

Figure 8 Study Area and Context

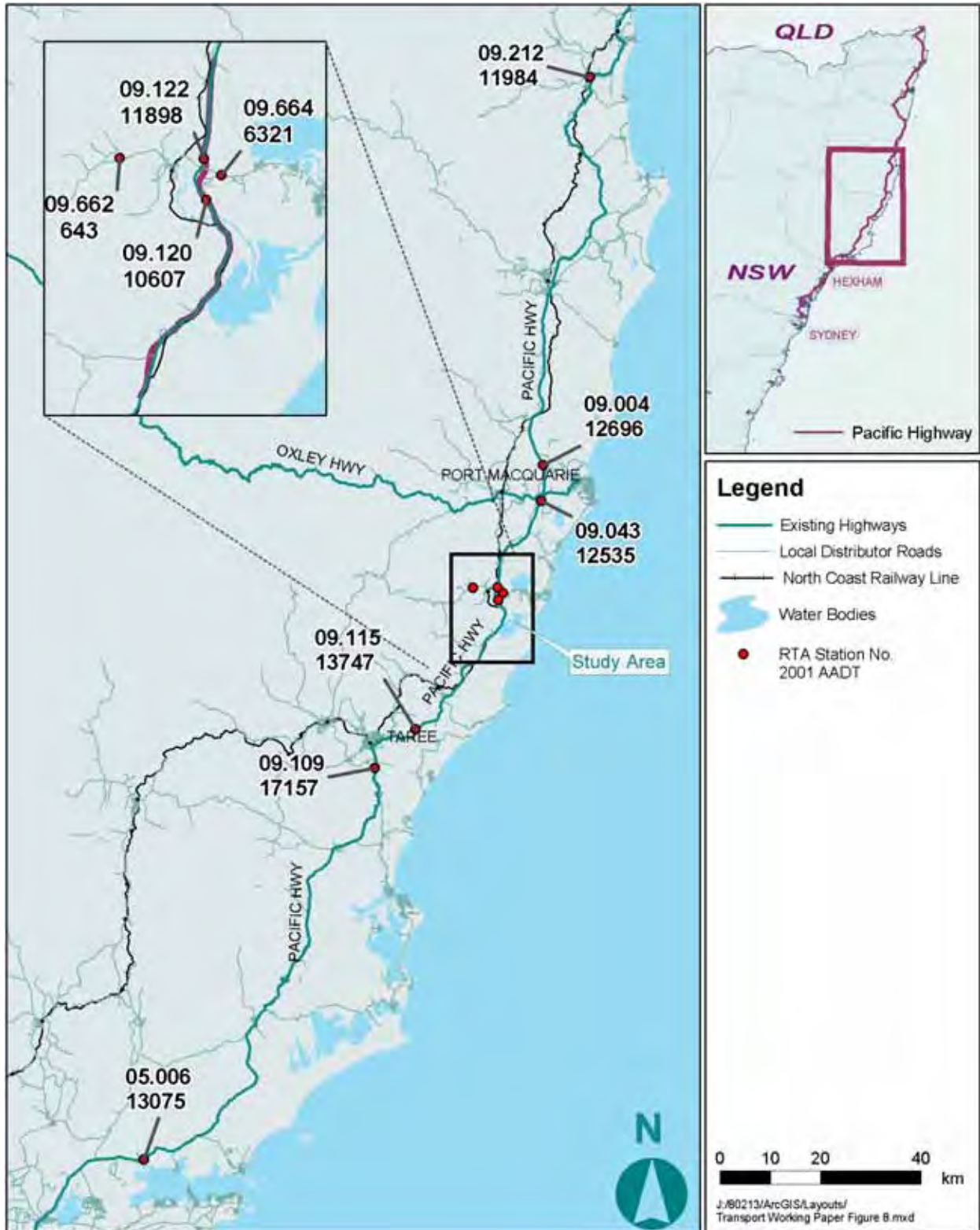
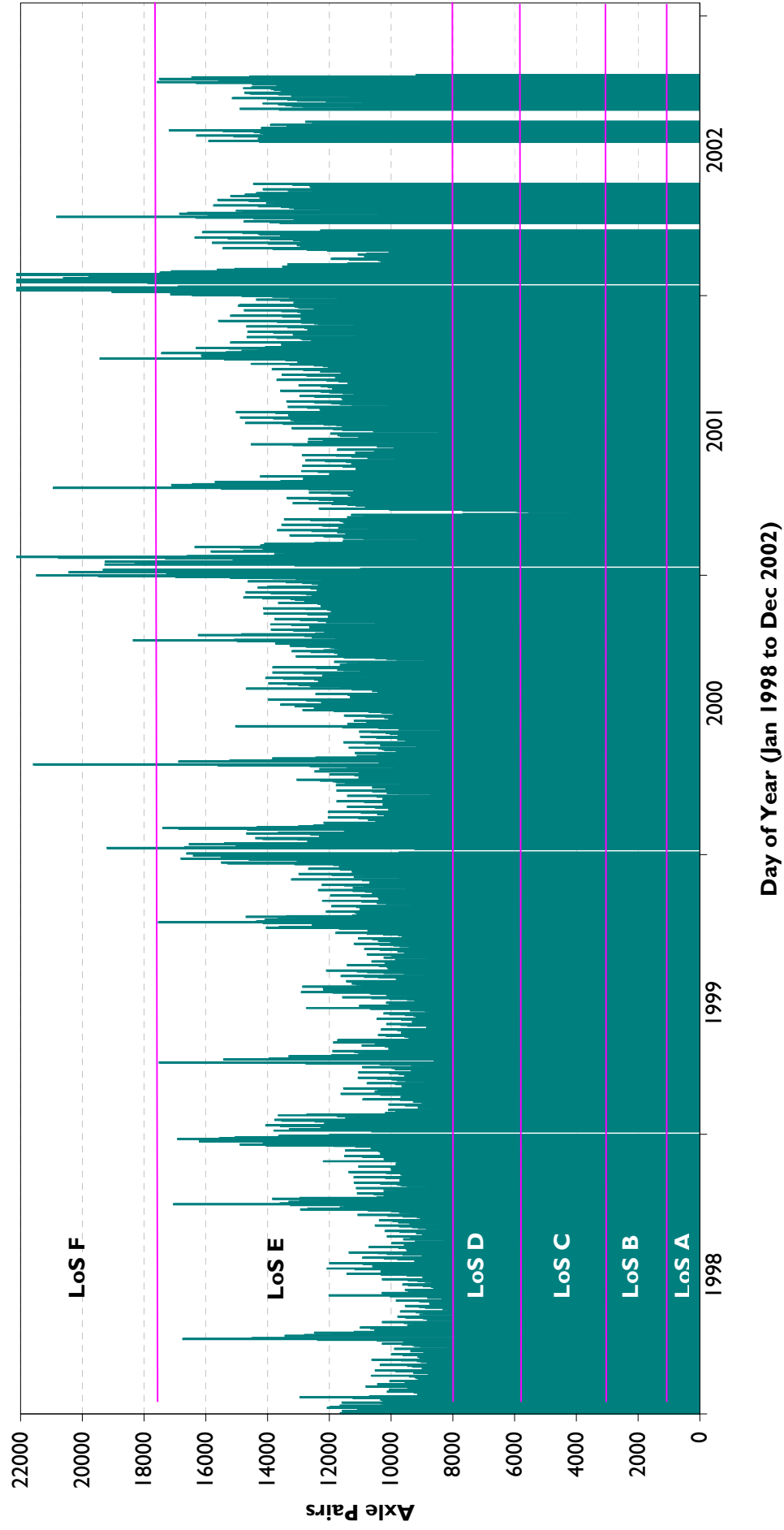


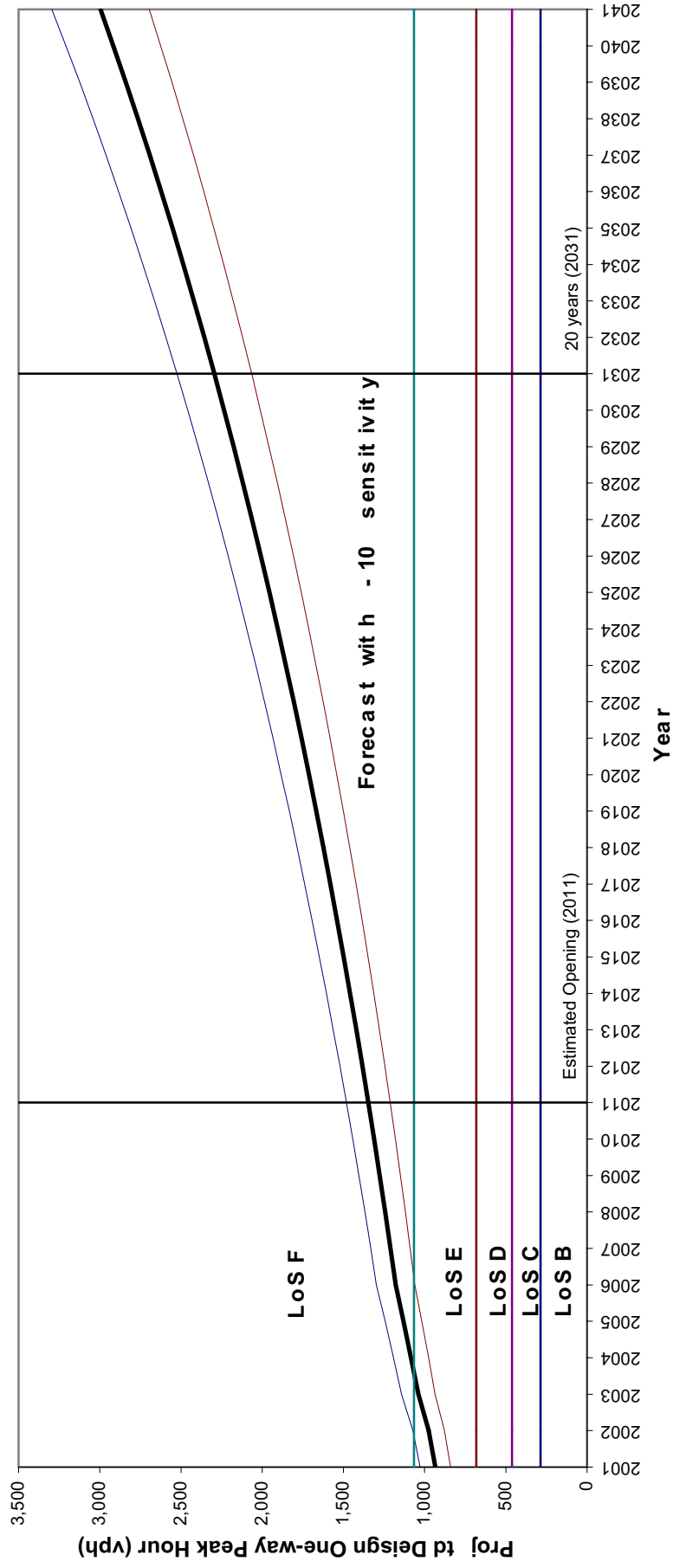
Figure 9 2001 AADT Volumes

**Figure 10 - Daily Two-Way Traffic Volumes
Pacific Highway - RTA Count Station 09.043**

NB: Zero count indicates tube failure



**Figure 11 - Future Pacific Highway Volume & LoS
 Moorland to Herons Creek
 Based on Existing Two-Lane Highway**



**1 2 - t ac f c H hway Vol m & LoS
 Moo land to H ons C k
 Bas d on 4 Lan D al Ca a way (110kph)**

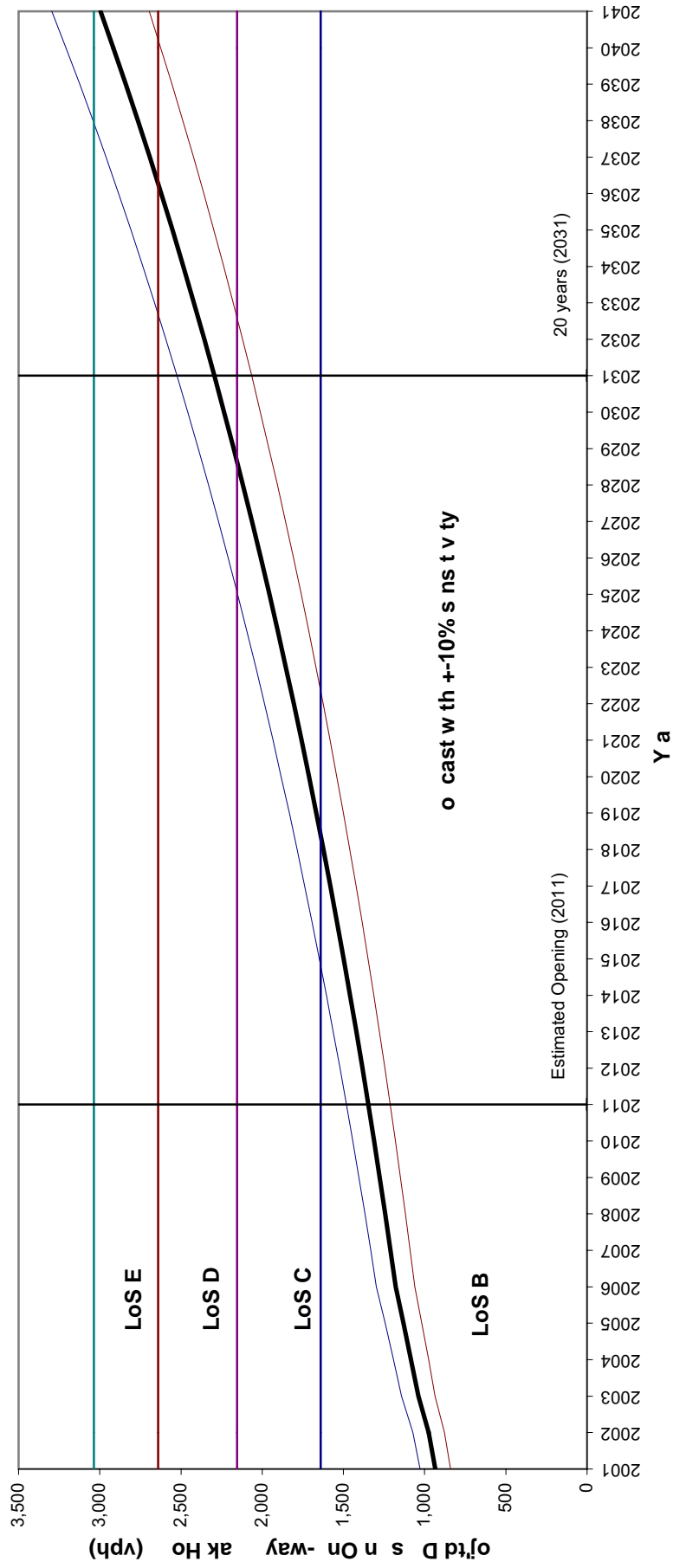




Figure 13 Intersecting Roads Between Moorland and Herons Creek

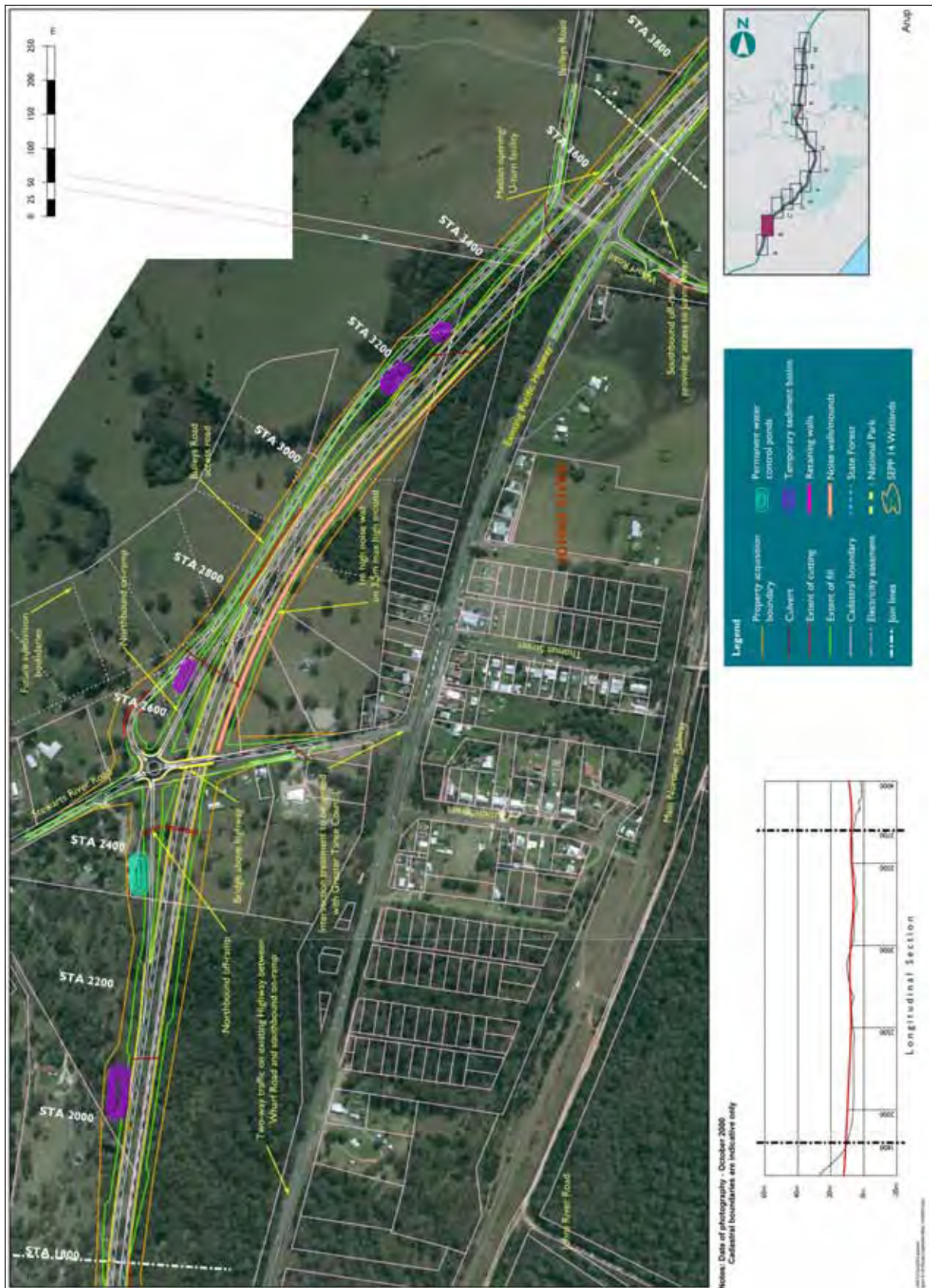


Figure 14 Johns River Intersection Treatment

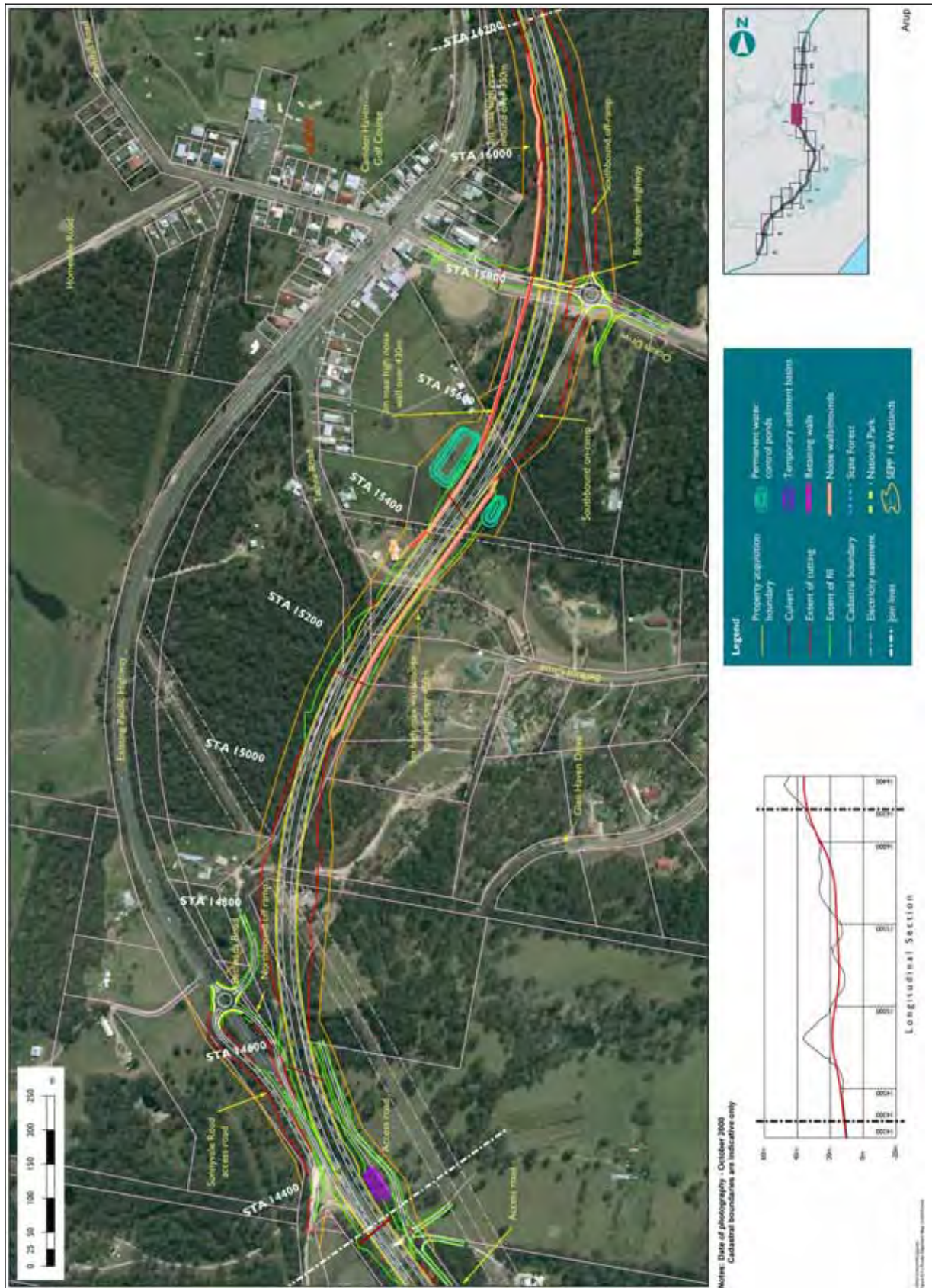


Figure 15 Kew Intersection Treatment

APPENDIX A

**1998-2002 Traffic
Growth Graphs**

1: 2-Way W kly Total (1998-2002)

09.212 PACIFIC HWY, SH10 MACKSVILLE-3.8KM N OF SCOTTS HEAD RD

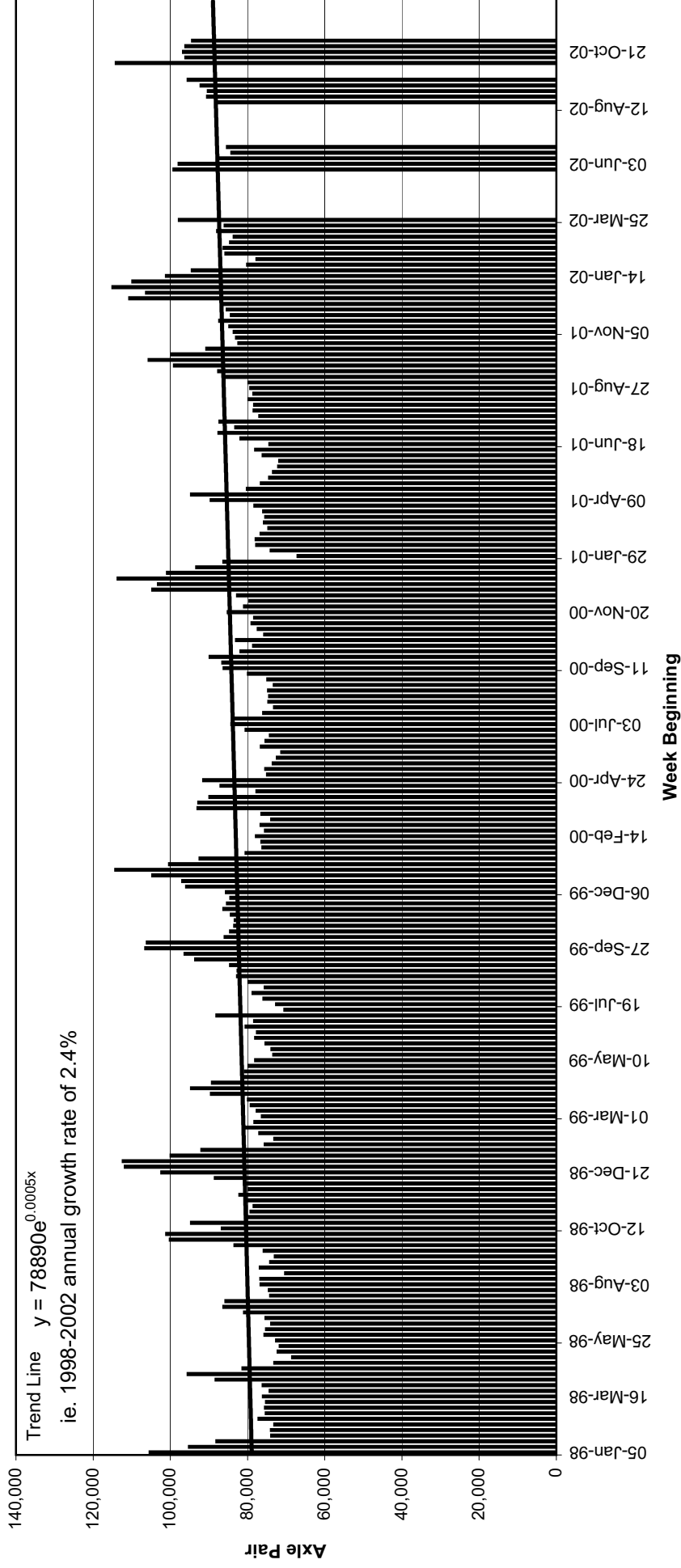


Figure A2: 2-Way Weekly Total (1998-2002)

09.004 PACIFIC HWY,SH10 BLACKMANS POINT-AT HASTINGS RIVER BR

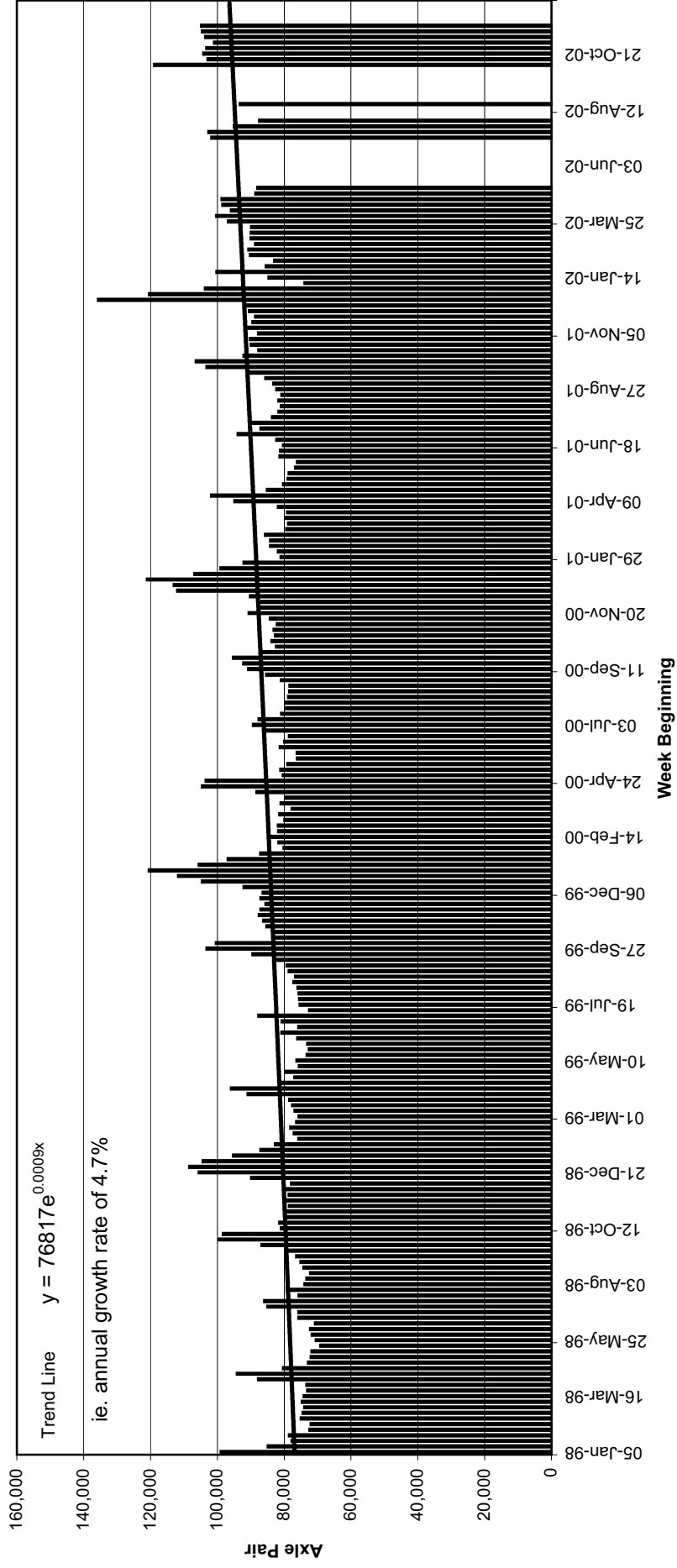


Figure A3: 2-Way Weekly Total (1998-2002)
09.043 PACIFIC HWY,SH10 S OF SH11,OXLEY HWY TO WAUCHOPE

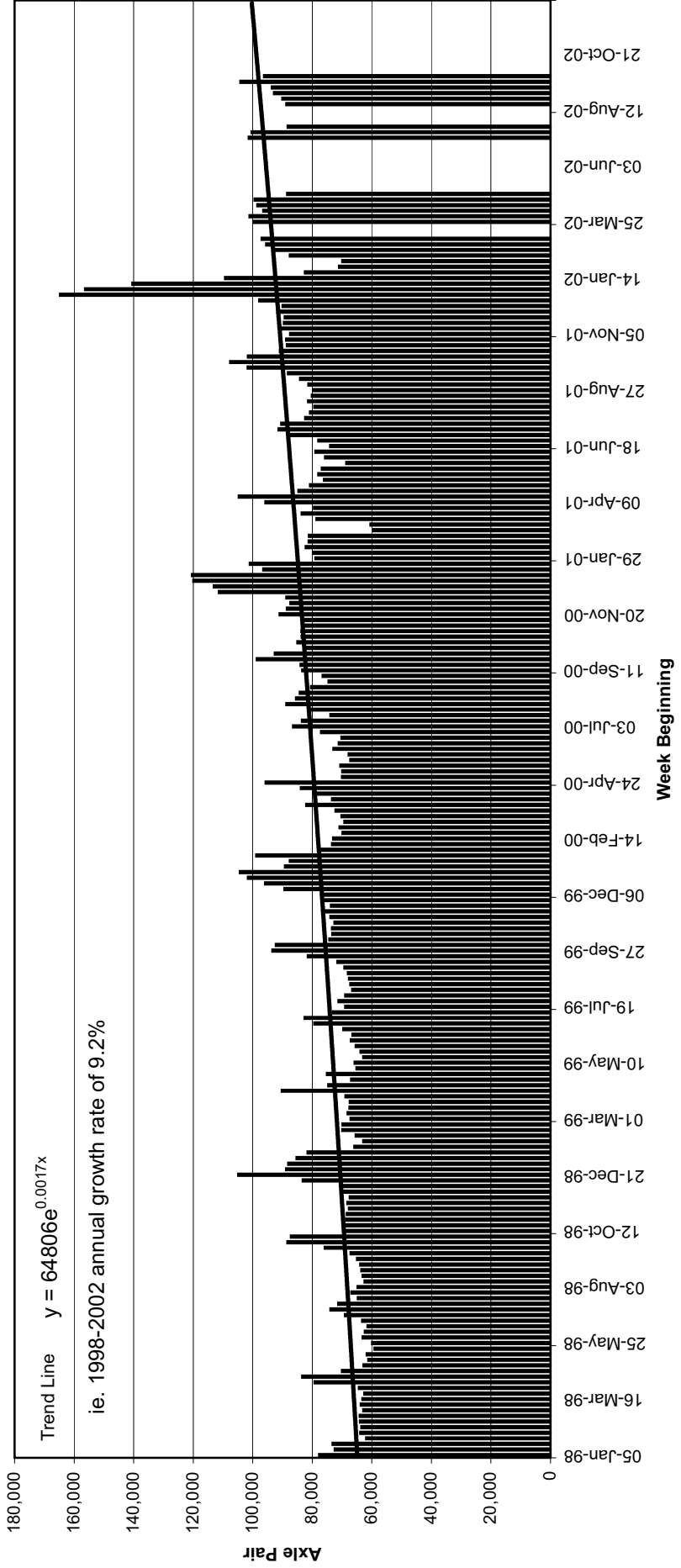


Figure A4: 2-Way Weekly Total (1998-2002)
 09.109 PACIFIC HWY,SH10 PURFLEET-1.3K S OF OLD BAR RD,RR7761

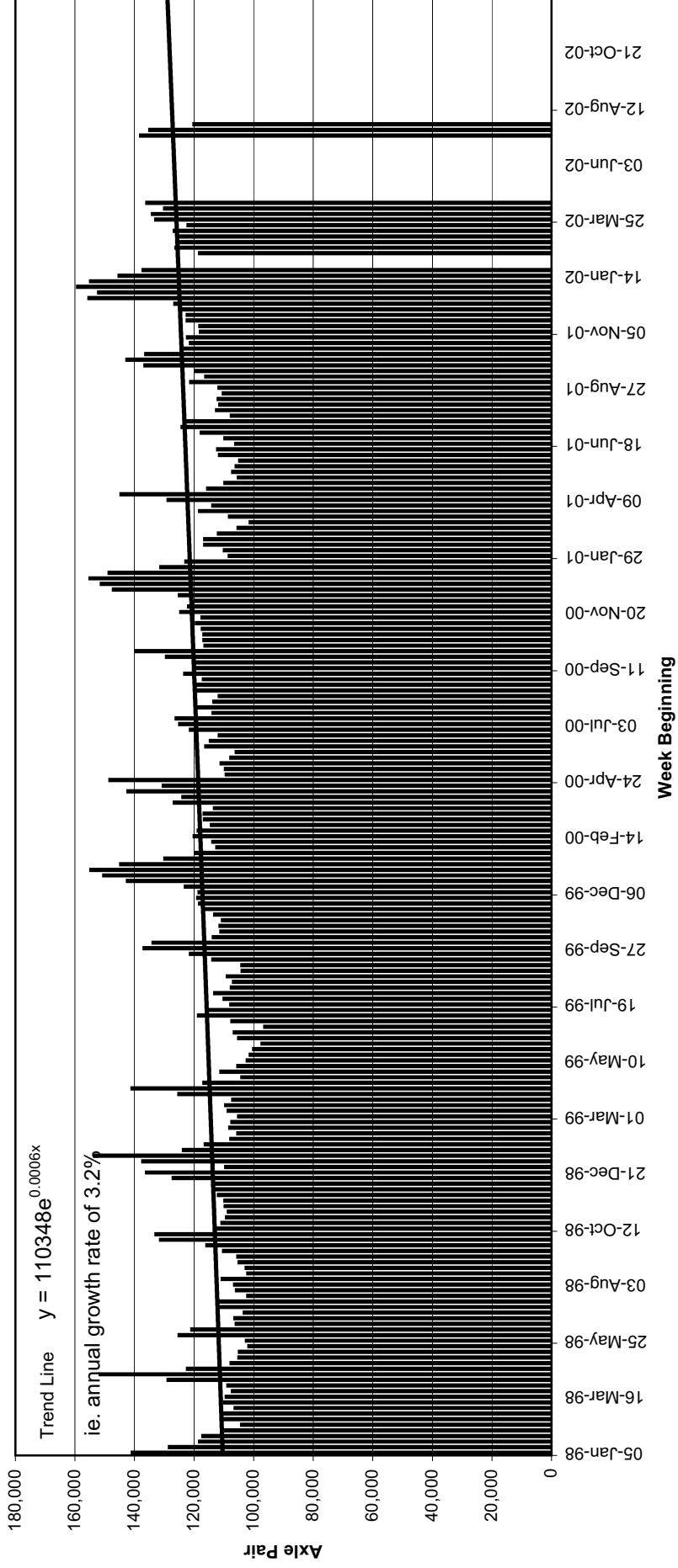
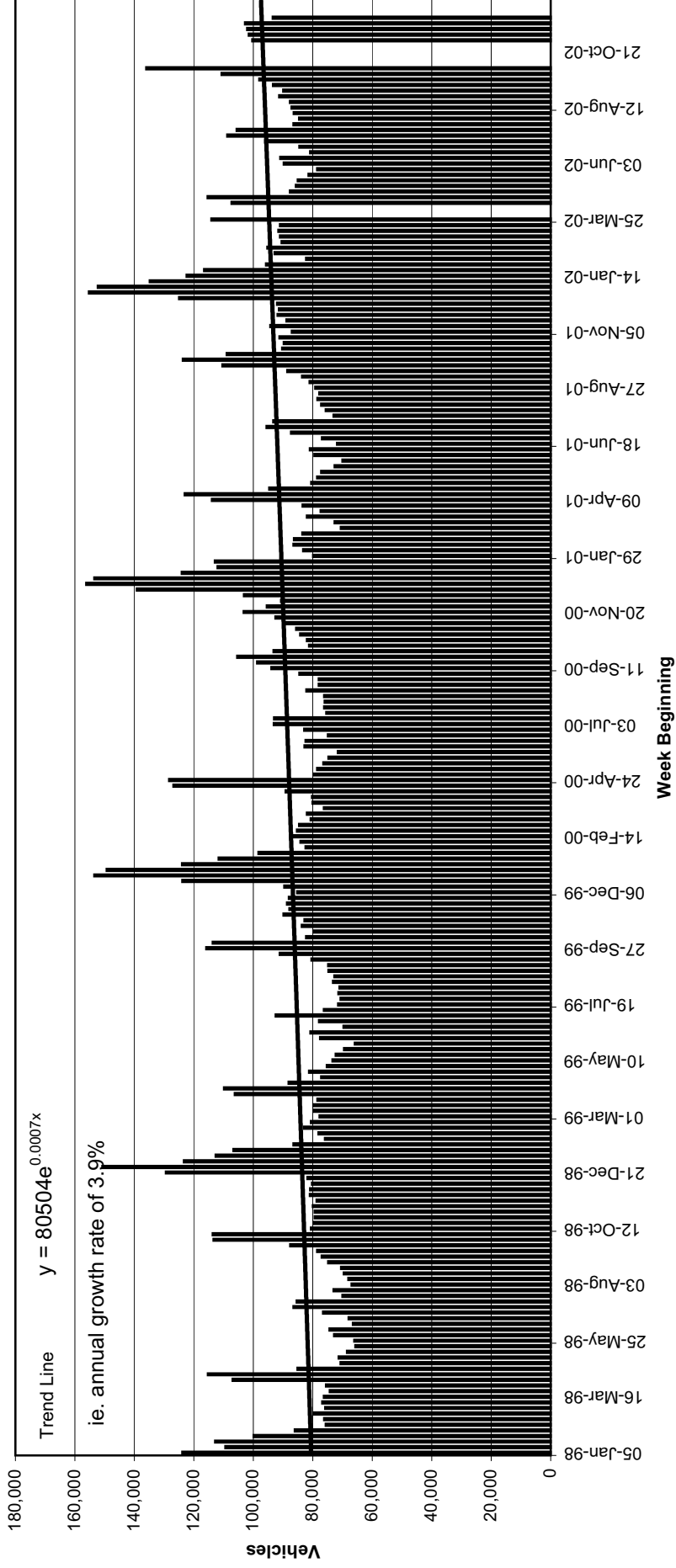


Figure A5: 2-Way Weekly Total (1998-2002)
 05.006 PACIFIC HWY,SH10 KARUAH-AT KARUAH RIVER BR



APPENDIX B

**1998, 2001, 2002 Heavy
Vehicle Calculations**

Table B1: Comparison of Northbound Heavy Vehicle Proportion between 1998, 2001 and 2002

1998		Site 09122					
Class	Semi 8+9	%	B-Double 10	%	Total HV 3 to 12	%	Total Vehicles
17/8/1998	380	9.81%	3	0.08%	633	16.34%	3875
18/8/1998	292	9.31%	2	0.06%	507	16.16%	3138
12/8/1998	582	14.21%	5	0.12%	888	21.68%	4095
13/8/1998	537	12.75%	4	0.09%	850	20.18%	4213
14/8/1998	441	8.98%	5	0.10%	767	15.62%	4910
15/8/1998	233	5.65%	1	0.02%	415	10.06%	4126
16/8/1998	131	4.01%	1	0.03%	237	7.26%	3264
	2596	9.40%	21	0.08%	4297	15.56%	27621

2001 Jun		kerbid - secondane		site 09043			
18/6/2001	463	10.60%	15	0.34%	791	18.10%	4369
19/6/2001	590	13.74%	22	0.51%	929	21.63%	4295
20/6/2001	628	14.24%	22	0.50%	974	22.09%	4410
21/6/2001	587	13.15%	20	0.45%	952	21.33%	4464
22/6/2001	459	8.97%	21	0.41%	799	15.61%	5118
23/6/2001	232	5.50%	12	0.28%	398	9.43%	4219
24/6/2001	158	4.16%	7	0.18%	307	8.08%	3799
	3117	10.16%	119	0.39%	5150	16.79%	30674

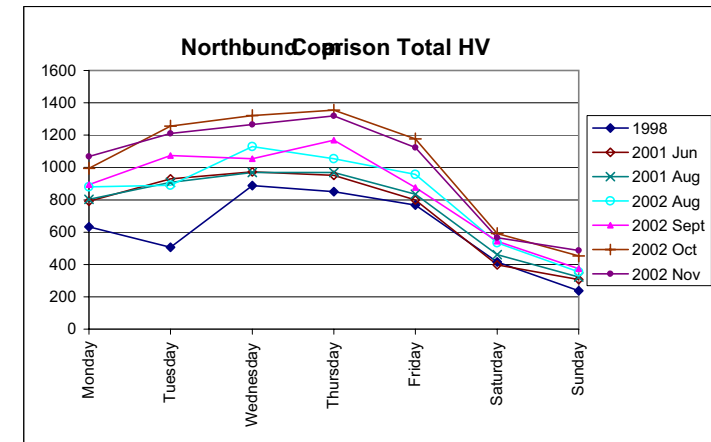
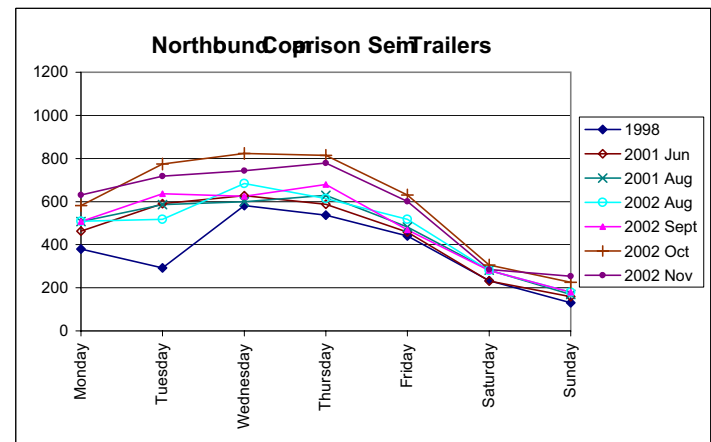
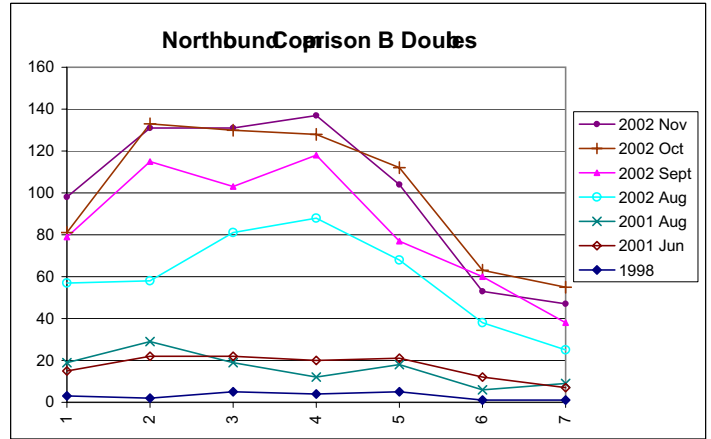
2001 Aug		kerbid - secondane		site 09043			
20/8/2001	508	11.07%	19	0.41%	802	17.48%	4589
21/8/2001	586	13.71%	29	0.68%	907	21.22%	4275
22/8/2001	600	13.30%	19	0.42%	969	21.48%	4511
23/8/2001	629	13.55%	12	0.26%	970	20.89%	4643
24/8/2001	482	9.27%	18	0.35%	834	16.04%	5198
25/8/2001	282	6.82%	6	0.15%	461	11.15%	4133
26/8/2001	169	4.70%	9	0.25%	323	8.98%	3598
	3256	10.52%	112	0.36%	5266	17.02%	30947

2002 Aug		kerbid - secondane		site 09043			
12/8/2002	509	9.62%	57	1.08%	880	16.63%	5291
13/8/2002	517	10.70%	58	1.20%	890	18.43%	4830
14/8/2002	684	13.20%	81	1.56%	1130	21.81%	5180
15/8/2002	614	11.45%	88	1.64%	1054	19.66%	5362
16/8/2002	517	8.12%	68	1.07%	957	15.03%	6369
17/8/2002	280	5.87%	38	0.80%	534	11.20%	4768
18/8/2002	179	3.92%	25	0.55%	354	7.74%	4572
	3300	9.07%	415	1.14%	5799	15.94%	36372

2002 Sep		kerbid - secondane		site 09043			
9/9/2002	508	9.03%	79	1.40%	894	15.90%	5623
10/9/2002	636	12.53%	115	2.27%	1074	21.15%	5077
11/9/2002	624	12.11%	103	2.00%	1055	20.47%	5154
12/9/2002	680	11.89%	118	2.06%	1169	20.44%	5719
13/9/2002	468	7.52%	77	1.24%	877	14.09%	6225
14/9/2002	281	5.31%	60	1.13%	544	10.27%	5295
15/9/2002	180	3.98%	38	0.84%	373	8.24%	4526
	3377	8.98%	590	1.57%	5986	15.91%	37619

2002 Oct		kerbid - secondane		site 09043			
14/10/2002	582	8.75%	81	1.22%	994	14.94%	6654
15/10/2002	774	12.96%	133	2.23%	1255	21.01%	5974
16/10/2002	823	13.80%	130	2.18%	1321	22.15%	5965
17/10/2002	814	12.82%	128	2.02%	1355	21.34%	6349
18/10/2002	630	8.42%	112	1.50%	1177	15.73%	7481
19/10/2002	306	5.39%	63	1.11%	592	10.42%	5681
20/10/2002	226	4.19%	55	1.02%	452	8.38%	5395
	4155	9.55%	702	1.61%	7146	16.43%	43499

2002 Nov		kerbid - secondane		site 09043			
18/11/2002	630	9.89%	98	1.54%	1067	16.76%	6368
19/11/2002	718	11.95%	131	2.18%	1211	20.16%	6006
20/11/2002	743	12.20%	131	2.15%	1266	20.79%	6089
21/11/2002	778	11.78%	137	2.07%	1320	19.98%	6607
22/11/2002	601	7.69%	104	1.33%	1124	14.39%	7813
23/11/2002	285	4.76%	53	0.89%	566	9.45%	5988
24/11/2002	254	4.43%	47	0.82%	486	8.47%	5740
	4009	8.99%	701	1.57%	7040	15.78%	44611



Note: care should be taken when comparing the vehicle volumes between the weeks from different months. Variations between weekly traffic volumes could be partly due to normal seasonal variation and not a result of traffic growth.

Table B2: Projected Vehicle Volumes (Including Heavy Vehicles) for Reiseøpning Year

Pacific Highway Upgrade - Moorland to Herons Creek

All data is in the form of Vehicles except as noted

Hour Commencing	Moorlando Herons Creek										Year																								
	1998 (3)					Oct 2002 (4) (post Yeilgun to Chinderah)					Feb 2004 (7) Including Additional HV from RTA					2011					2021					2031					2041				
	Proportion of Daily Traffic Flow	% Heavy Vehicles	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV	Proportion of Daily Traffic Flow	% Heavy Vehicles	% B-Doubles in HV			
0	1.0%	65%	1.2%	64%	13%	1.4%	67%	31%	64	98	140	43	210	183	56	274	73	238	183	238	73	357	95	311	95	466									
1	1.0%	66%	1.1%	69%	16%	1.1%	71%	28%	63	95	124	35	173	161	45	226	59	211	161	211	59	295	77	311	77	397									
2	0.8%	66%	0.9%	69%	13%	1.2%	74%	27%	50	76	133	36	178	173	48	233	62	226	173	226	62	304	295	81	397										
3	0.8%	58%	0.8%	63%	17%	0.9%	69%	28%	42	72	97	27	141	126	35	184	46	165	126	165	46	240	215	60	313										
4	0.8%	50%	0.8%	51%	12%	1.0%	57%	33%	36	73	85	28	148	111	36	194	48	145	111	145	48	253	189	62	330										
5	1.2%	35%	1.6%	30%	11%	1.6%	34%	18%	38	109	82	15	240	107	19	313	25	140	107	140	25	409	183	33	534										
6	2.6%	19%	3.1%	20%	6%	2.9%	21%	13%	48	245	95	13	446	124	17	582	22	162	124	162	22	760	211	28	992										
7	4.0%	14%	4.9%	13%	7%	4.4%	16%	11%	50	370	111	12	674	144	15	880	20	188	144	188	20	1148	246	26	1499										
8	6.1%	11%	7.0%	9%	7%	6.1%	12%	16%	61	569	110	18	936	144	24	1222	31	188	144	188	31	1595	245	40	2082										
9	6.6%	10%	7.5%	9%	6%	6.8%	11%	12%	60	620	112	13	1038	146	18	1355	23	191	146	191	23	1769	249	30	2308										
10	8.1%	9%	8.1%	8%	8%	7.2%	11%	10%	71	758	116	12	1105	152	16	1443	21	198	152	198	21	1883	258	27	2458										
11	8.1%	9%	7.9%	8%	7%	7.3%	10%	9%	66	754	107	10	1120	140	13	1463	17	182	140	182	17	1909	238	22	2492										
12	7.3%	10%	7.0%	9%	6%	6.8%	10%	9%	67	683	108	10	1038	140	13	1355	17	1769	140	1769	17	1769	239	22	2309										
13	7.5%	11%	7.3%	9%	7%	6.8%	11%	10%	78	700	115	12	1034	150	16	1350	20	196	150	196	20	1763	256	26	2301										
14	8.0%	10%	7.2%	9%	6%	7.1%	11%	11%	74	747	115	13	1082	150	17	1413	195	22	150	195	22	1844	255	29	2407										
15	8.4%	10%	7.6%	10%	6%	7.7%	11%	12%	79	780	133	16	1169	174	21	1526	27	227	174	227	28	1992	296	36	2600										
16	7.7%	11%	7.0%	11%	8%	7.3%	13%	12%	79	714	140	17	1106	182	22	1444	29	238	182	238	29	1885	311	38	2460										
17	6.6%	13%	5.9%	12%	9%	6.2%	13%	16%	82	618	121	19	941	158	25	1228	33	207	158	207	33	1603	270	43	2092										
18	3.9%	19%	4.0%	17%	9%	4.7%	19%	22%	70	366	138	30	714	180	39	932	51	307	180	307	51	1217	307	67	1589										
19	2.7%	21%	2.6%	24%	12%	3.2%	28%	24%	53	248	135	32	487	176	42	636	55	230	176	230	55	830	301	72	1083										
20	2.3%	31%	2.1%	33%	10%	2.6%	33%	19%	65	210	131	25	391	171	33	511	42	223	171	223	42	667	291	55	870										
21	1.8%	33%	1.7%	35%	12%	2.2%	39%	28%	55	167	130	36	330	169	47	431	61	221	169	221	61	562	288	80	734										
22	1.5%	36%	1.6%	42%	13%	1.8%	44%	25%	51	144	125	31	282	163	40	368	52	212	163	212	52	481	277	68	627										
23	1.2%	52%	1.2%	56%	13%	1.7%	54%	27%	60	116	143	38	266	187	50	347	65	244	187	244	65	454	318	85	592										
AADT (axle pairs)	100%	16%	100%	14%	10%	16%	10%	16%	931	2384	428	15253	3112	297	19910	4082	388	25988	5502	516	33922	516	33922	516	42063										
High Cap (vehicles/hour) (1) (5)										11570			18914			24688					32225			32225		42063									
Intersection Cap (vehicles/hour) (2)										67			1095			1429			88		1758			150		2996									
																											2435								

(1) Used for highway capacity analysis, design hour axle pair estimated at 7.6% of AADT, ie design hour vehicles = 8.8% of AADT

(2) Used for intersection analysis, design hour axle pair estimated at 6.2% of AADT, ie design hour vehicles = 7.2% of AADT

(3) 1998 classified traffic data from Station 09122 during a week in August. This is used to calculate the hourly vehicle volumes for 1998

(4) 2002 classified traffic data from Station 09043 during a week in October. This has been used to assess the variations post Yeilgun to Chinderah Freeway opening

(5) the Design hours are generally during the main holiday periods (Christmas or Easter) when the proportion of HV's is generally much lower at around 5%

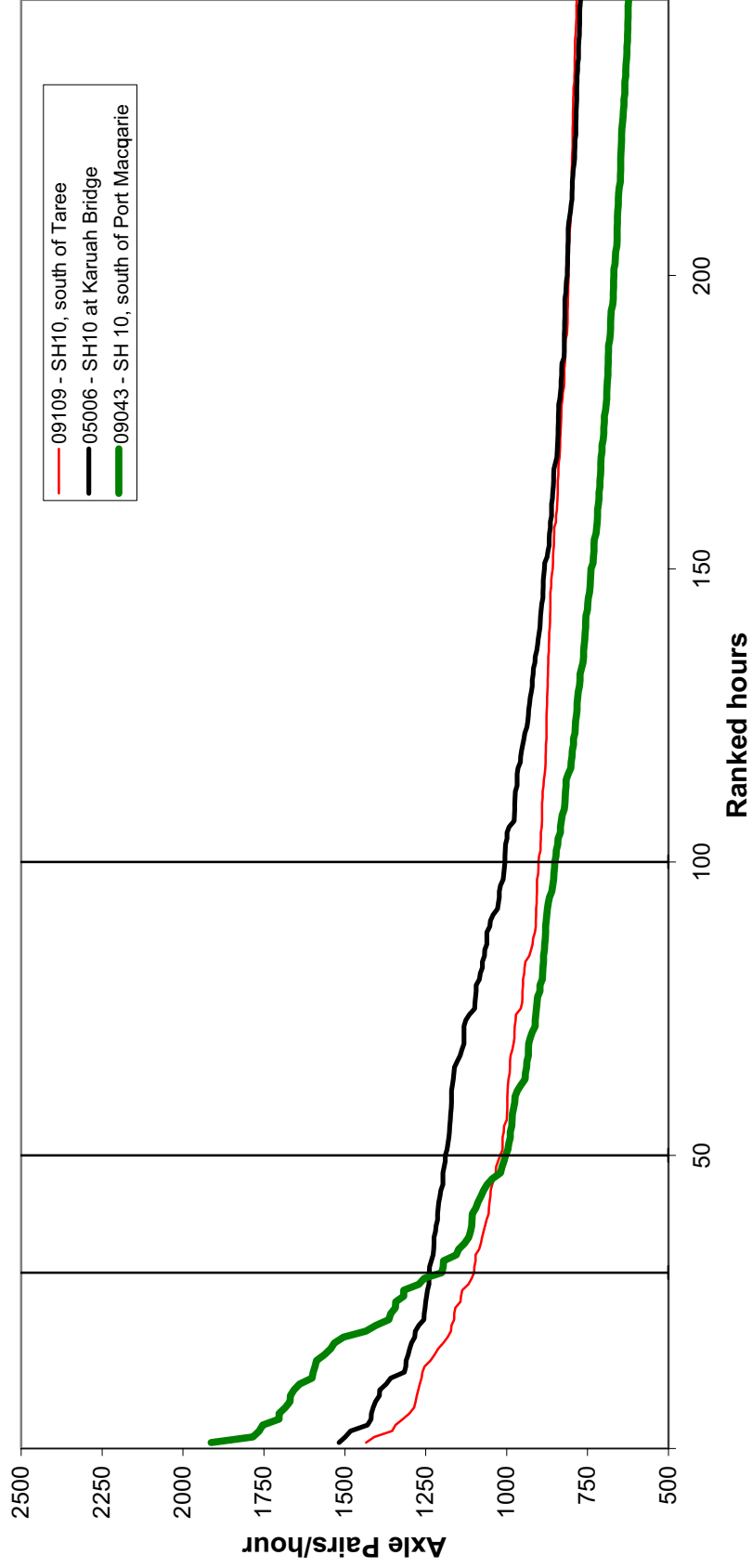
(6) Future year traffic forecast based on updated strategic assessment for 1999, 2006, 2021

(7) 2004 classified traffic data from Station 09122 during a week in February. This is used to calculate the hourly traffic volumes from opening year and beyond

APPENDIX C

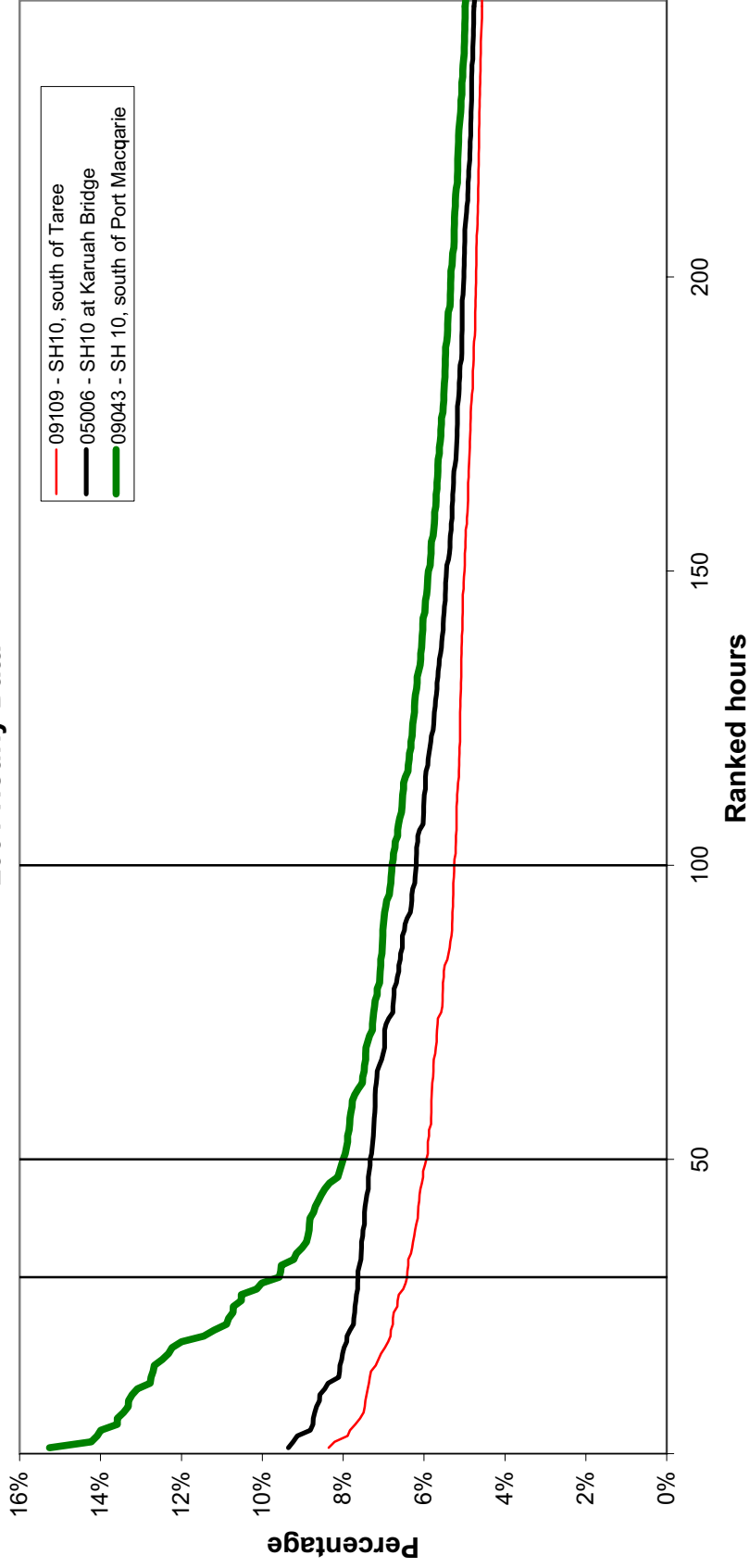
**Ranked Hourly
Volumes Graphs**

Figure C1: Ranked Northbound Hourly Traffic (Axle Pairs)
2001 Hourly Data*



*note: missing data in 2001 is supplemented by data from 2002 and 2000. Care taken to match data by holiday period and day of week where possible.

**Figure C2: Ranked Northbound Hourly Traffic
(Axle Pairs as Percentage of AADT)
2001 Hourly Data***



*note: missing data in 2001 is supplemented by data from 2002 and 2000. Care taken to match data by holiday period and day of week where possible.

APPENDIX D

**Level of Service
Calculations**

Appendix D Level of Service Calculations

Pacific Highway Upgrade - Moorland to Herons Creek Preliminary Assessment of Future Level of Service Provision Existing Two Lane Road

Based on Austroads. Guide to Traffic Engineering Practice, Part 2 - Roadway Capacity, Section 3
Assumes 2 Lane Road with 100kph speed limit

AAVD (2001)	11,898				See Note 1
One way peak hour volume	AADT	1000	From Hourly data (See DHV Analysis)		See Note 3
	935	Peak Hour AADV, 2001			See Note 4

2. Adjustment factors

Based on Austroads. Guide to Traffic Engineering Practice, Part 2 - Roadway Capacity, Section 3

Factor	Value	Notes
Speed	100 km/h	
	1400	2800 two way ideal Capacity pc/h
fd	0.94	Adjustment Factor for directional distribution (60/40)
fw	0.96	Adjustment factor for narrow lanes and shoulders
fHV	0.87	Heavy vehicles
		Pt (peak hour): 0.05 See Note 5
		Et (rolling terrain): 4

3. Service Flow Rate (SFI) for each LoS

LoS	v/c	SFI (vehicles/1 lane/hour)
B	0.26	286
C	0.42	461
D	0.62	681
E	0.97	1066

4. LoS each year, 1998 - 2041

Year	One way peak hour volume	LoS	Sensitivity Tests				Traffic Projection - See Note 2		AADT (vpd x 1.24)	PA Growth rates
			+10% Vol	LoS	-10% Vol	LoS	vpd	Kew		
1998									11,570	PA Growth rates
1999									12,068	1998 to 2007 1.043
2000									12,586	2007 to 2022 1.027
2001	935	E	1028	E	841	E	10,587		13,128	
2002	975	E	1072	F	877	E	11,042		13,692	
2003	1,039	E	1143	F	935	E	11,767		14,281	
2004	1,084	F	1192	F	975	E	12,273		14,895	
2005	1,130	F	1243	F	1017	E	12,801		15,535	
2006	1,179	F	1297	F	1061	E	13,351		16,203	
2007	1,211	F	1332	F	1090	F	13,711		16,641	
2008	1,243	F	1368	F	1119	F	14,082		17,090	
2009	1,277	F	1405	F	1149	F	14,462		17,552	
2010	1,311	F	1443	F	1180	F	14,852		18,026	
2011	1,347	F	1482	F	1212	F	15,253		18,512	
2012	1,383	F	1522	F	1245	F	15,665		19,012	
2013	1,421	F	1563	F	1279	F	16,088		19,525	
2014	1,459	F	1605	F	1313	F	16,523		20,053	
2015	1,498	F	1648	F	1348	F	16,969		20,594	
2016	1,539	F	1693	F	1385	F	17,427		21,150	
2017	1,580	F	1738	F	1422	F	17,897		21,721	
2018	1,623	F	1785	F	1461	F	18,381		22,308	
2019	1,667	F	1833	F	1500	F	18,877		22,910	
2020	1,712	F	1883	F	1541	F	19,386		23,528	
2021	1,758	F	1934	F	1582	F	19,910		24,164	
2022	1,805	F	1986	F	1625	F	20,447		24,816	
2023	1,854	F	2040	F	1669	F	21,000		25,486	
2024	1,904	F	2095	F	1714	F	21,567		26,174	
2025	1,956	F	2151	F	1760	F	22,149		26,881	
2026	2,009	F	2209	F	1808	F	22,747		27,607	
2027	2,063	F	2269	F	1856	F	23,361		28,352	
2028	2,118	F	2330	F	1907	F	23,992		29,118	
2029	2,176	F	2393	F	1958	F	24,640		29,904	
2030	2,234	F	2458	F	2011	F	25,305		30,711	
2031	2,295	F	2524	F	2065	F	25,988		31,541	
2032	2,357	F	2592	F	2121	F	26,690		32,392	
2033	2,420	F	2662	F	2178	F	27,410		33,267	
2034	2,486	F	2734	F	2237	F	28,150		34,165	
2035	2,553	F	2808	F	2297	F	28,910		35,087	
2036	2,622	F	2884	F	2360	F	29,691		36,035	
2037	2,692	F	2962	F	2423	F	30,493		37,008	
2038	2,765	F	3042	F	2489	F	31,316		38,007	
2039	2,840	F	3124	F	2556	F	32,162		39,033	
2040	2,917	F	3208	F	2625	F	33,030		40,087	
2041	2,995	F	3295	F	2696	F	33,922		41,169	

- Note 1** Projected Traffic Volumes
It has been assumed that the RTA count site 09122 provides a good indication of the level of traffic that will use the Pacific Highway between Moorland to Herons Creek. Source: Sinclair Knight Merz. "Pacific Highway Upgrade Strategic Assessment". Technical Working Paper 14: Transport Analysis". Prepared for the RTA (2000).
- Note 2** The forecast rather than the actual AADT is presented in this calculation for 2001, see discussion in Report text
- Note 3** Design hour volume based on peak hour traffic pattern in sites 05006 and 09109, further discussion in Report text
- Note 4** See discussion in Report text
- Note 5** Proportion of HV, 5% heavy vehicles has been assumed for capacity calculations. See Report text

Appendix D Level of Service Calculations

Pacific Highway Upgrade - Moorland to Herons Creek Preliminary Assessment of Future Level of Service Provision

Based on Austroads. Guide to Traffic Engineering Practice, Part 2 - Roadway Capacity, Section 4
Assumes 4 Lane Dual Carriageway with 110kph speed limit

1. Conversion of AADT to one-way peak hour axle pair to one-way peak hour volume

1998 AADT	12067.51			See Note 1
2001 forecast AADT	13,128			See Note 2
Design Hr (axle pair)	1,000			See Note 3
Design Hour %	7.6%	of AADT		
Design Hr (vehicle)	935		1.07	See Note 4
	8.8%	of AADV		

2. Adjustment factors

Based on Austroads. Guide to Traffic Engineering Practice, Part 2 - Roadway Capacity, Section 4

Factor	Value	Notes		
Speed	110 km/h			
cj	2000	Capacity per lane (pc/h/lane); LoS E		
N	2	Number of lanes in one direction		
fw	1	Lane width/lateral clearance		
f _{hv}	0.87	Heavy vehicles	Pt (peak hour): 0.05	See Note 5
f _e	1	Development environment (Rural divided)	Et (rolling terrain): 4	
f _p	0.85	Driver population (Regular/Recreation)		

3. Service Flow Rate (SFI) for each LoS

LoS	v/c	SFI (vehicles/2 lanes/hour)
B	0.54	1597
C	0.71	2099
D	0.87	2572
E	1.00	2957

4. LoS each year, 2001 - 2040

Year	One way peak hour volume	LoS	Sensitivity Tests				Traffic Projection - See Note 3		growth rates
			+10 % Vol	LoS	-10% Vol	LoS	vpd	AADT (vpd x 1.24)	
1998							9,331	11570	
1999							9,732	12,068	1.043
2000							10,150	12,586	1.043
2001	935	B	1028	B	841	B	10,587	13,128	1.043
2002	975	B	1073	B	878	B	11,042	13,692	1.043
2003	1,039	B	1143	B	935	B	11,767	15,201	1.043
2004	1,084	B	1192	B	975	B	12,273	15,855	1.043
2005	1,130	B	1243	B	1017	B	12,801	16,536	1.043
2006	1,179	B	1297	B	1061	B	13,351	17,247	1.043
2007	1,211	B	1332	B	1090	B	13,711	17,713	1.027
2008	1,243	B	1368	B	1119	B	14,082	18,191	1.027
2009	1,277	B	1405	B	1149	B	14,462	18,682	1.027
2010	1,311	B	1443	B	1180	B	14,852	19,187	1.027
2011	1,347	B	1482	B	1212	B	15,253	19,705	1.027
2012	1,383	B	1522	B	1245	B	15,665	20,237	1.027
2013	1,421	B	1563	B	1279	B	16,088	20,783	1.027
2014	1,459	B	1605	C	1313	B	16,523	21,344	1.027
2015	1,498	B	1648	C	1348	B	16,969	21,921	1.027
2016	1,539	B	1693	C	1385	B	17,427	22,513	1.027
2017	1,580	B	1738	C	1422	B	17,897	23,120	1.027
2018	1,623	C	1785	C	1461	B	18,381	23,745	1.027
2019	1,667	C	1833	C	1500	B	18,877	24,386	1.027
2020	1,712	C	1883	C	1541	B	19,386	25,044	1.027
2021	1,758	C	1934	C	1582	B	19,910	25,720	1.027
2022	1,805	C	1986	C	1625	C	20,447	26,415	1.027
2023	1,854	C	2040	C	1669	C	21,000	27,128	1.027
2024	1,904	C	2095	C	1714	C	21,567	27,861	1.027
2025	1,956	C	2151	D	1760	C	22,149	28,613	1.027
2026	2,009	C	2209	D	1808	C	22,747	29,385	1.027
2027	2,063	C	2269	D	1856	C	23,361	30,179	1.027
2028	2,118	D	2330	D	1907	C	23,992	30,994	1.027
2029	2,176	D	2393	D	1958	C	24,640	31,830	1.027
2030	2,234	D	2458	D	2011	C	25,305	32,690	1.027
2031	2,295	D	2524	D	2065	C	25,988	33,572	1.027
2032	2,357	D	2592	E	2121	D	26,690	34,479	1.027
2033	2,420	D	2662	E	2178	D	27,410	35,410	1.027
2034	2,486	D	2734	E	2237	D	28,150	36,366	1.027
2035	2,553	D	2808	E	2297	D	28,910	37,348	1.027
2036	2,622	E	2884	E	2360	D	29,691	38,356	1.027
2037	2,692	E	2962	F	2423	D	30,493	39,392	1.027
2038	2,765	E	3042	F	2489	D	31,316	40,455	1.027
2039	2,840	E	3124	F	2556	D	32,162	41,548	1.027
2040	2,917	E	3208	F	2625	E	33,030	42,669	1.027
2041	2,995	F	3295	F	2696	E	33,922	43,821	1.027

Note 1 Projected Traffic Volumes

It has been assumed that the RTA count site 09122 provides a good indication of the level of traffic that will use the Pacific Highway between Moorland to Herons Creek
Source: Sinclair Knight Merz. "Pacific Highway Upgrade Strategic Assessment". Technical Working Paper 14: Transport Analysis". Prepared for the RTA (2000).

- Note 2** The forecast rather than the actual AADT is presented in this calculation for 2001, see discussion in Report text
- Note 3** Design hour volume based on peak hour traffic pattern in sites 05006 and 09109, further discussion in Report text
- Note 4** See discussion in Report text
- Note 5** Proportion of HV, 5% heavy vehicles has been assumed for capacity calculations. See Report text

APPENDIX E

**Side Roads and
Intersections**

**Description of side road access to the Pacific Highway between Moorland and Herons Creek
Moving from south to north - To be used with Figure 7**

Intersection	ROADLOC Chainage (Section 8)	Name	Description	Purpose	Road Reservation?	Estimated Traffic Volume	Intersection Treatment
1	35.87		In adjacent section				
1a	36.61		Unsealed single track off west side of Highway Unsealed single track off west side of Highway (190m north of 1)	Local residential/farm access Local residential/farm access	ROW No	Minimal (20 vehicles per day) Minimal (20 vehicles per day)	Left in, Left out Left in, Left out
1b			Unsealed single track off west side of Highway (390m north of 1)	Local residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
2			Unsealed single track off west side of Highway (sth of large dam)	Local residential/farm access	No	Minimal (20 vehicles per day)	
3			Unsealed single track off west side of Highway	Local residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
4	36.71	Camp Obadiah	Sealed two lane road off east side of Highway	Access to lake and 12-15 homes	No	50 vehicles per day	Left in, Left out
5			Unsealed single track off west side of Highway	Local residential/farm access	ROW	Minimal (20 vehicles per day)	Left in, Left out
6	37.42		Unsealed single track off west side of Highway	Local residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
6a	37.87	Old garbage tip	Unsealed single track off east side of Highway (480m north of 6)	Local residential/farm access	Yes		Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
7		Old caravan park	Multiple sealed access off east side of Highway	Not currently open for business	No	Potentially 50 vehicles a day (possibly some HGVs)	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
8	38.74	John St	Sealed two lane residential road off east side of Highway	Local residential access	Yes	Minimal (less than 50 vehicles per day)	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
8a			2 driveways off east side of Highway to north of John St		No		Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
9	38.87	Station St	Sealed two lane residential road off east side of Highway	Residential access	Yes	Station Road surveyed: 120 vehicles per day	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
10	38.99	Stewarts River Road	Two lane sealed off west side of highway	Access to townships of Stewarts River and Lorne	Yes	Surveyed: 309 Vehicles per day	Grade Separation. Access via northbound on/off ramps or via Old Pacific Hwy (southbound on/off ramps)
10a			6 driveways off east side of highway on south side of Thomas St	Residential access	No		Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
10b			6 driveways off west side of highway on north side of Stewarts River Road	Residential access	No		Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
11	39.12	Thomas St	Sealed two lane residential road off east side of Highway	Residential access	Yes	Thomas Road surveyed: 122 vehicles per day	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
11a			Community centre		No		Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
12	39.27	Royans St	Unsealed single track off east side of Highway	Local residential/farm access	Yes	Minimal (30 vehicles per day)	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
12a			driveways to 2 properties north of Royans St	Local residential access			Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
13			Unsealed single track off east side of Highway	Local residential/farm access	No	Minimal (30 vehicles per day)	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
14	39.77	Wharf Road	Unsealed single track off east side of Highway	Local residential/farm access	Yes	Minimal (50 vehicles per day)	Access via Old Pacific Hwy (southbound on/off ramps or Johns River interchange)
15	39.77	Bulleys Rd (south)	Sealed two lane road off west side of Highway	Residential/farm access plus access to quarry	Yes	Maximum of 100 vehicles per day	Diverted via access road to Johns River Interchange. Southbound access via Stewarts River Rd and Old Pacific Hwy
16	41.28	Bulleys Rd (north)	Unsealed entry onto northbound highway (left out only)	Local/Quarry access	Yes	Minimal (30 vehicles per day)	Left in, Left out
17			Unsealed single lane track off east side of highway	Residential access only	Yes	Minimal (30 vehicles per day)	Left in, Left out at 19
18	41.69	Middle Brother Rd	Two lane sealed road off west side of highway	Access to Middle Brother State Forest	Yes	Minimal (25 vehicles per day)	Left in, Left out
19	41.79		Unsealed single lane track off east side of highway (connects to bridge over railway line)	Local residential/farm access	Yes	Minimal (20 vehicles per day)	Left in, Left out
20			Unsealed single lane track off west side of highway	Residential access only	No	Minimal (20 vehicles per day)	Diverted via access road to Left in, Left out at 22
21		Peitken	Unsealed single lane track off east side of highway	Residential access only	Yes	Minimal (30 vehicles per day)	Left in, Left out
22	42.20		Unsealed single lane track off west side of highway	Residential access only	No	Minimal (30 vehicles per day)	Left in, Left out
23	42.64	Algona Rd	Two lane sealed off west side of highway	Access to Middle Brother State Forest	Yes	Surveyed: 67 vehicles per day	2-Stage Priority Intersection
23a	43.82	Haydons Rd	S/B rest area - 300m south of Haydons Road				Facility Closed
24	44.13	Haydons Rd	Two lane sealed off west side of highway	Access to Middle Brother State Forest	Yes	Minimal (30 vehicles per day)	Left in, Left out
23a	44.55		S/B rest area, just south of Watson Taylor Road				Facility Closed

25	44.63	Watson Taylor Rd	Unsealed single lane track off east side of highway	Farm and lake access	Yes	Minimal (20 vehicles per day)	2-Stage Priority Intersection
26			Unsealed single lane track off west side of highway	Residential access only	No	Minimal (20 vehicles per day)	
26a	45.10		Unsealed track in ROW off west side of highway, 60m north of bridge over Stoney Creek		Yes		No Access to Highway
27	45.48		Sealed access to stockpile area/quarry/pit/rest area off east side of highway	Quarry/pit access only	Reservation to east	50 vehicles per day	Left in, Left out
28	45.88		Unsealed road off west side of highway, 60m south of Ivers Mill road	Forestry track	No	Minimal (20 vehicles per day)	No Access to Highway
29		Ivers Mill	Unsealed road off east side of highway	Access to Ivers Mill and residential properties	No	Minimal (60 vehicles per day)	Left in, Left out
30	47.29	Charles Yard Road	Unsealed single lane track off west side of highway	Access to National Park	No	Minimal (30 vehicles per day)	Left in, Left out
31a	47.55		Unsealed single lane track off east side of highway	Residential access only	No	Minimal (20 vehicles per day)	Left in, Left out
32		Airport	S/B rest area, entry and exit 150m apart	Access to airstrip	No	Minimal (60 vehicles per day)	Left in, Left out - Facility maintained
33	48.24	Ross Glen Rd	Two lane sealed off west side of highway	Access to Ross Glen township	Yes	Surveyed: 99 vehicles per day	2-Stage Priority Intersection
33a	48.34		N/B rest area				Relocated near Charles Yard Rd - Left in, Left out
34			Unsealed single lane track off west side of highway	Residential/farm/river access	No	Minimal (30 vehicles per day)	Left in, Left out
34a			Unsealed track under southern abutment of Camden Haven River		No		
35	49.20	Sunnyvale Road (south)	Two lane road off east side of highway	Residential/farm/river access	Yes	Surveyed: 38 vehicles per day	Left in, Left out
35a	49.90		S/B Rest area				Facility Closed
36	50.55	Glen Haven	Unsealed single lane track off east side of highway	Residential/farm/ access	No	Minimal (60 vehicles per day)	2-Stage Priority Intersection, 600m south via access road
37	50.69	Sunnyvale Road (north)	Unsealed track off west side of highway	Residential/farm/river access	Yes	Sunnyvale Road - Surveyed: 24 vehicles per day	Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
38	50.85	Bethesda Nursery	Unsealed track off east side of highway	Residential/farm access	Yes	Minimal (60 vehicles per day)	Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
39			Sealed single lane track off west side of highway 166m nth of 38	Residential/farm/river access	ROW	Minimal (60 vehicles per day)	Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
39a			Unsealed track off west side of highway 110m nth of 39 (opposite nursery)	Residential/farm access	No		Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
40			Unsealed single lane track off east side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
40a			Unsealed single lane track off west side of highway, opposite 40	Residential/farm access	No		Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
41	52.03	Tathra Rd	Sealed road off east side of highway	Residential/farm access	Yes	Minimal (60 vehicles per day)	Access via Old Pacific Highway, northbound on/off ramps and Kew Interchange
42	52.27	Ocean Dv/Kendall Rd	Cross intersection at Ocean Drive/Kew Road, Kew	Access to Kew, Kendall and Camden Haven	Yes	RoadNet traffic counts received	Grade Separation, Access via southbound on/off ramps or via Old Pacific Hwy (northbound on/off ramps)
43	53.0	Weeroona Place	Also various driveways fronting onto highway nth & sth of intersection Unsealed single lane track off west side of highway	Residential/farm access	Yes	Minimal (60 vehicles per day)	Existing access to Old Pacific Hwy maintained
44	53.35	Heron's Creek Rd (south)	Sealed road off west side of highway	Residential/farm access	Yes	Surveyed: 28 vehicles per day	Diverted via access road to Old Pacific Highway, northbound on/off ramps and Kew Interchange
45		STP	Unsealed single lane track off east side of highway	Access to sewerage treatment plant	Yes	Minimal (60 vehicles per day)	Left in, Left out
46		Eggbert	Unsealed single lane track off east side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
47	55.42		Unsealed single lane track off west side of highway	Residential/farm access	No	Minimal (60 vehicles per day)	2-Stage Priority Intersection
48	55.74		Unsealed single lane track off east side of highway	Residential/farm/river access	Yes	Minimal (60 vehicles per day)	Left in, Left out
49			Unsealed single lane track off west side of highway	Residential/farm access (also connects to Eggbert)	No	Minimal (20 vehicles per day)	Left in, Left out
50			Unsealed single lane track off west side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
51			Unsealed single lane track off west side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
52			Unsealed single lane track off west side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
53a		opposite 53	Unsealed single lane track off west side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
53		Mill	Unsealed single lane track off east side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
53b	57.10		Unsealed single lane track off west side of highway	Mill access - not used generally	No		Left in, Left out
53c		10m nth of mill	Unsealed single lane track off west side of highway	Property access	No		Left in, Left out
54	57.31	Cluleys rd	Unsealed single lane track off east side of highway	Residential/farm access	Yes	Minimal (60 vehicles per day)	2-Stage Priority Intersection
54a		opposite 54	Unsealed single lane track off west side of highway	Residential/farm access	Yes		

55	57.52	Heron's Creek Road	Sealed two lane road off west side of Bypass	Access to Herons Creek township	Yes	Surveyed: 248 vehicles per day	2-Stage Priority Intersection
56		Paramount	Unsealed single lane track off east side of highway	Residential/farm access	No	Minimal (20 vehicles per day)	Left in, Left out
57			Unsealed single lane track passes under bridge	Residential/farm access	Yes	Minimal (20 vehicles per day)	Left in, Left out
58		School	Unsealed single lane track off west side of highway	School and railway access	No	Minimal (30 vehicles per day)	2-Stage Priority Intersection at Bobs Ck Rd via access road, 300m north of school
59	58.55	Bobs Ck Rd	Sealed two lane road off east side of Bypass		Yes	At grade intersection with right turn lanes and acc/decel lanes	

APPENDIX F

**RoadNet Survey
Results**

80213-0075.

TRAFFIC COUNTS
**Traffic Counts
and
Intersection Modelling**

FILE:		
ARUP	SYDNEY	
18 JUL 2000		
RECEIVED		
DIST ⁿ	Init/Date	ACTION

**Intersection of
Pacific Highway,
Kew Road and Ocean Drive,
Kew**

for

RTA Northern Region

April 2000

Prepared by

RoadNet Pty Limited
4/51 Jindalee Road,
PO Box 1926
Port Macquarie NSW 2444
Contact: Brian Kerwick 6585 4182

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Appendices

A	-	Traffic Counts
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1.0 INTRODUCTION

The intersection of Pacific Highway with Kew Road and Ocean Drive is a cross intersection with both side roads controlled by Stop signs. The Highway has one through lane in both directions, right turn storage bays and left turn lanes.

RoadNet has been engaged by the Northern Region of the Roads and Traffic Authority to conduct traffic counts and monitor delays during various traffic periods. The following work has been completed:

- Intersection traffic counts
 - Good Friday 11:00 – 13:00
 - Typical weekday outside of school holidays - Tuesday 11 April between the hours 8:30–9:30 am and 3:00-5:00 pm
 - A weekday during school holidays - Tuesday 18 April between the hours 8:30–9:30 am and 3:00-5:00 pm
- a delay survey for the side roads as per the above times. Every 5 minutes during the counting period the last vehicle joining the queue was timed until it cleared the intersection. The number of queued vehicles was also noted.
- a comparison of the existing sign control with traffic signal control using the INTANAL program to model the counted traffic volumes.

This report outlines the findings of the traffic surveys and draws conclusions from the intersection analysis.

Traffic counts and delays are contained in Appendix A.

2.0 INTERSECTION MODELLING

Intersection performance has been modelled using the INTANAL traffic model.

The efficiency and applicability of the existing Stop sign control has been modelled for current peak hour, holiday peak hour and Good Friday volumes.

The existing intersection geometry has been assumed for traffic signals.

The following tables contain a summary of modelling results.

Normal Traffic Conditions (Tuesday 11 / 4 / 00)

OPTION 140 sec cycle time	Period	Degree of saturation	Level of Service	Total Av. Delay Secs	Highest av. Delay Secs	Longest Queue length (m)	Vehicles queued
Stop Signs Intanal file: Kew-01.dat	am	0.13	B	4	13	6	1
	pm	0.67	C	10	41	9	2
Traffic Signals Intanal file: Kew-01	am	0.16	A	13	18	12	1
	pm	0.34	A	13	30	18	3

School Holidays Traffic Conditions (Tuesday 18 / 4 / 00)

OPTION 140 sec cycle time	Period	Degree of saturation	Level of Service	Total Av. Delay Secs	Highest av. Delay Secs	Longest Queue length (m)	Vehicles queued
Stop Signs Intanal file: Kew-02.dat	am	0.39	C	7	30	6	1
	pm	0.32	C	6	41	6	1
Traffic Signals Intanal file: Kew-02.dat	am	0.36	A	13	18	18	3
	pm	0.33	A	13	30	24	4

Good Friday Traffic Conditions (Friday 21 / 4 / 00)

OPTION 140 sec cycle time	Period	Degree of saturation	Level of Service	Total Av. Delay Secs	Highest av. Delay Secs	Longest Queue length (m)	Vehicles queued
Stop Signs Intanal file: Kew-03.dat	Midday	1.50	F	41	967	103	15
Traffic Signals Intanal file: Kew-03.dat	Midday	0.69	B	16	44	54	8

The actual delays observed during counts are higher than those shown in the modelling because the modelling is averaged over a one hour period. In order to better reflect on site conditions the gap acceptance for signs has been increased in the model from the default value of 2.0 to 2.5 seconds in scenarios Kew-01 and Kew-02.

Explanation of terminology

Option	The scenario modelled.
Period	am = the morning peak hour, pm – the evening peak hour
Degree of saturation	The percentage utilisation of the highest used approach at the site. 100% (1.00) means no spare capacity and above 100% indicates residual queuing. 90% is the practical upper limit.
Level of Service	Tied to the average delay. LOS 'A' is good, LOS 'B' is good with spare capacity LOS 'C' is generally acceptable but safety issues may arise, LOS 'D' is tolerable for peak periods LOS 'E' is at capacity and additional capacity is needed LOS 'F' means the site is over saturated with residual queuing.
Total Av Delay	Average delay across all movements at the intersection in seconds.
Highest Av Delay	Average delay for the highest movement at the intersection.
Longest queue	Longest queue on any approach. The queue length is also shown.
(N-W)	Indicates direction of travel – from the north to the west.
SB	Southbound movement.

3.0 ASSESSMENT OF INTERSECTION PERFORMANCE

3.1 Traffic Flow

The following observations were noted during the traffic surveys.

- Vehicles in the right hand lane in Ocean Drive restrict sight distance for left turn traffic from Ocean Drive.
- Traffic from both side roads used the accesses to adjoining businesses to do various traffic manoeuvres to avoid the intersection. For example many vehicles waiting in Ocean Drive to turn right or proceed across into Kew Road eventually gave up and were observed to turn left from Ocean Drive into the Highway before making a U Turn. Others turned right into the service station and then crossed the Highway into the shopping centre entrance to the north of the intersection.
- Travel speeds in the Highway (especially northbound) often exceeded 60 kph.
- There were few pedestrians but those who did cross had serious difficulties. One older couple attempted to cross the Highway on Good Friday on a number of occasions but eventually gave up and returned to the Hotel.
- Several vehicles were observed to enter the Highway from Ocean Drive only to find that they could not proceed due to traffic flow and closing gaps resulting in them propping half way and blocking the southbound Highway flow.
- No accidents occurred during the count but there were a number of close calls observed

3.2 Delays

Delays recorded during the site surveys are higher than modelled results because the modelling reports on average delays over a one hour period. The surveyed results show delays every five minutes.

Significant delays to the side roads occurred during all counting periods. The maximum delay observed was 15 minutes to Kew Road on Good Friday at 10:30am with a queue of 25 vehicles. During normal traffic conditions (outside of school holidays) delays of up to 3 minutes regularly occur in peak hours.

4.0 CONCLUSIONS

Delays in the side roads are significant, up to 15 minutes on Good Friday and several minutes at other times. These delays cause unusual traffic manoeuvres such as U-turns in the Highway and vehicles accepting smaller gaps in traffic flow than required for safety.

The extent of delays during normal traffic conditions, up to 3 minutes, are also beyond what is considered acceptable for a regional centre.

It is concluded on the basis of traffic counts, modelling, delays and site observations that traffic signals are needed at the site. It is acknowledged that signals would impede Highway traffic flow but modelling shows that they would not cause a "bottleneck" such as that which occurs at Kempsey and Macksville.

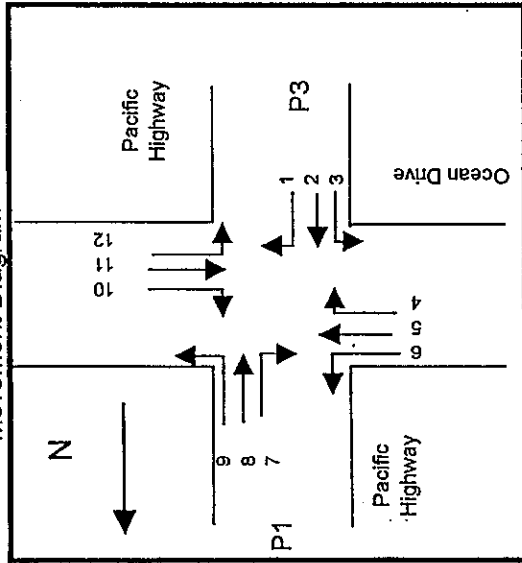
APPENDIX A

11 April 2000 Tuesday
(Normal traffic conditions)

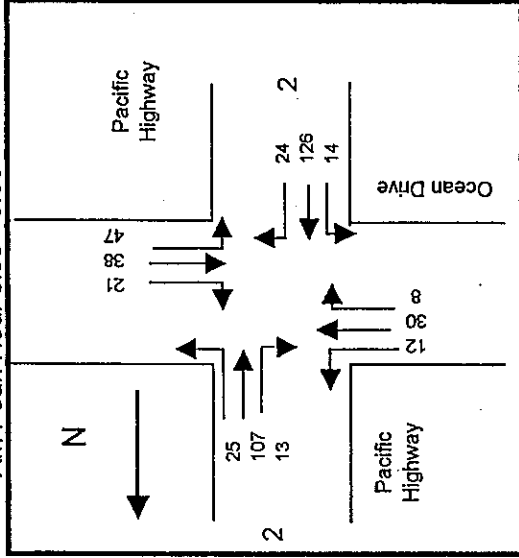
Traffic Counts
Kew Road / Pacific Hwy

RoadNet

Movement Diagram



AM Peak Hour 8:30-9:30



*Volume on A-90
for 1/2 hr*

7:00 PM

	1	2	3	4	5	6	7	8	9	10	11	12	15 min	Hour	P1	P2	P3	P4
8:30-8:45	11	70	6	7	30	18	17	56	11	14	39	21		300	2		0	
8:45-9:00	15	43	4	3	26	13	5	51	8	11	26	16		221	0		1	
9:00-9:15	12	66	7	6	14	3	7	51	11	8	19	27		231	0		1	
9:15-9:30	12	60	7	2	16	9	6	56	14	13	19	20		234	0		0	
TOTAL	50	239	24	18	86	43	35	214	44	46	103	84			2	0	2	0

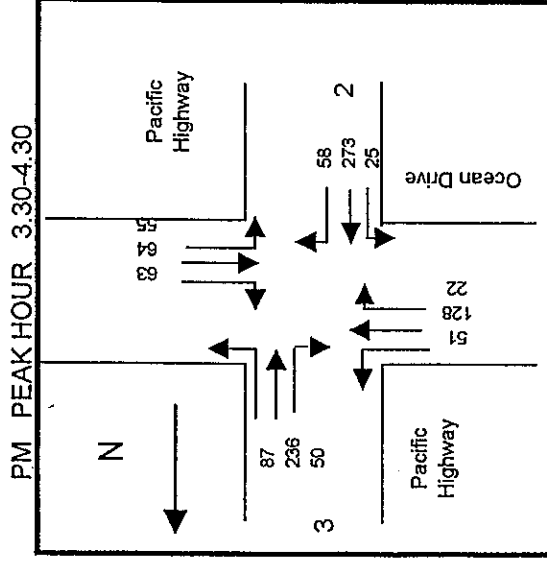
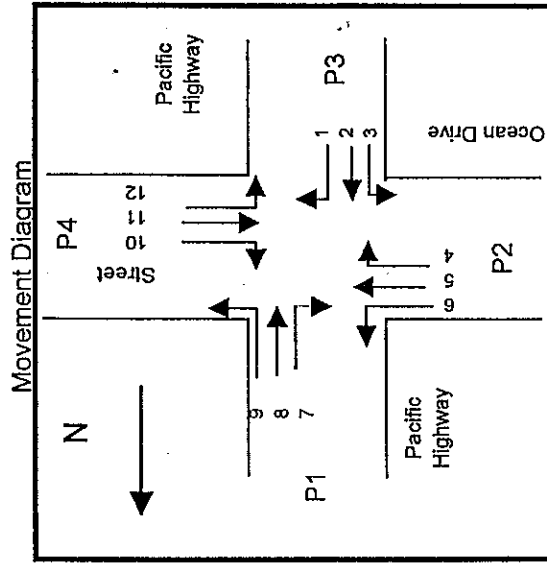
QUEUES

From Kendall	Time	No of vehicles	Delay (seconds)	8:30	8:35	8:40	8:45	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:25
	8:30	3	180	1	120	4	60	4	3	1	3	1	1	1	2
	8:35	4	180	120	180	180	180	0	30	15	180	15	15	60	120

From Laurieton	Time	No of vehicles	Delay (seconds)	8:30	8:35	8:40	8:45	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:25
	8:30	8	90	4	5	0	0	1	2	0	0	16	1	1	2
	8:35	90	180	180	180	135	135	0	60	0	0	150	5	5	45

Traffic Counts
 Kew Road / Pacific Hwy

	Pedestrians																			
	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
3.00-3.15	12	61	4	11	15	6	8	52	10	13	19	5			216		0		2	
3.15-3.30	15	53	7	10	33	13	9	73	13	12	25	15			278		0		0	
3.30-3.45	15	58	8	7	37	22	10	44	26	19	13	15			274		0		2	
3.45-4.00	18	91	6	6	39	13	11	61	16	14	17	8			300	1068	0		0	
4.00-4.15	11	55	4	2	26	11	8	60	18	12	21	18			246	1098	1		0	
4.15-4.30	14	69	7	7	26	5	21	71	27	18	13	14			292	1112	2		0	
4.30-4.45	2	60	9	3	23	5	19	60	10	13	26	13			243	1081	0		2	
4.45-5.00	13	63	8	7	20	3	14	46	24	14	12	14			238	1019	0		4	
TOTAL	100	510	53	53	219	78	100	467	144	115	146	102	0	0			3	0	10	0



Peak Hour

	Peak Hour																			
	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
3.30-3.45	15	58	8	7	37	22	10	44	26	19	13	15			274	274	0		2	
3.45-4.00	18	91	6	6	39	13	11	61	16	14	17	8			300	574	0		0	
4.00-4.15	11	55	4	2	26	11	8	60	18	12	21	18			246	820	1		0	
4.15-4.30	14	69	7	7	26	5	21	71	27	18	13	14			292	1112	2		0	
TOTAL	58	273	25	22	128	51	50	236	87	63	64	55	0	0			3	0	2	0

11 April 2000 (Tuesday)
 (Normal Traffic Conditions)

Traffic Counts
 Kew Road / Pacific Hwy

RoadNet

QUEUES

From Kendall

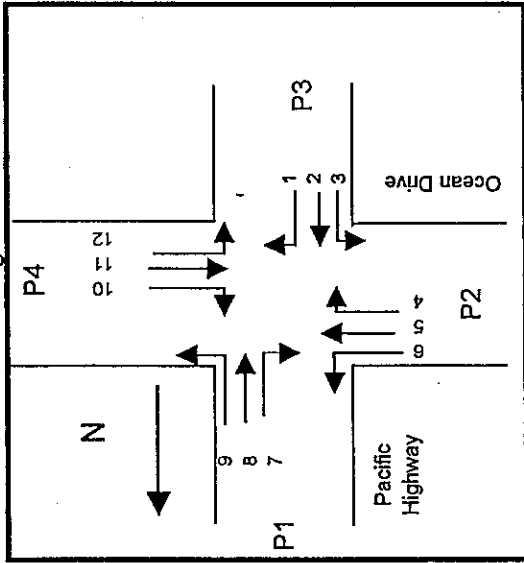
Time	3:00	3:05	3:10	3:15	3:20	3:25	3:30	3:35	3:40	3:45	3:50	3:55
No of vehicles	0	2	2	4	0	1	1	7	10	5	2	1
Delay (seconds)	0	60	90	90	0	15	30	60	180	120	30	25
Time	4:00	4:05	4:10	4:15	4:20	4:25	4:30	4:35	4:40	4:45	4:50	4:55
No of vehicles	1	0	0	0	1	4	1	0	0	1	0	4
Delay (seconds)	25	0	0	0	150	120	30	0	0	30	0	90

From Laurieton

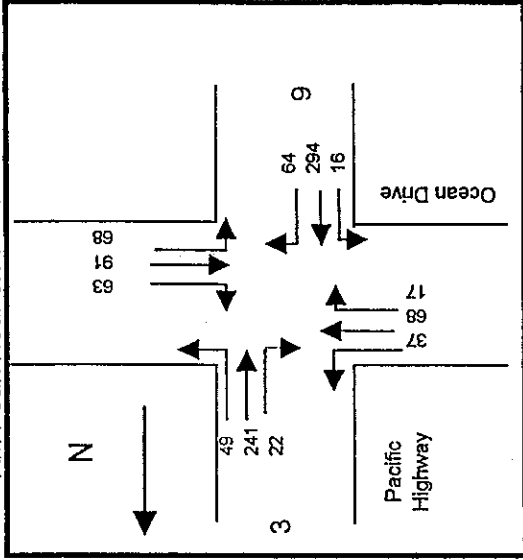
Time	3:00	3:05	3:10	3:15	3:20	3:25	3:30	3:35	3:40	3:45	3:50	3:55
No of vehicles	0	2	4	6	8	1	1	2	4	2	3	3
Delay (seconds)	0	60	30	120	120	15	30	30	180	15	120	30
Time	4:00	4:05	4:10	4:15	4:20	4:25	4:30	4:35	4:40	4:45	4:50	4:55
No of vehicles	4	3	0	0	2	1	1	1	2	3	4	0
Delay (seconds)	30	30	0	0	60	90	30	15	15	15	45	0

Traffic Counts
Kew Road / Pacific Hwy

Movement Diagram



AM Peak Hour 8:30 - 9:30



Peak Hour

	Peak Hour																		
	1	2	3	4	5	6	7	8	9	10	11	12	15 min	Hour	P1	P2	P3	P4	
8:30 - 8:45	16	72	2	4	13	7	4	51	10	19	22	15							
8:45 - 9:00	14	59	5	3	21	8	9	55	16	13	20	18							
9:00 - 9:15	13	74	2	7	19	14	5	67	14	15	28	17							
9:15 - 9:30	21	89	7	3	15	8	4	68	9	16	21	18	279	1030	3				
TOTAL	64	294	16	17	68	37	22	241	49	63	91	68	0	0	3	0	0	9	0

QUEUES

From Kendall

Time	8:30	8:35	8:40	8:45	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:25
No of vehicles	2	0	2	0	1	4	3	6	1	1	1	0
Delay (seconds)	15	0	30	0	15	120	45	150	30	15	180	0

From Laurieton

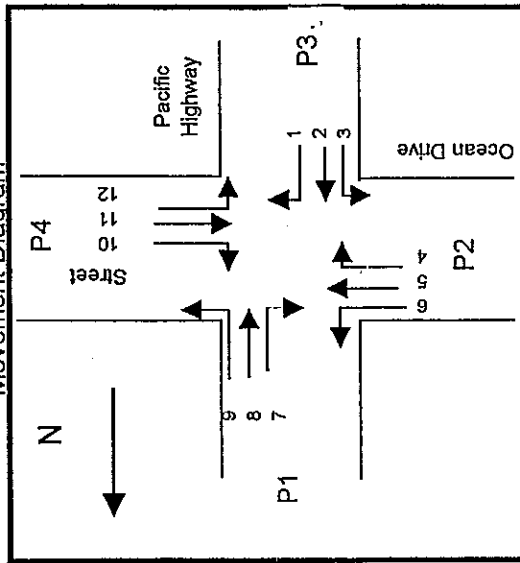
Time	8:30	8:35	8:40	8:45	8:50	8:55	9:00	9:05	9:10	9:15	9:20	9:25
No of vehicles	8	1	3	3	0	4	3	9	4	1	2	1
Delay (seconds)	90	15	30	75	0	210	60	150	30	15	15	30

Traffic Counts
Kew Road / Pacific Hwy

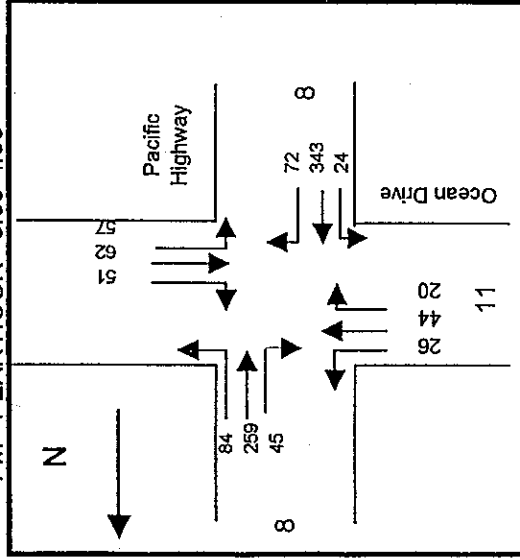
Pedestrians

	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
3.00-3.15	22	85	6	3	16	9	12	83	18	9	15	14			292		0		1	
3.15-3.30	16	90	8	4	13	8	10	64	27	9	21	13			283		6		5	
3.30-3.45	20	90	5	5	6	2	14	55	15	16	18	11			257		1		2	
3.45-4.00	14	78	5	8	9	7	9	57	24	17	8	19			255	1087	1		3	
4.00-4.15	18	76	4	4	15	3	8	87	18	5	24	13			275	1070	0		1	
4.15-4.30	14	76	5	7	23	8	13	57	22	13	20	14			272	1959	3		7	
4.30-4.45	15	61	5	5	13	9	14	53	14	11	14	18			232	1034	3		4	
4.45-5.00	10	82	4	5	13	4	12	72	13	11	10	12			248	1027	1		2	
TOTAL	129	638	42	41	108	50	92	528	151	91	130	114	0	0			15	0	25	0

Movement Diagram



PM PEAK HOUR 3.00-4.00



Peak Hour

	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
3.00-3.15	22	85	6	3	16	9	12	83	18	9	15	14			292		0		1	
3.15-3.30	16	90	8	4	13	8	10	64	27	9	21	13			283		6		5	
3.30-3.45	20	90	5	5	6	2	14	55	15	16	18	11			257		1		2	
3.45-4.00	14	78	5	8	9	7	9	57	24	17	8	19			255	1087	1		3	
TOTAL	72	343	24	20	44	26	45	259	84	51	62	57	0	0			8	0	8	0

18 April 2000 Tuesday
School Holidays

Traffic Counts
Kew Road / Pacific Hwy

RoadNet.

QUEUES

From Kendall

Time	3:00	3:05	3:10	3:15	3:20	3:25	3:30	3:35	3:40	3:45	3:50	3:55
No of vehicles	4	0	1	2	1	1	2	1	0	2	1	0
Delay (seconds)	45	0	15	30	30	60	210	15	0	30	45	0
Time	4:00	4:05	4:10	4:15	4:20	4:25	4:30	4:35	4:40	4:45	4:50	4:55
No of vehicles	3	1	5	1	1	4	2	1	3	1	0	1
Delay (seconds)	60	30	150	30	30	90	30	45	60	15	0	15

From Laurieton

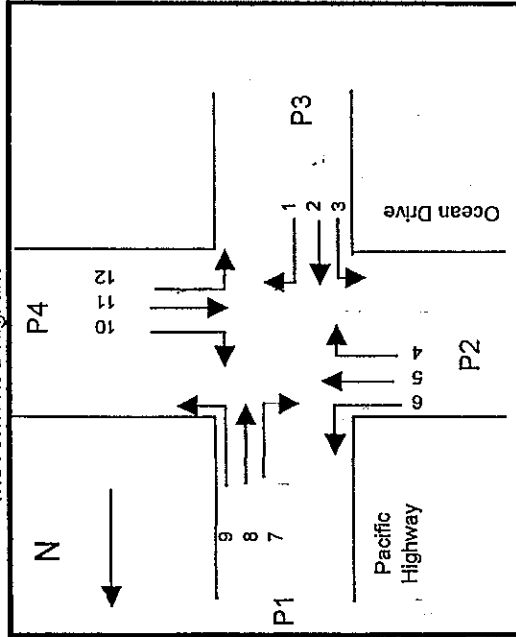
Time	3:00	3:05	3:10	3:15	3:20	3:25	3:30	3:35	3:40	3:45	3:50	3:55
No of vehicles	3	5	0	2	4	1	6	2	0	3	3	2
Delay (seconds)	45	90	0	15	60	30	90	15	0	45	45	30
Time	4:00	4:05	4:10	4:15	4:20	4:25	4:30	4:35	4:40	4:45	4:50	4:55
No of vehicles	3	0	3	2	3	1	2	4	1	4	0	2
Delay (seconds)	1	0	210	30	15	15	15	75	75	45	0	30

Traffic Counts
Kew Road / Pacific Hwy

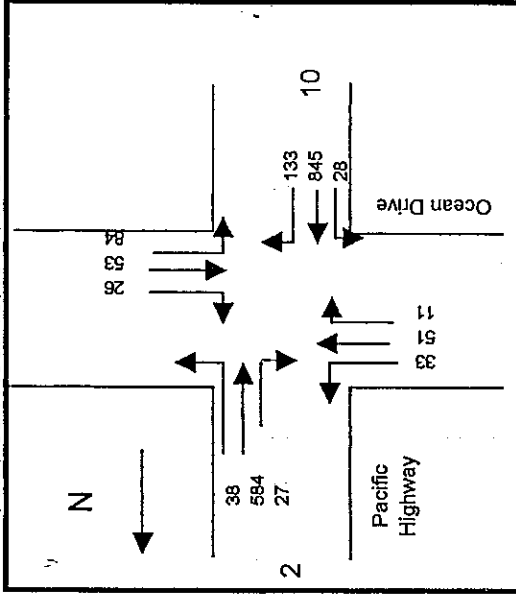
Pedestrians

	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
10:00-10:15	30	179	11	4	21	11	11	145	12	9	12	20			465		1		0	
10:15 - 10:30	29	207	7	3	14	8	9	161	2	8	20	34			502		0		4	
10:30 - 10:45	51	257	6	3	15	9	9	115	11	1	7	10			494		1		1	
10:45 - 11:00	22	185	5	3	12	3	3	125	11	2	13	19			403	1864	0		0	
11:00 - 11:15	31	196	10	2	10	13	6	147	14	12	13	21			475	1874	1		5	
11:15 - 11:30	26	177	3	5	4	5	4	138	17	5	13	18			415	1787	1		0	
11:30 - 11:45	39	255	13	5	9	10	6	111	7	10	4	19			488	1781	2		6	
11:45-12:00	21	177	12	2	19	8	7	130	19	0	8	24			427	1805	2		0	
TOTAL	249	1633	67	27	104	67	55	1072	93	47	90	165					8	0	16	0

Movement Diagram



AM Peak Hour 10:15 - 11:15



Peak Hour

	1	2	3	4	5	6	7	8	9	10	11	12	UN	US	15 min	Hour	P1	P2	P3	P4
10:15 - 10:30	29	207	7	3	14	8	9	161	2	8	20	34			502		0		4	
10:30 - 10:45	51	257	6	3	15	9	9	115	11	1	7	10			494		1		1	
10:45 - 11:00	22	185	5	3	12	3	3	125	11	2	13	19			403		0		0	
11:00 - 11:15	31	196	10	2	10	13	6	147	14	12	13	21			475	1874	1		5	
TOTAL	133	845	28	11	51	33	27	548	38	23	53	84					2	0	10	0

21 April 2000
(Good Friday)

Traffic Counts
Kew Road / Pacific Hwy

RoadNet

QUEUES

From Kendall		10:00	10:05	10:10	10:15	10:20	10:25	10:30	10:35	10:40	10:45	10:50	10:55
Time													
No of vehicles	1	10	8	1	8	16	25	6	7	3	0	6	
Delay (seconds)	60	180	240	30	7m	12m	15m	90	5m	4m	0	5m	6
Time	11:00	11:05	11:10	11:15	11:20	11:25	11:30	11:35	11:40	11:45	11:50	11:55	
No of vehicles	2	0	3	0	0	4	0	2	2	0	1	2	
Delay (seconds)	45	0	60	0	0	120	0	45	30	0	60	30	

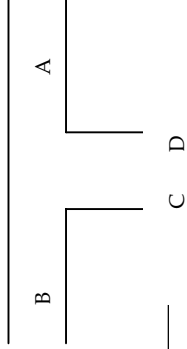
From Laurieton		10:00	10:05	10:10	10:15	10:20	10:25	10:30	10:35	10:40	10:45	10:50	10:55
Time													
No of vehicles	1	2	5	8	2	5	3	2	2	2	1	0	2
Delay (seconds)	120	60	180	120	90	60	150	90	30	30	90	0	150
Time	11:00	11:05	11:10	11:15	11:20	11:25	11:30	11:35	11:40	11:45	11:50	11:55	
No of vehicles	5	2	4	6	1	1	0	4	1	2	0	2	
Delay (seconds)	30	90	180	150	30	90	0	240	15	30	0	60	

APPENDIX G

Traffic Survey Results

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: _____ Station Street

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

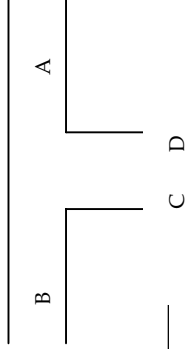
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 cyclist 1 pedestrian	2 pedestrians 5 cars	1 light truck	3 cars 1 light truck	2 cars	3 cars	2 pedestrians	1 car 3 pedestrians	9 cars 6 pedestrians	7 pedestrians	4 cars 1 pedestrian	4 cars 2 pedestrians 2 cyclists
B	1 car	1 car	1 car	2 cars	2 cars	2 cars	1 car	2 cars	4 cars		6 cars	
C		1 car	5 cars	4 cars 1 pedestrian	2 cars	2 cars	1 car	2 cars 3 pedestrians	1 pedestrian		3 cars 2 pedestrians	1 car
D	1 cyclist 6 pedestrians	6 cars 3 pedestrians	2 cars 1 pedestrian	6 cars 1 light truck	3 cars	1 car	2 pedestrians 2 cars	3 cars	6 cars 7 pedestrians	2 cars	4 cars 7 pedestrians	3 cars 2 pedestrians 2 cyclists

SUBTOTAL VEHICLES OF : A=40 B=20 C=22 D=38

GRAND TOTAL=120

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: Stewarts River Road

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	3 cars	4 cars 1 bus	1 car	1 light truck	4 cars	4 cars	4 cars	4 cars	4 cars	1 pedestrian 1 bus 1 semi trailer	4 cars	1 car
B	6 cars	8 cars 4 pedestrians 1 semi trailer	8 cars 2 cyclists	5 cars	3 cars 1 semi trailer	4 cars	8 cars	11 cars 1 semi trailer 1 bus 1 cyclist	15 cars 7 pedestrians 1 semi trailer	16 cars 4 pedestrians 1 semi trailer	7 cars	1 cyclist
C	10 cars 1 motorbike 1 light truck 1 semi trailer	20 cars 1 pedestrian 1 light truck 3 buses	14 cars 1 light truck 2 cyclists	7 cars 4 light trucks	6 cars 1 semi trailer	9 cars	9 cars	13 cars 2 semi trailers 4 pedestrians	12 cars 4 pedestrians 1 light truck	9 cars 4 pedestrians 1 light truck	7 cars 1 motor bike 1 cyclist	
D	7 cars	3 cars	3 cars	2 cars 1 light truck	2 cars	5 cars	5 cars 1 pedestrian 1 semi trailer	9 cars 1 pedestrian 1 semi trailer	1 bus 2 cars 4 pedestrians	3 cars 1 pedestrian	2 cars	

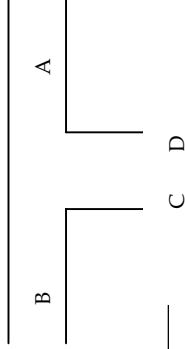
SUBTOTAL VEHICLES OF : A=33 B=101 C=138 D=37

GRAND TOTAL=309

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian



Intersection: _____ Thomas Street

	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 semi trailer 4 cars 1 bus 1 semi trailer 1 light truck	4 cars 3 cars	3 cars	4 cars	2 cars	1 light truck 1 car	1 car	1 car	1 car	1 bus 3 cars	2 cars	3 cars
B	2 pedestrians 4 cars	5 cars	3 cars	2 cars 2 pedestrians		3 cars 4 pedestrians	1 car	2 cars	2 cars	4 pedestrians	6 pedestrians 1 car	5 cars 2 pedestrians 1 cyclist
C	3 cars 2 pedestrians 1 semi trailers	8 cars 1 semi trailer 1 light truck 1 bus 8 pedestrians	1 car 1 pedestrian	5 cars 2 pedestrians 1 light truck	1 car	4 cars 4 pedestrians	1 car	2 cars	2 cars 1 cyclist	2 pedestrians	3 cars 3 pedestrians	1 car 1 cyclist 5 pedestrians
D	2 cars	4 cars 1 pedestrians	4 cars	1 car	3 cars	1 car	4 cars	3 cars	1 car	2 cars	1 car	1 car
E				1 car	1 pedestrian							
F					1 pedestrian							

SUBTOTAL VEHICLES OF : A=31

B=28

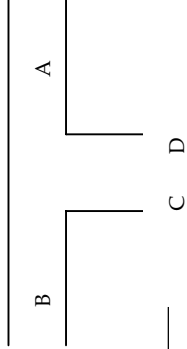
C=36

D=27

GRAND TOTAL=122

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: Algona Road

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

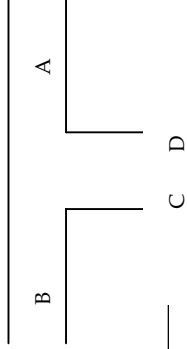
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A		1 bus	1 car	1 car	2 cars	2 cars	1 car	1 back hoe	2 cars	4 cars 1 bus	1 car	3 cars
B		2 cars		2 cars		2 cars	1 car	1 car	2 cars	1 light truck 2 cars 3 pedestrians	1 car 1 bus	1 car
C	1 car	3 cars 2 pedestrians 1 bus		2 cars	2 cars			3 cars	2 cars	1 light truck	1 car	
D		2 cars	3 cars	2 cars	3 cars	2 cars				1 bus 1 car		1 car

SUBTOTAL VEHICLES OF : A=18 B=18 C=16 D=15

GRAND TOTAL=67

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: Rossglen Road

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M Motorbike
- C Cyclist
- P Pedestrian

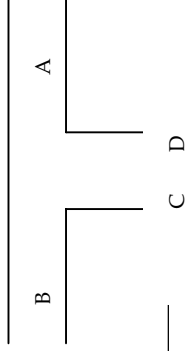
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 car	1 bus	1 car	1 car	1 car	2 cars		1 car	1 car	1 car	2 cars	2 cars
B	1 car	2 cars	2 cars	3 cars	1 car	4 cars	3 cars	2 cars	1 car	2 cars	5 cars	2 cars
C	7 cars	6 cars 1 bus	1 car	3 cars	2 cars	4 cars	2 cars	5 cars	3 cars	1 car	3 cars	1 car
D	3 cars	1 car	1 car	1 car	1 car	1 car	1 car	2 cars	1 bus	1 car	5 cars	2 car

SUBTOTAL VEHICLES OF : A=12 B=29 C=39 D=19

GRAND TOTAL=99

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: Sunnyvale Road South

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

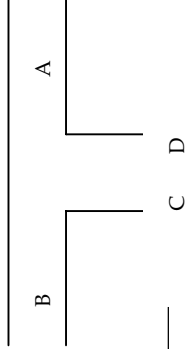
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 bus			1 car	1 car		1 car	1 car		1 car		1 car
B			1 car			1 car		1 car	2 cars 3 pedestrians	1 car		
C	1 car 1 bus 2 pedestrians	2 cars							1 car			
D		1 car		1 car	1 car	2 cars			1 car			1 car

SUBTOTAL VEHICLES OF : A=7 B=6 C=5 D=7

GRAND TOTAL=25

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: Sunnyvale Road North

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

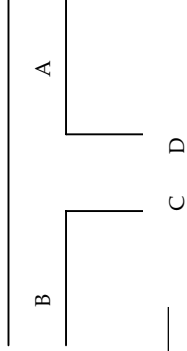
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A		1 bus 1 car	1 car	1 car		1 cars	1 car		1 cars	4 cars		
B			1 car	2 cars		1 cars	1 car	1 car	1 bus		1 car	
C	2 car	1 cars 1 bus		1 cars			1 car		3 cars		1 car	
D	3 cars		1 cars			1 cars	1 cars		1 bus 1 car		1 car	1 car

SUBTOTAL VEHICLES OF : A=11 B=7 C=10 D=10

GRAND TOTAL=38

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: _____ Herons Creek Road South

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

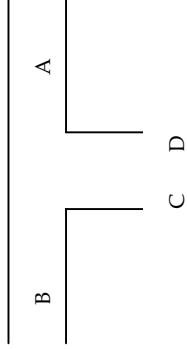
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 car		1 car	1 car	2 cars 2 light trucks	1 car		1 car	1 car	1 car		2 cars
B									1 car			
C			1 car									
D	4 cars	1 car		2 cars		1 light truck	1 light truck		2 cars	1 car	1 car	1 car

SUBTOTAL VEHICLES OF : A=10 B=2 C=2 D=14

GRAND TOTAL=28

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Date: 14th Nov. 2000 Intersection: Cluleys Lane

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

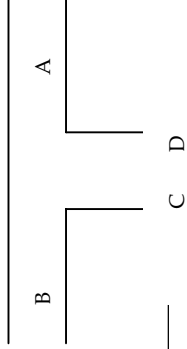
	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	1 car	1 car 1 bus	2 cars	1 car	1 car		1 car	2 cars	2 cars 1 bus 7 pedestrians All cross highway	1 car	2 cars	1 car
B	1 car		1 car	1 car			1 car		2 cars 1 light truck		1 car	
C	1 car	1 bus 7 pedestrians All cross highway	1 car	1 car	2 cars	1 car			1 bus	1 car		1 light truck
D	2 cars	3 cars	1 car	1 car			2 cars		1 car		2 cars	1 car

SUBTOTAL VEHICLES OF : A=17 B=8 C=10 D=13

GRAND TOTAL=48

PACIFIC HIGHWAY UPGRADE

MOORLAND TO HERONS CREEK



Intersection: _____ Herons Creek North

- 1 Car
- 2 Bus
- LT Light Truck
- ST Semi Trailer
- M MotorBike
- C Cyclist
- P Pedestrian

	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am-12n	12n - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
A	8 cars 2 buses	8 cars	2 cars	1 car	1 car	3 cars	2 cars	1 car	13 cars 1 bus 9 pedestrians 1 semi trailer	2 cars 1 semi trailer	4 cars	8 cars
B	14 cars 1 semi trailer	14 cars	3 2 semi trailers	1 semi trailers	2 cars 1 semi trailer	1 car 2 semi trailers 1 light truck	1 semi trailer	6 cars	5 cars	4 cars 1 bus 1 semi trailer	6 cars	2 cars 1 semi trailer
C	3 cars 2 buses 11 pedestrians	8 cars	2 cars	1 car	1 car		3 cars	3 cars 1 light truck	20 cars 1 light truck 1 semi trailer 1 bus	1 bus 2 cars 1 semi trailer	4 cars 2 semi trailers	4 cars 1 semi trailer
D	2 cars	6 cars 1 semi trailer	1 car 1 semi trailer		1 semi trailer	4 cars 2 semi trailers	1 car 2 semi trailers	1 car 1 semi trailers	14 cars 1 semi trailer	5 cars	7 cars	9 cars

SUBTOTAL VEHICLES OF : A=58 (2 semis)

B=69 (10 semis, 1 truck)

C=62 (5 semis, 2 trucks)

D=59 (9 semis)

GRAND TOTAL=248

Date: 8th June 2002 (Saturday)
 Direction: Pacific Highway Northbound
 Origin-Destination Survey

- | | | |
|---|---|-----------------------|
| 1 Pacific Highway north of Thomas Street | C | Cars, 4WD's, vans etc |
| 2 Thomas Street | B | Bus |
| 3 General store and adjacent frontage development | S | Truck - Semi |
| 4 Station Street | R | Truck - Rigid |
| 5 Pacific Highway south of Station Street | M | Motorcycle |
| 6 Tavern | | |
| 7 Stewarts River Road west of Tavern | | |

From	To	Veh	Time										
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm
2	1	C	2	1	10	29	13	4	6	6	1		
		B											
		S											
		R											
		M				1							
		Total	2	1	10	30	13	4	6	6	1	0	0
3	1	C	1	1	8	4	3			1	3	1	
		B											
		S											
		R											
		M											
		Total	1	1	8	4	3	0	0	1	3	1	0
3	2	C			1			1					
		B											
		S											
		R											
		M											
		Total	0	0	1	0	0	1	0	0	0	0	0
4	1	C		1				1		1			
		B											
		S											
		R											
		M											
		Total	0	1	0	0	1	0	1	0	0	0	0
4	2	C											
		B											
		S											
		R											
		M											
		Total	0	0	0	0	0	0	0	0	0	0	0
4	3	C				1					1	1	
		B											
		S											
		R											
		M								1			
		Total	0	0	0	1	0	0	0	1	1	1	0
4	6	C											
		B											
		S											
		R											
		M											
		Total	0	0	0	0	0	0	0	0	0	0	0
4	7	C											
		B											
		S											
		R											
		M											
		Total	0	0	0	0	0	0	0	0	0	0	0
5	2	C	7	7	15	13	2	1		2			
		B											
		S											
		R											
		M			1								
		Total	7	7	16	13	2	1	0	2	0	0	0
5	3	C	3	2	5	8	2	4	1	4	2	2	
		B						2					
		S											
		R											
		M											
		Total	3	2	5	8	2	6	1	4	2	2	0
5	4	C											
		B											
		S											
		R											
		M											
		Total	0	0	0	0	0	0	0	0	0	0	0
5	6	C		1				1			1		2
		B											
		S											
		R											
		M											
		Total	0	1	0	0	0	1	0	0	1	0	2

			Time											
From	To	Veh	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
5	7	C B S R M Total	2	0	4	3	1	2	3	6	6	5	3	4
6	1	C B S R M Total	0	0	0	0	0	0	0	0	1	0	0	1
6	2	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	1
6	3	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
6	7	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
7	1	C B S R M Total	4	10	12	15	5	5 1	10	8	18	9 1	23	15
7	2	C B S R M Total	3	4	12	1	1	3	2	1	0	0	2	0
7	3	C B S R M Total	1	2	5	0	1	2	1	2	1	2	0	0
7	6	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
Total			24	31	73	75	29	26	25	31	34	21	30	21

Date: 8th June 2002 (Saturday)
 Direction: Pacific Highway Southbound
 Origin-Destination Survey

- | | | |
|---|---|-----------------------|
| 1 Pacific Highway north of Thomas Street | C | Cars, 4WD's, vans etc |
| 2 Thomas Street | B | Bus |
| 3 General store and adjacent frontage development | S | Truck - Semi |
| 4 Station Street | R | Truck - Rigid |
| 5 Pacific Highway south of Station Street | M | Motorcycle |
| 6 Tavern | | |
| 7 Stewarts River Road west of Tavern | | |

From	To	Veh	Time												
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm	
1	2	C B S R M Total	20	15	23	8	6	5				1			
1	3	C B S R M Total	2	9	5	2	4	3	5	9	9	6	2		
1	4	C B S R M Total	1	1	0	0	0	0	2	1	0	1	0	1	
1	6	C B S R M Total	0	0	1	1	0	0	0	1	3	1	6	4	
1	7	C B S R M Total	3	2	13	15	11	7	17	5	8	10	1	7	
2	3	C B S R M Total	0	0	0	1	2	4	0	0	0	0	0	0	
2	4	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0	
2	5	C B S R M Total	2	3	6	5	1	9	2	2	1	0	0	0	
2	6	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0	
2	7	C B S R M Total	1	0	2	4	1	1	3	0	0	0	0	0	
3	4	C B S R M Total	0	0	0	0	0	0	0	0	1	0	0	0	
3	5	C B S R M Total	2	0	2	1	3	2	4	5	2	0	0	0	

			Time											
From	To	Veh	7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
3	6	C B S R M Total	0	0	0	0	0	0	0	0	1	1	0	0
3	7	C B S R M Total	2	0	1	1	4	0	0	1	0	0	0	0
4	5	C B S R M Total	2	0	0	0	0	0	0	1	0	0	0	0
6	4	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
6	5	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	2
7	4	C B S R M Total	0	0	0	0	1	0	1	0	0	0	0	0
7	5	C B S R M Total	1	0	1	1	1	0	3	1	1	1	1	0
Total			38	31	54	41	34	31	34	25	30	22	10	14

Date: 5th June 2002 (Wednesday)
 Direction: Pacific Highway Northbound
 Origin-Destination Survey

- | | | |
|---|---|-----------------------|
| 1 Pacific Highway north of Thomas Street | C | Cars, 4WD's, vans etc |
| 2 Thomas Street | B | Bus |
| 3 General store and adjacent frontage development | S | Truck - Semi |
| 4 Station Street | R | Truck - Rigid |
| 5 Pacific Highway south of Station Street | M | Motorcycle |
| 6 Tavern | | |
| 7 Stewarts River Road west of Tavern | | |

From	To	Veh	Time											
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
2	1	C	1	2	2	1	1	2	2	3	2			1
		B												
		S												
		R		1					1					
		M												
		Total	1	3	2	1	1	2	2	4	2	0	0	1
3	1	C	5	7		3	6	5	3	2		1		
		B												
		S												
		R						1						
		M												
		Total	5	7	0	3	6	6	3	2	0	1	0	0
3	2	C			1		1		1					
		B												
		S												
		R												
		M												
		Total	0	0	1	0	1	0	1	0	0	0	0	0
4	1	C	1	4			2		1	1		2	1	2
		B												
		S												
		R												
		M												
		Total	1	4	0	0	2	0	1	1	0	2	1	2
4	2	C		1							2			
		B												
		S												
		R												
		M												
		Total	0	1	0	0	0	0	0	0	2	0	0	0
4	3	C		2	1					1	3		1	
		B												
		S												
		R												
		M												
		Total	0	2	1	0	0	0	0	1	3	0	1	0
4	6	C		1										
		B												
		S												
		R												
		M												
		Total	0	1	0	0	0	0	0	0	0	0	0	0
4	7	C		4	1			1			5			
		B												
		S												
		R												
		M												
		Total	0	4	1	0	0	1	0	0	5	0	0	0
5	2	C					2							
		B												
		S												
		R												
		M												
		Total	0	0	0	0	2	0	0	0	0	0	0	0
5	3	C	1	2		4	4	3	3	2	1	3		
		B												
		S												
		R		1				1						
		M												
		Total	1	3	0	4	4	4	3	2	1	3	0	0
5	4	C		4							1		1	
		B												
		S												
		R												
		M												
		Total	0	4	0	0	0	0	0	0	1	0	1	0
5	6	C						1	1	1		1		2
		B		1								1		
		S												
		R												
		M												
		Total	0	1	0	0	0	1	1	1	0	2	0	2

From	To	Veh	Time											
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm
5	7	C B S R M Total	0	1	0	2	0	2	3	3	4	1	2	0
6	1	C B S R M Total	0	3	0	0	0	0	0	0	0	0	0	1
6	2	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
6	3	C B S R M Total	0	2	0	0	0	0	0	0	0	0	0	1
6	7	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
7	1	C B S R M Total	10	12 1 1	4	5	8	9	9	8	5	1	3	
7	2	C B S R M Total	0	1 1	1	0	0	0	2	1	0	0	0	0
7	3	C B S R M Total	1	7	0	1	2	0	3	8	1	4	3	3
7	6	C B S R M Total	0	0	0	0	0	0	0	0	0	0	0	0
Total			19	59	11	18	26	25	28	31	24	15	11	10

Date: 5th June 2002 (Wednesday)
 Direction: Pacific Highway Southbound
 Origin-Destination Survey

- | | | |
|---|---|-----------------------|
| 1 Pacific Highway north of Thomas Street | C | Cars, 4WD's, vans etc |
| 2 Thomas Street | B | Bus |
| 3 General store and adjacent frontage development | S | Truck - Semi |
| 4 Station Street | R | Truck - Rigid |
| 5 Pacific Highway south of Station Street | M | Motorcycle |
| 6 Tavern | | |
| 7 Stewarts River Road west of Tavern | | |

From	To	Veh	Time												
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm	
1	2	C B S R M Total				2	1	2	1	1					
1	3	C B S R M Total	3	5 1	9	10	5	8	15	11	11 1	8	7	4	
1	4	C B S R M Total		2 1						4	2	3	1		
1	6	C B S R M Total	1			1				2		3	3	2	
1	7	C B S R M Total	2	1	2	3	6	8 1	5	15	12 2	10	7	4	
2	3	C B S R M Total								1					
2	4	C B S R M Total								1					
2	5	C B S R M Total			2				2	4	1			2	
2	6	C B S R M Total						1							
2	7	C B S R M Total			1			1							
3	4	C B S R M Total		2 1		2				1	1				
3	5	C B S R M Total	2	1 1	7	4	1		13	4	1	2	1	1	

From	To	Veh	Time												
			7am - 8am	8am - 9am	9am - 10am	10am - 11am	11am - 12pm	12pm - 1pm	1pm - 2pm	2pm - 3pm	3pm - 4pm	4pm - 5pm	5pm - 6pm	6pm - 7pm	
3	6	C B S R M Total		5					1			1 1		1	
3	7	C B S R M Total	1		5	4	3		5	7	6	3	2		
4	5	C B S R M Total			2		1				2				
6	4	C B S R M Total													
6	5	C B S R M Total									1 1				
7	4	C B S R M Total	3	5	1					2	3	1			
7	5	C B S R M Total	4	6 1	4	3		1	2	2	1	2	3		
Total			16	32	34	30	18	27	43	55	50	34	22	14	

Pedestrian count

East people walking eastward past the Tavern and crossing the Pacific Highway

West people crossing the Pacific Highway and walking westward passing the Tavern

O Old (over 60)

N Normal

Y Very young

5th June 2002 (Wednesday)

Time		East				West			
From	To	O	N	Y	Total	O	N	Y	Total
7:00	8:00		6		6				0
8:00	9:00				0				0
9:00	10:00				0				0
10:00	11:00				0		1	1	2
11:00	12:00		1	1	2				0
12:00	13:00				0				0
13:00	14:00				0		1		1
14:00	15:00				0				0
15:00	16:00				0		1		1
16:00	17:00		2		2				0
17:00	18:00				0				0
18:00	19:00				0				0

8th June 2002 (Saturday)

Time		East				West			
From	To	O	N	Y	Total	O	N	Y	Total
7:00	8:00				0				0
8:00	9:00				0				0
9:00	10:00				0				0
10:00	11:00		2		2				0
11:00	12:00				0				0
12:00	13:00				0				0
13:00	14:00				0				0
14:00	15:00				0				0
15:00	16:00				0				0
16:00	17:00		1		1				0
17:00	18:00				0				0
18:00	19:00				0				0

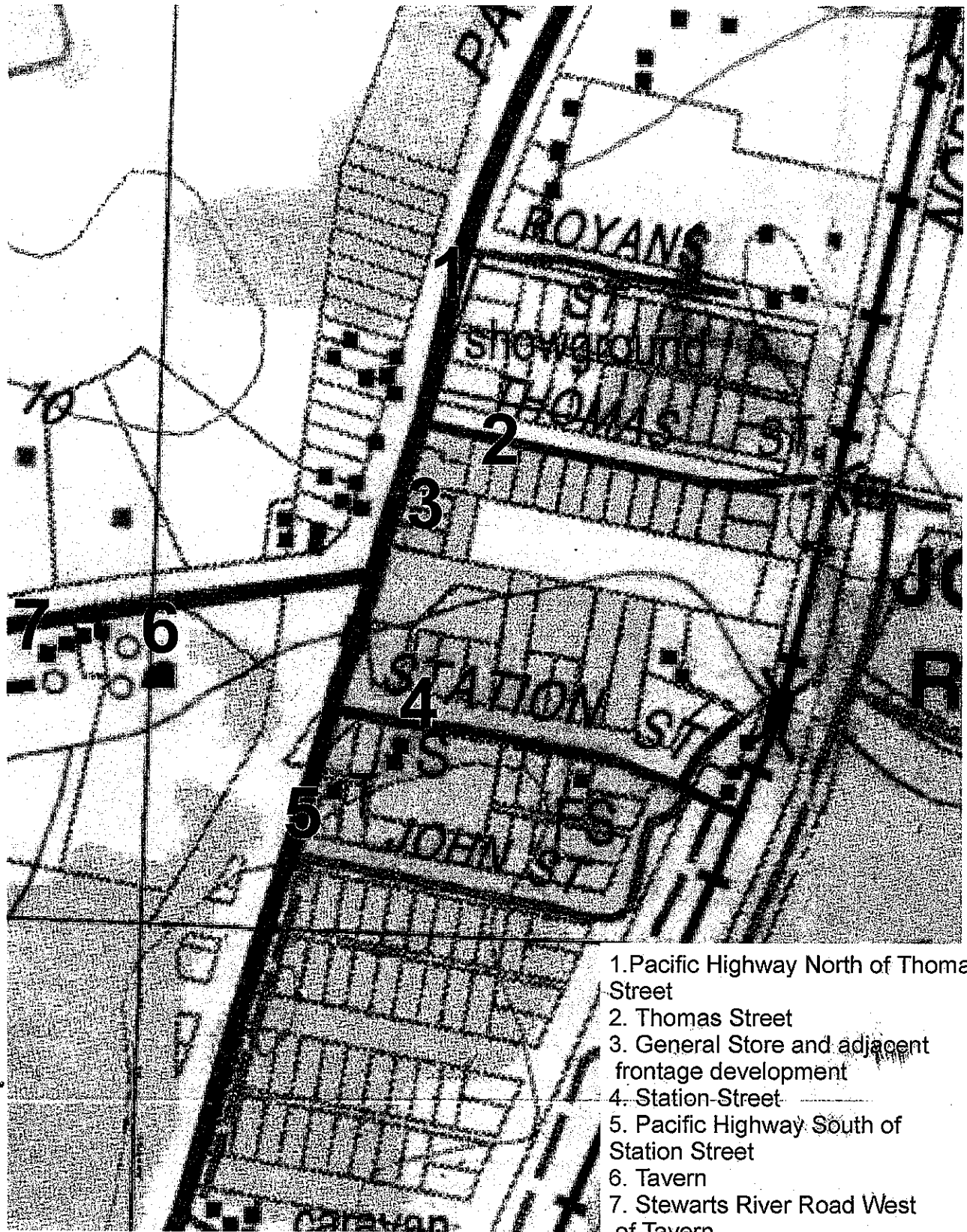


Figure 1 Location of Study Area

