A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010059

7.27.2 Applicant's Responses to Deadline 6 Submissions - Appendix B - Chevington Road Junctions 9 Report

Rule 8(1)(c)

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

May 2021

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Examination Procedure) Rules
2010**

The A1 in Northumberland: Morpeth to Ellingham

Development Consent Order 20[xx]

Appendix B - Chevington Road Junctions 9 Report

Rule Reference:	8(1)(c)
Planning Inspectorate Scheme Reference:	TR010059
Doc Reference:	7.27.2
Author:	A1 in Northumberland: Morpeth to Ellingham Project Team, Highways England

Version	Date	Status of Version
Rev 0	May 2021	Deadline 7

TRL THE FUTURE OF TRANSPORT

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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Filename: 70044136-ChevingtonRoad-JunctionModel.j9
Path: C:\Users\UKBWH002\Desktop
Report generation date: 07/05/2021 10:50:41

»2023, AM
»2023, PM

Summary of junction performance

		AM						PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
						2023						
Stream B-C	D1	0.1	6.29	0.11	A	567 % [Stream B-C]	D2	0.1	6.24	0.09	A	476 % [Stream B-A]
Stream B-A		0.0	7.42	0.02	A			0.1	8.03	0.10	A	
Stream C-AB		0.1	6.00	0.07	A			0.1	5.94	0.06	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	07/05/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CORP\UKBWH002
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC ()
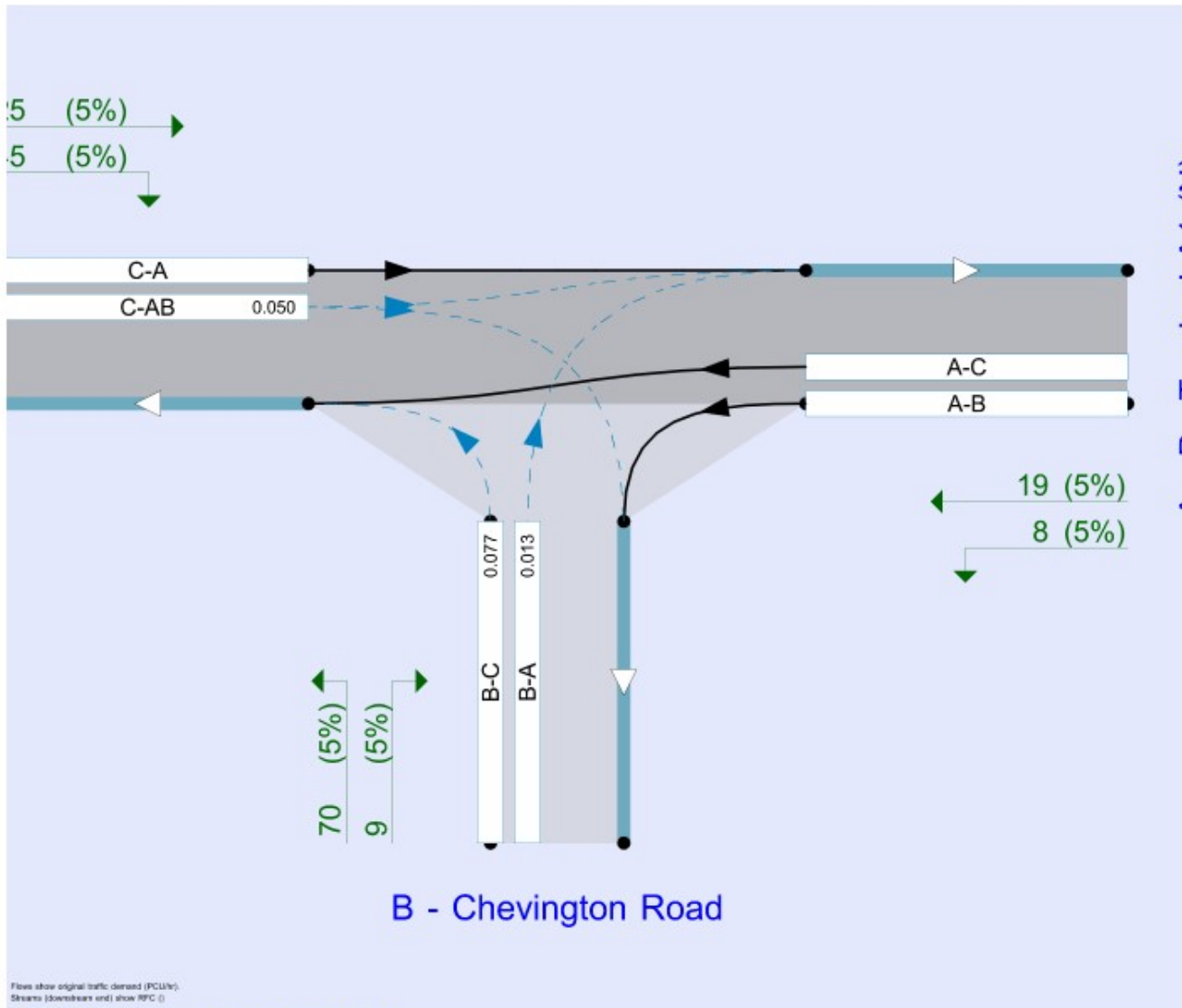
The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	08:00	09:30	15	✓
D2	2023	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	De-Trunked A1 / Chevington Road T-Junction	T-Junction	Two-way		4.42	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	567	Stream B-C

Arms

Arms

Arm	Name	Description	Arm type
A	De-Trunked A1 (N)		Major
B	Chevington Road		Minor
C	De-Trunked A1 (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - De-Trunked A1 (S)	6.00		✓	3.00	100.0	✓	17.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Chevington Road	Two lanes	3.25	3.00	100	75

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	548	0.100	0.252	0.159	0.360
B-C	688	0.105	0.267	-	-
C-B	687	0.266	0.266	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2023	AM	ONE HOUR	08:00	09:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - De-Trunked A1 (N)		ONE HOUR	✓	27	100.000
B - Chevington Road		ONE HOUR	✓	79	100.000
C - De-Trunked A1 (S)		ONE HOUR	✓	70	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - De-Trunked A1 (N)	B - Chevington Road	C - De-Trunked A1 (S)
From	A - De-Trunked A1 (N)	0	8	19
	B - Chevington Road	9	0	70
	C - De-Trunked A1 (S)	25	45	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - De-Trunked A1 (N)	B - Chevington Road	C - De-Trunked A1 (S)
From	A - De-Trunked A1 (N)	5	5	5
	B - Chevington Road	5	5	5
	C - De-Trunked A1 (S)	5	5	5

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.11	6.29	0.1	A	64	96
B-A	0.02	7.42	0.0	A	8	12
C-AB	0.07	6.00	0.1	A	41	62
C-A					23	34
A-B					7	11
A-C					17	26

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	53	13	681	0.077	52	0.0	0.1	6.007	A
B-A	7	2	528	0.013	7	0.0	0.0	7.244	A
C-AB	34	8	681	0.050	34	0.0	0.1	5.834	A
C-A	19	5			19				
A-B	6	2			6				
A-C	14	4			14				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	63	16	680	0.093	63	0.1	0.1	6.125	A
B-A	8	2	525	0.015	8	0.0	0.0	7.316	A
C-AB	40	10	680	0.059	40	0.1	0.1	5.905	A
C-A	22	6			22				
A-B	7	2			7				
A-C	17	4			17				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	77	19	678	0.114	77	0.1	0.1	6.287	A
B-A	10	2	519	0.019	10	0.0	0.0	7.417	A
C-AB	50	12	679	0.073	49	0.1	0.1	6.004	A
C-A	28	7			28				
A-B	9	2			9				
A-C	21	5			21				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	77	19	678	0.114	77	0.1	0.1	6.287	A
B-A	10	2	519	0.019	10	0.0	0.0	7.418	A
C-AB	50	12	679	0.073	50	0.1	0.1	6.004	A
C-A	28	7			28				
A-B	9	2			9				
A-C	21	5			21				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	63	16	680	0.093	63	0.1	0.1	6.127	A
B-A	8	2	525	0.015	8	0.0	0.0	7.320	A
C-AB	40	10	680	0.059	41	0.1	0.1	5.909	A
C-A	22	6			22				
A-B	7	2			7				
A-C	17	4			17				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	53	13	681	0.077	53	0.1	0.1	6.016	A
B-A	7	2	528	0.013	7	0.0	0.0	7.245	A
C-AB	34	8	681	0.050	34	0.1	0.1	5.837	A
C-A	19	5			19				
A-B	6	2			6				
A-C	14	4			14				

2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	De-Trunked A1 / Chevington Road T-Junction	T-Junction	Two-way		5.09	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	476	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2023	PM	ONE HOUR	17:00	18:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - De-Trunked A1 (N)		ONE HOUR	✓	35	100.000
B - Chevington Road		ONE HOUR	✓	103	100.000
C - De-Trunked A1 (S)		ONE HOUR	✓	49	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - De-Trunked A1 (N)	B - Chevington Road	C - De-Trunked A1 (S)
From	A - De-Trunked A1 (N)	0	26	9
	B - Chevington Road	50	0	53
	C - De-Trunked A1 (S)	12	37	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - De-Trunked A1 (N)	B - Chevington Road	C - De-Trunked A1 (S)
From	A - De-Trunked A1 (N)	5	5	5
	B - Chevington Road	5	5	5
	C - De-Trunked A1 (S)	5	5	5

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.09	6.24	0.1	A	49	73
B-A	0.10	8.03	0.1	A	46	69
C-AB	0.06	5.94	0.1	A	34	50
C-A					11	17
A-B					23	35
A-C					8	12

Main Results for each time segment

17:00 – 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	10	672	0.060	40	0.0	0.1	5.975	A
B-A	38	9	533	0.071	37	0.0	0.1	7.623	A
C-AB	28	7	680	0.041	27	0.0	0.0	5.791	A
C-A	9	2			9				
A-B	19	5			19				
A-C	7	2			7				

17:15 – 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	48	12	669	0.071	48	0.1	0.1	6.086	A
B-A	45	11	530	0.085	45	0.1	0.1	7.793	A
C-AB	33	8	679	0.049	33	0.0	0.1	5.854	A
C-A	11	3			11				
A-B	23	6			23				
A-C	8	2			8				

17:30 – 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	664	0.088	58	0.1	0.1	6.238	A
B-A	55	14	526	0.105	55	0.1	0.1	8.025	A
C-AB	40	10	677	0.060	40	0.1	0.1	5.939	A
C-A	13	3			13				
A-B	28	7			28				
A-C	10	2			10				

17:45 – 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	664	0.088	59	0.1	0.1	6.239	A
B-A	55	14	526	0.105	55	0.1	0.1	8.029	A
C-AB	40	10	677	0.060	40	0.1	0.1	5.939	A
C-A	13	3			13				
A-B	28	7			28				
A-C	10	2			10				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	48	12	669	0.071	48	0.1	0.1	6.091	A
B-A	45	11	530	0.085	45	0.1	0.1	7.798	A
C-AB	33	8	679	0.049	33	0.1	0.1	5.855	A
C-A	11	3			11				
A-B	23	6			23				
A-C	8	2			8				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	10	672	0.060	40	0.1	0.1	5.982	A
B-A	38	9	533	0.071	38	0.1	0.1	7.638	A
C-AB	28	7	680	0.041	28	0.1	0.0	5.796	A
C-A	9	2			9				
A-B	19	5			19				
A-C	7	2			7				