

2011 Auckland Region Manual Cycle Monitor

- Regional Summary -



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1. INTRODUCTION

1.1 The Need For Reliable Cycle Trip Data

The Need For Reliable Cycle Trip Data

Monitoring cycle movements and cycle traffic is important to Auckland Transport, to identify where investment may be needed to improve infrastructure for cycling. Cycle traffic data will also help Auckland Transport prioritise future funding through the Auckland Land Transport Programme¹.

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 Auckland Transport to track progress against a quality baseline over the coming decade.

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 methodology² and conducted at different times of the year. This variability prevented the possibility of comparing the relative popularity of different sites across TA boundaries.

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.

This report provides a regional summary of the results of manual cycle monitoring conducted at 82 pre-determined sites throughout the Auckland region. Site-by-site results and ward summaries for each of the twelve³ wards in the Auckland region have been provided in separate documents. Readers should refer to these documents for ward and site-level detail.

¹ Auckland Regional Transport Authority (2006) *Regional Cycle Monitoring Plan (Provisional Guidelines)*

² For example, Manukau and North Shore cities' monitors took place at the same morning and evening peak times, while Auckland city's differed by one hour for the evening peak, and Waitakere's differed for both peaks.

³ Note that there were no monitoring sites in the Rodney ward.

1.2 Cycle Monitoring Locations

Eighty-two sites were monitored across the Auckland region in 2011. Note that where sites lie on the border between two wards, they have been included in the reports for both wards. Site numbers (which correspond to the numbering in Figure 1.1) appear in brackets after the site name.

Albany

- Whangaparaoa Road (near Red Beach intersection), Red Beach (59)
- Whangaparaoa Road (near SH1 intersection), Silverdale (60)
- D'Oyly Reserve cycleway, Stanmore Bay (61)
- Gulf Harbour Drive/Laurie Southwick Parade, Gulf Harbour (63)
- Jelas/Moffatt Road, Silverdale (82)
- Behind Rodney District Council Building, Centreway Road, Orewa (84)
- Beach/Browns Bay Road, Browns Bay (45)
- Rosedale/East Coast Road, Rosedale (38)
- Upper Harbour Drive/Albany Highway, Greenhithe (39)
- Oteha Valley Road/SH17/Albany Highway, Oteha (40)
- Rosedale/Bush Road, Albany (46)
- Oteha Valley/East Coast Road, Northcross (47)
- Upper Harbour Drive/Buckley Avenue, Greenhithe (70)
- Luckens/Hobsonville Road, West Harbour (51)
- Sunnynook Road/East Coast Road, Sunnynook (89)

North Shore

- Lake Road by Takapuna Grammar, Takapuna (35)
- Hurstmere Road/Killarney Street, Takapuna (36)
- Taharoto/Northcote Road, Northcote (37)
- Wairau/Glenfield Road, Glenfield (41)
- Shakespeare/East Coast Road, Milford (42)
- Glenfield/Coronation Road, Hillcrest (43)
- Birkenhead Ave/Mokoia Road, Birkenhead (44)
- Sunnynook Road/East Coast Road, Sunnynook (89)

Waitakere

- Henderson Creek, Henderson (48)
- Triangle Road/Don Buck Road, Massey (49)
- Lincoln Road/Fairdene Ave, Henderson (50)
- Luckens/Hobsonville Road, West Harbour (51)
- Central Park Drive, Henderson (52)
- 326 Te Atatu Road, Te Atatu (53)
- Te Atatu Road/Elcoat Eve, Te Atatu (54)
- Swanson Road/Ranui Station Road/Armada Drive, Ranui (55)
- West Coast/Rosier Road, Glen Eden (57)
- North Western Cycleway (near Te Atatu off-ramp), Te Atatu (58)
- Te Atatu Road/Old Te Atatu Road, Te Atatu (72)
- Rathgar/Pomaria Road, Henderson (85)
- Triangle Road/Huruhuru Road, Henderson (87)

Waitemata and Gulf

- Victoria Street/Wellesley Street, CBD (1)
- Ponsonby/Karangahape/Newton/Great North Road, Newton (2)
- Symonds/Karangahape/Grafton Road, Grafton (8)
- Karangahape Road/Queen Street, CBD (9)
- Tamaki Drive/The Strand, Mechanics Bay (10)
- Auckland Ferry Terminal, CBD (22)
- Stanley Street/Grafton Road/Wellesley Street East, CBD (75)
- Ian McKinnon Drive/Newton Road, Eden Terrace (13)
- Jervois Road/Wallace Street/Kelmarna Ave, Herne Bay (16)

Albert-Eden–Roskill

- Great North/Carrington/Point Chevalier Road, Point Chevalier (3)
- Dominion/Balmoral Road, Balmoral (5)
- North Western Cycleway/Great North Road, Waterview (6)
- North Western Cycleway/St Lukes Road, St Lukes (7)
- Manukau Road/Greenlane West, Epsom (12)
- Mount Albert/New North Road, Mt Albert (14)
- Keith Hay Park, Sandringham (88)
- Great South Road/Campbell Road/Main Highway, Ellerslie (21)
- Blockhouse Bay Road/Great North Road, Avondale (73)
- Richardson Road/Maioro Street, New Windsor (15)

Whau

- 3 Rankin Ave, New Lynn (56)
- Blockhouse Bay Road/Great North Road, Avondale (73)
- Patiki/Rosebank Road, Avondale (4)
- Richardson Road/Maioro Street, New Windsor (15)

Orakei

- St Heliers Bay/West Tamaki Road, Glendowie (20)
- Remuera/Orakei Road, Remuera (11)

Maungakiekie-Tamaki

- Ellerslie Panmure Highway/Lunn Ave, Panmure (19)
- Great South Road/Campbell Road/Main Highway, Ellerslie (21)
- Apirana Avenue/Pilkington Road/Tripoli Road, Glen Innes (74)
- Waikaraka Cycleway, Onehunga (76)
- Onehunga Harbour Road, Onehunga (17)
- Lagoon Drive/Church Crescent, Panmure (78)
- St Heliers Bay/West Tamaki Road, Glendowie (20)

Howick

- Bucklands Beach/Pakuranga Road, Howick (33)
- Te Irirangi/Ti Rakau Drive, Botany (34)
- Pakuranga Road/Ti Rakau Drive, Pakuranga (80)
- Harris/Smales Road, East Tamaki (79)
- Te Irirangi Drive/Ormiston Road, Flat Bush (81)

Manukau

- Great South/Bairds Road, Papatoetoe (23)
- Great South Road/Te Irirangi Drive/Cavendish Drive, Manukau (24)
- Massey/Buckland Road, Mangere (28)
- Te Irirangi Drive/Ormiston Road, Flat Bush (81)
- Tom Pearce/George Bolt Memorial Drive, Mangere (25)
- Great South/East Tamaki Road, Papatoetoe (30)
- Wylie Avenue/Puhinui Road, Papatoetoe (31)
- McKenzie/Coronation/Walmsley Road, Mangere (32)
- Highbrook Drive, Highbrook (71)
- Great South Road/High Street/Atkinson Avenue, Otahuhu (18)

Manurewa-Papakura

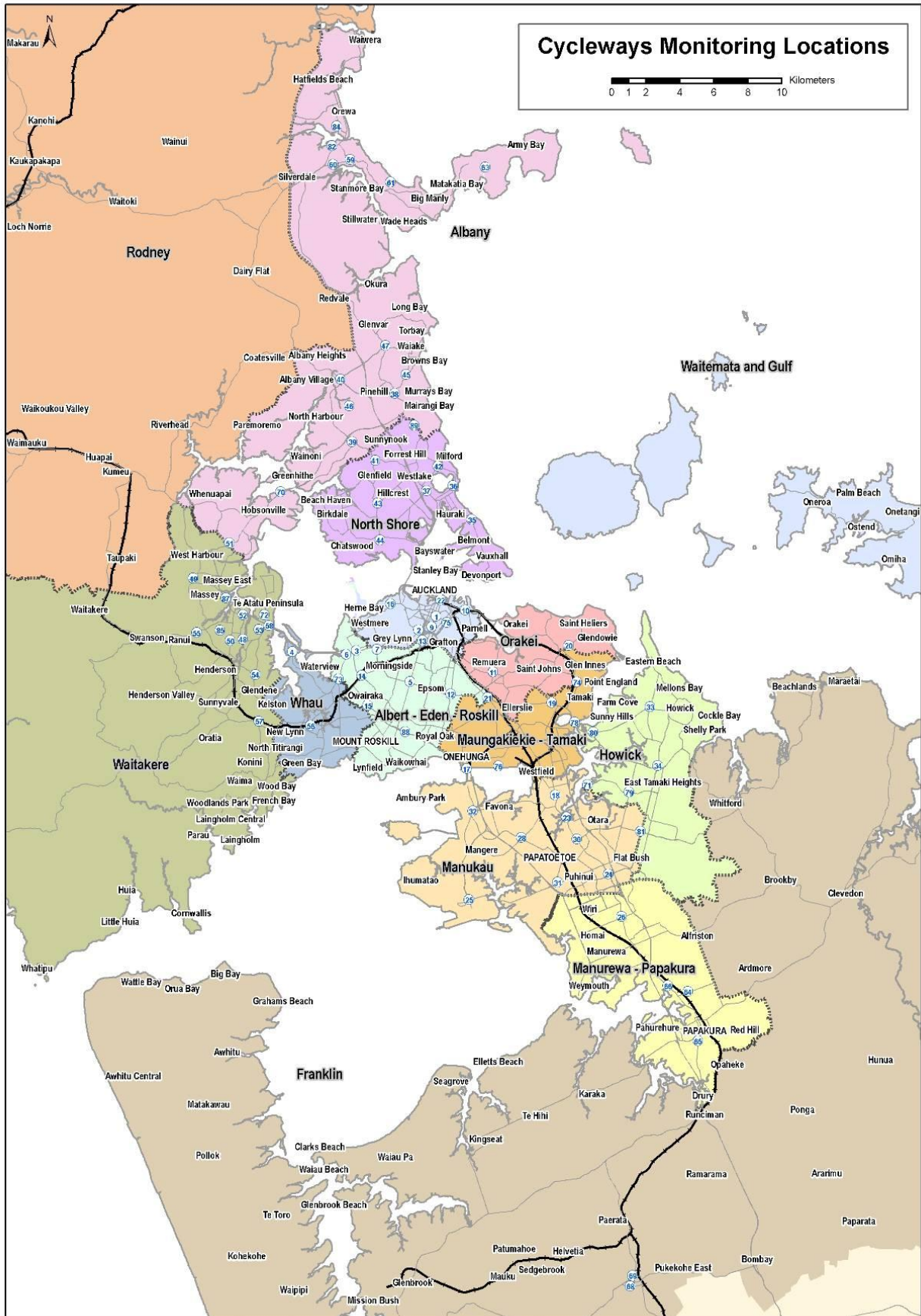
- Great South Road/Taka Street, Takanini (66)
- Porchester Road/Walters Road, Takanini (64)
- Great South Road/Rosehill Drive, Papakura (65)
- Great South/Browns/Orams Road, Manurewa (26)

Franklin

- Queen/Harris Street, Pukekohe (68)
- Edinburgh/Tobin Street, Pukekohe (69)

Note that there are no cycle monitoring sites in the Rodney ward.

Figure 1.1: 2011 Cycle Monitoring Locations in the Auckland Region



2. REGIONAL SUMMARY OF RESULTS

2.1 Aggregated Total

Total Movements

- Overall, a total of 13406 cyclist movements⁴ were recorded across the 82 sites monitored in 2011. Of the 80 sites monitored in both 2010 and 2011, a total of 13160 movements were recorded. This figure represents a 3 per cent increase when compared with 2010 (12836 movements).
- Across the 60 sites monitored since the manual cycle monitor began in 2007, cyclist movements have increased 30 per cent.

**Table 2.1: Total Cyclist Movements in the Auckland Region
2007-2011**

<i>Locations</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
Total (60 sites since 2007)	8417	8783	8427	10659	10917	2%	30%
Total (67 sites since 2008)	-	9255	8965	11336	11517	2%	-
Total (78 sites in 2009)	-	-	9969	12646	12970	3%	-
Total (80 sites in 2010)	-	-	-	12836	13160	3%	-
Total (82 sites in 2011)	-	-	-	-	13406	-	-

- Of the sites monitored in both 2010 and 2011, the average number of cycle movements in the region across the morning and evening periods has increased (165 per site in 2011 compared with 160 per site in 2010 – an increase of 3 per cent).
- However, these figures mask considerable variation between wards. Manurewa-Papakura (up 28 per cent), Manukau (up 26 per cent) and Orakei (up 22 per cent) have experienced notable increases in average total cycle movements. In contrast, Waitakere has experienced a decline in average total cycle movements since 2010 (down from 131 movements per site in 2010 to 116 this year, a decrease of 11 per cent) (Figures 2.1 and 2.2).

⁴ 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 the Auckland 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 13406 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.

Figure 2.1: Average and Range of Total Cyclist Movements by Ward in 2011 (All 82 Sites)

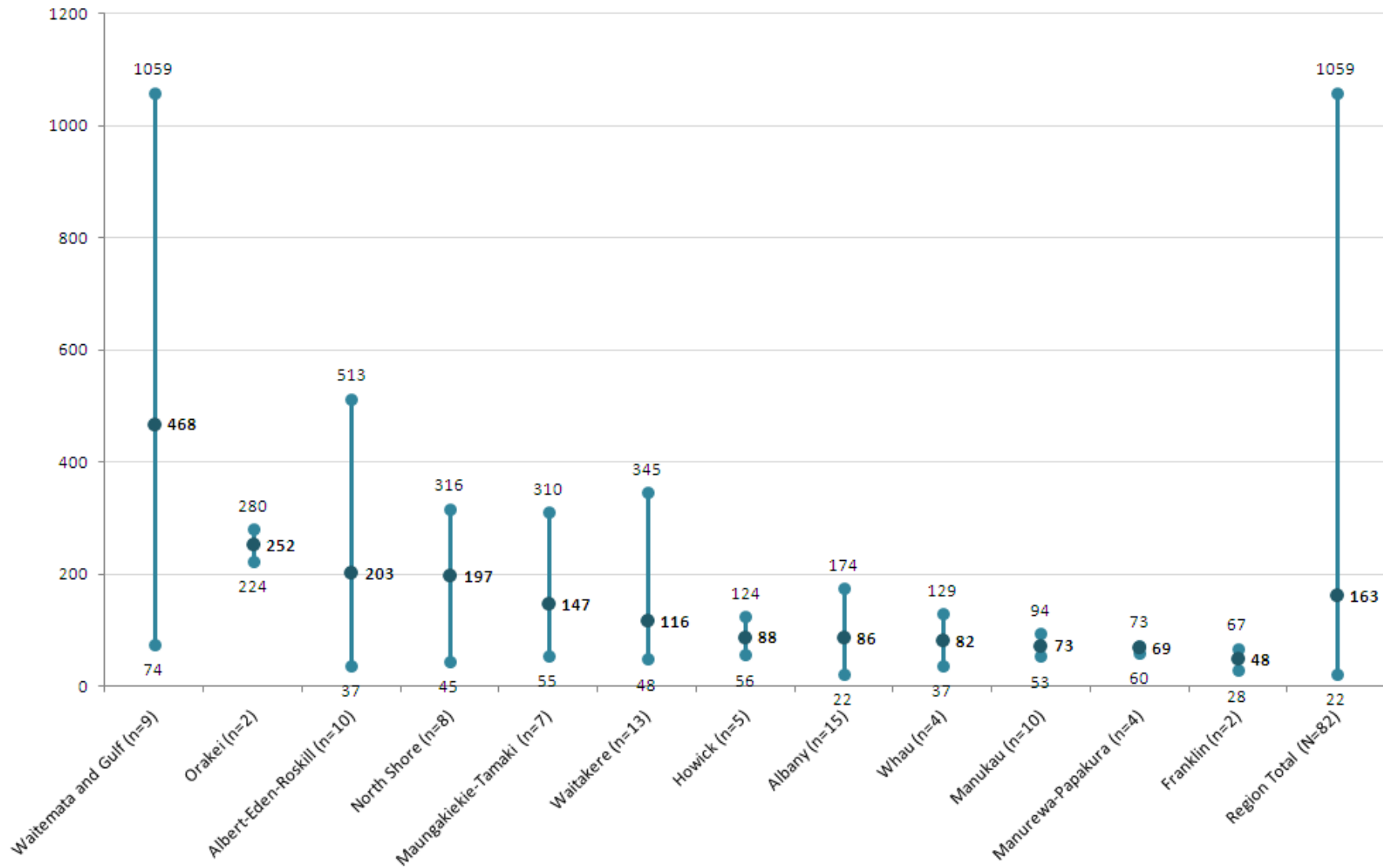
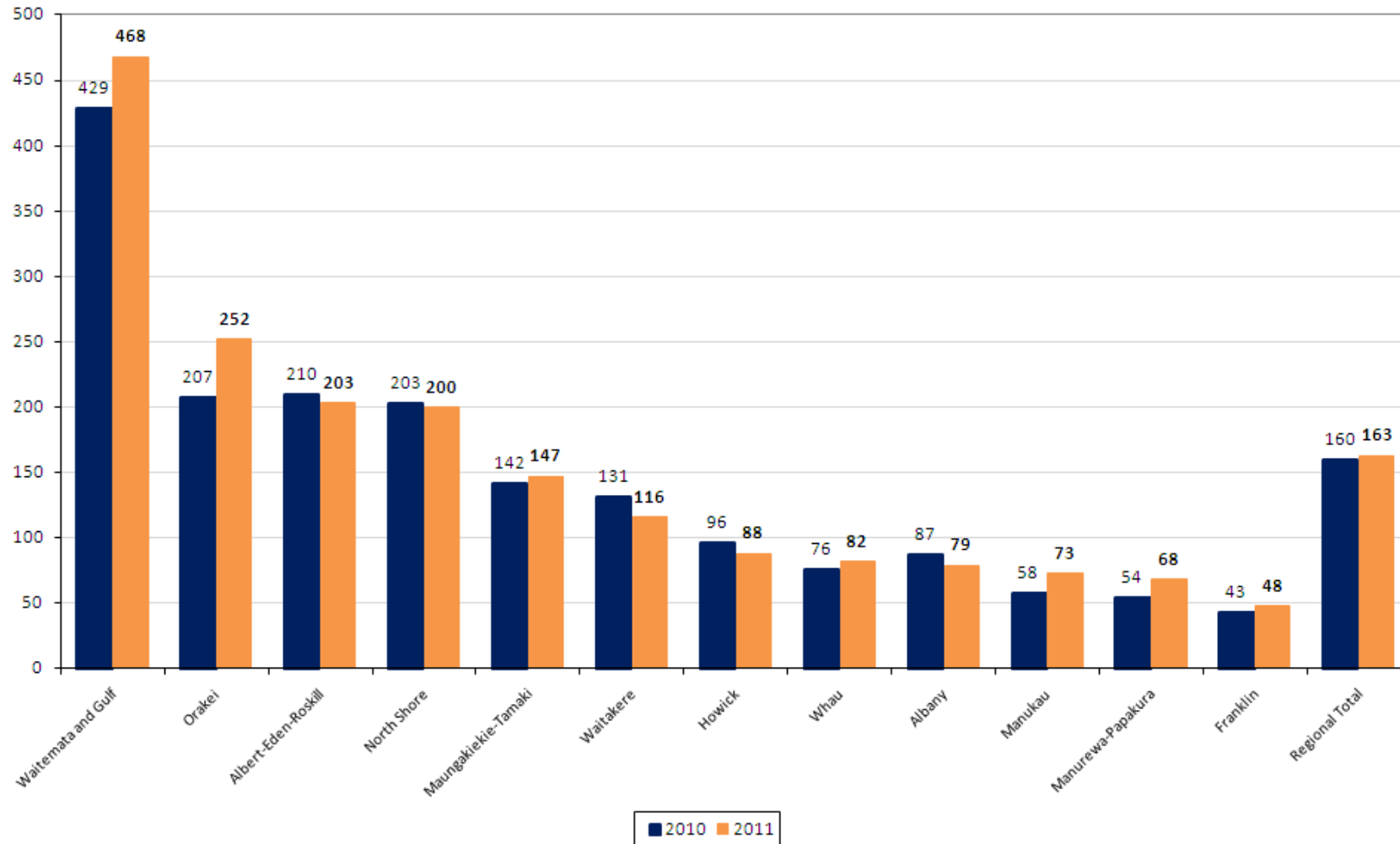


Figure 2.2: Average Cyclist Movements by Ward - 2010-2011 (n)



Note: To allow for accurate time series comparisons, average site calculation for 2011 for North Shore and Albany wards exclude Sunnynook/East Coast Bay Road, a site monitored for the first time in 2011. Average site calculation for 2011 for Manurewa-Papakura ward excludes Porchester/Walters Road site which was not monitored in 2010.

- Of the 82 sites monitored in the Auckland region, the busiest is the Tamaki Drive/The Strand intersection with a total of 1059 movements (up from 936 movements last year).
- Whangaparaoa Road near the SH1 intersection has the lightest cyclist traffic (22 movements).
- Forty-three per cent of the sites (34 of the 80 sites monitored in 2010 and 2011) have recorded increases in total cyclist numbers this year compared with 2010. The intersections with the biggest increases are:
 - Tom Pearce/George Bolt Memorial Drive, Manukau ward – up from 12 to 54 movements (350 per cent);
 - Waikaraka Cycleway, Maungakiekie-Tamaki ward – up from 42 to 65 movements (55 per cent); and
 - Ian McKinnon/Newton Road – up from 374 to 560 movements (50 per cent).
- In contrast, the number of total cyclists recorded at 42 sites is lower than last year. The most notable decreases are at:
 - Luckens/Hobsonville Road, Albany and Waitakere wards – down from 95 to 52 movements (45 per cent);
 - Glenfield/Coronation Road, North Shore ward – down from 93 to 52 movements (44 per cent); and
 - Birkenhead Avenue/Mokoia Road, North Shore ward – down from 75 to 45 movements (40 per cent).

**Table 2.2: Summary Of Total Cyclist Movements
2007-2011 (n) – 6:30am to 9:00am and 4:00pm to 7:00pm**

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
10	Tamaki Drive/The Strand	Waitemata and Gulf	900	786	603	936	1059	13%	18%
8	Symonds Street/Karangahape Road	Waitemata and Gulf	639	621	528	597	690	16%	8%
13	Ian McKinnon/Newton Road	Waitemata and Gulf	-	-	291	374	560	50%	-
9	Karangahape Road/Queen Street	Waitemata and Gulf	507	424	459	582	554	-5%	9%
7	North Western Cycleway/St Lukes	Albert-Eden-Roskill	324	331	310	432	513	19%	58%
2	Ponsonby/Karangahape Road	Waitemata and Gulf	487	415	370	559	511	-9%	5%
6	North Western Cycleway/Great North Road	Albert-Eden-Roskill	232	369	286	485	486	0%	109%
22	Ferry Terminal	Waitemata and Gulf	380	316	248	395	391	-1%	3%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	232	272	355	388	345	-11%	49%
35	Lake Road, by Takapuna Grammar	North Shore	192	297	295	327	316	-3%	65%
17	Onehunga Harbour Road	Maungakiekie-Tamaki	249	220	180	257	310	21%	24%
37	Taharoto/Northcote Road	North Shore	162	270	202	229	307	34%	90%
36	Hurstmere Road/Killarney Street	North Shore	121	252	318	302	304	1%	151%
42	Shakespeare/East Coast Road	North Shore	137	250	310	305	286	-6%	109%
11	Remuera/Orakei Road	Orakei	195	189	187	244	280	15%	44%
3	Great North/Carrington Road	Albert-Eden-Roskill	235	231	193	314	232	-26%	-1%
12	Manukau Road/Greenlane West	Albert-Eden-Roskill	225	205	176	257	227	-12%	1%
1	Victoria/Wellesley/Halsey Street	Waitemata and Gulf	160	136	124	162	225	39%	41%
20	St Heliers Bay/West Tamaki Road	Maungakiekie- Tamaki/Orakei	208	167	108	170	224	32%	8%
52	Central Park Drive	Waitakere	127	157	212	200	212	6%	67%

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
14	Mount Albert/New North Road	Albert-Eden-Roskill	156	164	142	209	201	-4%	29%
5	Dominion/Balmoral Road	Albert-Eden-Roskill	237	201	183	205	197	-4%	-17%
78	Lagoon Drive/Church Crescent	Maungakiekie-Tamaki	-	-	129	195	163	-16%	-
39	Upper Harbour Drive/Albany Highway	Albany	25	98	138	158	148	-6%	492%
16	Jervois Road/Wallace Street	Waitemata and Gulf	-	-	111	167	148	-11%	-
38	Rosedale/East Coast Road	Albany	76	98	159	152	143	-6%	88%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	111	134	207	141	-32%	-
84	Behind Rodney District Council Building	Albany	-	-	86	95	138	45%	-
21	Great South Road/Campbell Road/Main Highway	Albert-Eden- Roskill/Maungakiekie- Tamaki	174	114	151	171	138	-19%	-21%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	62	86	103	102	132	29%	113%
73	Blockhouse Bay/Great North Road	Albert-Eden-Roskill/Whau	-	117	119	141	129	-9%	-
47	Oteha Valley/East Coast Road	Albany	59	114	138	168	129	-23%	119%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	87	107	138	127	127	0%	46%
80	Pakuranga Road/Ti Rakau Drive	Howick	-	-	123	162	124	-23%	-
4	Patiki/Rosebank Road	Whau	82	79	72	90	121	34%	48%
87	Triangle/Huruhuru Road	Waitakere	-	-	-	137	121	-12%	-
33	Bucklands Beach/Pakuranga Road	Howick	140	130	94	114	107	-6%	-24%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	73	51	41	72	94	31%	29%
32	McKenzie/Coronation/Walmsley Road	Manukau	70	57	52	87	93	7%	33%
41	Wairau/Glenfield Road	North Shore	64	73	80	91	93	2%	45%
30	Great South/East Tamaki Road	Manukau	73	51	63	65	89	37%	22%

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
23	Great South/Bairds Road	Manukau	68	56	57	71	89	25%	31%
49	Triangle Road/Don Buck Road	Waitakere	67	61	56	90	88	-2%	31%
46	Rosedale/Bush Road	Albany	31	73	72	109	85	-22%	174%
70	Upper Harbour Drive/Buckley Avenue ⁵	Albany	-	35	68	94	83	-12%	-
40	Oteha Valley Road/SH17/Albany Highway	Albany	19	48	72	91	82	-10%	332%
19	Ellerslie Panmure Highway/Lunn Ave	Maungakiekie-Tamaki	118	94	82	100	77	-23%	-35%
34	Te Irirangi Drive/Ti Rakau Drive	Howick	81	75	59	78	76	-3%	-6%
31	Wyllie Avenue/Puhinui Road	Manukau	38	33	35	57	75	32%	97%
79	Harris/Smales Road	Howick	-	-	60	62	75	21%	-
45	Beach/Browns Bay Road	Albany	19	45	59	77	75	-3%	295%
75	Stanley Street/Grafton Road	Waitemata and Gulf	-	65	96	93	74	-20%	-
65	Great South Road/Rosehill Drive	Manurewa-Papakura	53	72	59	62	73	18%	38%
18	Great South Road/High Street/Atkinson/Park Avenue	Manukau	84	60	49	61	71	16%	-15%
26	Great South/Browns/Orams Road	Manurewa-Papakura	60	55	39	58	70	21%	17%
88	Keith Hay Park	Albert-Eden-Roskill	-	-	-	53	69	30%	-
85	Rathgar/Pomaria Road	Waitakere	-	-	85	99	68	-31%	-
68	Queen/Harris Street	Franklin	101	83	95	57	67	18%	-34%
48	Henderson Creek	Waitakere	46	30	73	84	66	-21%	43%
76	Waikaraka Cycle Way	Maungakiekie-Tamaki	-	54	51	42	65	55%	-
66	Great South Road/Taka Street	Manurewa-Papakura	58	58	36	43	60	40%	3%
57	West Coast/Rosier Road	Waitakere	48	37	62	60	60	0%	25%

⁵ 2008 and 2009 results do not include movement into or out of Buckley Avenue, southwest on Upper Harbour Drive.

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
61	D'Oyly Reserve cycleway	Albany	24	103	9	44	58	32%	142%
81	Te Irirangi Drive/Ormiston Road	Howick/Manukau	-	-	33	66	56	-15%	-
74	Apirana Avenue/Pilkington/Tripoli Road	Maungakiekie-Tamaki	-	61	32	60	55	-8%	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	27	12	54	350%	-
50	Lincoln Road/Fairdene Avenue	Waitakere	40	55	43	56	54	-4%	35%
71	Highbrook Drive	Manukau	-	29	38	40	53	33%	-
28	Massey/Buckland Road	Manukau	43	31	39	45	53	18%	23%
43	Glenfield/Coronation Road	North Shore	28	75	78	93	52	-44%	86%
51	Luckens/Hobsonville Road	Albany/Waitakere	32	41	77	95	52	-45%	63%
54	Te Atatu Road/Elcoat Avenue	Waitakere	50	45	69	52	48	-8%	-4%
44	Birkenhead Ave/Mokoia Road	North Shore	40	49	57	75	45	-40%	13%
56	3 Rankin Avenue	Whau	31	38	38	32	42	31%	35%
63	Gulf Harbour Drive/Laurie Southwick Parade	Albany	56	44	22	37	39	5%	-30%
15	Richardson Road/Maioro Street	Albert-Eden-Roskill/Whau	-	-	21	39	37	-5%	-
82	Jelas/Moffatt Road	Albany	-	-	38	39	30	-23%	-
69	Edinburgh/Tobin Street	Franklin	35	40	34	28	28	0%	-20%
59	Whangaparaoa Road, near Red Beach Intersection	Albany	29	31	26	29	26	-10%	-10%
60	Whangaparaoa Road, near SH1 Intersection	Albany	28	20	12	23	22	-4%	-21%
	Total (60 sites since 2007)^		8417	8783	8427	10659	10917	2%	30%
	Total (67 sites since 2008)^		-	9255	8965	11336	11517	2%	-
	Total (78 sites in 2009)		-	-	9969	12646	12970	3%	-
	Total (80 sites in 2010)		-	-	-	12836	13160	3%	-
64	Porchester Road/Walters Road	Manurewa-Papakura	50	46	49	-	72	-	44%

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
89	Sunnynook/East Coast Road	Albany/North Shore	-	-	-	-	174	-	-
	Total (82 sites in 2011)		-	-	-	-	13406	-	-

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

- Overall, 90 per cent of cyclists in the Auckland region are adults in 2011 (stable from 2010). Of the twelve wards monitored, the Waitemata and Gulf ward has the highest proportion of cyclists who are adults (99 per cent) whilst Franklin ward has the greatest share of cyclists identified as school children (49 per cent).
- Almost all cyclists are wearing a helmet (91 per cent, unchanged from previous years). Orakei ward has the highest proportion of cyclists who are wearing a helmet (98 per cent) whilst the Manurewa-Papakura ward has the greatest share of cyclists who are not wearing helmets (24 per cent).
- Seventy-nine per cent of all cyclists observed in the Auckland region throughout the monitoring period are male; sixteen per cent are female. Howick ward has the highest proportion of cyclists who are male (89 per cent), while Waitemata and Gulf ward has the greatest share of female cyclists (19 per cent).
- On average, 61 per cent of all cyclists are riding on the road (stable from 62 per cent last year). Eighteen per cent of cyclists are riding on an off-road cycleway, up from 13 per cent in 2010. Orakei ward has the highest share of cyclists who are riding on the road (90 per cent), while Waitakere ward has the greatest share of cyclists who are using an off-road cycleway (44 per cent). Franklin ward has the highest proportion of footpath riders (67 per cent).

Table 2.3: Aggregate Totals of Cyclist Characteristics 2007-2011 (%)

	<i>Aggregate Total (2007)</i>	<i>Aggregate Total (2008)</i>	<i>Aggregate Total (2009)</i>	<i>Aggregate Total (2010)</i>	<i>Aggregate Total 2011)</i>
Cyclist Type					
Adult	89	87	88	89	90
School child	11	13	12	11	10
Helmet Wearing					
Helmet on head	90	90	91	91	91
No helmet	10	10	9	9	9
Gender					
Male	-	-	-	-	79
Female	-	-	-	-	16
Can't tell	-	-	-	-	5
Where Riding					
Road	68	72	61	62	61
Footpath	21	21	25	25	21
Off-road cycleway	10	7	14	13	18
Base:	8417	9255	9969	12836	13406

Table 2.4: Summary of Cyclist Characteristics by Ward in 2011

	<i>Albany</i>	<i>North Shore</i>	<i>Wai-takere</i>	<i>Waite-mata and Gulf</i>	<i>Albert/Eden/Roskill</i>	<i>Whau</i>	<i>Orakei</i>	<i>Maungakiekie-Tamaki</i>	<i>Howick</i>	<i>Manukau</i>	<i>Manurewa-Papakura</i>	<i>Franklin</i>
Cyclist Type												
Adult	76	85	81	99	91	93	91	91	86	89	79	51
School child	24	15	19	1	9	7	9	9	14	11	21	49
Helmet Wearing												
Helmet on head	92	96	86	90	93	88	98	92	91	82	76	81
No helmet	8	4	14	10	7	12	2	8	9	18	24	19
Gender												
Male	83	73	84	74	81	84	75	84	89	83	86	87
Female	16	14	14	19	16	14	14	15	6	12	13	13
Can't tell	1	13	2	7	3	2	11	1	5	5	1	0
Where Riding												
Road	66	79	29	69	43	57	90	71	64	65	53	33
Footpath	15	17	27	18	16	37	10	20	36	31	47	67
Off-road cycleway	19	4	44	13	41	6	0	9	0	4	0	0
Base:	1284	1577	1514	4212	2229	329	504	1032	438	727	275	95

Note: Orange highlighting denotes the ward with the highest proportion of a particular characteristic when compared to the other wards.

2.2 Morning Peak

Key Points

- A total of 6457⁶ cyclist movements were recorded across the 82 sites monitored in 2011.
- Across the the 80 sites monitored in 2010 and 2011 in the morning peak period (between 6:30am and 9:00am), 6343 cyclist movements were recorded in 2011. This represents a 2 per cent increase from 2010 (6192 movements).
- As shown in Figure 2.3 and 2.4, the average volume of morning cyclists across the 82 sites in the Auckland region is 79 cycle movements in 2011, up from 77 movements last year. Of the twelve wards, the average number of morning cyclists is highest in the Waitemata and Gulf ward (231 movements) and lowest in Franklin ward (13 movements).

⁶ 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 6457 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.

Figure 2.3: Average and Range of Morning Cyclist Movements by Ward in 2011 (All 82 Sites)

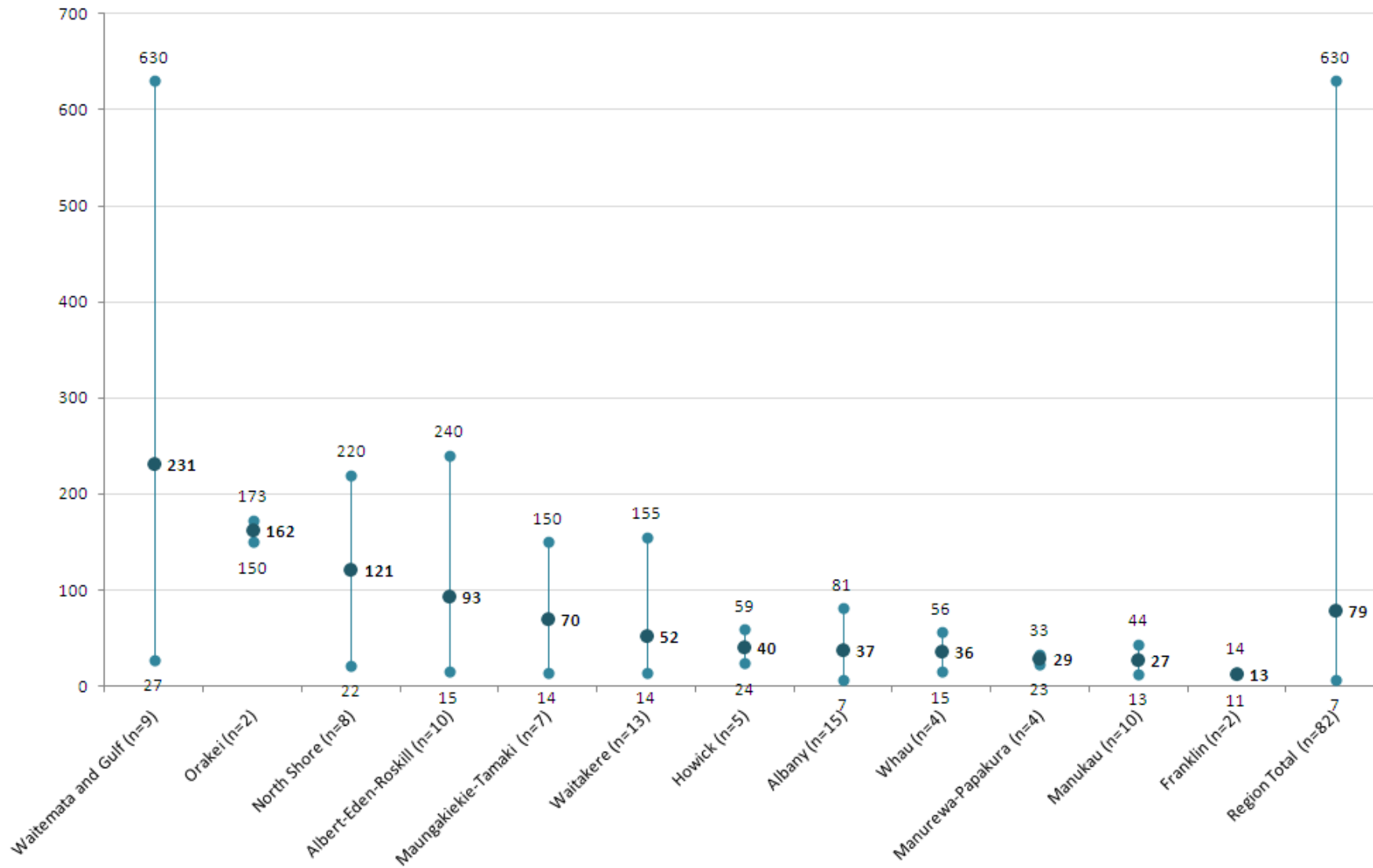
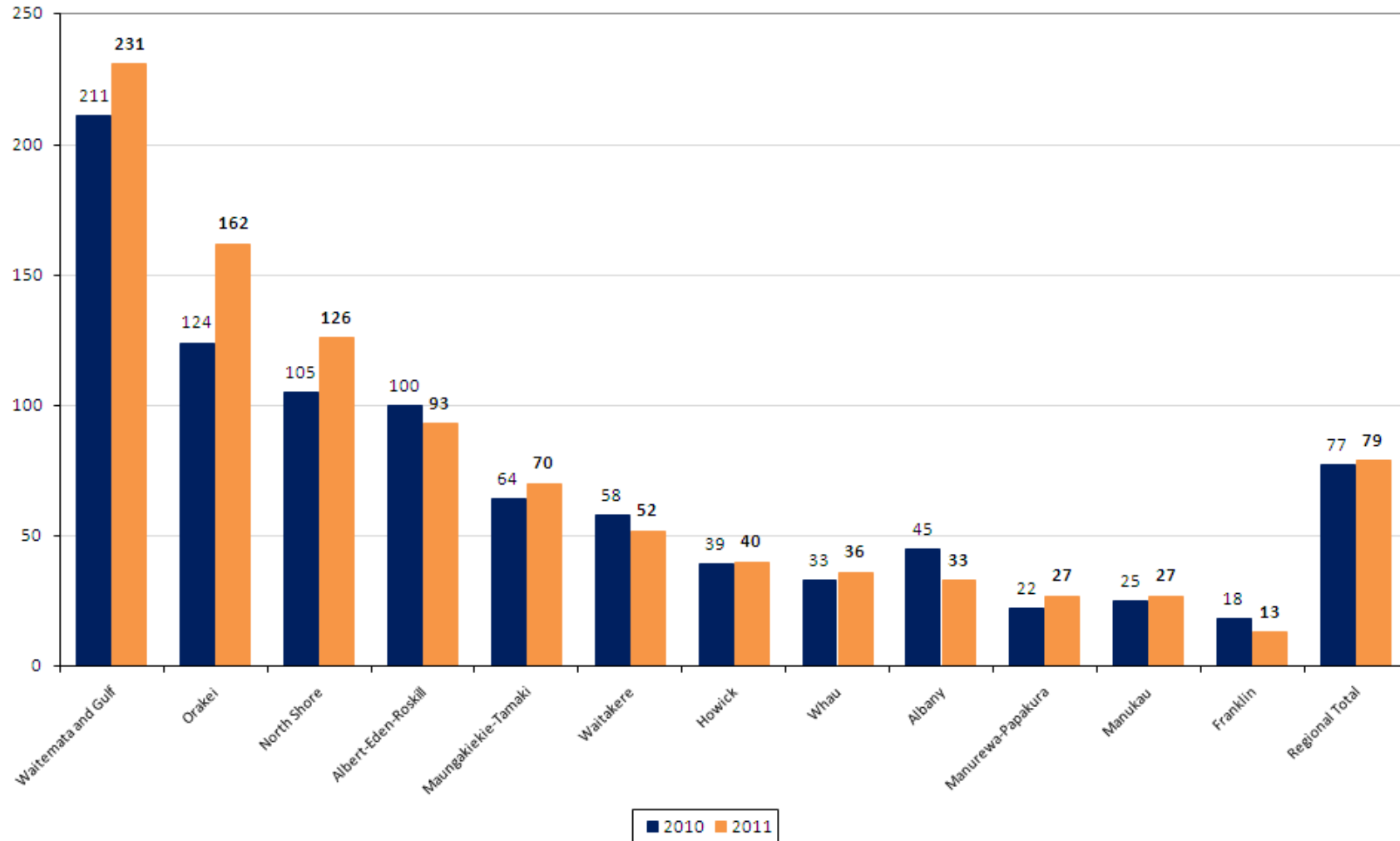


Figure 2.4: Average Morning Cyclist Movements by Ward - 2010-2011 (n)



Note: To allow for accurate time series comparisons, average site calculation for 2011 for North Shore and Albany wards exclude Sunnynook/East Coast Bay Road, a site monitored for the first time in 2011. Average site calculation for 2011 for Manurewa-Papakura ward excludes Porchester/Walters Road site which was not monitored in 2010.

- As in previous years, the busiest site out of the 82 in the morning peak is the intersection of Tamaki Drive and The Strand (630 movements, up from 498 movements in 2010), while the lowest level of morning cyclist traffic was observed at the Whangaparaoa Road near the SH1 intersection (7 movements).
- Forty-five per cent of the sites (36 of the 80 sites monitored in 2010 and 2011) have recorded increases in total morning cyclist numbers this year compared with 2010. The most notable increases are at:
 - Waikara Cycleway, Maungakiekie-Tamaki ward – up from 7 to 29 movements (314 per cent);
 - Tom Pearce/George Bolt Memorial Drive, Manukau ward – up from 5 to 15 movements (200 per cent);
 - Great South/East Tamaki Road, Manukau ward – up from 25 to 44 movements (76 per cent); and
 - Taharoto/Northcote Road, North Shore ward – up from 117 to 202 movements (73 per cent).
- In contrast, the number of morning cyclists recorded at 43 sites is lower than last year. The most notable decreases are at:
 - Luckens/Hobsonville Road, Albany and Waitakere wards – down from 41 to 14 movements (66 per cent);
 - D’Oyly Reserve cycleway, Albany ward – down from 31 to 13 movements (58 per cent); and
 - Apirana Avenue/Pilkington/Tripoli Road, Maungakiekie-Tamaki ward – down from 30 to 14 movements (53 per cent).

Table 2.5: Summary Of Morning Cyclist Movements

2007-2011 (n) – 6:30am to 9:00am

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
10	Tamaki Drive/The Strand	Waitemata and Gulf	480	416	321	498	630	27%	31%
8	Symonds Street/Karangahape Road	Waitemata and Gulf	290	285	246	283	317	12%	9%
9	Karangahape Road/Queen Street	Waitemata and Gulf	246	212	238	272	256	-6%	4%
7	North Western Cycleway/St Lukes	Albert-Eden-Roskill	152	156	155	222	240	8%	58%
13	Ian McKinnon/Newton Road	Waitemata and Gulf	-	-	139	190	236	24%	-
2	Ponsonby/Karangahape Road	Waitemata and Gulf	226	199	176	242	222	-8%	-2%
35	Lake Road, by Takapuna Grammar	North Shore	127	200	166	186	220	18%	73%
22	Ferry Terminal	Waitemata and Gulf	195	158	137	198	205	4%	5%
6	North Western Cycleway/ Great North Road	Albert-Eden-Roskill	98	156	145	244	204	-16%	108%
37	Taharoto/Northcote Road	North Shore	111	160	98	117	202	73%	82%
36	Hurstmere Road/Killarney Street	North Shore	76	134	186	180	191	6%	151%
42	Shakespeare/East Coast Road	North Shore	82	127	177	146	181	24%	121%
11	Remuera/Orakei Road	Orakei	86	100	107	149	173	16%	101%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	102	121	157	179	155	-13%	52%
20	St Heliers Bay/West Tamaki Road	Maungakiekie-Tamaki/Orakei	139	107	61	98	150	53%	8%
17	Onehunga Harbour Road	Maungakiekie-Tamaki	93	88	74	98	139	42%	49%
12	Manukau Road/Greenlane West	Albert-Eden-Roskill	103	92	84	130	120	-8%	17%
1	Victoria/Wellesley/Halsey Street	Waitemata and Gulf	70	57	59	82	116	41%	66%
3	Great North/Carrington Road	Albert-Eden-Roskill	114	95	97	150	103	-31%	-10%

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
52	Central Park Drive	Waitakere	61	68	91	94	100	6%	64%
5	Dominion/Balmoral Road	Albert-Eden-Roskill	114	90	85	91	99	9%	-13%
14	Mount Albert/New North Road	Albert-Eden-Roskill	75	68	59	91	97	7%	29%
38	Rosedale/East Coast Road	Albany	44	52	79	65	73	12%	66%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	-	-	60	88	73	-17%	-
16	Jervois Road/Wallace Street	Waitemata and Gulf	54	52	105	93	73	-22%	35%
84	Behind Rodney District Council Building	Albany	-	-	75	73	72	-1%	-
78	Lagoon Drive/Church Crescent	Maungakiekie-Tamaki	-	-	57	100	65	-35%	-
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	56	66	105	63	-40%	-
21	Great South Road/Campbell Road/Main Highway	Albert-Eden-Roskill/Maungakiekie-Tamaki	89	53	64	69	60	-13%	-33%
80	Pakuranga Road/Ti Rakau Drive	Howick	-	-	46	70	59	-16%	-
39	Upper Harbour Drive/Albany Highway	Albany	14	54	63	65	57	-12%	307%
4	Patiki/Rosebank Road	Whau	37	34	38	38	56	47%	51%
73	Blockhouse Bay/Great North Road	Albert-Eden-Roskill/Whau	-	57	57	66	56	-15%	-
47	Oteha Valley/East Coast Road	Albany	42	40	69	87	53	-39%	26%
87	Triangle/Huruhuru Road	Waitakere	-	-	-	59	52	-12%	-
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	15	21	37	34	47	38%	213%
45	Beach/Browns Bay Road	Albany	11	26	29	50	47	-6%	327%
30	Great South/East Tamaki Road	Manukau	36	24	33	25	44	76%	22%
33	Bucklands Beach/Pakuranga Road	Howick	68	53	51	45	43	-4%	-37%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	34	25	19	28	41	46%	21%

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
41	Wairau/Glenfield Road	North Shore	34	39	42	38	41	8%	21%
23	Great South/Bairds Road	Manukau	32	27	29	34	40	18%	25%
34	Te Irirangi Drive/Ti Rakau Drive	Howick	36	36	30	30	37	23%	3%
79	Harris/Smales Road	Howick	-	-	35	25	35	40%	-
49	Triangle Road/Don Buck Road	Waitakere	24	29	21	27	35	30%	46%
70	Upper Harbour Drive/Buckley Avenue ⁷	Albany	-	17	23	37	34	-8%	-
85	Rathgar/Pomaria Road	Waitakere	-	-	32	53	33	-38%	-
32	McKenzie/Coronation/Walmsley Road	Manukau	28	21	22	38	32	-16%	14%
19	Ellerslie Panmure Highway/Lunn Ave	Maungakiekie-Tamaki	52	42	31	44	31	-30%	-40%
65	Great South Road/Rosehill Drive	Manurewa-Papakura	29	42	22	29	30	3%	3%
54	Te Atatu Road/Elcoat Avenue	Waitakere	26	27	37	30	30	0%	15%
76	Waikaraka Cycle Way	Maungakiekie-Tamaki	-	13	18	7	29	314%	-
26	Great South/Browns/Orams Road	Manurewa-Papakura	25	32	21	21	29	38%	16%
88	Keith Hay Park	Albert-Eden-Roskill	-	-	-	28	29	4%	-
46	Rosedale/Bush Road	Albany	15	36	26	48	29	-40%	93%
43	Glenfield/Coronation Road	North Shore	16	36	36	37	27	-27%	69%
75	Stanley Street/Grafton Road	Waitemata and Gulf	-	36	49	47	27	-43%	-
50	Lincoln Road/Fairdene Avenue	Waitakere	13	19	21	21	26	24%	100%
40	Oteha Valley Road/SH17/Albany Highway	Albany	4	20	25	29	26	-10%	550%
57	West Coast/Rosier Road	Waitakere	19	18	28	31	25	-19%	32%
81	Te Irirangi Drive/Ormiston Road	Howick/Manukau	-	-	13	25	24	-4%	-

⁷ 2008 and 2009 results do not include movement into or out of Buckley Avenue, southwest on Upper Harbour Drive.

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
48	Henderson Creek	Waitakere	14	11	27	38	24	-37%	71%
66	Great South Road/Taka Street	Manurewa-Papakura	18	19	12	15	23	53%	28%
71	Highbrook Drive	Manukau	-	13	20	27	23	-15%	-
44	Birkenhead Ave/Mokoia Road	North Shore	20	20	27	29	22	-24%	10%
18	Great South Road/High Street/Atkinson/Park Avenue	Manukau	38	30	21	25	20	-20%	-47%
82	Jelas/Moffatt Road	Albany	-	-	15	24	19	-21%	-
28	Massey/Buckland Road	Manukau	12	11	19	16	18	13%	50%
56	3 Rankin Avenue	Whau	16	17	21	12	16	33%	0%
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	6	5	15	200%	-
15	Richardson Road/Maioro Street	Albert-Eden-Roskill/Whau	-	-	8	14	15	7%	-
68	Queen/Harris Street	Franklin	44	31	27	18	14	-22%	-68%
74	Apirana Avenue/Pilkington/Tripoli Road	Maungakiekie-Tamaki	-	22	12	30	14	-53%	-
51	Luckens/Hobsonville Road	Albany/Waitakere	20	25	26	41	14	-66%	-30%
31	Wyllie Avenue/Puhinui Road	Manukau	18	8	12	23	13	-43%	-28%
61	D'Oyly Reserve cycleway	Albany	14	19	5	31	13	-58%	-7%
63	Gulf Harbour Drive/Laurie Southwick Parade	Albany	17	14	5	14	12	-14%	-29%
69	Edinburgh/Tobin Street	Franklin	17	16	15	17	11	-35%	-35%
59	Whangaparaoa Road, near Red Beach Intersection	Albany	13	15	15	21	11	-48%	-15%
60	Whangaparaoa Road, near SH1 Intersection	Albany	11	9	6	13	7	-46%	-36%
	Total (60 sites since 2007)^		4109	4192	4135	5119	5370	5%	31%
	Total (67 sites since 2008)^		-	4406	4380	5438	5616	3%	-
	Total (78 sites in 2009)		-	-	4866	6105	6262	3%	-
	Total (80 sites in 2010)		-	-	-	6192	6343	2%	-

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
64	Porchester Road/Walters Road	Manurewa-Papakura	22	19	19	-	33	-	50%
89	Sunnynook/East Coast Road	Albany/North Shore	-	-	-	-	81	-	-
	Total (82 sites in 2011)		-	-	-	-	6457	-	-

Total morning cyclist characteristics are shown in Table 2.6 below.

- Overall, 88 per cent of morning cyclists in the Auckland region are adults in 2011 (stable from 2010). Of the twelve wards monitored, the Waitemata and Gulf ward has the highest proportion of cyclists who are adults (99 per cent) whilst Franklin ward has the greatest share of cyclists identified as school children (40 per cent).
- Almost all cyclists are wearing a helmet (93 per cent, unchanged from previous years). North Shore and Orakei wards have the highest proportion of cyclists who are wearing a helmet (99 per cent respectively) whilst the Manurewa-Papakura ward has the greatest share of cyclists not wearing helmets (19 per cent).
- Seventy-seven percent of all morning cyclists are identified as male. Howick ward has the highest proportion of cyclists who are male (89 per cent), while Franklin ward has the highest share of cyclists who are female (20 per cent).
- On average, 65 per cent of all cyclists are riding on the road (stable from 63 per cent last year). Sixteen per cent of cyclists are riding on an off-road cycleway, stable from 14 per cent 12 months ago. North Shore ward has the highest share of cyclists who are riding on the road (80 per cent), while Waitakere ward (43 per cent) has the greatest share of cyclists who are using an off-road cycleway. Franklin ward has the highest proportion of footpath riders (60 per cent).

Table 2.6: Aggregate Totals of Morning Cyclist Characteristics - 2007-2011 (%)

	<i>Aggregate Total (2007)</i>	<i>Aggregate Total (2008)</i>	<i>Aggregate Total (2009)</i>	<i>Aggregate Total (2010)</i>	<i>Aggregate Total (2011)</i>
Cyclist Type					
Adult	86	86	85	87	88
School child	14	14	15	13	12
Helmet Wearing					
Helmet on head	93	93	93	93	93
No helmet	7	7	7	7	7
Gender					
Male	-	-	-	-	77
Female	-	-	-	-	16
Can't tell	-	-	-	-	7
Where Riding					
Road	69	73	63	63	65
Footpath	21	20	23	23	19
Off-road cycleway	9	7	14	14	16
Base:	4109	4406	4866	6192	6457

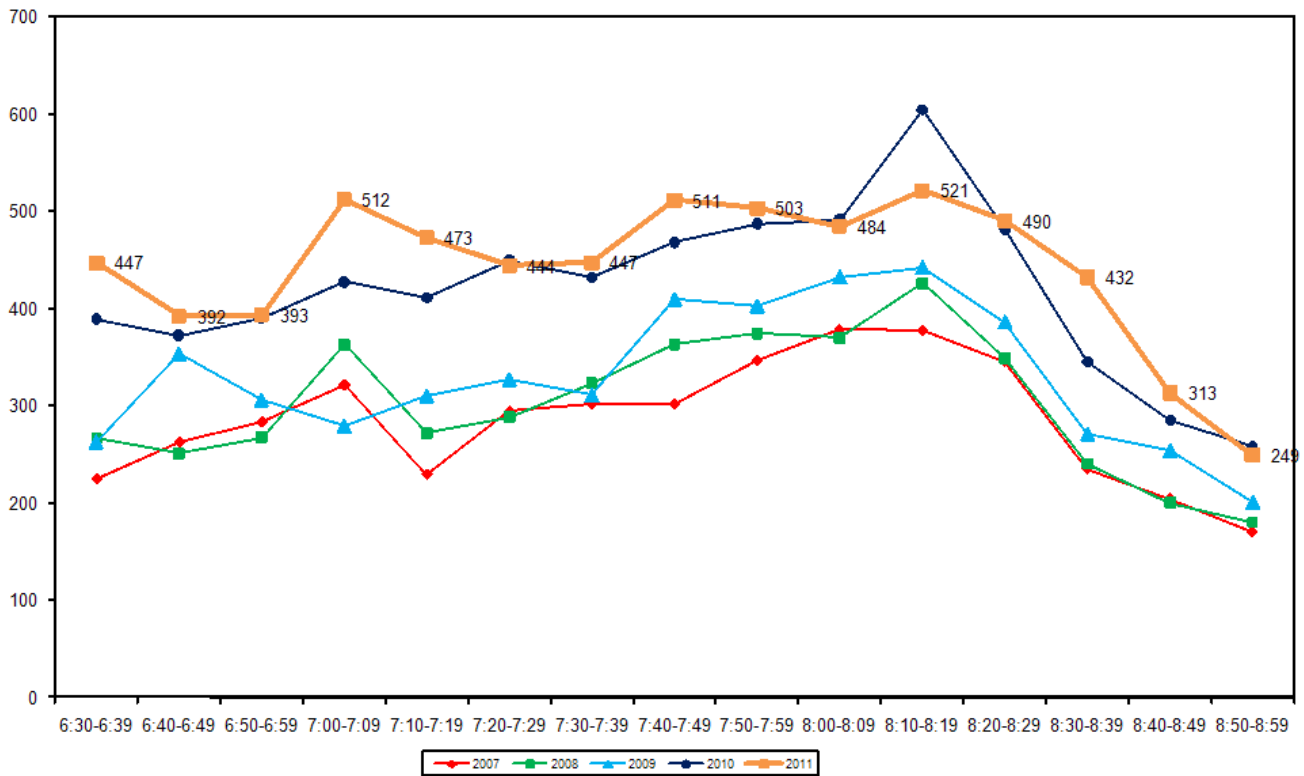
Table 2.7: Summary of Morning Cyclist Characteristics by Ward in 2011

	<i>Albany</i>	<i>North Shore</i>	<i>Wai- takere</i>	<i>Waite- mata and Gulf</i>	<i>Albert/ Eden/ Roskill</i>	<i>Whau</i>	<i>Orakei</i>	<i>Maunga- kieke- Tamaki</i>	<i>Howick</i>	<i>Manukau</i>	<i>Manu- rewa- Papakura</i>	<i>Franklin</i>
Cyclist Type												
Adult	72	85	75	99	89	91	94	90	84	87	75	60
School child	28	15	25	1	11	9	6	10	16	13	25	40
Helmet Wearing												
Helmet on head	93	99	91	92	94	92	99	94	95	87	81	92
No helmet	7	1	9	8	6	8	1	6	5	13	19	8
Gender												
Male	83	65	83	74	78	84	70	83	89	85	85	80
Female	14	16	15	19	18	13	16	16	7	12	15	20
Can't tell	3	19	2	7	4	3	14	1	4	3	0	0
Where Riding												
Road	66	80	28	74	45	54	92	75	63	66	58	40
Footpath	14	17	29	15	16	42	8	17	37	29	42	60
Off-road cycleway	20	3	43	11	39	4	0	8	0	5	0	0
Base:	548	965	677	2082	1023	143	323	488	198	270	115	25

Note: Orange highlighting denotes the ward with the highest proportion of a particular characteristic when compared to the other wards.

- Figure 2.5 shows the overall pattern of total morning cyclist volumes recorded at the 82 sites monitored in the Auckland region. Morning cyclist numbers remain steady over the monitoring period, decreasing from 8:20am and continuing to decline until the end of the morning peak period. Morning cyclist numbers peaked between 8:10am and 8:19am at 521 cyclist movements across all sites. There were at least 249 cycle movements recorded within any ten minute interval during the morning peak.

**Figure 2.5: Total Cyclist Frequency – Morning Peak
2007-2011 (n)**



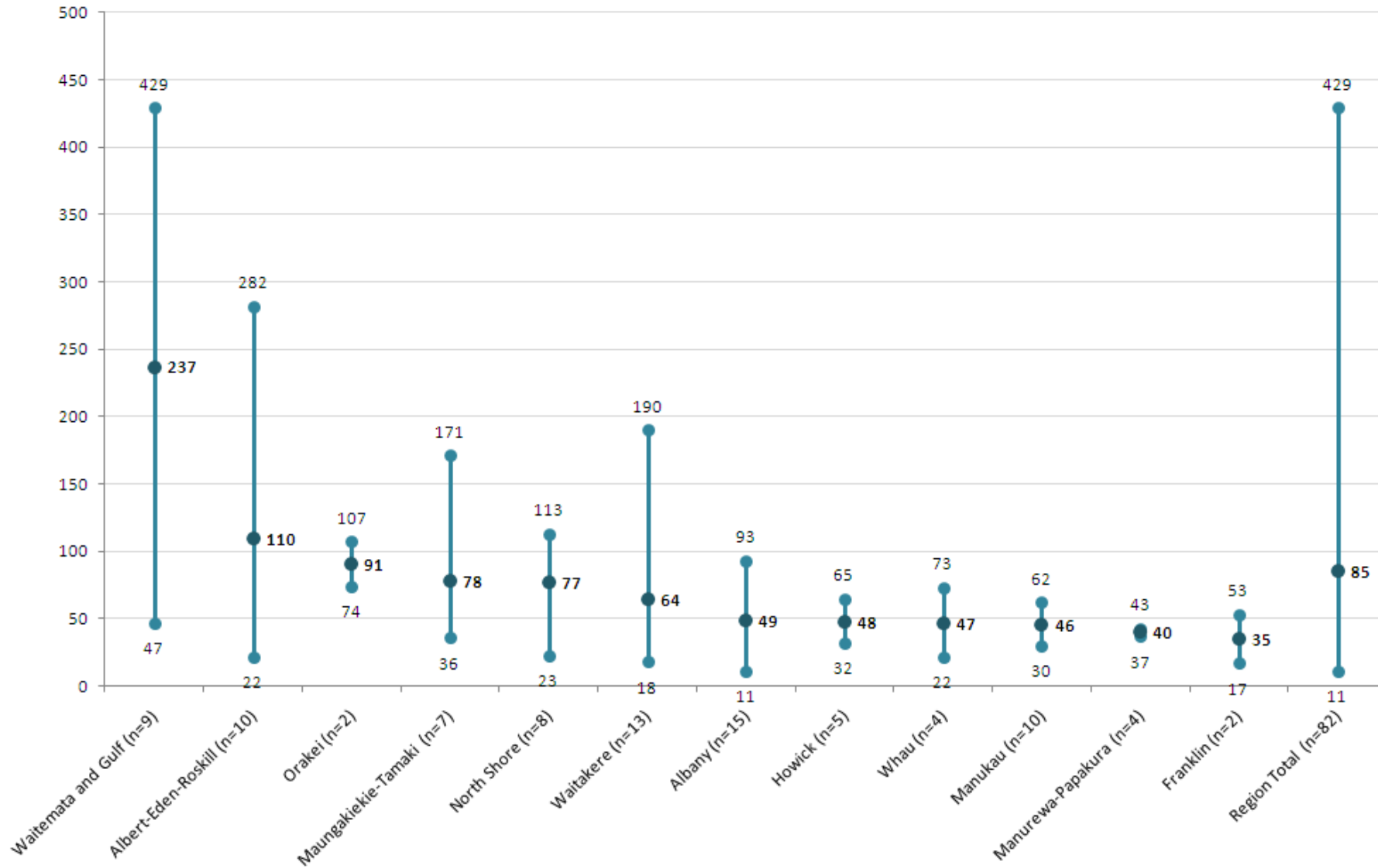
2.3 Evening Peak

Key Points

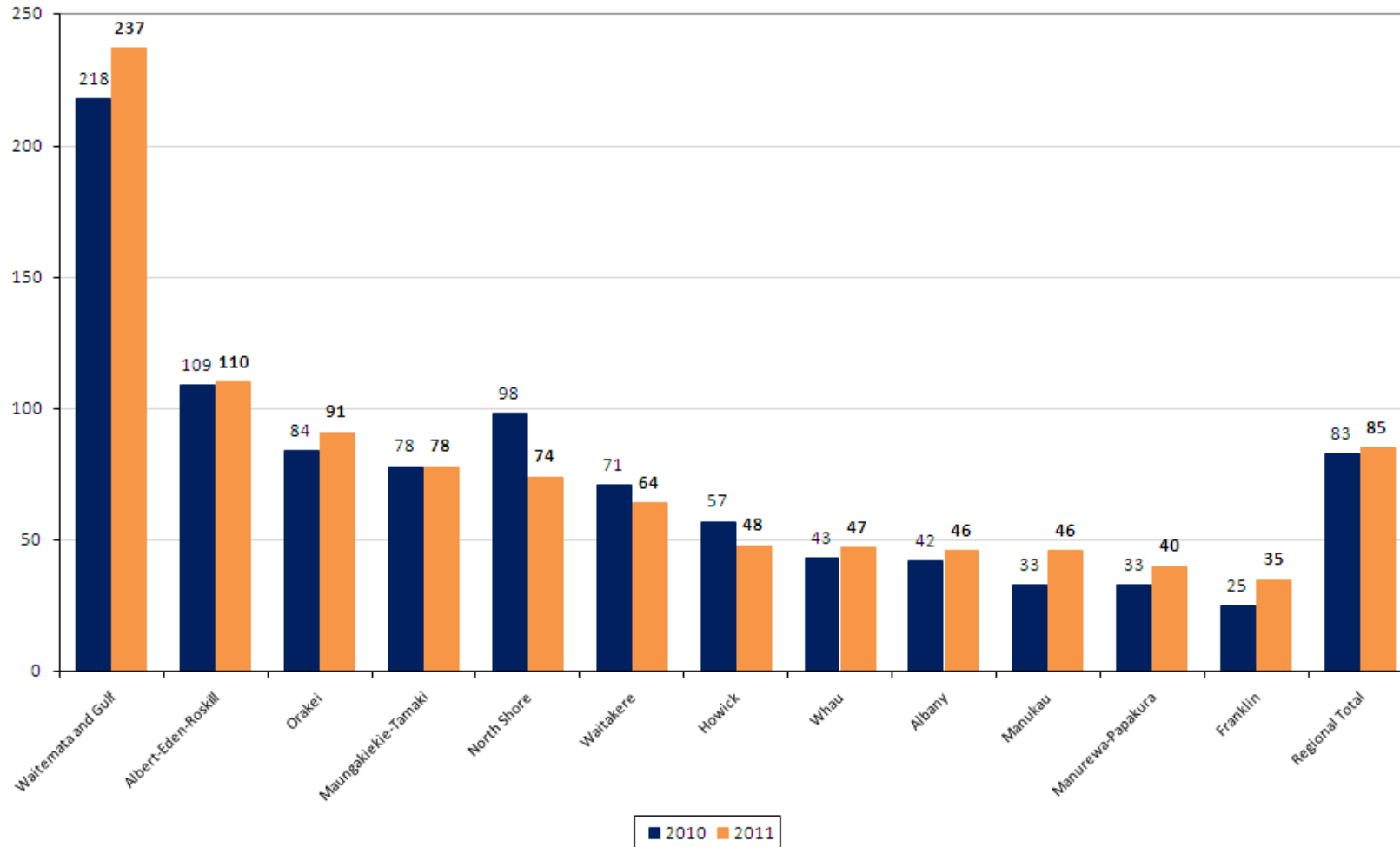
- A total of 6949⁸ cyclist movements were recorded across the 82 sites monitored in 2011.
- Across the the 80 sites monitored in 2010 and 2011 in the evening peak period (between 4:00pm and 7:00pm), 6817 cyclist movements were recorded in 2011. This represents a 3 per cent increase from 2010 (6644 movements).
- As shown in Figures 2.6 and 2.7, the average volume of evening cyclists across the 82 sites in the Auckland region is 85 cycle movements in 2011. Of the twelve wards, the average number of evening cyclists is highest in the Waitemata and Gulf ward (237 movements) and lowest in Franklin (35 movements).

⁸ 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 6949 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.

Figure 2.6: Average and Range of Evening Cyclist Movements by Ward in 2011 (All 82 Sites)



**Figure 2.7: Average Evening Cyclist Movements by Ward
2007-2011 (n)**



Note: To allow for accurate time series comparisons, average site calculation for 2011 for North Shore and Albany wards exclude Sunnynook/East Coast Bay Road, a site monitored for the first time in 2011. Average site calculation for 2011 for Manurewa-Papakura ward excludes Porchester/Walters Road site which was not monitored in 2010.

- As in previous years, the busiest site of the 82 monitored in the evening period is the intersection of Tamaki Drive and The Strand (429 movements, down slightly from 438 movements in 2010), while the lowest level of evening cyclist traffic was observed at the Jelas/Moffatt Road in Albany ward (11 movements).
- Fifty per cent of the sites (40 of the 80 sites monitored in 2010 and 2011) have recorded increases in total evening cyclist numbers this year compared with 2010. The most notable increases are at:
 - Tom Pearce/George Bolt Memorial Drive, Manukau ward – up from 7 to 39 movements (457 per cent);
 - D’Oyly Reserve cycleway, Albany ward – up from 13 to 45 movements (246 per cent);
 - Behind Rodney District Council Building, Albany ward – up from 22 to 66 movements (200 per cent); and
 - Highbrook Drive, Manukau ward – up from 13 to 30 movements (131 per cent).
- In contrast, the number of evening cyclists recorded at the 40 sites remaining sites is lower than last year. The most notable decreases are at:
 - Glenfield/Coronation Road, North Shore ward – down from 56 to 25 movements (55 per cent); and
 - Birkenhead Avenue/Mokoia Road, North Shore ward – down from 46 to 23 movements (50 per cent).

**Table 2.8: Summary of Evening Cyclist Movements
2007-2011 (n) – 4:00pm to 7:00pm**

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
10	Tamaki Drive/The Strand	Waitemata and Gulf	420	370	282	438	429	-2%	2%
8	Symonds Street/Karangahape Road	Waitemata and Gulf	349	336	282	314	373	19%	7%
13	Ian McKinnon/Newton Road	Waitemata and Gulf	-	-	152	184	324	76%	-
9	Karangahape Road/Queen Street	Waitemata and Gulf	261	212	221	310	298	-4%	14%
2	Ponsonby/Karangahape Road	Waitemata and Gulf	261	216	194	317	289	-9%	11%
6	North Western Cycleway/Great North Road	Albert-Eden-Roskill	134	213	141	241	282	17%	110%
7	North Western Cycleway/St Lukes	Albert-Eden-Roskill	172	175	155	210	273	30%	59%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	130	151	198	209	190	-9%	46%
22	Ferry Terminal	Waitemata and Gulf	185	158	111	197	186	-6%	1%
17	Onehunga Harbour Road	Maungakiekie-Tamaki	156	132	106	159	171	8%	10%
3	Great North/Carrington Road	Albert-Eden-Roskill	121	136	96	164	129	-21%	7%
36	Hurstmere Road/Killarney Street	North Shore	45	118	132	122	113	-7%	151%
52	Central Park Drive	Waitakere	66	89	121	106	112	6%	70%
1	Victoria/Wellesley/Halsey Street	Waitemata and Gulf	90	79	65	80	109	36%	21%
11	Remuera/Orakei Road	Orakei	109	89	80	95	107	13%	-2%
12	Manukau Road/Greenlane West	Albert-Eden-Roskill	122	113	92	127	107	-16%	-12%
37	Taharoto/Northcote Road	North Shore	51	110	104	112	105	-6%	106%
42	Shakespeare/East Coast Road	North Shore	55	123	133	159	105	-34%	91%
14	Mount Albert/New North Road	Albert-Eden-Roskill	81	96	83	118	104	-12%	28%
78	Lagoon Drive/Church Crescent	Maungakiekie-Tamaki	-	-	72	95	98	3%	-

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
5	Dominion/Balmoral Road	Albert-Eden-Roskill	123	111	98	114	98	-14%	-20%
35	Lake Road, by Takapuna Grammar	North Shore	65	97	129	141	96	-32%	48%
39	Upper Harbour Drive/Albany Highway	Albany	11	44	75	93	91	-2%	727%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	47	65	66	68	85	25%	81%
21	Great South Road/Campbell Road/Main Highway	Albert-Eden-Roskill/Maungakiekie-Tamaki	85	61	87	102	78	-24%	-8%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	55	68	102	78	-24%	-
47	Oteha Valley/East Coast Road	Albany	17	74	69	81	76	-6%	347%
16	Jervois Road/Wallace Street	Waitemata and Gulf	-	-	51	79	75	-5%	-
20	St Heliers Bay/West Tamaki Road	Maungakiekie-Tamaki/Orakei	69	60	47	72	74	3%	7%
73	Blockhouse Bay/Great North Road	Albert-Eden-Roskill/Whau	-	60	62	75	73	-3%	-
38	Rosedale/East Coast Road	Albany	22	46	54	59	70	19%	218%
87	Triangle/Huruhuru Road	Waitakere	-	-	-	78	69	-12%	-
84	Behind Rodney District Council Building	Albany	-	-	11	22	66	200%	-
4	Patiki/Rosebank Road	Whau	45	45	34	52	65	25%	44%
80	Pakuranga Road/Ti Rakau Drive	Howick	-	-	77	92	65	-29%	-
33	Bucklands Beach/Pakuranga Road	Howick	72	77	43	69	64	-7%	-11%
31	Wyllie Avenue/Puhinui Road	Manukau	20	25	23	34	62	82%	210%
32	McKenzie/Coronation/Walmsley Road	Manukau	42	36	30	49	61	24%	45%
46	Rosedale/Bush Road	Albany	16	37	46	61	56	-8%	250%
40	Oteha Valley Road/SH17/Albany Highway	Albany	15	28	47	62	56	-10%	273%

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
53	326 Te Atatu Road, near Covil Avenue	Waitakere	43	55	59	62	54	-13%	26%
68	Queen/Harris Street	Franklin	57	52	68	39	53	36%	-7%
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	39	26	22	44	53	20%	36%
49	Triangle Road/Don Buck Road	Waitakere	43	32	35	63	53	-16%	23%
41	Wairau/Glenfield Road	North Shore	30	34	38	53	52	-2%	73%
18	Great South Road/High Street/Atkinson/Park Avenue	Manukau	46	30	28	36	51	42%	11%
23	Great South/Bairds Road	Manukau	36	29	28	37	49	32%	36%
70	Upper Harbour Drive/Buckley Avenue ⁹	Albany	-	18	45	57	49	-14%	-
75	Stanley Street/Grafton Road	Waitemata and Gulf	-	29	47	46	47	2%	-
19	Ellerslie Panmure Highway/Lunn Ave	Maungakiekie-Tamaki	66	52	51	56	46	-18%	-30%
61	D'Oyly Reserve cycleway	Albany	10	84	4	13	45	246%	350%
30	Great South/East Tamaki Road	Manukau	37	27	30	40	45	13%	22%
65	Great South Road/Rosehill Drive	Manurewa-Papakura	24	30	37	33	43	30%	79%
48	Henderson Creek	Waitakere	32	19	46	46	42	-9%	31%
74	Apirana Avenue/Pilkington/Tripoli Road	Maungakiekie-Tamaki	-	39	20	30	41	37%	-
26	Great South/Browns/Orams Road	Manurewa-Papakura	35	23	18	37	41	11%	17%
88	Keith Hay Park	Albert-Eden-Roskill	-	-	-	25	40	60%	-
79	Harris/Smales Road	Howick	-	-	25	37	40	8%	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	21	7	39	457%	-
34	Te Irirangi Drive/Ti Rakau Drive	Howick	45	39	29	48	39	-19%	-13%
51	Luckens/Hobsonville Road	Albany/Waitakere	12	16	51	54	38	-30%	217%

⁹ 2008 and 2009 results do not include movement into or out of Buckley Avenue, southwest on Upper Harbour Drive.

Site Number	Location	Area	2007	2008	2009	2010	2011	Change 10-11	Change 07-11
66	Great South Road/Taka Street	Manurewa-Papakura	40	39	24	28	37	32%	-8%
76	Waikaraka Cycle Way	Maungakiekie-Tamaki	-	41	33	35	36	3%	-
28	Massey/Buckland Road	Manukau	31	20	20	29	35	21%	13%
57	West Coast/Rosier Road	Waitakere	29	19	34	29	35	21%	21%
85	Rathgar/Pomaria Road	Waitakere	-	-	53	46	35	-24%	-
81	Te Irirangi Drive/Ormiston Road	Howick/Manukau	-	-	20	41	32	-22%	-
71	Highbrook Drive	Manukau	-	16	18	13	30	131%	-
45	Beach/Browns Bay Road	Albany	8	19	30	27	28	4%	250%
50	Lincoln Road/Fairdene Avenue	Waitakere	27	36	22	35	28	-20%	4%
63	Gulf Harbour Drive/Laurie Southwick Parade	Albany	39	30	17	23	27	17%	-31%
56	3 Rankin Avenue	Whau	15	21	17	20	26	30%	73%
43	Glenfield/Coronation Road	North Shore	12	39	42	56	25	-55%	108%
44	Birkenhead Ave/Mokoia Road	North Shore	20	29	30	46	23	-50%	15%
15	Richardson Road/Maioro Street	Albert-Eden-Roskill/Whau	-	-	13	25	22	-12%	-
54	Te Atatu Road/Elcoat Avenue	Waitakere	24	18	32	22	18	-18%	-25%
69	Edinburgh/Tobin Street	Franklin	18	24	19	11	17	55%	-6%
59	Whangaparaoa Road, near Red Beach Intersection	Albany	16	16	11	8	15	88%	-6%
60	Whangaparaoa Road, near SH1 Intersection	Albany	17	11	6	10	15	50%	-12%
82	Jelas/Moffatt Road	Albany	-	-	23	15	11	-27%	-
	Total (60 sites since 2007)^		4308	4591	4292	5540	5547	0%	29%
	Total (67 sites since 2008)^		-	4849	4585	5898	5901	0%	-
	Total (78 sites in 2009)		-	-	5103	6541	6708	3%	-
	Total (80 sites in 2010)		-	-	-	6644	6817	3%	-

<i>Site Number</i>	<i>Location</i>	<i>Area</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
64	Porchester Road/Walters Road	Manurewa-Papakura	28	27	30	-	39	-	39%
89	Sunnynook/East Coast Road	Albany/North Shore	-	-	-	-	93	-	-
	Total (82 sites in 2011)		-	-	-	-	6949	-	-

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

- Evening cyclist characteristics are shown in Table 2.9 below. Overall, 91 per cent of evening cyclists in the Auckland region are adults in 2011 (unchanged from 2010). Of the twelve wards monitored, the Waitemata and Gulf ward has the highest proportion of cyclists who are adults (99 per cent) whilst Franklin ward has the greatest share of cyclists identified as school children (52 per cent).
- Almost all cyclists are wearing a helmet (88 per cent, unchanged from last year). Orakei ward has the highest proportion of cyclists who are wearing a helmet (95 per cent) whilst the Manurewa-Papakura ward has the greatest share of cyclists who are not wearing helmets (28 per cent).
- Eighty-two per cent of evening cyclists are male. Howick ward and Franklin ward have the highest share of cyclists who are male (90 per cent respectively), while Waitemata and Gulf ward has the highest proportion of cyclists who are female (19 per cent).
- On average, 58 per cent of all cyclists are riding on the road (stable from 60 per cent last year). Twenty per cent of cyclists are riding on an off-road cycleway, up from 13 per cent in 2010. Orakei ward has the highest share of cyclists who are riding on the road (86 per cent), while Waitakere ward has the greatest share of cyclists who are using an off-road cycleway (45 per cent). Franklin ward has the highest proportion of footpath riders (69 per cent).

**Table 2.9: Aggregate Totals of Evening Cyclist Characteristics
2007-2011 (%)**

	<i>Aggregate Total (2007)</i>	<i>Aggregate Total (2008)</i>	<i>Aggregate Total (2009)</i>	<i>Aggregate Total (2010)</i>	<i>Aggregate Total (2011)</i>
Cyclist Type					
Adult	92	88	90	91	91
School child	8	12	10	9	9
Helmet Wearing					
Helmet on head	87	87	89	88	88
No helmet	13	13	11	12	12
Gender					
Male	-	-	-	-	82
Female	-	-	-	-	15
Can't tell	-	-	-	-	3
Where Riding					
Road	67	71	60	60	58
Footpath	22	21	26	27	22
Off-road cycleway	11	8	14	13	20
Base:	4308	4849	5103	6644	6949

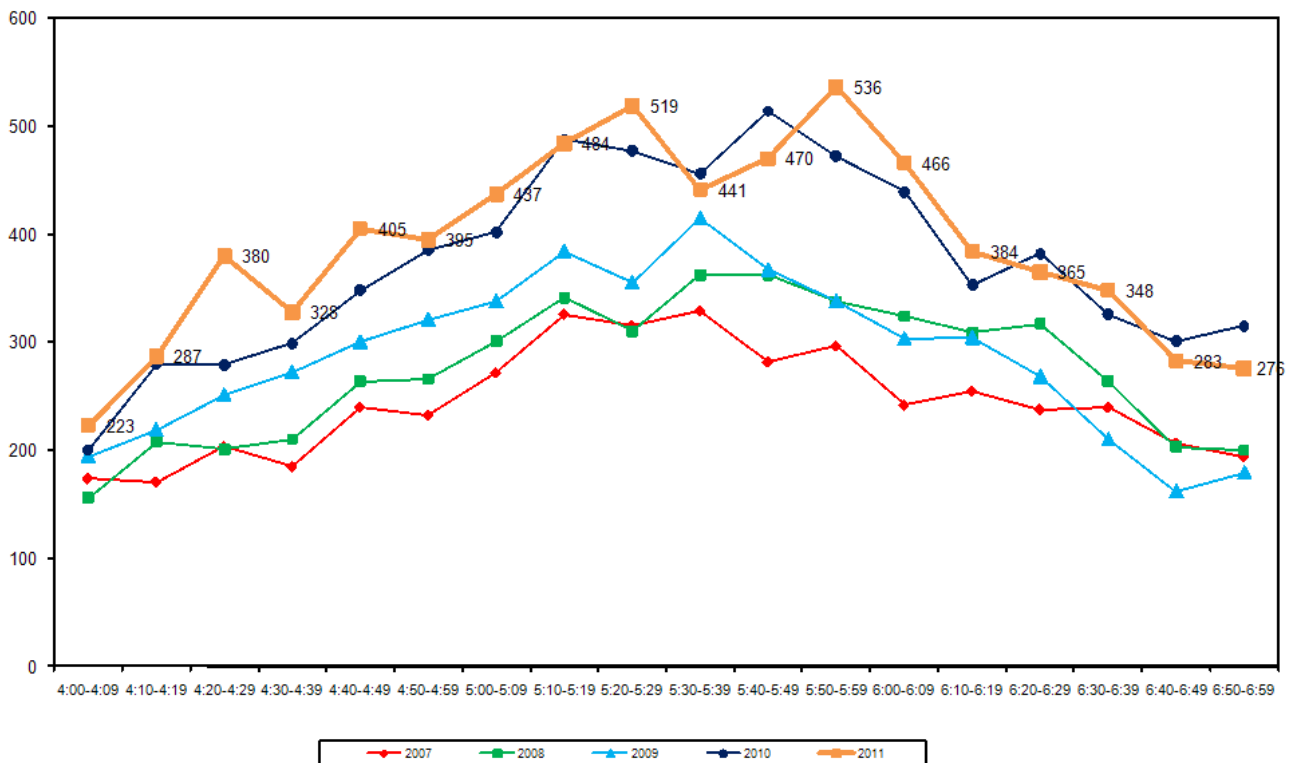
Table 2.10: Summary of Evening Cyclist Characteristics by Ward in 2011

	<i>Albany</i>	<i>North Shore</i>	<i>Wai- takere</i>	<i>Waite- mata and Gulf</i>	<i>Albert/ Eden/ Roskill</i>	<i>Whau</i>	<i>Orakei</i>	<i>Maunga- kieke- Tamaki</i>	<i>Howick</i>	<i>Manukau</i>	<i>Manu- rewa- Papakura</i>	<i>Franklin</i>
Cyclist Type												
Adult	79	85	86	99	92	94	86	91	89	90	82	48
School child	21	15	14	1	8	6	14	9	11	10	18	52
Helmet Wearing												
Helmet on head	91	92	83	88	92	85	95	89	89	79	72	77
No helmet	9	8	17	12	8	15	5	11	11	21	28	23
Gender												
Male	82	85	86	74	84	84	83	84	90	83	88	90
Female	17	11	12	19	14	15	10	15	5	13	11	10
Can't tell	1	4	2	6	2	1	7	1	5	4	1	0
Where Riding												
Road	66	76	30	64	42	60	86	66	65	64	49	31
Footpath	15	18	25	21	16	33	14	24	35	33	51	69
Off-road cycleway	19	6	45	15	42	7	0	10	0	3	0	0
Base:	736	612	837	2130	1206	186	181	544	240	457	160	70

Note: Orange highlighting denotes the ward with the highest proportion of a particular characteristic when compared to the other wards.

- Figure 2.8 shows the overall pattern of total morning cyclist volumes recorded at the 82 sites monitored in the Auckland region. Evening cyclist numbers increase over the monitoring period, with a peak of 519 cyclist movements between 5:20pm and 5:29pm, and a second peak of 536 cyclist movements between 5:50pm and 5:59pm. Evening cyclist numbers then decline until the end of the monitoring period. There were at least 223 cycle movements recorded within any ten minute interval during the evening peak.

**Figure 2.8: Total Cyclist Frequency – Evening Peak
2007-2011**



2.4 Annual Average Daily Traffic (AADT) Estimates

Note: A full description of the Annual Daily Traffic tool, the calculation used, and the limitations of the estimates, are provided in Appendix Two. Readers are encouraged to review this section in conjunction with the data presented here.

- Table 2.11 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 (1555 daily trips, up from 1365 daily trips last year) and the lowest is at the Whangaparaoa Road near SH1 intersection (31 daily trips).
- Forty-four per cent of the sites monitored in 2010 and 2011 (35 out of 84) have recorded increases in total AADT estimates this year compared with 2010. The intersection with the biggest increase is Tom Pearce/George Bolt Memorial Drive, Manukau ward – up from 17 to 77 movements (351 per cent).
- In contrast, AADT estimates at 45 sites are lower than last year. The most notable declines are at:
 - Luckens/Hobsonville Road, Albany and Waitakere wards – down from 137 to 74 movements (46 per cent).; and
 - Glenfield/Coronation Road, North Shore ward – down from 134 to 76 movements (43 per cent).

Table 2.11¹⁰: AADT Estimates Based on Morning and Evening Cyclist Movements 2007-2011 (n)

<i>Site Number</i>	<i>Locations</i>	<i>Area</i>	<i>AADT 2007</i>	<i>AADT 2008</i>	<i>AADT 2009</i>	<i>AADT 2010</i>	<i>AADT 2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
10	Tamaki Drive/The Strand	Waitemata and Gulf	1313	1146	880	1365	1555	14%	18%
8	Symonds Street/Karangahape Road	Waitemata and Gulf	924	899	765	865	999	15%	8%
13	Ian McKinnon/Newton Road	Waitemata and Gulf	-	-	422	544	807	48%	-
9	Karangahape Road/Queen Street	Waitemata and Gulf	736	616	669	843	802	-5%	9%
7	North Western Cycleway/St Lukes	Albert-Eden-Roskill	469	480	451	629	743	18%	58%
2	Ponsonby/Karangahape Road	Waitemata and Gulf	705	602	536	807	738	-9%	5%
6	North Western Cycleway/Great North Road	Albert-Eden-Roskill	335	532	416	705	701	-1%	109%
22	Ferry Terminal	Waitemata and Gulf	553	459	363	574	570	-1%	3%
58	North Western Cycleway/near Te Atatu Road off-ramp	Waitakere	335	393	513	562	499	-11%	49%
35	Lake Road, by Takapuna Grammar	North Shore	444	440	432	479	469	-2%	6%
37	Taharoto/Northcote Road	North Shore	375	396	293	333	454	36%	21%
17	Onehunga Harbour Road	Maungakiekie-Tamaki	357	316	259	369	448	21%	26%
36	Hurstmere Road/Killarney Street	North Shore	279	368	466	443	448	1%	61%
42	Shakespeare/East Coast Road	North Shore	314	364	454	442	422	-5%	34%
11	Remuera/Orakei Road	Orakei	282	276	274	359	412	15%	46%
3	Great North/Carrington Road	Albert-Eden-Roskill	341	333	281	455	335	-26%	-2%
12	Manukau Road/Greenlane West	Albert-Eden-Roskill	326	296	255	374	331	-11%	2%

¹⁰ The AADT estimates for all TAs in 2008, 2009, 2010 and 2011 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	AADT 2010	AADT 2011	Change 10-11	Change 07-11
20	St Heliers Bay/West Tamaki Road	Maungakiekie-Tamaki/Orakei	308	246	158	249	331	33%	8%
1	Victoria/Wellesley/Halsey Street	Waitemata and Gulf	231	196	180	236	328	39%	42%
52	Central Park Drive	Waitakere	184	227	306	290	307	6%	67%
14	Mount Albert/New North Road	Albert-Eden-Roskill	226	236	205	302	292	-3%	29%
5	Dominion/Balmoral Road	Albert-Eden-Roskill	344	291	265	296	286	-3%	-17%
78	Lagoon Drive/Church Crescent	Maungakiekie-Tamaki	-	-	186	284	234	-17%	-
16	Jerovis Road/Wallace Street	Waitemata and Gulf	-	-	162	243	215	-12%	-
39	Upper Harbour Drive/Albany Highway	Albany	57	143	200	228	213	-7%	273%
38	Rosedale/East Coast Road	Albany	176	143	235	224	208	-7%	18%
72	Te Atatu/Old Te Atatu Road/Tatau Way	Waitakere	-	161	195	301	204	-32%	-
84	Behind Rodney District Council Building	Albany	-	-	130	142	201	42%	-
21	Great South Road/Campbell Road/Main Highway	Albert-Eden-Roskill/Maungakiekie-Tamaki	253	165	218	246	199	-19%	-21%
55	Swanson/Ranui Station Road/Armada Drive	Waitakere	88	122	148	146	189	29%	115%
47	Oteha Valley/East Coast Road	Albany	137	163	201	245	186	-24%	36%
53	326 Te Atatu Road, near Covil Avenue	Waitakere	127	155	202	185	186	1%	47%
73	Blockhouse Bay/Great North Road	Albert-Eden-Roskill/Whau	-	170	173	204	186	-9%	-
80	Pakuranga Road/Ti Rakau Drive	Howick	-	-	176	234	180	-23%	-
4	Patiki/Rosebank Road	Whau	119	114	105	130	175	35%	47%
87	Triangle/Huruhuru Road	Waitakere	-	-	-	198	175	-12%	-
33	Bucklands Beach/Pakuranga Road	Howick	203	187	137	164	154	-6%	-24%

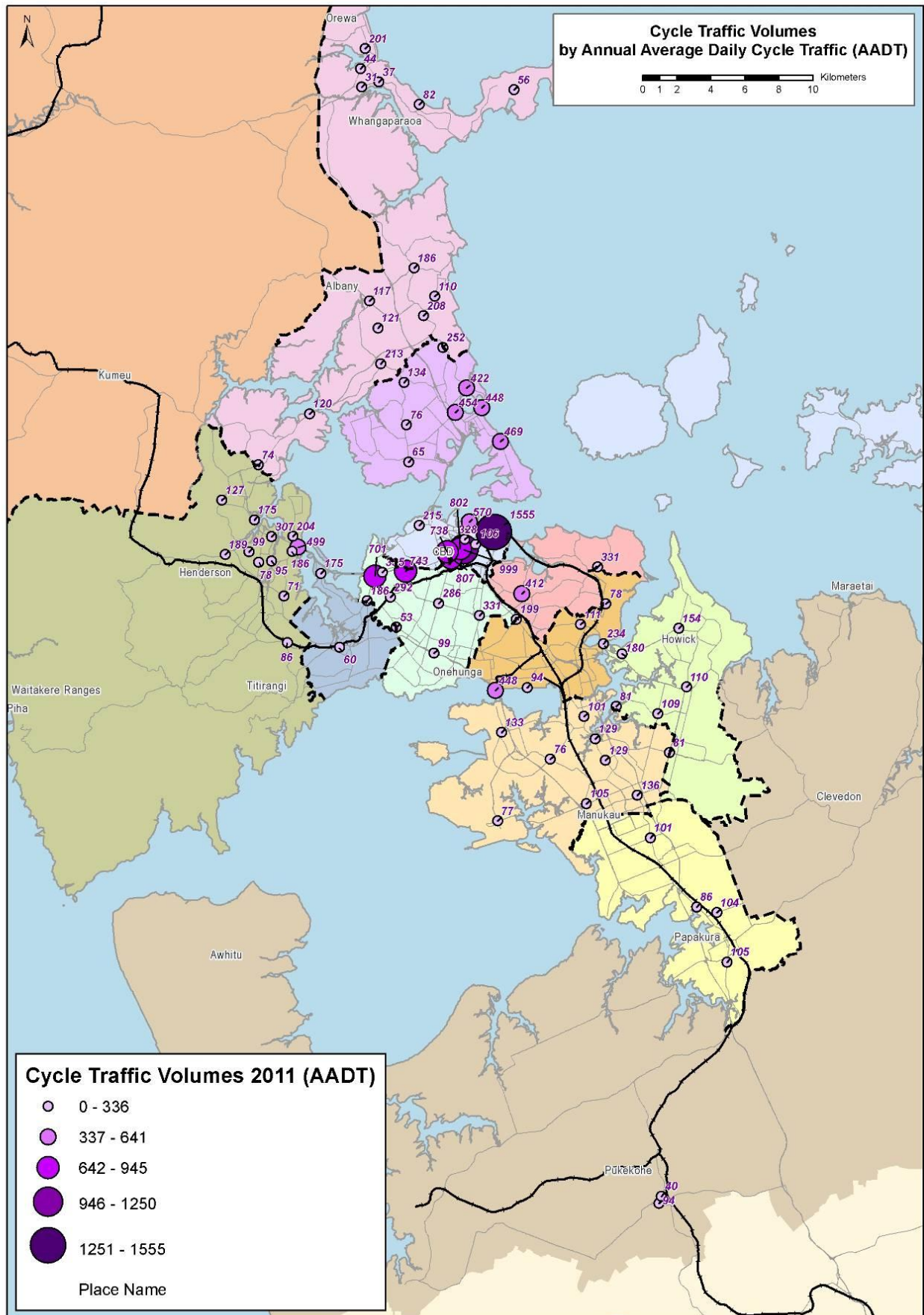
Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	AADT 2010	AADT 2011	Change 10-11	Change 07-11
24	Great South Road/Te Irirangi Drive/Cavendish Drive	Manukau	106	74	59	103	136	32%	28%
41	Wairau/Glenfield Road	North Shore	93	107	117	131	134	3%	44%
32	McKenzie/Coronation/Walmsley Road	Manukau	101	82	75	126	133	6%	32%
23	Great South/Bairds Road	Manukau	99	81	83	103	129	25%	30%
30	Great South/East Tamaki Road	Manukau	106	74	92	93	129	39%	22%
49	Triangle Road/Don Buck Road	Waitakere	96	88	80	128	127	-1%	32%
46	Rosedale/Bush Road	Albany	70	106	103	157	121	-23%	74%
70	Upper Harbour Drive/Buckley Avenue	Albany	-	51	97	135	120	-11%	-
40	Oteha Valley Road/SH17/Albany Highway	Albany	42	69	103	130	117	-10%	178%
19	Ellerslie Panmure Highway/Lunn Ave	Maungakiekie-Tamaki	170	136	118	144	111	-23%	-35%
34	Te Irirangi Drive/Ti Rakau Drive	Howick	117	109	86	112	110	-1%	-6%
45	Beach/Browns Bay Road	Albany	44	66	86	114	110	-3%	151%
79	Harris/Smales Road	Howick	-	-	88	89	109	22%	-
75	Stanley Street/Grafton Road	Waitemata and Gulf	-	95	140	135	106	-21%	-
31	Wyllie Avenue/Puhinui Road	Manukau	55	47	50	82	105	28%	91%
65	Great South Road/Rosehill Drive	Manurewa-Papakura	77	106	85	90	105	17%	37%
18	Great South Road/High Street/Atkinson/Park Avenue	Manukau	121	87	71	88	101	15%	-17%
26	Great South/Browns/Orams Road	Manurewa-Papakura	86	81	57	83	101	21%	17%
85	Rathgar/Pomaria Road	Waitakere	-	-	122	144	99	-31%	-

Site Number	Locations	Area	AADT 2007	AADT 2008	AADT 2009	AADT 2010	AADT 2011	Change 10-11	Change 07-11
88	Keith Hay Park	Albert-Eden-Roskill	-	-	-	77	99	29%	-
48	Henderson Creek	Waitakere	65	43	105	121	95	-22%	45%
68	Queen/Harris Street	Franklin	146	119	135	81	94	17%	-35%
76	Waikaraka Cycle Way	Maungakiekie-Tamaki	-	76	73	59	94	59%	-
57	West Coast/Rosier Road	Waitakere	69	54	90	87	86	-1%	25%
66	Great South Road/Taka Street	Manurewa-Papakura	83	83	51	62	86	39%	4%
61	D'Oyly Reserve cycleway	Albany	35	145	13	65	82	26%	134%
81	Te Irirangi Drive/Ormiston Road	Howick/Manukau	-	-	47	95	81	-15%	-
50	Lincoln Road/Fairdene Avenue	Waitakere	57	79	62	80	78	-2%	37%
74	Apirana Avenue/Pilkington/Tripoli Road	Maungakiekie-Tamaki	-	87	46	87	78	-10%	-
25	Tom Pearce/George Bolt Memorial Drive	Manukau	-	-	38	17	77	351%	-
71	Highbrook Drive	Manukau	-	42	55	59	77	30%	-
28	Massey/Buckland Road	Manukau	61	44	57	64	76	18%	24%
43	Glenfield/Coronation Road	North Shore	64	109	113	134	76	-43%	18%
51	Luckens/Hobsonville Road	Albany/Waitakere	47	60	110	137	74	-46%	57%
54	Te Atatu Road/Elcoat Avenue	Waitakere	73	66	101	76	71	-7%	-3%
44	Birkenhead Ave/Mokoia Road	North Shore	58	71	83	108	65	-39%	13%
56	3 Rankin Avenue	Whau	45	55	56	46	60	31%	34%
63	Gulf Harbour Drive/Laurie Southwick Parade	Albany	80	63	31	53	56	5%	-31%
15	Richardson Road/Maioro Street	Albert-Eden-Roskill/Whau	-	-	30	56	53	-5%	-
82	Jelas/Moffatt Road	Albany	-	-	55	57	44	-22%	-
69	Edinburgh/Tobin Street	Franklin	51	58	49	41	40	-2%	-21%
59	Whangaparaoa Road, near Red Beach Intersection	Albany	42	45	38	43	37	-13%	-11%

<i>Site Number</i>	<i>Locations</i>	<i>Area</i>	<i>AADT 2007</i>	<i>AADT 2008</i>	<i>AADT 2009</i>	<i>AADT 2010</i>	<i>AADT 2011</i>	<i>Change 10-11</i>	<i>Change 07-11</i>
60	Whangaparaoa Road, near SH1 Intersection	Albany	40	29	17	34	31	-8%	-22%
	Total (60 sites since 2007)^		12940	12740	12243	15461	15857	3%	23%
	Total (67 sites since 2008)^		-	13422	13022	16441	16721	2%	-
	Total (78 sites in 2009)		-	-	14478	18346	18821	3%	-
	Total (80 sites in 2010)		-	-	-	18621	19095	3%	-
64	Porchester Road/Walters Road	Manurewa-Papakura	72	66	70	-	104	-	44%
89	Sunnynook/East Coast Road	Albany/North Shore	-	-	-	-	252	-	-
	Total (82 sites in 2011)		-	-	-	-	19199	-	-

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

Figure 2.9: AADT Cycle Volumes in the Auckland Region - 2011



2.5 Ferry Wharf Count Summary

- At two ferry wharves (Devonport and Half Moon Bay), counts of stationary cycles were conducted prior to, and at the conclusion of, the morning and evening monitoring periods (on the same day as other sites in the ward).
- At six additional ferry wharves, single point in time stationary cycle counts were conducted – at 10:00am on Wednesday the 9th of March.

Key Points

- In the morning, 5 cycles were observed at the Devonport Ferry Terminal at 6.10am and 47 were observed at 9.10am. In the afternoon, 79 cycles were recorded at the Devonport Ferry Terminal at 3.30pm (Note: This includes cycles from a cycle tour) and 11 were observed at 7.10pm.
- At Half Moon Bay, no cycles were observed either prior to, or after, the morning shift. In the afternoon, whilst no cycles were recorded at 3.30pm, one cycle was observed at 7.10pm.

Table 2.12: ‘Multiple Count’ Cycle Counts at Ferry Wharves (n)

	<i>Devonport</i>	<i>Half Moon Bay</i>
Morning Peak		
6:10am	5	0
9:10am	47	0
Evening Peak		
3:30pm	79	0
7:10pm	11	1

- Twenty-nine additional cycles were observed at ferry wharves where a single point in time count was taken (around 10:00am).

Table 2.13: ‘Single Count’ Cycle Counts at Ferry Wharves (n)

<i>Ferry Wharf</i>	<i>Cycle Count</i>
Pine Harbour	12
Waiheke	12
Bayswater	5
West Harbour	0
Birkenhead	0
Northcote	0

2.6 School Bike Shed Count Summary

Background Information

- A total of 295 full primary, intermediate, secondary and composite schools throughout the Auckland region were contacted by Gravitass. Of the 201¹¹ schools that responded to the survey (68 per cent), most have no policies that restrict students cycling to school.¹²
- Most schools conducted their count on Tuesday the 8th of March, 2011.

Key Points

- Of those students from the surveyed schools eligible to cycle to school, on average two per cent are cycling to their schools.
- Three schools (Belmont Intermediate, North Shore ward (30 per cent), Pasadena Intermediate, Albert-Eden-Roskill ward (22 per cent), and Sandspit Road School, Franklin ward (10 per cent)) report at least 10 per cent of students cycling to school. Among secondary schools, Takapuna Grammar (North Shore ward) has the highest rate of students cycling to school (9 per cent).
- Of the 200 eligible schools, 83 (42 per cent) had no students cycling to school.

¹¹ Note that Dilworth School responded to the survey. However, their results have been excluded from the analysis as all students are boarders.

¹² These exceptions are detailed in the ward level reports. Most relate to full primary schools restricting younger students from cycling.

- Tables 2.14 and 2.15 illustrate the rates of cycling to school at different school levels in 2011 and in previous years. Rates of cycling to school are highest among intermediate schools surveyed (4 per cent).

Table 2.14: Average Cycling Rates by School Level
2011 (n)

<i>Year Levels</i>	<i>Number of Schools Responding (n)</i>	<i>Average School Roll Eligible To Cycle</i>	<i>Average Number of Cycles Counted</i>	<i>Average Cycling Rate per School</i>
Intermediate	32	566	22	4%
Full Primary	93	227	4	2%
Secondary	35	1334	16	1%
Intermediate/Secondary	17	883	9	1%
Composite	23	363	3	1%
Regional Total	200	555	9	2%

Table 2.15: Summary Table of Average Cycling Rates by School Level
2007-2011

<i>Year Levels</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>
Intermediate	5%	4%	4%	5%	4%
Full Primary	-	-	-	-	2%
Secondary	1%	1%	1%	1%	1%
Intermediate/Secondary	2%	2%	1%	2%	1%
Composite	1%	1%	<1%	1%	1%
Regional Total	2%	2%	2%	2%	2%

- Table 2.16 illustrates the rates of cycling to school within each of the Auckland wards. Rates of cycling to school are highest among schools in North Shore ward (4 per cent, unchanged from 4 per cent last year) and Franklin ward (3 per cent, up from less than 1 per cent in 2010). By comparison, Manukau ward and Maungakiekie-Tamaki ward (less than 1 per cent respectively) have the lowest rates of cycling.

**Table 2.16: Summary Table of School Bike Count by Ward
2007-2011 (n)**

<i>Ward</i>	<i>2011</i>			<i>Average Cycle Rate Per Ward</i>				
	<i>Number of Schools Responding (n)</i>	<i>Average School Roll Eligible To Cycle</i>	<i>Average Number of Cycles Counted</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>
North Shore	13	957	37	3%	3%	3%	4%	4%
Franklin	17	290	8	1%	1%	1%	<1%	3%
Albert-Eden-Roskill	16	800	15	2%	1%	1%	2%	2%
Orakei	11	607	13	1%	1%	2%	1%	2%
Waitemata and Gulf	13	632	12	1%	1%	2%	2%	2%
Albany	16	853	12	2%	1%	1%	1%	1%
Howick	10	958	13	1%	2%	3%	2%	1%
Manurewa-Papakura	22	499	7	<1%	1%	<1%	1%	1%
Rodney	18	223	1	2%	1%	<1%	0%	1%
Waitakere	19	315	3	1%	1%	1%	1%	1%
Whau	9	484	6	1%	1%	1%	<1%	1%
Manukau	23	579	2	0%	0%	<1%	<1%	<1%
Maungakiekie-Tamaki	13	238	1	<1%	0%	<1%	0%	<1%
Regional Total	200	555	9	2%	2%	2%	2%	2%

Table 2.17: Summary Table of Average Cycling Rates by School Level and Ward

2011

<i>Ward</i>	<i>School Type</i>					<i>All School Levels</i>
	<i>Intermediate</i>	<i>Full Primary</i>	<i>Secondary</i>	<i>Intermediate/ Secondary</i>	<i>Composite</i>	
North Shore	10%	0%	3%	2%	-	4%
Franklin	2%	4%	-	1%	1%	3%
Albert-Eden-Roskill	7%	2%	1%	0%	0%	2%
Orakei	6%	2%	2%	1%	0%	2%
Waitemata and Gulf	5%	2%	2%	0%	1%	2%
Albany	2%	3%	1%	4%	1%	1%
Howick	3%	-	1%	1%	1%	1%
Manurewa-Papakura	4%	2%	0%	-	0%	1%
Rodney	-	1%	0%	1%	3%	1%
Waitakere	2%	1%	0%	0%	1%	1%
Whau	3%	1%	1%	-	0%	1%
Manukau	1%	0%	0%	0%	1%	<1%
Maungakiekie-Tamaki	1%	0%	-	-	0%	<1%
Regional Total	4%	2%	1%	1%	1%	2%

The following table ranks the 200 schools from the highest share of cyclists to the lowest.

Table 2.18: School Bike Count by School

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Belmont Intermediate	North Shore	Intermediate	547	165	30%	33%	22%	26%	34%
Pasadena Intermediate School	Albert-Eden-Roskill	Intermediate	320	70	22%	26%	17%	12%	18%
Sandspit Road School	Franklin	Full primary	200	20	10%	-	-	-	-
Takapuna Grammar School	North Shore	Secondary	1620	143	9%	8%	9%	6%	8%
Reremoana School	Manurewa-Papa	Full primary	120	27	9%	-	-	-	-
Silverdale School	Albany	Full primary	79	6	8%	-	-	-	-
Te Atatu Intermediate	Waitakere	Intermediate	302	23	8%	8%	9%	7%	10%
Kadimah	Waitemata/Gulf	Full primary	40	3	8%	-	-	-	-
Marist Catholic School	Waitemata/Gulf	Full primary	36	3	8%	-	-	-	-
Paparimu School	Manurewa-Papa	Full primary	24	2	8%	-	-	-	-
Auckland Normal Intermediate	Albert-Eden-Roskill	Intermediate	651	45	7%	7%	6%	5%	7%
Beachlands School	Franklin	Full primary	512	37	7%	-	-	-	-
Farm Cove Intermediate	Howick	Intermediate	558	40	7%	7%	9%	6%	4%
Swanson School	Waitakere	Full primary	200	13	7%	-	-	-	-
Gulf Harbour Primary	Albany	Full primary	439	25	6%	-	-	-	-
Buckland School	Franklin	Full primary	238	15	6%	-	-	-	-

¹³ 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	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Remuera Intermediate	Orakei	Intermediate	946	61	6%	5%	7%	5%	9%
Waitakere Primary	Waitakere	Full primary	70	4	6%				
Rosehill Intermediate	Manurewa-Papa	Intermediate	364	22	6%	6%	6%	-	-
Kowhai Intermediate School	Albert-Eden-Roskill	Intermediate	402	22	5%	5%	6%	6%	6%
Waikowhai Intermediate School	Albert-Eden-Roskill	Intermediate	388	18	5%	3%	4%	3%	3%
Waiuku Primary	Franklin	Full primary	450	22	5%	-	-	-	-
Rosmini College	North Shore	Intermediate/secondary	1001	46	5%	3%	3%	4%	3%
Ponsonby Intermediate	Waitemata/Gulf	Intermediate	556	26	5%	6%	5%	4%	6%
Huapai District School	Rodney	Full primary	206	10	5%	-	-	-	-
Living Way Learning Centre	Rodney	Composite	37	2	5%	3%	9%	3%	24%
Orewa College	Albany	Intermediate/secondary	1500	57	4%	7%	5%	5%	6%
Balmoral School	Albert-Eden-Roskill	Full primary	533	22	4%		-	-	-
Te Kura Kaupapa Maori o Piripono	Manukau	Composite	82	3	4%	-	-	-	-
Wairau Intermediate School	North Shore	Intermediate	260	10	4%	6%	5%	7%	4%
Westlake Boys High School	North Shore	Secondary	2251	82	4%	3%	2%	<1%	2%
Glendowie Primary	Orakei	Full primary	621	24	4%	-	-	-	-
Auckland Grammar	Waitemata/Gulf	Secondary	2494	88	4%	4%	4%	3%	2%
Waiheke High School	Waitemata/Gulf	Secondary	461	20	4%	4%	3%	2%	3%
Greemeadows Intermediate School	Manurewa-Papa	Intermediate	422	18	4%	2%	0%	5%	3%
Conifer Grove School	Manurewa-Papa	Full primary	527	19	4%	-	-	-	-

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Drury	Manurewa-Papa	Full primary	183	7	4%	-	-	-	-
Maraetai Beach School	Franklin	Full primary	260	8	3%	-	-	-	-
View Road School	Franklin	Full primary	149	4	3%	-	-	-	-
Bucklands Beach Intermediate	Howick	Intermediate	749	19	3%	8%	5%	4%	-
Northcote Intermediate School	North Shore	Intermediate	249	7	3%	5%	2%	3%	2%
Blockhouse Bay Intermediate	Whau	Intermediate	848	27	3%	-	3%	4%	4%
Green Bay Primary and Intermediate School	Whau	Full primary	204	7	3%	-	-	-	-
Murrays Bay Intermediate	Albany	Intermediate	950	16	2%	3%	2%	2%	5%
Northcross Intermediate	Albany	Intermediate	1085	23	2%	-	4%	0%	5%
Wentworth College	Albany	Intermediate/secondary	214	4	2%	3%	4%	<1%	3%
Kingsway School	Albany	Composite	877	16	2%	1%	1%	1%	<1%
Balmoral SDA School	Albert-Eden-Roskill	Full primary	88	2	2%	-	-	-	-
Mt Roskill Intermediate School	Albert-Eden-Roskill	Intermediate	680	16	2%	4%	-	2%	2%
Awhitu District School	Franklin	Full primary	111	2	2%	-	-	-	-
Pukekohe Intermediate School	Franklin	Intermediate	611	10	2%	-	3%	7%	5%
Ramarama School	Franklin	Full primary	90	2	2%	-	-	-	-
St Joseph's Pukekohe	Franklin	Full primary	182	3	2%	-	-	-	-
Edgewater College	Howick	Secondary	945	18	2%	2%	2%	2%	-
Somerville Intermediate	Howick	Intermediate	930	18	2%	3%	3%	4%	4%

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Elim Christian College	Howick	Composite	541	9	2%	2%	6%	5%	-
Papatoetoe Intermediate School	Manukau	Intermediate	830	13	2%	2%	1%	-	-
Birkdale Intermediate	North Shore	Intermediate	429	10	2%	2%	1%	<1%	-
Selwyn College	Orakei	Secondary	850	19	2%	2%	2%	1%	-
Churchill Park School	Orakei	Full primary	143	3	2%	-	-	-	-
Nga Kakano Christian Reo Rua Kura	Waitakere	Composite	60	1	2%	-	6%	7%	7%
Te Kura Kaupapa Maori O Hoani Waititi Marae	Waitakere	Composite	183	4	2%	2%	0%	0%	-
Wesley Intermediate	Whau	Intermediate	139	3	2%	-	3%	3%	3%
Papakura Normal Primary School	Manurewa-Papa	Full primary	601	10	2%	-	-	-	-
St Mary's Catholic School, Papakura	Manurewa-Papa	Full primary	112	2	2%	-	-	-	-
Albany Senior High School	Albany	Secondary	755	9	1%	2%	-	-	-
Rangitoto College	Albany	Secondary	3060	24	1%	1%	1%	<1%	1%
Stella Maris	Albany	Full primary	348	3	1%	-	-	-	-
Mt Roskill Grammar School	Albert-Eden-Roskill	Secondary	2250	31	1%	1%	1%	1%	2%
Onewhero Area School	Franklin	Composite	450	5	1%	2%	1%	1%	1%
Tuakau College	Franklin	Intermediate/secondary	679	8	1%	1%	1%	2%	-
Mission Heights Junior College	Howick	Intermediate/secondary	595	8	1%	5%	3%	-	-
Sancta Maria College	Howick	Intermediate/secondary	960	7	1%	1%	1%	1%	2%
Mangere College	Manukau	Secondary	910	6	1%	1%	1%	-	-

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Kedgley Intermediate	Manukau	Intermediate	768	7	1%	2%	2%	-	-
Te Kura Kaupapa Maori a Rohe o Mangere	Manukau	Composite	180	2	1%	-	-	-	-
Ellerslie School	Maungakiekie	Full primary	230	3	1%	-	-	-	-
Panmure District School	Maungakiekie	Full primary	163	2	1%	-	-	-	-
St Pius X School	Maungakiekie	Full primary	165	1	1%	-	-	-	-
Tamaki Intermediate School	Maungakiekie	Intermediate	150	1	1%	0%	1%	0%	3%
Glenfield Intermediate School	North Shore	Intermediate	414	4	1%	1%	3%	2%	4%
Glendowie College	Orakei	Secondary	1040	14	1%	1%	1%	-	-
Sacred Heart College	Orakei	Intermediate/secondary	1150	14	1%	-	1%	1%	-
Glen Eden Intermediate School	Waitakere	Intermediate	1045	12	1%	1%	3%	-	-
Parnell District School	Waitemata/Gulf	Full primary	467	7	1%	-	-	-	-
ACG Parnell College	Waitemata/Gulf	Composite	800	9	1%	1%	-	0%	-
Alfriston College	Manurewa-Papa	Secondary	1389	14	1%	1%	1%	2%	-
Rosehill College	Manurewa-Papa	Secondary	1780	22	1%	1%	1%	1%	<1%
Green Bay High School	Whau	Secondary	1220	16	1%	1%	1%	1%	1%
Whangaparaoa College	Rodney	Intermediate/secondary	1400	10	1%	-	1%	2%	4%
Kristin School	Albany	Composite	1576	4	<1%	<1%	1%	-	-
Long Bay College	Albany	Secondary	1650	3	<1%	<1%	0%	1%	-
Pinehurst School	Albany	Composite	646	1	<1%	1%	0%	1%	1%

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Diocesan School for Girls	Albert-Eden-Roskill	Composite	1450	2	<1%	<1%	0%	<1%	0%
Lynfield College	Albert-Eden-Roskill	Secondary	1982	9	<1%	<1%	1%	<1%	1%
Marcellin College	Albert-Eden-Roskill	Intermediate/secondary	710	1	<1%	0%	0%	1%	-
Macleans College	Howick	Secondary	2500	11	<1%	-	2%	1%	-
Saint Kentigern College	Howick	Intermediate/secondary	1660	4	<1%	<1%	1%	-	-
Auckland SDA High School	Manukau	Secondary	251	1	<1%	-	-	-	-
Sir Douglas Bader Intermediate School	Manukau	Intermediate	1200	4	<1%	<1%	0%	<1%	0%
Stanhope Road School	Maungakiekie	Full primary	240	1	<1%	-	-	-	-
Birkenhead College	North Shore	Secondary	800	2	<1%	1%	-	-	-
Carmel College	North Shore	Intermediate/secondary	973	1	<1%	0%	0%	<1%	0%
Northcote College	North Shore	Secondary	1250	1	<1%	<1%	0%	-	-
Westlake Girls High School	North Shore	Secondary	2250	6	<1%	<1%	0%	<1%	<1%
St Thomas's School	Orakei	Full primary	605	3	<1%	-	-	-	-
ACG Sunderland	Waitakere	Composite	280	1	<1%	4%	2%	1%	-
Bruce McLaren Intermediate	Waitakere	Intermediate	287	1	<1%	3%	4%	2%	2%
Colwill School	Waitakere	Full primary	270	1	<1%	-	-	-	-
Auckland Girls Grammar School	Waitemata/Gulf	Secondary	1474	2	<1%	0%	0%	0%	<1%
Kelston Boys High School	Whau	Secondary	1053	3	<1%	<1%	0%	1%	1%
St Dominic's Catholic Primary School	Whau	Full primary	261	1	<1%	-	-	-	-
Manurewa High School	Manurewa-Papa	Secondary	1922	5	<1%	1%	0%	1%	2%

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Papakura High School	Manurewa-Papa	Secondary	1024	4	<1%	1%	0%	<1%	<1%
Clayton Park	Manurewa-Papa	Full primary	467	2	<1%	-	-	-	-
Redhill School	Manurewa-Papa	Full primary	105	1	<1%	-	-	-	-
Taupaki School	Rodney	Full primary	68	1	<1%	-	-	-	-
Dairy Flat School	Albany	Full primary	188	0	0%	-	-	-	-
Te Kura Kaupapa Maori o Te Raki Paewhenua	Albany	Composite	87	0	0%	-	-	-	-
Westminster Christian School	Albany	Full primary	197	0	0%	-	-	-	-
Christ the King Catholic School	Albert-Eden-Roskill	Full primary	130	0	0%	-	-	-	-
Epsom Girls Grammar School	Albert-Eden-Roskill	Secondary	2193	0	0%	<1%	0%	<1%	-
Ficino School	Albert-Eden-Roskill	Full primary	120	0	0%	-	-	-	-
St Therese School	Albert-Eden-Roskill	Full primary	145	0	0%	-	-	-	-
Marist College	Albert-Eden-Roskill	Intermediate/secondary	750	0	0%	<1%	0%	-	-
Ararimu School	Franklin	Full primary	90	0	0%	-	-	-	-
Ardmore School	Franklin	Full primary	330	0	0%	-	-	-	-
Bombay School	Franklin	Full primary	334	0	0%	-	-	-	-
Glenbrook	Franklin	Full primary	203	0	0%	-	-	-	-
Kingsgate School	Franklin	Full primary	37	0	0%	-	-	-	-
Tyndale Park Christian School	Howick	Composite	140	0	0%	0%	0%	0%	0%
Aorere College	Manukau	Secondary	1506	0	0%	0%	0%	-	-

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
McAuley High School	Manukau	Secondary	668	0	0%	0%	0%	0%	0%
Otahuhu College	Manukau	Secondary	1500	0	0%	-	0%	0%	0%
Tangaroa College	Manukau	Secondary	1061	0	0%	0%	-	0%	-
Kia Aroha College/Clover Park Middle School	Manukau	Intermediate/secondary	417	0	0%	-	-	0%	-
Ferguson Intermediate School	Manukau	Intermediate	521	0	0%	-	-	0%	-
Otahuhu Intermediate School	Manukau	Intermediate	335	0	0%	0%	-	1%	1%
Mary Mackillop School	Manukau	Full primary	324	0	0%	-	-	-	-
Pacific Christian School	Manukau	Full primary	108	0	0%	-	-	-	-
Redoubt North School	Manukau	Full primary	660	0	0%	-	-	-	-
St Joseph's Catholic School Onehunga	Manukau	Full primary	255	0	0%	-	-	-	-
St Joseph's Otahuhu	Manukau	Full primary	310	0	0%	-	-	-	-
Sutton Park School	Manukau	Full primary	510	0	0%	-	-	-	-
Wiri Central	Manukau	Full primary	404	0	0%	-	-	-	-
Al-Madinah School	Manukau	Composite	450	0	0%	0%	0%	0%	-
Zayed College for Girls	Manukau	Composite	68	0	0%	-	-	-	-
Bailey Road School	Maungakiekie	Full primary	418	0	0%	-	-	-	-
Destiny School	Maungakiekie	Full primary	Not given	0	0%	-	-	-	-
Golden Grove School	Maungakiekie	Full primary	30	0	0%	-	-	-	-
Pt England School	Maungakiekie	Full primary	570	0	0%	-	-	-	-

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
St Mary's Catholic School Ellerslie	Maungakiekie	Full primary	310	0	0%	-	-	-	-
Sylvia Park School	Maungakiekie	Full primary	330	0	0%	-	-	-	-
Te Kura Kaupapa Maori o Puau Te Moananui-a-Kiwa	Maungakiekie	Composite	111	0	0%	-	-	-	-
Westmount School	Maungakiekie	Full primary	140	0	0%	-	-	-	-
St. Mary's School	North Shore	Full primary	400	0	0%	-	-	-	-
Baradene College	Orakei	Intermediate/secondary	1024	0	0%	0%	0%	<1%	0%
St Kentigern School	Orakei	Full primary	180	0	0%	-	-	-	-
Saint Kentigern School for Girls - Corran	Orakei	Composite	115	0	0%	0%	-	-	-
The Bridge Academy	Orakei	Composite	5	0	0%	0%	-	-	-
Birdwood School	Waitakere	Full primary	82	0	0%	-	-	-	-
Don Buck School	Waitakere	Full primary	56	0	0%	-	-	-	-
Hobsonville Primary School	Waitakere	Full primary	256	0	0%	-	-	-	-
Holy Cross Henderson	Waitakere	Full primary	410	0	0%	-	-	-	-
Kelston Girls High School	Waitakere	Secondary	854	0	0%	0%	0%	0%	0%
Lincoln Heights School	Waitakere	Full primary	280	0	0%	-	-	-	-
Royal Road School	Waitakere	Full primary	73	0	0%	-	-	-	-
St Dominic's College	Waitakere	Intermediate/secondary	923	0	0%	-	<1%	<1%	<1%
Titirangi Rudolf Steiner School	Waitakere	Full primary	Not given	0	0%				

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Waitakere SDA School	Waitakere	Full primary	38	0	0%				
ACG Senior College	Waitemata/Gulf	Secondary	360	0	0%	1%	-	0%	-
Auckland International College	Waitemata/Gulf	Secondary	380	0	0%	0%	0%	0%	-
St Marys College Ponsonby	Waitemata/Gulf	Intermediate/secondary	836	0	0%	0%	0%	-	-
St Pauls College	Waitemata/Gulf	Intermediate/secondary	215	0	0%	-	0%	-	-
St Joseph's School, Grey Lynn	Waitemata/Gulf	Full primary	96	0	0%	-	-	-	-
Glenavon School	Whau	Full primary	252	0	0%	-	-	-	-
St Mary's School Avondale	Whau	Full primary	248	0	0%	-	-	-	-
Immanuel Christian School	Whau	Composite	127	0	0%	-	2%	1%	1%
Mansell Senior School	Manurewa-Papa	Intermediate	168	0	0%	0%	-	-	-
Edmund Hillary School	Manurewa-Papa	Full primary	159	0	0%	-	-	-	-
Opaheke School	Manurewa-Papa	Full primary	544	0	0%	-	-	-	-
Papakura South School	Manurewa-Papa	Full primary	95	0	0%	-	-	-	-
Randwick Park School	Manurewa-Papa	Full primary	473	0	0%	-	-	-	-
St Anne's Catholic School	Manurewa-Papa	Full primary	230	0	0%	-	-	-	-
Te Hiri School	Manurewa-Papa	Full primary	236	0	0%	-	-	-	-
Manukau Christian School	Manurewa-Papa	Composite	41	0	0%	0%	2%	0%	4%
Ahuroa School	Rodney	Full primary	51	0	0%	-	-	-	-
Hare Krishna School	Rodney	Full primary	Not given	0	0%	-	-	-	-
Kaipara College	Rodney	Secondary	640	0	0%	0%	-	0%	<1%

School Name	Ward	School Type	School Roll Eligible To Cycle	No. of Cycles Counted	Cyclists as share of those eligible ¹³				
					2011	2010	2009	2008	2007
Kaukapakapa School	Rodney	Full primary	114	0	0%	-	-	-	-
Parakai School	Rodney	Full primary	86	0	0%	-	-	-	-
Rodney College	Rodney	Secondary	336	0	0%	0%	0%	0%	2%
Tapora School	Rodney	Full primary	35	0	0%	-	-	-	-
Tau Te Arohanoa Akoranga	Rodney	Composite	32	0	0%	-	-	-	-
Tauhoa	Rodney	Full primary	53	0	0%	-	-	-	-
Tomarata	Rodney	Full primary	118	0	0%	-	-	-	-
Waimauku School	Rodney	Full primary	300	0	0%	-	-	-	-
Wainui	Rodney	Full primary	184	0	0%	-	-	-	-
Waioneke School	Rodney	Full primary	92	0	0%	-	-	-	-
Wentworth Primary School	Rodney	Full primary	37	0	0%	-	-	-	-

APPENDICES

Appendix One: Methodology

Appendix Two: Annual Average Daily Traffic (AADT) Calculation

APPENDIX ONE: METHODOLOGY

Manual cycle counts have been conducted using a standardised methodology across all sites. This methodology is outlined below.

1. Choice of Sites

Decisions as to which sites were chosen for cycle counts were guided by the planned developments for the Regional Cycle Network.

Manual counts were undertaken at 82 different sites throughout the region. Sites were distributed by ward as follows:

• Albany	15 sites
• Albert-Eden–Roskill	10 sites
• Franklin	2 sites
• Howick	5 sites
• Manukau	10 sites
• Manurewa-Papakura	4 sites
• Maungakiekie-Tamaki	7 sites
• North Shore	8 sites
• Orakei	2 sites
• Waitakere	13 sites
• Waitemata and Gulf	9 sites
• Whau	4 sites

(Note: Seven sites lie on the border of two wards. These sites have been included in both ward reports).

2. Monitoring Times

Time Of Day

Manual counts in the morning peak were conducted between 6:30 and 9:00 am, with manual counts in the evening peak conducted between 4:00pm and 7:00pm.

Day Of Week

Previous experience conducting cycle and other traffic manual counts 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 Auckland Transport. 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 Bikewise Month; and
- daylight saving times.

It was agreed that manual counts would commence on Tuesday the 8th of March and be conducted on the first three fine days of the 8th, 9th, 10th, 15th, 16th, or 17th of March.

Counts were conducted on the following days:

- Tuesday 8th March Albany, Manukau, Manurewa-Papakura, Franklin
- Wednesday 9th March North Shore, Waitemata and Gulf, Whau, Albert-Eden-Roskill
- Thursday 10th March Maungakiekie-Tamaki, Howick, Orakei, Waitakere

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. 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 2011 was as follows:

Tuesday 8th March

- Sunrise: 7:12am; Sunset: 7:51pm.
- Highest temperature: 20.1 degrees Celsius.
- Fine weather for all sites in both the morning and evening shifts.

Wednesday 9th March

- Sunrise: 7:13am; Sunset: 7:50pm.
- Highest temperature: 22.5 degrees Celsius.
- Fine weather for all sites in the morning shifts. In the evening shift, showers were observed at some sites from 6.00pm until the end of the monitoring period.

Thursday 10th March

- Sunrise: 7:14am; Sunset: 7:48pm.
- Highest temperature: 21.7 degrees Celsius.
- Fine weather for all sites in both the morning and evening shifts.

3. Conducting The Manual Counts

Scoping Visit

Gravitas visited each of the 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 or more 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; Maungakiekie-Tamaki/Albert-Eden-Roskill wards).
- Beach Road/Browns Bay Road, Mairangi Bay (Site 45; Albany ward).

Three surveyors were used at the ferry terminal site (Site 22; Waitemata and Gulf ward).

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 Gravitas research team¹⁴.

During their shift the surveyor collected data on:

- The total number of cyclists¹⁵ 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;
- Gender of the cyclist (*collected for the first time in 2011*); and
- Whether cyclists are riding on the road, footpath or designated off- road cycleway¹⁶.

¹⁴ This letter also contained contact details for Auckland Transport and Gravitas Research and Strategy for any member of the public or local business owners who had queries about the work being undertaken.

¹⁵ To ensure consistency across all surveyors, a “cycle” was defined as being non-motorised, with one or two wheels and requiring pedalling to make it move. Note that this definition did not include scooters.

¹⁶ 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).

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

In addition, where cyclists were recognisable, surveyors were instructed to record each cyclist no more than three times during a single shift, irrespective of how many movements they actually made through the site. Surveyors noted where and when this occurred.

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 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.

4. 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.

5. 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 Zealand¹⁷, 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 ViaStrada¹⁸.

¹⁷ <http://www.ltsa.govt.nz/road-user-safety/walking-and-cycling/cycle-network/appendix2.html>

¹⁸ ViaStrada is a traffic engineering and transport planning consultancy based in Christchurch, New Zealand.

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 One.*

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 study¹⁹.

6. School Bike Shed Counts

As stated above, manual cycle counts were undertaken during the morning (6:30am to 9:00am) and evening (4:00pm to 7:00pm) 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).

Initially 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. Note however that, to ensure all children of intermediate school age cycling to school were captured, full primary schools (those catering for Years 1 to 8) were included in the school bike shed count from 2011.

¹⁹ Appendix 2 of the Cycle Network and Route Planning Guide (CNRPG) (Land Transport New Zealand, 2004)

Methodology

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

1. Gravitas designed an information sheet that was distributed to most full primary, intermediate, secondary and composite (Years 1 to 13) schools in the Auckland region via email (note a small number of schools were omitted due to the special nature of the students e.g. boarding schools, special needs schools). This sheet was designed in consultation with Auckland Transport to ensure all necessary information was collected.
2. This email was then sent to all eligible schools in Auckland region (n=295) to notify them of the bike shed count and to let them know what they would be required to do. Included in this email was a link to an online count form.
3. To enhance the comparability of the school bike shed data with that of the regional cycle monitor, Tuesday 8th 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 completed the online count form and submitted it electronically to Gravitas. Gravitas contacted all participating schools who had not returned their sheets after five working days, first by email (two rounds) and then by telephone. All count forms were checked for completeness before being data-entered into Excel. In 2011, 201 responses were received, a response rate of 68 per cent.

7. Reporting

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

Manual Counts - Site Level Reporting

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
 - male/female
 - riding on the road/riding on the footpath/riding on an off-road path

Manual Counts - Aggregated Reporting

Results have also been reported at an aggregate level (that is, summing up all sites) – by ward 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 ward 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 AADT²⁰ 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)²¹, 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)

²⁰ Annual average daily traffic

²¹ 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%