REPORT 4
(1215/12/IM)

WILLOWBANK ROAD RESIDENTS PETITION

1. Purpose of Report

To submit a proposal for the Board's consideration following a petition from the residents of Willowbank Road regarding their concerns of vehicle speeds.

2. Executive Summary

Council Officers received a petition from Willowbank Road residents expressing their concerns regarding the speed of vehicles through the residential portion of this road.

Education and Enforcement are used to modify driver behaviour. Engineering is the third tool, the physical modification of a road environment to force drivers to change behaviour.

Engineering solutions are generally only appropriate in specific locations where there is a past crash history. Only after careful consideration of quantitative data (speeds, volumes, crash rates, user groups) and qualitative (resident and other stakeholder feedback) does Council implement traffic calming. Different types of traffic calming are introduced to modify driver behaviour such that the behaviour is considered reasonable for the environment in which they are travelling.

This report is to provide the Board with data regarding residents' concerns, and provide additional information on possible treatments for their consideration.

3. Recommendations

Officers recommend that the Tawa Community Board:

1. *Receives the information.*

2. *Notes that Willowbank Road is a principal road and is inappropriate for the installation of speed control humps.*

3. *Notes that the Officer/Board Member Working Group has been consulted on the Council's proposed approach;*

4. *Agrees with the Council's plan of implementing education and enforcement traffic calming measures and undertaking a review of the efficacy of these measures in six months time and reporting back to the Board at its February 2011 meeting.*

4. Background

4.1 Road Classification

Willowbank Road is classified under the District Plan as a **Principal Road**.

> **ROAD HIERARCHY**: means the classification of roads as follows and as shown in District Plan Maps 33 and 34.
> • Principal Road: roads that provide access to motorways and to arterial roads having a dominant through-traffic function and carrying the major public transport routes (primary road).

In addition to this classification, Willowbank Road is designated as the alternate route for the State Highway to carry overweight/over-dimensional and hazardous vehicles.

4.2 Traffic Volume and Speed Data

Willowbank Road, on average, carries 3800 vehicles per day[1].

The 85th percentile speed has been measured at 58 km/h[2]. This is a 4 km/h reduction since the previous speed survey was completed back in February 2009.

4.3 Current Crash Analysis Data

There have been three recorded crashes in Willowbank Road since 2005, of these;

(a) One attributed to Speed / Alcohol
(b) Two due to driver inattention
(c) Crashes occurred during the following times

06:00 – 12:00 hrs	12:01 – 18:00 hrs	18:01 – 21:00 hrs	21:01 – 06:00 hrs
1	1	-	1

(d) One minor injury was sustained

[1] Willowbank Rd Traffic Counts – conducted 20/04/10 – 27/04/10, Outside #27
[2] Willowbank Rd Speed Counts – conducted 20/04/10 – 27/04/10, Outside #27

5. Discussion

Traffic calming measures are implemented to enhance traffic and pedestrian safety while minimising the impact on neighbourhood character and liveability. There are a number of traffic calming devices that are available to achieve this effect. The specific measures are described in more detail below, but can generally be used to address problems with speeding, increased traffic volume, and safety. When a traffic calming measure is implemented successfully, it is effective and self enforcing.

If a problem exists, Council Officers will propose possible measures that do not involve physical controls or impediments on the road. These are primarily education and enforcement based measures, including;

- Speed Trailer / Driver Feedback Sign – This is a temporary device that is primarily used to educate motorists regarding the fact that they may be significantly exceeding the posted speed limit.

- Enforcement Actions – This is a traditional enforcement activity on the part of NZ Police. The intent is to modify behaviour to promote a safer situation for all drivers and the neighbourhood.

- Traffic Signing and Pavement Markers – Council Traffic Engineers will assess the traffic signage and pavement markings in the area. If necessary, officers will install additional signs or markings.

Various urban threshold treatments have been implemented to reduce drivers' speeds when entering an urban area or village. The visual complexity of the threshold design is positively related to the amount of speed reduction produced and it is not uncommon for thresholds at the entrance to an urban area to incorporate a range of physical and visual design elements. [3]

Gateway treatments placed at the entrances to villages overseas found that;

- simple visual gateways (roadside signing and marking) reduced drivers 85th percentile speeds by 5 km/h

[3] Speed change management for New Zealand roads – (Land Transport New Zealand research Report 300)

- more elaborate treatments employing high visibility features on the roadside and road surface (e.g. coloured road surfacing, visual narrowing, large roadside signs) reduced 85th percentile speeds by 11 km/h

- gateways using physical restrictions as well as visual features produced 85th percentile reductions of 16 km/h.

The placement of gateways prior to the first house, have been found to be more effective.

Vehicle-activated speed limit signs have been found to reduce mean speeds up to 11 km/h.

Other visual treatments to produce optical narrowing, such as cross-hatching, flush medians, and edge lines, have been shown to reduce C85 speeds by 11-16 km/h when used at gateways.

Speed change designs at gateways or thresholds usually include a combination of features, some physical and some visual. The location of gateways has important implications for their effectiveness; if they are not accompanied by downstream changes in the road conditions such as increased urban/residential density, the speed reductions produced may dissipate within 250 metres.

Note: the slowing effect can be temporary and dissipate 250 metres after passing the threshold/gateway.

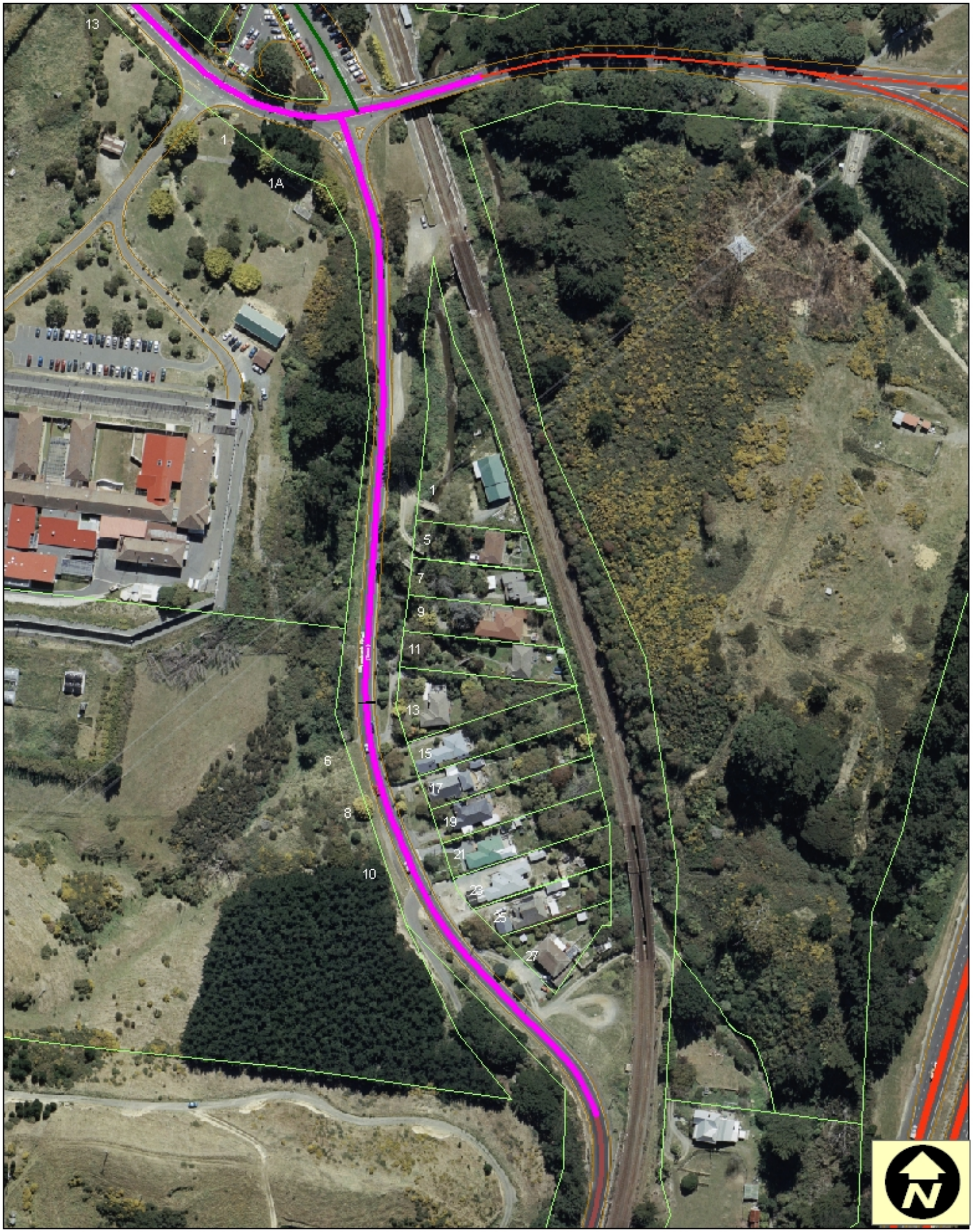
If one or more of these measures are implemented, Council Officers will undertake a review (speed and volume data) six months after implementation. This data will be analysed to determine if the measures have been successful and report back to the Board.

6. Conclusion

Wellington City Council Officers have reviewed several safety and traffic calming improvements to Willowbank Road to address the residents concerns regarding speed.

This report outlines that action plan for the Board to consider and discuss.

Contact Officer: *Charles Agate – Area Traffic Engineer*



DATA STATEMENT

Willowbank Road

Absolutely

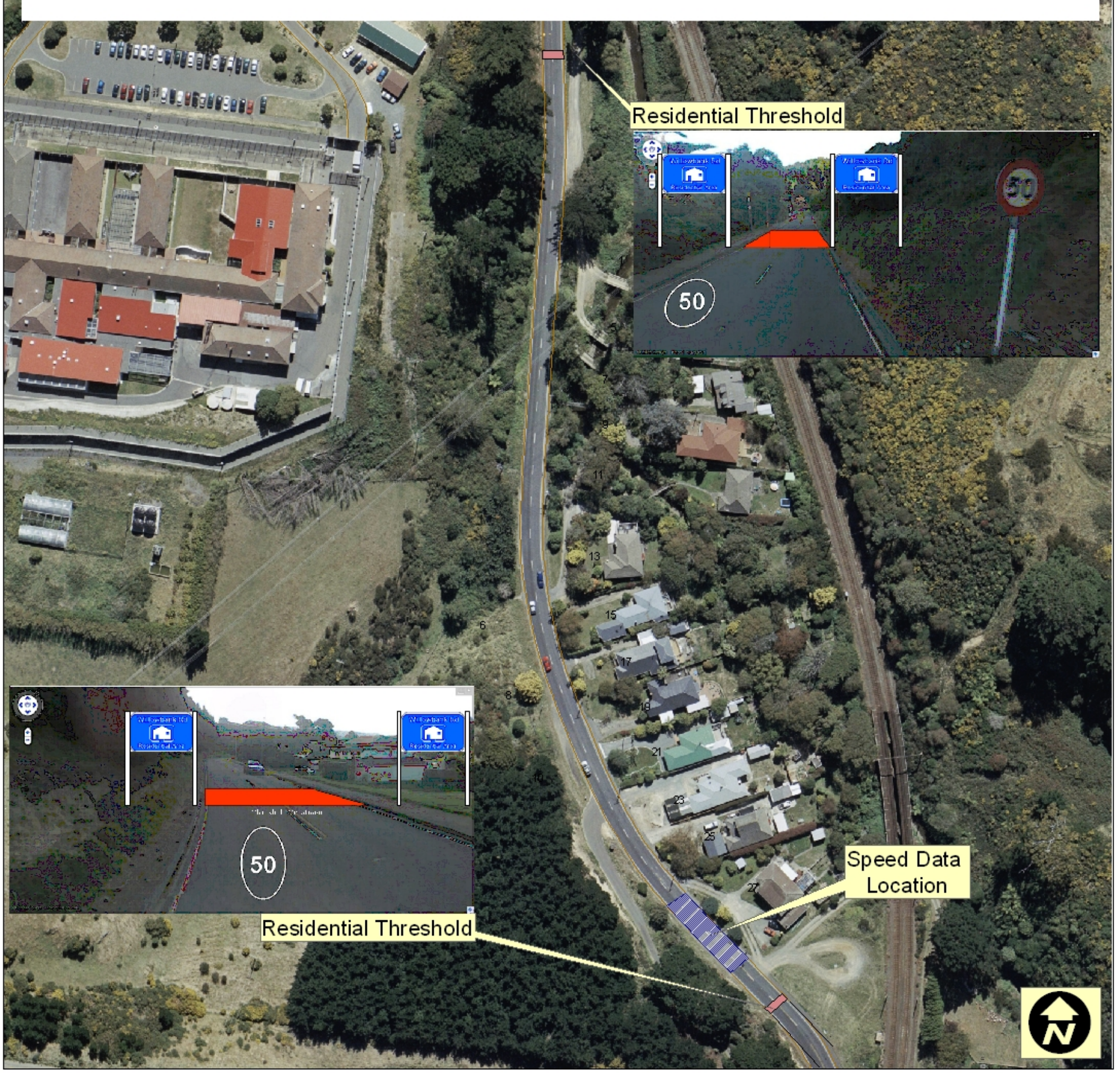
1:2,000

Street Name: Willowbank Rd
Site ID: 3908
Location: 400M South of Main Rd, Outside #27.
North Bound bound traffic, travelling towards: Main Rd
South Bound bound traffic, travelling towards: Middleton Rd

Start Date: 20/04/2010 End Date: 27/04/2010

Speed Summary

	Northbound	Southbound	Both Directions
5 day 85th Percentile Speed	59	57	58
7 day 85th Percentile Speed	59	57	58
5 day Mean Speed	53	52	52
7 day Mean Speed	53	51	52
5 day 3 - 4pm 85th Percentile Speed	58	56	57



DATA STATEMENT

Property boundaries
Land Information NZ
Licence: WH005/08/1/2
Crown Copyright reserved
Accuracy, in urban areas: +/-1m
Accuracy, in rural areas: +/-20m

Topographic data
Wellington City Council
WCC copyright reserved
Accuracy: +/- 20cm

Other data has been compiled from a variety of sources and its accuracy may vary

Any contours displayed are only approximate and are not to be used for detailed engineering design

Colour Orthophotography 1:500 flown Mar 2006 owned by Wellington City Council

Willowbank Road [Tawa]

1:1,250

Meters
0 5 10 20 30 40

Absolutely Positively Wellington
Me Heke Ki Pōneke
Wellington City Council

Street Name: Willowbank Rd
Site ID: 3908
Location: 400M South of Main Rd, Outside #27.
North Bound bound traffic, travelling towards: Main Rd
South Bound bound traffic, travelling towards: Middleton Rd

Start Date: 20/04/2010 End Date: 27/04/2010

Volume Summary

	Northbound	Southbound	Both Direction
5 day Average Daily Traffic Volumes	1442	2581	4023
7 day Average Daily Traffic Volumes	1409	2307	3716
Total Weekly Volume	9861	16152	26013
AM- Average one hour 7-9 AM (5 Day)	115	572	687
IM- Average one hour 10am-2pm	91	112	203
PM- Average one hour 4-6 PM	137	167	305
Average one hour 10am-2pm (Saturday)	155	169	324
Average one hour 10am-2pm (Sunday)	99	161	259

MetroCount Traffic Executive
Weekly Vehicle Counts

Site Number : **[W3908]**
Site Id: **Willowbank Rd Outside #27 Site W3908**
Data Direction NS
Direction Shown North bound
Time Range 0:00 Tuesday, 20 April 2010 0:00 Tuesday, 27 April 2010
Duration: Classes 1 2 3 4 5 6 7 8 9 10 11 12

	MON	TUE	WED	THU	FRI	SAT	SUN	AVERAGES 5-DAY	AVERAGES 7-DAY
Hour Period									
0000-0100	4	0	3	1	2	9	12	2	4
0100-0200	1	1	2	2	2	6	12	2	4
0200-0300	0	1	0	1	0	2	8	0	2
0300-0400	1	2	3	3	7	1	4	3	3
0400-0500	2	3	2	1	0	5	4	2	2
0500-0600	4	5	3	4	3	1	3	4	3
0600-0700	25	19	17	22	18	8	6	20	16
0700-0800	84	116	115	97	86	33	20	100	79
0800-0900	**120**	**143**	**147**	**117**	**127**	87	56	**131**	**114**
0900-1000	95	93	100	89	96	116	63	95	93
1000-1100	93	72	90	95	86	161	69	87	95
1100-1200	89	82	77	74	88	**173**	**77**	82	94
1200-1300	92	98	113	83	96	146	112	96	106
1300-1400	94	101	81	116	98	141	**137**	98	110
1400-1500	102	112	122	116	102	**146**	122	111	117
1500-1600	128	132	130	123	111	115	95	125	119
1600-1700	105	131	**159**	149	133	115	96	135	**127**
1700-1800	**129**	**134**	146	**153**	**133**	82	79	**139**	122
1800-1900	73	101	93	77	70	85	32	83	76
1900-2000	58	48	59	59	38	40	32	52	48
2000-2100	22	34	25	30	23	27	18	27	26
2100-2200	24	31	27	19	22	19	17	25	23
2200-2300	12	11	12	26	15	17	12	15	15
2300-2400	6	5	14	7	13	23	6	9	11
Totals									
12 Hr 7-19	1204	1315	1373	1289	1226	1400	958	1281	1252
16 Hr 6-22	1333	1447	1501	1419	1327	1494	1031	1405	1365
18 Hr 6-24	1351	1463	1527	1452	1355	1534	1049	1430	1390
24 Hr 0-24	1363	1475	1540	1464	1369	1558	1092	1442	1409
AM Hour	8	8	8	8	8	11	11	8	8
Peak	120	143	147	117	127	173	77	131	114
PM Hour	17	17	16	17	17	14	13	17	16
Peak	129	134	159	153	133	146	137	139	127

Figure in **BOLD** denotes Peak AM and PM reading

7-9 AVG	102	130	131	107	107	60	38	115	96
10-2 AVG	92	88	90	92	92	155	99	91	101
4-6 AVG	117	133	153	151	133	99	88	137	125

MetroCount Traffic Executive

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Site Number : **[W3908]**
Site Id: **Willowbank Rd Outside #27 Site W3908**
Data Direction NS
Direction Shown South bound
Time Range 0:00 Tuesday, 20 April 2010 0:00 Tuesday, 27 April 2010
Duration: Classes 1 2 3 4 5 6 7 8 9 10 11 12

								AVERAGES	
	MON	TUE	WED	THU	FRI	SAT	SUN	5-DAY	7-DAY
Hour Period									
0000-0100	3	0	5	5	8	9	12	4	6
0100-0200	1	2	4	3	2	4	3	2	3
0200-0300	0	2	1	0	2	2	0	1	1
0300-0400	0	0	0	1	0	2	2	0	1
0400-0500	2	4	2	2	2	4	6	2	3
0500-0600	9	7	3	5	7	3	2	6	5
0600-0700	47	51	55	46	36	13	6	47	36
0700-0800	**811**	**811**	**803**	**745**	**618**	28	15	**758**	**547**
0800-0900	363	399	456	334	377	75	30	386	291
0900-1000	93	102	113	92	84	110	92	97	98
1000-1100	109	107	98	95	98	**176**	**273**	101	137
1100-1200	117	107	123	107	97	168	115	110	119
1200-1300	124	122	117	127	123	168	133	123	131
1300-1400	93	128	120	100	129	163	121	114	122
1400-1500	114	135	131	117	136	161	138	127	133
1500-1600	134	149	172	153	122	**168**	**166**	146	152
1600-1700	**157**	165	**184**	**202**	**178**	143	125	**177**	**165**
1700-1800	155	**173**	163	167	129	144	97	157	147
1800-1900	72	79	81	77	72	58	63	76	72
1900-2000	43	46	51	54	44	53	26	48	45
2000-2100	43	32	33	48	29	27	29	37	34
2100-2200	41	31	40	28	23	32	20	33	31
2200-2300	14	23	21	25	17	23	7	20	19
2300-2400	7	7	8	10	12	25	6	9	11

Totals									
12 Hr 7-19	2342	2477	2561	2316	2163	1562	1368	2372	2113
16 Hr 6-22	2516	2637	2740	2492	2295	1687	1449	2536	2259
18 Hr 6-24	2537	2667	2769	2527	2324	1735	1462	2565	2289
24 Hr 0-24	2552	2682	2784	2543	2345	1759	1487	2581	2307
AM Hour	7	7	7	7	7	10	10	7	7
Peak	811	811	803	745	618	176	273	758	547
PM Hour	16	17	16	16	16	15	15	16	16
Peak	157	173	184	202	178	168	166	177	165

Figure in **BOLD** denotes Peak AM and PM reading

7-9 AVG	587	605	630	540	498	52	23	572	419
10-2 AVG	111	116	115	107	112	169	161	112	127
4-6 AVG	156	169	174	185	154	144	111	167	156

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7 day Mean Speed	53	51	52
5 day 3 - 4pm 85th Percentile Speed	58	56	57

7 Day Northbound Speed Count Summary

	Speed Bin												
Hour End	**0 - 15**	**15 - 30**	**30 - 40**	**40 - 50**	**50 - 60**	**60 - 70**	**70 - 80**	**80 - 90**	**90 - 100**	**100 - 110**	**110 -120**	**120 - 999**	
0 - 1	0	0	0	1	1	1	0	0	0	0	0	0	
1 - 2	0	0	0	0	2	1	0	0	0	0	0	0	
2 - 3	0	0	0	0	1	0	0	0	0	0	0	0	
3 - 4	0	0	0	1	1	1	0	0	0	0	0	0	
4 - 5	0	0	0	2	0	0	0	0	0	0	0	0	
5 - 6	0	0	0	1	1	1	0	0	0	0	0	0	
6 - 7	1	1	1	2	9	3	1	0	0	0	0	0	
7 - 8	0	5	1	16	47	9	1	0	0	0	0	0	
8 - 9	0	4	3	26	66	14	0	0	0	0	0	0	
9 -10	0	2	2	18	61	10	0	0	0	0	0	0	
10 - 11	0	2	3	23	58	9	0	0	0	0	0	0	
11 - 12	0	1	1	22	60	10	0	0	0	0	0	0	
12 - 13	0	1	1	28	66	10	0	0	0	0	0	0	
13 - 14	0	1	2	28	67	10	0	0	0	0	0	0	
14 - 15	1	2	1	34	70	9	1	0	0	0	0	0	
15 - 16	0	2	1	26	78	12	0	0	0	0	0	0	
16 - 17	0	3	2	31	78	12	0	0	0	0	0	0	
17 - 18	1	7	2	24	75	13	1	0	0	0	0	0	
18 - 19	1	5	3	14	44	8	0	0	0	0	0	0	
19 - 20	1	1	1	11	25	7	1	0	0	0	0	0	
20 - 21	0	0	1	6	14	5	0	0	0	0	0	0	
21 - 22	0	0	0	5	12	4	1	0	0	0	0	0	
22 - 23	0	0	0	2	9	3	1	0	0	0	0	0	
23 - 24	0	0	0	3	5	2	0	0	0	0	0	0	
													Total
Speed Tot	6	37	25	324	849	152	12	2	1	0	0	0	1409
	0.43%	2.63%	1.75%	23.01%	60.30%	10.81%	0.87%	0.12%	0.08%	0.00%	0.00%	0.00%	100%

5 Day Northbound Speed Count Summary

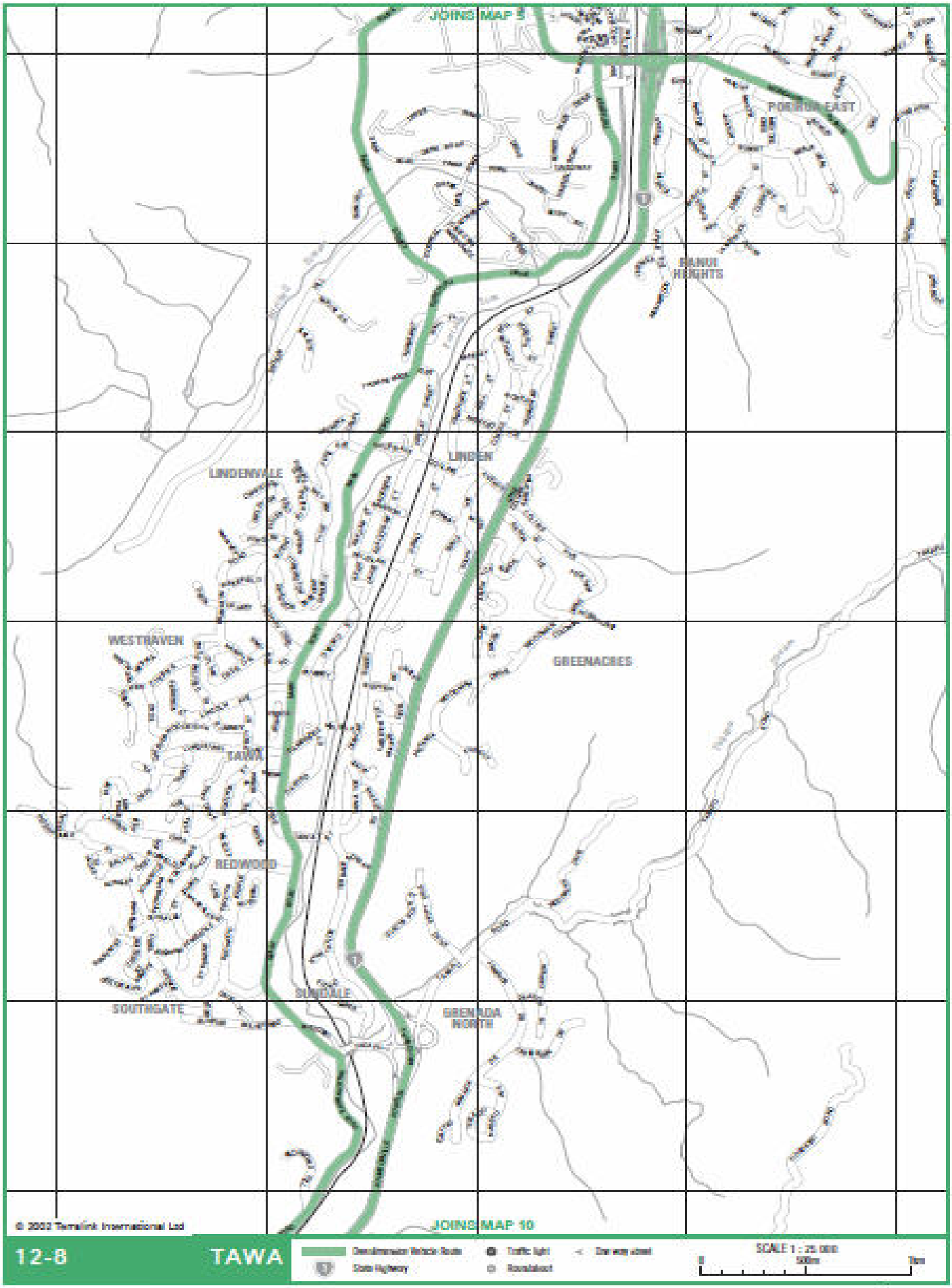
	Speed Bin												
Hour End	**0 - 15**	**15 - 30**	**30 - 40**	**40 - 50**	**50 - 60**	**60 - 70**	**70 - 80**	**80 - 90**	**90 - 100**	**100 - 110**	**110 -120**	**120 - 999**	
0 - 1	0	0	0	1	0	0	0	0	0	0	0	0	
1 - 2	0	0	0	0	1	0	0	0	0	0	0	0	
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0	
3 - 4	0	0	0	1	1	1	0	0	0	0	0	0	
4 - 5	0	0	0	1	0	0	0	0	0	0	0	0	
5 - 6	0	0	0	1	1	1	0	0	0	0	0	0	
6 - 7	1	1	1	3	11	3	1	0	0	0	0	0	
7 - 8	0	6	1	20	61	11	0	0	0	0	0	0	
8 - 9	1	3	2	28	80	17	0	0	0	0	0	0	
9 -10	0	1	1	16	64	12	0	0	0	0	0	0	
10 - 11	0	1	2	20	55	8	1	0	0	0	0	0	
11 - 12	1	1	0	22	49	9	1	0	0	0	0	0	
12 - 13	0	1	1	22	63	10	0	0	0	0	0	0	
13 - 14	1	1	1	23	62	10	0	0	0	0	0	0	
14 - 15	1	2	1	32	64	9	2	0	0	0	0	0	
15 - 16	0	2	1	29	82	10	0	0	0	0	0	0	
16 - 17	0	4	2	35	81	14	0	0	0	0	0	0	
17 - 18	1	10	2	29	84	13	0	0	0	0	0	0	
18 - 19	1	8	5	14	46	9	0	0	0	0	0	0	
19 - 20	1	1	1	14	28	6	1	0	0	0	0	0	
20 - 21	0	0	1	7	13	6	0	0	0	0	0	0	
21 - 22	0	0	0	5	13	5	1	0	0	0	0	0	
22 - 23	0	0	0	2	8	2	2	0	1	0	0	0	
23 - 24	0	0	0	3	4	1	1	0	0	0	0	0	
													Total
Speed Tot	7	42	23	327	871	158	12	1	1	0	0	0	1442
	0.49%	2.88%	1.58%	22.67%	60.41%	10.96%	0.85%	0.10%	0.07%	0.00%	0.00%	0.00%	100%

7 Day Southbound Speed Count Summary

	Speed Bin												
Hour End	**0 - 15**	**15 - 30**	**30 - 40**	**40 - 50**	**50 - 60**	**60 - 70**	**70 - 80**	**80 - 90**	**90 - 100**	**100 - 110**	**110 -120**	**120 - 999**	
0 - 1	0	0	0	2	3	1	0	0	0	0	0	0	
1 - 2	0	0	0	1	2	0	0	0	0	0	0	0	
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0	
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0	
4 - 5	0	0	0	1	2	0	0	0	0	0	0	0	
5 - 6	0	0	0	1	3	0	0	0	0	0	0	0	
6 - 7	0	7	0	8	16	5	0	0	0	0	0	0	
7 - 8	0	11	7	143	350	36	1	0	0	0	0	0	
8 - 9	0	3	4	75	187	20	1	0	0	0	0	0	
9 -10	0	2	1	35	53	7	1	0	0	0	0	0	
10 - 11	0	4	4	53	69	8	0	0	0	0	0	0	
11 - 12	0	3	2	46	61	6	1	0	0	0	0	0	
12 - 13	0	3	2	48	69	8	1	0	0	0	0	0	
13 - 14	0	2	3	44	67	6	0	0	0	0	0	0	
14 - 15	0	2	2	51	70	6	1	0	0	0	0	0	
15 - 16	0	2	2	57	81	9	1	0	0	0	0	0	
16 - 17	0	4	3	56	93	9	1	0	0	0	0	0	
17 - 18	0	4	3	51	78	9	1	0	0	0	0	0	
18 - 19	0	1	1	26	36	7	0	0	0	0	0	0	
19 - 20	0	1	1	16	21	5	1	0	0	0	0	0	
20 - 21	0	0	1	12	17	4	0	0	0	0	0	0	
21 - 22	0	0	0	13	15	2	1	0	0	0	0	0	
22 - 23	0	0	1	6	9	2	0	0	0	0	0	0	
23 - 24	0	0	0	3	5	1	1	0	0	0	0	0	
													Total
Speed Tot	2	47	38	748	1306	152	13	2	0	0	0	0	2307
	0.08%	2.05%	1.64%	32.40%	56.60%	6.59%	0.54%	0.07%	0.01%	0.00%	0.00%	0.00%	100%

5 Day Southbound Speed Count Summary

	Speed Bin											
Hour End	**0 - 15**	**15 - 30**	**30 - 40**	**40 - 50**	**50 - 60**	**60 - 70**	**70 - 80**	**80 - 90**	**90 - 100**	**100 - 110**	**110 -120**	**120 - 999**
0 - 1	0	0	0	1	2	0	0	0	0	0	0	0
1 - 2	0	0	0	1	1	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	1	0	0	1	1	0	0	0	0	0	0	0
5 - 6	0	0	0	1	4	0	1	0	0	0	0	0
6 - 7	0	9	1	10	21	6	0	0	0	0	0	0
7 - 8	0	14	10	198	485	49	1	0	0	0	0	0
8 - 9	0	3	5	98	252	26	1	0	0	0	0	0
9 -10	0	0	1	34	54	7	1	0	0	0	0	0
10 - 11	0	1	3	34	55	8	0	0	0	0	0	0
11 - 12	0	2	3	41	58	6	1	0	0	0	0	0
12 - 13	0	2	1	44	66	9	1	0	0	0	0	0
13 - 14	0	1	2	41	62	6	0	0	0	0	0	0
14 - 15	1	2	2	46	68	7	1	0	0	0	0	0
15 - 16	0	2	2	53	78	9	1	0	0	0	0	0
16 - 17	0	5	3	55	105	9	1	0	0	0	0	0
17 - 18	0	5	3	53	85	9	1	1	0	0	0	0
18 - 19	0	1	2	28	38	8	0	0	0	0	0	0
19 - 20	0	1	2	16	22	6	1	0	0	0	0	0
20 - 21	0	0	2	13	17	4	1	0	0	0	0	0
21 - 22	0	0	0	14	15	3	1	0	0	0	0	0
22 - 23	0	0	0	7	10	2	0	0	0	0	0	0
23 - 24	0	0	0	3	4	1	1	0	0	0	0	0
												Total
Speed Tot	3	49	42	792	1502	177	14	2	0	0	0	0	2581
	0.10%	1.90%	1.63%	30.70%	58.19%	6.87%	0.53%	0.07%	0.01%	0.00%	0.00%	0.00%	100%


JOINS MAP 5
POKENO EAST
BANKS HEIGHTS
LINDEN
LINDENVALE
WESTHAVEN
GREENACRES
TAWA
REDWOOD
SUNDALE
SOUTHGATE
GREENDALE NORTH
JOINS MAP 10
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12-8
TAWA
Overdimension Vehicle Route
State Highway
Traffic light
Roundabout
One way street
SCALE 1 : 25 000
0
500m
1km