A9 Data Monitoring and Analysis Report

May 2016

Content

1. Executive Summary

This is the latest quarterly report which provides a comprehensive range of data sets designed to evaluate the impact of the A9 Safety Group's strategy for the route. This report contains collision and casualty data for the first 15 months of operation of the average speed cameras (to 31 January 2016) and other performance data covering the 18 month period to 30 April 2016.

The collision and casualty data sets contains an assessment of the current annual average collision and casualty data compared against the equivalent baseline period (Appendix 'A')

The overall summary is that since the cameras were introduced there has been sustained improvements in driver behaviour and a corresponding fall in collisions and casualties as well as additional benefits brought through reduced incidents and their subsequent impact, which has improvemed journey time reliability. The main headlines from the data monitoring are:

- The annual average number of fatal casualties between **Dunblane and Inverness** is down by 30% compared to the baseline average (15 month after period)
- The annual average number of 'fatal and serious' collisions between **Dunblane and Inverness** overall is down by almost 44%, with fatal and serious casualties down 60%
- There have been no fatal collisions between **Dunblane and Perth** and the annual average number of serious collisions and injuries is down by over 82%
- The number of 'fatal and serious' collisions between **Perth and Inverness** is down by almost 31%, with fatal and serious casualties down by over 56%
- The number of serious injury casualties between Perth and Inverness is down by over 70%
- The number of vehicles exceeding the speed limit remains low, at 1 in 10 compared to the historic benchmark figure of 1 in 3
- The number of vehicles speeding excessively (more than 10 mph above the speed limit) remains low, with a sustained reduction from the historic benchmark figure of 1 in 10 vehicles to 1 in 250
- The number of vehicles detected by the ASC system which were considered by Police Scotland for further action remains extremely low at an average of 13 per day (less than 0.03% of the overall volume of vehicles using the route).

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 decided to exclude this period to ensure that baseline data was not influenced by this activity. 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 are at a point in the project where the available casualty data facilitates the provision of an average annual performance figure to compare against the equivalent baseline figure. 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

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 January 2016.

This report contains an annual average comparison with the baseline figures (see Section 4 for explanation) which shows a sustained drop in injury collisions and casualties across the route. The headline figures from the data are:

- The number of fatal and serious accidents between Dunblane and Inverness is down by almost 44%
- The number of fatal and serious casualties between Dunblane and Inverness is down by 60%
- The total number of injury accidents is down by over 31% and injury related casualties by over 46%

Sadly since the last report two people have been fatally injured in two separate collisions which occurred in January and March 2016. One of the collisions was on a dual carriageway section near Birnam not covered by the average speed cameras while and the other was on a single carriageway section near to Dalwhinnie. Whilst investigations are still on-going Police Scotland have confirmed that neither collision was as a result of excessive speed or involved an overtaking manoeuvre.

The A9 Safety Group will await the detailed findings from these collisions to ascertain what further mitigation measures may be appropriate.

6. Vehicle Speed Data

Previous reports have highlighted the significant reduction in the number of vehicles exceeding the maximum speed limits along the A9 corridor between Dunblane and Inverness. The latest data continues to evidence this pattern with driver behaviour in terms of speed limit compliance significantly improved in comparison to the baseline figures.

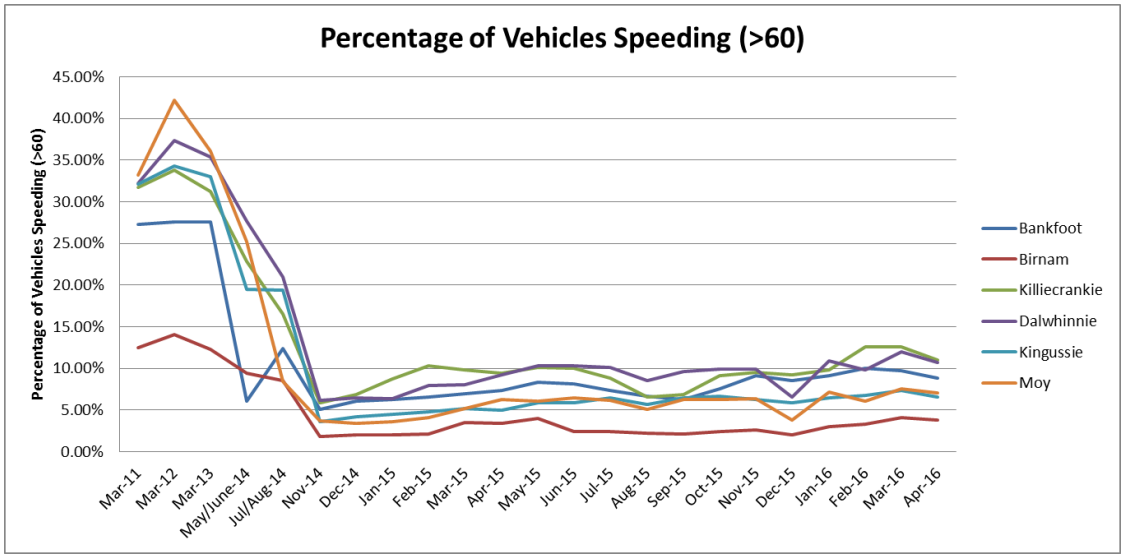
The continuing data set from the A9 has established the profile that 1 in 10 vehicles exceed the speed limit compared to the benchmark figure of 1 in 3. The impact of the system on driver behaviour in respect to vehicles travelling at more than 10 mph above the speed remains consistent with monitoring figures confirming a reduction of 95% from the benchmark figure which equates to a reduction from 1 in 10 vehicles to less than 1 in 250.

The data incorporates all vehicles including emergency service vehicles which may have been recorded responding to an emergency.

The January 2016 report highlighted some minor concerns about variability of speed and incidents on the southbound downhill stretches south of Perth. The A9 Safety Group at their last meeting (2 February 2016) agreed that BEAR Scotland should carry out further investigation in and around the laybys on this stretch to determine if any further mitigation measures may be necessary.

The latest data sets are also highlighting some variability on speed on the single carriageway section immediately north of Killiecrankie which will also be subject to further investigation.

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

Due to maintenance operations between Dunblane and Perth over the last few months there have been interruptions to the data gathering capability of sites on this part of the route. It is hoped that this will be resolved shortly, although a temporary portable solution will be considered if the situation continues. An assessment of the trend based on data from other sites is indicating that the consistency in driver behaviour is being maintained.

Police Scotland have advised that since the system went live on the 28th October 2014 through to 24 April 2016 there have been 6,914 vehicles detected by the system exceeding the speed limit which warranted further action. The latest quarterly data indicates that over the first 18 months of operation there have been on average 13 vehicles per day detected exceeding the operational threshold. In considering the average daily traffic volume in each direction of over 10,000 vehicles between Perth & Inverness and 24,000 vehicles between Dunblane and Perth this equates to an operational compliance in the region of 99.97% which is exceptionally good given the continuous enforcement capability on the route.

7. Incident Frequency & Impact

The previous report contained an evaluation of a full calendar years' worth of data (2015) with the 2013 baseline. This evaluation reported a 33% reduction in frequency and a 43% reduction in impact in terms of restriction or closure. The latest data set incorporates the incident data from the first quarter of 2016 which continues to support the established trend of reductions in both frequency and impact.

The latest figures show significant reductions with both the baseline figure and the respective 1st quarter figures of 2014 and 2015. While these figures continue to evidence the

overall downward trend they should be considered on the basis that incident frequency within this period is often impacted by the severity of the winter experienced. With relatively few severe weather related events during the 2015 / 16 winter this will have had some degree of influence on the figures. A closer look at the figures reveals that there were some significant impacts associated with broken down HGV's and HGV's which had shed their load, which necessitated both full route closures and lane restrictions.

8. Journey Time Analysis – Perth to Inverness

The January 2016 report highlighted that journey time analysis to date has indicated an average rise of 1 – 9 minutes dependent on day of the week. It was also identified that major road works on the route would influence journey times and with the start of the construction of the dualling programme towards the end of 2015 on the Kincraig to Dalraddy section.

While initial traffic management arrangements to facilitate the construction operations had an impact on journey times, travel through the works area since late January has been essentially free flow with journey times now consistent with the established pattern.

9. Traffic Volumes

Traffic counters are indicating that traffic growth continues to be sustained along the length of the A9 with growth averaging 2.9% year on year.

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Appendix A Collision & Casualty Analysis – Dunblane to Perth

DUNBLANE TO INVERNESS - 3 YEAR AVERAGE COMPARISONS - 15 MONTHS OPERATION TO THE END OF JANUARY 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 (15 Months)	0.00	0.80	0.80	12.00	12.80
First 15 Months ASC	0	1	1	15	16
% Annual Average Variation	-100.0%	-78.2%	-81.5%	-32.1%	-41.8%

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 (15 Months)	4.80	4.00	8.80	20.80	29.60
First 15 Months ASC	6	5	11	26	37
% Annual Average Variation	-4.0%	-47.8%	-30.5%	-23.0%	-25.4%

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 (15 Months)	4.80	4.80	9.60	32.80	42.40
First 15 Months ASC	6	6	12	41	53
% Annual Average Variation	-15.3%	-57.6%	-43.5%	-26.6%	-31.2%

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 (15 Months)	0.00	0.80	0.80	15.20	16.00
First 15 Months ASC	0	1	1	19	20
% Annual Average Variation	-100.0%	-78.2%	-81.5%	-41.5%	-47.3%

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 (15 Months)	5.60	4.80	10.40	36.80	47.20
First 15 Months ASC	7	6	13	46	59
% Annual Average Variation	-23.6%	-70.6%	-56.1%	-41.9%	-45.7%

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 (15 Months)	5.60	5.60	11.20	52.00	63.20
First 15 Months ASC	7	7	14	65	79
% Annual Average Variation	-30.0%	-72.0%	-60.0%	-41.8%	-46.1%

Appendix B - Vehicle Speed Data – Dunblane to Perth

SPEED ANALYSIS DUNBLANE - PERTH (SPOT SPEED)

Sites	SEPTEMBER 2014 - BENCHMARK				DECEMBER 2014				MARCH 2014				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%	>70	70 - 80	80 - 90	>90	8.76%	8.46%	0.26%	0.04%
Crieff N/B	28.47%	25.10%	3.37%	0.00%	NOT AVAILABLE				NOT AVAILABLE				6.03%	5.89%	0.13%	0.01%
Auchterarder N/B	29.44%	25.42%	3.71%	0.31%	NOT AVAILABLE				5.44%	5.32%	0.11%	0.01%	NOT AVAILABLE			
Broxden S/B	27.74%	25.73%	2.01%	0.00%	7.63%	7.45%	0.16%	0.02%	8.01%	7.91%	0.08%	0.02%	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%	10.22%	9.91%	0.28%	0.03%	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%	11.65%	11.21%	0.39%	0.05%	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%				
Crieff N/B	6.58%	6.45%	0.12%	0.01%	4.29%	4.21%	0.07%	0.01%	NOT AVAILABLE							
Auchterarder N/B	NOT AVAILABLE				8.29%	7.93%	0.27%	0.09%	12.72%	12.16%	0.42%	0.14%				
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%				
Dunning S/B	15.74%	15.16%	0.51%	0.07%	NOT AVAILABLE				NOT AVAILABLE							
Blackford S/B	NOT AVAILABLE				NOT AVAILABLE				NOT AVAILABLE							

Appendix C - Vehicle Speed Data – Perth to Inverness

SPEED ANALYSIS PERTH - INVERNESS (SPOT SPEED)

Sites	MARCH 2012 BENCHMARK				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%				
Birnam	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				
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%				
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%				
Kingussie	6.49%	6.00%	0.43%	0.06%	NOT AVAILABLE				7.34%	6.80%	0.49%	0.05%				
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%				

Appendix D - Incident Analysis – Dunblane to Inverness

INCIDENTS

	Perth - Inverness		Dunblane - Perth		A9 Total	
	Incidents	Restriction	Incidents	Restriction	Incidents	Restriction
2013 Baseline	**135**	**282**	**49**	**121**	**184**	**403**
2014 Total	**62**	**124**	**90**	**120**	**152**	**244**
2015 Total	**71**	**167**	**53**	**65**	**124**	**232**
Q1 2016	11	24	9	11	20	35

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
Sep -15 N/B	122	122	122	122	121	120	116
Sep-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							
Jun 16 S/B							

PERTH - KINGUSSIE

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Nov-15 N/B	79	80	79	81	80	73	74
Nov-15 S/B	78	82	80	81	78	74	75
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							
Jun 16 S/B							

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							
Jun 16 S/B							

AVIEMORE - INVERNESS

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Nov-15 N/B	30	33	32	33	30	29	29
Nov-15 S/B	33	31	32	30	31	30	30
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							
Jun 16 S/B							

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%**

* Some assumption due to technical problems

2016 COMPARISON WITH 2015

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									
% Increase/Decrease												

Birnam Average

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									
% Increase/Decrease	**13.4%**	**4.3%**	**12.3%**									

Dalwhinnie Average **10.0%**

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									
% Increase/Decrease	**11.9%**	**5.1%**	**9.7%**									

Moy Average **8.9%**

Note: technical difficulties are continuing to cause difficultieswith the Birnam data station