A9 Data Monitoring and Analysis Report

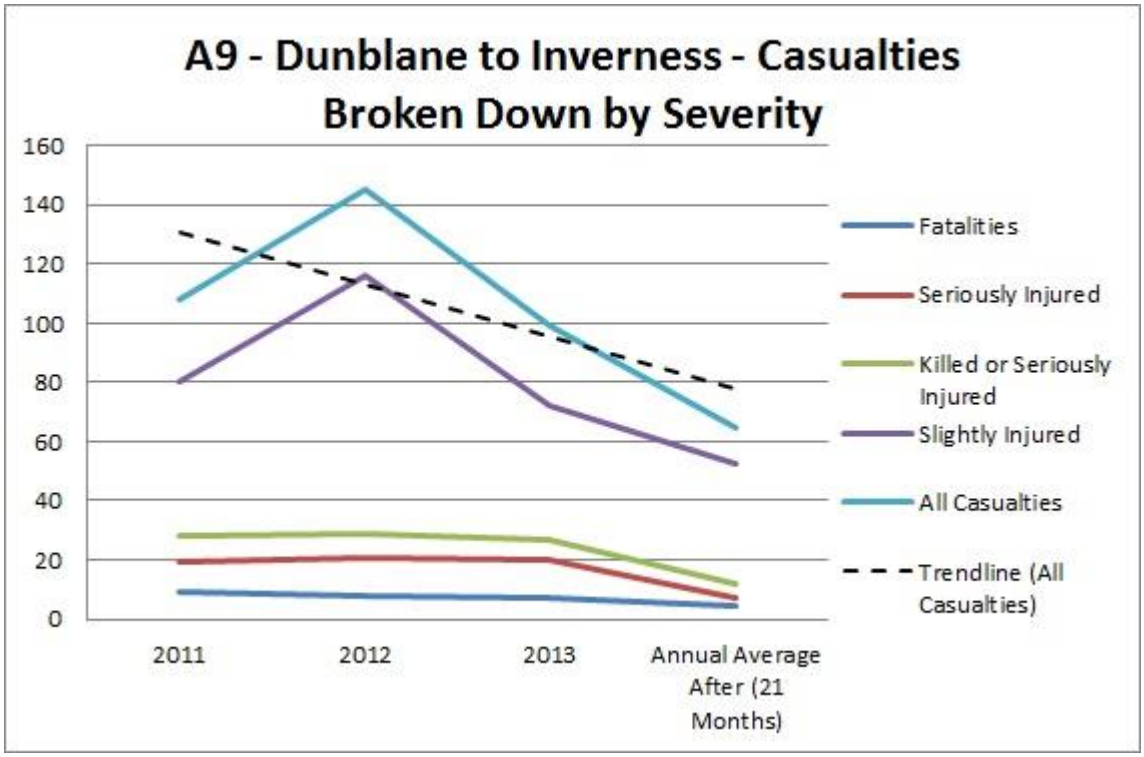
November 2016

Content

1. Executive Summary

This latest report updates the comprehensive range of data sets designed to evaluate the impact of the A9 Safety Group's strategy for the route between Dunblane and Inverness. This report contains collision and casualty data for the first 21 months of operation of the average speed cameras (to 31 July 2016) with the remaining performance data covering the period to 30 September 2016 unless otherwise stated.

With performance data being published every three months there is always the risk that variations in performance data between reporting periods can be misinterpreted which is the key reason why road safety schemes are evaluated over a three period which lessens the impact of short term variations and considers the longer term impact of the mitigation measures. In similar terms to previous reports which are not milestones in the project a rolling twelve month average evaluation is provided within this report. The graph below highlights the casualty performance of the route using the latest data and highlights the positive downward trend now being established.



A9 Casualty Performance - July 2016

The overall summary has not changed significantly since the last update with sustained improvements in driver behaviour and a corresponding fall in collisions and casualties when compared to the baseline data. The latest data set indicates that based on a twelve month rolling average

- The number of fatal casualties between **Dunblane and Inverness** is down by almost 43% compared to the baseline average
- The number of 'fatal and serious' collisions between **Dunblane and Inverness** overall is down by almost 45%, with fatal and serious casualties down by almost 63%
- There have been no fatal collisions between **Dunblane and Perth** with the number of serious collisions down by over 60% and serious casualties down by over 47%
- The number of 'fatal and serious' collisions between **Perth and Inverness** is down by over 33%, with fatal and serious casualties down by 59%
- The number of serious injury casualties between **Perth and Inverness** is down by almost 69%
- The overall number of casualties of all classes between **Dunblane and Inverness** is down by 45%
- The significantly reduced number of vehicles exceeding the speed limit continues to be sustained
- The number of vehicles detected by the ASC system which were considered by Police Scotland for further action has remained constant at an extremely low average level of slightly more than 12 per day (less than 0.03% of the overall volume of vehicles using the route).
- The journey time variation from the established baseline between Perth and Inverness has remained consistent and within the projected estimated range

2. Overview

The A9 Safety Group was set up by Transport Scotland in July 2012. The main aim of the group is to work together to positively influence driver behaviour in a way that helps to reduce road casualty figures on the route before and during the A9 dualling programme.

To assess the impact of the A9 average speed camera system it has been agreed to monitor a number of key performance indicators across the route and compare them on an on-going basis with an established baseline comprising of data gathered prior to the introduction of the camera system. More information on these baselines is contained within this report.

This report is structured as a live document to be updated on a regular basis to allow for regular monitoring against the established baseline. It uses established Transport Scotland data sources and does not contain information on the technical performance of the average speed camera system, the operational management of the system or the number of offenders detected. Where information on offender numbers is presented within this document it has been sourced from Police Scotland; Transport Scotland do not hold detailed information of this nature.

3. Purpose

The A9 average speed camera system (ASC) is the largest route based safety strategy in existence in the UK and is one of a range of measures introduced by the A9 Safety Group to positively change driver behaviour on the route. The overall aim is to reduce casualties while improving journey time reliability through reduced incident occurrence on the route.

The A9 strategy key deliverables are:

- Casualty Reduction – reduction in the number of people being killed or seriously injured
- Reduction in excessive speeding and improvements in speed limit compliance
- Incident frequency reduction
- Improved journey time reliability

From these key deliverables an assessment can be made not only on the key casualty reduction indicator but also an identification of improvements in the operational efficiency on the route. Driver attitude is more of a subjective issue and a repeat of the driver survey carried out in May 2014 was undertaken in March 2015 to provide a comparative analysis on this subject. The report is published at http://a9road.info/

The principle purpose of this report is to provide on-going monitoring of the evidence base emerging from the A9 to support an overall assessment of the impact of the strategy. This will also provide the evidence base for any further supporting engineering or educational measures if required.

4. Baseline Data Sources

Casualties

The casualty baseline methodology follows established practice for road safety schemes in providing the data for the three years before the introduction of the scheme and the three years after. In respect to the A9 data the baseline data is taken from the 1 January through to 31 December for each calendar year from 2011 through to 2013. Normally data capture would involve the immediate 3 year period preceding the start of the project but given the visible 7 month construction programme during 2014 for the ASC the A9 Safety Group agreed to exclude this period to ensure that baseline data was not influenced by this activity. This ensures that the data is directly comparable to more effectively measure the impact of the mitigation measures. The casualty classification is also in standard format with the 'Killed Seriously Injured' (KSI) being the key performance indicator.

The Road Accident statistics are compiled from returns made by Police Scotland which follow an agreed national standard known as 'Stats 19'. These returns are subject to a validation process and given the steps involved this effectively means that it can take up to 9 months before accurate statistics are available.

While the above structure will be used to formally evaluate the impact of the cameras and this will be published in due course there is a desire to provide an understanding of how the route is performing in real time. To provide this understanding we have previously published the information using a 12 month rolling average to compare against the equivalent baseline figure and this methodology is again used for this report as the data gathering period does not fall on one of the identified milestone periods. This information is provided in Appendix 'A'.

Speed

The Vehicle Speed and Speed Enforcement Summary Report 2012 was the primary evidence base for establishing vehicle speeds across the A9 and in respect to the Perth to Inverness section the data has been utilised as the baseline for comparison purposes. This data was

gathered during a neutral month to avoid the influence of seasonal variations. The report is published at: http://a9road.info/uploads/publications/

Between Dunblane and Perth the baseline figure was established in September 2014 using portable equipment positioned near to the then proposed camera sites which had not been constructed at that point.

The analysis data is gathered from counter sites positioned as closely as possible to where the baseline figures were determined. Due to maintenance upgrades and other limitations this was not possible in every section and the closest alternative was used instead.

The data gathered is spot speed from the respective counters and not average speed which is assessed by the camera system for enforcement purposes. To allow for consistency in the analysis data is gathered from all sites during the first week of each month (Mon – Sun). This will allow for seasonal trends to be incorporated within all data sets.

On some occasions data sets are not available from specific sites due to technical reasons. The majority of traffic counter sites are solar powered and prolonged poor weather in winter with limited daylight hours can impact on power availability. Maintenance and resurfacing schemes can also interrupt data collection.

Incidents

The incident frequency data is gathered from Traffic Scotland's incident management database and looks at all incidents on the A9 resulting in a carriageway closure or restriction. It does not include weather related closures (it does include incidents which may happen during weather events) or planned closures such as road works.

The analysis of this data is based on restriction time with the output given in hours. The analysis does not consider anything which may have impacted on the closure times.

The data output does provide an overall comparison in terms of the operational efficiency of the route and the subsequent journey time reliability.

Journey Times

Journey Times on the A9 are measured using Bluetooth technology and the available data is sourced from Transport Scotland's established journey time stations immediately north of Inveralmond Roundabout, Perth and immediately south of the A96 Raigmore junction, Inverness. The data is gathered in a similar fashion to the speed data in that it comprises of the first week of each month. A further filter has also been applied to use only the time

period 07:00 to 19:00 each day which provides a more realistic picture of travel time during normal traffic conditions.

Roadworks can significantly impact on journey times and while routine maintenance on the route is to be expected where there have been significant projects leading to delays these are qualified. The commencement of the dualling programme may also impact journey times and to cater for this reporting will include by section on either side of dualling works.

Traffic Volumes

To allow for a comparison of traffic volumes on the A9 between Perth & Inverness data has been taken from three counting stations on this stretch of the route to provide an overview of activity. The current baseline shown will be expanded with each month to provide the comparative analysis year on year.

The figures represent the seven day annual average daily flow which is the standard reporting format for this type of data. During the recording period Transport Scotland will be commissioning a new traffic services database so there may be some interruption in data management provision during this process which is being undertaken through the latter part of 2016.

5. Casualty Analysis

As indicated in Section 4 collision and casualty figures are subjected to an extended validation process and this report considers the validated data available up until 31 July 2016.

The evaluation uses the 12 month rolling average comparison (see Section 4 for explanation) from the data gathered during the first 21 months of operation compared with the equivalent baseline figures. The latest data continues to show a sustained drop in injury collisions and casualties across the route. The headline figures from the data are:

- The number of fatal casualties between **Dunblane and Inverness** is down by almost 43% compared to the baseline average
- The number of 'fatal and serious' collisions between **Dunblane and Inverness** overall is down by almost 45%, with fatal and serious casualties down by almost 63%
- There have been no fatal collisions between **Dunblane and Perth** with the number of serious collisions down by over 60% and serious casualties down by over 47%
- The number of 'fatal and serious' collisions between **Perth and Inverness** is down by over 33%, with fatal and serious casualties down by 59%
- The number of serious injury casualties between **Perth and Inverness** is down by almost 69%

- The overall number of casualties of all classes between **Dunblane and Inverness** is down by 45%

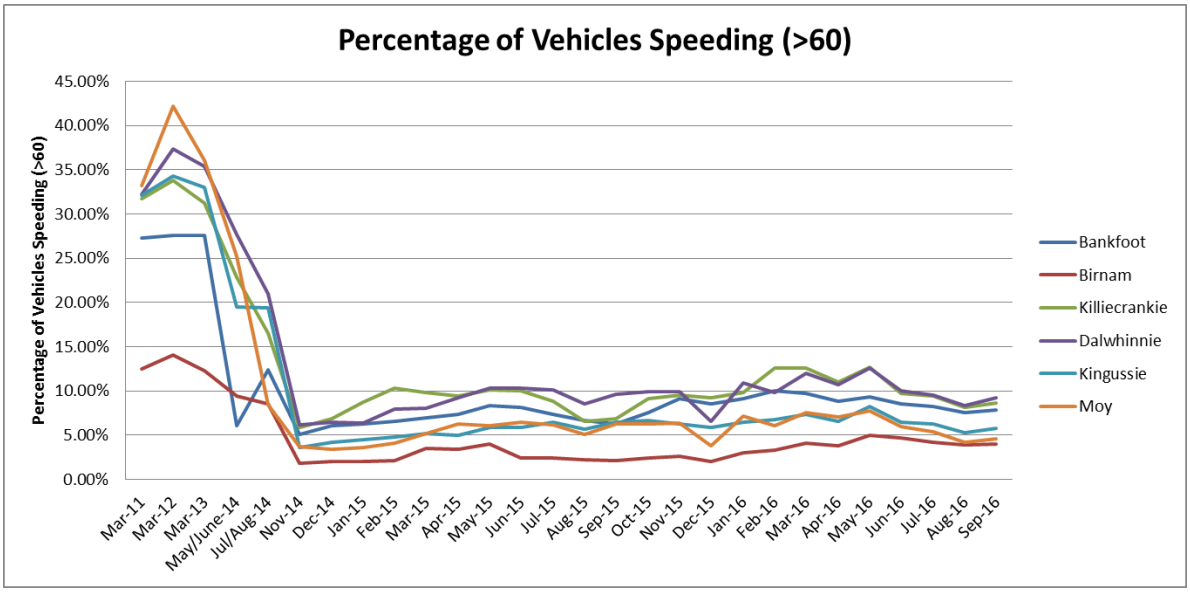
Since the last report there have been no fatal collisions on the A9 within the monitoring area.

6. Vehicle Speed Data

There has been very little change to the speed profile along the route with the data continuing to support a sustained change in driver behaviour. The latest data continues to demonstrate high levels of compliance and the occurrence of vehicles travelling at more than 10 mph above the speed limit continues to be exceptionally low.

Maintenance operations on the route, particularly between Perth and Dunblane has led to an interruption of the data gathering capability in recent months. The data is gathered through loops cut in the road surface and resurfacing operations mean that the loop arrays have to be reinstalled following completion of the maintenance operations. While this has been programmed the data sets available continue to support the sustained change in driver behaviour.

The graph below represents the speed profile between Perth to Inverness and continues to demonstrate the established driver behaviour pattern on this section of the route.



Perth to Inverness Speed Profile

Police Scotland have advised that since the system went live on the 28th October 2014 through to 24 October 2016 there have been 8,916 vehicles detected by the system exceeding the speed limit which warranted further action. The latest quarterly data indicates

that the average has now dropped to 12 vehicles per day detected exceeding the operational threshold.

The 'Vehicle Speed and Speed Enforcement Summary Report' published on the A9 website indicated that prior to the introduction of the average speed cameras over 12,000 drivers per annum were being reported for fixed and mobile camera speeding offences within the monitoring area. The introduction of the average speed cameras has resulted in a reduction of over 63% in the number of drivers being detected speeding. Not considered within this factor is that the previous enforcement regime did not have the 24/7 capability that the average speed cameras provide.

These figures do not include the dualling construction between Kincraig and Dalraddy which is monitored by a separate ASC system and is subject to a temporary 40 mph limit. Police Scotland publish the figures separately for this stretch.

7. Incident Frequency & Impact

The latest data set incorporates the incident data from the third quarter of 2016 which continues to support the sustained reductions in both frequency and impact compared to the baseline data.

There has been some unexpected variability in the figures for this quarter, particularly between Dunblane and Perth with a significant rise in related incidents. Further investigation reveals that over 25% of the restriction time were attributed to mechanical breakdowns and 23% to two specific incidents which required retailed police investigation Over the entire monitoring area breakdowns of heavy goods vehicles continue to be one of the principal causes of restrictions being placed on the route and we will work with the haulage industry to consider what if any preventative measures may be appropriate for the haulage industry to consider.

8. Journey Time Analysis – Perth to Inverness

The Journey Time Analysis for the reporting period is still demonstrating that journey time reliability is within the projected range. The data is intermittently showing a slight increase in overall journey times during the working week with this not being unexpected during the reporting period covering the summer months. The analysis also indicated a slight variation during the period of major traffic management re-alignment on the Kincraig to Dalraddy dualling works. This was a short term impact and consistency through the works has been re-established.

9. Traffic Volumes

In similar terms to the speed data, the gathering of traffic volume data has been interrupted by maintenance operations on the route. While other counter sites are available the interruption is anticipated to be short term and data will be available for the next report. From the data available there is a suggestion that traffic growth is slowing on the stretch north of Aviemore when compared with the original baseline. As these figures take account of the peak summer months they can vary considerably during this period. To ensure that this information is correct data will be extracted from other counter sites on this stretch for verification purposes and the outcome will be provided in the next report.

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Appendix A Collision & Casualty Analysis – Dunblane to Perth

DUNBLANE TO INVERNESS - 3 YEAR AVERAGE COMPARISONS - 21 MONTHS OPERATION TO THE END OF JULY 2016

DUNBLANE - PERTH COLLISIONS

Year	Fatal	Serious	KSI	Slight	TOTAL
2011	1	3	4	14	18
2012	0	5	5	20	25
2013	1	3	4	19	23
Annual Average Before (3 Years)	0.67	3.67	4.33	17.67	22
Annual Average After (21 Months)	0.00	1.71	1.71	13.14	14.86
First 21 Months ASC	0	3	3	23	26
% Annual Average Variation	**-100.0%**	**-53.2%**	**-60.4%**	**-25.6%**	**-32.5%**

PERTH - INVERNESS COLLISIONS

Year	Fatal	Serious	KSI	Slight	TOTAL
2011	6	5	11	29	40
2012	5	8	13	30	43
2013	4	10	14	22	36
Annual Average Before (3 Years)	5.00	7.67	12.67	27.00	39.67
Annual Average After (21 Months)	4.00	4.57	8.57	17.14	25.71
First 21 Months ASC	7	8	15	30	45
% Annual Average Variation	**-20.0%**	**-40.4%**	**-32.3%**	**-36.5%**	**-35.2%**

DUNBLANE - INVERNESS COLLISIONS COMBINED

Year	Fatal	Serious	KSI	Slight	TOTAL
2011	7	8	15	43	58
2012	5	13	18	50	68
2013	5	13	18	41	59
Annual Average Before (3 Years)	5.67	11.33	17.00	44.67	61.67
Annual Average After (21 Months)	4.00	6.29	10.29	30.29	40.57
First 21 Months ASC	7	11	18	53	71
% Annual Average Variation	**-29.4%**	**-44.5%**	**-39.5%**	**-32.2%**	**-34.2%**

DUNBLANE - PERTH CASUALTIES

Year	Fatalities	Seriously Injured	Killed or Seriously Injured	Slightly Injured	TOTAL
2011	1	3	4	20	24
2012	0	5	5	25	30
2013	1	3	4	33	37
Annual Average Before (3 Years)	0.67	3.67	4.33	26.00	30.33
Annual Average After (21 Months)	0.00	2.29	2.29	18.86	21.14
First 21 Months ASC	0	4	4	33	37
% Annual Average Variation	**-100.0%**	**-37.7%**	**-47.3%**	**-27.5%**	**-30.3%**

PERTH - INVERNESS CASUALTIES

Year	Fatalities	Seriously Injured	Killed or Seriously Injured	Slightly Injured	TOTAL
2011	8	16	24	60	84
2012	8	16	24	91	115
2013	6	17	23	39	62
Annual Average Before (3 Years)	7.33	16.33	23.67	63.33	87
Annual Average After (21 Months)	4.57	5.14	9.71	33.71	43.43
First 21 Months ASC	8	9	17	59	76
% Annual Average Variation	**-37.7%**	**-68.5%**	**-59.0%**	**-46.8%**	**-50.1%**

DUNBLANE - INVERNESS CASUALTIES COMBINED

Year	Fatalities	Seriously Injured	Killed or Seriously Injured	Slightly Injured	TOTAL
2011	9	19	28	80	108
2012	8	21	29	116	145
2013	7	20	27	72	99
Annual Average Before (3 Years)	8.00	20.00	28.00	89.33	117.33
Annual Average After (21 Months)	4.57	7.43	12.00	52.57	64.57
First 21 Months ASC	8	13	21	92	113
% Annual Average Variation	**-42.9%**	**-62.9%**	**-57.1%**	**-41.2%**	**-45.0%**

Appendix B - Vehicle Speed Data – Dunblane to Perth

SPEED ANALYSIS DUNBLANE - PERTH (SPOT SPEED)

Sites	SEPTEMBER 2014				DECEMBER 2014				MARCH 2015				JUNE 2015			
	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90
Dunblane N/B	32.70%	29.21%	3.49%	0.00%	5.99%	5.67%	0.24%	0.08%	NOT AVAILABLE				8.76%	8.46%	0.26%	0.04%
Crieff N/B	28.47%	25.10%	3.37%	0.00%	NOT AVAILABLE				5.44%	5.32%	0.11%	0.01%	6.03%	5.89%	0.13%	0.01%
Auchterarder N/B	29.44%	25.42%	3.71%	0.31%	NOT AVAILABLE				8.01%	7.91%	0.08%	0.02%	NOT AVAILABLE			
Broxden S/B	27.74%	25.73%	2.01%	0.00%	7.63%	7.45%	0.16%	0.02%	10.22%	9.91%	0.28%	0.03%	13.15%	12.73%	0.39%	0.03%
Dunning S/B	33.28%	28.87%	4.04%	0.37%	9.59%	9.27%	0.28%	0.04%	11.65%	11.21%	0.39%	0.05%	13.22%	12.69%	0.48%	0.05%
Blackford S/B	24.81%	21.68%	2.89%	0.24%	5.47%	5.36%	0.10%	0.01%	NOT AVAILABLE				NOT AVAILABLE			

Sites	SEPTEMBER 2015				DECEMBER 2015				MARCH 2016				JUNE 2016			
	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90
Dunblane N/B	8.32%	8.06%	0.23%	0.03%	NOT AVAILABLE				9.70%	9.40%	0.27%	0.03%	7.25%	6.98%	0.23%	0.04%
Crieff N/B	6.58%	6.45%	0.12%	0.01%	4.29%	4.21%	0.07%	0.01%	NOT AVAILABLE				NOT AVAILABLE			
Auchterarder N/B	NOT AVAILABLE				8.29%	7.93%	0.27%	0.09%	12.72%	12.16%	0.42%	0.14%	11.58%	11.07%	0.39%	0.12%
Broxden S/B	13.87%	13.45%	0.40%	0.02%	11.04%	10.71%	0.31%	0.02%	16.95%	16.42%	0.51%	0.02%	11.30%	10.95%	0.32%	0.03%
Dunning S/B	15.74%	15.16%	0.51%	0.07%	NOT AVAILABLE				NOT AVAILABLE				12.33%	11.76%	0.50%	0.07%
Blackford S/B	NOT AVAILABLE				NOT AVAILABLE				NOT AVAILABLE				NOT AVAILABLE			

Sites	SEPTEMBER 2016				DECEMBER 2016				MARCH 2017				JUNE 2017			
	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80
Bankfoot	NOT AVAILABLE															
Birnam	NOT AVAILABLE															
Faskally	NOT AVAILABLE															
Killiecrankie	8.68%	8.07%	0.54%	0.07%												
Dalwhinnie	9.22%	8.63%	0.53%	0.06%												
Kingussie	5.80%	5.21%	0.53%	0.06%												
Moy	NOT AVAILABLE															

Appendix C - Vehicle Speed Data – Perth to Inverness

SPEED ANALYSIS PERTH - INVERNESS (SPOT SPEED)

Sites	MARCH 2012				DECEMBER 2014				MARCH 2015				JUNE 2015			
	>60	60-70	70-80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80
Bankfoot	27.60%	24.03%	3.23%	0.34%	6.06%	5.65%	0.37%	0.04%	NOT AVAILABLE				8.19%	7.68%	0.47%	0.04%
Birnam	14.10%	12.62%	1.31%	0.17%	2.04%	1.93%	0.08%	0.03%	3.51%	3.36%	0.14%	0.01%	2.38%	2.28%	0.07%	0.03%
Faskally	NOT AVAILABLE				3.12%	3.02%	0.10%	0.00%	5.26%	5.12%	0.14%	N/A	5.31%	5.19%	0.12%	N/A
Killiecrankie	33.85%	27.41%	5.63%	0.81%	6.86%	6.57%	0.26%	0.03%	9.86%	9.35%	0.46%	0.05%	10.06%	9.50%	0.50%	0.06%
Dalwhinnie	37.39%	28.32%	7.53%	1.54%	6.49%	6.17%	0.28%	0.04%	8.04%	7.68%	0.34%	0.02%	10.32%	9.76%	0.50%	0.06%
Kingussie	34.27%	26.95%	6.16%	1.16%	4.22%	3.93%	0.25%	0.04%	5.19%	4.80%	0.34%	0.05%	5.88%	5.42%	0.40%	0.06%
Moy	42.25%	34.22%	7.08%	0.95%	3.38%	3.32%	0.06%	0.00%	5.19%	5.12%	0.07%	0.004%	6.45%	6.28%	0.15%	0.02%

Sites	SEPTEMBER 2015				DECEMBER 2015				MARCH 2016				JUNE 2016			
	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80	>60	60 - 70	70 - 80	>80
Bankfoot	6.23%	5.81%	0.38%	0.04%	8.55%	8.03%	0.47%	0.05%	9.68%	9.08%	0.54%	0.06%	NOT AVAILABLE			
Birnam	NOT AVAILABLE				NOT AVAILABLE				NOT AVAILABLE				NOT AVAILABLE			
Faskally	3.90%	3.79%	0.11%	N/A	5.19%	5.08%	0.11%	N/A	7.49%	7.35%	0.14%	N/A	NOT AVAILABLE			
Killiecrankie	6.90%	6.51%	0.33%	0.06%	9.27%	8.83%	0.40%	0.04%	12.56%	11.88%	0.60%	0.08%	9.77%	9.03%	0.66%	0.08%
Dalwhinnie	9.65%	9.16%	0.43%	0.06%	6.54%	6.27%	0.26%	0.01%	11.95%	11.33%	0.55%	0.07%	10.01%	9.30%	0.62%	0.09%
Kingussie	6.49%	6.00%	0.43%	0.06%	NOT AVAILABLE				7.34%	6.80%	0.49%	0.05%	6.47%	5.75%	0.63%	0.09%
Moy	6.23%	6.10%	0.11%	0.02%	3.78%	3.72%	0.05%	0.01%	7.51%	7.36%	0.14%	0.01%	5.96%	5.77%	0.15%	0.04%

Sites	SEPTEMBER 2016				DECEMBER 2016				MARCH 2017				JUNE 2017			
	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90	>70	70 - 80	80 - 90	>90
Dunblane N/B	9.50%	9.24%	0.23%	0.03%												
Crieff N/B	NOT AVAILABLE															
Auchterarder	NOT AVAILABLE															
Broxden S/B	10.22%	9.96%	0.24%	0.02%												
Dunning S/B	17.94%	17.21%	0.62%	0.11%												
Blackford S/B	NOT AVAILABLE															

Appendix D - Incident Analysis – Dunblane to Inverness

INCIDENTS

	Perth - Inverness		Dunblane - Perth		A9 Total	
	Incidents	Restriction	Incidents	Restriction	Incidents	Restriction
Q1 2013	31	98	20	41	51	139
Q2 2013	23	37	20	28	43	65
Q3 2013	22	46	14	21	36	67
Q4 2013	41	101	14	31	55	132
2013 Baseline	**135**	**282**	**49**	**121**	**184**	**403**
Q1 2014	14	40	22	38	36	78
Q2 2014	10	22	22	30	32	52
Q3 2014	16	25	25	26	41	51
Q4 2014	22	37	21	26	43	63
2014 Total	**62**	**124**	**90**	**120**	**152**	**244**
Q1 2015	26	57	12	12	38	69
Q2 2015	14	34	8	5	22	39
Q3 2015	16	32	18	27	34	59
Q4 2015	15	44	15	21	30	65
2015 Total	**71**	**167**	**53**	**65**	**124**	**232**
Q1 2016	11	24	9	11	20	35
Q2 2016	15	31	7	7	22	38
Q3 2016	23	34	23	34	46	68
Q4 2016						
2015 Total	**49**	**89**	**39**	**52**	**88**	**141**

Incident data is drawn from the Traffic Scotland Control Centre Incident Logs. Only data involving physical restriction or closure of network is incorporated. Road works data is not included.

Data reflects number of individual incidents and cumulative time in hours.

Appendix E - Journey Time Analysis – Perth to Inverness

JOURNEY TIMES

PERTH - INVERNESS

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Jun-13 N/B	116	116	115	117	120	111	109
Jun-13 S/B	115	118	118	116	124	114	110
Dec-14 N/B	131	131	132	128	124	116	124
Dec-14 S/B	134	133	135	134	131	118	127
Mar-15 N/B	125	129	128	127	124	114	116
Mar-15 S/B	127	128	124	124	123	116	116
Jun-15 N/B	123	122	122	124	121	116	116
Jun-15 S/B	125	123	122	124	122	117	115
Sept -15 N/B	122	122	122	122	121	120	116
Sept-15 S/B	122	122	123	122	123	125	130
Dec-15 N/B	129	130	128	135	139	119	120
Dec-15 S/B	129	131	129	140	139	119	120
Mar-16 N/B	123	125	125	126	124	117	119
Mar-16 S/B	124	126	125	126	125	118	118
Jun-16 N/B	125	125	124	125	123	120	118
Jun-16 S/B	124	125	129	124	124	119	119
Sept -16 N/B	130	124	124	124	123	119	120
Sept-16 S/B	133	129	129	129	126	121	121

VARIATION

Dec-14 N/B	15	15	17	11	4	5	15
Dec-14 S/B	19	15	17	18	7	4	17
Mar-15 N/B	9	13	13	10	4	3	7
Mar-15 S/B	12	10	6	8	-1	2	6
Jun-15 N/B	7	6	7	7	1	5	7
Jun-15 S/B	10	5	4	8	-2	3	5
Sept -15 N/B	6	6	7	5	1	9	7
Sept-15 S/B	7	4	5	6	-1	11	20
Dec-15 N/B	13	14	13	18	19	8	11
Dec-15 S/B	14	13	11	24	15	5	10
Mar-16 N/B	7	9	10	9	4	6	10
Mar-16 S/B	9	8	7	10	1	4	8
Jun-16 N/B	9	9	9	8	3	9	9
Jun-16 S/B	9	7	11	8	0	5	9
Sept -16 N/B	14	8	9	7	3	8	11
Sept-16 S/B	18	11	11	13	2	7	11

PERTH - KINGUSSIE

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dec-15 N/B	78	79	79	94	90	75	74
Dec-15 S/B	78	78	79	89	91	74	74
Mar-16 N/B	77	78	78	78	77	73	74
Mar-16 S/B	76	77	78	77	77	72	73
Jun-16 N/B	78	77	77	78	76	74	73
Jun-16 S/B	76	77	83	77	77	73	74
Sept-16 N/B	83	77	77	77	77	74	75
Sept-16 S/B	86	81	82	81	79	75	76

AVIEMORE - INVERNESS

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dec-15 N/B	33	34	32	34	32	29	29
Dec-15 S/B	33	35	32	33	31	29	29
Mar-16 N/B	30	30	30	30	30	29	28
Mar-16 S/B	30	31	30	30	30	28	28
Jun-16 N/B	30	30	30	30	30	28	28
Jun-16 S/B	30	30	30	30	29	28	29
Sept-16 N/B	29	30	30	30	29	28	28
Sept-16 S/B	30	31	30	30	29	29	28

Appendix F – Traffic Volumes Perth to Inverness

Traffic Volume Figures - 7 Day Annual Average Daily Flow (Two Way)

2014 COMPARISON WITH 2013 BASELINE	
Birnam Average	2.7%
Dalwhinnie Average	2.5%
Moy Average	2.9%

2015 COMPARISON WITH 2013 BASELINE	
Birnam Average	1.9%*
Dalwhinnie Average	3.2%
Moy Average	5.4%

2015 - 2016

Birnam	January	February	March	April	May	June	July	August	September	October	November	December
2015	9,436	11,701	12,426	14,853	14,446	15,364	N/A	N/A	N/A	N/A	N/A	N/A
2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
% Increase/Decrease	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**			

Birnam Average	N/A

Dalwhinnie	January	February	March	April	May	June	July	August	September	October	November	December
2015	5,590	7,235	7,669	9,498	9,822	10,120	11,547	12,256	10,399	9,817	7,315	6,681
2016	6,340	7,545	8,612	9,632	10,096	10,742	12,111	12,186	11,023			
% Increase/Decrease	**13.4%**	**4.3%**	**12.3%**	**1.4%**	**2.8%**	**6.1%**	**4.9%**	**-0.6%**	**6.0%**			

Dalwhinnie Average	5.6%

Moy	January	February	March	April	May	June	July	August	September	October	November	December
2015	6,365	7,787	8,326	9,772	10,033	10,347	11,498	12,233	10,663	9,866	8,216	7,680
2016	7,122	8,182	9,133	9,880	10,460	10,660	10,745	11,144	N/A			
% Increase/Decrease	**11.9%**	**5.1%**	**9.7%**	**1.1%**	**4.3%**	**3.0%**	**-6.5%**	**-8.9%**	**N/A**			

Moy Average	2.4%