

MONITORING REPORT

**Prepared For Regional Cycle Monitoring Working Group
(Co-ordinated by Auckland Regional Transport Authority)**

**MANUAL CYCLE MONITORING IN THE
AUCKLAND REGION
March 2009**

Regional Summary

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

1.	INTRODUCTION	1
1.1	The Need For Reliable Cycle Trip Data	2
2.	REGIONAL SUMMARY OF RESULTS	8
2.1	Morning Peak	8
2.2	Evening Peak	21
2.3	Aggregated Total	39
2.4	Annual Average Daily Traffic (AADT) Estimates	48
2.5	School Bike Shed Count Summary	54

APPENDICES

Appendix One:	Methodology
Appendix Two:	Annual Average Daily Traffic (AADT) Calculation
Appendix Three:	School Bike Shed Information Sheet And Cover Letter

EXECUTIVE SUMMARY

This summary contains the aggregated cycle monitoring results of the 83 sites surveyed in Auckland region. All data was collected on March 10th (Waitakere and North Shore cities), 11th (Auckland city) and 12th (all other Territorial Authorities) 2009. Results are reported by site and peak traffic period (morning – 6:30am to 9:00am, and evening – 4:00pm to 7:00pm).

Key Points

- In 2009, the average number of cycle movements across the 83 sites in the Auckland region is 59 in the morning peak and 62 in the evening peak.
- Of the seven TAs, the average number of cyclists at each of the monitored sites in 2009 is highest in Auckland city (96 morning movements, 100 evening movements). While the average volume of morning cyclists is lowest in Franklin district (12 morning movements), Rodney district has the lowest evening cyclist counts (10 evening movements).

**Summary Table 1: Average Cyclist Movements by TA
- 2009 (83 sites)**

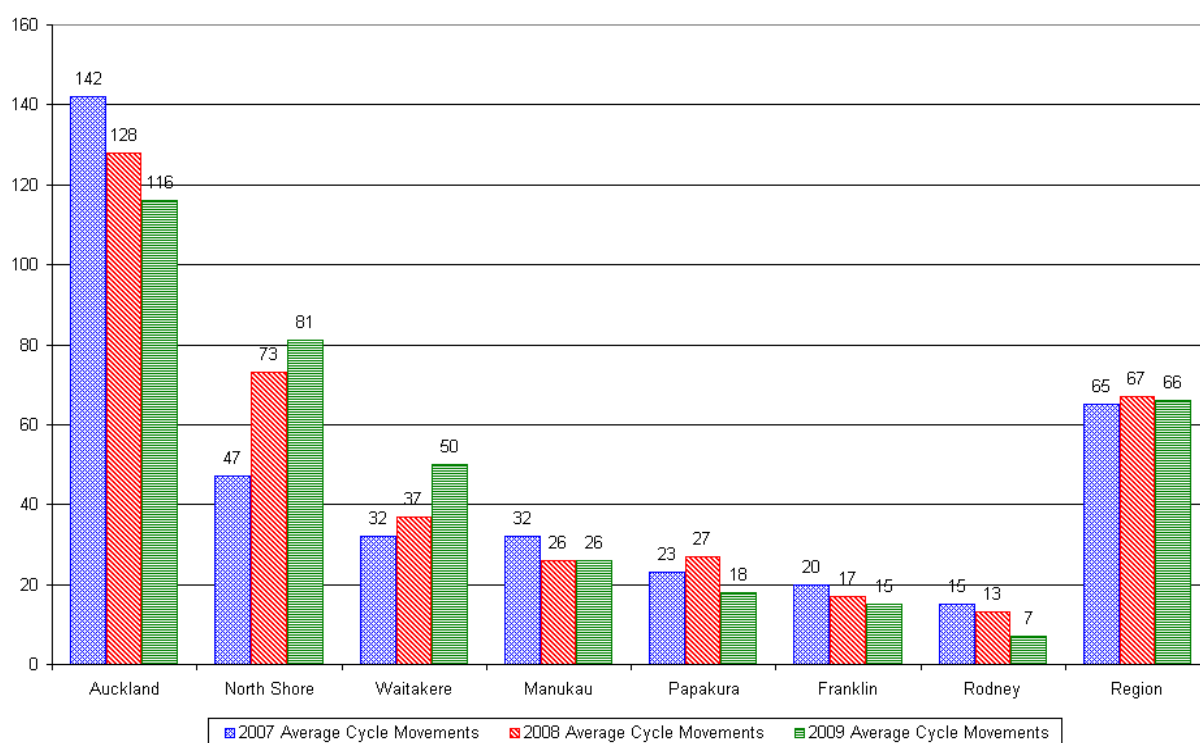
Area	Number Of Sites	AM	AM Range	PM	PM Range
Auckland	27	96	8 - 321	100	13 - 282
North Shore	13	81	25 - 186	71	30 - 133
Waitakere	14	48	21 - 157	61	17 - 198
Manukau	14	25	6 - 51	29	18 - 77
Papakura	3	18	12 - 22	30	24 - 37
Rodney	8	16	1 - 75	10	1 - 23
Franklin	4	12	2 - 27	26	3 - 68
Regional	83	59	1 - 321	62	1 - 282

- Of the sites monitored in both 2008 and 2009, the average number of cycle movements across the region in the morning period has remained relatively stable (67 in 2008 compared with 66 in 2009 – a decrease of 1 per cent).
- However, these figures mask considerable variation between Territorial Authorities. Waitakere (up 35 per cent) and North Shore (up 11 per cent) have experienced notable increases in average cycle movements in the morning period. In contrast, Auckland, Franklin, Papakura and Rodney have experienced declines in average cycle movements in the morning peak since 2008, this decline most notable in Rodney (down from 13 movements per site in 2008 to 7 this year).

**Table 2a: Summary Of Average Morning Cyclist Movements by TA
– 2007-2009 (63 Sites)**

Locations	Number of Sites	2007 Average Cycle Movements	2008 Average Cycle Movements	2009 Average Cycle Movements	Change 08-09	Change 07-09
Auckland	19	142	128	116	-9%	-18%
North Shore	13	47	73	81	11%	72%
Waitakere	11	32	37	50	35%	56%
Manukau	9	32	26	26	0%	-19%
Papakura	3	23	27	18	-33%	-22%
Franklin	3	20	17	15	-12%	-25%
Rodney	5	15	13	7	-46%	-53%
Region	63	65	67	66	-1%	2%

**Graph 1: Average Morning Cyclist Movements by TA
– 2007-2009 (63 Sites)**



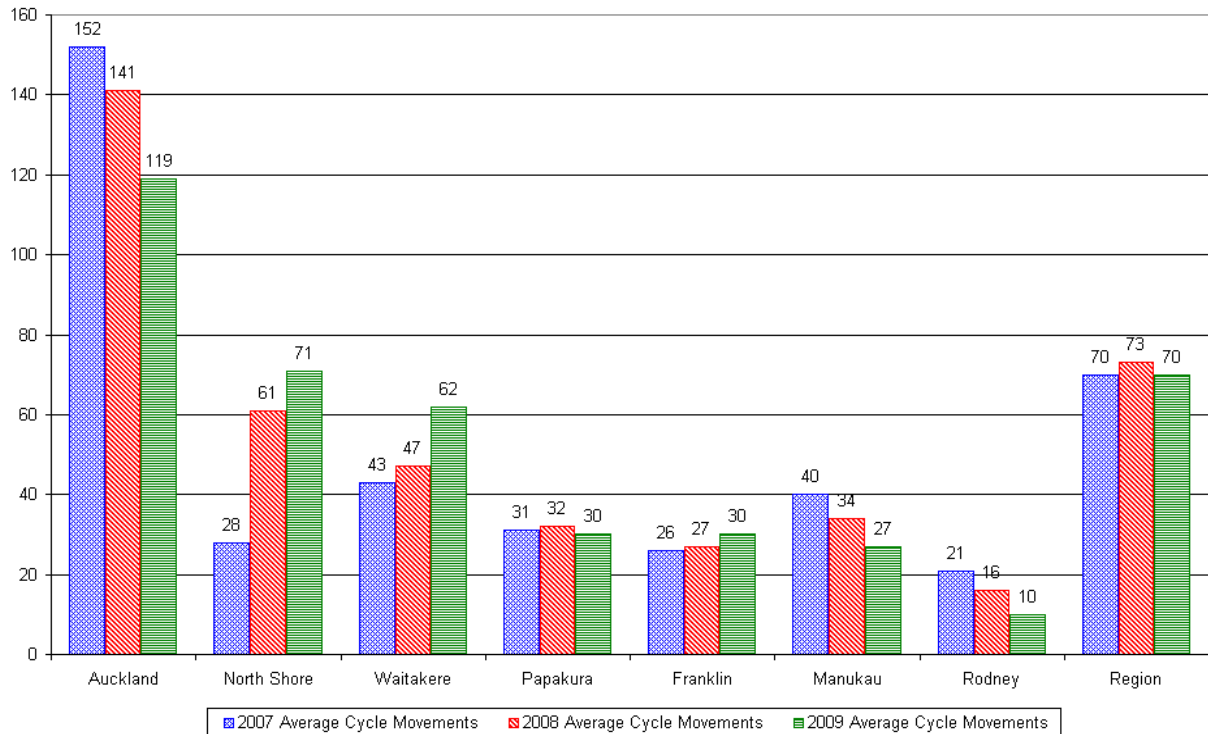
- The pattern for average evening cyclist movements is similar to the morning. While average cycle movements across the region have declined only slightly in the last 12 months (from 73 in 2008 to 70 in 2009 – a 4 per cent decline), this result hides considerable variation at the city/district level.
- Waitakere and North Shore cities and Franklin district have experienced increases in average evening cycle movements (32, 16 and 11 per cent respectively). In contrast, all other Territorial Authorities have experienced declines in average evening cycle movements, including a 16 per cent decline in Auckland and 21 per cent decline in Manukau.

**Table 2b: Summary Of Average Evening Cyclist Movements by TA
– 2007-2009 (62 Sites)**

Locations	Number of Sites	2007 Average Cycle Movements	2008 Average Cycle Movements	2009 Average Cycle Movements	Change 08-09	Change 07-09
Auckland	19	152	141	119	-16%	-22%
North Shore	13	28	61	71	16%	154%
Waitakere	11	43	47	62	32%	44%
Papakura	3	31	32	30	-6%	-3%
Franklin	3	26	27	30	11%	15%
Manukau	9	40	34	27	-21%	-33%
Rodney [^]	4	21	16	10	-38%	-52%
Region[^]	62	70	73	70	-4%	0%

[^]Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the summary figures exclude this site for more accurate comparison.

**Graph 2: Average Evening Cyclist Movements by TA
– 2007-2009 (62 Sites)**



- Overall, a total of 9,021 cyclist movements¹ were recorded across the 69 sites monitored in both 2008 and 2009. This figure represents a 2 per cent decrease when compared with 2008 (9,221 movements). However, this decrease is not statistically significant – that is, the decline falls within the margin of error at the 95% confidence interval.

¹ It is important to note that this figure represents individual cyclist movements rather than total cyclist numbers. The limitations of the methodology used mean that, due to the close proximity of sites to one another (particularly in Auckland City's CBD), it is possible for the same cyclist to be counted at more than one site. It is also possible to 'double count' cyclists if they use the same intersection more than once during a shift. At the same time, there will be many cycle trips that will not be counted at all by this methodology, if a cyclist's route does not pass through a monitoring location. Because of these limitations, it cannot be said that 9,021 different cyclists were counted on the Auckland region's roads using these sites; the actual number of cyclists, and the number of cycle trips they take, may be higher or lower than the number of cycle movements counted through this methodology.

- At 91 per cent, the extent of helmet-wearing across the region is high and stable. However, there is considerable variation by Territorial Authority – ranging from 74 per cent of cyclists in Papakura to 96 per cent of North Shore cyclists.
- Most cyclists recorded continued to be adults (87 per cent) while around one fifth of cyclists (21 per cent) continue to ride on the footpath.

**Table 3: Summary of Total Cyclist Characteristics
2007-2009 (%)**

	Auckland	Manukau	North Shore	Waitakere	Rodney	Papakura	Franklin	Aggregate Total (2009)	Aggregate Total (2008)	Aggregate Total (2007)
Cyclist Type										
Adult	95%	86%	84%	81%	28%	65%	37%	87%	86%	88%
School child	5%	14%	16%	19%	72%	35%	63%	13%	14%	12%
Helmet Wearing										
Helmet on head	92%	84%	96%	86%	82%	74%	77%	91%	90%	89%
No helmet	8%	16%	4%	14%	18%	26%	23%	9%	10%	11%
Where Riding										
Road	64%	64%	77%	32%	18%	57%	32%	60%	81%	77%
Footpath	15%	33%	22%	29%	20%	43%	68%	21%	19%	23%
Off-road cycleway ²	21%	3%	1%	39%	62%	0%	0%	19%	-	-
Base:	5301	760	1978	1513	206	144	152	10054	9780	9019

² In 2009, surveyors were asked to distinguish between cyclists riding on the road and cyclists riding on off-road cycleways. In previous years, all cyclists riding on both off-road cycleway and road were classified as road riders. Thus, no comparable results are provided with previous years.

- As in 2007 and 2008, the busiest site of the 83 is the intersection of Tamaki Drive and The Strand in Auckland city (321 morning movements and 282 evening movements), while this year the lowest levels of morning and evening cyclist traffic are observed at the Jelas Road/Croi Bridge site in Rodney district (1 morning and 1 evening movement observed).

Summary Table 4: Cyclist Movements
2009 (n) – 6.30 to 9.00 am and 4.00 to 7.00 pm

Site Number	Locations	Area	AM	PM	AADT 2009	AADT 2008	AADT 2007
10	Tamaki Drive/The Strand	Auckland	321	282	880	1146	1313
8	Symonds Street/Karangahape Road	Auckland	246	282	765	899	924
9	Karangahape Road/Queen Street	Auckland	238	221	669	616	736
2	Ponsonby/Karangahape Road	Auckland	176	194	536	602	705
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	157	198	513	393	335
36	Hurstmere Road/Killarney Street	North Shore	186	132	466	368	279
42	Shakespeare/East Coast Road	North Shore	177	133	454	364	314
7	North Western Cycleway/St Lukes	Auckland	155	155	451	480	469
35	Lake Road, by Takapuna Grammar	North Shore	166	129	432	440	444
13	Ian McKinnon/Newton Road	Auckland	139	152	422	-	-
6	North Western Cycleway/Great North Road	Auckland	145	141	416	532	335
22	Ferry Terminal	Auckland	137	111	363	459	553
52	Central Park Drive	Waitakere	91	121	306	227	184
37	Taharoto/Northcote Road	North Shore	98	104	293	396	375
3	Great North/Carrington Road	Auckland	97	96	281	333	341

Site Number	Locations	Area	AM	PM	AADT 2009	AADT 2008	AADT 2007
11	Remuera/Orakei Road	Auckland	107	80	274	276	282
5	Dominion/Balmoral Road	Auckland	85	98	265	291	344
17	Onehunga Harbour Road	Auckland	74	106	259	316	357
12	Manukau Road/Greenlane West	Auckland	84	92	255	296	326
38	Rosedale/East Coast Road	North Shore	105	54	235	143	176
21	Great South Road/Campbell Road/Main Highway	Auckland	64	87	218	165	253
14	Mount Albert/New North Road	Auckland	59	83	205	236	226
53	326 Te Atatu Road (Near Covil Ave)	Waitakere	79	59	202	155	127
47	Oteha Valley/East Coast Road	North Shore	69	69	201	163	137
39	Upper Harbour Drive/Albany Highway	North Shore	63	75	200	143	57
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	66	68	195	161	-
78	Lagoon Drive/Church Crescent	Auckland	57	72	186	-	-
1	Victoria/Wellesley/Halsey Street	Auckland	59	65	180	196	231
80	Pakuranga Road/Ti Rakau Drive	Manukau	46	77	176	-	-
73	Blockhouse Bay/Great North Road	Auckland	57	62	173	170	-
16	Jervois Road/Wallace Street	Auckland	60	51	162	-	-
20	St Heliers Bay/West Tamaki Road	Auckland	61	47	158	246	308
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	37	66	148	122	88
75	Stanley Street/Grafton Road	Auckland	49	47	140	95	-
33	Bucklands Beach/Pakuranga Road	Manukau	51	43	137	187	203
68	Queen/Harris Street	Franklin	27	68	135	119	146
84	Behind Rodney District Council Building	Rodney	75	11	130	-	-
85	Rathgar/Pomaria Road	Waitakere	32	53	122	-	-

Site Number	Locations	Area	AM	PM	AADT 2009	AADT 2008	AADT 2007
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	31	51	118	136	170
41	Wairau/Glenfield Road	North Shore	42	38	117	107	93
43	Glenfield/Coronation Road	North Shore	36	42	113	109	64
51	Luckens/Hobsonville Road	Waitakere	26	51	110	60	47
4	Patiki/Rosebank Road	Auckland	38	34	105	114	119
48	Henderson Creek	Waitakere	27	46	105	43	65
40	Oteha Valley Road/SH17/Albany Highway	North Shore	25	47	103	69	42
46	Rosedale/Bush Road	North Shore	26	46	103	106	70
54	Te Atatu Road/Elcoat Avenue	Waitakere	37	32	101	66	73
70	Upper Harbour Bridge	Waitakere	23	45	97	51	-
30	Great South/East Tamaki Road	Manukau	33	30	92	74	106
57	West Coast/Rosier Road	Waitakere	28	34	90	54	69
79	Harris/Smales Road	Manukau	35	25	88	-	-
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	30	29	86	109	117
45	Beach/Browns Bay Road	North Shore	29	30	86	66	44
65	Great South Road/Rosehill Drive	Papakura	22	37	85	106	77
23	Great South/Bairds Road	Manukau	29	28	83	81	99
44	Birkenhead Ave/Mokoia Road	North Shore	27	30	83	71	58
49	Triangle Road/Don Buck Road	Waitakere	21	35	80	88	96
32	McKenzie/Coronation/Walmsley Road	Manukau	22	30	75	82	101
76	Waikaraka Cycle Way	Auckland	18	33	73	76	-
18	Great South Road/High St/Atkinson/Park Ave	Auckland	21	28	71	87	121
64	Porchester/Walters Road	Papakura	19	30	70	66	72

Site Number	Locations	Area	AM	PM	AADT 2009	AADT 2008	AADT 2007
50	Lincoln Road/Fairdene Avenue	Waitakere	21	22	62	79	57
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	19	22	59	74	106
26	Great South/Browns/Orams Road	Manukau	21	18	57	81	86
28	Massey/Buckland Road	Manukau	19	20	57	44	61
56	3 Rankin Avenue	Waitakere	21	17	56	55	45
71	Highbrook Drive	Manukau	20	18	55	42	-
82	Jelas/Moffatt Road	Rodney	15	23	55	-	-
66	Great South Road/Taka Street	Papakura	12	24	51	83	83
31	Wyllie Avenue/Puhinui Road	Manukau	12	23	50	47	55
69	Edinburgh/Tobin Street	Franklin	15	19	49	58	51
81	Te Irirangi Drive/Ormiston Road	Manukau	13	20	47	-	-
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	12	20	46	87	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	6	21	38	-	-
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	15	11	38	45	42
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	5	17	31	63	80
15	Richardson Road/Maioro Street	Auckland	8	13	30	-	-
86	George/Elizabeth Street	Franklin	4	14	25	-	-
60	Whangaparaoa Road, near SH1 Intersection	Rodney	6	6	17	29	40
62	Rata Road/Rimu Road/Centre cycleway	Rodney	6	5	16	21	46
61	D'Oyly Reserve cycleway	Rodney	5	4	13	145	35
67	Karaka/Glenbrook Road/SH22	Franklin	2	3	7	13	6
83	Jelas Road/Croi Bridge	Rodney	1	1	3		-

- Overall, 2 per cent of intermediate, secondary and composite school students eligible to cycle to school in the Auckland region do so. This result is unchanged from 2007 and 2008.
- Rates of cycling to school are highest among schools in Rodney district (3 per cent, up from 2 per cent last year). By comparison, Manukau city and Papakura district have the lowest rates of cycling (1 per cent respectively, unchanged from 2008, but Manukau down from 2 per cent in 2007).
- Rates of cycling to school are highest among intermediate schools surveyed (4 per cent, unchanged from 2008 but down slightly from 5 per cent in 2007) and lowest for composite schools surveyed (less than 1 per cent, down from 1 per cent last year).

**Table 5a: Summary Table of School Bike Count by Area
2007-2009 (n)**

Area	Number of Schools Responding (n)	Average School Roll Eligible To Cycle	Average Number of Cycles Counted	Average of Cycling Rate per School (2009)	Average of Cycling Rate per School (2008)	Average of Cycling Rate per School (2007)
Rodney	6	755	22	3%	2%	3%
North Shore	21	1115	26	2%	3%	3%
Auckland	44	859	14	2%	2%	2%
Waitakere	17	783	14	2%	1%	2%
Franklin	3	545	10	2%	2%	2%
Manukau	31	955	14	1%	1%	2%
Papakura	4	1080	10	1%	1%	1%
Total	126	910	16	2%	2%	2%

**Table 5b: Summary Table of School Bike Count by School Level
2007-2009 (n)**

Year Levels	Number of Schools Responding (n)	Average School Roll Eligible To Cycle	Average Number of Cycles Counted	Average Cycling Rate per School (2009)	Average Cycling Rate per School (2008)	Average Cycling Rate per School (2007)
Intermediate	34	554	23	4%	4%	5%
Intermediate/Secondary	18	943	12	1%	2%	2%
Secondary	49	1369	20	1%	1%	1%
Composite	25	469	3	<1%	1%	1%
Total	126	910	16	2%	2%	2%

1. INTRODUCTION

1.1 The Need For Reliable Cycle Trip Data

The Need For Reliable Cycle Trip Data

Monitoring cycle trips and cycle traffic is important to the Auckland Regional Transport Authority (ARTA) and the local councils in the Auckland region, to identify where investment may be needed to improve infrastructure for cycling. Cycle traffic data will also help ARTA prioritise future funding through the Auckland Land Transport Programme³.

Cycle traffic data will help inform a major programme of improvements for cycling in the Auckland region – over \$100 million is planned to be invested in building over 50% of the Regional Cycle Network over the next eight years. Comprehensive cycle data assists with the development of the region's cycle network and prioritization of projects.

This cycle monitoring gives precise cycle traffic information for a number of locations across the region, which can guide investment in infrastructure and other programmes. It also allows councils to track progress against a quality baseline over the coming decade.

³ Auckland Regional Transport Authority (2006) *Regional Cycle Monitoring Plan (Provisional Guidelines)*

Manual Cycle Monitoring

Historically, manual cycle monitoring had been carried out in four of the seven Auckland region Territorial Authorities (TAs). However, each monitor had been undertaken using a different methodology⁴. This variability prevented the possibility of comparing the relative popularity of different sites across TA boundaries. In addition, each monitor programme took place at different times of the year, preventing comparability from location to location since factors such as weather, school/tertiary education holidays, seasonal variations and daylight savings each have an impact on the numbers of cyclists. Even within TAs, inconsistencies as to when counts took place from year to year prevented robust comparability over time.

Through the Regional Cycle Monitoring Plan, it was proposed that these manual counts be regionally aligned to ensure better regional consistency. Ideally, cycle count monitoring would be carried out at the same time each year across the region, applying a standard methodology. As outlined in the Regional Cycle Monitoring Plan, a consistent methodology would ensure that:

- standard monitoring days are used – that is, school and tertiary holidays, and statutory holidays are excluded and that monitoring preferably takes place at the same time each year to enable reliable year-on-year comparisons to be made. Decisions about whether cycle counts take place on weekdays and weekends would be made at the outset;
- a consistent set of times are used for monitoring, for the morning, evening and inter-peak periods; and
- a consistent method is used for monitoring direction and location of cyclists, including monitoring how many are on the footpath.

This report presents results from manual cycle counts conducted at 83 sites across the Auckland region following a standardised methodology. Results are presented site-by-site, as well as being aggregated to a TA and region level. For sites also monitored in 2007 and 2008, comparative results are provided.

Important Note: This report provides a regional summary of the results of manual cycle monitoring conducted at 83 pre-determined sites throughout the Auckland region. Site-by-site results and city/district summaries for each Territorial Authority have been provided in separate documents. Readers should refer to these documents for Territorial Authority and site-level detail.

⁴ For example, Manukau and North Shore cities' monitors took place at the same morning and evening peak times, while Auckland city's differs by one hour for the evening peak, and Waitakere's differs for both peaks.

Cycle Monitoring Locations

Auckland City

1. Victoria / Wellesley / Halsey Street
2. Ponsonby / Karangahape / Newton / Great North Road
3. Great North / Carrington / Point Chevalier Road
4. Patiki / Rosebank Road
5. Dominion / Balmoral Road
6. North Western Cycleway / Great North Road
7. North Western Cycleway / St Lukes Road
8. Symonds / Karangahape / Grafton Road
9. Karangahape Road / Queen Street
10. Tamaki Drive / The Strand
11. Remuera / Orakei / Ascot Road
12. Manukau / Greenlane Road
13. Ian McKinnon / Newton Road*
14. Mount Albert / New North Road
15. Richardson Road / Maioro Street*
16. Jervois Road / Wallace Street*
17. Onehunga Harbour Road
18. Great South Road / High Street / Atkinson Avenue
19. Ellerslie Panmure Highway / Lunn Avenue
20. St Heliers Bay / West Tamaki Road
21. Great South Road / Campbell Road / Main Highway
22. Ferry Terminal
73. Blockhouse Bay / Great North Road**
74. Pilkington Road / Apirana Avenue / Tripoli Road**
75. Stanley Street / Grafton Road / Wellesley Street East**
76. Waikaraka Cycleway**
78. Lagoon Drive / Church Crescent*

North Shore City

35. Lake Road
36. Hurstmere Road / Killarney Street
37. Taharoto / Northcote Road
38. Rosedale / East Coast Road
39. Upper Harbour Drive / Albany Highway
40. Oteha Valley Road / SH17 / Albany Highway
41. Wairau / Glenfield Road
42. Shakespeare / East Coast Road
43. Glenfield / Coronation Road
44. Birkenhead Avenue / Mokoia Road
45. Beach / Browns Bay Road
46. Rosedale / Bush Road
47. Oteha Valley / East Coast Road

*New site in 2009

**New site in 2008

Manukau City

- 23. Great South / Bairds Road
- 24. Great South Road / Te Irirangi Drive / Cavendish Drive
- 25. Tom Pearce / George Bolt Memorial Drive (re-located site)
- 26. Great South / Browns / Orams Road
- 28. Massey / Buckland Road
- 30. Great South / East Tamaki Road
- 31. Wyllie Avenue / Puhinui Road
- 32. McKenzie / Coronation / Walmsley Road
- 33. Bucklands Beach / Pakuranga Road
- 34. Te Irirangi / Ti Rakau Drive
- 71. Highbrook Interchange** – NZTA
- 79. Harris / Smales Road*
- 80. Pakuranga Road / Ti Rakau Drive*
- 81. Te Irirangi Drive / Ormiston Road*

Waitakere

- 48. Henderson Creek
- 49. Triangle / Don Buck Road
- 50. Lincoln Road / Fairdene Avenue
- 51. Luckens / Hobsonville Road
- 52. Central Park Drive
- 53. 326 Te Atatu Road
- 54. Te Atatu Road / Elcoat Avenue
- 55. Swanson Road / Ranui Station Road / Armada Drive
- 56. 3 Rankin Avenue
- 57. West Coast / Rosier Road
- 58. North Western Cycleway (near Te Atatu off-ramp)
- 70. Upper Harbour Bridge** – NZTA
- 72. Te Atatu Road / Old Te Atatu Road**
- 85. Rathgar / Pomaria Road*

Rodney District

- 59. Whangaparaoa Road – near Red Beach intersection
- 60. Whangaparaoa Road – near SH1 intersection
- 61. D'Oyly Reserve cycleway
- 62. Cycleway between Whangaparaoa Town Centre and Leisure Centre
- 63. Gulf Harbour Drive / Laurie Southwick Parade
- 82. Jelas / Moffatt Road*
- 83. Jelas / Croi Bridge*
- 84. Behind Rodney District Council Building*

*New site in 2009

**New site in 2008

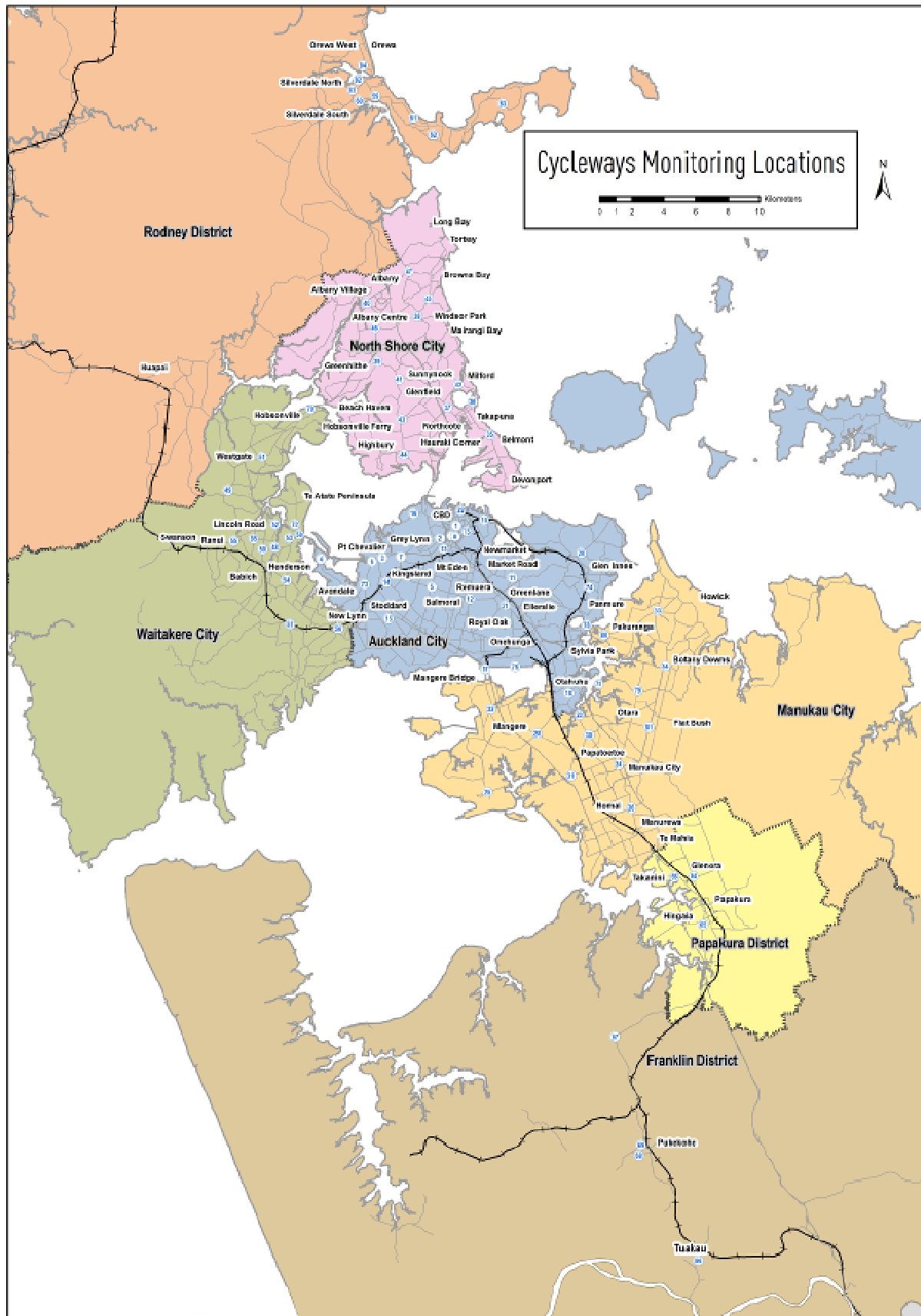
Papakura District

- 64. Porchester / Walters Road
- 65. Great South Road / Rosehill Drive
- 66. Great South Road / Taka Street

Franklin District

- 67. Karaka (SH22) / Glenbrook Road
- 68. Queen / Harris Street
- 69. Edinburgh / Tobin Street
- 86. George / Elizabeth Street*

*New site in 2009



2. REGIONAL SUMMARY OF RESULTS

2.1 Morning Peak

Environmental Conditions

- The weather was fine across all sites in North Shore city, Rodney and Franklin districts in the morning monitoring period. Only one site each in Waitakere and Papakura experienced light rain. Auckland city sites were subjected to high winds with light drizzle and/or showers reported at six of the 27 sites. All sites in Manukau city reported intermittent drizzle throughout the morning monitoring period. *Note: A day-by-day account of the weather over the surveying period is provided in Appendix One.*
- Road works were being carried out at seven of the 83 sites:
 - Richardson Road/Maioro Street (Auckland city);
 - Symonds Street/Karangahape Road/Grafton Road (Auckland city);
 - Onehunga Harbour Road (Auckland city);
 - Hurstmere Road/Killarney Street (North Shore city);
 - Bucklands Beach/Pakuranga Road (Manukau city);
 - Tom Pearce/George Bolt Memorial Drive (Manukau city);
 - Edinburgh Street/Tobin Street (Franklin district); and
 - 3 Rankin Avenue (Waitakere city).

There was a truck and a digger on Central Park Drive blocking the cycleway at Central Park Drive in Waitakere that may have affected the cycle counts.

Key Points

- A total of 4,407⁵ cyclist movements were recorded across the 70 sites monitored in 2008 and 2009 in the morning peak period (between 6:30am and 9:00am) in 2009. This is stable from 2008 (4,438 movements).
- Thirty-four sites recorded increases of more than 3 per cent compared to 2008. The most notable increases are at:
 - Henderson Creek – up from 11 to 27 movements (145 per cent);
 - Rosedale/East Coast Road – up 52 to 105 movements (102 per cent);
 - Swanson/Ranui Station Road/Armada Drive – up from 21 to 37 movements (76 per cent);
 - Massey/Buckland Road – up 11 to 19 movements (73 per cent); and
 - Oteha Valley/East Coast Road – up 40 to 69 movements (73 per cent).

⁵ It is important to note that this figure represents individual cyclist movements rather than total cyclist numbers. The limitations of the methodology used mean that, due to the close proximity of sites to one another (particularly in Auckland City's CBD), it is possible for the same cyclist to be counted at more than one site. It is also possible to 'double count' cyclists if they use the same intersection more than once during a shift. At the same time, there will be many cycle trips that were not counted at all by this methodology, if a cyclist's route does not pass through a monitoring location. Because of these limitations, it cannot be said that 4,407 different cyclists were counted on the Auckland region's roads using these sites; the actual number of cyclists, and the number of cycle trips they take, may be higher or lower than the number of cycle movements counted through this methodology.

- In contrast, 30 sites recorded declines of more than 3 per cent this year compared to 2008. The most notable decreases are at:
 - D'Oyly Reserve cycleway – down from 19 to 5 movements (74 per cent); and
 - Gulf Harbour Drive/Laurie Southwick Parade – down from 14 to 5 movements (64 per cent).
- A total of 4,898 cyclist movements were recorded across the 83 sites in the morning peak period (between 6:30am and 9:00am) in 2009. This comprises five per cent of morning cycle movements (n=256) observed in cycling groups. *Note that this year there are 13 new sites monitored.*
- As in 2007 and 2008, the busiest site out of the 83 in the morning peak is the intersection of Tamaki Drive and The Strand (321 movements, down from 416 movements in 2008), while the lowest levels of morning cyclist traffic were observed at the Karaka/Glenbrook Road/SH22 intersection in Franklin district (2 movements) and Jelas Road/Croi Bridge (1 movement).

**Table 2.1A: Summary Of Morning Cyclist Movements
2007-2009 (n) – 6.30 to 9.00 am**

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
10	Tamaki Drive/The Strand	Auckland	480	416	321	-23%	-33%
8	Symonds Street/Karangahape Road	Auckland	290	285	246	-14%	-15%
9	Karangahape Road/Queen Street	Auckland	246	212	238	12%	-3%
36	Hurstmere Road/Killarney Street	North Shore	76	134	186	39%	145%
42	Shakespeare/East Coast Road	North Shore	82	127	177	39%	116%
2	Ponsonby/Karangahape Road	Auckland	226	199	176	-12%	-22%
35	Lake Road, by Takapuna Grammar	North Shore	127	200	166	-17%	31%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	102	121	157	30%	54%
7	North Western Cycleway/St Lukes	Auckland	152	156	155	-1%	2%
6	North Western Cycleway/ Great North Road	Auckland	98	156	145	-7%	48%
13	Ian McKinnon/Newton Road	Auckland	-	-	139	-	-
22	Ferry Terminal	Auckland	195	158	137	-13%	-30%
11	Remuera/Orakei Road	Auckland	86	100	107	7%	24%
38	Rosedale/East Coast Road	North Shore	54	52	105	102%	94%
37	Taharoto/Northcote Road	North Shore	111	160	98	-39%	-12%
3	Great North/Carrington Road	Auckland	114	95	97	2%	-15%
52	Central Park Drive	Waitakere	61	68	91	34%	49%
5	Dominion/Balmoral Road	Auckland	114	90	85	-6%	-25%
12	Manukau Road/Greenlane West	Auckland	103	92	84	-9%	-18%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	44	52	79	52%	80%
84	Behind Rodney District Council Building	Rodney	-	-	75	-	-
17	Onehunga Harbour Road	Auckland	93	88	74	-16%	-20%

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
47	Oteha Valley/East Coast Road	North Shore	42	40	69	73%	64%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	56	66	18%	-
21	Great South Road/Campbell Road/Main Highway	Auckland	89	53	64	21%	-28%
39	Upper Harbour Drive/Albany Highway	North Shore	14	54	63	17%	350%
20	St Heliers Bay/West Tamaki Road	Auckland	139	107	61	-43%	-56%
16	Jervois Road/Wallace Street	Auckland	-	-	60	-	-
1	Victoria/Wellesley/Halsey Street	Auckland	70	57	59	4%	-16%
14	Mount Albert/New North Road	Auckland	75	68	59	-13%	-21%
73	Blockhouse Bay/Great North Road	Auckland	-	57	57	0%	-
78	Lagoon Drive/Church Crescent	Auckland	-	-	57	-	-
33	Bucklands Beach/Pakuranga Road	Manukau	68	53	51	-4%	-25%
75	Stanley Street/Grafton Road	Auckland	-	36	49	36%	-
80	Pakuranga Road/Ti Rakau Drive	Manukau	-	-	46	-	-
41	Wairau/Glenfield Road	North Shore	34	39	42	8%	24%
4	Patiki/Rosebank Road	Auckland	37	34	38	12%	3%
54	Te Atatu Road/Elcoat Avenue	Waitakere	26	27	37	37%	42%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	15	21	37	76%	147%
43	Glenfield/Coronation Road	North Shore	16	36	36	0%	125%
79	Harris/Smales Road	Manukau	-	-	35	-	-
30	Great South/East Tamaki Road	Manukau	36	24	33	38%	-8%
85	Rathgar/Pomaria Road	Waitakere	-	-	32	-	-
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	52	42	31	-26%	-40%
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	36	36	30	-17%	-17%
23	Great South/Bairds Road	Manukau	32	27	29	7%	-9%

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
45	Beach/Browns Bay Road	North Shore	11	26	29	12%	164%
57	West Coast/Rosier Road	Waitakere	19	18	28	56%	47%
44	Birkenhead Ave/Mokoia Road	North Shore	20	20	27	35%	35%
48	Henderson Creek	Waitakere	14	11	27	145%	93%
68	Queen/Harris Street	Franklin	44	31	27	-13%	-39%
46	Rosedale/Bush Road	North Shore	15	36	26	-28%	73%
51	Luckens/Hobsonville Road	Waitakere	20	25	26	4%	30%
40	Oteha Valley Road/SH17/Albany Highway	North Shore	4	20	25	25%	525%
70	Upper Harbour Bridge	Waitakere	-	17	23	35%	-
32	McKenzie/Coronation/Walmsley Road	Manukau	28	21	22	5%	-21%
65	Great South Road/Rosehill Drive	Papakura	29	42	22	-48%	-24%
18	Great South Road/High Street/Atkinson/Park Avenue	Auckland	38	30	21	-30%	-45%
26	Great South/Browns/Orams Road	Manukau	25	32	21	-34%	-16%
49	Triangle Road/Don Buck Road	Waitakere	24	29	21	-28%	-13%
50	Lincoln Road/Fairdene Avenue	Waitakere	13	19	21	11%	62%
56	3 Rankin Avenue	Waitakere	16	17	21	24%	31%
71	Highbrook Drive	Manukau	-	13	20	54%	-
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	34	25	19	-24%	-44%
28	Massey/Buckland Road	Manukau	12	11	19	73%	58%
64	Porchester/Walters Road	Papakura	22	19	19	0%	-14%
76	Waikaraka Cycle Way	Auckland	-	13	18	38%	-
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	13	15	15	0%	15%
69	Edinburgh/Tobin Street	Franklin	17	16	15	-6%	-12%
82	Jelas/Moffatt Road	Rodney	-	-	15	-	-
81	Te Irirangi Drive/Ormiston Road	Manukau	-	-	13	-	-

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
31	Wyllie Avenue/Puhinui Road	Manukau	18	8	12	50%	-33%
66	Great South Road/Taka Street	Papakura	18	19	12	-37%	-33%
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	-	22	12	-45%	-
15	Richardson Road/Maioro Street	Auckland	-	-	8	-	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	6	-	-
60	Whangaparaoa Road, near SH1 Intersection	Rodney	11	9	6	-33%	-45%
62	Rata Road/Rimu Road/Centre cycleway	Rodney	21	9	6	-33%	-71%
61	D'Oyly Reserve cycleway	Rodney	14	19	5	-74%	-64%
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	17	14	5	-64%	-71%
86	George/Elizabeth Street	Franklin	-	-	4	-	-
67	Karaka/Glenbrook Road/SH22	Franklin	0	4	2	-50%	-
83	Jelas Road/Croi Bridge	Rodney	-	-	1	-	-
	Total (63 sites since 2007)		4152	4224	4162	-1%	<1%
	Total (70 sites since 2008)		-	4438	4407	-1%	-
	Total (83 sites in 2009)		-	-	4898	-	-

Table 2.1B: Summary Of Average Morning Cyclist Movements by TA
– 2007-2009 (63 Sites)

Locations	Number of Sites	2007		2008		2009		Change 08-09	Change 07-09
		Average Cycle Movements	Range	Average Cycle Movements	Range	Average Cycle Movements	Range		
Auckland	19	142	37 - 480	128	30 - 416	116	21 - 321	-9%	-18%
North Shore	13	47	4 - 127	73	20 - 200	81	25 - 186	11%	72%
Waitakere	11	32	13 - 102	37	11 - 121	50	21 - 157	35%	56%
Manukau	9	32	12 - 68	26	8 - 53	26	12 - 51	0%	-19%
Papakura	3	23	18 - 29	27	19 - 42	18	12 - 22	-33%	-22%
Franklin	3	20	0 - 44	17	4 - 31	15	2 - 27	-12%	-25%
Rodney	5	15	11 - 21	13	9 - 19	7	5 - 15	-46%	-53%
Region	63	65	0 - 480	67	4 - 416	66	2 - 321	-1%	2%

- Table 2.1C illustrates the comparable summary results between 2008 and 2009 based on 70 sites monitored in both years. Of the seven TAs, the average number of morning cyclists at each of the monitored sites in 2008 and 2009 is highest in Auckland city (101 movements, down from 112 movements last year) and lowest in Rodney district (7 movements, down from 13 movements in 2008).

**Table 2.1C: Summary Of Average Morning Cyclist Movements by TA
– 2008-2009 (70 Sites)**

Locations	Number of Sites	2008		2009		Change 08-09
		Average Cycle Movements	Range	Average Cycle Movements	Range	
Auckland	23	112	13 - 416	101	12 - 321	-10%
North Shore	13	73	20 - 200	81	25 - 186	11%
Waitakere	13	37	11 - 121	49	21 - 157	32%
Manukau	10	25	8 - 53	26	12 - 51	4%
Papakura	3	27	19 - 42	18	12 - 22	-33%
Franklin	3	17	4 - 31	15	2 - 27	-12%
Rodney	5	13	9 - 19	7	5 - 15	-46%
Region	70	63	4 - 416	63	2 - 321	0%

- As shown in Table 2.1D, the average volume of morning cyclists across the 83 sites in the Auckland region is 59 cycle movements in 2009. Of the seven TAs the average number of morning cyclists is highest in Auckland City (96 movements) and lowest in Franklin (12 movements).

**Table 2.1D: Summary Of Average Morning Cyclist Movements by TA
–2009 (83 Sites)**

Locations	Number of Sites	Average Cycle Movements	09 Range
Auckland	27	96	8 - 321
North Shore	13	81	25 - 186
Waitakere	14	48	21 - 157
Manukau	14	25	6 - 51
Papakura	3	18	12 - 22
Rodney	8	16	1 - 75
Franklin	4	12	2 - 27
Region	83	59	1 - 321

Morning cyclist characteristics are shown in Table 2.2 below.

- Overall, 85 per cent of cyclists in the morning peak are adults in 2009 (unchanged from the last two years).
- Almost all morning cyclists are wearing a helmet (93 per cent, unchanged from 2008 and 2007).
- On average, four in five morning cyclists are either riding on the road or the off-road cycleway (81 per cent, unchanged from last year). Eighteen per cent of cyclists are riding on off-road cycleway. *Note that this year riding on the road has been split into riding on the road and riding on the off-road cycleway for some sites; therefore results with previous years are not directly comparable.*
- Of the seven TAs monitored, Auckland city has the highest proportion of cyclists who are adults (94 per cent) and riding either on the road or off-road cycleway (88 per cent), while North Shore city has greatest share of cyclists wearing a helmet (96 per cent).
- By comparison, Franklin district has the greatest share of cyclists who are not wearing helmets (19 per cent) and riding on the footpath (56 per cent), while cyclists identified as being school children are most common in Rodney district (86 per cent).

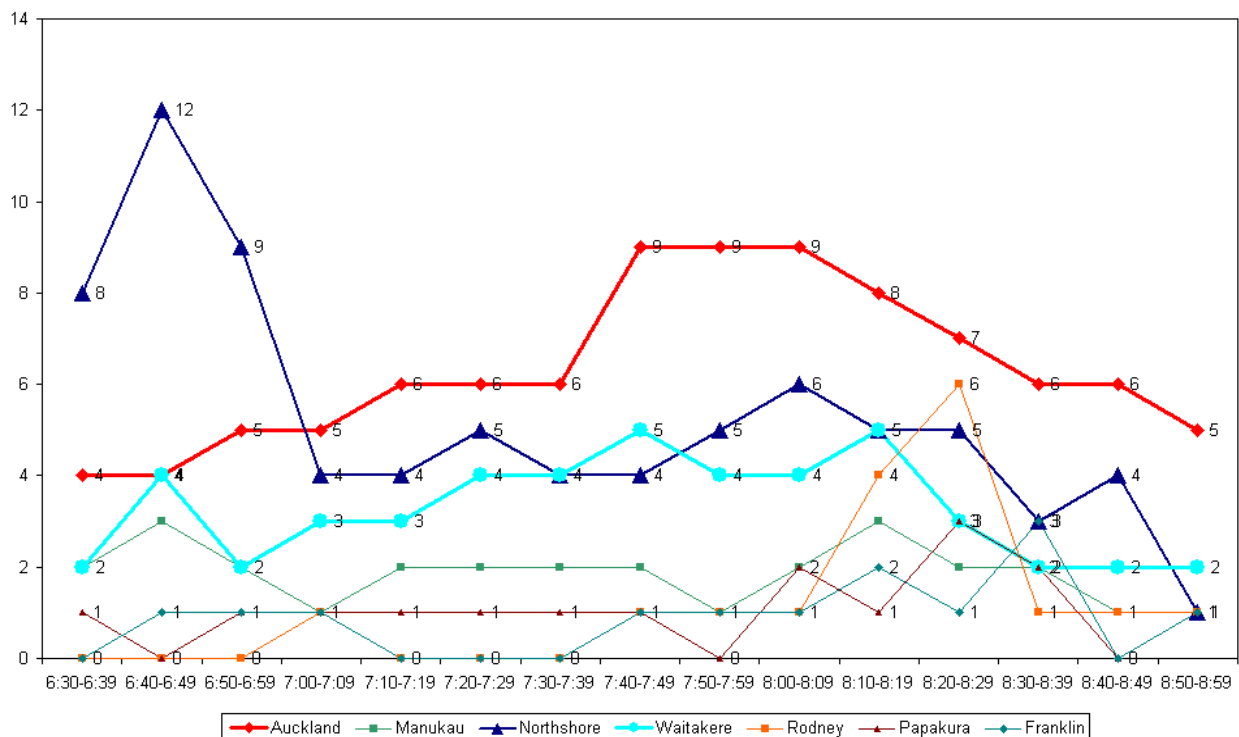
**Table 2.2: Summary of Morning Cyclist Characteristics
2007-2009 (%)**

	Auckland	Manukau	North Shore	Waitakere	Rodney	Papakura	Franklin	Aggregate Total (2009)	Aggregate Total (2008)	Aggregate Total (2007)
Cyclist Type										
Adult	94%	82%	82%	78%	14%	60%	40%	85%	85%	85%
School child	6%	18%	18%	22%	86%	40%	60%	15%	15%	15%
Helmet Wearing										
Helmet on head	94%	85%	96%	90%	84%	87%	81%	93%	93%	93%
No helmet	6%	15%	4%	10%	16%	13%	19%	7%	7%	7%
Where Riding										
Road	69%	64%	77%	33%	12%	45%	44%	63%	81%	78%
Footpath	12%	32%	22%	30%	17%	55%	56%	19%	19%	22%
Off-road cycleway ⁶	19%	4%	1%	37%	71%	0%	0%	18%	-	-
Base:	2598	356	1049	666	128	53	48	4898	4619	4358

⁶ In 2009, surveyors were asked to distinguish between cyclist riding on the road and cyclists riding on off-road cycleway. In previous years, all cyclists riding on both off-road cycleway and road were classified as road riders. Thus, no comparable results are provided with previous years.

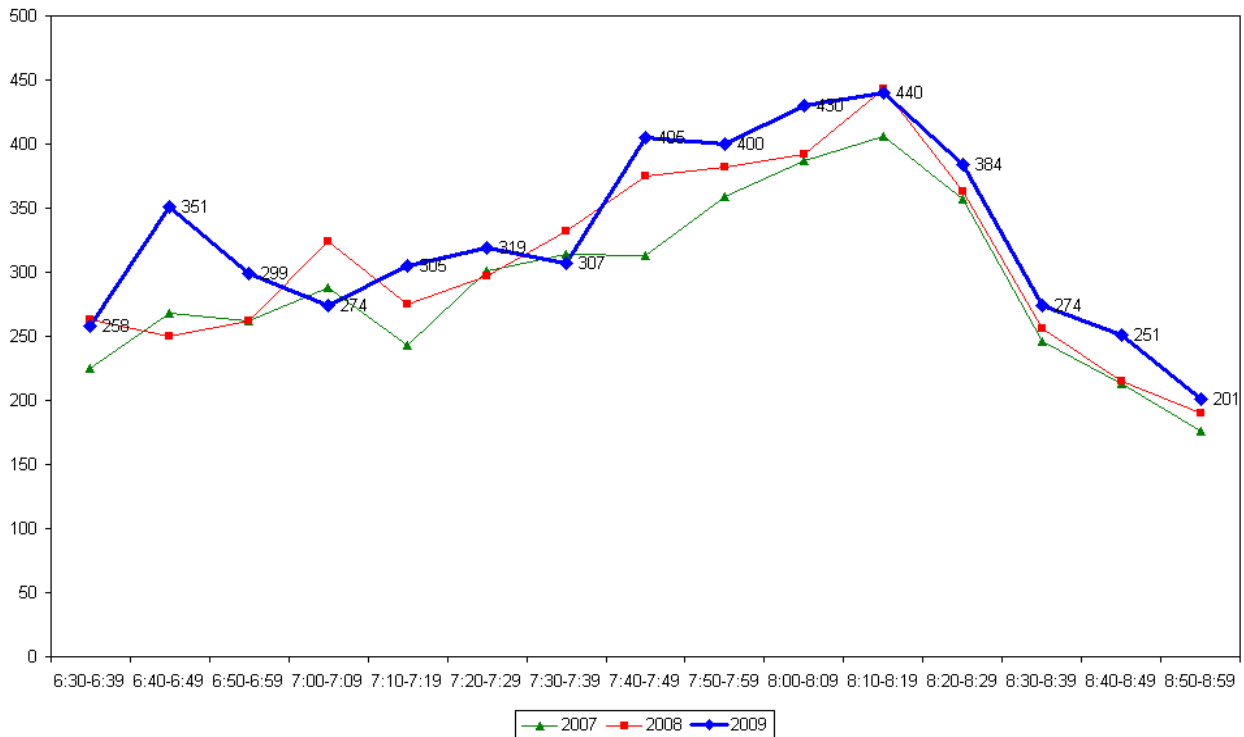
- Figure 2.1 illustrates the average number of morning cycle movements per site by time of trip. The graph shows the different patterns of morning cyclist volumes across each of the cities/districts in the region.
- Of the seven TAs, Auckland city has the highest average number of cycle movements over every ten-minute interval from 7:10am to 8:19am, while North Shore city has the greatest average cyclist volumes between 6:30 and 6:59 am (peaking at 12 movements). The average per-site cycle volumes across the Auckland city sites peak between 7:40 and 8:09 am (9 movements at each ten minute interval).
- Of the other TAs, Waitakere has the highest number of cycle movements over most ten-minute interval throughout the morning monitoring period, with slight peaks at around 7:20-7:29, 7:40-7:49, and 8:00-8:19 am. The only exceptions were between 8:10 and 8:29 am, where Rodney district recorded a peak (6 cyclists, even higher than North Shore city).
- By comparison, Manukau, Papakura and Franklin districts have low cycle volumes throughout the morning monitoring period. Movement numbers are relatively consistent throughout the period, with a slight peak in movement numbers between 8:00 and 8:39 am reported for each district (attributable to school cycle traffic).

**Figure 2.1: Average Cyclist Frequency per Site by Territorial Authority
– Morning Peak 2009**



- Figure 2.2 shows the overall pattern of total morning cyclist volumes recorded at the 83 sites monitored in the Auckland region. Similar to the overall cyclist pattern reported last year, morning cyclist numbers follow a steady increasing trend from 7:00 to 8:10am, reaching a peak between 8.10 and 8:19am (440 movements), and then drop off towards the end of the morning period. In contrast to previous years, there was a notable peak (351 movements between 6:40am and 6:49am) at the beginning of the monitoring period. There were at least 200 cycle movements recorded within any ten minute interval during the morning peak. *Note that there are three sites dropped, four sites relocated and nine new sites monitored this year.*

**Figure 2.2: Total Cyclist Frequency
– Morning Peak 2007-2009**



2.2 Evening Peak

Environmental Conditions

- Of the 83 sites monitored in the Auckland region, almost all had windy weather with light intermittent drizzle throughout the evening shift. The only exceptions were North Shore city sites (only one site reported light drizzle) and two Waitakere city sites that experienced fine weather. Brief, but often heavy, showers were reported at some sites in Manukau and Papakura. *Note: A day-by-day account of the weather over the surveying period is provided in Appendix One.*
- Road works on seven sites continued during the evening monitoring period:
 - Richardson Road/Maioro Street (Auckland city);
 - Symonds Street/Karangahape Road/Grafton Road (Auckland city);
 - Onehunga Harbour Road (Auckland city);
 - Hurstmere Road/Killarney Street (North Shore city);
 - Bucklands Beach/Pakuranga Road (Manukau city);
 - Tom Pearce/George Bolt Memorial Drive (Manukau city);
 - Edinburgh Street/Tobin Street (Franklin district); and
 - 3 Rankin Avenue (Waitakere city).

Key Points

- A total of 4,619 cyclist movements⁷ were recorded across the sites also monitored in 2008 in the evening peak period (between 4:00pm and 7:00pm) in 2009. This represents a 4 per cent decrease on the 2008 result (4,802 movements). However, this decrease is not statistically significant – that is, the decline falls within the margin of error at the 95% confidence interval.
- Over the evening peak, 35 sites recorded declines this year compared to 2008. The most notable decreases are at:
 - D'Oyly Reserve cycleway – down from 84 to 4 movements (95 per cent);
 - Apirana Avenue/Pilkington/Tripoli Road – down from 39 to 20 movements (49 per cent); and
 - Whangaparaoa Road, near SH1 Intersection – down from 11 to 6 movements (45 per cent).
- In contrast, 28 sites recorded increases. The most notable increases are at:
 - Luckens/Hobsonville Road – up from 16 to 51 movements (219 per cent);
 - Upper Harbour Bridge – up 18 to 45 movements (150 per cent); and

⁷ It is important to note that this figure represents individual cyclist movements rather than total cyclist numbers. The limitations of the methodology used mean that, due to the close proximity of sites to one another (particularly in Auckland City's CBD), it is possible for the same cyclist to be counted at more than one site. It is also possible to 'double count' cyclists if they use the same intersection more than once during a shift. At the same time, there will be many cycle trips that will not be counted at all by this methodology, if a cyclist's route does not pass through a monitoring location. Because of these limitations, it cannot be said that 4,619 different cyclists were counted on the Auckland region's roads using these sites; the actual number of cyclists, and the number of cycle trips they take, may be higher or lower than the number of cycle movements counted through this methodology.

- Henderson Creek – up from 19 to 46 movements (142 per cent).
- A total of 5,156 cyclist movements were recorded across the 83 sites in the evening peak period (between 4:00pm and 7:00pm) in 2009. This comprises three per cent of evening cycle movements (n=149) observed in cycling groups.
- Of the 83 sites monitored in 2009, the Tamaki Drive/The Strand and Symonds Street/Karangahape Road intersections are the busiest in terms of evening cyclist activity, with 282 movements recorded (down by 24 and 23 per cent respectively from last year). The lowest level of evening cyclist traffic is at Jelas Road/Croi Bridge in Rodney district (1 movement).

**Table 2.3A: Summary Of Evening Cyclist Movements
2007-2009 (n) – 4.00 to 7.00 pm**

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
8	Symonds Street/Karangahape Road	Auckland	349	336	282	-23%	-19%
10	Tamaki Drive/The Strand	Auckland	420	370	282	-24%	-33%
9	Karangahape Road/Queen Street	Auckland	261	212	221	4%	-15%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	130	151	198	31%	52%
2	Ponsonby/Karangahape Road	Auckland	261	216	194	-10%	-26%
7	North Western Cycleway/St Lukes	Auckland	172	175	155	-11%	-10%
13	Ian McKinnon/Newton Road	Auckland	-	-	152	-	-
6	North Western Cycleway/Great North Road	Auckland	134	213	141	-34%	5%
42	Shakespeare/East Coast Road	North Shore	55	123	133	8%	142%
36	Hurstmere Road/Killarney Street	North Shore	45	118	132	12%	193%
35	Lake Road, by Takapuna Grammar	North Shore	65	97	129	33%	98%
52	Central Park Drive	Waitakere	66	89	121	36%	83%
22	Ferry Terminal	Auckland	185	158	111	-30%	-40%
17	Onehunga Harbour Road	Auckland	156	132	106	-20%	-32%
37	Taharoto/Northcote Road	North Shore	51	110	104	-5%	104%
5	Dominion/Balmoral Road	Auckland	123	111	98	-12%	-20%
3	Great North/Carrington Road	Auckland	121	136	96	-29%	-21%
12	Manukau Road/Greenlane West	Auckland	122	113	92	-19%	-25%
21	Great South Road/Campbell Road/Main Highway	Auckland	85	61	87	43%	2%
14	Mount Albert/New North Road	Auckland	81	96	83	-14%	2%
11	Remuera/Orakei Road	Auckland	109	89	80	-10%	-27%

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
80	Pakuranga Road/Ti Rakau Drive	Manukau	-	-	77	-	-
39	Upper Harbour Drive/Albany Highway	North Shore	11	44	75	70%	582%
78	Lagoon Drive/Church Crescent	Auckland	-	-	72	-	-
47	Oteha Valley/East Coast Road	North Shore	17	74	69	-7%	306%
68	Queen/Harris Street	Franklin	57	52	68	31%	19%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	55	68	24%	-
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	47	65	66	2%	40%
1	Victoria/Wellesley/Halsey Street	Auckland	90	79	65	-18%	-28%
73	Blockhouse Bay/Great North Road	Auckland	-	60	62	3%	-
53	326 Te Atatu Road, near Covil Avenue	Waitakere	43	55	59	7%	37%
38	Rosedale/East Coast Road	North Shore	22	46	54	17%	145%
85	Rathgar/Pomaria Road	Waitakere	-	-	53	-	-
16	Jervois Road/Wallace Street	Auckland	-	-	51	-	-
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	66	52	51	-2%	-23%
51	Luckens/Hobsonville Road	Waitakere	12	16	51	219%	325%
20	St Heliers Bay/West Tamaki Road	Auckland	69	60	47	-22%	-32%
40	Oteha Valley Road/SH17/Albany Highway	North Shore	15	28	47	68%	213%
75	Stanley Street/Grafton Road	Auckland	-	29	47	62%	-
46	Rosedale/Bush Road	North Shore	16	37	46	24%	188%
48	Henderson Creek	Waitakere	32	19	46	142%	44%
70	Upper Harbour Bridge	Waitakere	-	18	45	150%	-
33	Bucklands Beach/Pakuranga Road	Manukau	72	77	43	-44%	-40%
43	Glenfield/Coronation Road	North Shore	12	39	42	8%	250%
41	Wairau/Glenfield Road	North Shore	30	34	38	12%	27%

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
65	Great South Road/Rosehill Drive	Papakura	24	30	37	23%	54%
49	Triangle Road/Don Buck Road	Waitakere	43	32	35	9%	-19%
4	Patiki/Rosebank Road	Auckland	45	45	34	-24%	-24%
57	West Coast/Rosier Road	Waitakere	29	19	34	79%	17%
76	Waikaraka Cycle Way	Auckland	-	41	33	-20%	-
54	Te Atatu Road/Elcoat Avenue	Waitakere	24	18	32	78%	33%
30	Great South/East Tamaki Road	Manukau	37	27	30	11%	-19%
32	McKenzie/Coronation/Walmsley Road	Manukau	42	36	30	-17%	-29%
44	Birkenhead Ave/Mokoia Road	North Shore	20	29	30	3%	50%
45	Beach/Browns Bay Road	North Shore	8	19	30	58%	275%
64	Porchester/Walters Road	Papakura	28	27	30	11%	7%
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	45	39	29	-26%	-36%
18	Great South Road/High Street/Atkinson/Park Avenue	Auckland	46	30	28	-7%	-39%
23	Great South/Bairds Road	Manukau	36	29	28	-3%	-22%
79	Harris/Smales Road	Manukau	-	-	25	-	-
66	Great South Road/Taka Street	Papakura	40	39	24	-38%	-40%
31	Wyllie Avenue/Puhinui Road	Manukau	20	25	23	-8%	15%
82	Jelas/Moffatt Road	Rodney	-	-	23	-	-
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	39	26	22	-15%	-44%
50	Lincoln Road/Fairdene Avenue	Waitakere	27	36	22	-39%	-19%
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	21	-	-
28	Massey/Buckland Road	Manukau	31	20	20	0%	-35%
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	-	39	20	-49%	-
81	Te Irirangi Drive/Ormiston Road	Manukau	-	-	20	-	-

Site Number	Locations	Area	2007	2008	2009	Change 08-09	Change 07-09
69	Edinburgh/Tobin Street	Franklin	18	24	19	-21%	6%
26	Great South/Browns/Orams Road	Manukau	35	23	18	-22%	-49%
71	Highbrook Drive	Manukau	-	16	18	13%	-
56	3 Rankin Avenue	Waitakere	15	21	17	-19%	13%
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	39	30	17	-43%	-56%
86	George/Elizabeth Street	Franklin	-	-	14	-	-
15	Richardson Road/Maioro Street	Auckland	-	-	13	-	-
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	16	16	11	-31%	-31%
84	Behind Rodney District Council Building	Rodney	-	-	11	-	-
60	Whangaparaoa Road, near SH1 Intersection	Rodney	17	11	6	-45%	-65%
62	Rata Road/Rimu Road/Centre cycleway	Rodney	10	5	5	0%	-50%
61	D'Oyly Reserve cycleway	Rodney	10	84	4	-95%	-60%
67	Karaka/Glenbrook Road/SH22	Franklin	4	5	3	-40%	-25%
83	Jelas Road/Croi Bridge	Rodney	-	-	1	-	-
Total (62 sites since 2007)^			4340	4544	4326	-5%	<-1%
Total (69 sites since 2008)^			-	4802	4619	-4%	-
Total (83 sites in 2009)			-	-	5156	-	-

^Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the average and total figures exclude this outlier for more accurate comparison.

**Table 2.3B: Summary Of Average Evening Cyclist Movements by TA
–2007-2009 (62 Sites)**

Locations	Number of Sites	2007		2008		2009		Change 08-09	Change 07-09
		Average Cycle Movements	Range	Average Cycle Movements	Range	Average Cycle Movements	Range		
Auckland	19	152	45 - 420	141	30 - 370	119	28 - 282	-16%	-22%
North Shore	13	28	8 - 65	61	19 - 123	71	30 - 133	16%	154%
Waitakere	11	43	12 - 130	47	16 - 151	62	17 - 198	32%	44%
Papakura	3	31	24 - 40	32	27 - 39	30	24 - 37	-6%	-3%
Franklin	3	26	4 - 57	27	5 - 52	30	3 - 68	11%	15%
Manukau	9	40	20 - 72	34	20 - 77	27	18 - 43	-21%	-33%
Rodney^	4	21	10 - 39	16	5 - 30	10	5 - 17	-38%	-52%
Region^	62	70	4 - 420	73	5 - 370	70	3 - 282	-4%	0%

^Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the summary figures exclude this site for more accurate comparison.

- Table 2.3C illustrates the comparable summary results between 2008 and 2009 based on 69 sites monitored in both years. Of the seven TAs, the average number of evening cyclists at each site of those monitored in both 2008 and 2009 continues to be highest in Auckland city (105 movements, down from 124 movements in 2008) and is lowest in Rodney district (8 movements, compared with 12 movements last year).

**Table 2.3C: Summary Of Average Evening Cyclist Movements by TA
–2008-2009 (69 Sites)**

Locations	Number of Sites	2008		2009		Change 08-09
		Average Cycle Movements	Range	Average Cycle Movements	Range	
Auckland	23	124	29 - 370	105	20 - 282	-15%
North Shore	13	61	19 - 123	71	30 - 133	16%
Waitakere	13	46	16 - 151	61	17 - 198	33%
Papakura	3	32	27 - 39	30	24 - 37	-6%
Franklin	3	27	5 - 52	30	3 - 68	11%
Manukau	10	32	16 - 77	26	18 - 43	-19%
Rodney [^]	4	12	5 - 30	8	5 - 17	-33%
Region[^]	69	70	5 - 370	67	3 - 282	-4%

[^]Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the summary figures exclude this site for more accurate comparison.

- As shown in Table 2.3D, the average volume of evening cyclists across the 83 sites in the Auckland region is 62 cycle movements. Of the seven TAs, the average number of evening cycle movements is highest in Auckland City (100) and lowest in Rodney (10).

**Table 2.3D: Summary Of Average Evening Cyclist Movements by TA
–2009 (83 Sites)**

Locations	Number of Sites	Average Cycle Movements	09 Range
Auckland	27	100	13 - 282
North Shore	13	71	30 - 133
Waitakere	14	61	17 - 198
Papakura	3	30	24 - 37
Manukau	14	29	18 - 77
Franklin	4	26	3 - 68
Rodney	8	10	1 - 23
Region	83	62	1 - 282

Table 2.4 shows the percentage change in cyclist movements from morning to evening at each site monitored in the Auckland region.

Note that there are three hours for the evening monitoring period compared with 2.5 hours in the morning. To enable the morning and evening cyclist volumes to be fairly compared, a scale factor has been applied so that the count numbers for both periods are based on the same length of time (2.5 hours). However, the limitation of this approach is that it does not take into account the variation in cycle movement numbers that exist over the course of a shift (as illustrated in Figure 2.1 and 3.3); rather, the number of cycle movements is assumed to be consistent throughout the monitoring period. Consequently, the results presented in Table 2.4 should be considered indicative only.

- Overall, the number of evening cycle movements across the 83 sites decreases by 12 per cent from the number recorded in the morning shift. *Note that this decline can be attributed, at least in part, to the fact that the morning peak (6.30 to 9.00am) captured students cycling to school, but these same students will have been missed in the evening peak counts which commenced at 4pm, some time after schools are dismissed.*
- Thirty-nine per cent of the sites (32 out of 83) have the evening cycle volume greater than the morning cycle volume. The three most notable increases are at:
 - Tom Pearce/George Bolt Memorial Drive, Manukau city – increase from 6 morning movements to 18 movements in the evening (200 per cent);
 - George/Elizabeth Street, Franklin district – increase from 4 morning movements to 12 movements in the evening (200 per cent); and
 - Gulf Harbour Drive/Laurie Southwick Parade, Rodney district – increase from 5 morning movements to 14 evening movements (180 per cent).
- In contrast, the number of evening cyclists recorded at 47 sites is lower than in the morning peak. The most notable decreases are at:
 - Behind Rodney District Council Building, Rodney district – from 75 morning movements to 9 evening movements (88 per cent); and
 - Rosedale/East Coast Road, North Shore city – from 105 morning movements to 45 evening movements (57 per cent.)

**Table 2.4: Summary Of Change in Cyclist Movements from Morning to Evening
2009 (%)**

Site Number	Locations	Area	AM	PM⁸	Change
25	Tom Pearce/George Bolt Memorial Drive	Manukau	6	18	200%
86	George/Elizabeth Street	Franklin	4	12	200%
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	5	14	180%
68	Queen/Harris Street	Franklin	27	57	111%
66	Great South Road/Taka Street	Papakura	12	20	67%
51	Luckens/Hobsonville Road	Waitakere	26	43	65%
70	Upper Harbour Bridge	Waitakere	23	38	65%
31	Wyllie Avenue/Puhinui Road	Manukau	12	19	58%
40	Oteha Valley Road/SH17/Albany Highway	North Shore	25	39	56%
76	Waikaraka Cycle Way	Auckland	18	28	56%
67	Karaka/Glenbrook Road/SH22	Franklin	2	3	50%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	37	55	49%
46	Rosedale/Bush Road	North Shore	26	38	46%
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	12	17	42%
48	Henderson Creek	Waitakere	27	38	41%
65	Great South Road/Rosehill Drive	Papakura	22	31	41%
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	31	43	39%
80	Pakuranga Road/Ti Rakau Drive	Manukau	46	64	39%
15	Richardson Road/Maioro Street	Auckland	8	11	38%
49	Triangle Road/Don Buck Road	Waitakere	21	29	38%
85	Rathgar/Pomaria Road	Waitakere	32	44	38%

⁸ A scale factor of 5/6 has been applied to reduce the evening cyclist volumes to a 2.5 hour interval, consistent with the morning monitoring period.

Site Number	Locations	Area	AM	PM^B	Change
64	Porchester/Walters Road	Papakura	19	25	32%
81	Te Irirangi Drive/Ormiston Road	Manukau	13	17	31%
82	Jelas/Moffatt Road	Rodney	15	19	27%
17	Onehunga Harbour Road	Auckland	74	88	19%
14	Mount Albert/New North Road	Auckland	59	69	17%
21	Great South Road/Campbell Road/Main Highway	Auckland	64	73	14%
32	McKenzie/Coronation/Walmsley Road	Manukau	22	25	14%
52	Central Park Drive	Waitakere	91	101	11%
18	Great South Road/High Street/Atkinson/Park Avenue	Auckland	21	23	10%
69	Edinburgh/Tobin Street	Franklin	15	16	7%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	157	165	5%
78	Lagoon Drive/Church Crescent	Auckland	57	60	5%
39	Upper Harbour Drive/Albany Highway	North Shore	63	63	0%
57	West Coast/Rosier Road	Waitakere	28	28	0%
83	Jelas Road/Croi Bridge	Rodney	1	1	0%
43	Glenfield/Coronation Road	North Shore	36	35	-3%
5	Dominion/Balmoral Road	Auckland	85	82	-4%
8	Symonds Street/Karangahape Road	Auckland	246	235	-4%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	19	18	-5%
44	Birkenhead Ave/Mokoia Road	North Shore	27	25	-7%
1	Victoria/Wellesley/Halsey Street	Auckland	59	54	-8%
2	Ponsonby/Karangahape Road	Auckland	176	162	-8%
12	Manukau Road/Greenlane West	Auckland	84	77	-8%
13	Ian McKinnon/Newton Road	Auckland	139	127	-9%
73	Blockhouse Bay/Great North Road	Auckland	57	52	-9%

Site Number	Locations	Area	AM	PM^B	Change
28	Massey/Buckland Road	Manukau	19	17	-11%
37	Taharoto/Northcote Road	North Shore	98	87	-11%
45	Beach/Browns Bay Road	North Shore	29	25	-14%
50	Lincoln Road/Fairdene Avenue	Waitakere	21	18	-14%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	66	57	-14%
47	Oteha Valley/East Coast Road	North Shore	69	58	-16%
7	North Western Cycleway/St Lukes	Auckland	155	129	-17%
60	Whangaparaoa Road, near SH1 Intersection	Rodney	6	5	-17%
3	Great North/Carrington Road	Auckland	97	80	-18%
6	North Western Cycleway/Great North Road	Auckland	145	118	-19%
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	30	24	-20%
75	Stanley Street/Grafton Road	Auckland	49	39	-20%
23	Great South/Bairds Road	Manukau	29	23	-21%
9	Karangahape Road/Queen Street	Auckland	238	184	-23%
30	Great South/East Tamaki Road	Manukau	33	25	-24%
41	Wairau/Glenfield Road	North Shore	42	32	-24%
71	Highbrook Drive	Manukau	20	15	-25%
4	Patiki/Rosebank Road	Auckland	38	28	-26%
10	Tamaki Drive/The Strand	Auckland	321	235	-27%
54	Te Atatu Road/Elcoat Avenue	Waitakere	37	27	-27%
16	Jervois Road/Wallace Street	Auckland	60	43	-28%
26	Great South/Browns/Orams Road	Manukau	21	15	-29%
33	Bucklands Beach/Pakuranga Road	Manukau	51	36	-29%
22	Ferry Terminal	Auckland	137	93	-32%
56	3 Rankin Avenue	Waitakere	21	14	-33%

Site Number	Locations	Area	AM	PM^B	Change
62	Rata Road/Rimu Road/Centre cycleway	Rodney	6	4	-33%
35	Lake Road, by Takapuna Grammar	North Shore	166	108	-35%
20	St Heliers Bay/West Tamaki Road	Auckland	61	39	-36%
11	Remuera/Orakei Road	Auckland	107	67	-37%
42	Shakespeare/East Coast Road	North Shore	177	111	-37%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	79	49	-38%
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	15	9	-40%
61	D'Oyly Reserve cycleway	Rodney	5	3	-40%
79	Harris/Smales Road	Manukau	35	21	-40%
36	Hurstmere Road/Killarney Street	North Shore	186	110	-41%
38	Rosedale/East Coast Road	North Shore	105	45	-57%
84	Behind Rodney District Council Building	Rodney	75	9	-88%
	Total		4898	4303	-12%

- Most evening cyclists are adults (89 per cent, stable from 87 per cent in the previous year).
- Helmet wearing is still widespread in the evening (89 per cent, compared with 87 per cent in 2008).
- On average, four in five evening cyclists are either riding on the road or off-road cycleway (77 per cent, compared with 80 per cent last year). The share riding on the footpath has increased 3 per centage points to 23 per cent.
- Of the seven TAs, Auckland city continues to have the greatest share of cyclists who are adults (96 per cent) and riding on the road and off-road cycleway (93 per cent), while North Shore city has the highest share of cyclists wearing a helmet (95 per cent).
- In contrast, Franklin district has the greatest share of cyclists who are school children (64 per cent) and riding on the footpath (73 per cent), while one-third of evening cyclists in Papakura district are not wearing helmets (33 per cent).

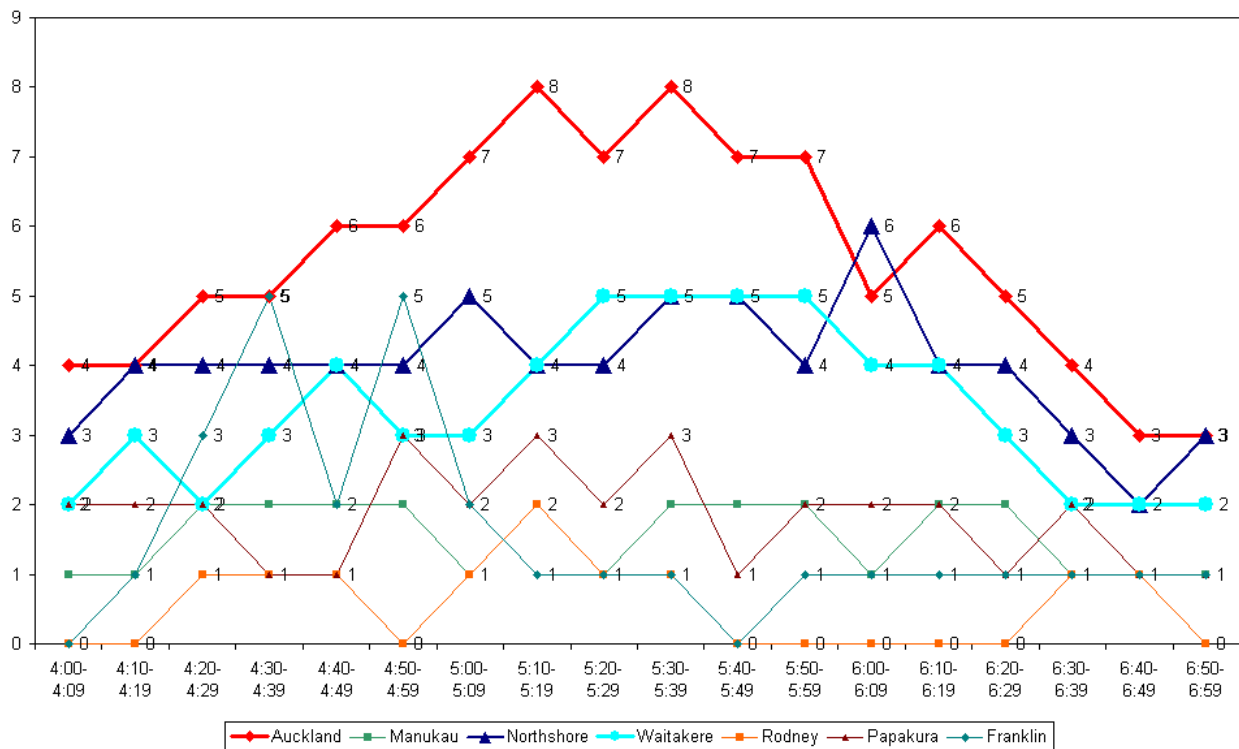
**Table 2.5: Summary of Evening Cyclist Characteristics
2009 (%)**

	<i>Auckland</i>	<i>Manukau</i>	<i>North Shore</i>	<i>Waitakere</i>	<i>Rodney</i>	<i>Papakura</i>	<i>Franklin</i>	Aggregate Total (2009)	Aggregate Total (2008)	Aggregate Total (2007)
Cyclist Type										
Adult	96%	89%	86%	84%	50%	68%	36%	89%	87%	91%
School child	4%	11%	14%	16%	50%	32%	64%	11%	13%	9%
Helmet Wearing										
Helmet on head	91%	82%	95%	82%	77%	67%	75%	89%	87%	86%
No helmet	9%	18%	5%	18%	23%	33%	25%	11%	13%	14%
Where Riding										
Road	60%	64%	77%	30%	28%	64%	27%	57%	80%	77%
Footpath	17%	33%	22%	29%	24%	36%	73%	23%	20%	23%
Off-road cycleway ⁹	23%	3%	1%	41%	48%	0%	0%	20%	-	-
Base:	2703	404	929	847	78	91	104	5156	5161	4661

⁹ In 2009, surveyors were asked to distinguish between cyclists riding on the road and cyclists riding on off-road cycleways. In previous years, all cyclists riding on both off-road cycleways and road were classified as road riders. Thus, no comparable results are provided with previous years.

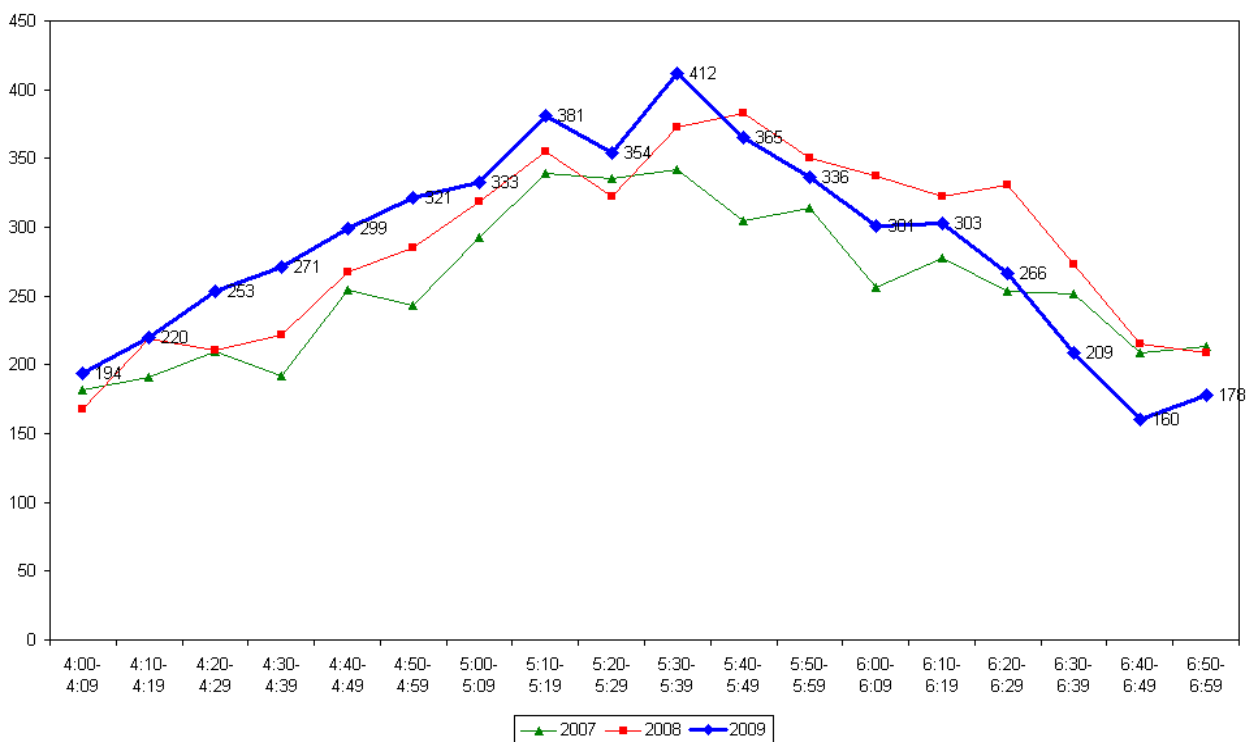
- Figure 2.3 illustrates the average number of evening cycle movements per site by time of trip. The graph shows the different patterns of evening cyclist volumes across each site of the cities/districts in the region.
- Consistent with the overall trend in the morning peak, evening cyclist numbers are highest at the Auckland city sites. No less than an average of 3 evening cyclists per site are recorded in all ten-minute intervals, with peaks evident between 5:00 and 5:59 pm (7 to 8 cyclists per each ten minute interval).
- Whilst notably lower than for Auckland city, evening cycle volumes are higher for North Shore followed by Waitakere when compared with other TAs. Cycle movement numbers peak at around 6:09pm in North Shore city (6 cyclists), while Waitakere reported slight peaks between 5:20pm and 5:59pm (5 cyclists).
- By comparison Manukau, Rodney, Papakura and Franklin districts have low cycle volumes throughout the evening monitoring period.

Figure 2.3: Average Cyclist Frequency per Site by Territorial Authority – Evening Peak 2009



- The overall pattern of total evening cyclist volumes derived from the 83 sites is illustrated in Figure 2.4. In 2009, evening cyclist numbers start off relatively low, increase gradually to a peak in the middle of the monitoring period (412 cyclists at around 5:35pm), and then tail off through to the end of the evening period. This is consistent with the general trend observed in previous years. *Note that there are three sites dropped, four sites relocated and nine new sites monitored this year.*

**Figure 2.4: Total Cyclist Frequency
– Evening Peak 2007-2008**



2.3 Aggregated Total

- Overall, a total of 9,021 cyclist movements¹⁰ were recorded across the 69 sites monitored in both 2008 and 2009. This figure represents a 2 per cent decrease when compared with 2008 (9,221 movements). However, this decrease is not statistically significant – that is, the decline falls within the margin of error at the 95% confidence interval.
- In total, 10,054 cycle movements were reported across the 83 sites in the Auckland region. This comprises four per cent of morning cycle movements (n=405) observed in cycling groups. The number of evening cyclists comprises a slightly larger share (51 per cent) of the total number of cycle movements than the morning cyclists (49 per cent).
- Of the 83 sites monitored in the Auckland region, the busiest is the Tamaki Drive/The Strand intersection with a total of 603 movements (down from 786 movements last year).
- Jelas Road/Croi Bridge has the lightest cyclist traffic (2 movements).
- Just over two-fifth of the sites (35 out of 83) have recorded decreases in total cyclist numbers this year compared with 2008. The intersections with the biggest decreases are:
 - D'Oyly Reserve cycleway, Rodney district – down from 103 to 9 movements (91 per cent);
 - Gulf Harbour Drive/Laurie Southwick Parade, Rodney district – down from 44 to 22 movements (50 per cent); and
 - Apirana Avenue/Pilkington/Tripoli Road, Auckland city – down from 61 to 32 movements (48 per cent).
- In contrast, the number of total cyclists recorded at 29 sites is higher than last year. The most notable increases are at:
 - Henderson Creek, Waitakere – up from 30 to 73 movements (143 per cent);
 - Upper Harbour Bridge, Waitakere – up 35 to 68 movements (94 per cent); and
 - Luckens/Hobsonville Road, Waitakere – up from 41 to 77 movements (88 per cent).

¹⁰ It is important to note that this figure represents individual cyclist movements rather than total cyclist numbers. The limitations of the methodology used mean that, due to the close proximity of sites to one another (particularly in Auckland City's CBD), it is possible for the same cyclist to be counted at more than one site. It is also possible to 'double count' cyclists if they use the same intersection more than once during a shift. At the same time, there will be many cycle trips that will not be counted at all by this methodology, if a cyclist's route does not pass through a monitoring location. Because of these limitations, it cannot be said that 9,021 different cyclists were counted on the Auckland region's roads using these sites; the actual number of cyclists, and the number of cycle trips they take, may be higher or lower than the number of cycle movements counted through this methodology.

**Table 2.6A: Summary Of Total Cyclist Movements
2007-2009 (n) – 6.30 to 9.00 am and 4.00 to 7.00 pm**

Site Number	Location	Area	2007	2008	2009	Change 08-09	Change 07-09
10	Tamaki Drive/The Strand	Auckland	900	786	603	-23%	-33%
8	Symonds Street/Karangahape Road	Auckland	639	621	528	-15%	-17%
9	Karangahape Road/Queen Street	Auckland	507	424	459	8%	-9%
2	Ponsonby/Karangahape Road	Auckland	487	415	370	-11%	-24%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	232	272	355	31%	53%
36	Hurstmere Road/Killarney Street	North Shore	121	252	318	26%	163%
7	North Western Cycleway/St Lukes	Auckland	324	331	310	-6%	-4%
42	Shakespeare/East Coast Road	North Shore	137	250	310	24%	126%
35	Lake Road, by Takapuna Grammar	North Shore	192	297	295	-1%	54%
13	Ian McKinnon/Newton Road	Auckland	-	-	291	-	-
6	North Western Cycleway/Great North Road	Auckland	232	369	286	-22%	23%
22	Ferry Terminal	Auckland	380	316	248	-22%	-35%
52	Central Park Drive	Waitakere	127	157	212	35%	67%
37	Taharoto/Northcote Road	North Shore	162	270	202	-25%	25%
3	Great North/Carrington Road	Auckland	235	231	193	-16%	-18%
11	Remuera/Orakei Road	Auckland	195	189	187	-1%	-4%
5	Dominion/Balmoral Road	Auckland	237	201	183	-9%	-23%
17	Onehunga Harbour Road	Auckland	249	220	180	-18%	-28%
12	Manukau Road/Greenlane West	Auckland	225	205	176	-14%	-22%
38	Rosedale/East Coast Road	North Shore	76	98	159	62%	109%
21	Great South Road/Campbell Road/Main Highway	Auckland	174	114	151	32%	-13%
14	Mount Albert/New North Road	Auckland	156	164	142	-13%	-9%

Site Number	Location	Area	2007	2008	2009	Change 08-09	Change 07-09
39	Upper Harbour Drive/Albany Highway	North Shore	25	98	138	41%	452%
47	Oteha Valley/East Coast Road	North Shore	59	114	138	21%	134%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	87	107	138	29%	59%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	111	134	21%	-
78	Lagoon Drive/Church Crescent	Auckland	-	-	129	-	-
1	Victoria/Wellesley/Halsey Street	Auckland	160	136	124	-9%	-23%
80	Pakuranga Road/Ti Rakau Drive	Manukau	-	-	123	-	-
73	Blockhouse Bay/Great North Road	Auckland	-	117	119	2%	-
16	Jervois Road/Wallace Street	Auckland	-	-	111	-	-
20	St Heliers Bay/West Tamaki Road	Auckland	208	167	108	-35%	-48%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	62	86	103	20%	66%
75	Stanley Street/Grafton Road	Auckland	-	65	96	48%	-
68	Queen/Harris Street	Franklin	101	83	95	14%	-6%
33	Bucklands Beach/Pakuranga Road	Manukau	140	130	94	-28%	-33%
84	Behind Rodney District Council Building	Rodney	-	-	86	-	-
85	Rathgar/Pomaria Road	Waitakere	-	-	85	-	-
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	118	94	82	-13%	-31%
41	Wairau/Glenfield Road	North Shore	64	73	80	10%	25%
43	Glenfield/Coronation Road	North Shore	28	75	78	4%	179%
51	Luckens/Hobsonville Road	Waitakere	32	41	77	88%	141%
48	Henderson Creek	Waitakere	46	30	73	143%	59%
4	Patiki/Rosebank Road	Auckland	82	79	72	-9%	-12%
40	Oteha Valley Road/SH17/Albany Highway	North Shore	19	48	72	50%	279%
46	Rosedale/Bush Road	North Shore	31	73	72	-1%	132%

Site Number	Location	Area	2007	2008	2009	Change 08-09	Change 07-09
54	Te Atatu Road/Elcoat Avenue	Waitakere	50	45	69	53%	38%
70	Upper Harbour Bridge	Waitakere	-	35	68	94%	-
30	Great South/East Tamaki Road	Manukau	73	51	63	24%	-14%
57	West Coast/Rosier Road	Waitakere	48	37	62	68%	29%
79	Harris/Smales Road	Manukau	-	-	60	-	-
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	81	75	59	-21%	-27%
45	Beach/Browns Bay Road	North Shore	19	45	59	31%	211%
65	Great South Road/Rosehill Drive	Papakura	53	72	59	-18%	11%
23	Great South/Bairds Road	Manukau	68	56	57	2%	-16%
44	Birkenhead Ave/Mokoia Road	North Shore	40	49	57	16%	43%
49	Triangle Road/Don Buck Road	Waitakere	67	61	56	-8%	-16%
32	McKenzie/Coronation/Walmsley Road	Manukau	70	57	52	-9%	-26%
76	Waikaraka Cycle Way	Auckland	-	54	51	-6%	-
18	Great South Road/High Street/Atkinson/Park Avenue	Auckland	84	60	49	-18%	-42%
64	Porchester/Walters Road	Papakura	50	46	49	7%	-2%
50	Lincoln Road/Fairdene Avenue	Waitakere	40	55	43	-22%	8%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	73	51	41	-20%	-44%
26	Great South/Browns/Orams Road	Manukau	60	55	39	-29%	-35%
28	Massey/Buckland Road	Manukau	43	31	39	26%	-9%
56	3 Rankin Avenue	Waitakere	31	38	38	0%	23%
71	Highbrook Drive	Manukau	-	29	38	31%	-
82	Jelas/Moffatt Road	Rodney	-	-	38	-	-
66	Great South Road/Taka Street	Papakura	58	58	36	-38%	-38%
31	Wyllie Avenue/Puhinui Road	Manukau	38	33	35	6%	-8%

Site Number	Location	Area	2007	2008	2009	Change 08-09	Change 07-09
69	Edinburgh/Tobin Street	Franklin	35	40	34	-15%	-3%
81	Te Irirangi Drive/Ormiston Road	Manukau	-	-	33	-	-
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	-	61	32	-48%	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	27	-	-
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	29	31	26	-16%	-10%
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	56	44	22	-50%	-61%
15	Richardson Road/Maioro Street	Auckland	-	-	21	-	-
86	George/Elizabeth Street	Franklin	-	-	18	-	-
60	Whangaparaoa Road, near SH1 Intersection	Rodney	28	20	12	-40%	-57%
62	Rata Road/Rimu Road/Centre cycleway	Rodney	31	14	11	-21%	-65%
61	D'Oyly Reserve cycleway	Rodney	24	103	9	-91%	-63%
67	Karaka/Glenbrook Road/SH22	Franklin	4	9	5	-44%	25%
83	Jelas Road/Croi Bridge	Rodney	-	-	2	-	-
Total (62 sites since 2007) ^			8478	8749	8483	-3%	<1%
Total (69 sites since 2008) ^			-	9221	9021	-2%	-
Total (83 sites in 2009)			-	-	10054	-	-

^Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the average and total figures exclude this outlier for more accurate comparison.

**Table 2.6B: Summary Of Average Cyclist Movements by TA
- 2007-2009 (62 Sites)**

Locations	Number of Sites	2007		2008		2009		Change 08-09	Change 07-09
		Average Cycle Movements	Range	Average Cycle Movements	Range	Average Cycle Movements	Range		
Auckland	19	294	82 - 900	270	60 - 786	234	49 - 603	-13%	-20%
North Shore	13	75	19 - 192	134	45 - 297	152	57 - 318	13%	103%
Waitakere	11	75	31 - 232	84	30 - 272	111	38 - 355	32%	48%
Manukau	9	72	38 - 140	60	31 - 130	53	35 - 94	-12%	-26%
Papakura	3	54	50 - 58	59	46 - 72	48	36 - 59	-19%	-11%
Franklin	3	47	4 - 101	44	9 - 83	45	5 - 95	2%	-4%
Rodney [^]	4	36	28 - 56	27	14 - 44	18	11 - 26	-33%	-50%
Region[^]	62	137	4 - 900	141	9 - 786	137	5 - 603	-3%	0%

[^]Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the summary figures exclude this site for more accurate comparison.

**Table 2.6C: Summary Of Average Cyclist Movements by TA
- 2008-2009 (69 Sites)**

<i>Locations</i>	<i>Number of Sites</i>	<i>2008</i>		<i>2009</i>		<i>Change 08-09</i>
		<i>Average Cycle Movements</i>	<i>Range</i>	<i>Average Cycle Movements</i>	<i>Range</i>	
Auckland	23	236	54 - 786	206	32 - 603	-13%
North Shore	13	134	45 - 297	152	57 - 318	13%
Waitakere	13	83	30 - 272	110	38 - 355	33%
Manukau	10	57	29 - 130	52	35 - 94	-9%
Papakura	3	59	46 - 72	48	36 - 59	-19%
Franklin	3	44	9 - 83	45	5 - 95	2%
Rodney [^]	4	27	14 - 44	18	11 - 26	-33%
Region[^]	69	134	9 - 786	131	5 - 603	-2%

[^]Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the summary figures exclude this site for more accurate comparison.

**Table 2.6D: Summary Of Average Cyclist Movements by TA
- 2008-2009 (83 Sites)**

Locations	Number of Sites	Average Cycle Movements	09 Range
Auckland	27	196	21 - 603
Manukau	14	54	27 - 123
North Shore	13	152	57 - 318
Waitakere	14	108	38 - 355
Rodney	8	26	2 - 86
Papakura	3	48	36 - 59
Franklin	4	38	5 - 95
Region	83	121	2 - 603

- In total, 87 per cent of all cyclists are adults (compared with 86 per cent last year).
- Most cyclists are wearing a helmet (91 per cent, compared with 90 per cent in 2008).
- The majority of cyclists are either riding on the road or off-road cycleway (79 per cent, down slightly from 81 per cent last year).

**Table 2.7: Summary of Total Cyclist Characteristics
2007-2009 (%)**

	<i>Auckland</i>	<i>Manukau</i>	<i>North Shore</i>	<i>Waitakere</i>	<i>Rodney</i>	<i>Papakura</i>	<i>Franklin</i>	Aggregate Total (2009)	Aggregate Total (2008)	Aggregate Total (2007)
Cyclist Type										
Adult	95%	86%	84%	81%	28%	65%	37%	87%	86%	88%
School child	5%	14%	16%	19%	72%	35%	63%	13%	14%	12%
Helmet Wearing										
Helmet on head	92%	84%	96%	86%	82%	74%	77%	91%	90%	89%
No helmet	8%	16%	4%	14%	18%	26%	23%	9%	10%	11%
Where Riding										
Road	64%	64%	77%	32%	18%	57%	32%	60%	81%	77%
Footpath	15%	33%	22%	29%	20%	43%	68%	21%	19%	23%
Off-road cycleway ¹¹	21%	3%	1%	39%	62%	0%	0%	19%	-	-
Base:	5301	760	1978	1513	206	144	152	10054	9780	9019

¹¹ In 2009, surveyors were asked to distinguish between cyclists riding on the road and cyclists riding on off-road cycleways. In previous years, all cyclists riding on both off-road cycleway and road were classified as road riders. Thus, no comparable results are provided with previous years.

2.4 Annual Average Daily Traffic (AADT) Estimates

Note: A discussion of Annual Average Daily Traffic Estimates is provided in Section Two. A full description of the tool, the calculation used, and the limitations of the estimates, are provided in Appendix Two. Readers are encouraged to review these sections in conjunction with the data presented here.

- Table 2.8 provides the comparative AADT estimates for each site, based on the average of morning and evening peak AADT calculations.
- The highest AADT is at Tamaki Drive/The Strand (880 daily trips, down from 1146 daily trips last year) and the lowest is at Jelas Road/Croi Bridge (3 daily trips).
- Just over two-fifth of the sites (35 out of 83) have recorded decreases in total AADT estimates this year compared with 2008. The intersections with the biggest decreases are:
 - D'Oyly Reserve cycleway, Rodney district – down from 145 to 13 movements (91 per cent);
 - Gulf Harbour Drive/Laurie Southwick Parade, Rodney district – down from 63 to 31 movements (51 per cent); and
 - Apirana Avenue/Pilkington/Tripoli Road, Auckland city – down from 87 to 46 movements (47 per cent).
- In contrast, AADT estimates at 29 sites are higher than last year. The most notable increases are at:
 - Henderson Creek, Waitakere – up from 43 to 105 movements (144 per cent);
 - Upper Harbour Bridge, Waitakere – up 51 to 97 movements (90 per cent); and
 - Luckens/Hobsonville Road, Waitakere – up from 60 to 110 movements (83 per cent).

Table 2.8¹²: AADT Estimates Based on Morning and Evening Cyclist Movements 2007-2009 (n)

Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	Change 08-09	Change 07-09
10	Tamaki Drive/The Strand	Auckland	1313	1146	880	-23%	-33%
8	Symonds Street/Karangahape Road	Auckland	924	899	765	-15%	-17%
9	Karangahape Road/Queen Street	Auckland	736	616	669	9%	-9%
2	Ponsonby/Karangahape Road	Auckland	705	602	536	-11%	-24%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	335	393	513	31%	53%
36	Hurstmere Road/Killarney Street	North Shore	279	368	466	27%	67%
42	Shakespeare/East Coast Road	North Shore	314	364	454	25%	45%
7	North Western Cycleway/St Lukes	Auckland	469	480	451	-6%	-4%
35	Lake Road, by Takapuna Grammar	North Shore	444	440	432	-2%	-3%
13	Ian McKinnon/Newton Road	Auckland	-	-	422	-	-
6	North Western Cycleway/Great North Road	Auckland	335	532	416	-22%	24%
22	Ferry terminal	Auckland	553	459	363	-21%	-34%
52	Central Park Drive	Waitakere	184	227	306	35%	66%
37	Taharoto/Northcote Road	North Shore	375	396	293	-26%	-22%
3	Great North/Carrington Road	Auckland	341	333	281	-16%	-18%
11	Remuera/Orakei Road	Auckland	282	276	274	-1%	-3%
5	Dominion/Balmoral Road	Auckland	344	291	265	-9%	-23%
17	Onehunga Harbour Road	Auckland	357	316	259	-18%	-27%
12	Manukau Road/Greenlane West	Auckland	326	296	255	-14%	-22%
38	Rosedale/East Coast Road	North Shore	176	143	235	64%	34%

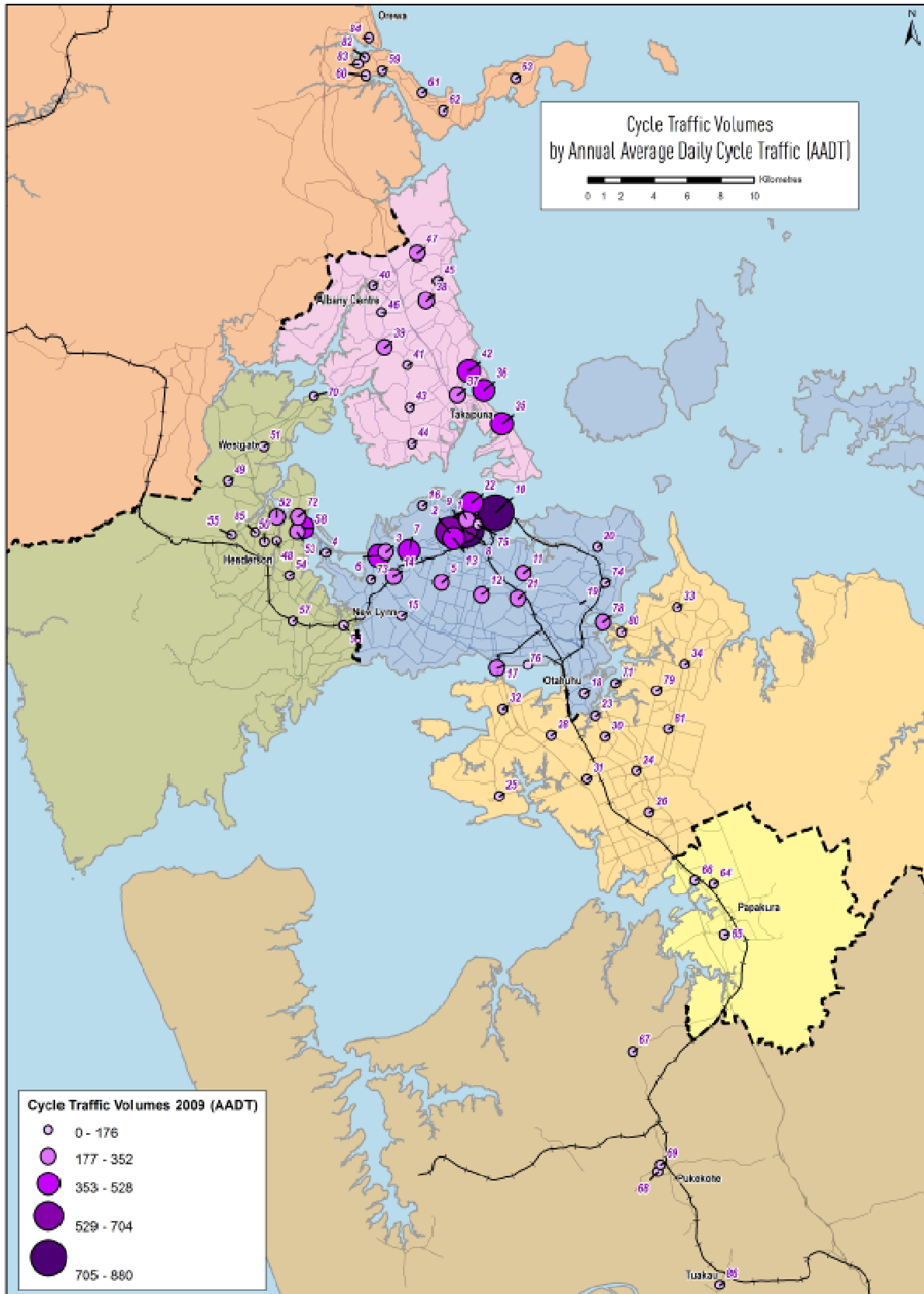
¹² The AADT estimates for all TAs in 2008 and 2009 are calculated using the 'dry' weather factor, whereas a 'wet' factor was applied to 2007's AADT calculation for North Shore City. The 'wet' factor is a greater multiplier than the 'dry' factor and consequently produces higher AADT estimates.

Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	Change 08-09	Change 07-09
21	Great South Road/Campbell Road/Main Highway	Auckland	253	165	218	32%	-14%
14	Mount Albert/New North Road	Auckland	226	236	205	-13%	-9%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	127	155	202	30%	59%
47	Oteha Valley/East Coast Road	North Shore	137	163	201	23%	47%
39	Upper Harbour Drive/Albany Highway	North Shore	57	143	200	40%	251%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	161	195	21%	-
78	Lagoon Drive/Church Crescent	Auckland	-	-	186	-	-
1	Victoria/Wellesley/Halsey Street	Auckland	231	196	180	-8%	-22%
80	Pakuranga Road/Ti Rakau Drive	Manukau	-	-	176	-	-
73	Blockhouse Bay/Great North Road	Auckland	-	170	173	2%	-
16	Jervois Road/Wallace Street	Auckland	-	-	162	-	-
20	St Heliers Bay/West Tamaki Road	Auckland	308	246	158	-36%	-49%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	88	122	148	21%	68%
75	Stanley Street/Grafton Road	Auckland	-	95	140	47%	-
33	Bucklands Beach/Pakuranga Road	Manukau	203	187	137	-27%	-33%
68	Queen/Harris Street	Franklin	146	119	135	13%	-8%
84	Behind Rodney District Council Building	Rodney	-	-	130	-	-
85	Rathgar/Pomaria Road	Waitakere	-	-	122	-	-
19	Ellerslie Panmure Highway/Lunn Ave	Auckland	170	136	118	-13%	-31%
41	Wairau/Glenfield Road	North Shore	93	107	117	9%	26%
43	Glenfield/Coronation Road	North Shore	64	109	113	4%	77%
51	Luckens/Hobsonville Road	Waitakere	47	60	110	83%	134%
4	Patiki/Rosebank Road	Auckland	119	114	105	-8%	-12%
48	Henderson Creek	Waitakere	65	43	105	144%	62%

Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	Change 08-09	Change 07-09
40	Oteha Valley Road/SH17/Albany Highway	North Shore	42	69	103	49%	145%
46	Rosedale/Bush Road	North Shore	70	106	103	-3%	47%
54	Te Atatu Road/Elcoat Avenue	Waitakere	73	66	101	53%	38%
70	Upper Harbour Bridge	Waitakere	-	51	97	90%	-
30	Great South/East Tamaki Road	Manukau	106	74	92	24%	-13%
57	West Coast/Rosier Road	Waitakere	69	54	90	67%	30%
79	Harris/Smales Road	Manukau	-	-	88	-	-
34	Te Irirangi Drive/Ti Rakau Drive	Manukau	117	109	86	-21%	-26%
45	Beach/Browns Bay Road	North Shore	44	66	86	30%	95%
65	Great South Road/Rosehill Drive	Papakura	77	106	85	-20%	10%
23	Great South/Bairds Road	Manukau	99	81	83	2%	-16%
44	Birkenhead Ave/Mokoia Road	North Shore	58	71	83	17%	43%
49	Triangle Road/Don Buck Road	Waitakere	96	88	80	-9%	-17%
32	McKenzie/Coronation/Walmsley Road	Manukau	101	82	75	-9%	-26%
76	Waikaraka Cycle Way	Auckland	-	76	73	-4%	-
18	Great South Road/High Street/Atkinson/Park Avenue	Auckland	121	87	71	-18%	-41%
64	Porchester/Walters Road	Papakura	72	66	70	6%	-3%
50	Lincoln Road/Fairdene Avenue	Waitakere	57	79	62	-22%	9%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	106	74	59	-20%	-44%
26	Great South/Browns/Orams Road	Manukau	86	81	57	-30%	-34%
28	Massey/Buckland Road	Manukau	61	44	57	30%	-7%
56	3 Rankin Avenue	Waitakere	45	55	56	2%	24%
71	Highbrook Drive	Manukau	-	42	55	31%	-
82	Jelas/Moffatt Road	Rodney	-	-	55	-	-

Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	Change 08-09	Change 07-09
66	Great South Road/Taka Street	Papakura	83	83	51	-39%	-39%
31	Wyllie Avenue/Puhinui Road	Manukau	55	47	50	6%	-9%
69	Edinburgh/Tobin Street	Franklin	51	58	49	-16%	-4%
81	Te Irirangi Drive/Ormiston Road	Manukau	-	-	47	-	-
74	Apirana Avenue/Pilkington/Tripoli Road	Auckland	-	87	46	-47%	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	38	-	-
59	Whangaparaoa Road, near Red Beach Intersection	Rodney	42	45	38	-16%	-10%
63	Gulf Harbour Drive/Laurie Southwick Parade	Rodney	80	63	31	-51%	-61%
15	Richardson Road/Maioro Street	Auckland	-	-	30	-	-
86	George/Elizabeth Street	Franklin	-	-	25	-	-
60	Whangaparaoa Road, near SH1 Intersection	Rodney	40	29	17	-41%	-58%
62	Rata Road/Rimu Road/Centre cycleway	Rodney	46	21	16	-24%	-65%
61	D'Oyly Reserve cycleway	Rodney	35	145	13	-91%	-63%
67	Karaka/Glenbrook Road/SH22	Franklin	6	13	7	-46%	17%
83	Jelas Road/Croi Bridge	Rodney	-	-	3	-	-
	Total (62 sites since 2007)^		210	205	199	-3%	-5%
	Total (69 sites since 2008)^		-	194	190	-2%	-
	Total (83 sites in 2009)		-	-	176	-	-

^Note that the evening count for D'Oyly Reserve cycleway (site 61) in 2008 is considered as an outlier, so the average and total figures exclude this outlier for more accurate comparison.



Monitoring locations are numbered for ease of reference - please see Section 2.1 for monitoring location descriptions.

2.5 School Bike Shed Count Summary

Background Information

- A total of 156 intermediate, secondary and composite schools throughout the Auckland region were contacted by Gravitas. Of the 126 schools that responded to the survey (81 per cent), most have no policies that restrict students cycling to school.¹³ Most schools conduct countings on 10th of March, 2009.
- One school (West City Christian College) noted that there were students absent due to school camps. Consequently, the reported cycle number for this school may be lower than actual numbers.

Key Points

- Of those students from the surveyed schools eligible to cycle to school, on average across the region, two per cent are cycling to their schools.
- Two schools (Belmont Intermediate in North Shore city – 22 per cent - and Pasadena Intermediate in Auckland city – 17 per cent) report more than 10 per cent of students cycling to school. Among secondary schools, Takapuna Grammar (North Shore city) has the highest rate of students cycling to school (9 per cent).
- Of the 126 schools that responded, 36 (29 per cent) had no students cycling to school. This compares with 28 schools (22 per cent) in 2008.

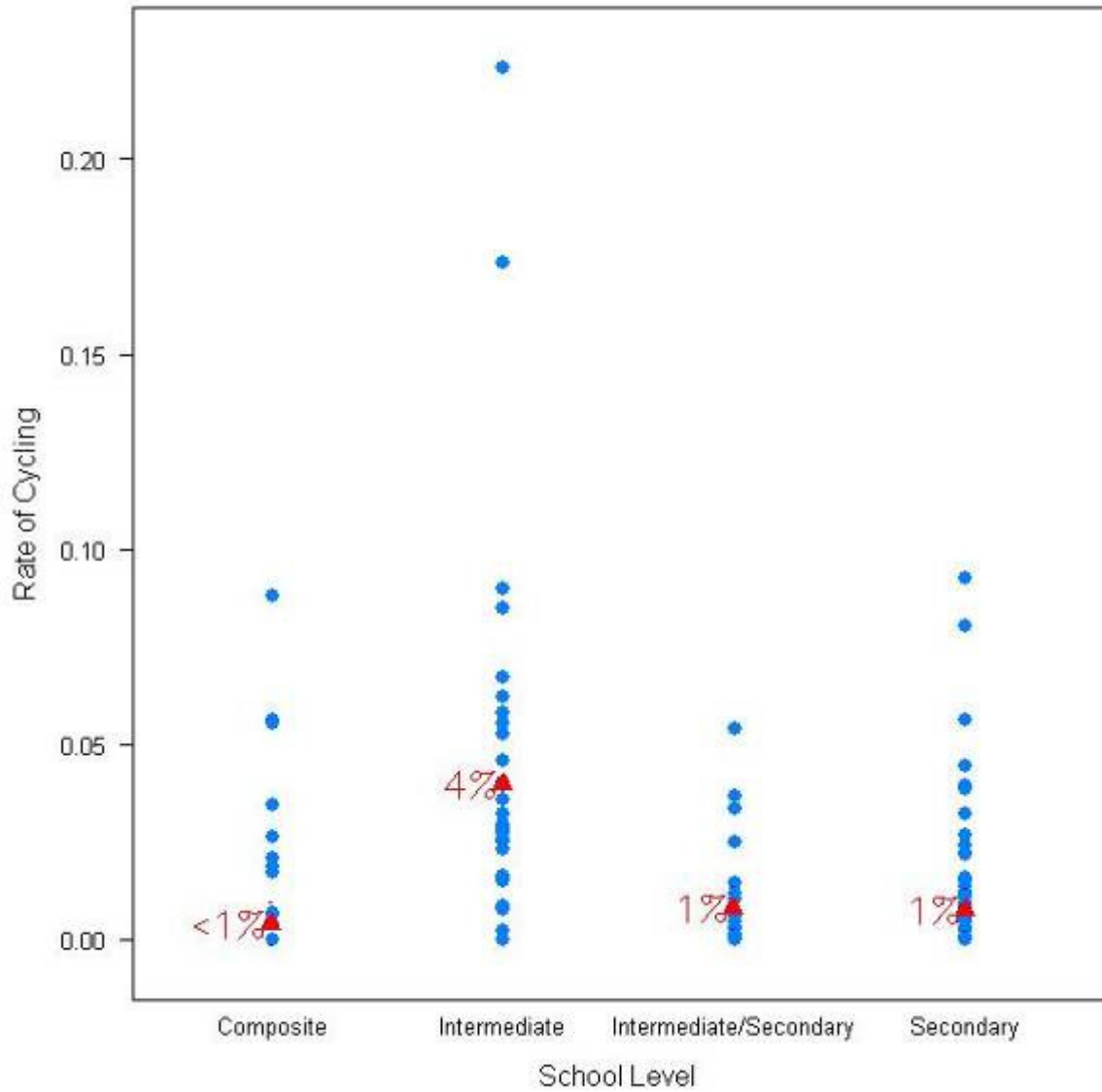
¹³ The exceptions were four composite schools which only allow students at Year 4 (Pinehurst School), Year 5 (Tyndale Park Christian School and Kingsway School) or Year 6 (Manukau Christian School) onwards to cycle to school.

- Table 2.9 and Figure 2.6 illustrate the rates of cycling to school at different school levels. Rates of cycling to school are highest among intermediate schools surveyed (4 per cent, unchanged from 2008) and lowest for composite schools surveyed (less than 1 per cent, down from 1 per cent last year).

**Table 2.9: Summary Table of School Bike Count by School Level
2007-2009 (n)**

Year Levels	Number of Schools Responding (n)	Average School Roll Eligible To Cycle	Average Number of Cycles Counted	Average Cycling Rate per School (2009)	Average Cycling Rate per School (2008)	Average Cycling Rate per School (2007)
Intermediate	34	554	23	4%	4%	5%
Intermediate/Secondary	18	943	12	1%	2%	2%
Secondary	49	1369	20	1%	1%	1%
Composite	25	469	3	<1%	1%	1%
Total	126	910	16	2%	2%	2%

**Figure 2.6: Cycling Rates by School Level
2009 (%)**

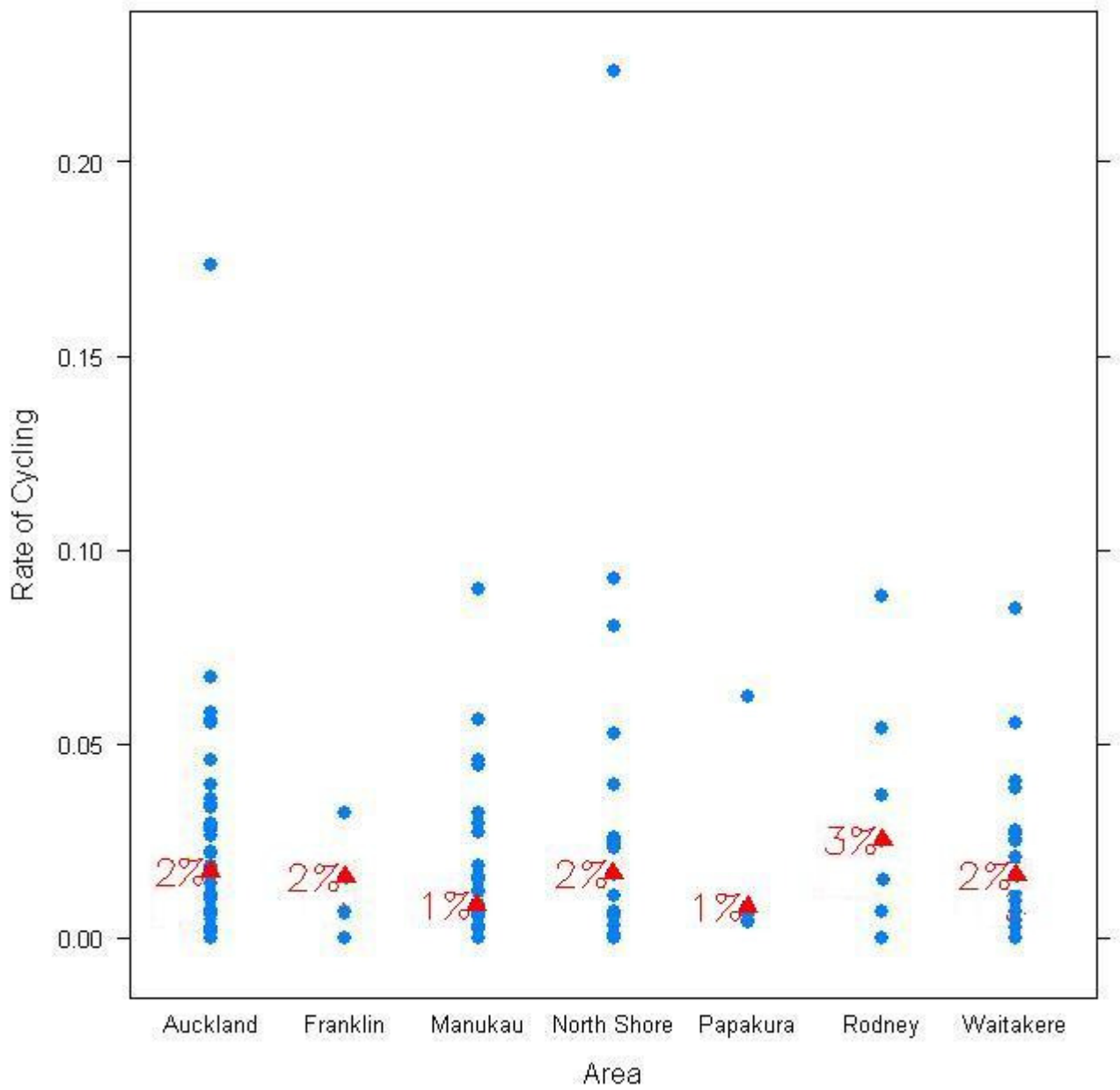


- Table 2.10 and Figure 2.7 illustrate the rates of cycling to school within each of the Auckland TAs. Rates of cycling to school are highest among schools in Rodney district (3 per cent, up from 2 per cent last year). By comparison, Manukau city and Papakura district have the lowest rates of cycling (1 per cent respectively, unchanged from 2008).

**Table 2.10: Summary Table of School Bike Count by Area
2007-2009 (n)**

Area	Number of Schools Responding (n)	Average School Roll Eligible To Cycle	Average Number of Cycles Counted	Average of Cycling Rate per School (2009)	Average of Cycling Rate per School (2008)	Average of Cycling Rate per School (2007)
Rodney	6	755	22	3%	2%	3%
North Shore	21	1115	26	2%	3%	3%
Auckland	44	859	14	2%	2%	2%
Waitakere	17	783	14	2%	1%	2%
Franklin	3	545	10	2%	2%	2%
Manukau	31	955	14	1%	1%	2%
Papakura	4	1080	10	1%	1%	1%
Total	126	910	16	2%	2%	2%

**Figure 2.7: Cycling Rates by Area
2009 (%)**



- The following table ranks the 126 schools from the highest share of cyclists to the lowest.

Table 2.11: School Bike Count, by School

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Belmont Intermediate School	Intermediate	North Shore	515	115	22%	26%	34%
Pasadena Intermediate	Intermediate	Auckland	277	48	17%	12%	18%
Takapuna Grammar School	Secondary	North Shore	1600	148	9%	6%	8%
Farm Cove Intermediate	Intermediate	Manukau	613	55	9%	6%	4%
Te Atatu Intermediate	Intermediate	Waitakere	294	25	9%	7%	10%
Living Way Learning Centre	Composite	Rodney	34	3	9%	3%	24%
Takapuna Normal Intermediate School	Intermediate	North Shore	586	47	8%	16%	-
Remuera Intermediate	Intermediate	Auckland	910	61	7%	5%	9%
Western Springs College	Secondary	Auckland	1100	62	6%	7%	-
Auckland Normal Intermediate	Intermediate	Auckland	650	36	6%	5%	7%
Kowhai Intermediate	Intermediate	Auckland	362	21	6%	6%	6%
Rosehill Intermediate	Intermediate	Papakura	339	21	6%	-	-
Elim Christian College	Composite	Manukau	267	15	6%	5%	-
Nga Kakano Christian Reo Rua Kura	Composite	Waitakere	54	3	6%	7%	7%
Orewa College	Intermediate/Secondary	Rodney	1700	92	5%	5%	6%
Bucklands Beach Intermediate	Intermediate	Manukau	760	35	5%	4%	-

¹⁴ This share is calculated by averaging the number of cycles counted over the total number of students eligible to cycle. The figure obtained is rounded to zero decimal places.

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Ponsonby Intermediate	Intermediate	Auckland	547	25	5%	4%	6%
Wairau Intermediate School	Intermediate	North Shore	305	16	5%	7%	4%
Auckland Grammar	Secondary	Auckland	2400	95	4%	3%	2%
Botany Downs Secondary College	Secondary	Manukau	1788	80	4%	-	-
Rutherford College	Secondary	Waitakere	1345	52	4%	3%	3%
Northcross Intermediate	Intermediate	North Shore	1092	43	4%	0%	5%
Waikowhai Intermediate	Intermediate	Auckland	393	14	4%	3%	3%
Bruce McLaren Intermediate	Intermediate	Waitakere	323	13	4%	2%	2%
Wentworth College	Intermediate/Secondary	Rodney	218	8	4%	<1%	3%
Somerville Intermediate School	Intermediate	Manukau	951	28	3%	4%	4%
Glen Eden Intermediate	Intermediate	Waitakere	1011	28	3%	-	-
Rangeview Intermediate	Intermediate	Waitakere	953	24	3%	2%	3%
Blockhouse Bay Intermediate	Intermediate	Auckland	785	23	3%	4%	4%
Rosmini College	Intermediate/Secondary	North Shore	879	22	3%	4%	3%
Liston College	Secondary	Waitakere	791	21	3%	2%	2%
Pukekohe Intermediate	Intermediate	Franklin	592	19	3%	7%	5%
Royal Oak Intermediate	Intermediate	Auckland	527	15	3%	2%	2%
Waiheke High School	Intermediate/Secondary	Auckland	448	15	3%	2%	3%
Michael Park School	Composite	Auckland	405	14	3%	2%	1%
Glenfield Intermediate	Intermediate	North Shore	501	13	3%	2%	4%
Henderson Intermediate	Intermediate	Waitakere	520	13	3%	3%	5%

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Pakuranga Intermediate	Intermediate	Manukau	442	12	3%	1%	5%
Mission Heights Junior College	Secondary	Manukau	278	9	3%	-	-
Hebron Christian College	Composite	Auckland	305	8	3%	2%	3%
Wesley Intermediate	Intermediate	Auckland	144	4	3%	3%	3%
Westlake Boys High School	Secondary	North Shore	2168	52	2%	<1%	2%
Mt Albert Grammar School	Secondary	Auckland	2205	48	2%	3%	-
Macleans College	Secondary	Manukau	2500	40	2%	1%	-
Pakuranga College	Secondary	Manukau	2050	32	2%	3%	-
Murrays Bay Intermediate	Intermediate	North Shore	950	22	2%	2%	5%
Selwyn College	Secondary	Auckland	720	16	2%	1%	-
Edgewater College	Secondary	Manukau	922	14	2%	2%	-
Kedgley Intermediate	Intermediate	Manukau	711	11	2%	-	-
Sunderland School and College	Composite	Waitakere	240	5	2%	1%	-
Northcote Intermediate	Intermediate	North Shore	184	3	2%	3%	2%
Immanuel Christian School	Composite	Auckland	116	2	2%	1%	1%
Manukau Christian School	Composite	Manukau	107	2	2%	0%	4%
Rangitoto College	Secondary	North Shore	3077	33	1%	<1%	1%
Mt Roskill Grammar School	Secondary	Auckland	2332	32	1%	1%	2%
Onehunga High School	Secondary	Auckland	1545	23	1%	-	-
Papatoetoe High School	Secondary	Manukau	1829	22	1%	1%	1%
Avondale College	Secondary	Auckland	2700	21	1%	1%	-

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Whangaparaoa College	Intermediate/Secondary	Rodney	1435	21	1%	2%	4%
Massey High School	Secondary	Waitakere	2422	19	1%	1%	1%
Howick College	Secondary	Manukau	1888	13	1%	1%	1%
Papatoetoe Intermediate	Intermediate	Manukau	881	13	1%	-	-
Waitakere College	Secondary	Waitakere	1150	13	1%	1%	1%
Sacred Heart College	Intermediate/Secondary	Auckland	1103	12	1%	1%	-
St Peter's College	Intermediate/Secondary	Auckland	1157	12	1%	1%	1%
Sancta Maria College	Intermediate/Secondary	Manukau	920	11	1%	1%	2%
Kristin School	Composite	North Shore	1656	11	1%	-	-
Rosehill College	Secondary	Papakura	1850	11	1%	1%	<1%
Glendowie College	Secondary	Auckland	1036	10	1%	1%	2%
Lynfield College	Secondary	Auckland	1860	10	1%	<1%	1%
Tuakau College	Secondary	Franklin	735	10	1%	2%	-
St Kentigern College	Intermediate/Secondary	Manukau	1650	10	1%	-	-
Alfriston College	Secondary	Manukau	1250	9	1%	2%	-
Green Bay High School	Secondary	Waitakere	1022	9	1%	1%	1%
Kingsway School	Composite	Rodney	800	7	1%	1%	<1%
Birkenhead College	Secondary	North Shore	900	5	1%	<1%	-
Glenfield College	Secondary	North Shore	858	5	1%	-	-
Howick Intermediate	Intermediate	Manukau	485	4	1%	1%	1%
Mangere College	Secondary	Manukau	767	4	1%	-	-

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Weymouth Intermediate	Intermediate	Manukau	461	4	1%	1%	2%
Tamaki Intermediate	Intermediate	Auckland	265	2	1%	0%	3%
Onewhero Area School	Composite	Franklin	307	2	1%	1%	1%
Long Bay College	Secondary	North Shore	1550	5	<1%	1%	-
Manurewa High School	Secondary	Manukau	2009	5	<1%	1%	2%
Papakura High School	Secondary	Papakura	1127	5	<1%	<1%	<1%
Northcote College	Secondary	North Shore	1266	4	<1%	-	-
St Dominics College	Intermediate/Secondary	Waitakere	916	4	<1%	<1%	<1%
James Cook High School	Secondary	Manukau	1378	4	<1%	<1%	-
ACG Strathallan College	Composite	Papakura	1003	4	<1%	1%	-
Aorere College	Secondary	Manukau	1445	3	<1%	-	-
De La Salle College	Intermediate/Secondary	Manukau	1000	3	<1%	<1%	0%
Kelston Boys High School	Secondary	Waitakere	1105	3	<1%	1%	1%
Marist College	Intermediate/Secondary	Auckland	750	2	<1%	-	-
Westlake Girls High School	Secondary	North Shore	2020	2	<1%	<1%	<1%
St Mary's College	Intermediate/Secondary	Auckland	800	1	<1%	-	-
Carmel College	Intermediate/Secondary	North Shore	979	1	<1%	<1%	0%
Avondale Intermediate	Intermediate	Auckland	435	1	<1%	1%	1%
Marcellin College	Intermediate/Secondary	Auckland	704	1	<1%	1%	-
ACG New Zealand International College	Secondary	Auckland	448	0	0%	-	-
ACG Senior College	Secondary	Auckland	461	0	0%	0%	0%

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Auckland Girls' Grammar School	Secondary	Auckland	1400	0	0%	0%	<1%
Auckland International College	Secondary	Auckland	380	0	0%	0%	-
Baradene College	Intermediate/Secondary	Auckland	950	0	0%	<1%	0%
Carey College	Composite	Auckland	66	0	0%	-	-
Corran School	Composite	Auckland	343	0	0%	0%	0%
Diocesan School for Girls	Composite	Auckland	1460	0	0%	<1%	0%
McAuley High School	Secondary	Auckland	653	0	0%	0%	0%
Mt Hobson Middle School	Composite	Auckland	45	0	0%	-	-
One Tree Hill College	Secondary	Auckland	770	0	0%	-	-
Otahuhu College	Secondary	Auckland	1433	0	0%	0%	0%
St Cuthbert's College	Composite	Auckland	1470	0	0%	-	-
St Paul's College	Intermediate/Secondary	Auckland	227	0	0%	-	-
Tamaki College	Secondary	Auckland	713	0	0%	<1%	<1%
Al-Madinah School	Composite	Manukau	445	0	0%	0%	-
Sir Douglas Bader Intermediate School	Intermediate	Manukau	200	0	0%	<1%	0%
Sir Edmund Hillary Collegiate	Composite	Manukau	1300	0	0%	-	-
The Bridge Academy	Composite	Manukau	17	0	0%	-	-
TKKM o Mangere	Composite	Manukau	180	0	0%	-	-
Tyndale Park Christian School	Composite	Manukau	112	0	0%	0%	0%
Albany Junior High School	Intermediate/Secondary	North Shore	1145	0	0%	7%	4%
Birkdale Intermediate	Intermediate	North Shore	460	0	0%	1%	2%

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible¹⁴ (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Pinehurst School	Composite	North Shore	716	0	0%	1%	1%
Rodney College	Secondary	Rodney	342	0	0%	0%	2%
Kelston Girls High School	Secondary	Waitakere	905	0	0%	0%	0%
Te Kura Kaupapa Maori O Hoani Waititi	Composite	Waitakere	180	0	0%	0%	-
West City Christian College	Composite	Waitakere	85	0	0%	-	-

Table 2.11a: Summary Of Non-Participating Schools

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Epsom Girls Grammar	Secondary	Auckland	1770	-	-	<1%	-
Southern Cross Campus	Composite	Manukau	1750	-	-	0%	-
Pukekohe High School	Secondary	Franklin	1600	-	-	<1%	1%
Mahurangi College	Intermediate/Secondary	Rodney	1140	-	-	1%	1%
Tangaroa College	Secondary	Manukau	1115	-	-	0%	-
Henderson High School	Secondary	Waitakere	975	-	-	1%	<1%
Kings College	Secondary	Auckland	955	-	-	2%	0%
Waiuku College	Secondary	Franklin	820	-	-	1%	1%
Manurewa Intermediate	Secondary	Manukau	742	-	-	-	-
Mt Roskill Intermediate	Intermediate	Auckland	683	-	-	2%	2%
Kaipara College	Secondary	Rodney	663	-	-	0%	<1%
ACG Parnell College	Composite	Auckland	650	-	-	0%	-
Ferguson Intermediate	Intermediate	Manukau	498	-	-	0%	-
Greenmeadows Intermediate	Intermediate	Manukau	428	-	-	5%	3%
Otahuhu Intermediate	Intermediate	Auckland	370	-	-	1%	1%
Kelston Intermediate	Intermediate	Waitakere	326	-	-	2%	-
Auckland Seventh Day Adventist High School	Secondary	Manukau	284	-	-	-	-
Mansell Senior School	Intermediate	Papakura	240	-	-	-	-

School Name	Year Levels	Area	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible (2009)	Cyclists as share of those eligible (2008)	Cyclists as share of those eligible (2007)
Te Whanau o Tupuranga	Secondary	Manukau	186	-	-	-	-
Clover Park Middle School	Intermediate	Manukau	165	-	-	0%	-
Hato Petera College	Secondary	North Shore	135	-	-	0%	-
The Corelli School	Composite	North Shore	78	-	-	-	-
Zayed College For Girls	Secondary	Manukau	68	-	-	0%	0%
Te KKM o Puau Te Moananui-a-Kiwa	Composite	Auckland	61	-	-	-	-
MindAlive	Composite	Auckland	49	-	-	-	-
Tau Te Arohanoa Akoranga	Composite	Rodney	48	-	-	-	-
Drury Christian School	Composite	Papakura	19	-	-	0%	-
Montessori College of Auckland	Composite	Auckland	14	-	-	-	-
Dingwall Trust School	Composite	Manukau	-	-	-	-	-

APPENDICES

Appendix One: Methodology

Appendix Two: Annual Average Daily Traffic (AADT) Calculation

Appendix Three: School Bike Shed Information Sheet And Cover
Letter

APPENDIX ONE: METHODOLOGY

Manual Cycle Counts

Manual cycle counts have been conducted using a standardised methodology across all sites. This methodology is outlined below. *Note: To ensure the longitudinal comparability of its cycle data, Gravitass have conducted the regional monitoring using a similar approach to that used to collect manual count data for Auckland City Council between 2001 and 2006.*

Choice Of Sites

Decisions as to which sites were chosen for cycle counts were guided by each respective TA, keeping in mind the planned developments for the Regional Cycle Network. In choosing their sites, TAs were strongly recommended to consider sites that could be retained over time as this will allow for the most accurate longitudinal assessment of change in cycle numbers.

Manual counts were undertaken at 83 different sites throughout the region. Sites were distributed throughout the region as follows:

- Auckland City n=27 sites (12 sites monitored since 2001; 10 sites added in 2007; 5 sites added in 2008; 3 sites relocated, one site dropped and one site added in 2009)
- Manukau City n=14 sites (12 sites monitored since 2007; 1 site added in 2008; one site relocated, 2 sites dropped and 3 sites added in 2009)
- Waitakere City n=14 sites (11 sites monitored since 2007; 2 sites added in 2008; 1 site added in 2009)
- North Shore City n=13
- Rodney District n=8 (5 sites monitored since 2007; 3 sites added in 2009)
- Franklin District n=4 (3 sites monitored since 2007; 1 site added in 2009)
- Papakura District n=3

Monitoring Times

Time Of Day

On the recommendation of the Regional Cycling Monitoring Working Group, manual counts in the morning peak were conducted between **6.30 and 9.00 am**. It should be noted that this is a slightly longer morning peak than was used for manual counts in Auckland city prior to 2007 – 7.00 to 9.00 am. However, to allow for longitudinal comparisons, results for Auckland city have been presented for both 7.00 to 9.00 am and 6.30 to 9.00 am.

Between 2001 and 2006, Gravitas monitored Auckland city evening cycle numbers between 4.00 and 6.00 pm. However, in 2005 and 2006, data collected at some sites had shown upwards trends and notable peaks later in the shift (particularly between 5.50 and 6.00pm) which suggested that cycle numbers after 6.00 pm may remain high or even increase. To capture this trend, Gravitas recommended extending the evening peak monitoring period to **4.00 to 7.00 pm**. Once again, to allow for longitudinal comparisons, results for Auckland city have been presented for 4.00 to 6.00 pm as well as 4.00 to 7.00 pm.

Day Of Week

Previous experience conducting cycle and other traffic manual counts on behalf of Auckland city has found that these counts are best undertaken on either a Tuesday, Wednesday or Thursday as travel patterns on Mondays and Fridays tend to be more variable.

Time Of Year

To ensure consistency throughout the region, standard monitoring days were selected and agreed upon by the Regional Cycle Monitoring Working Group. In selecting the days, consideration was given to:

- the timing of school and tertiary holidays/the commencement of term time for tertiary institutions;
- the timing of statutory holidays (particularly Easter);
- the timing of Bike Week; and
- daylight saving times.

It was agreed that manual counts would commence on Tuesday the 10th of March and be conducted on the first three fine days of the 10th, 11th, 12th, 17th, 18th or 19th of March.

Counting at sites in **North Shore and Waitakere** cities was completed on **Tuesday the 10th of March**. Counting at sites in **Auckland city** was completed on **Wednesday the 11th of March**. Counts in **Manukau, Rodney, Papakura** and **Franklin** were completed on **Thursday the 12th of March**. Note: Counts in the morning and evening peaks took place on the same day for each site.

Weather and Daylight Conditions

Auckland city's 2006 cycle monitor provides a clear example of the impact of weather conditions on the validity of the data collected. During the (fine) morning peak, 1579 cyclists were recorded across the twelve monitoring sites. By comparison, in the (wet) evening peak on the same day, only 1050 cyclists were counted, demonstrating that only 66% of those who cycled during the morning peak were counted again in the evening. Such a significant drop in cycle numbers was not observed in previous years, when weather was comparable in the morning and evening peak.

To reduce the impact of weather conditions on cycle numbers, manual counts were conducted on predominantly fine days (although intermittent drizzle was observed at a small number of sites). In addition, if it rained during the morning peak, monitoring in the evening peak on that same day was also postponed, irrespective of the weather (as it can be assumed that cyclists' travel behaviour in the evening peak will have been influenced by decisions they made earlier in the day – for example, the decision to leave their bike at home and use public transport instead). Care was taken to ensure that all manual counts were conducted prior to the conclusion of daylight saving.

The weather on the three count days in 2009 was as follows:

Tuesday 10th March

(Waitakere and North Shore city sites monitored)

- Sunrise: 7:15am; Sunset: 7:48pm.
- Average temperature: 18 degrees Celsius.
- Fine weather for all but one site in the morning period.
- Weather fine with some cloud throughout the evening shift. Most Waitakere sites and one North Shore site experienced very light drizzle intermittently between 6:30pm and 7:00pm.

Wednesday 11th March

(Auckland city sites monitored)

- Sunrise: 7:15am; Sunset: 7:46pm.
- Average temperature: 17 degrees Celsius.
- The weather was windy at most sites in the morning period. Light drizzle and/or showers reported at six of the 27 sites.

- All but three sites experienced intermittent light drizzle and/or showers throughout the evening period.

Thursday 12th March

(Manukau city and Rodney, Papakura and Franklin district sites monitored)

- Sunrise: 7:16am; Sunset: 7:45pm.
- Average temperature: 16 degrees Celsius.
- Almost all sites had fine weather in the morning period apart from light drizzle at the Rodney sites which cleared by 7am; four sites experienced intermittent light showers throughout the morning period (these sites predominantly in Manukau).
- Weather in the evening period was overcast, with intermittent drizzle throughout the period. Brief, but often heavy, showers were reported at some sites in Manukau and Papakura.

Conducting The Manual Counts

Scoping Visit

Gravitas visited each of the selected sites prior to the first monitoring shift. This scoping visit was used to map the roading network and to identify and map the range of directions that cyclists could travel through the site. This visit was also used to identify any particular features (such as designated cycle ways) or potential hazards that surveyors needed to be aware of when monitoring at the site. As part of the scoping visit, a recommended observation point was identified and mapped (this point chosen on the basis of offering the best trade-off between visibility and safety). The maps prepared for each site have been included in this report – just prior to the count results for each site.

As part of the scoping visit, a small number of sites were identified as requiring two surveyors to accurately capture all cycle movements (due predominantly to the complexity of the roading/cycleway network at the site or poor visibility at the intersection). Two surveyors were used at:

- Great South Road/Campbell Road/Main Highway, Greenlane (Site 21; Auckland city);
- Ferry terminal (Site 22; Auckland city); and
- Beach Road/Browns Bay Road, Mairangi Bay (Site 45; North Shore city).

Briefing Session

Prior to their monitoring shift, all surveyors participated in a briefing session. The session covered:

- the overall aims of the Regional Cycle Monitoring Plan and how the manual monitoring fits with this Plan;
- the aims and purpose of the cycle monitoring and the process to be used;
- review of all materials supplied – how to interpret and use the maps, how to accurately record data on count sheets etc;

- health and safety issues; and
- general administration – shift times, collection and return of materials etc.

This session was interactive, with surveyors being encouraged to ask questions and seek further explanation on issues they were unsure about. Surveyors were also provided with a copy of the briefing notes for reference during their shifts. During the briefing session, all surveyors were also required to conduct a “practice count” for 20 minutes at the Ponsonby Road/Karangahape Road site.

Conducting The Manual Counts

Each site was assigned to a surveyor, who was issued with a map that showed the range of movements a cyclist could make through that site. In addition to the map, surveyors were issued with a clipboard, a safety vest and a letter identifying them as a member of a Gravitass research team¹⁵.

For consistency with the Auckland city cycle data collected since 2001, during their shift the surveyor collected data on:

- The total number of cyclists¹⁶ passing through the intersection;
- The direction in which cyclists are travelling (using the numbers on the map provided);
- The time at which cyclists pass through the intersection (to the nearest minute);
- Whether cyclists are school children or adults (determined by whether they are wearing a school uniform or clearly of school age);
- Whether cyclists are wearing a helmet; and
- Whether cyclists are riding on the road, footpath or designated off- road cycleway¹⁷.

For the first time in 2009, surveyors were required to indicate those cyclists riding together in groups of three or more. To be consistent with previous year, each member of these ‘pelatons’ has been included in the site-level analysis as a separate cyclist movement. However, where pelatons were observed, the number of cyclists and the time they passed through the site have been given in the report, along with a percentage figure indicating what share of all cyclists of the site were riding as groups.

In addition, data was collected on the weather and daylight conditions at the site. Surveyors were also encouraged to record any information that may have affected cycle numbers or cycle

¹⁵ This letter also contained contact details for the client organisation and Gravitass Research and Strategy for any member of the public or local business owners who had queries about the work being undertaken.

¹⁶ To ensure consistency across all surveyors, a “cycle” was defined as being non-motorised, with two wheels and requiring pedalling to make it move. Note that this definition did not include scooters.

¹⁷ Note: For the purpose of this project, an off-road cycleway is defined as designated off-road path for cycles. This includes exclusive cycle paths, separated paths (such as the footpath on Tamaki Drive) and shared-use paths (available to cyclists and pedestrians). It excludes on-road cycle lanes (that is, designated lanes marked on the road).

movements at the site – for example, construction or maintenance works being conducted on the cycle way or road works at the intersection.

A team of supervisors checked that surveyors were in the correct position and recording data accurately.

Data Analysis

Upon their return to Gravitas, all count sheets were checked for completeness. The raw data was then entered into Excel for logic checking, analysis and graphing.

Annual Average Daily Traffic (AADT) Analysis

It is acknowledged that the number of cyclists using a site varies by time of day, day of the week and week of the year, and therefore it is not valid to simply multiply manual count data collected over a certain (relatively brief) period out to represent a full day, week or year. However, according to Land Transport New Zealand¹⁸, Annual Average Daily Traffic (AADT) analysis can be used to estimate the average annual daily flow of cyclists from manual and automated cycle counts conducted at one point in time. The procedure involves deriving scale factors, which account for the time of day, day of the week, and week of the year (which varies with school holidays and season) as well as weather conditions on the count day. These scale factors are then applied to the count data collected to give an AADT estimate.

Using the manual count figures for each site, it has been possible to provide the average annual daily traffic flow of cyclists (cycling AADT) estimate for each site. AADT scale factors (morning and afternoon) were provided by ViaStrada¹⁹.

By applying the scale factor to the manual count data for each morning and afternoon peak, and averaging the two figures, an average annual daily cyclist flow figure has been obtained for each site. *A more comprehensive overview of the methodology used for this analysis is provided in Appendix Two.*

Note: ViaStrada acknowledge that, as cycling volumes fluctuate from day to day depending on the weather, this method should be used with caution. They note that ideally an estimate should be achieved based on the average of the results of several counts, rather than counts from a single day, as in this study²⁰.

¹⁸ <http://www.ltsa.govt.nz/road-user-safety/walking-and-cycling/cycle-network/appendix2.html>

¹⁹ ViaStrada is a traffic engineering and transport planning consultancy based in Christchurch, New Zealand.

²⁰ Appendix 2 of the Cycle Network and Route Planning Guide (CNRPG) (Land Transport New Zealand, 2004)

School Bike Shed Counts

As stated above, manual cycle counts were undertaken during the morning (6.30 am to 9 am) and evening (4 pm to 7 pm) peaks. However, it was noted in the design phase of the project that the timing of the evening peak monitoring would mean that the greatest share of students cycling home from school will be excluded from the counts. This was identified as a potential weakness of the monitoring proposed.

Therefore, it was suggested that information on numbers of students cycling to and from intermediate and secondary schools across the region could be collected by counting the number of bikes in school bike sheds on a pre-determined day. Rates of cycling among students could also be assessed by calculating the number of bikes counted as a share of the school's total roll (or share of the school's roll eligible to cycle).

It was decided that school bike shed monitoring would focus only on intermediate and secondary schools (and composite schools which included children of intermediate and secondary school age), since children travelling to primary schools are considered by many parents (and schools) as too young to cycle to school.

Methodology

The following process was used to collect the school bike shed count data.

1. Gravitas designed a fax information sheet that was distributed to most intermediate, secondary and composite (Years 1 to 13) schools in the Auckland region (note a small number of schools were omitted due to the special nature of the students eg special needs schools). This sheet was designed in consultation with the Regional Cycle Monitoring Working Group to ensure all necessary information was collected. A copy of the information sheet is provided in Appendix Three.
2. Gravitas contacted all intermediate, secondary and composite schools in Auckland region (n=152) to notify them of the bike shed count and to let them know what they would be required to do. Gravitas then sent out the information sheet to all schools that agreed to take part in the bike shed count (n=126), along with a cover letter explaining the purpose of the research and providing detail on how to complete and submit the form. A copy of this letter is provided in Appendix Three.

3. To enhance the comparability of the school bike shed data with that of the regional cycle monitor, Tuesday 4th March was designated as the bike shed count day. (Most schools reported that they undertook the count on this day).
4. Once the school bike shed count had been completed, schools were requested to fax or (free) post the information sheets back to Gravitass. Gravitass contacted all participating schools who had not returned their sheets after five working days. All information sheets were checked for completeness before being data-entered into Excel.

Reporting

The data from the manual counts has been presented at a site-by-site, TA and regional level.

Manual Counts - Site Level Reporting

For consistency with Auckland city's cycle monitor, the following results have been reported for each site:

- Total number of movements through the intersection during each peak;
- Total number of movements through the intersection during each ten-minute interval during each peak;
- Number of cyclists making each directional movement through the intersection during each peak; and
- Share of cyclists through the intersection during each peak who are:
 - adults/school children
 - wearing a helmet/not wearing a helmet
 - riding on the road/riding on the footpath.

Manual Counts - Aggregated Reporting

Results have also been reported at an aggregate level (that is, summing up all sites) – by city/district and across the region – to show the total number of cycle movements recorded (both overall and by ten-minute intervals) and the characteristics of the cyclists.

Bike Shed Counts

Results have been provided by school (along with notes explaining why counts for some schools may not be representative), as well as at a TA and regional level. Raw cycle numbers and a “cyclists as a share of total school roll” figure have both been provided.

APPENDIX TWO: ANNUAL AVERAGE DAILY TRAFFIC (AADT) CALCULATION

Note: *This description of the calculation of the Annual Average Daily Traffic Flow of Cyclists has been provided by ViaStrada based on their May 2007 report for ARTA entitled “Development of a Cycle Traffic AADT Tool”.*

Purpose

The purpose of this appendix is to document the recommended procedure for estimating a cycling AADT²¹ in the Auckland region from any Gravitas manual count.

Method for Estimating AADT

The methodology is based on that published in Appendix 2 of the Cycle Network and Route Planning Guide (CNRPG)²², adjusted for Auckland conditions based on data collected during March 2007. The aim was to use the published methodology as much as possible, with any necessary departure from it documented below. The following equation yields the best estimate of a cycling AADT:

$$AADT_{Cyc} = Count \times \frac{1}{\sum H} \times \frac{1}{D} \times \frac{W}{7} \times \frac{1}{R}$$

where *Count* = result of count period

H = scale factor for time of day

D = scale factor for day of week

W = scale factor for week of year

R = scale factor for weather conditions on the count day

If more than one set of count data is available (for example, both a morning count and afternoon count), then **the calculation should be carried out for each set of data, and the estimates derived from each averaged.**

The values for the scale factors (*H*, *D*, *W* and *R*) have been deduced in the ViaStrada report and are included in this report in Figure 1. For the Gravitas counts, the following factors apply:

$\sum H_{AM} = 30\%$; $\sum H_{PM} = 33.3\%$; (AM and PM refer to morning and afternoon respectively)

$D = 14\%$

$W = 0.9$

$R_{DRY} = 100\%$; $R_{WET} = 64\%$ (DRY and WET refer to fine and rainy conditions respectively)

²¹ Annual average daily traffic

²² LTSA, 2004

These can be combined as a single multiplier to convert the manual count to an AADT estimate as follows:

	Morning	Afternoon
Dry weather	3.06	2.78
Wet weather	4.78	4.35

Worked Example

If morning and afternoon manual traffic counts are available at a site, the AADT can be calculated using the count summaries for each period. For example, a morning survey of 102 and an afternoon survey of 130 are suggested. It is assumed for this example that the weather was fine in both surveys.

- Thus the AADT from the morning survey is estimated as $3.06 \times 102 = 312$.
- The AADT from the afternoon survey is estimated as $2.78 \times 130 = 359$.
- The average of these two estimates is 335; this is the estimate of AADT for this site, based on the two surveys.

Figure 1: Scale Factors for Auckland Region

Period Starting	Period Ending	Interval (hours)	H _{Weekday}		H _{Weekend}	
			Mon to Fri	Sat & Sun		
0:00	6:30	6.50	5.5%	1.8%		
6:30	6:45	0.25	2.3%	0.8%		
6:45	7:00	0.25	2.6%	1.5%		
7:00	7:15	0.25	3.2%	1.4%		
7:15	7:30	0.25	3.7%	2.1%		
7:30	7:45	0.25	3.8%	2.8%		
7:45	8:00	0.25	4.0%	3.3%		
8:00	8:15	0.25	3.9%	3.2%		
8:15	8:30	0.25	3.1%	3.8%		
8:30	8:45	0.25	2.3%	3.5%		
8:45	9:00	0.25	1.3%	3.5%		
9:00	10:00	1.00	4.2%	13.6%		
10:00	11:00	1.00	3.4%	11.6%		
11:00	12:00	1.00	2.6%	9.1%		
12:00	13:00	1.00	2.7%	6.6%		
13:00	14:00	1.00	2.7%	5.0%		
14:00	14:15	0.25	0.7%	1.9%		
14:15	14:30	0.25	0.7%	1.3%		
14:30	14:45	0.25	0.6%	1.3%		
14:45	15:00	0.25	0.6%	1.2%		
15:00	15:15	0.25	0.8%	1.1%		
15:15	15:30	0.25	1.0%	0.9%		
15:30	15:45	0.25	1.3%	1.4%		
15:45	16:00	0.25	1.2%	1.3%		
16:00	16:15	0.25	2.1%	1.0%		
16:15	16:30	0.25	2.3%	1.7%		
16:30	16:45	0.25	2.1%	1.0%		
16:45	17:00	0.25	2.5%	1.2%		
17:00	17:15	0.25	3.3%	1.2%		
17:15	17:30	0.25	3.7%	1.2%		
17:30	17:45	0.25	4.0%	1.1%		
17:45	18:00	0.25	3.2%	1.1%		
18:00	18:15	0.25	3.0%	0.9%		
18:15	18:30	0.25	2.7%	0.7%		
18:30	18:45	0.25	2.4%	0.8%		
18:45	19:00	0.25	2.1%	0.6%		
19:00	20:00	1.00	5.6%	2.0%		
20:00	0:00	4.00	3.0%	1.5%		
			24.00	100.0%	100.0%	

Day	D
Monday	14%
Tuesday	14%
Wednesday	14%
Thursday	14%
Friday	14%
Saturday	14%
Sunday	16%

Period	W
Summer holidays	1.0
Term 1	0.9
April holidays	1.0
Term 2	1.0
July holidays	1.2
Term 3	1.1
Sep/Oct holidays	1.2
Term 4	1.0

Weather	R
Fine	100%
Rain	64%

APPENDIX THREE: SCHOOL BIKE SHED INFORMATION SHEET AND COVER LETTER

AUCKLAND REGIONAL CYCLE MONITOR - 2009 SCHOOL CYCLE COUNT -

ABOUT YOUR SCHOOL (To be completed by staff member)

Name of school: _____

Physical address of school: _____

This school caters for students from Year to Year

Current school roll (total number of students):

Does the school have a policy which recommends only certain Year levels should cycle to school?
(Please tick one box only)

No

Yes Please outline which Year levels the policy recommends should cycle to school:

If school policy recommends only certain Year levels should cycle to and from school, please tell us the current school roll of students in Year levels allowed to cycle to school:

Is there any reason why this cycle count may NOT be representative of the usual number of students who cycle to school? eg students away at school camp, senior study break etc. Please write in.

In case we need to contact you about the information you have provided:

Contact staff member's name _____ Contact phone number: _____

AUCKLAND REGIONAL CYCLE MONITOR
- 2009 SCHOOL CYCLE COUNT -

THE CYCLE COUNT (Can be completed by staff member or student)

Name of school: _____

Date of cycle count: _____

(Note: The preferred day is Tuesday 10th of March)

Total number of cycles counted:

Name of counter: _____

Postal address: _____

(Please note that your personal details will only be used by Gravitas if we need to contact you for clarification of your school or count information. Your personal details will not be passed on to any other organisation or used for any purpose other than this research).

Thank you for your assistance with the project – your contribution is much appreciated.

Once completed, please place this form (check you have both pages) in the stamped addressed envelope provided and post no later than Friday March 13 2009.

26 February 2009

«Staff_Member_Name»

«Schools_Name»

«Address_1»

«Address_2_suburb»

«Address_3»

Dear «Staff_Member»

Re: Regional Cycle Monitoring Programme – Student Cyclists

In conjunction with a larger region-wide cycle monitoring programme being undertaken in early March, intermediate and secondary schools in the Auckland region are being invited to play a part in building a greater understanding of how students get to school. The data provided by schools, along with counts of cyclists at major intersections throughout the Auckland region, will provide local Councils and the Auckland Regional Transport Authority with the information they need to ensure future funding for improvements to cycle infrastructure.

This is the third year that this count of student cyclists has been undertaken. On behalf of the local Councils and the Auckland Regional Transport Authority, we would like to thank those schools that have participated in 2007 and 2008 for their contribution. We look forward to hearing from you again this year.

Accompanying this letter is an information form. The form is in two parts:

- The first part of the form (“About Your School”) asks for basic information about your school, including whether there is a policy around recommending that only certain Year levels should cycle to and from school. Given the nature of the information being requested, it is probably most appropriate for the first part of the form to be filled out by a staff member. It should only take two or three minutes to complete.
- The second part of the form (“The Cycle Count”) asks for a count of the number of bicycles at your school (in bike sheds, racks etc.) on a pre-determined day. It is envisaged that this information could be collected by a student during one of their breaks (however, if students are permitted to leave the school on cycles during lunchtime, we would ask that the count not be conducted at this time).

To ensure consistency across all schools in the region, **Tuesday the 10th of March** has been selected as the day we would like the cycle count to be conducted. We realise that the weather plays a significant role in the numbers of students cycling to school on any particular day. For this reason, if the weather is particularly bad on the 10th of March, then please postpone the count until **Tuesday the 17th of March**.

Once BOTH PARTS of the form have been completed, it should be placed in the stamped, addressed envelope accompanying this letter and posted no later than Friday the 13th of March (or Friday the 20th of March should the count be postponed due to bad weather).

The data you provide will be analysed to provide an 'actual student cyclists as a share of all potential student cyclists' figure for each school as well as aggregated results by city/district and region. (The final results will be available in May. If you would like a copy, you can contact Brian Horspool at ARTA – Brian.Horspool@arta.co.nz). Please be assured that all information you provide will be treated in the strictest confidence and only used for the purpose of this study.

One of our team will call you in the next couple of days to confirm that you have received the form and to answer any questions you have. However, if you have any questions about what is required, or would like further information about the wider study being undertaken, please don't hesitate to contact me (tania@gravitas.co.nz).

Thank you for your co-operation. Your assistance is greatly appreciated.

Kind regards



Tania Boyer
Project Director
Gravitas Research and Strategy Limited