

Consulting



Report Title

A9 Parallel Running - Investigation Survey

Transport Scotland

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EXECUTIVE SUMMARY

The Scottish Ministers received a complaint that there were vehicles leaving the A9 to avoid the recently installed Average Speed Camera System on the route. The complaint perceives that the vehicles are using the secondary roads as a "rat-run".

The routes which have raised concerns are the:-

- B9152/A95/B9153/A938 Kingussie - Aviemore - Carrbridge (Route 1)
- B9154 Loch Moy (Route 2)

Amey were commissioned as part of their Traffic Scotland Operations and Infrastructure Services Contact (TSOIS) to collect and collate traffic data on both these routes to ascertain if vehicles were using these routes as an alternative. Both Origin/Destination (route/vehicle tracking) and Automatic Traffic Counter (traffic count) surveys were commissioned.

The evidence provided from the traffic data collected on these routes for the period 5th January – 11th January 2015 would strongly indicate that there is no issue with vehicles using the secondary roads and routes as detailed above as a rat-run to the A9.

• **METHODOLOGY OF SURVEYS**





Origin/Destination (route/vehicle tracking)

A “Bluetooth” Detection System was deployed which traced vehicles through pre-defined route points, thus providing origin-destination information.


The unique address of each signal was logged, along with the time to the nearest second. A similar process occurred at every chosen route point, and the data then processed through unique software, it builds up an O-D matrix of the required traffic movements.

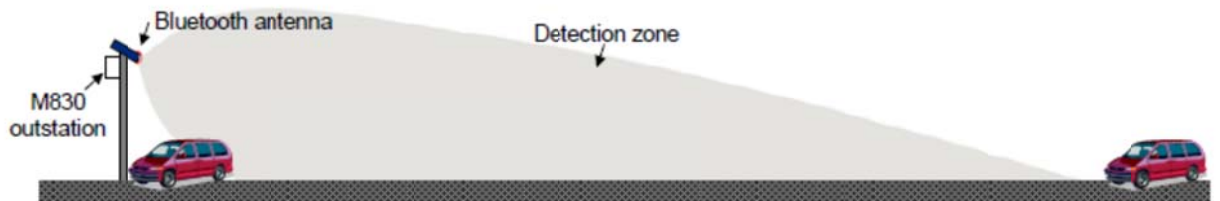
How it Works

Bluetooth Monitoring System

-  Mobile Phones
-  Hand Free Car Kits
-  Sat Nav Systems
-  Laptops

Creates a unique signature

-  MAC address (Encrypted)



Automatic Traffic Count (ATC)

Air pulse recording traffic measurement equipment connected to pneumatic road tubes was deployed adjacent to the “Bluetooth” Detection System at the pre-defined route points to provide volumetric traffic flows by direction.



• SCOPE OF SURVEYS

Routes

- B9152/A95/B9153/A938 Kingussie - Aviemore - Carrbridge (Route 1)
 - 4 no Bluetooth Waypoints (WP1-WP4)
 - 2 no ATC Waypoints (WP2 & WP3)

- B9154 Loch Moy (Route 2)
 - 2 no Bluetooth Waypoints (WP5-WP6)
 - 1 no ATC Waypoints (WP5)

Period of Surveys

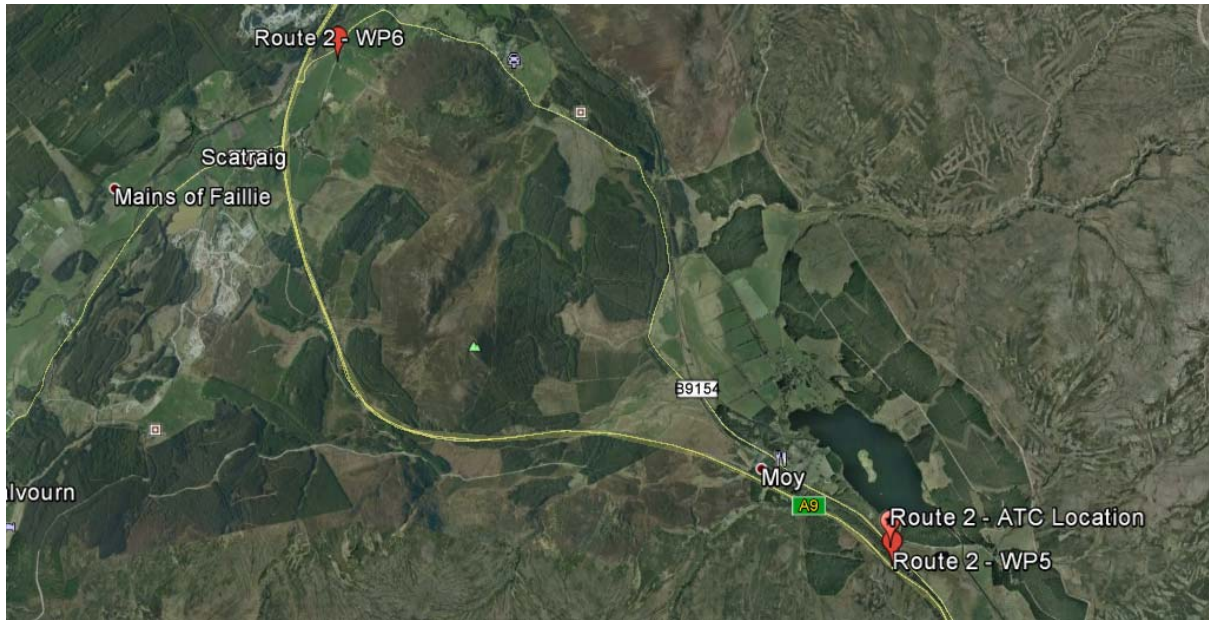
- Monday 5th January to Sunday 12th January (Inclusive)

Provision of Origin – Destination Route Data

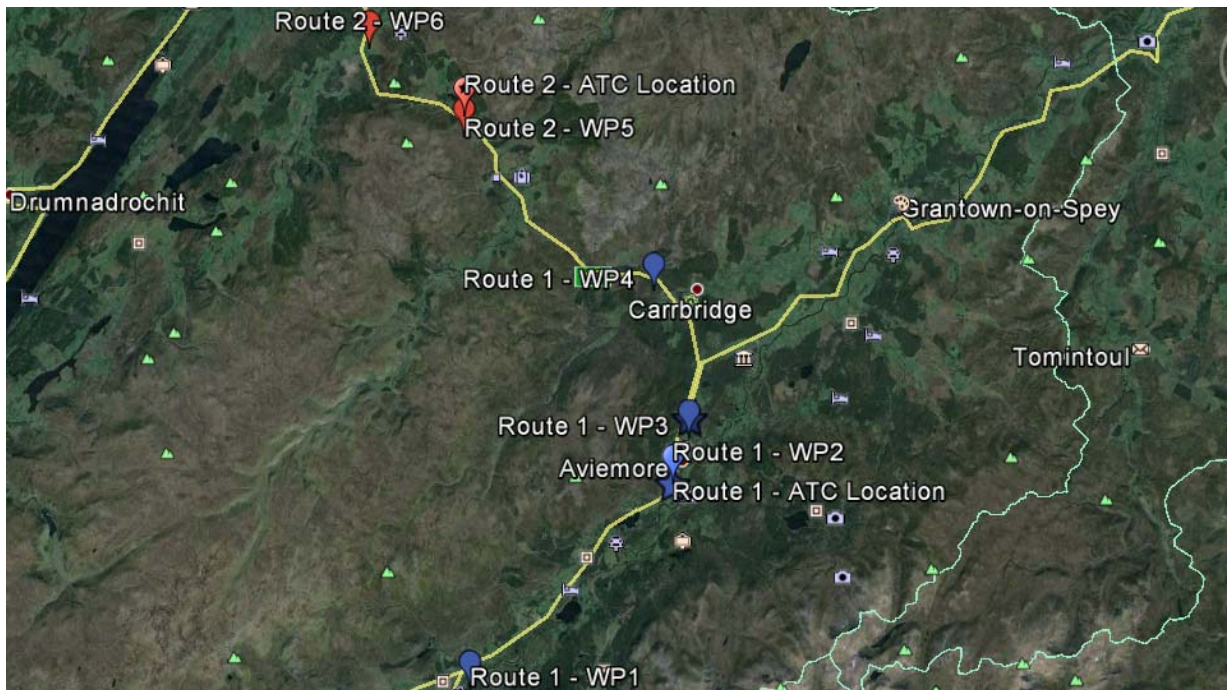
- Route 1
 - WP1 – WP2 (NB) & WP2 – WP1 (SB)
 - WP2 – WP3 (NB) & WP3 – WP2 (SB)
 - WP3 – WP4 (NB) & WP4 – WP3 (SB)
 - WP1 – WP4 (NB) & WP4 – WP1 (SB) (Assumed Rat-Run)



- Route 2
 - WP5 – WP6 (NB) & WP6 – WP5 (SB) (Assumed Rat-Run)



- Route 1&2
 - WP1 – WP6 (NB) & WP6 – WP1 (SB) (Assumed Rat-Run)



• **BLUETOOTH SURVEY RESULTS – ORIGIN & DESTINATION (O&D)**

Not all vehicles have a Bluetooth transmitter in them and not all Bluetooth transmitters are in vehicles. However, there is a sufficient proportion of vehicles with a Bluetooth transmitter to provide an adequate sample to understand vehicle movements and trends.

In a previous report prepared by Stephen Cragg of Transport Scotland “Bluetooth Detection – Cheap But Challenging”, analysis of a bluetooth survey compared to an automatic traffic counter on the A9 route provided the following results for comparison,

- Weekday - Bluetooth detects equated to 33% (1/3rd) of the ATC (count)
- Weekend - Bluetooth detects equated to 20% (1/5th) of the ATC (count)

Reference: *Table 4.2 of section 6_“Bluetooth Detection – Cheap But Challenging”*

For the purpose of this survey, results for 5th – 9th will be factored by 3 and 10th - 11th Jan will be factored by 5.

WP1 – WP2

TIME	Waypoint 1 - Waypoint 2							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	1	0	0	1
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	1	0	0	1
0700 - 0800	0	0	4	2	4	0	0	10
0800 - 0900	0	0	3	4	4	0	0	11
0900 - 1000	1	2	7	5	6	3	0	24
1000 - 1100	0	5	5	5	9	1	1	26
1100 - 1200	0	3	4	7	4	4	1	23
1200 - 1300	2	4	10	5	1	4	1	27
1300 - 1400	1	2	4	4	7	6	1	25
1400 - 1500	1	4	6	8	9	1	1	30
1500 - 1600	1	0	2	2	3	0	1	9
1600 - 1700	1	1	1	0	1	1	0	5
1700 - 1800	1	0	4	0	0	0	1	6
1800 - 1900	0	1	1	0	0	0	1	3
1900 - 2000	0	0	2	1	2	1	1	7
2000 - 2100	0	0	0	0	1	0	0	1
2100 - 2200	0	0	0	1	0	0	0	1
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	8	22	53	44	53	21	9	210
24h Session Average	0.33	0.92	2.21	1.83	2.21	0.88	0.38	8.75
Factored Results	24	66	159	132	159	63	27	630
Factored by %	33	33	33	33	33	20	20	

WP2 – WP1

TIME	Waypoint 2 - Waypoint 1							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	1	1
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	1	0	0	0	0	0	1
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	1	0	0	1
0600 - 0700	0	0	2	1	1	0	0	4
0700 - 0800	0	0	2	3	2	0	0	7
0800 - 0900	0	1	4	2	5	0	0	12
0900 - 1000	0	5	7	7	6	2	0	27
1000 - 1100	1	4	5	6	5	2	0	23
1100 - 1200	0	5	5	8	3	2	2	25
1200 - 1300	0	2	7	6	4	4	2	25
1300 - 1400	1	3	5	6	5	3	0	23
1400 - 1500	0	4	5	5	7	0	1	22
1500 - 1600	1	3	4	6	5	2	1	22
1600 - 1700	1	0	4	3	3	0	0	11
1700 - 1800	1	3	3	3	3	1	0	14
1800 - 1900	0	0	2	1	1	1	2	7
1900 - 2000	0	0	1	0	1	0	0	2
2000 - 2100	0	1	0	0	0	0	0	1
2100 - 2200	0	1	0	1	0	1	0	3
2200 - 2300	0	1	0	1	0	0	0	2
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	5	34	56	59	52	18	9	233
24h Session Average	0.21	1.42	2.33	2.46	2.17	0.75	0.38	9.71
Factored Results	15	102	168	177	156	54	27	699
Factored by %	33	33	33	33	33	20	20	

WP2 – WP3

TIME	Waypoint 2 - Waypoint 3							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	2	0	1	1	0	1	5
0100 - 0200	2	2	2	1	1	0	0	8
0200 - 0300	1	0	1	0	1	0	0	3
0300 - 0400	1	0	0	0	0	0	1	2
0400 - 0500	2	1	0	0	2	0	0	5
0500 - 0600	0	3	0	2	1	0	0	6
0600 - 0700	1	2	8	4	1	4	0	20
0700 - 0800	3	5	5	10	5	2	0	30
0800 - 0900	6	4	8	10	4	3	0	35
0900 - 1000	10	8	9	14	13	7	4	65
1000 - 1100	9	8	13	9	12	6	0	57
1100 - 1200	13	7	11	11	9	3	4	58
1200 - 1300	13	5	7	14	14	5	4	62
1300 - 1400	7	9	5	10	11	5	3	50
1400 - 1500	8	9	5	14	7	5	6	54
1500 - 1600	9	8	4	12	8	3	9	53
1600 - 1700	9	4	4	12	6	5	2	42
1700 - 1800	3	7	7	1	5	2	2	27
1800 - 1900	4	2	2	7	4	1	2	22
1900 - 2000	3	3	3	4	0	3	2	18
2000 - 2100	3	0	1	4	1	2	1	12
2100 - 2200	1	0	2	3	3	3	0	12
2200 - 2300	1	1	1	2	1	1	0	7
2300 - 0000	0	2	0	0	0	0	0	2
24h Session Total	109	92	98	145	110	60	41	655
24h Session Average	4.54	3.83	4.08	6.04	4.58	2.50	1.71	27.29
Factored Results	327	276	294	435	330	180	123	1965
Factored by %	33	33	33	33	33	20	20	

WP3 – WP2

TIME	Waypoint 3 - Waypoint 2							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	1	0	3	0	0	1	5
0100 - 0200	0	1	4	2	2	1	1	11
0200 - 0300	1	0	1	1	2	0	1	6
0300 - 0400	0	1	0	0	2	1	3	7
0400 - 0500	1	1	1	0	1	0	0	4
0500 - 0600	0	2	0	0	2	1	1	6
0600 - 0700	3	8	2	6	4	1	2	26
0700 - 0800	3	3	6	8	3	3	0	26
0800 - 0900	9	10	8	18	9	4	2	60
0900 - 1000	12	15	6	22	10	5	4	74
1000 - 1100	17	14	14	14	16	8	9	92
1100 - 1200	7	4	6	10	11	5	9	52
1200 - 1300	9	6	15	17	11	8	4	70
1300 - 1400	7	4	9	10	10	4	2	46
1400 - 1500	7	3	9	10	12	5	2	48
1500 - 1600	6	8	6	10	9	4	3	46
1600 - 1700	3	5	6	12	7	4	1	38
1700 - 1800	5	2	1	7	6	2	1	24
1800 - 1900	7	2	4	5	7	2	0	27
1900 - 2000	3	4	0	3	4	3	1	18
2000 - 2100	1	0	0	2	1	2	2	8
2100 - 2200	1	0	0	4	1	0	1	7
2200 - 2300	2	0	0	1	0	1	0	4
2300 - 0000	0	0	0	1	0	1	1	3
24h Session Total	104	94	98	166	130	65	51	708
24h Session Average	4.33	3.92	4.08	6.92	5.42	2.71	2.13	29.50
Factored Results	312	282	294	498	390	195	153	2124
Factored by %	33	33	33	33	33	20	20	

WP3 – WP4

TIME	Waypoint 3 - Waypoint 4							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	1	1
0200 - 0300	0	0	0	0	0	1	0	1
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	1	0	0	0	0	1
0600 - 0700	0	0	1	1	2	0	1	5
0700 - 0800	4	0	0	0	1	0	0	5
0800 - 0900	1	2	3	1	4	0	0	11
0900 - 1000	2	1	2	7	2	1	0	15
1000 - 1100	1	1	6	3	1	1	0	13
1100 - 1200	4	3	4	7	1	2	0	21
1200 - 1300	1	4	1	2	0	2	0	10
1300 - 1400	4	5	2	0	0	3	2	16
1400 - 1500	4	2	3	1	1	1	1	13
1500 - 1600	3	1	1	0	0	0	1	6
1600 - 1700	0	0	0	1	0	0	0	1
1700 - 1800	0	3	1	1	1	0	0	6
1800 - 1900	0	0	0	2	0	0	0	2
1900 - 2000	0	0	0	0	0	1	0	1
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	1	0	0	1
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	1	0	0	0	0	0	1
24h Session Total	24	23	25	26	14	12	6	130
24h Session Average	1.00	0.96	1.04	1.08	0.58	0.50	0.25	5.42
Factored Results	72	69	75	78	42	36	18	390
Factored by %	33	33	33	33	33	20	20	



WP4 – WP3

TIME	Waypoint 4 - Waypoint 3							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	1	0	0	0	0	1
0500 - 0600	0	1	0	1	0	0	0	2
0600 - 0700	0	1	1	2	1	0	0	5
0700 - 0800	5	3	3	0	2	1	0	14
0800 - 0900	9	3	2	2	1	0	0	17
0900 - 1000	2	7	5	7	4	1	0	26
1000 - 1100	5	3	3	3	1	1	0	16
1100 - 1200	4	1	1	3	1	0	0	10
1200 - 1300	1	4	4	6	2	6	1	24
1300 - 1400	4	0	2	1	1	1	2	11
1400 - 1500	3	1	6	0	3	0	0	13
1500 - 1600	3	1	1	2	0	1	1	9
1600 - 1700	1	0	1	1	0	0	0	3
1700 - 1800	1	1	2	0	0	0	0	4
1800 - 1900	0	0	1	0	1	0	0	2
1900 - 2000	0	1	0	0	0	0	0	1
2000 - 2100	0	0	0	0	1	0	0	1
2100 - 2200	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	38	27	33	28	18	11	4	159
24h Session Average	1.58	1.13	1.38	1.17	0.75	0.46	0.17	6.63
Factored Results	114	81	99	84	54	33	12	477
Factored by %	33	33	33	33	33	20	20	

WP1 – WP4

TIME	Waypoint 1 - Waypoint 4							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	1	0	0	1
0700 - 0800	0	0	0	0	0	0	0	0
0800 - 0900	0	0	0	1	0	0	0	1
0900 - 1000	0	0	0	2	1	1	0	4
1000 - 1100	0	0	1	0	0	0	0	1
1100 - 1200	0	1	0	1	0	0	0	2
1200 - 1300	0	0	0	0	1	0	0	1
1300 - 1400	0	0	1	0	0	0	0	1
1400 - 1500	0	0	0	0	1	0	0	1
1500 - 1600	0	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0	0
1800 - 1900	0	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	0	1	2	4	4	1	0	12
24h Session Average	0.00	0.04	0.08	0.17	0.17	0.04	0.00	0.50
Factored Results	0	3	6	12	12	3	0	36
Factored by %	33	33	33	33	33	20	20	

WP4 – WP1

TIME	Waypoint 4 - Waypoint 1							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	1	2	0	0	3
0700 - 0800	0	2	0	0	0	0	0	2
0800 - 0900	0	0	0	0	0	0	0	0
0900 - 1000	0	3	1	1	0	0	0	5
1000 - 1100	1	0	0	0	0	0	0	1
1100 - 1200	0	0	1	0	1	0	0	2
1200 - 1300	0	1	1	1	0	1	0	4
1300 - 1400	0	0	0	0	1	0	0	1
1400 - 1500	1	0	0	0	0	0	0	1
1500 - 1600	0	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0	0
1800 - 1900	0	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	2	6	3	3	4	1	0	19
24h Session Average	0.08	0.25	0.13	0.13	0.17	0.04	0.00	0.79
Factored Results	6	18	9	9	12	3	0	57
Factored by %	33	33	33	33	33	20	20	

WP5 – WP6

TIME	Waypoint 5 - Waypoint 6							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	0	0	0	0
0700 - 0800	0	2	2	1	4	0	0	9
0800 - 0900	0	0	0	2	1	0	0	3
0900 - 1000	0	0	1	1	0	0	2	4
1000 - 1100	1	0	1	1	2	0	0	5
1100 - 1200	0	0	0	0	0	0	0	0
1200 - 1300	0	0	0	0	0	1	1	2
1300 - 1400	0	0	1	0	0	0	0	1
1400 - 1500	1	2	2	3	0	0	0	8
1500 - 1600	0	0	0	0	1	1	0	2
1600 - 1700	0	0	0	0	0	0	0	0
1700 - 1800	1	0	1	0	0	0	0	2
1800 - 1900	0	1	0	0	0	0	0	1
1900 - 2000	0	0	0	0	0	0	1	1
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	3	5	8	8	8	2	4	38
24h Session Average	0.13	0.21	0.33	0.33	0.33	0.08	0.17	1.58
Factored Results	9	15	24	24	24	6	12	114
Factored by %	33	33	33	33	33	20	20	

WP6 – WP5

TIME	Waypoint 6 - Waypoint 5							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	2	2	1	0	0	5
0700 - 0800	0	3	3	1	0	1	0	8
0800 - 0900	0	2	2	1	0	0	2	7
0900 - 1000	3	2	0	1	0	0	0	6
1000 - 1100	2	1	1	0	1	0	0	5
1100 - 1200	0	2	0	0	1	0	0	3
1200 - 1300	0	18*	0	0	0	0	0	0
1300 - 1400	0	0	0	0	0	0	0	0
1400 - 1500	0	0	0	3	0	0	0	3
1500 - 1600	0	1	0	2	0	1	0	4
1600 - 1700	3	1	0	0	0	0	0	4
1700 - 1800	0	1	0	1	0	0	0	2
1800 - 1900	0	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	1	0	0	0	0	1
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	8	13	9	11	3	2	2	48
24h Session Average	0.33	0.57	0.38	0.46	0.13	0.08	0.08	2.00
Factored Results	24	39	27	33	9	6	6	144
Factored by %	33	33	33	33	33	20	20	

18* Data omitted due to not normal trend - an assumed local event

WP1 – WP6

TIME	Waypoint 1 - Waypoint 6						TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	
0000 - 0100	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	0	0	0
0700 - 0800	1	0	1	0	0	0	2
0800 - 0900	0	0	0	0	0	0	0
0900 - 1000	0	0	0	0	0	0	0
1000 - 1100	0	0	0	0	0	0	0
1100 - 1200	0	0	0	0	0	0	0
1200 - 1300	0	0	0	0	0	0	0
1300 - 1400	0	0	1	0	0	0	1
1400 - 1500	0	0	0	0	0	0	0
1500 - 1600	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0
1800 - 1900	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0
24h Session Total	1	0	2	0	0	0	3
24h Session Average	0.04	0.00	0.08	0.00	0.00	0.00	0.13
Factored Results	3	0	6	0	0	0	9
Factored by %	33	33	33	33	33	20	20

WP6 – WP1

TIME	Waypoint 6 - Waypoint 1							TOTAL
	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	
0000 - 0100	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	0	0	0	0
0700 - 0800	0	0	0	0	0	0	0	0
0800 - 0900	0	0	0	0	0	0	0	0
0900 - 1000	0	0	0	0	0	0	0	0
1000 - 1100	0	0	0	0	0	0	0	0
1100 - 1200	0	0	0	0	0	0	0	0
1200 - 1300	0	1	0	1	0	0	0	2
1300 - 1400	0	0	0	0	0	0	0	0
1400 - 1500	0	0	0	0	1	0	0	1
1500 - 1600	0	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0	0
1800 - 1900	0	0	0	0	0	0	0	0
1900 - 2000	0	0	0	0	0	0	0	0
2000 - 2100	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0
2300 - 0000	0	0	0	0	0	0	0	0
24h Session Total	0	1	0	1	1	0	0	3
24h Session Average	0.00	0.04	0.00	0.04	0.04	0.00	0.00	0.13
Factored Results	0	3	0	3	3	0	0	9
Factored by %	33	33	33	33	33	20	20	

• COUNT SURVEY RESULTS

WP2 - ATC

Time	Hourly Totals	WP2 - Southbound												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	2498	5	1	2163	20	257	17	6	3	6	4	15	1	0
Tue	2622	6	1	2262	14	288	23	1	0	9	11	6	1	0
Wed	2534	3	1	2203	8	263	23	5	3	3	7	15	0	0
Thu	2628	2	1	2253	19	280	23	11	3	4	10	17	5	0
Fri	2767	0	1	2388	18	301	16	14	1	6	9	13	0	0
Sat	2066	7	1	1739	12	242	45	10	0	3	4	3	0	0
Sun	636	0	0	573	1	49	9	2	0	0	2	2	0	0
Weekly	15751	23	6	13581	92	1680	156	49	10	31	47	71	7	0

Time	Hourly Totals	WP2 - Northbound												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	2426	2	1	2160	18	155	75	5	1	3	3	3	0	0
Tue	2432	3	1	2128	11	164	108	6	1	6	0	4	0	0
Wed	2271	1	0	1973	5	116	150	16	0	1	2	6	0	1
Thu	2322	3	1	1986	11	155	144	10	1	3	1	7	0	0
Fri	2420	2	0	2115	10	144	127	9	0	2	4	6	0	1
Sat	2025	2	1	1775	9	159	71	6	0	0	0	2	0	0
Sun	809	0	0	744	2	50	10	1	0	2	1	0	1	0
Weekly	14705	13	4	12881	66	943	685	53	3	17	11	28	1	2

Time	Hourly Totals	WP2 - Combined												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	4924	7	2	4323	38	412	92	11	4	9	7	18	1	0
Tue	5054	9	2	4390	25	452	131	7	1	15	11	10	1	0
Wed	4805	4	1	4176	13	379	173	21	3	4	9	21	0	1
Thu	4950	5	2	4239	30	435	167	21	4	7	11	24	5	0
Fri	5187	2	1	4503	28	445	143	23	1	8	13	19	0	1
Sat	4091	9	2	3514	21	401	116	16	0	3	4	5	0	0
Sun	1445	0	0	1317	3	99	19	3	0	2	3	2	1	0
Weekly	30456	36	10	26462	158	2623	841	102	13	48	58	99	8	2

Partail Data Available 0000-0900hrs

WP3 - ATC

Time	Hourly Totals	WP3 - Southbound												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	2246	1	2	1759	24	246	19	3	2	14	36	135	3	2
Tue	2256	0	0	1691	24	287	16	5	0	17	63	151	1	1
Wed	2332	0	0	1743	19	303	19	8	2	18	67	149	1	3
Thu	2406	1	1	1802	30	311	15	12	7	18	63	143	1	2
Fri	2533	1	0	2020	25	295	17	8	6	16	44	101	0	0
Sat	1433	0	0	1219	11	157	6	3	3	5	10	19	0	0
Sun	1295	0	0	1120	4	126	3	2	0	5	13	21	0	1
Weekly	14501	3	3	11354	137	1725	95	41	20	93	296	719	6	9

Time	Hourly Totals	WP3 - Northbound												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	2416	2	1	1917	34	250	30	6	3	9	61	100	1	2
Tue	2159	1	0	1664	32	243	25	6	0	18	50	118	1	1
Wed	2283	0	1	1756	19	252	29	5	2	19	68	129	2	1
Thu	2330	0	0	1767	23	283	24	13	5	12	56	146	1	0
Fri	2254	2	0	1807	23	245	18	9	2	11	43	92	1	1
Sat	1330	2	0	1155	9	121	10	3	0	4	7	18	1	0
Sun	1485	0	0	1346	7	91	5	3	1	3	12	17	0	0
Weekly	14257	7	2	11412	147	1485	141	45	13	76	297	620	7	5

Time	Hourly Totals	WP3 - Combined												
		Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train
Mon	4662	3	3	3676	58	496	49	9	5	23	97	235	4	4
Tue	4415	1	0	3355	56	530	41	11	0	35	113	269	2	2
Wed	4615	0	1	3499	38	555	48	13	4	37	135	278	3	4
Thu	4736	1	1	3569	53	594	39	25	12	30	119	289	2	2
Fri	4787	3	0	3827	48	540	35	17	8	27	87	193	1	1
Sat	2763	2	0	2374	20	278	16	6	3	9	17	37	1	0
Sun	2780	0	0	2466	11	217	8	5	1	8	25	38	0	1
Weekly	28758	10	5	22766	284	3210	236	86	33	169	593	1339	13	14

WP5 – ATC

Time	Hourly Totals	WP5 - Southbound												
		Cycles	Motor	Car Van	Car	2 Axle	3 Axle	4 Axle	3 Axle	4 Axle	5 Axle	6 Axle	Double Road Train	Triple Road Train
			Cycles		Towing	Van	Rigid	Rigid	Artic	Artic	Artic	Artic		
Mon	131	1	0	111	2	15	0	1	0	0	0	1	0	0
Tue	264	1	0	217	5	33	2	0	0	0	2	4	0	0
Wed	153	0	0	130	3	16	0	1	0	1	0	2	0	0
Thu	169	0	0	140	2	22	1	1	1	0	0	2	0	0
Fri	167	0	0	150	1	15	0	0	0	0	1	0	0	0
Sat	94	0	0	80	5	8	0	1	0	0	0	0	0	0
Sun	69	0	0	63	0	4	0	2	0	0	0	0	0	0
Weekly	1047	2	0	891	18	113	3	6	1	1	3	9	0	0

Time	Hourly Totals	WP5 - Northbound												
		Cycles	Motor	Car Van	Car	2 Axle	3 Axle	4 Axle	3 Axle	4 Axle	5 Axle	6 Axle	Double Road Train	Triple Road Train
			Cycles		Towing	Van	Rigid	Rigid	Artic	Artic	Artic	Artic		
Mon	122	0	0	105	1	14	2	0	0	0	0	0	0	0
Tue	113	0	0	94	6	11	1	0	0	1	0	0	0	0
Wed	129	0	0	109	1	15	3	1	0	0	0	0	0	0
Thu	137	0	0	112	2	21	1	0	0	0	0	1	0	0
Fri	143	0	0	126	1	14	0	0	0	0	1	1	0	0
Sat	85	0	0	69	3	12	0	1	0	0	0	0	0	0
Sun	57	0	0	52	0	4	0	0	1	0	0	0	0	0
Weekly	786	0	0	667	14	91	7	2	1	1	1	2	0	0

Time	Hourly Totals	WP5 - Combined												
		Cycles	Motor	Car Van	Car	2 Axle	3 Axle	4 Axle	3 Axle	4 Axle	5 Axle	6 Axle	Double Road Train	Triple Road Train
			Cycles		Towing	Van	Rigid	Rigid	Artic	Artic	Artic	Artic		
Mon	253	1	0	216	3	29	2	1	0	0	0	1	0	0
Tue	377	1	0	311	11	44	3	0	0	1	2	4	0	0
Wed	282	0	0	239	4	31	3	2	0	1	0	2	0	0
Thu	306	0	0	252	4	43	2	1	1	0	0	3	0	0
Fri	310	0	0	276	2	29	0	0	0	0	2	1	0	0
Sat	179	0	0	149	8	20	0	2	0	0	0	0	0	0
Sun	126	0	0	115	0	8	0	2	1	0	0	0	0	0
Weekly	1833	2	0	1558	32	204	10	8	2	2	4	11	0	0

• **MATCHED O&D JOURNEY TIMES**

WP1 – WP4

DATE	Waypoint 1 - Waypoint 4		
	Origin	Destination	Duration
06-Jan	11:46:09	12:54:51	01:08:42
07-Jan	10:08:59	11:59:41	01:50:42
	13:40:44	14:18:46	00:38:02
08-Jan	08:43:26	10:40:28	01:57:02
	09:16:14	14:08:07	04:51:53
	09:57:05	12:03:22	02:06:17
09-Jan	11:04:57	14:09:59	03:05:02
	06:59:25	18:37:31	11:38:06
	09:02:16	09:30:34	00:28:18
10-Jan	12:40:11	15:55:12	03:15:01
	14:58:41	19:25:52	04:27:11
10-Jan	09:50:49	11:11:31	01:20:42

WP4 – WP1

DATE	Waypoint 4 - Waypoint 1		
	Origin	Destination	Duration
05-Jan	10:41:45	14:04:15	03:22:30
	14:41:25	15:56:56	01:15:31
06-Jan	07:42:22	14:23:05	06:40:43
	07:42:24	14:22:47	06:40:23
	09:07:15	13:11:48	04:04:33
	09:07:16	13:11:48	04:04:32
	09:26:04	11:56:09	02:30:05
07-Jan	12:42:58	15:59:28	03:16:30
	09:07:10	10:08:59	01:01:49
	11:11:42	16:02:15	04:50:33
08-Jan	12:28:30	15:08:17	02:39:47
	06:53:57	08:43:26	01:49:29
09-Jan	09:02:33	09:57:05	00:54:32
	12:03:22	12:55:50	00:52:28
10-Jan	06:21:29	11:04:34	04:43:05
	06:42:56	10:22:29	03:39:33
	11:46:18	12:48:17	01:01:59
10-Jan	13:09:16	15:45:26	02:36:10
10-Jan	12:03:47	12:59:55	00:56:08

WP5 – WP6

DATE	Waypoint 5 - Waypoint 6		
	Origin	Destination	Duration
05-Jan	10:38:00	11:14:14	00:36:14
	14:37:59	15:57:03	01:19:04
	17:25:23	18:10:56	00:45:33
06-Jan	07:05:11	07:23:47	00:18:36
	07:14:36	18:27:33	11:12:57
	14:09:31	15:06:42	00:57:11
	14:09:33	15:06:41	00:57:08
07-Jan	18:27:47	20:07:47	01:40:00
	07:06:00	17:11:32	10:05:32
	08:07:32	08:18:16	00:10:44
	08:07:37	08:18:18	00:10:41
	09:45:20	10:23:17	00:37:57
	10:10:25	10:41:36	00:31:11
	14:10:32	15:34:20	01:23:48
08-Jan	14:13:27	15:34:24	01:20:57
	14:57:26	15:20:54	00:23:28
	07:13:53	17:27:54	10:14:01
	07:54:28	17:11:24	09:16:56
	09:41:54	09:51:00	00:09:06
	10:14:35	10:30:49	00:16:14
	13:00:31	14:10:21	01:09:50
	14:13:26	14:22:03	00:08:37
09-Jan	14:57:16	15:11:35	00:14:19
	17:23:31	17:32:16	00:08:45
	07:15:46	07:24:15	00:08:29
	07:16:17	07:26:30	00:10:13
	07:28:26	07:40:39	00:12:13
	07:32:10	07:40:39	00:08:29
	08:18:22	08:33:38	00:15:16
	10:05:03	10:33:34	00:28:31
10-Jan	10:22:50	10:34:57	00:12:07
	15:36:26	16:23:32	00:47:06
	12:16:36	12:47:13	00:30:37
11-Jan	15:16:25	15:24:26	00:08:01
	09:11:37	14:17:08	05:05:31
	09:12:04	14:17:26	05:05:22
	12:51:10	12:59:04	00:07:54
	19:11:31	19:18:38	00:07:07

WP6 – WP5

DATE	Waypoint 6 - Waypoint 5		
	Origin	Destination	Duration
05-Jan	09:56:51	11:18:10	01:21:19
	09:56:53	11:18:04	01:21:11
	09:56:56	11:18:01	01:21:05
	10:29:01	11:19:17	00:50:16
	10:29:44	10:38:00	00:08:16
	16:03:48	17:06:09	01:02:21
	16:39:51	17:02:41	00:22:50
	16:57:21	17:19:13	00:21:52
06-Jan	07:22:25	16:45:06	09:22:41
	07:23:47	16:54:17	09:30:30
	07:23:47	16:53:59	09:30:12
	08:15:25	08:24:23	00:08:58
	08:51:47	08:59:31	00:07:44
	09:15:14	09:21:30	00:06:16
	09:41:47	10:12:25	00:30:38
	10:04:18	14:47:24	04:43:06
	11:05:49	11:11:54	00:06:05
	11:12:18	14:47:43	03:35:25
	12:05:21	12:11:55	00:06:34
	12:05:39	12:13:51	00:08:12
	12:06:41	12:14:06	00:07:25
	12:08:06	12:14:32	00:06:26
	12:08:38	12:14:42	00:06:04
	12:12:58	12:20:42	00:07:44
	12:15:52	12:23:14	00:07:22
	12:18:11	12:24:44	00:06:33
	12:20:40	12:27:50	00:07:10
	12:22:23	12:30:17	00:07:54
	12:22:23	12:30:04	00:07:41
	12:24:14	12:36:33	00:12:19
	12:24:30	12:33:21	00:08:51
	12:28:55	12:36:42	00:07:47
	12:33:50	17:38:59	05:05:09
	12:34:14	12:41:10	00:06:56
	12:35:46	12:44:25	00:08:39
	12:50:03	16:04:34	03:14:31
	15:41:12	15:47:11	00:05:59
	16:42:28	17:04:10	00:21:42
17:33:10	17:43:28	00:10:18	
07-Jan	06:54:23	07:01:28	00:07:05
	06:54:25	07:01:31	00:07:06
	07:23:07	16:55:54	09:32:47
	07:35:59	11:35:26	03:59:27
	07:42:02	10:57:49	03:15:47
	08:03:51	09:37:23	01:33:32
	08:03:54	09:37:17	01:33:23
	10:20:14	11:53:58	01:33:44
21:03:13	21:16:00	00:12:47	
08-Jan	06:55:23	14:13:26	07:18:03
	06:57:46	07:04:56	00:07:10
	07:39:04	07:45:04	00:06:00
	08:07:04	13:00:31	04:53:27
	09:49:06	09:56:12	00:07:06
	14:07:59	14:45:15	00:37:16
	14:10:03	14:17:43	00:07:40
	14:10:21	14:23:43	00:13:22
	15:32:08	15:47:12	00:15:04
	15:40:21	15:46:35	00:06:14
17:11:24	17:25:45	00:14:21	
09-Jan	06:46:46	16:32:00	09:45:14
	10:59:14	13:40:14	02:41:00
	11:39:43	11:50:10	00:10:27
10-Jan	07:11:46	13:06:55	05:55:09
	15:25:55	15:33:53	00:07:58
11-Jan	08:51:27	09:11:37	00:20:10
	08:51:31	09:11:06	00:19:35

- **SUMMARY OF RESULTS**

Route 1 (WP1-WP4 & WP4-WP1)

The total number of vehicles for the period 5th January – 11th January 2015 recorded at the ATC sites at WP2 & WP3 was 30,456 and 28,758 respectively and an average of 29,607 vehicles on the route.

The total number of actual matched O&D surveys (WP1-WP4 & WP4-WP1) for the period 5th January – 11th January 2015 was 31 and when factored was 93 which equates to 0.3% of possible journeys on this route.

On further analysis of the matched journey times it is obvious many of these journeys may be associated with cyclists, walkers and vehicles not using the route as a secondary route and rat-run for the A9 which would equate to less than 0.3% of possible journeys on this route.

Route 2 (WP5-WP6 & WP6-WP5)

The total number of vehicles for the period 5th January – 11th January 2015 recorded at the ATC site at WP5 was 1,833 vehicles using this route.

The total number of actual matched O&D surveys (WP5-WP6 & WP6-WP5) for the period 5th January – 11th January 2015 was 86 and when factored was 258 which equates to 14.1% of possible journeys on this route.

On further analysis of the matched journey times it is obvious many of these journeys may be associated with cyclists, walkers and vehicles not using the route as a secondary route and rat-run for the A9.

In-fact only 29 of the actual matched journeys was recorded at less than 15mins which equates overall to 3.1% of possible journeys on this route.

- **CONCLUSION**

The evidence provided from the traffic data collected on these routes for the period 5th January – 11th January 2015 would strongly indicate that there is no issue with vehicles using the secondary roads as a rat-run to the A9.