Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 2: Appendices

Appendix 8.1: Transport Assessment [part 7 of 20] PRTM 2.2 Base Year Model Review and Addenda

Document reference: 6.2.8.1

Revision: 05

November 2022

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

[redacted]

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

AECOM

PRTM v2.2

Hinckley National Rail Freight Interchange Transport Modelling:
Base Year Model Review and Refinements

Quality Information

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Revision History

Revision	Revision date	Details	Authorised	Name	Position
v1.0	23/11/2021	For Issue	Yes	Mark Dazeley	Regional Director
v2.0	23/11/2021	For Issue – minor updates	Yes	Mark Dazeley	Regional Director
v3.0	20/12/2021	For Issue – following further model refinements	Yes	Mark Dazeley	Regional Director
v4.0	11/02/2022	For Issue – following refinements for Stoney Stanton	Yes	Mark Dazeley	Regional Director

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Table of Contents

List of Tables

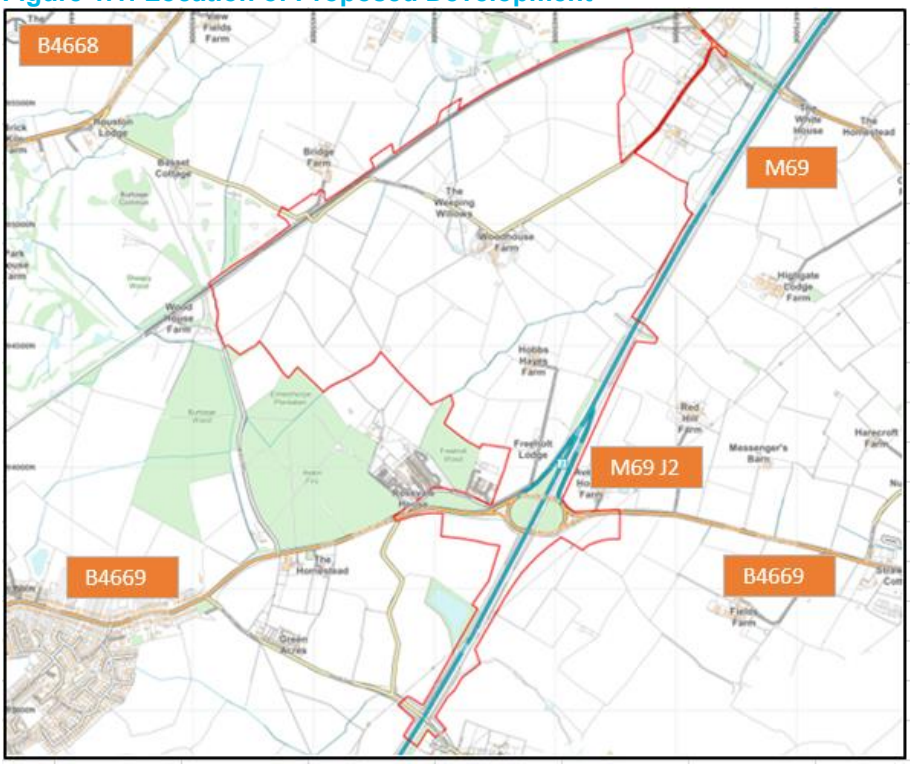
List of Figures

Section 1– Overview

1.1 Introduction

1.1.1 Hinckley National Rail Freight Interchange (NRFI) is a proposed B8 (warehousing) employment development located to the north-west of M69 Junction 2, to the east of Hinckley. This proposed development has capacity for 850,000m^2 of employment land and it is expected that this proposed development will generate around 8,000 jobs. Figure 1.1 provides an indication of the location of the proposed Hinckley NRFI development.

Figure 1.1: Location of Proposed Development



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1.1.2 AECOM has been commissioned by Leicestershire County Council (LCC) to undertake a strategic assessment of this proposed development using the Pan-Regional Transport Model v2.2 (PRTM v2.2) for the AM Peak and PM Peak hours.

1.2 Background to Model Review and Refinements

1.2.1 As part of this work, a review of the base year highway model in the vicinity of the development has been undertaken to set out the performance of the model in this area.

1.2.2 A technical note was produced in 2018 following the review of the base year PRTM v1.0 which focused on three areas of the PRTM highway model:

- a review of the model zoning in the vicinity of the proposed development;
- a review of the base year coded highway network in the vicinity of the proposed development (focussing on M69 Junction 2 and its approaches); and
- a review of the performance of the base year model against observed counts and journey times collected for use in the calibration and validation of the model.

1.2.3 Following the Hinckley NRFI base year review in 2018, the PRTM was enhanced and updated. As part of that enhancement, the PRTM v2.2 was recalibrated and validated using observed count data and journey times, potentially affecting modelled flows and journey times. The network and zoning around the proposed development site were unchanged materially; therefore, only a review of the updated model calibration and validation performance of the PRTM v2.2 in the vicinity of the proposed development was undertaken in that base year review, as documented in "*Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v1.0"* (15th July 2021).

1.2.4 In Autumn 2021, the Hinckley NRFI base year model review report was updated following comments from stakeholders. It included performance results for two additional screenlines east of the M69, and nine additional journey time routes near Hinckley. No updates or refinements were made to the model itself as part of this work. The updated base year review report, "*Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021), was issued to stakeholders for further comments.

1.2.5 Subsequent to v2.0 of the base year model review, further work was commissioned to refine the model in the following three ways:

- inclusion of the Narborough level crossing in the highway network;
- improvement of journey time performance for selected routes; and
- correction of highway network coding at the M6 / M69 interchange near Coventry.

1.2.6 This report details these refinements to the PRTM base year highway model to be used for the Hinckley NRFI work and presents the resulting impact on the base year model performance.

1.3 Report Structure

1.3.1 Following this introduction, this report contains the following sections:

- Section 2 details the refinements made to the PRTM as part of the current commission;
- Section 3 sets out the updated PRTM base year model performance compared with observed data;
- Section 4 provides a summary of the base year model review and performance;
- Appendix A presents the journey time validation performance of the original PRTM v2.2 routes near the proposed development; and
- Appendix B presents the journey time validation performance of additional specified routes near the proposed development.

Section 2– PRTM v2.2 Base Year Model Refinements

2.1 Introduction

2.1.1 This section details the three refinements made to the base year highway model since October 2021 in the vicinity of the proposed Hinckley NRFI development.

2.2 Narborough Level Crossing

2.2.1 Barrier downtime data provided by BWB and Network Rail have been used to reflect the delay experienced by drivers at the Narborough level crossing. The barrier downtime varies by time period as follows:

- AM Peak hour (08:00 to 09:00): 22:59 (mm:ss)[1]
- PM Peak hour (17:00 to 18:00): 17:50 (mm:ss)[2]
- Interpeak: 8-10 mins per hour[3]

2.2.2 Downtime information has been translated into SATURN signal timings and coded appropriately into the highway network.

2.2.3 The representation of delay at the Narborough level crossing is intended to improve the journey time performance along the Desford Road / Station Road route, results for which are provided in Section 3.

2.3 Journey Time Routes

2.3.1 Results for nine additional journey time validation routes have been provided in the "*Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021) (several of which cover the villages to the east of the M69).

2.3.2 Of these nine additional journey time routes, four have been identified as areas for model refinement (due to the model's under-representation of delay along sections of these routes). A description of the refinements made for each of these four routes is provided in the remainder of this section.

Huncote Road

2.3.3 The Huncote Road route extends from Narborough in the north, through Stoney Stanton, and then via Stanton Lane to the B4669. The under-representation of delay along this route stems primarily from the section through Stoney Stanton. To reflect the density of frontages along Hinckley Road (south-western part of the village) and Long Street (northern part of the village), as well as widespread on-street parking along Hinckley Road, the speed flow curves of links along these sections of the route have been updated to simulate lower speeds.

B581 Station Road / Broughton Road

2.3.4 The B581 Station Road / Broughton Road route extends from the A47 in the west to the B4114 Coventry Road in the east. The under-representation of delay along this route stemmed primarily from the section through Stoney Stanton and (in the eastbound direction only) the section east of Stoney Stanton approaching the B4114.

2.3.5 To address the under-representation of delay between Stoney Stanton and the B4114, the journey time performance has previously been improved by the selection of the "Rural S7.0 Typical A-Road / B-Road" speed flow curve (the speed flow curve applied previously was "Rural S7.3 Good A-Road / B-Road") for the rural section east of Stoney Stanton. The presence of on-street parking on Station Road on the western edge of the village as well as the general density of frontages, pedestrian crossings, and traffic calming infrastructure in Stoney Stanton was noted. Therefore, the speed flow curve used in this part of the model was updated accordingly from "Suburban 1-lane A-Road / B-Road (30 mph limit)" to "Urban 25mph Fixed Speed (30mph limit limited impedances)".

[1] Barrier downtime data from Network Rail's datalogger system for Narborough crossing on Wednesday 3 Nov 2021 ("*Narborough Peak Hour Barrier Down Times - Morning Peak.inc addn freight.pdf*") (received via email from BWB on 24/11/2021)
[2] Barrier downtime data from Network Rail's datalogger system for Narborough crossing on Wednesday 3 Nov 2021 ("*Narborough Peak Hour Barrier Down Times - Evening Peak.inc addn freight.pdf*") (received via email from BWB on 24/11/2021)
[3] Average barrier downtimes provided by BWB (via email on 28/10/2021)

2.3.6 Despite the improved journey time performance relative to observed data, this route still did not meet TAG criteria in the eastbound direction in the PM Peak hour. Consequently, the speed flow curve used in Stoney Stanton has been revised to “Urban 15mph Fixed Speed (20mph limit limited impedances)”.

Nuneaton Lane / Hinckley Lane

2.3.7 The Nuneaton Lane / Hinckley Lane route extends from the A47 / Wykin Road roundabout in the east, through Higham on the Hill, to the A5 in the west. The under-representation of delay along this route stems primarily from the central section of the route which includes the village of Higham on the Hill. To reflect the density of frontages and on-street parking on Nuneaton Lane in Higham on the Hill, the speed flow curve of links along this section of the route has been updated to simulate lower speeds.

Fenn Lanes / Bosworth Road / Dan's Lane

2.3.8 The Fenn Lanes / Bosworth Road / Dan’s Lane route extends from the A47 / Dan’s Lane junction in the east, through Kirkby Mallory, to the A5 in the west. The under-representation of journey times stems from the modelled speed being marginally higher than the observed speed along the extent of the route. To reflect the quality of the route in terms of road surface, width and driver visibility, the speed flow curves of links along certain sections of the route have been updated to simulate lower speeds.

2.4 M6 / M69 Interchange

2.4.1 A review of the M6 / M69 interchange revealed outdated network coding that did not reflect the signalised design of the junction as it existed in 2014 (base year of the PRTM). The junction was signalised before 2014, and this is now reflected in the PRTM base year network. Signal timings for the gyratory have been estimated based on proportions of flow (by time period) in the existing base year model.

Section 3– PRTM v2.2 Base Year Model Performance

3.1 PRTM v2.2 Highway Base Year Model Performance

3.1.1 As part of the development of the PRTM v2.2, an extensive collection of observed link count data was undertaken forming screenlines and cordons throughout the Fully Modelled Area that centres around Leicestershire. Count data were used to both calibrate and validate the model to observed data. In addition to the observed traffic count data, observed journey times have been derived from Trafficmaster data for multiple routes across the county and are used to validate the model to observed data.

3.1.2 As documented in the "*Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021), screenlines / cordons and journey time routes in the vicinity of the proposed Hinckley NRFI development have been extracted and analysed. Following the base year highway model refinements as set out in Section 2, it is necessary to extract the base year model data for these screenlines / cordons and journey time routes and compare with observed data to provide assurance that the PRTM is suitable for the assessment of the proposed Hinckley NRFI development. In addition to the screenlines / cordons in the vicinity of the proposed development, the base year model performance for the Fully Modelled Area was also checked to ensure the refinements undertaken as part of this application have not caused a wider impact on base year model performance of the PRTM.

3.1.3 It should be noted that the model refinements completed since October 2021 (as set out in Section 2) are not deemed significant enough to warrant undertaking matrix estimation specifically for this application of the PRTM. The highway demand matrices are therefore consistent with those developed for the main PRTM base year model (v2.2).

3.2 Screenline and Cordon Performance

3.2.1 Table 3.1 presents the performance of the 76 screenlines and cordons in Leicester City and Leicestershire. As each screenline / cordon is assessed in two directions, this equates to 152 movements.

3.2.2 At Leicester City and Leicestershire level, the model meets the TAG acceptability guideline that "all or nearly all" screenlines meet the TAG criterion for screenline flows for both AM Peak and PM Peak hours.

Table 3.1: Leicester City and Leicestershire Screenline and Cordon Performance

	AM Peak Pass Rate	PM Peak Pass Rate
Leicester City	97%	97%
North Leicestershire	100%	100%
North-east Leicestershire	100%	100%
South Leicestershire	96%	100%
South-west Leicestershire	100%	100%
North-west Leicestershire	100%	100%
County-wide	100%	100%
SRN (Internal)	96%	92%
Leicestershire (inc. Leicester City)	**98%**	**98%**

3.2.3 Figure 3.1 shows the locations of the screenlines and cordons assessed as part of the base year model review for this application due to their close proximity to the proposed Hinckley NRFI development. Table 3.2 presents the performance of these screenlines and cordons, and all the screenlines and cordons pass TAG acceptability guidelines for AM Peak and PM Peak hours.

Figure 3.1: Locations of Screenlines and Cordons

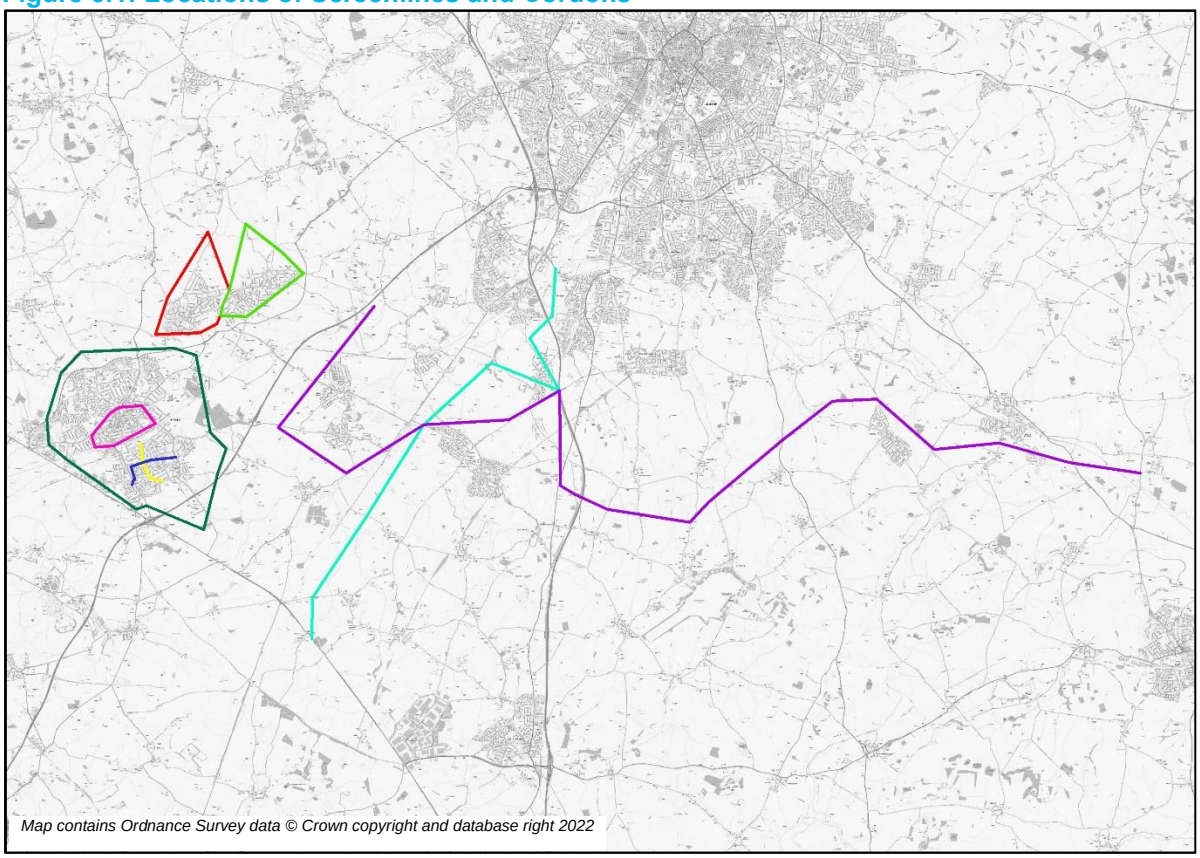

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Table 3.2: Comparison of Modelled and Observed Traffic: Screenlines & Cordons (Vehicles)

		AM Peak					PM Peak				
	Counts	Obs.	Mod.	Diff	%	Pass?	Obs.	Mod.	Diff	%	Pass?
Barwell Cordon Inbound	8	1,477	1,453	-25	-1.7%	✓	2,176	2,170	-6	-0.3%	✓
Barwell Cordon Outbound	8	1,901	1,927	26	1.4%	✓	1,750	1,696	-55	-3.1%	✓
Earl Shilton Cordon Inbound	7	907	949	42	4.6%	✓	1,539	1,571	32	2.1%	✓
Earl Shilton Cordon Outbound	7	1,361	1,406	45	3.3%	✓	1,093	1,126	32	2.9%	✓
Hinckley East-West Screenline (South) Northbound	6	1,492	1,483	-9	-0.6%	✓	1,910	1,953	44	2.3%	✓
Hinckley East-West Screenline (South) Southbound	6	1,710	1,761	51	3.0%	✓	1,608	1,605	-3	-0.2%	✓
Hinckley Inner Cordon Inbound	9	4,591	4,724	133	2.9%	✓	3,892	4,022	130	3.3%	✓
Hinckley Inner Cordon Outbound	9	3,235	3,370	135	4.2%	✓	4,420	4,544	124	2.8%	✓
Hinckley North-South Screenline (South) Eastbound	5	821	827	6	0.7%	✓	913	930	17	1.9%	✓
Hinckley North-South Screenline (South) Westbound	5	820	833	13	1.6%	✓	907	901	-6	-0.7%	✓
Hinckley Outer Cordon Inbound	14	5,342	5,424	81	1.5%	✓	6,384	6,453	69	1.1%	✓
Hinckley Outer Cordon Outbound	14	5,485	5,563	78	1.4%	✓	5,312	5,386	74	1.4%	✓
Leicestershire S-Line (South) Eastbound	9	6,584	6,738	155	2.3%	✓	6,502	6,438	-63	-1.0%	✓
Leicestershire S-Line (South) Westbound	9	6,555	6,292	-263	-4.0%	✓	7,483	7,638	155	2.1%	✓
Harborough District East-West Screenline Northbound	18	9,990	9,876	-114	-1.1%	✓	11,629	11,844	215	1.9%	✓
Harborough District East-West Screenline Southbound	18	10,668	10,969	301	2.8%	✓	10,220	10,233	13	0.1%	✓

3.3 Link Performance

3.3.1 Table 3.3 presents the performance of the 1,356 link counts in Leicester City and Leicestershire.

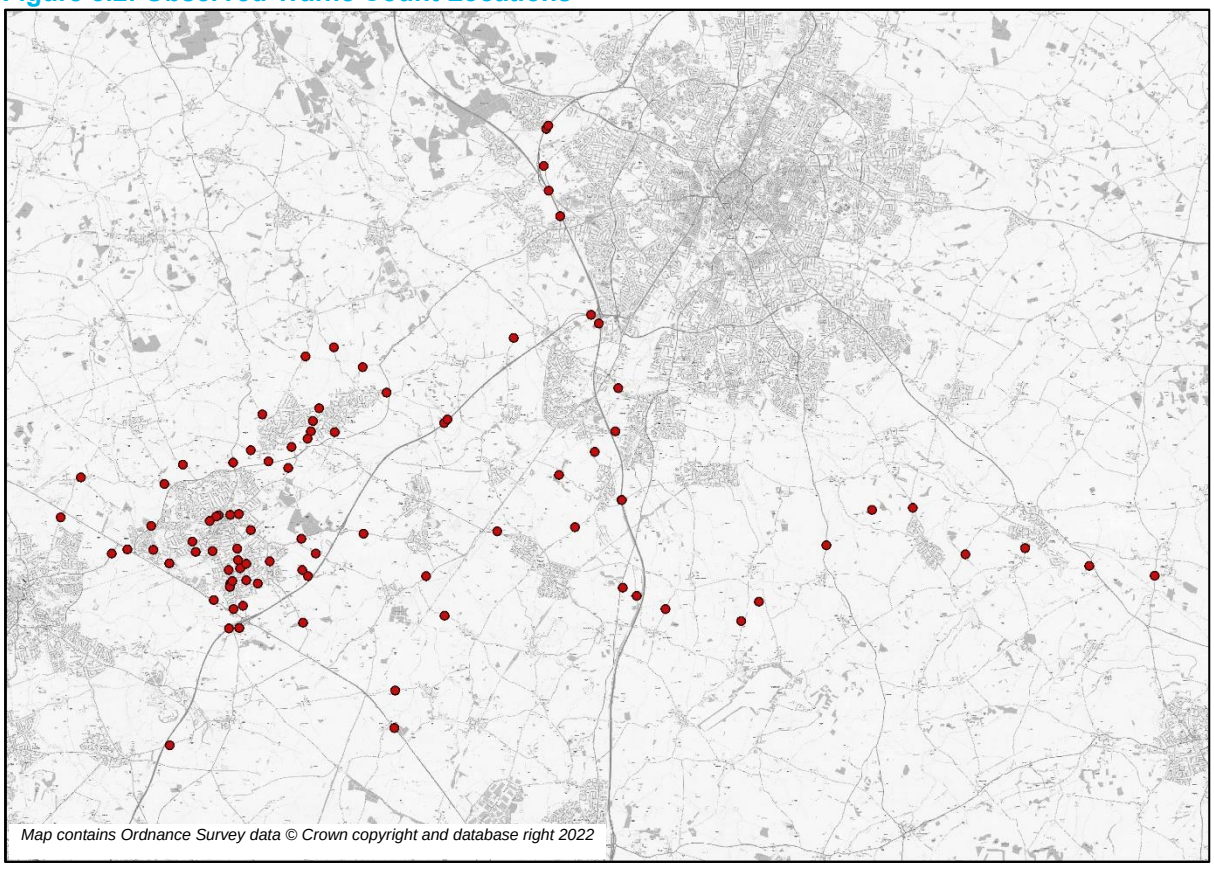
3.3.2 At Leicester City and Leicestershire level, the model meets the TAG acceptability guideline that over 85% of link flows meet the link flow criteria for both AM Peak and PM Peak hours.

Table 3.3: Leicester City and Leicestershire Link Performance

	AM Peak Pass Rate	PM Peak Pass Rate
Leicester City	84%	85%
North Leicestershire	86%	82%
North-east Leicestershire	98%	93%
South Leicestershire	90%	90%
South-west Leicestershire	88%	85%
North-west Leicestershire	96%	90%
County-wide	89%	87%
SRN (Internal)	97%	96%
Leicestershire (inc. Leicester City)	***89%***	***87%***

3.3.3 Figure 3.2 shows the location of observed traffic count data used for the calibration and validation of PRTM v2.2 near the proposed development. There are 83 two-way count sites and four one-way count sites (170 counts in total) used in the assessment of the base year model performance for the proposed Hinckley NRFI development.

Figure 3.2: Observed Traffic Count Locations



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3.3.4 Guidelines set out in Table 2 of TAG Unit M3.1 on highway assignment modelling state that a modelled link flow meets TAG criteria if at least one of the two following conditions are met:

- Flow Criteria:
  - modelled flow is within 100 vehicles for counts with an observed flow of less than 700 vehicles;
  - modelled flow is within 15% vehicles for counts with an observed flow between 700 and 2,700 vehicles; or
  - modelled flow is within 400 vehicles for counts with an observed flow greater than 2,700 vehicles.
- GEH criteria:
  - a GEH[4] value of less than 5.

3.3.5 Table 3.4 shows the modelled link flows compared with observed link counts by time period and by direction. Of the 170 counts assessed, 21 counts fail to meet TAG criteria in each of the AM Peak and PM Peak hours. This equates to 88% of links passing, which exceeds the TAG acceptability guideline of more than 85% of links passing. This indicates that the base year model performs well compared with observed traffic in the vicinity of the proposed Hinckley NRFI development.

3.3.6 Figure 3.3 and Figure 3.4 illustrate the location of the links passing in the AM Peak and PM Peak hours respectively. Most of the links that have a failure in at least one direction tend to be located in the following areas:

- Hinckley urban area;
- relatively minor roads to the west of Hinckley; and
- rural areas between the M69 and M1.

3.3.7 Further analysis and commentary on the locations where the model does not meet TAG criteria in terms of link performance can be found in *"Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021). This analysis includes commentary on the M69 eastbound approach to M1 Junction 21 in the AM Peak.

3.3.8 As shown in Table 3.4, the modelled flow for the M69 eastbound approach to the M1 Junction 21 is lower than the observed for the AM Peak. Paragraph 2.2.11 and 2.2.12 of the *"Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021) discuss that this is likely related to route choice.

3.3.9 The model represents observed flows on the main section of the M69 before the M1 slip road diverge well, meeting TAG criteria as shown in Table 3.4. Also, the two M69 eastbound journey time routes: M69 (M6 to M1) (Figure 3.5 and Table 3.6) and M69 (M6 Junction to M1 Junction 21a) (Figure 3.6 and Table 3.7) both perform well and meet TAG criteria for both AM Peak and PM Peak hours. As such, it is likely that this discrepancy in observed and modelled flow on the M69 eastbound approach to the M1 Junction 21 for the AM Peak is related to the route choice that vehicles entering Leicester have from this direction: either to take the route through the Junction 21 gyratory and enter Leicester from the south, or to use the M1 northbound and A46 to enter Leicester from the north. Select link analysis at M1 Junction 21 undertaken previously which illustrates the route choice to Leicester is provided in Figure 2.7 to Figure 2.10 of the *"Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021).

[4] $GEH = \sqrt{\frac{(M-O)^2}{(M+O)/2}}$, where M is the modelled flow and O is the observed flow

Table 3.4: Comparison of Modelled and Observed Traffic: Links (Vehicles)

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Main Street - Eastbound	137	201	245	297	108	96	79%	48%	7.8	6.1	×	✓
Main Street - Westbound	239	157	295	193	56	35	24%	22%	3.4	2.7	✓	✓
Aston Lane - Northbound	68	65	67	47	-1	-18	-2%	-28%	0.2	2.5	✓	✓
Aston Lane - Southbound	39	72	41	47	3	-25	7%	-35%	0.4	3.3	✓	✓
Lychgate Lane - Eastbound	46	53	53	56	7	3	16%	6%	1.0	0.4	✓	✓
Lychgate Lane - Westbound	36	56	23	29	-12	-27	-34%	-48%	2.3	4.1	✓	✓
Wykin Road - Eastbound	135	143	277	262	142	118	105%	83%	9.9	8.3	×	×
Wykin Road - Westbound	147	174	188	202	41	28	28%	16%	3.2	2.0	✓	✓
Hinckley Road - Eastbound	556	638	604	702	48	65	9%	10%	2.0	2.5	✓	✓
Hinckley Road - Westbound	554	559	564	620	10	60	2%	11%	0.4	2.5	✓	✓
Dodwells Road - North-Eastbound	452	768	464	747	12	-21	3%	-3%	0.6	0.8	✓	✓
Dodwells Road - South-Westbound	718	598	725	619	7	21	1%	4%	0.3	0.8	✓	✓
B4666 Coventry Road - Eastbound	422	578	478	614	56	36	13%	6%	2.6	1.5	✓	✓
B4666 Coventry Road - Westbound	544	377	584	409	40	32	7%	9%	1.7	1.6	✓	✓
Coventry Road (between Brookdale and Northfield Road) - Eastbound	776	711	870	738	95	26	12%	4%	3.3	1.0	✓	✓
Coventry Road (between Brookdale and Northfield Road) - Westbound	544	727	625	811	81	84	15%	12%	3.4	3.0	✓	✓
Leicester Road - Northbound	394	669	431	765	36	96	9%	14%	1.8	3.6	✓	✓
Leicester Road - Southbound	674	419	887	547	214	129	32%	31%	7.7	5.9	×	×
Upper Bond Street - North-Eastbound	287	493	225	428	-62	-65	-22%	-13%	3.9	3.0	✓	✓
Upper Bond Street - South-Westbound	563	455	459	406	-104	-48	-18%	-11%	4.6	2.3	✓	✓
Rugby Road (near Sketchley Hill Primary School) - Northbound	478	843	468	926	-10	83	-2%	10%	0.5	2.8	✓	✓
Rugby Road (near Sketchley Hill Primary School) - Southbound	712	574	710	501	-1	-73	-0%	-13%	0.1	3.1	✓	✓
B578 Hinckley Road - Northbound	363	490	339	550	-23	59	-6%	12%	1.3	2.6	✓	✓
B578 Hinckley Road - Southbound	491	351	438	251	-52	-100	-11%	-29%	2.4	5.8	✓	×
Westfield Road - Eastbound	153	100	67	58	-86	-43	-56%	-42%	8.2	4.8	✓	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Westfield Road - Westbound	115	126	41	46	-73	-80	-64%	-63%	8.3	8.6	✓	✓
Brookside - Eastbound	197	282	237	390	39	108	20%	38%	2.7	5.9	✓	×
Brookside - Westbound	244	177	188	164	-56	-13	-23%	-7%	3.8	1.0	✓	✓
Tilton Road - Eastbound	137	141	111	84	-27	-57	-19%	-40%	2.4	5.4	✓	✓
Tilton Road - Westbound	112	110	152	138	40	28	36%	26%	3.5	2.5	✓	✓
Sketchley Road (east of Pyeharps Road) - Eastbound	141	188	165	160	24	-27	17%	-15%	1.9	2.1	✓	✓
Sketchley Road (east of Pyeharps Road) - Westbound	143	113	193	241	50	128	35%	113%	3.8	9.6	✓	×
Derby Road - Northbound	293	394	361	430	68	36	23%	9%	3.8	1.8	✓	✓
Derby Road - Southbound	285	275	250	234	-35	-41	-12%	-15%	2.2	2.6	✓	✓
Hollycroft - North-Westbound	306	555	256	457	-50	-98	-16%	-18%	3.0	4.4	✓	✓
Hollycroft - South-Eastbound	503	431	485	454	-18	23	-4%	5%	0.8	1.1	✓	✓
Featherston Drive - North-Westbound	161	195	183	178	23	-17	14%	-9%	1.7	1.3	✓	✓
Featherston Drive - South-Eastbound	102	132	94	113	-7	-19	-7%	-14%	0.7	1.7	✓	✓
Thurlaston Lane - Eastbound	219	88	238	51	20	-37	9%	-42%	1.3	4.5	✓	✓
Thurlaston Lane - Westbound	86	216	58	153	-28	-63	-32%	-29%	3.3	4.6	✓	✓
The Ridgeway - Eastbound	27	52	30	44	3	-8	10%	-16%	0.5	1.2	✓	✓
The Ridgeway - Westbound	31	29	34	23	3	-6	11%	-19%	0.6	1.1	✓	✓
Boyslade Road - Northbound	271	296	298	243	27	-53	10%	-18%	1.6	3.3	✓	✓
Boyslade Road - Southbound	251	257	358	363	107	107	43%	42%	6.1	6.1	×	×
Herald Way - Northbound	111	113	109	71	-2	-42	-2%	-37%	0.2	4.4	✓	✓
Herald Way - Southbound	73	84	81	148	8	64	11%	77%	0.9	6.0	✓	✓
Sketchley Road (east of Rugby Road) - Eastbound	157	291	143	298	-13	6	-9%	2%	1.1	0.4	✓	✓
Sketchley Road (east of Rugby Road) - Westbound	238	139	234	141	-4	2	-2%	2%	0.3	0.2	✓	✓
Shilton Road - Northbound	100	94	96	90	-4	-4	-4%	-4%	0.4	0.4	✓	✓
Shilton Road - Southbound	94	110	85	99	-9	-12	-9%	-11%	0.9	1.1	✓	✓
Hinckley Road (north of A47) - Eastbound	147	218	150	208	3	-10	2%	-5%	0.2	0.7	✓	✓
Hinckley Road (north of A47) - Westbound	199	176	226	191	27	15	13%	8%	1.8	1.1	✓	✓
Thurlaston Lane - Eastbound	124	71	167	73	43	3	35%	4%	3.6	0.3	✓	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Thurlaston Lane - Westbound	78	141	107	172	30	30	38%	22%	3.1	2.4	✓	✓
A47 Leicester Road - Eastbound	364	236	365	247	1	11	0%	5%	0.0	0.7	✓	✓
A47 Leicester Road - Westbound	191	399	193	390	2	-9	1%	-2%	0.2	0.4	✓	✓
Hinckley Road (through Barwell) - Eastbound	302	506	350	527	49	21	16%	4%	2.7	0.9	✓	✓
Hinckley Road (through Barwell) - Westbound	410	380	489	374	78	-6	19%	-2%	3.7	0.3	✓	✓
Kirkby Road - Northbound	63	44	63	39	-0	-5	-0%	-11%	0.0	0.7	✓	✓
Kirkby Road - Southbound	53	72	60	79	8	7	15%	10%	1.0	0.8	✓	✓
Elmesthorpe Lane - Eastbound	27	93	0	0	-27	-93	-100%	-100%	7.3	13.6	✓	✓
Elmesthorpe Lane - Westbound	75	47	0	0	-75	-47	-100%	-100%	12.3	9.7	✓	✓
Heath Lane - Eastbound	122	87	109	98	-13	11	-11%	13%	1.2	1.2	✓	✓
Heath Lane - Westbound	88	125	62	159	-26	34	-29%	27%	3.0	2.9	✓	✓
Stapleton Lane - Northbound	204	177	175	165	-29	-12	-14%	-7%	2.1	0.9	✓	✓
Stapleton Lane - Southbound	134	257	127	235	-6	-22	-5%	-9%	0.6	1.4	✓	✓
The Common - Northbound	204	326	248	407	44	81	21%	25%	2.9	4.2	✓	✓
The Common - Southbound	368	275	347	292	-21	17	-6%	6%	1.1	1.0	✓	✓
Coventry Road - Eastbound	244	170	221	183	-24	13	-10%	8%	1.6	1.0	✓	✓
Coventry Road - Westbound	161	311	117	180	-44	-132	-27%	-42%	3.7	8.4	✓	×
Canning Street - Eastbound	32	24	59	27	27	3	85%	11%	4.0	0.5	✓	✓
Canning Street - Westbound	3	10	60	120	57	111	1,678%	1,139%	10.1	13.7	✓	×
Hinckley Road (near M69 Junction 1) - Eastbound	337	471	526	575	189	104	56%	22%	9.1	4.5	×	✓
Hinckley Road (near M69 Junction 1) - Westbound	457	441	429	535	-28	93	-6%	21%	1.3	4.2	✓	✓
The Long Shoot - North-Eastbound	807	890	707	837	-100	-53	-12%	-6%	3.6	1.8	✓	✓
The Long Shoot - South-Westbound	891	790	944	848	53	59	6%	7%	1.7	2.1	✓	✓
Carrs Hill - Northbound	366	750	316	707	-50	-43	-14%	-6%	2.7	1.6	✓	✓
Carrs Hill - Southbound	616	392	656	383	40	-9	7%	-2%	1.6	0.5	✓	✓
Station Road - Northbound	94	202	103	285	10	83	11%	41%	1.0	5.3	✓	✓
Station Road - Southbound	200	141	228	182	28	42	14%	29%	1.9	3.3	✓	✓
B4668 Leicester Road - Northbound	487	806	365	784	-122	-22	-25%	-3%	5.9	0.8	×	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
B4668 Leicester Road - Southbound	875	572	957	594	82	22	9%	4%	2.7	0.9	✓	✓
Rugby Road - Northbound	541	1240	485	995	-55	-246	-10%	-20%	2.4	7.3	✓	×
Rugby Road - Southbound	1062	589	957	626	-104	37	-10%	6%	3.3	1.5	✓	✓
B578 Lutterworth Road - Northbound	102	287	124	405	22	119	22%	41%	2.1	6.4	✓	×
B578 Lutterworth Road - Southbound	289	105	363	102	74	-3	26%	-3%	4.1	0.3	✓	✓
Stoke Road - Northbound	238	327	120	274	-118	-53	-50%	-16%	8.8	3.1	×	✓
Stoke Road - Southbound	376	189	267	101	-109	-87	-29%	-46%	6.1	7.3	×	✓
Ashby Road - Northbound	408	653	500	662	92	9	22%	1%	4.3	0.3	✓	✓
Ashby Road - Southbound	728	542	706	539	-22	-2	-3%	-0%	0.8	0.1	✓	✓
Normandy Way - Eastbound	514	834	642	885	129	52	25%	6%	5.4	1.8	×	✓
Normandy Way - Westbound	818	710	759	682	-59	-28	-7%	-4%	2.1	1.1	✓	✓
B4109 Rugby Road - Northbound	771	677	506	548	-265	-129	-34%	-19%	10.5	5.2	×	×
B4109 Rugby Road - Southbound	706	738	492	607	-214	-130	-30%	-18%	8.7	5.0	×	×
London Road - North-Westbound	835	799	1140	1009	305	210	37%	26%	9.7	7.0	×	×
London Road - South-Eastbound	588	708	879	879	291	170	49%	24%	10.7	6.0	×	×
B4669 Hinckley Road - Eastbound	267	476	365	484	97	7	36%	2%	5.5	0.3	✓	✓
B4669 Hinckley Road - Westbound	386	259	372	337	-13	78	-3%	30%	0.7	4.5	✓	✓
A46 between Kirby Road and Kirby Muxlow Interchange - Eastbound	1016	918	1017	906	1	-12	0%	-1%	0.0	0.4	✓	✓
A46 between Kirby Road and Kirby Muxlow Interchange - Westbound	737	953	750	944	13	-9	2%	-1%	0.5	0.3	✓	✓
Ratby Lane - Eastbound	1139	468	1131	547	-7	80	-1%	17%	0.2	3.5	✓	✓
Ratby Lane - Westbound	384	1060	489	1054	105	-5	27%	-0%	5.0	0.2	×	✓
Wolvey Road - Northbound	83	286	116	472	34	187	41%	65%	3.4	9.6	✓	×
Wolvey Road - Southbound	114	65	187	35	73	-30	64%	-46%	6.0	4.2	✓	✓
Nutts Lane - Northbound	151	311	94	264	-57	-48	-37%	-15%	5.1	2.8	✓	✓
Nutts Lane - Southbound	327	99	272	64	-55	-35	-17%	-35%	3.2	3.9	✓	✓
Higham Lane - Northbound	308	343	359	453	51	109	17%	32%	2.8	5.5	✓	×
Higham Lane - Southbound	377	390	431	333	55	-58	15%	-15%	2.7	3.0	✓	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
A46 between B5380 and A50 - Northbound	2462	3263	2408	3215	-54	-47	-2%	-1%	1.1	0.8	✓	✓
A46 between B5380 and A50 - Southbound	3191	2540	3246	2517	55	-23	2%	-1%	1.0	0.5	✓	✓
M1 between Junction 21 and Junction 21a - North-Westbound	5440	6615	5502	6573	62	-42	1%	-1%	0.8	0.5	✓	✓
M1 between Junction 21 and Junction 21a - South-Eastbound	6256	5563	6338	5617	83	54	1%	1%	1.0	0.7	✓	✓
M69 between Junction 2 and Junction 3 - North-Eastbound	2414	2639	2295	2809	-119	169	-5%	6%	2.5	3.2	✓	✓
M69 between Junction 2 and Junction 3 - South-Westbound	2700	2700	2776	2723	76	23	3%	1%	1.4	0.4	✓	✓
M69 Junction 1 - Northbound	1845	3301	1909	3301	64	0	3%	0%	1.5	0.0	✓	✓
M69 Junction 1 - Southbound	2984	2195	3079	2219	95	25	3%	1%	1.7	0.5	✓	✓
M69 between Junction 1 and Junction 2 - North-Eastbound	1970	2521	1979	2499	9	-21	0%	-1%	0.2	0.4	✓	✓
M69 between Junction 1 and Junction 2 - South-Westbound	2495	2127	2443	2171	-53	43	-2%	2%	1.1	0.9	✓	✓
A5 - North-Westbound	1426	1441	1445	1467	19	26	1%	2%	0.5	0.7	✓	✓
A5 - South-Eastbound	1379	1395	1389	1397	10	2	1%	0%	0.3	0.0	✓	✓
M1 Junction 21 Northbound Off-slip	690	568	665	567	-25	-0	-4%	-0%	1.0	0.0	✓	✓
M69 Eastbound Approach to M1 Junction 21	1165	1018	848	1001	-318	-17	-27%	-2%	10.0	0.5	×	✓
A5 (south of Sketchley) - North-Westbound	992	799	1004	802	12	3	1%	0%	0.4	0.1	✓	✓
A5 (south of Sketchley) - South-Eastbound	982	1064	974	1084	-8	20	-1%	2%	0.2	0.6	✓	✓
Coventry Road near Sapcote - Northbound	384	767	417	762	32	-4	8%	-1%	1.6	0.1	✓	✓
Coventry Road near Sapcote - Southbound	505	350	607	377	102	27	20%	8%	4.3	1.4	✓	✓
B581 Coventry Road - Westbound	774	646	658	652	-116	6	-15%	1%	4.3	0.3	✓	✓
B581 Coventry Road - Eastbound	500	777	383	621	-117	-156	-23%	-20%	5.5	5.9	×	×
Broughton Road - Northbound	303	246	417	282	114	37	38%	15%	6.0	2.3	×	✓
Broughton Road - Southbound	252	346	198	355	-54	9	-21%	3%	3.6	0.5	✓	✓
A426 Lutterworth Road - Northbound	374	555	341	563	-33	8	-9%	2%	1.7	0.4	✓	✓
A426 Lutterworth Road - Southbound	457	386	529	421	73	35	16%	9%	3.3	1.8	✓	✓
Holt Lane - Northbound	13	19	5	5	-7	-14	-58%	-75%	2.4	4.2	✓	✓
Holt Lane - Southbound	19	18	15	6	-4	-12	-22%	-67%	1.0	3.5	✓	✓
M1 between Junction 20 to Junction 21 - Northbound	3321	3690	3211	3684	-110	-6	-3%	-0%	1.9	0.1	✓	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
M1 between Junction 20 to Junction 21 - Southbound	3367	3231	3597	3212	230	-19	7%	-1%	3.9	0.3	✓	✓
Willoughby Road - Northbound	39	53	19	7	-20	-46	-52%	-87%	3.8	8.4	✓	✓
Willoughby Road - Southbound	49	46	22	19	-27	-27	-55%	-58%	4.5	4.7	✓	✓
Main St near Peatling Parva - Northbound	18	18	1	7	-17	-11	-96%	-61%	5.5	3.2	✓	✓
Main St near Peatling Parva - Southbound	18	16	14	2	-4	-14	-23%	-85%	1.1	4.5	✓	✓
Main St near Peatling Magna - Northbound	51	48	27	27	-24	-21	-47%	-43%	3.9	3.4	✓	✓
Main St near Peatling Magna - Southbound	74	57	47	27	-27	-30	-36%	-52%	3.4	4.6	✓	✓
Welford Road - Northbound	315	378	408	467	93	90	29%	24%	4.9	4.4	✓	✓
Welford Road - Southbound	294	277	374	365	80	88	27%	32%	4.4	4.9	✓	✓
Kilby Road - Eastbound	47	99	61	79	14	-20	30%	-20%	1.9	2.1	✓	✓
Kilby Road - Westbound	106	60	90	69	-16	10	-15%	16%	1.6	1.2	✓	✓
Leicester Road near Fleckney - Northbound	291	221	421	307	130	87	45%	39%	6.9	5.3	×	✓
Leicester Road near Fleckney - Southbound	166	306	251	407	85	101	51%	33%	5.9	5.4	✓	×
Kibworth Road - Northbound	244	243	158	172	-86	-71	-35%	-29%	6.1	4.9	✓	✓
Kibworth Road - Southbound	202	216	157	193	-45	-24	-22%	-11%	3.4	1.7	✓	✓
Main St near Kibworth - Northbound	85	71	53	49	-32	-22	-37%	-31%	3.8	2.8	✓	✓
Main St near Kibworth - Southbound	86	100	31	48	-55	-52	-64%	-52%	7.2	6.1	✓	✓
A6 Harborough Road - Northbound	767	1193	697	1093	-70	-100	-9%	-8%	2.6	3.0	✓	✓
A6 Harborough Road - Southbound	1182	813	1151	817	-31	3	-3%	0%	0.9	0.1	✓	✓
B6047 Melton Road - Northbound	225	308	293	404	69	96	31%	31%	4.3	5.1	✓	✓
B6047 Melton Road - Southbound	365	223	383	224	18	1	5%	0%	0.9	0.1	✓	✓
A5 near Wibtoft - Northbound	574	917	574	932	0	16	0%	2%	0.0	0.5	✓	✓
A5 near Wibtoft - Southbound	940	582	958	577	18	-5	2%	-1%	0.6	0.2	✓	✓
High Cross Road - Eastbound	69	173	172	207	103	34	148%	20%	9.3	2.5	×	✓
High Cross Road - Westbound	176	83	143	186	-33	103	-19%	124%	2.6	8.9	✓	×
Frolesworth Road - Eastbound	98	94	97	81	-1	-13	-1%	-13%	0.1	1.4	✓	✓
Frolesworth Road - Westbound	74	105	43	200	-30	95	-41%	91%	4.0	7.7	✓	✓
Croft Road - Eastbound	347	248	311	305	-36	57	-10%	23%	2.0	3.4	✓	✓

Location	Observed Total		Modelled Total		Difference		% Difference		GEH		Pass?	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Croft Road - Westbound	263	438	363	296	100	-142	38%	-32%	5.7	7.4	×	×
Cosby Road - Northbound	126	123	38	154	-88	31	-70%	25%	9.8	2.6	✓	✓
Cosby Road - Southbound	79	135	95	64	16	-71	20%	-53%	1.7	7.1	✓	✓
Warwick Road - Eastbound	204	309	152	304	-52	-5	-25%	-2%	3.9	0.3	✓	✓
Warwick Road - Westbound	329	319	193	420	-136	101	-41%	32%	8.4	5.3	×	×
B582 Enderby Road - Eastbound	979	952	973	1066	-7	114	-1%	12%	0.2	3.6	✓	✓
B582 Enderby Road - Westbound	919	1163	1069	1113	151	-49	16%	-4%	4.8	1.5	✓	✓

Figure 3.3: Comparison of Modelled and Observed Traffic on Links: AM Peak Hour

(green = passing in both directions (or one direction if a one-way count), orange passes in one direction, red no passes)

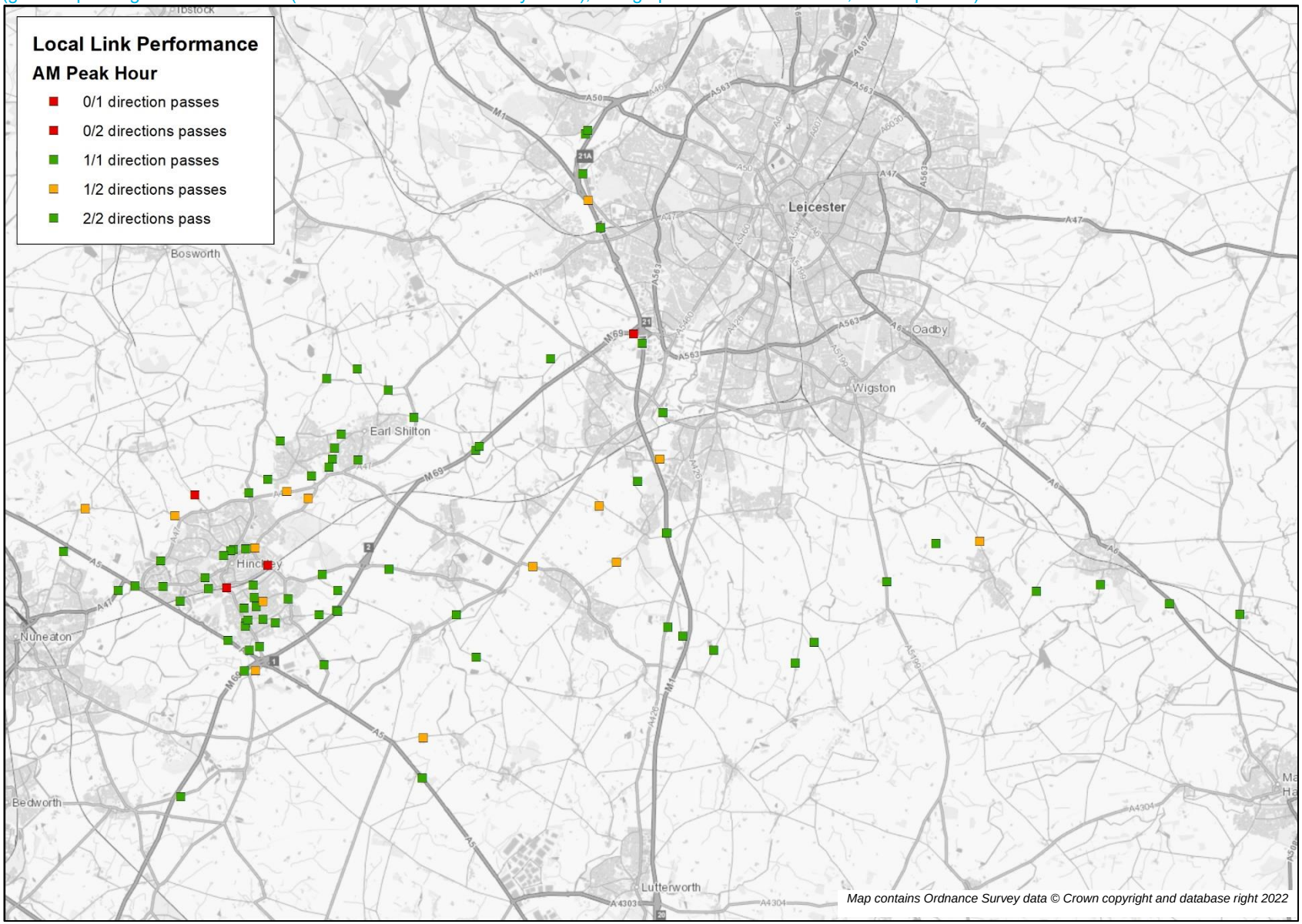
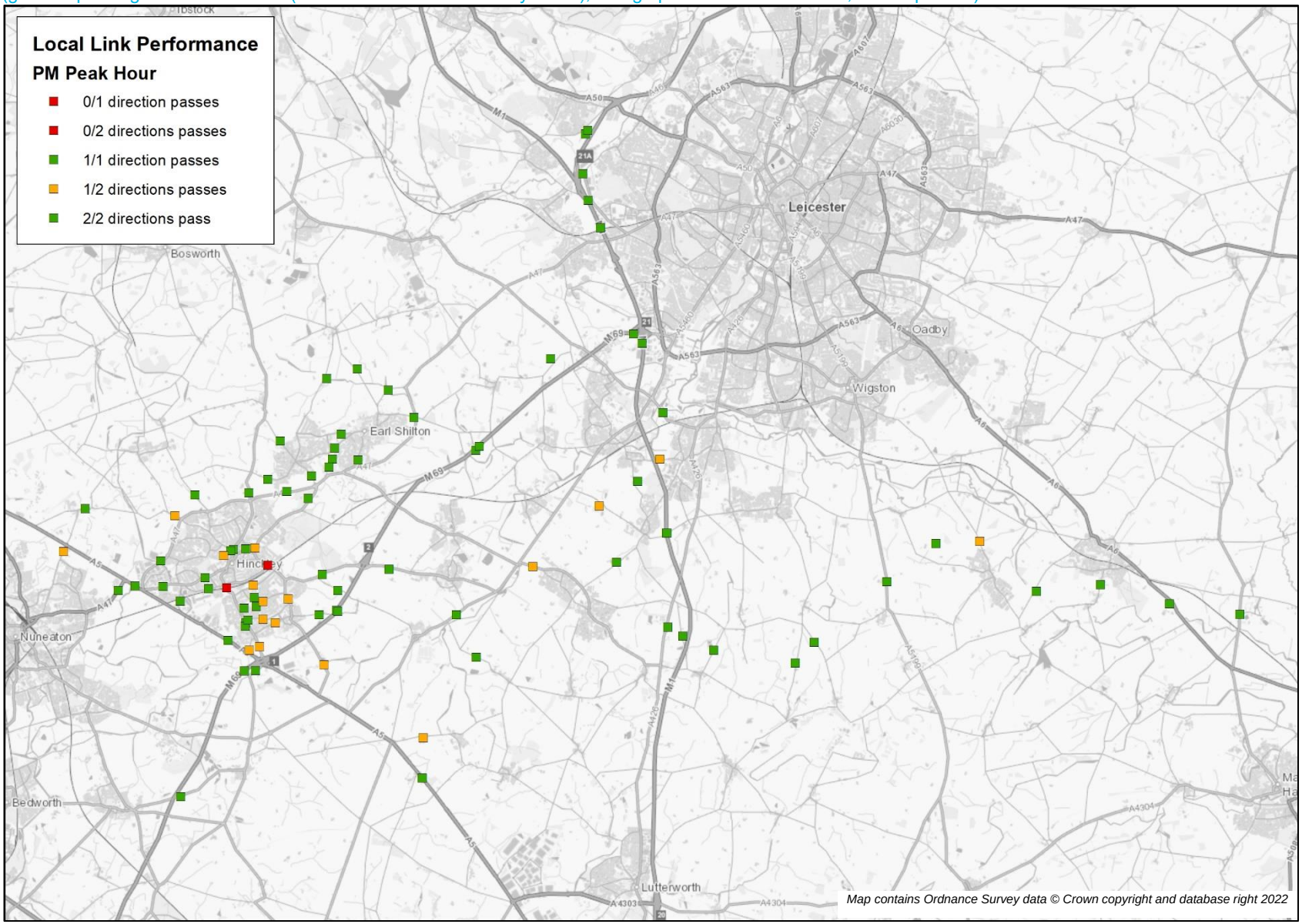


Figure 3.4: Comparison of Modelled and Observed Traffic on Links: PM Peak Hour

(green = passing in both directions (or one direction if a one-way count), orange passes in one direction, red no passes)



3.4 Journey Time Performance

3.4.1 Table 3.5 presents the performance of the 69 journey time routes in Leicester City and Leicestershire. As each journey time route is assessed in two directions, this equates to 138 results.

3.4.2 At Leicester City and Leicestershire level, the model meets the TAG acceptability guideline that over 85% of journey time routes meet the validation criteria for both AM Peak and PM Peak hours.

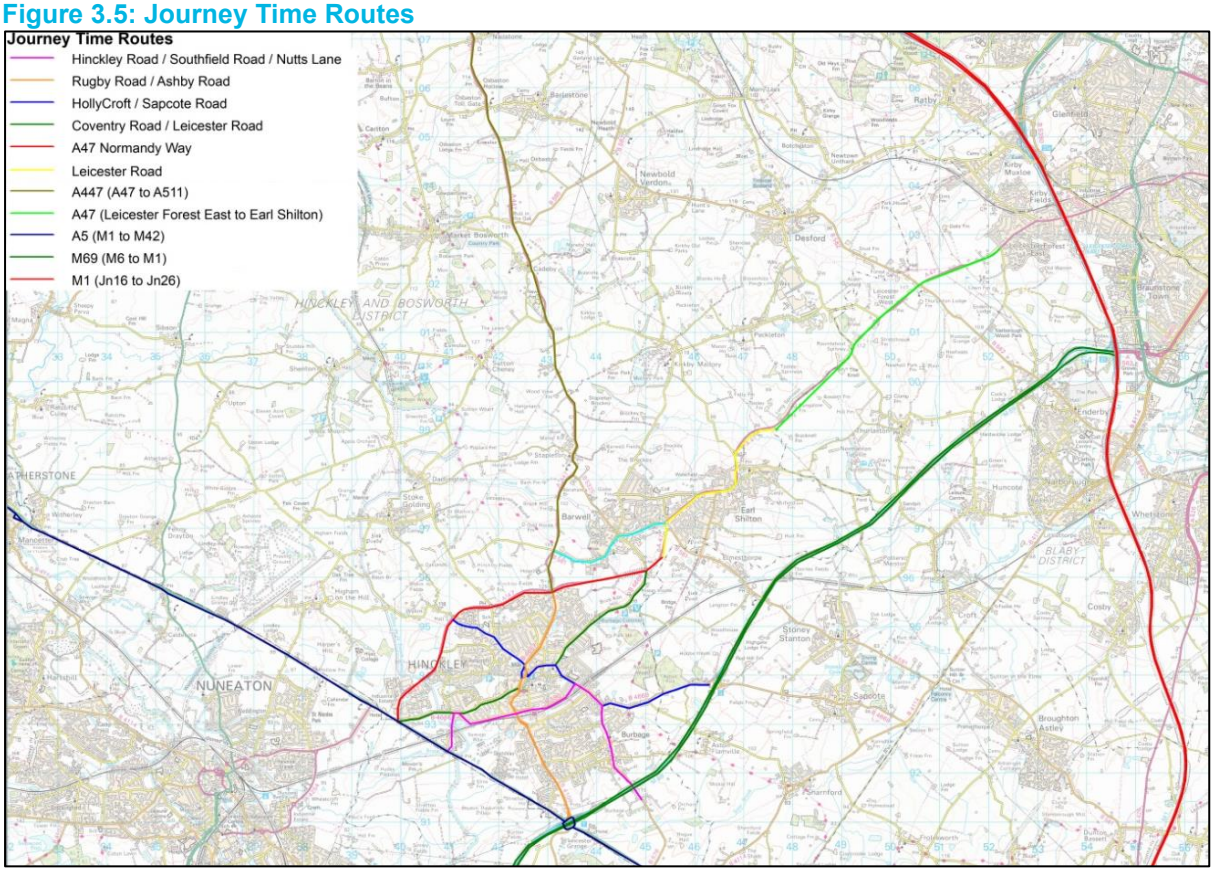
Table 3.5: Leicester City and Leicestershire Journey Time Performance

	AM Peak Pass Rate	PM Peak Pass Rate
Leicester City	94%	91%
North Leicestershire	83%	83%
North-east Leicestershire	92%	100%
South Leicestershire	100%	94%
South-west Leicestershire	100%	92%
North-west Leicestershire	96%	100%
SRN (Internal)	100%	100%
Total	**95%**	**93%**

3.4.3 Figure 3.5 presents the journey time routes that are relevant to the proposed Hinckley NRFI development identified for the assessment of the base year model performance, as originally used in the validation of PRTM v2.2. The TAG acceptability criteria for journey time routes (TAG Unit M3.1, Table 3) are for modelled journey times to be within ±15% (or ±1 minute) of the observed journey time.

3.4.4 Table 3.6 shows the journey time performance for the base year model for the selected routes. All journey time routes pass TAG criteria in the AM Peak hour. In the PM Peak hour, the Coventry Road / Leicester Road eastbound and Rugby Road / Ashby Road northbound journey time routes, both of which are located within the Hinckley urban area, fail to meet TAG criteria.

Figure 3.5: Journey Time Routes



Map contains Ordnance Survey data © Crown copyright and database 2022

3.4.5 Appendix A shows journey time validation graphs comparing modelled journey times with observed journey times for both peaks and in both directions. Overall, the modelled journey times closely follow the observed journey time profile for the entire length of the route. There are some instances where the model has a slight underestimate or overestimate of delay which can be seen in the graphs.

3.4.6 For the journey time routes shown in Figure A 2 (Coventry Road / Leicester Road in the eastbound direction) and Figure A 4 (Rugby Road / Ashby Road primarily in the northbound direction) the differences in delay tend to occur around the centre of Hinckley.

3.4.7 For the route shown in Figure A 8 (Leicester Road in Barwell and Earl Shilton) in the northbound direction, the difference in delay is occurring on Hinckley Road between Barwell and Earl Shilton heading east towards Leicester. For the A5 route shown in Figure A 11 in the PM Peak hour westbound direction, there appears to be a delay along the A5 approaching the Dodwells Roundabout which is not fully captured in the model.

Table 3.6: Comparison of Modelled and Observed Journey Times – Original PRTM v2.2 Routes

Route	AM Peak					PM Peak				
	Obs.	Mod.	Diff	%	Pass?	Obs.	Mod.	Diff	%	Pass?
A47 Normandy Way Eastbound	07:38	08:11	00:33	7.2%	✓	08:03	08:49	00:46	9.6%	✓
A47 Normandy Way Westbound	10:42	09:52	-00:51	-7.9%	✓	08:54	08:59	00:04	0.8%	✓
Coventry Road / Leicester Road Eastbound	11:19	12:37	01:18	11.5%	✓	10:28	13:06	02:38	25.2%	×
Coventry Road / Leicester Road Westbound	12:23	11:51	-00:32	-4.3%	✓	12:52	11:50	-01:02	-8.1%	✓
Hollycroft / Sapcote Road Eastbound	12:25	11:14	-01:12	-9.6%	✓	10:22	10:45	00:23	3.7%	✓
Hollycroft / Sapcote Road Westbound	12:40	13:27	00:47	6.2%	✓	14:07	14:33	00:26	3.0%	✓
Rugby Road / Ashby Road Northbound	13:46	12:24	-01:22	-10.0%	✓	15:52	11:46	-04:06	-25.9%	×
Rugby Road / Ashby Road Southbound	10:04	11:05	01:01	10.2%	✓	09:50	10:49	00:59	10.0%	✓
Hinckley Road / Southfield Road / Nutts Lane Eastbound	14:36	14:00	-00:36	-4.1%	✓	15:04	14:26	-00:38	-4.2%	✓
Hinckley Road / Southfield Road / Nutts Lane Westbound	13:41	13:38	-00:02	-0.3%	✓	16:01	14:05	-01:57	-12.2%	✓
A47 (Leicester Forest East to Earl Shilton) Eastbound	06:36	06:05	-00:30	-7.7%	✓	06:50	06:06	-00:44	-10.7%	✓
A47 (Leicester Forest East to Earl Shilton) Westbound	05:39	05:26	-00:13	-3.7%	✓	05:30	05:20	-00:09	-2.7%	✓
Leicester Road Northbound	05:25	06:12	00:47	14.4%	✓	05:24	06:15	00:51	15.8%	✓
Leicester Road Southbound	05:52	06:24	00:31	8.9%	✓	05:38	06:27	00:49	14.6%	✓
A447 (A47 to A511) Northbound	22:11	21:22	-00:50	-3.7%	✓	21:28	21:07	-00:21	-1.6%	✓
A447 (A47 to A511) Southbound	22:24	21:02	-01:22	-6.1%	✓	21:45	21:17	-00:28	-2.1%	✓
A5 (M1 to M42) Eastbound	42:40	41:51	-00:49	-1.9%	✓	40:32	40:58	00:26	1.1%	✓
A5 (M1 to M42) Westbound	41:23	42:40	01:17	3.1%	✓	46:43	41:40	-05:04	-10.8%	✓
M69 (M6 to M1) Northbound	17:57	19:39	01:42	9.4%	✓	17:03	15:05	-01:58	-11.6%	✓
M69 (M6 to M1) Southbound	14:26	14:50	00:24	2.8%	✓	14:15	14:35	00:20	2.3%	✓
M1 (Junction 16 to Junction 26) Northbound	51:39	57:39	06:00	11.6%	✓	60:08	00:55	00:48	1.3%	✓
M1 (Junction 16 to Junction 26) Southbound	59:46	01:58	02:12	3.7%	✓	52:49	59:16	06:27	12.2%	✓

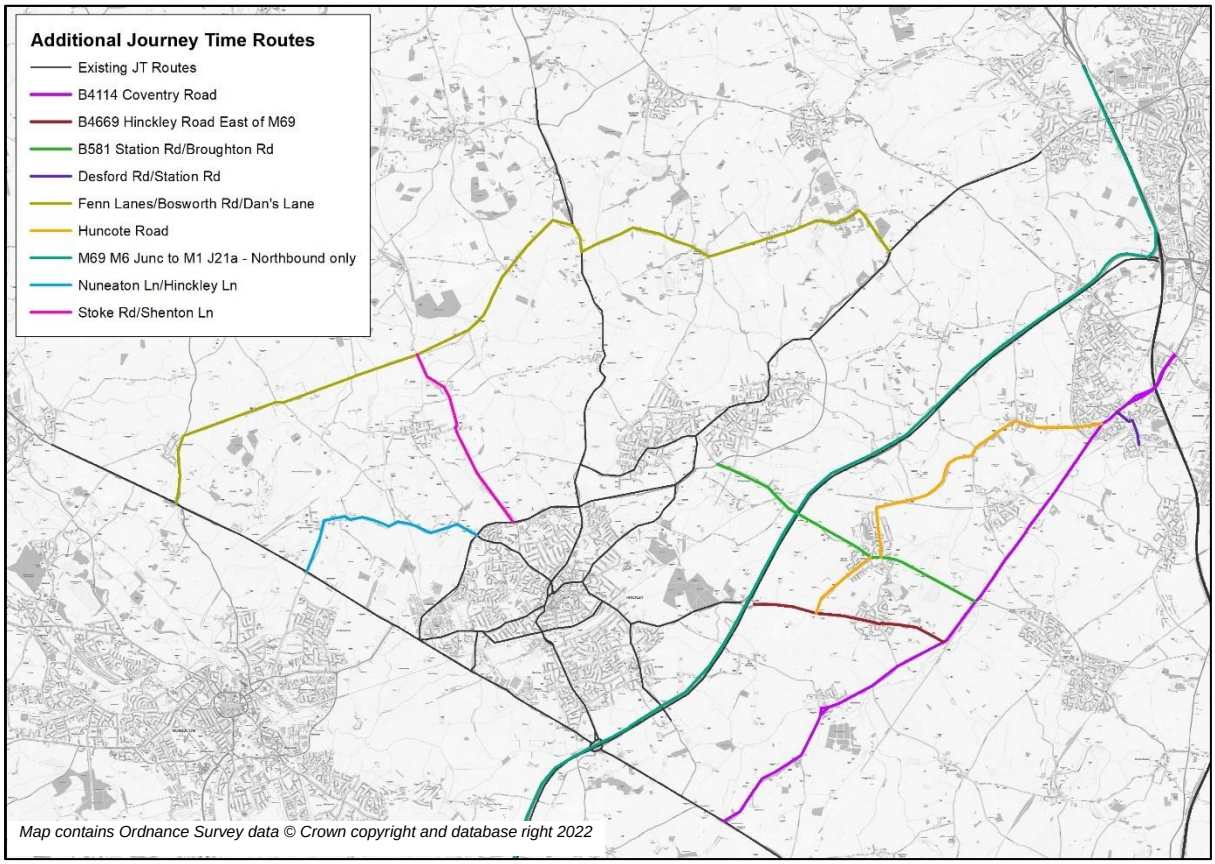
3.5 Additional Journey Time Route Analysis

3.5.1 In addition to the journey time routes defined during the original development of PRTM v2.2 (shown in Figure 3.5 and Table 3.6), nine further routes were agreed by stakeholders (at a meeting on 16th September 2021) to understand the performance of the model across a wider area. These additional routes (as well as the original routes for context) are shown in Figure 3.6.

3.5.2 The Trafficmaster data for these routes were extracted and processed in order to allow comparison with modelled journey times. It should be noted that a number of the routes defined are on more minor roads where the sample of observed data is likely to be lower than the more major routes usually selected for journey time validation for a strategic model, and this should be considered when reviewing the results of the validation.

3.5.3 Table 3.7 shows the performance of the journey time routes according to TAG criteria as set out in paragraph 3.4. Appendix B shows journey time validation graphs comparing modelled journey times with observed journey times for both peaks and in both directions. A pass rate of 100% is achieved in both AM and PM Peak hours.

Figure 3.6: Additional Journey Time Routes



Map contains Ordnance Survey data © Crown copyright and database 2022

Table 3.7: Comparison of Modelled and Observed Journey Times – Additional Journey Time Routes

Route	AM Peak					PM Peak				
	Obs.	Mod.	Diff	%	Pass?	Obs.	Mod.	Diff	%	Pass?
B4114 Coventry Road Northbound	14:33	14:03	-00:30	-3.4%	✓	13:49	13:47	-00:02	-0.3%	✓
B4114 Coventry Road Southbound	14:09	13:16	-00:52	-6.2%	✓	14:10	14:51	00:41	4.9%	✓
B4669 Hinckley Road East of M69 Eastbound	04:09	04:20	00:10	4.2%	✓	04:17	04:22	00:05	2.0%	✓
B4669 Hinckley Road East of M69 Westbound	04:21	04:19	-00:02	-0.9%	✓	04:03	04:17	00:14	5.8%	✓
B581 Station Road / Broughton Road Eastbound	07:31	07:28	-00:03	-0.6%	✓	07:45	07:27	-00:18	-3.8%	✓
B581 Station Road / Broughton Road Westbound	07:23	07:43	00:20	4.5%	✓	07:06	07:49	00:43	10.0%	✓
Desford Road / Station Road Northbound	03:29	02:54	-00:35	-16.7%	✓	02:36	02:36	00:00	0.3%	✓
Desford Road / Station Road Southbound	02:34	02:42	00:08	4.9%	✓	01:52	02:32	00:40	36.2%	✓
Fenn Lanes / Bosworth Road / Dan's Lane Eastbound	17:27	18:05	00:37	3.6%	✓	17:50	18:03	00:12	1.1%	✓
Fenn Lanes / Bosworth Road / Dan's Lane Westbound	20:05	18:08	-01:57	-9.7%	✓	18:24	18:05	-00:19	-1.7%	✓
Huncote Road Northbound	11:09	10:54	-00:15	-2.3%	✓	10:24	10:57	00:33	5.4%	✓
Huncote Road Southbound	10:11	10:59	00:48	7.9%	✓	10:29	11:03	00:34	5.4%	✓
M69 M6 Junction to M1 Junction 21a Northbound	17:12	16:14	-00:58	-5.6%	✓	17:28	17:07	-00:21	-2.0%	✓
Nuneaton Lane / Hinckley Lane Eastbound	06:15	05:33	-00:41	-11.0%	✓	06:01	05:34	-00:27	-7.4%	✓
Nuneaton Lane / Hinckley Lane Westbound	05:58	05:33	-00:25	-7.0%	✓	06:27	05:30	-00:57	-14.6%	✓
Stoke Road / Shenton Lane Northbound	04:28	04:16	-00:12	-4.4%	✓	04:30	04:11	-00:20	-7.3%	✓
Stoke Road / Shenton Lane Southbound	04:32	04:24	-00:08	-3.0%	✓	04:34	04:13	-00:21	-7.6%	✓

Section 4– Summary of Findings

4.1 Conclusions

4.1.1 The PRTM v2.2 highway model represents an average weekday in April / May / June in 2014 for an AM Peak, average Interpeak and PM Peak hour. This review is focussed on the suitability of the model for the use in the strategic assessment of the traffic and travel patterns of the proposed Hinckley National Rail Freight Interchange development in the AM Peak and PM Peak hours.

4.1.2 The review of the base year highway model has considered the performance of the model against the observed flows and journey time data collated as part of the model development. A previous review of the PRTM in 2018 additionally considered the model zone system and network coding.

4.1.3 An extensive data set of observed traffic counts and journey times has been collated as part of the development of the PRTM v2.2. Of this dataset, eight screenlines and cordons, 83 bi-directional traffic counts and four one-way traffic counts have been identified as part of this base year model review assessment which are of interest to the proposed Hinckley NRFI development. In terms of journey times, 11 original PRTM v2.2 routes plus nine additional project specific routes have been assessed in the vicinity of the proposed development.

4.1.4 All screenlines and cordons identified as part of this review meet the TAG criteria in the AM Peak and PM Peak hours.

4.1.5 Regarding link flow performance, the model performs strongly with 88% of the selected links meeting the TAG criteria in the AM Peak and PM Peak hours, exceeding the 85% TAG criterion.

4.1.6 Finally, in terms of the journey time performance, all the original PRTM v2.2 journey time routes pass in both directions in the AM Peak hour. In the PM Peak hour, the Coventry Road / Leicester Road eastbound and the Rugby Road / Ashby Road northbound journey time routes do not meet the TAG criteria. In the PM Peak hour, the pass rate for the selected journey times is 91%, which is above the 85% guideline defined in TAG. In terms of the additional nine routes, 100% of journey time routes meet TAG criteria in the AM Peak and PM Peak hours.

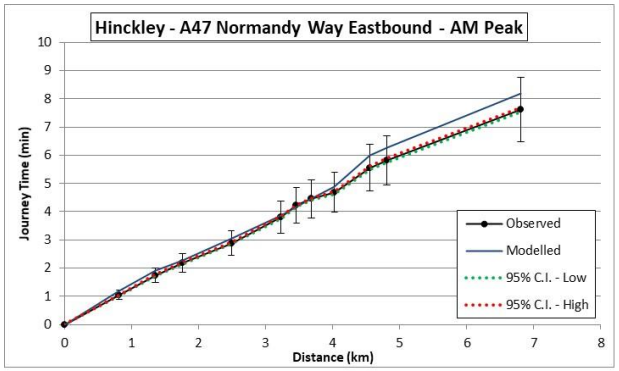
4.1.7 In relation to the aspects where the model has been refined since previous reporting (i.e. *"Hinckley National Rail Freight Interchange Transport Modelling: Base Year Model Review Addendum v2.0"* (1st October 2021)), the following observations are made:

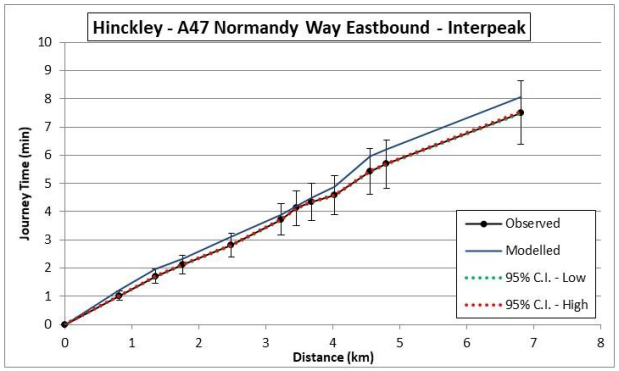
- Narborough Level Crossing: the representation of journey times along the Desford Road / Station Road route is significantly improved and now meets TAG criteria in all time periods and directions.
- Huncote Road, Fenn Lanes / Bosworth Road / Dan's Lane, and Nuneaton Lane / Hinckley Lane routes: the representation of journey times meets TAG criteria along these routes in all time periods and directions.
- B581 Station Road / Broughton Road journey time route: the representation of journey times is improved in all time periods and directions, and meet the TAG criteria in all directions for AM Peak and PM Peak hours.
- M6 / M69 Interchange: the coding in this location has been updated and there is no significant impact on the M69 journey time performance or link flow performance.

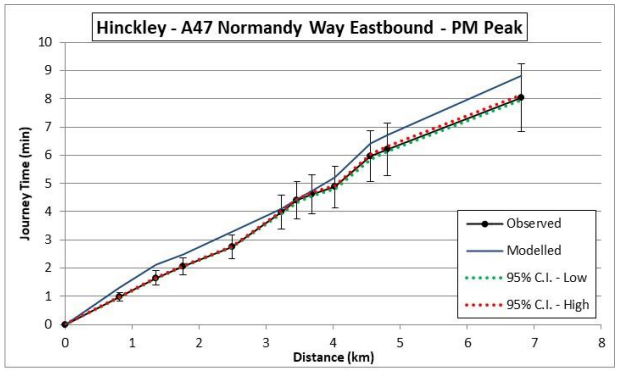
4.1.8 In summary, based on this review, the PRTM v2.2 is considered suitable for use for the assessment of the proposed Hinckley NRFI development.

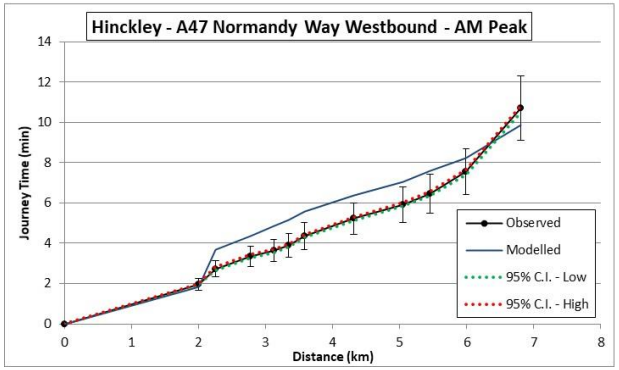
Appendix A: Journey Time Validation Performance – Original Routes

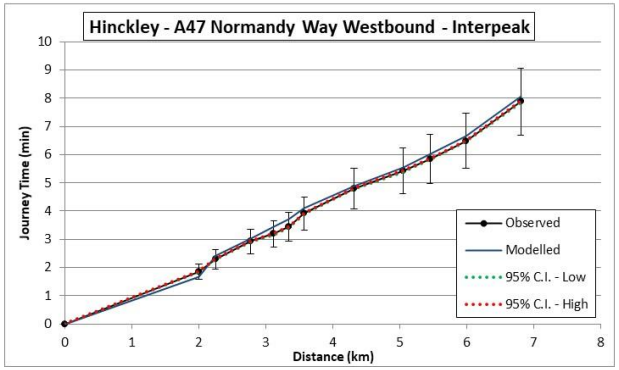
Figure A 1: Hinckley - A47 Normandy Way











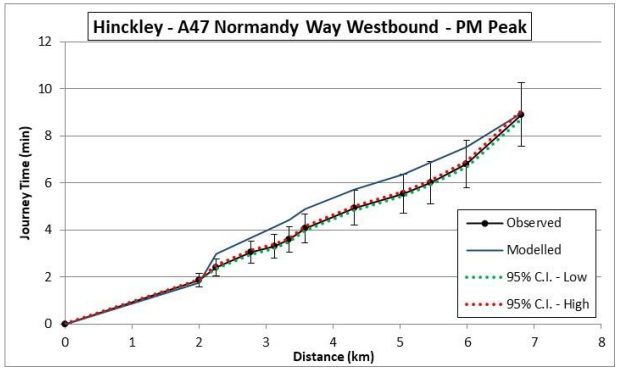
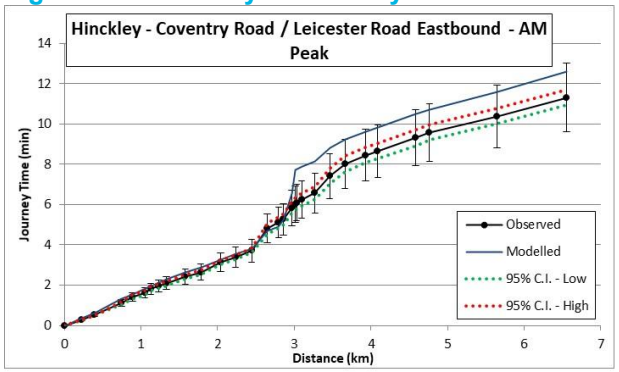
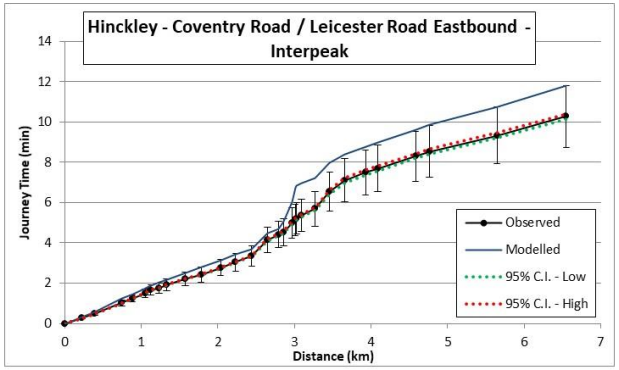
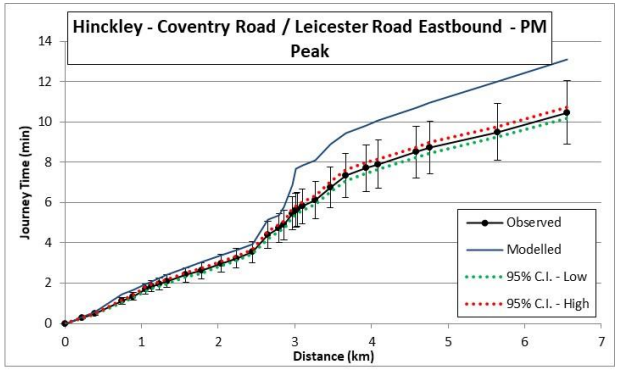
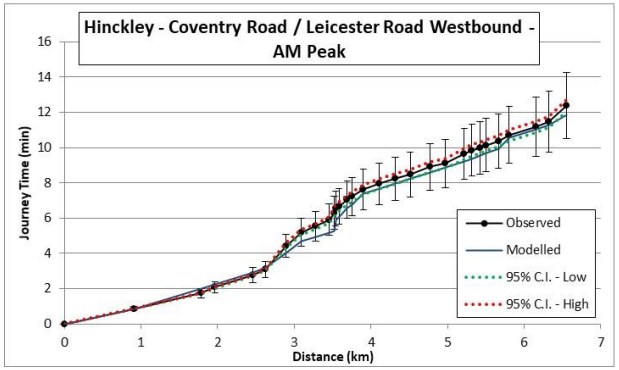


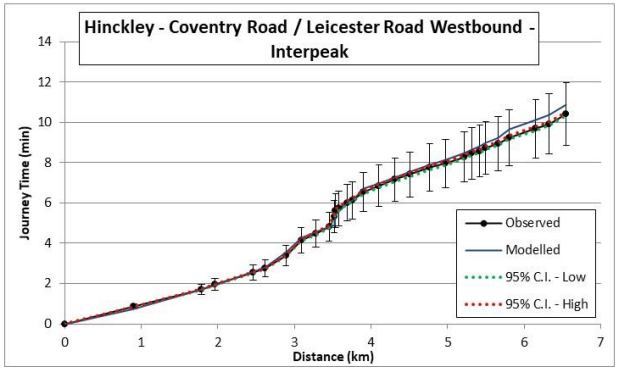
Figure A 2: Hinckley – Coventry Road / Leicester Road











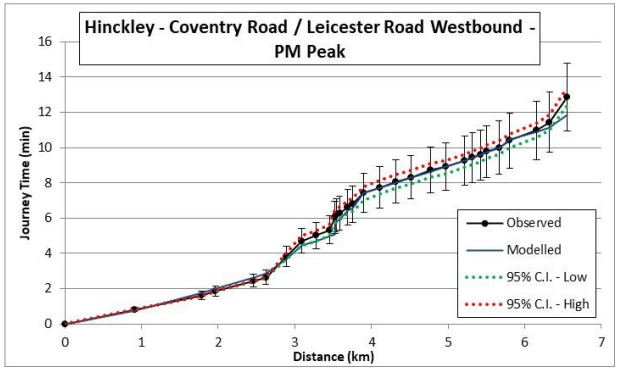
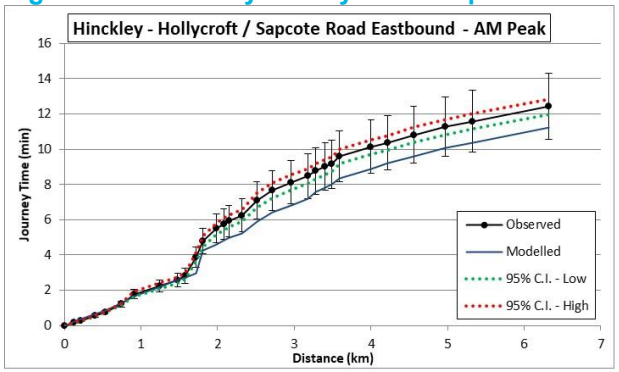
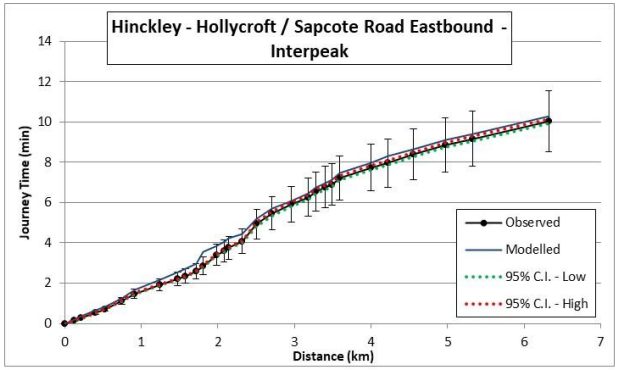
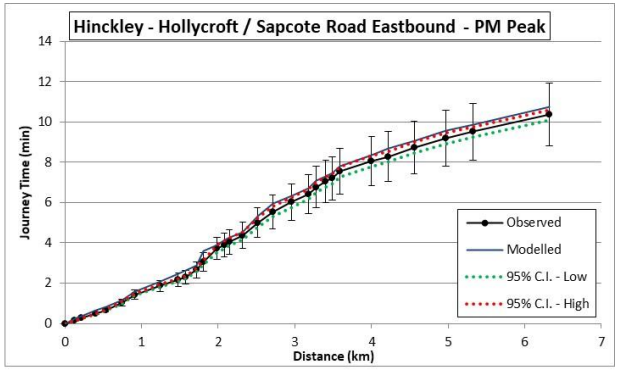
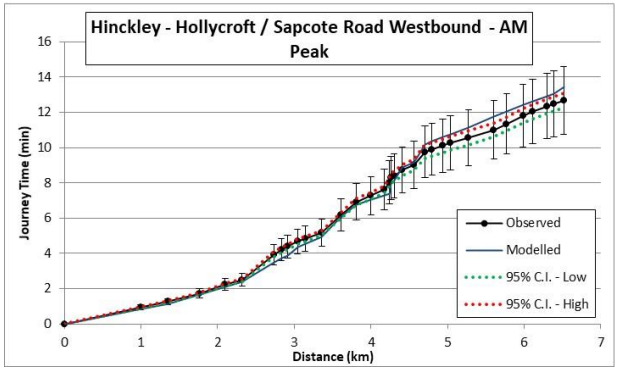


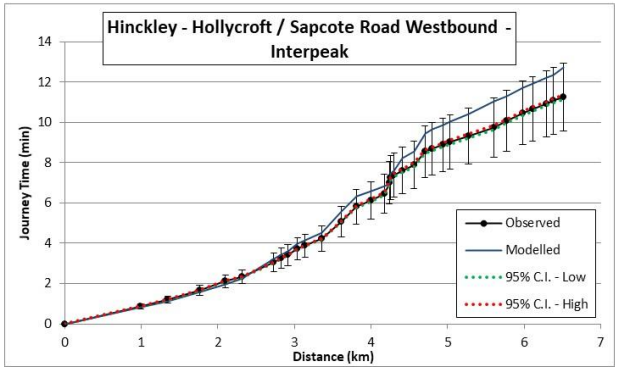
Figure A 3: Hinckley – Hollycroft / Sapcote Road











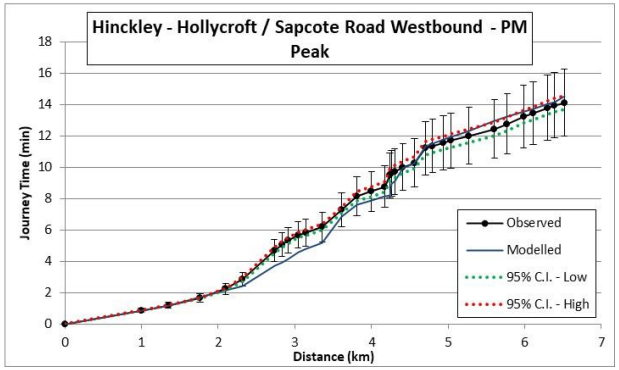
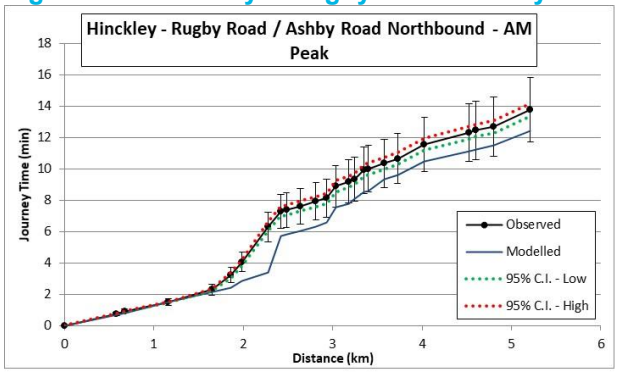
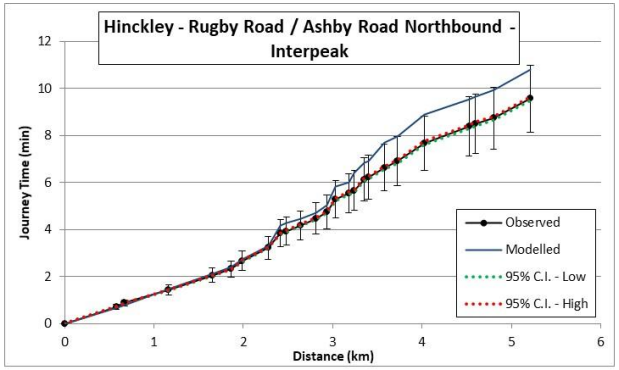
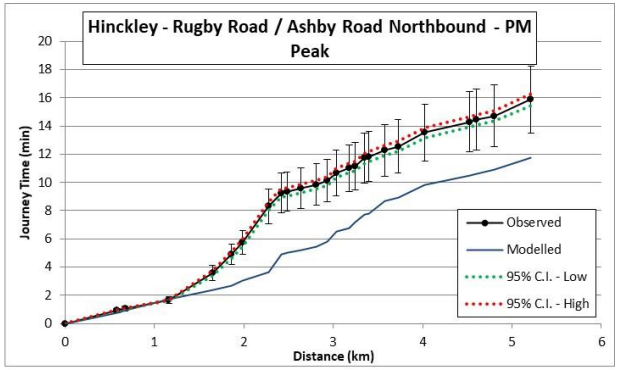
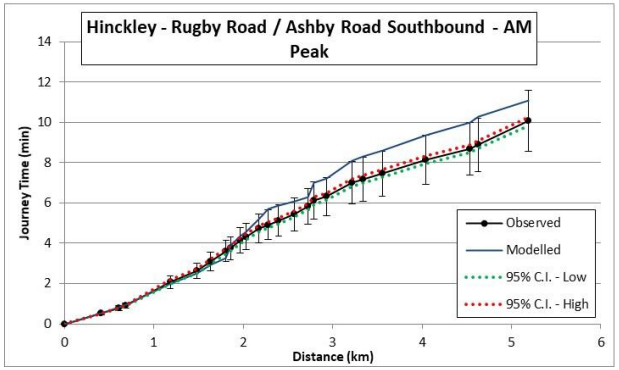


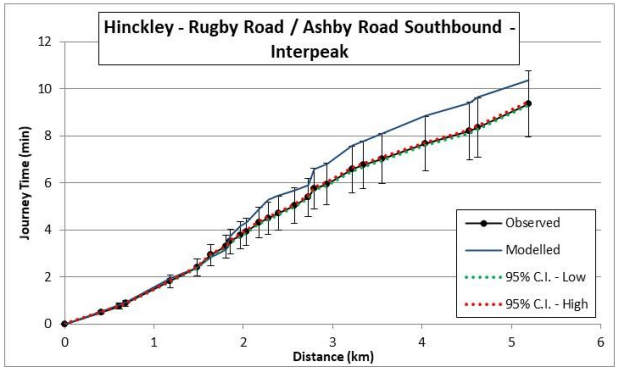
Figure A 4: Hinckley – Rugby Road / Ashby Road











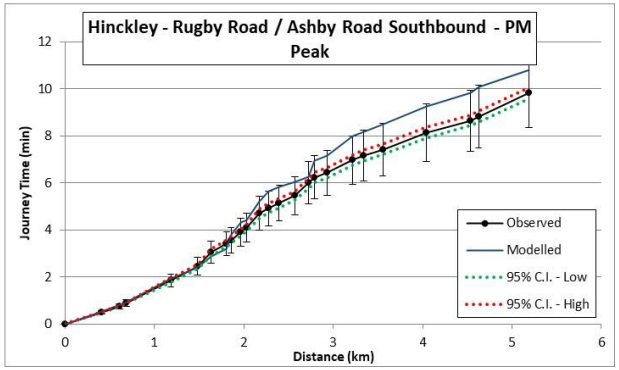
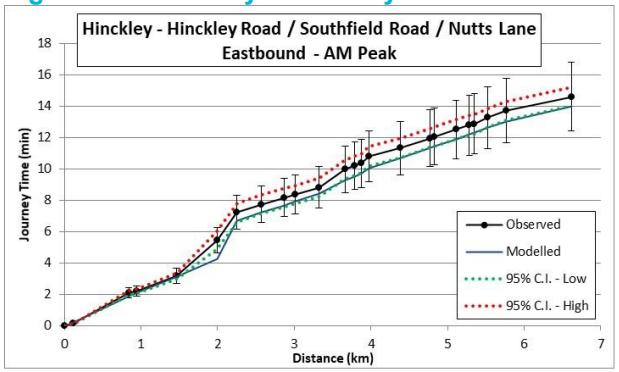
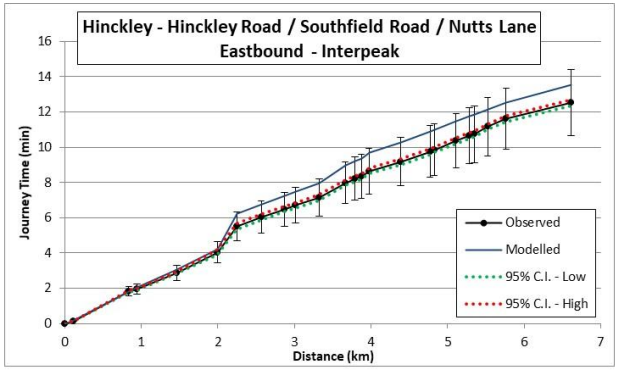
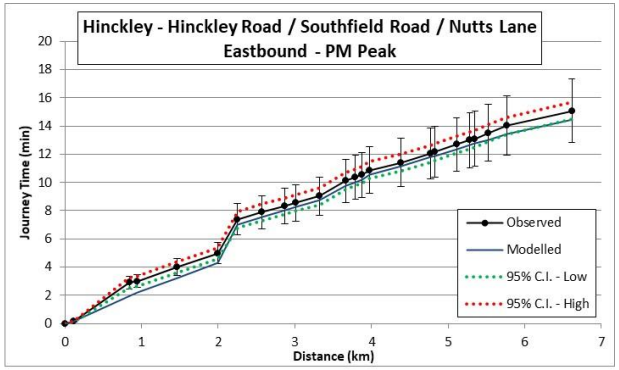
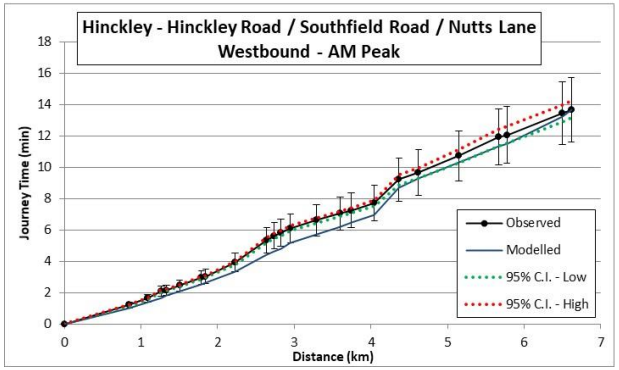


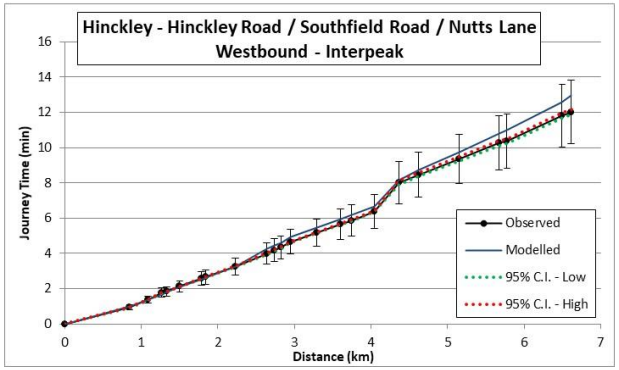
Figure A 5: Hinckley – Hinckley Road / Southfield Road / Nutts Lane











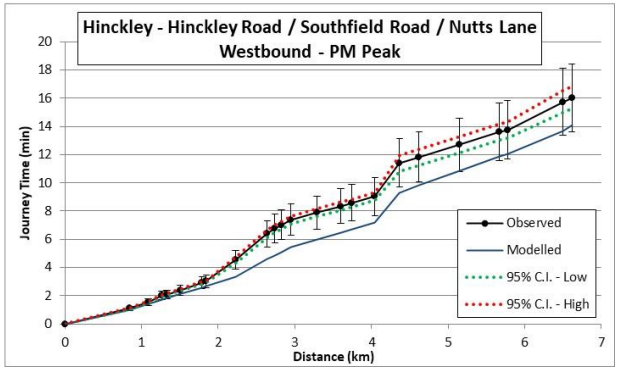
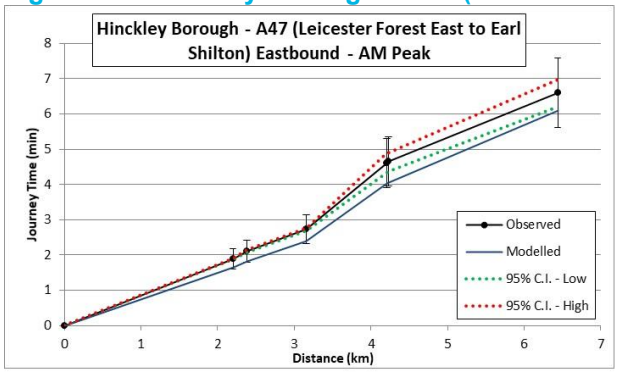
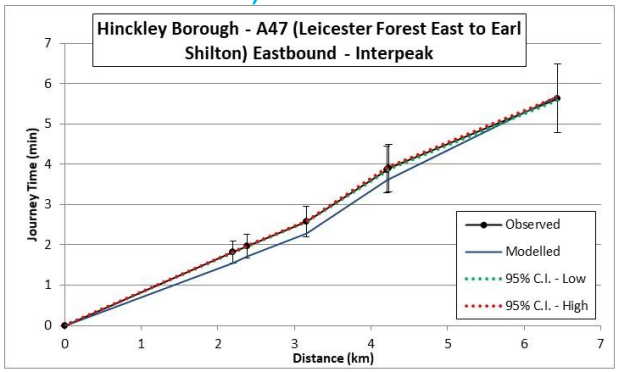
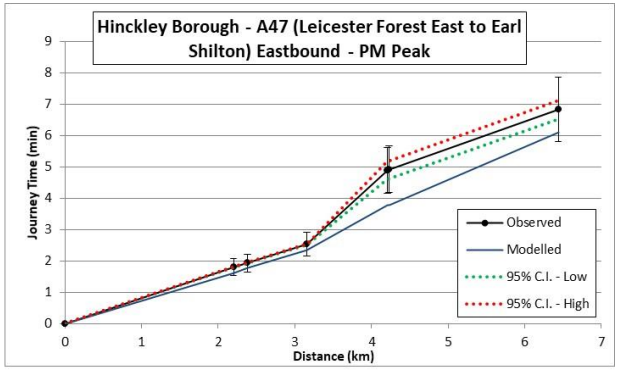
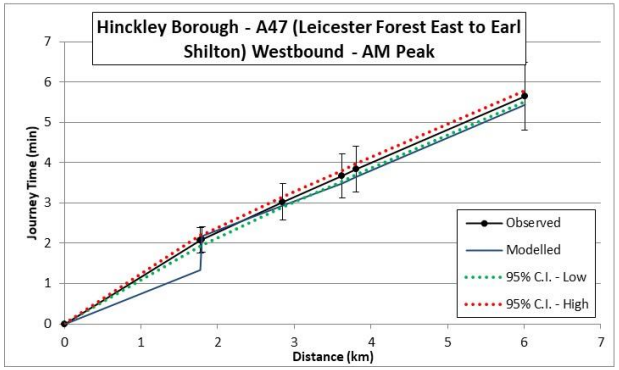


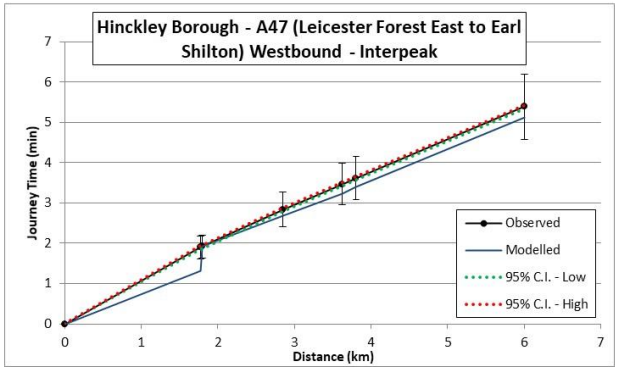
Figure A 6: Hinckley Borough – A47 (Leicester Forest East to Earl Shilton)











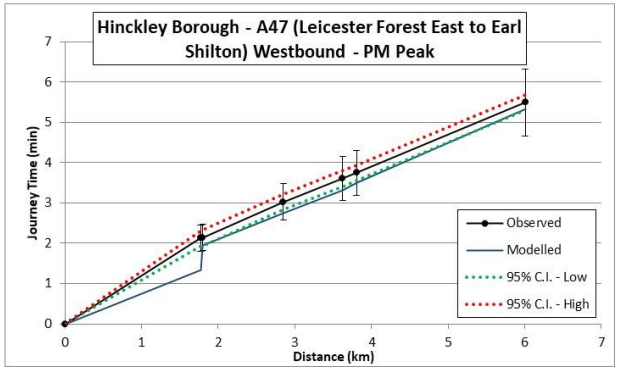
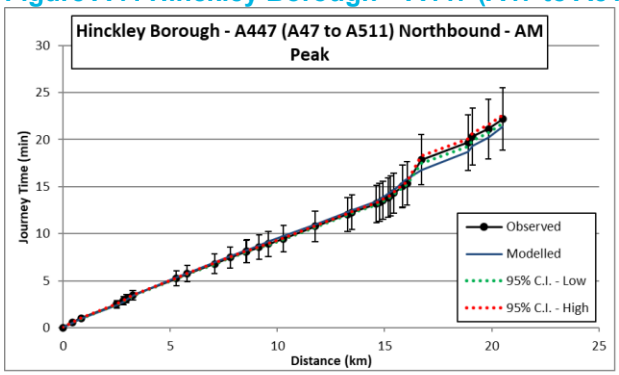
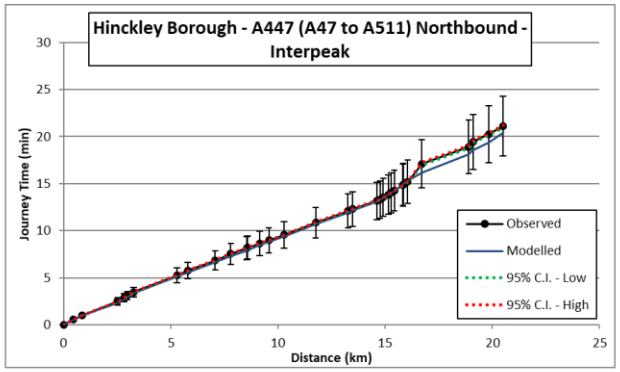
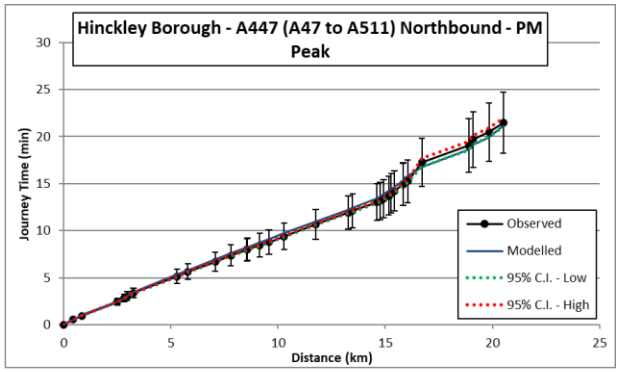
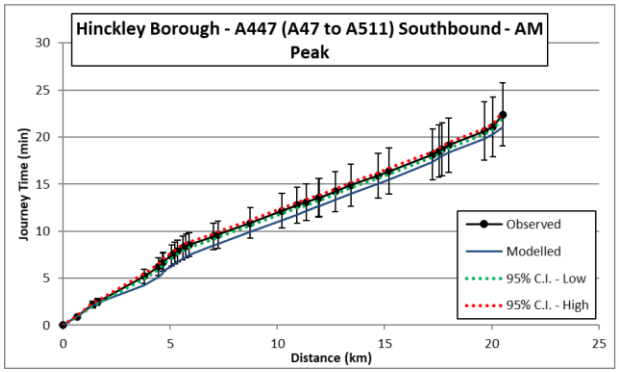


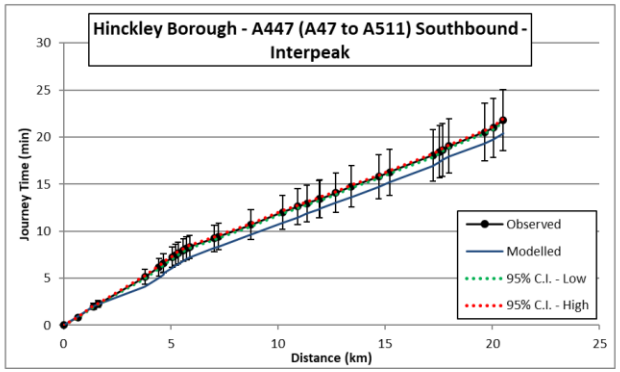
Figure A 7: Hinckley Borough – A447 (A47 to A511)











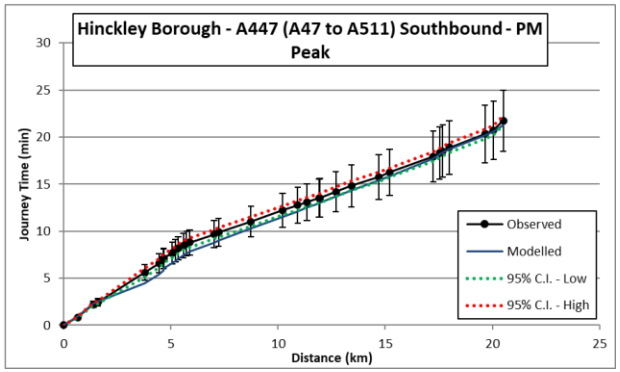
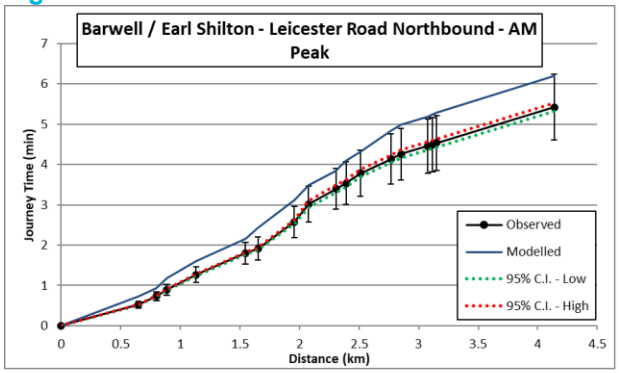
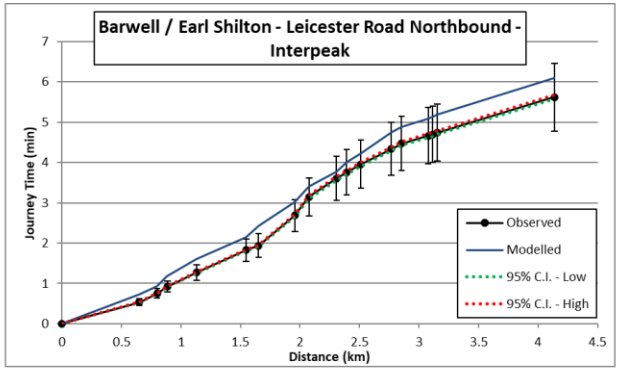
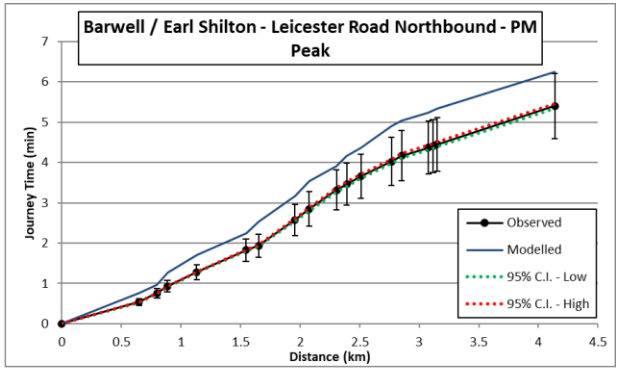
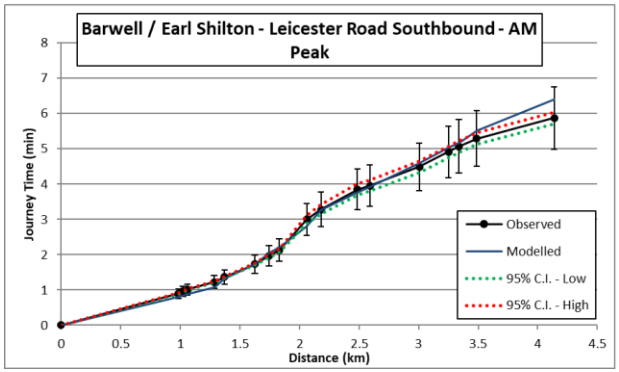


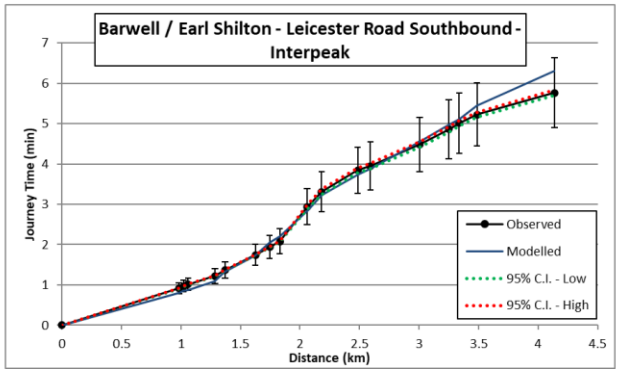
Figure A 8: Barwell / Earl Shilton – Leicester Road











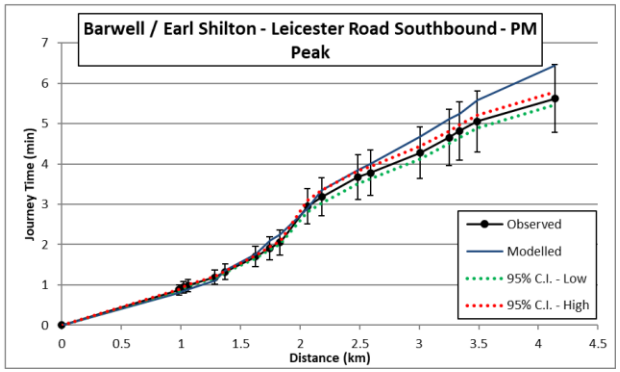
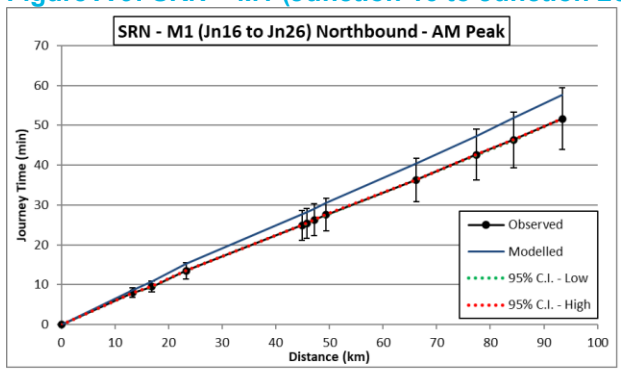
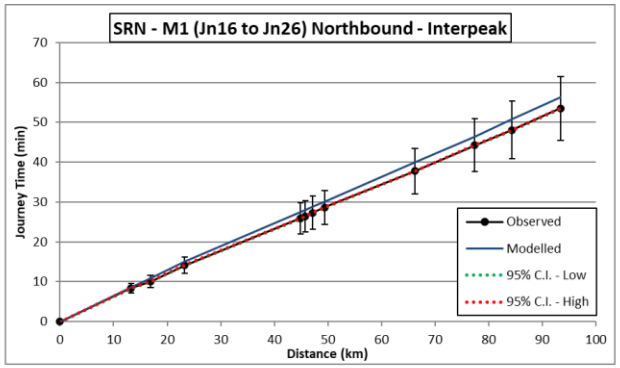
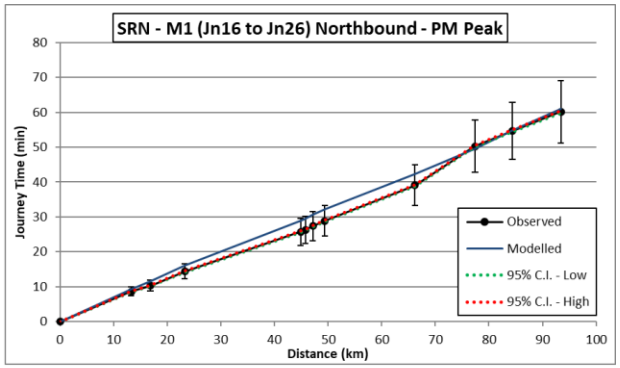
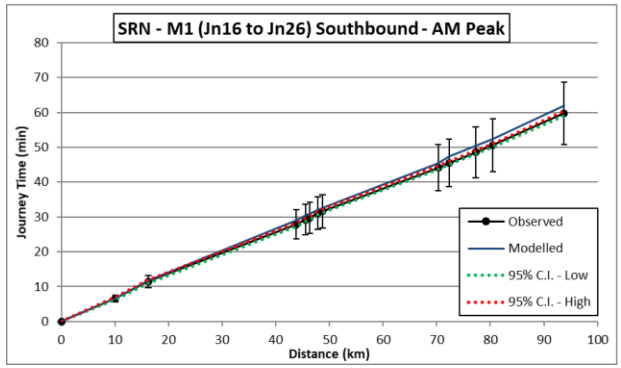


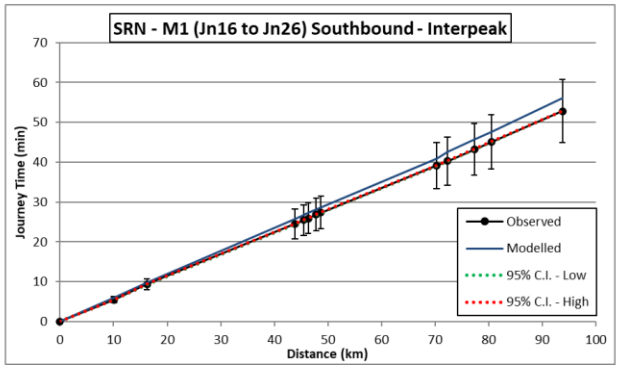
Figure A 9: SRN – M1 (Junction 16 to Junction 26)











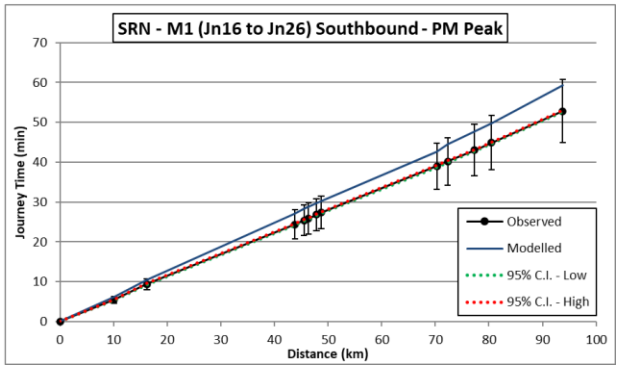
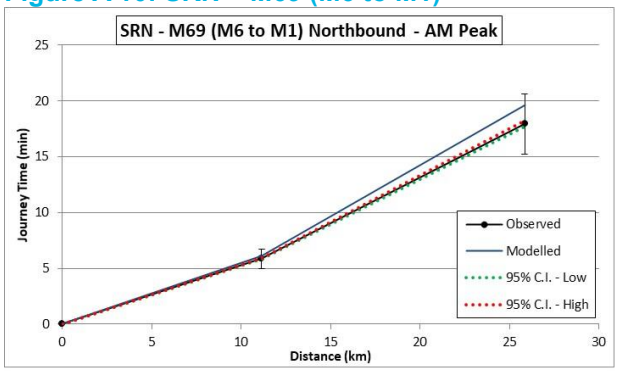
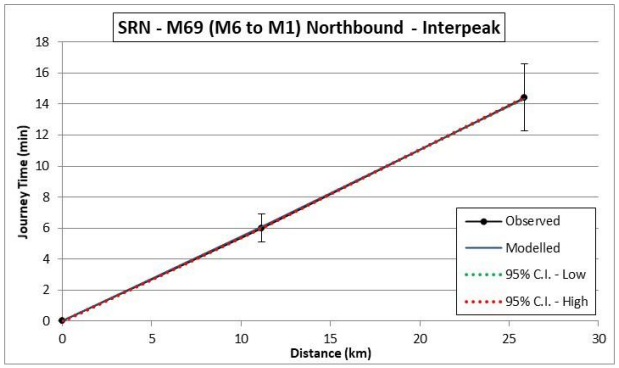
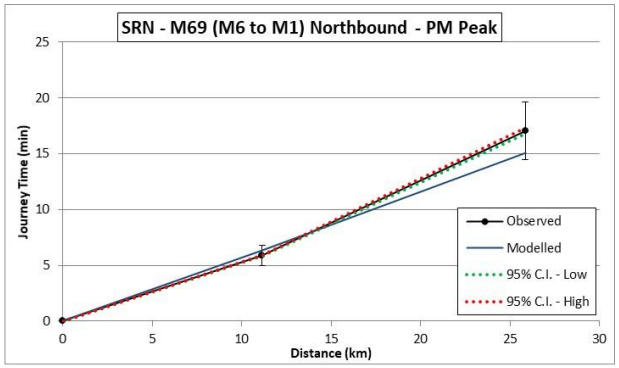
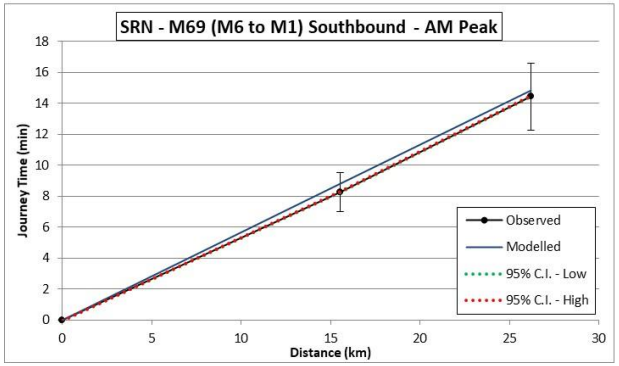


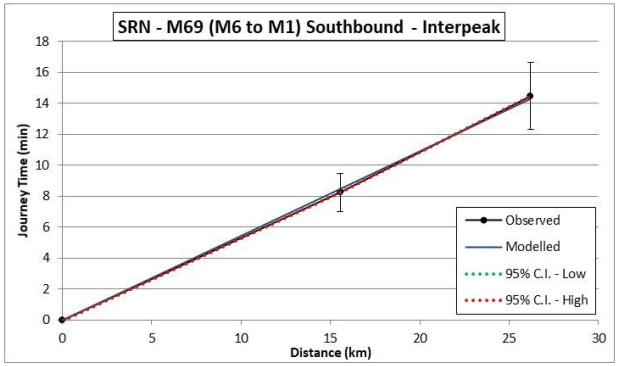
Figure A 10: SRN – M69 (M6 to M1)











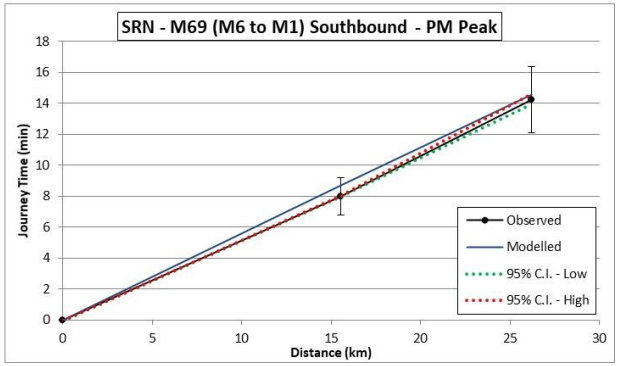
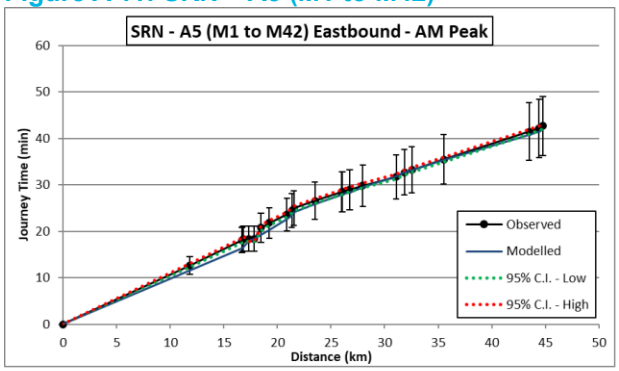
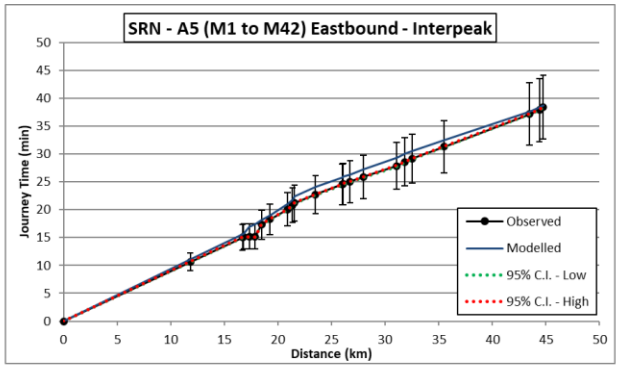
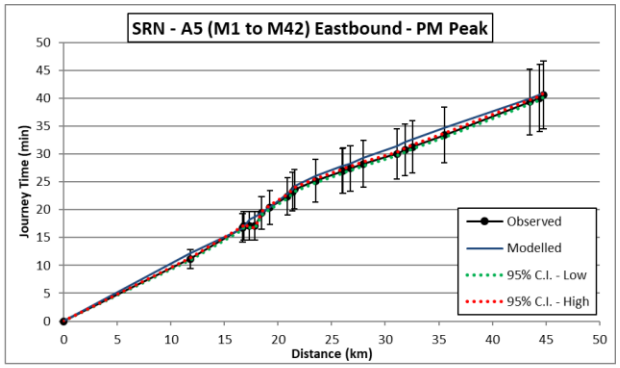
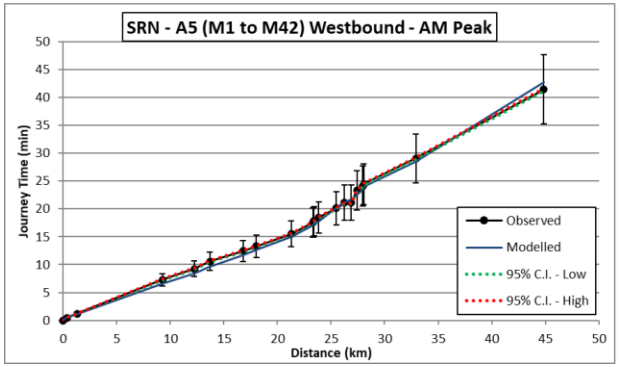


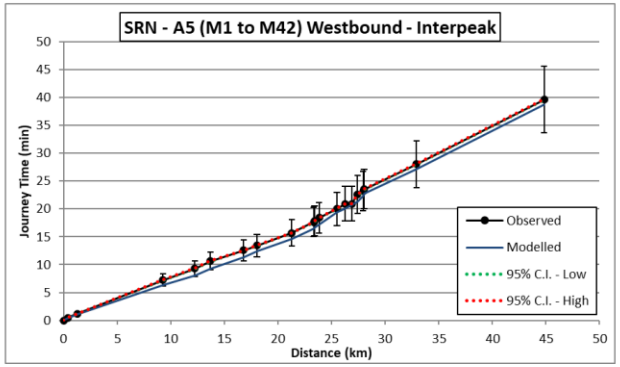
Figure A 11: SRN – A5 (M1 to M42)

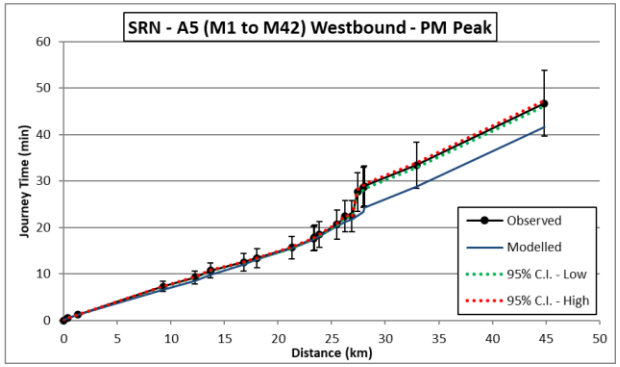






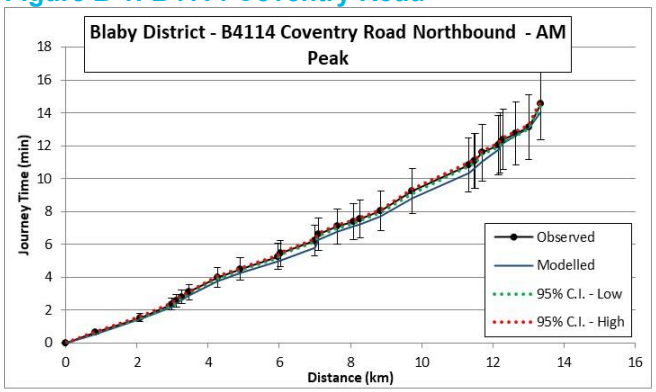


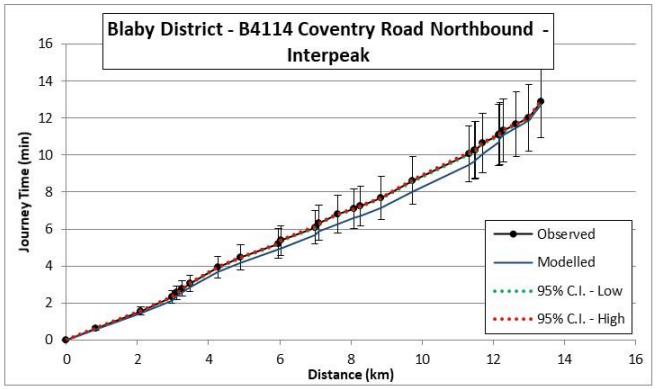


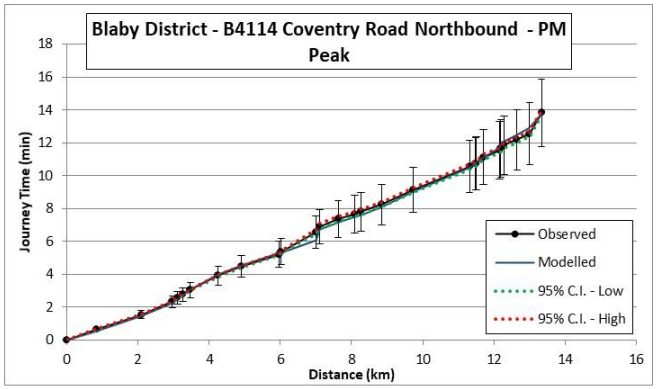


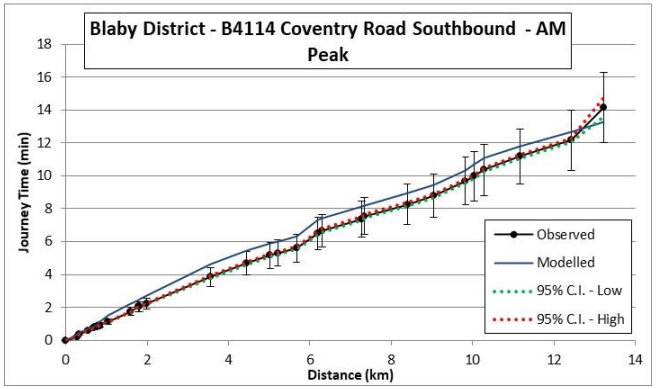
Appendix B: Journey Time Validation Performance – Additional Routes

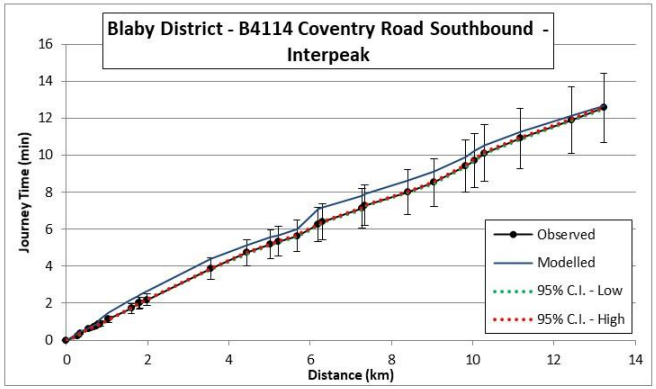
Figure B 1: B4114 Coventry Road











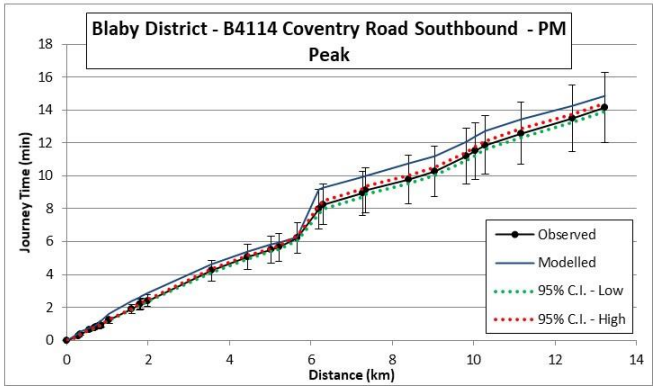
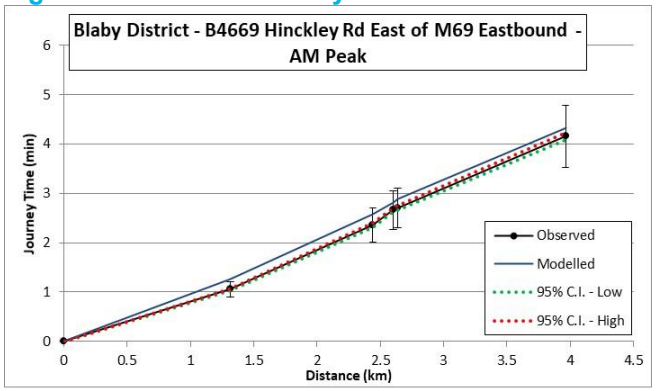
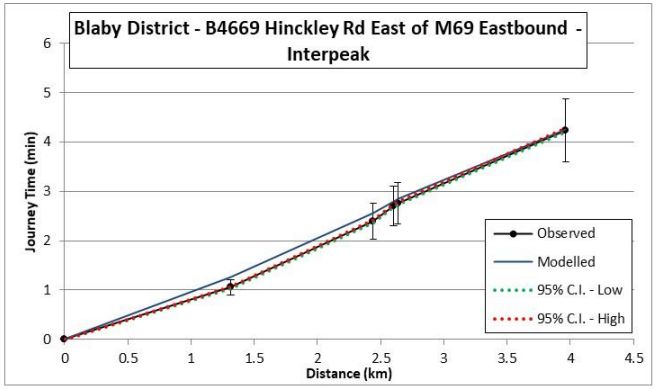
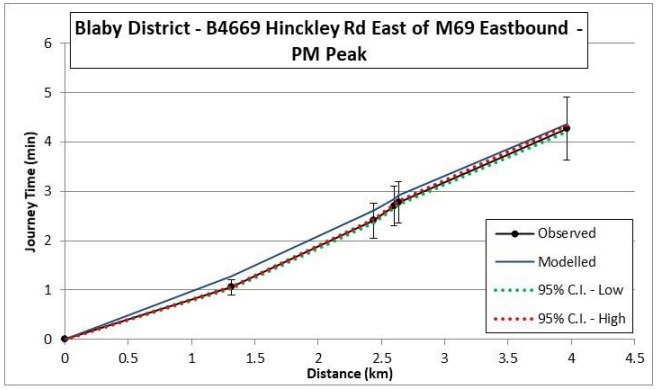
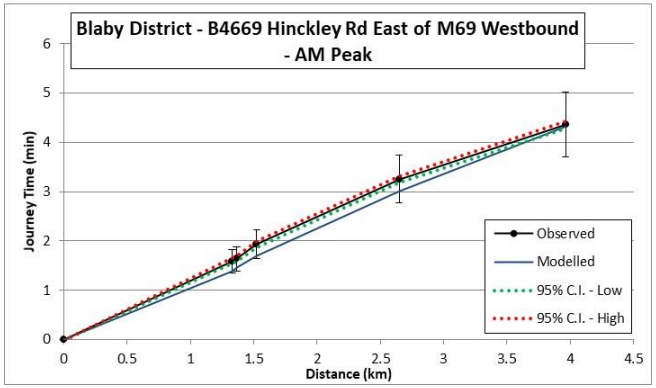


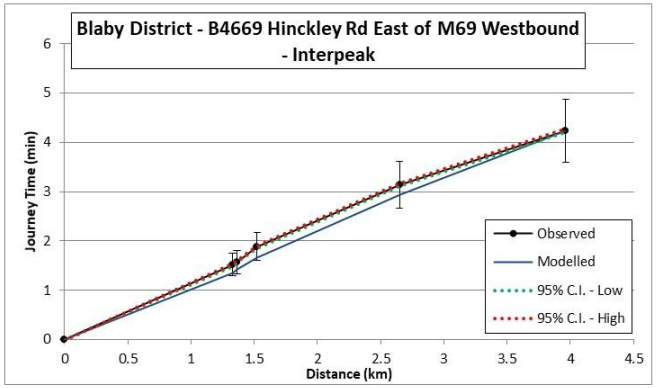
Figure B 2: B4669 Hinckley Road east of M69











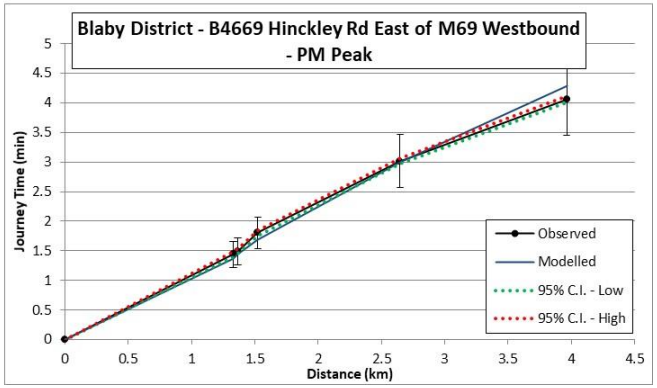
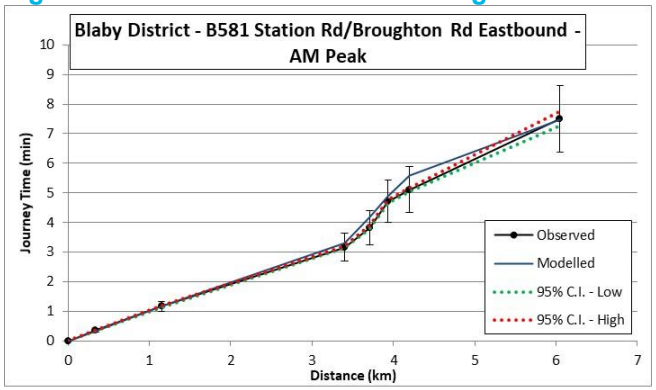
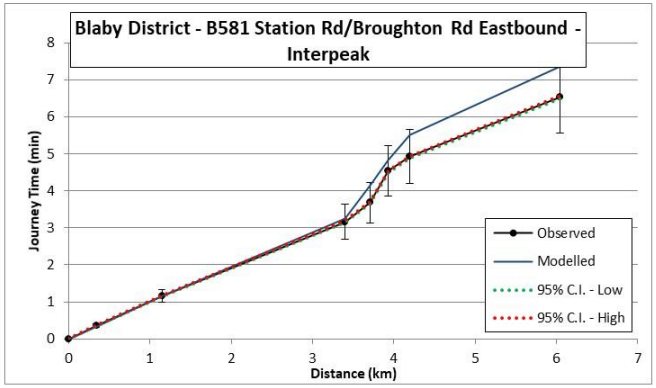
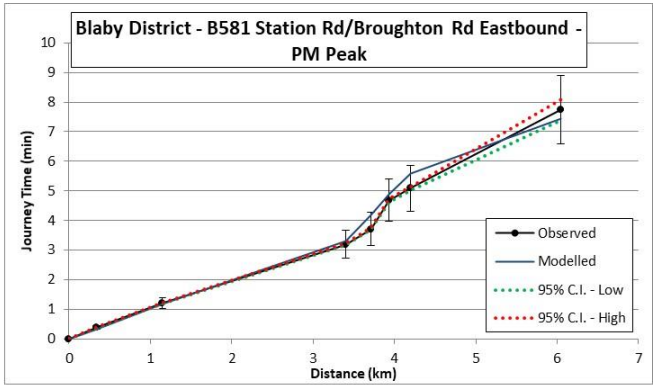
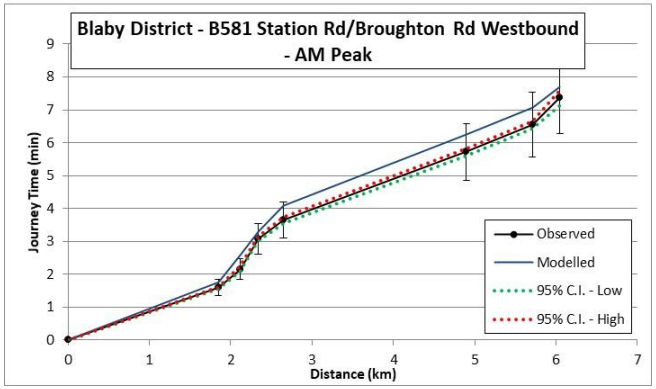


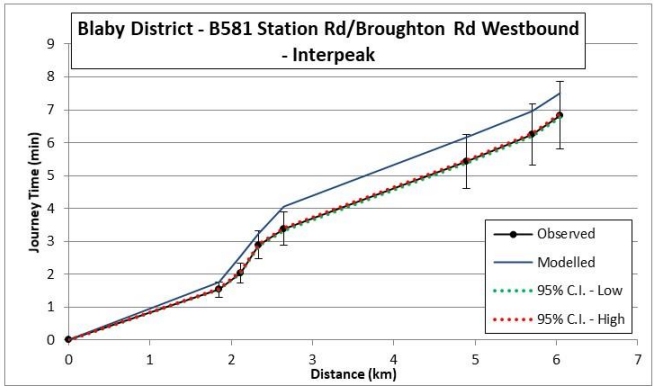
Figure B 3: B581 Station Road / Broughton Road











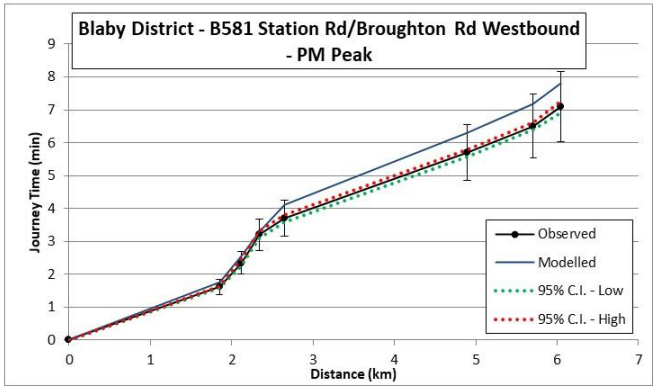
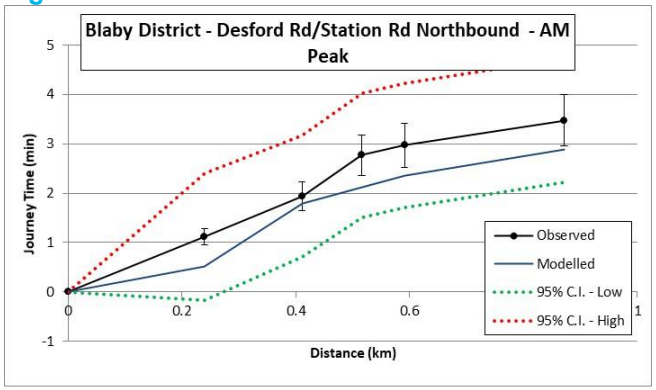
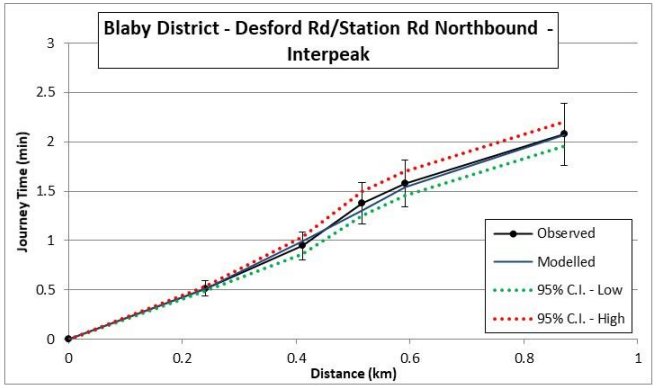
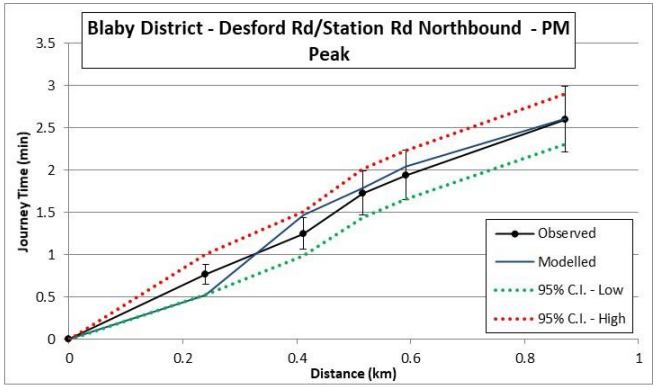
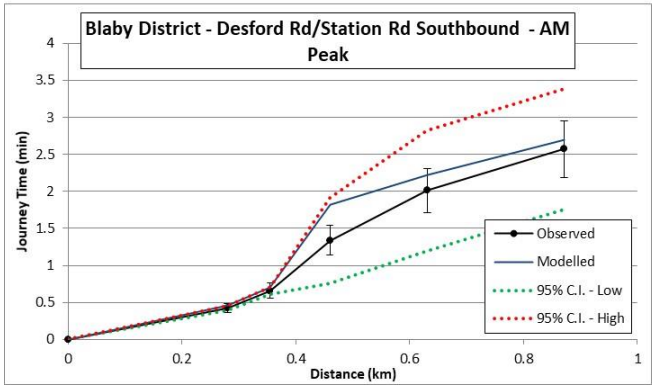


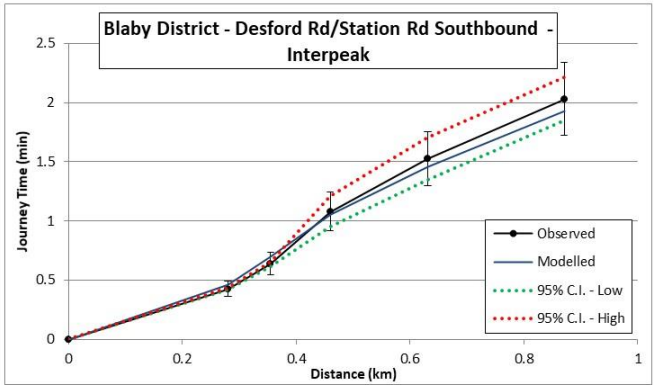
Figure B 4: Desford Road / Station Road











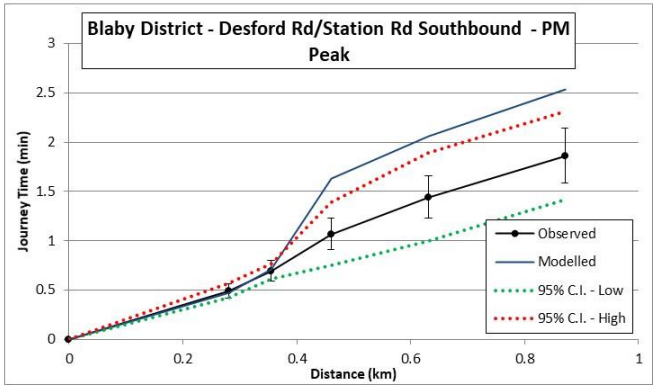
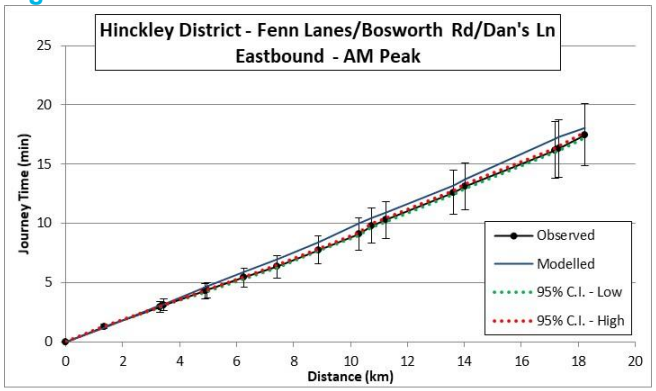
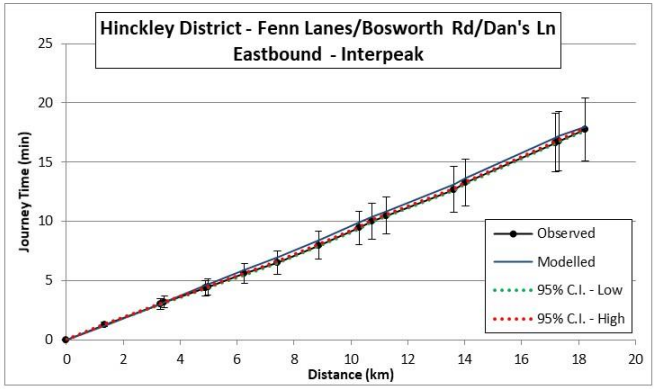
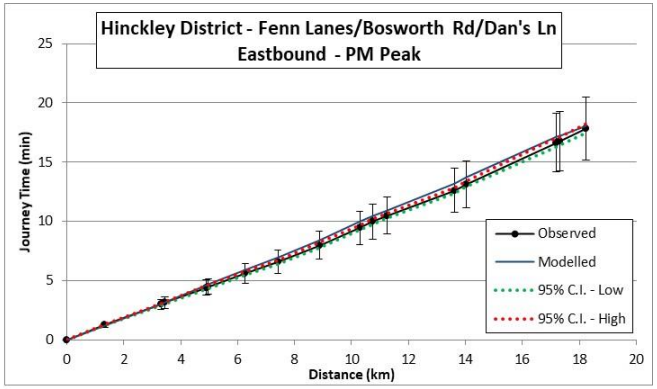
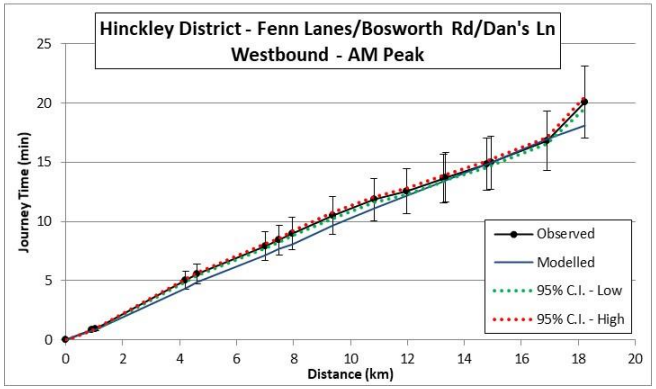


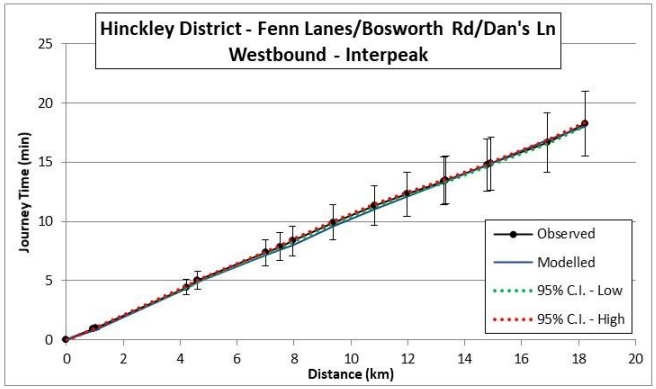
Figure B 5: Fenn Lanes / Bosworth Road / Dan's Lane











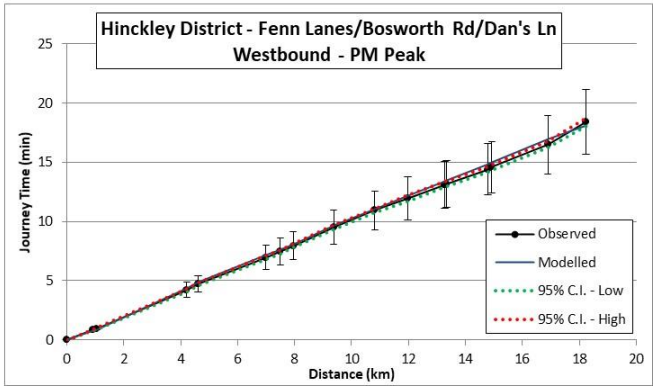
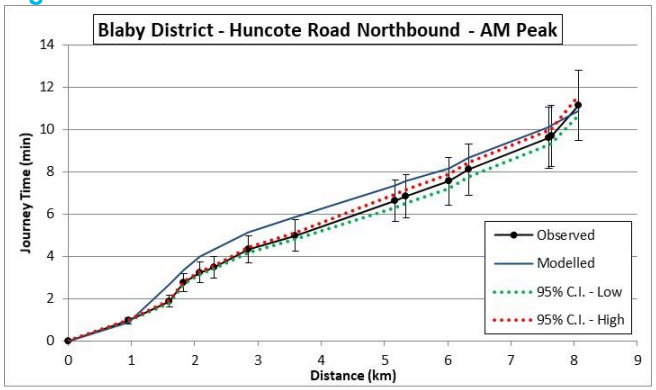
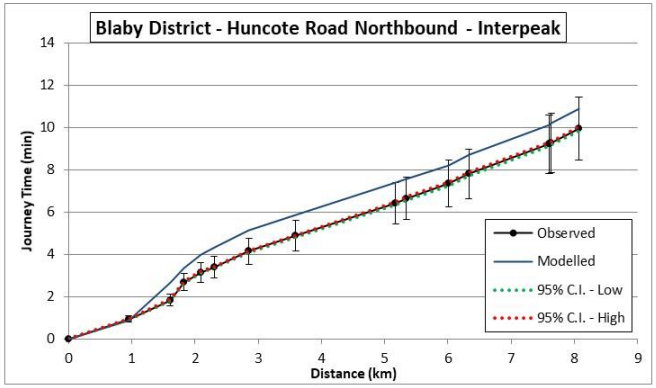
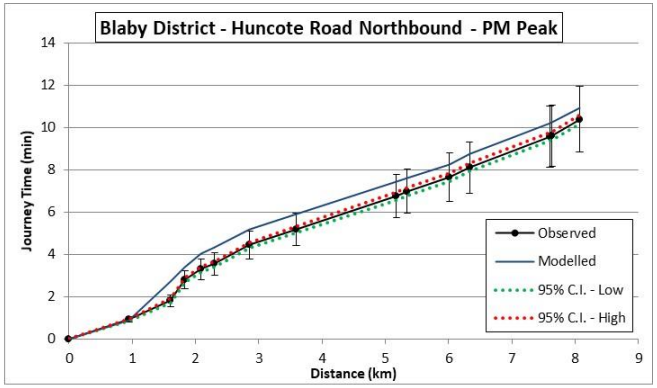
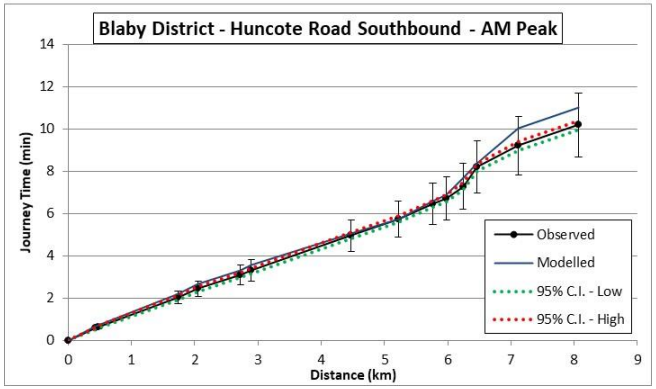


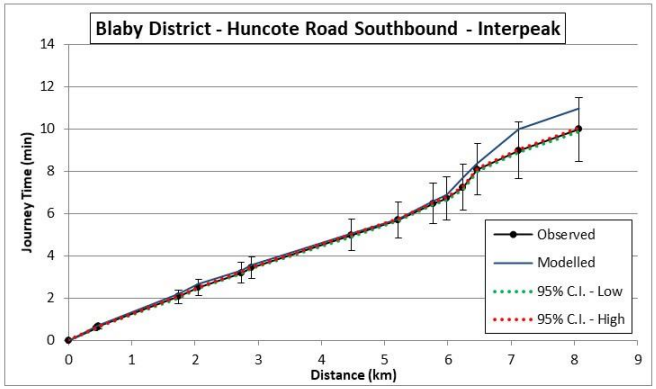
Figure B 6: Huncote Road











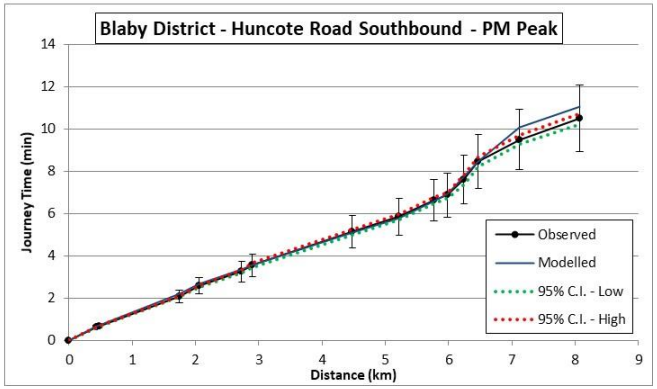
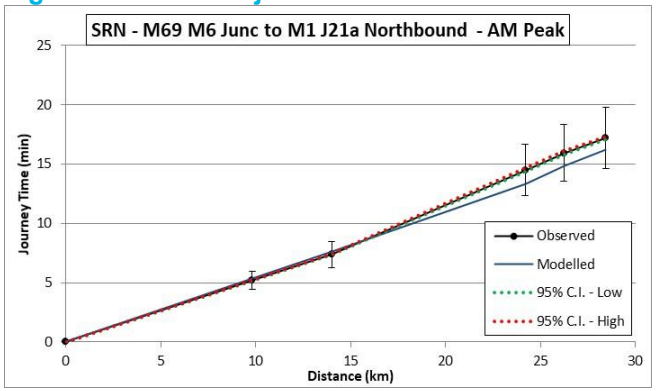
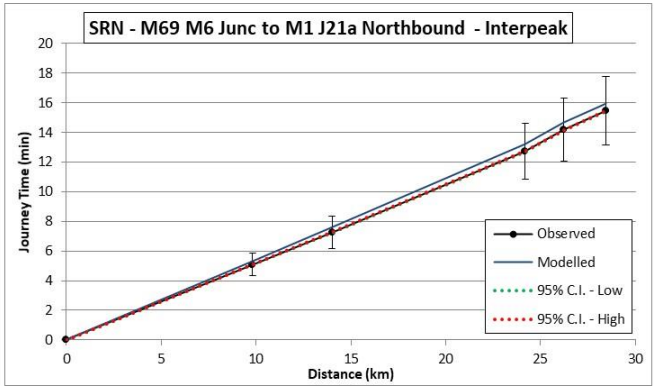


Figure B 7: M69 M6 junction to M1 Junction 21a Northbound





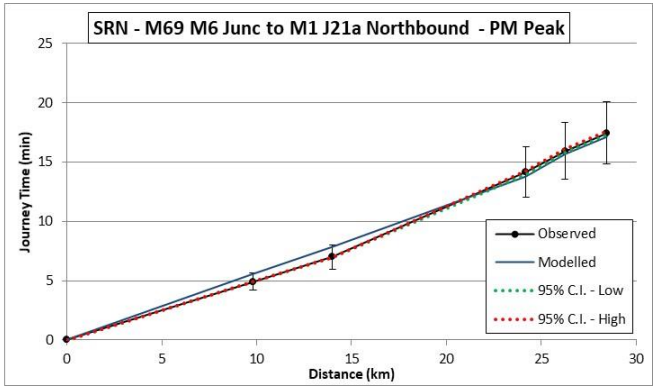
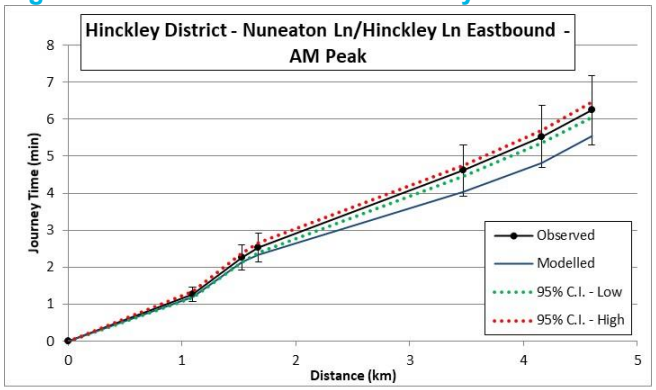
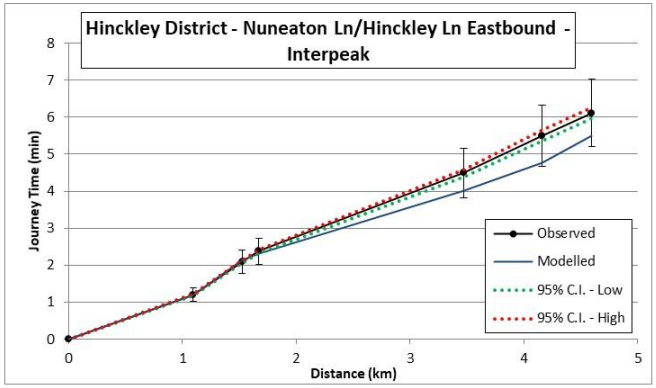
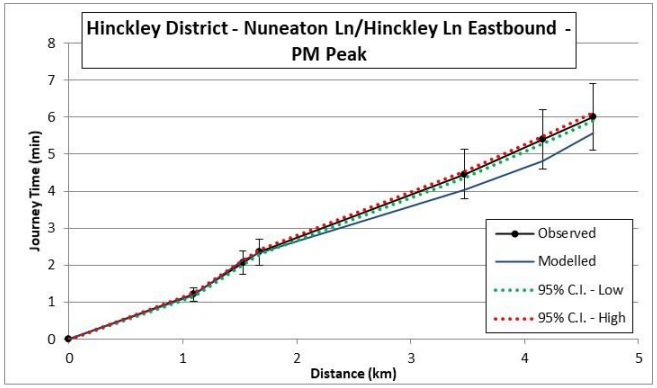
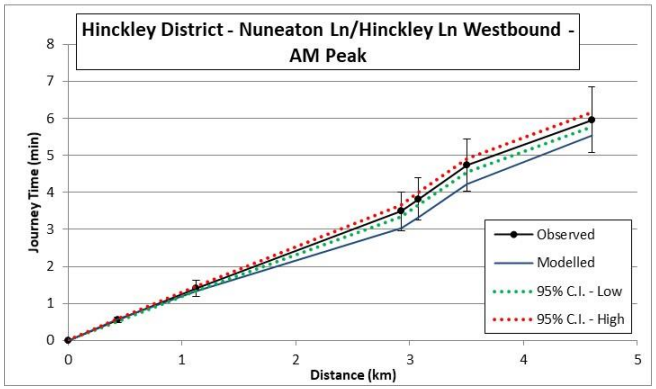


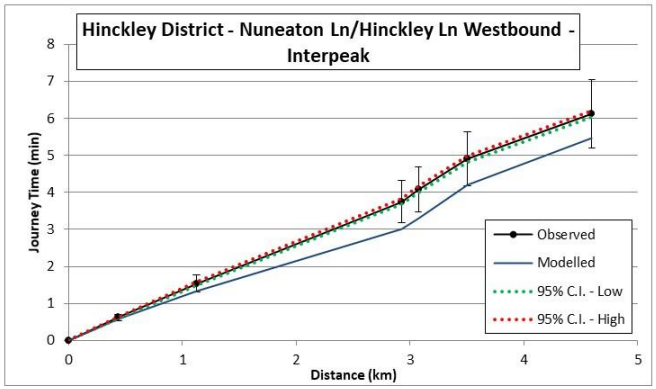
Figure B 8: Nuneaton Lane / Hinckley Lane











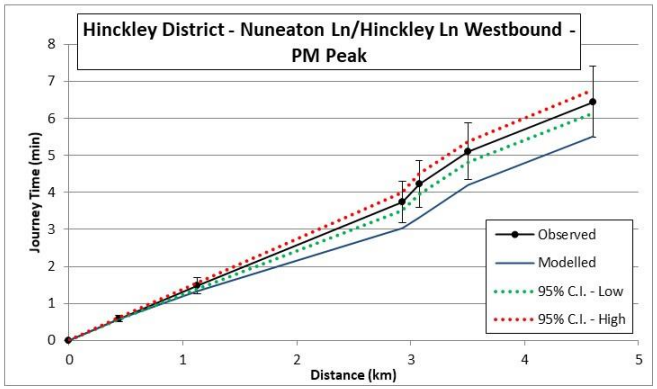
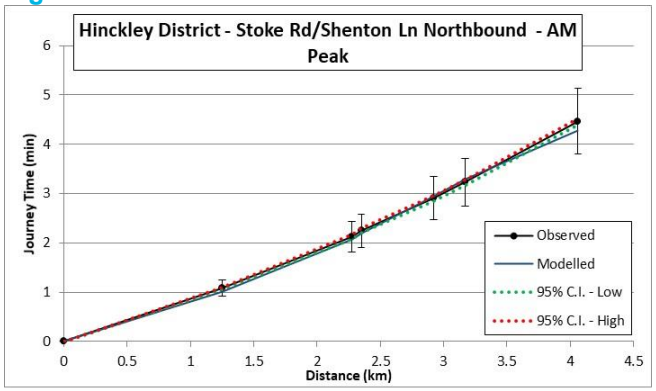
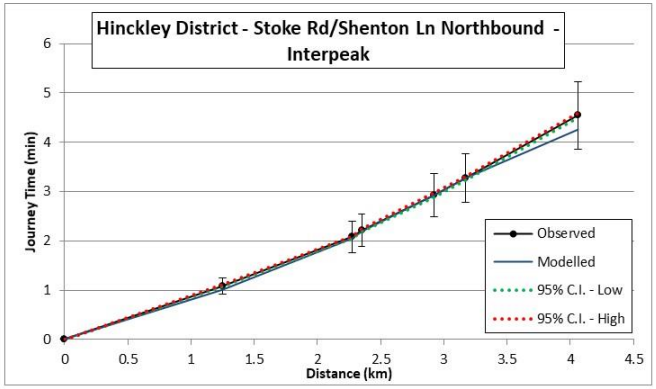
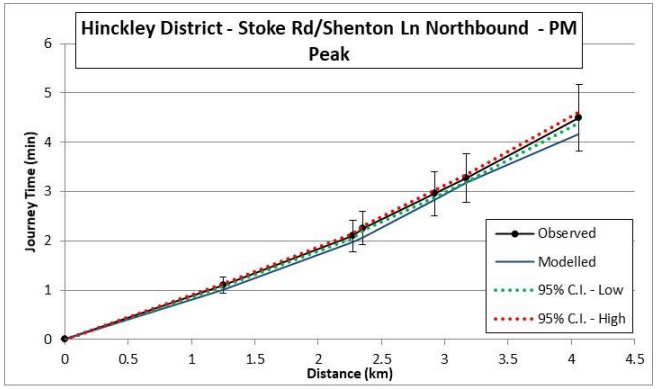
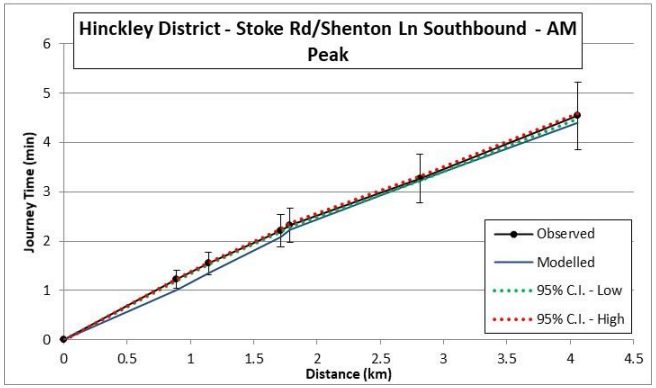


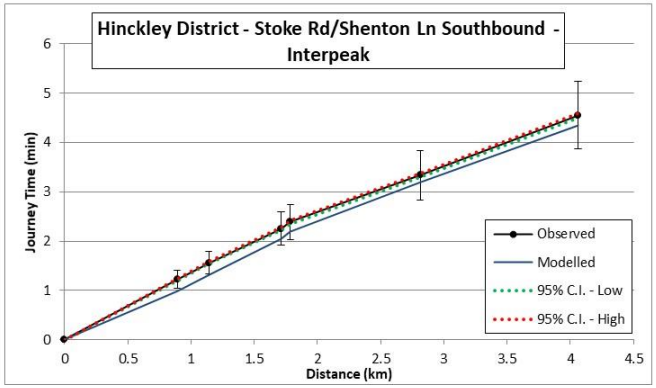
Figure B 9: Stoke Road / Shenton Lane

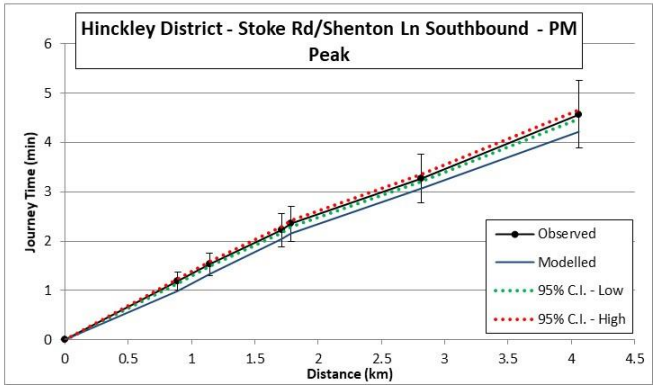












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