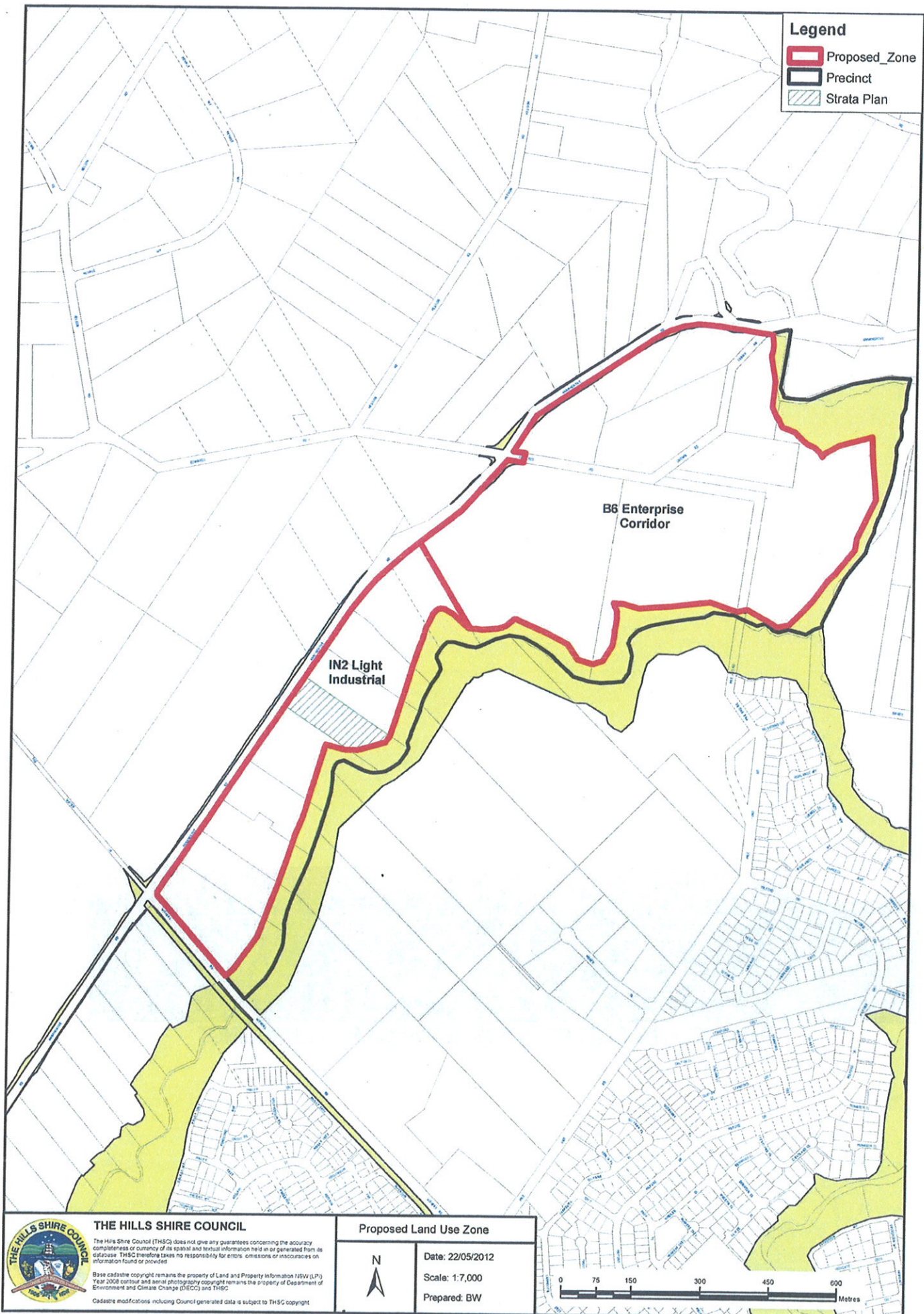
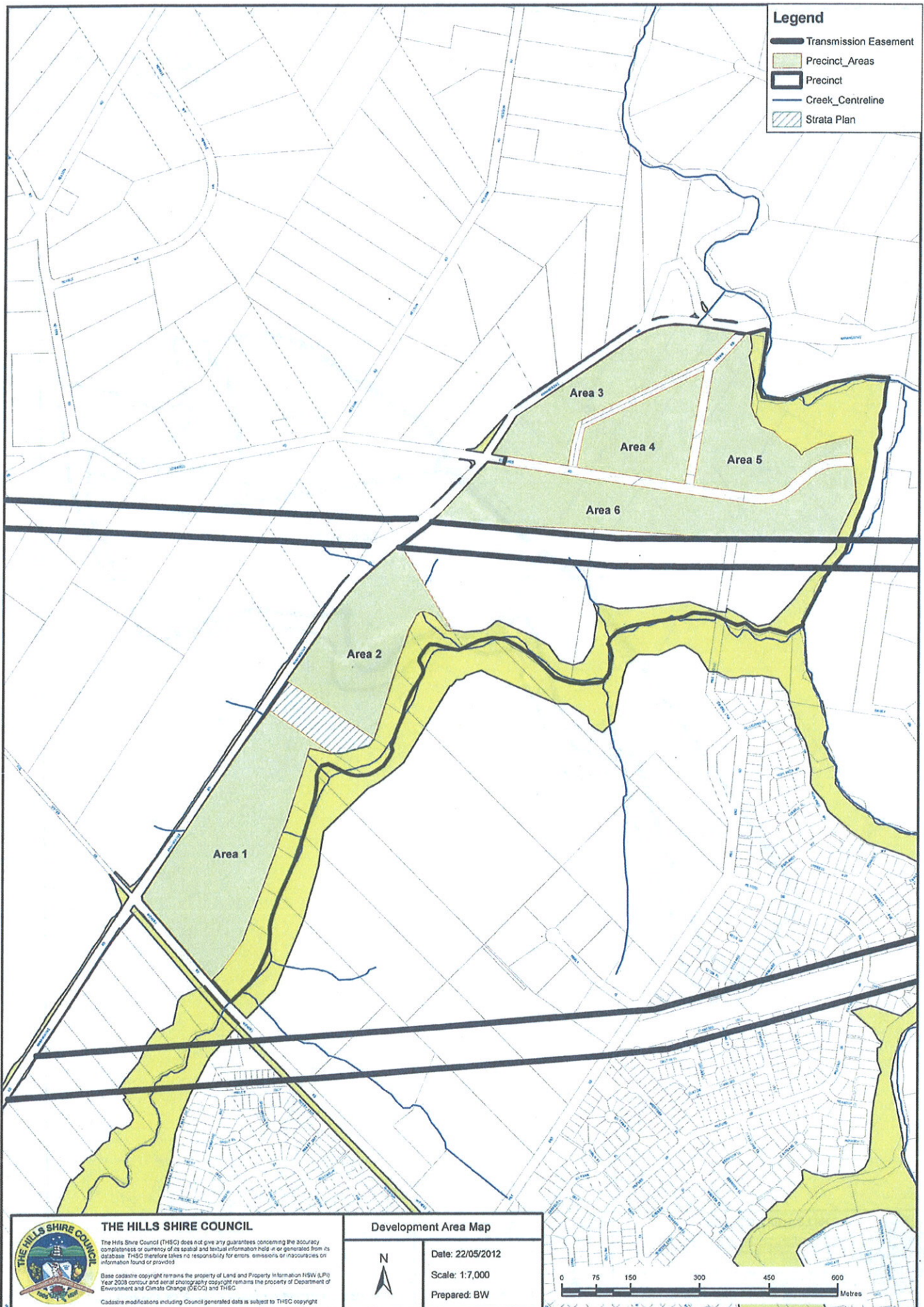


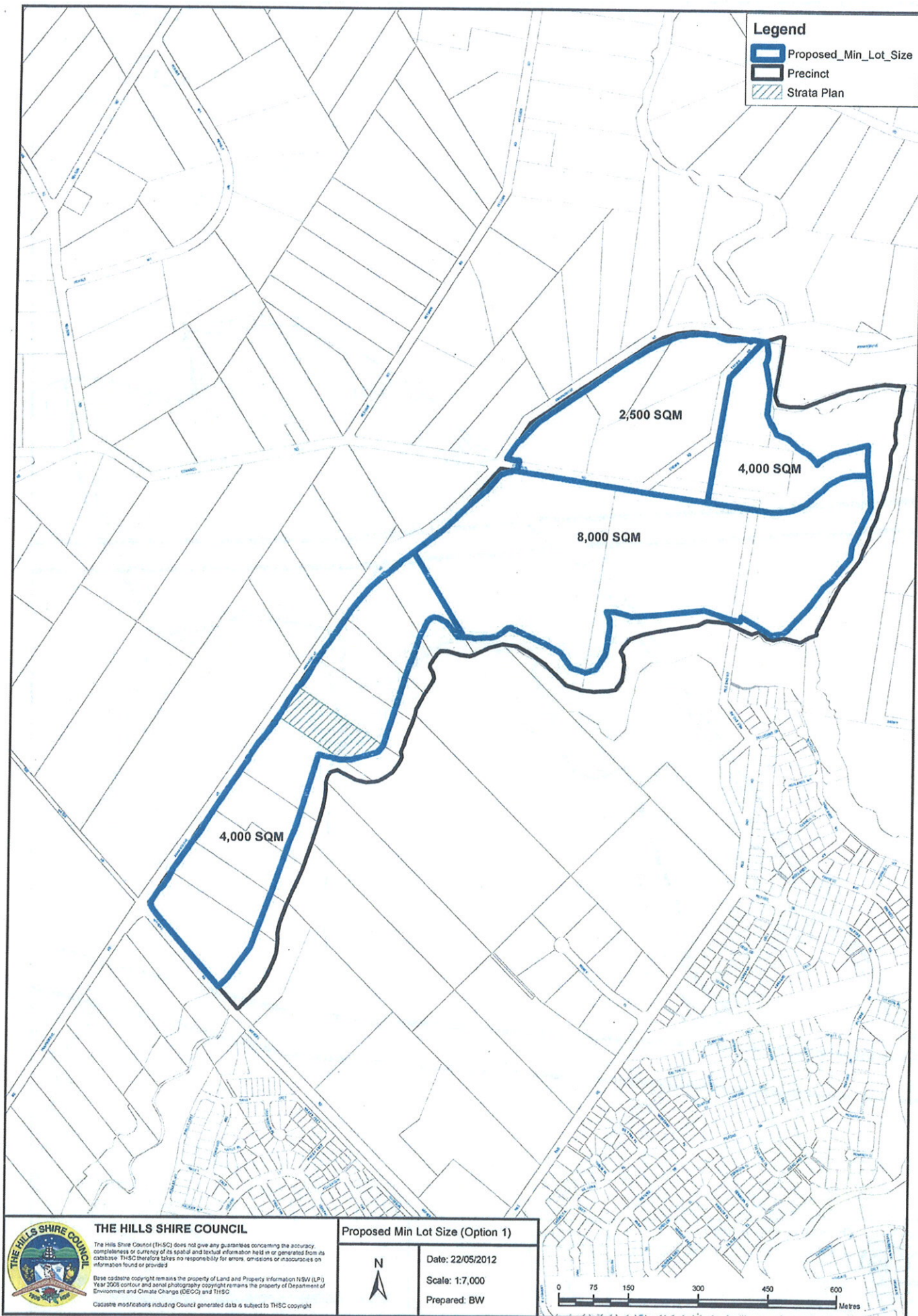


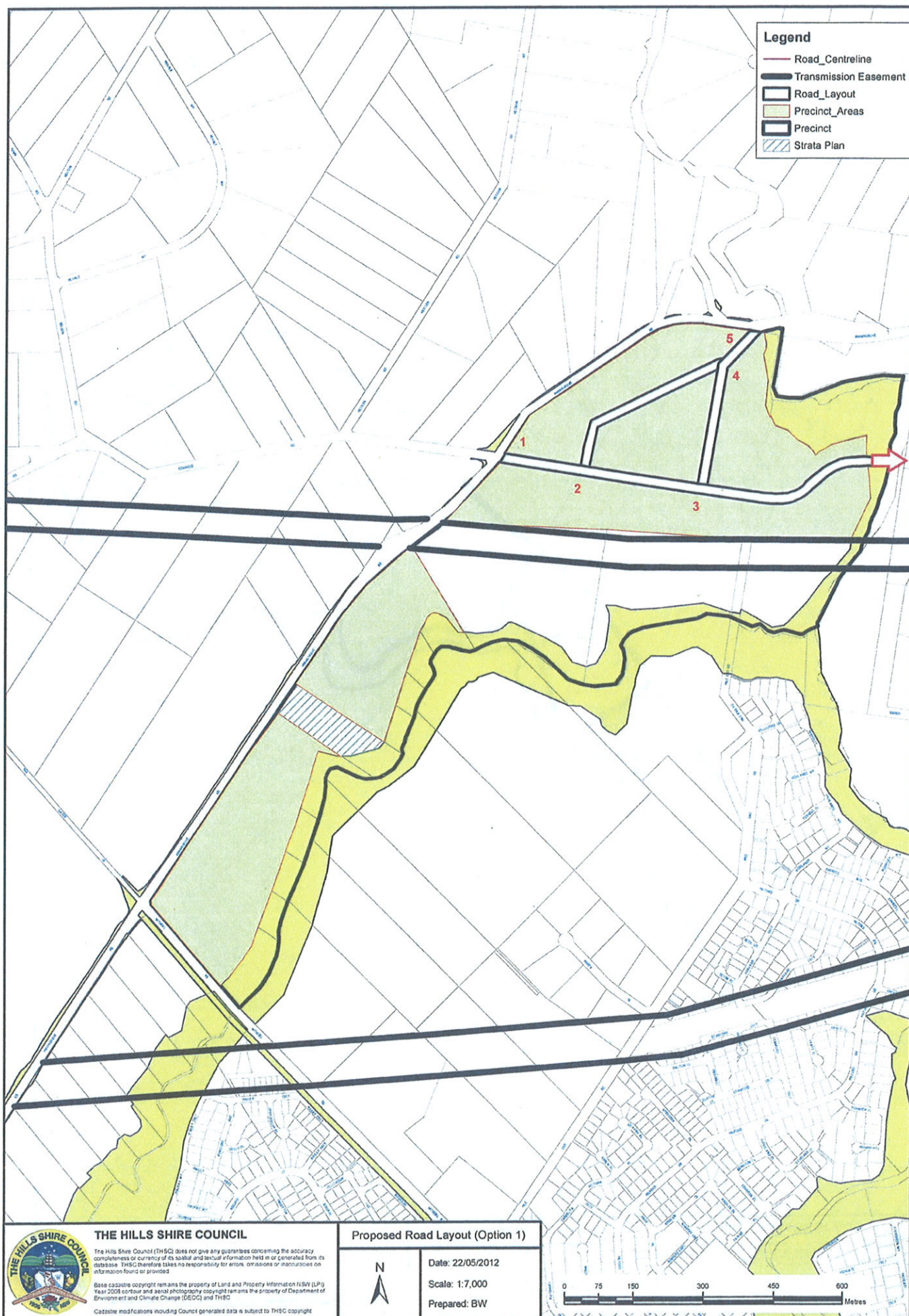
APPENDIX A

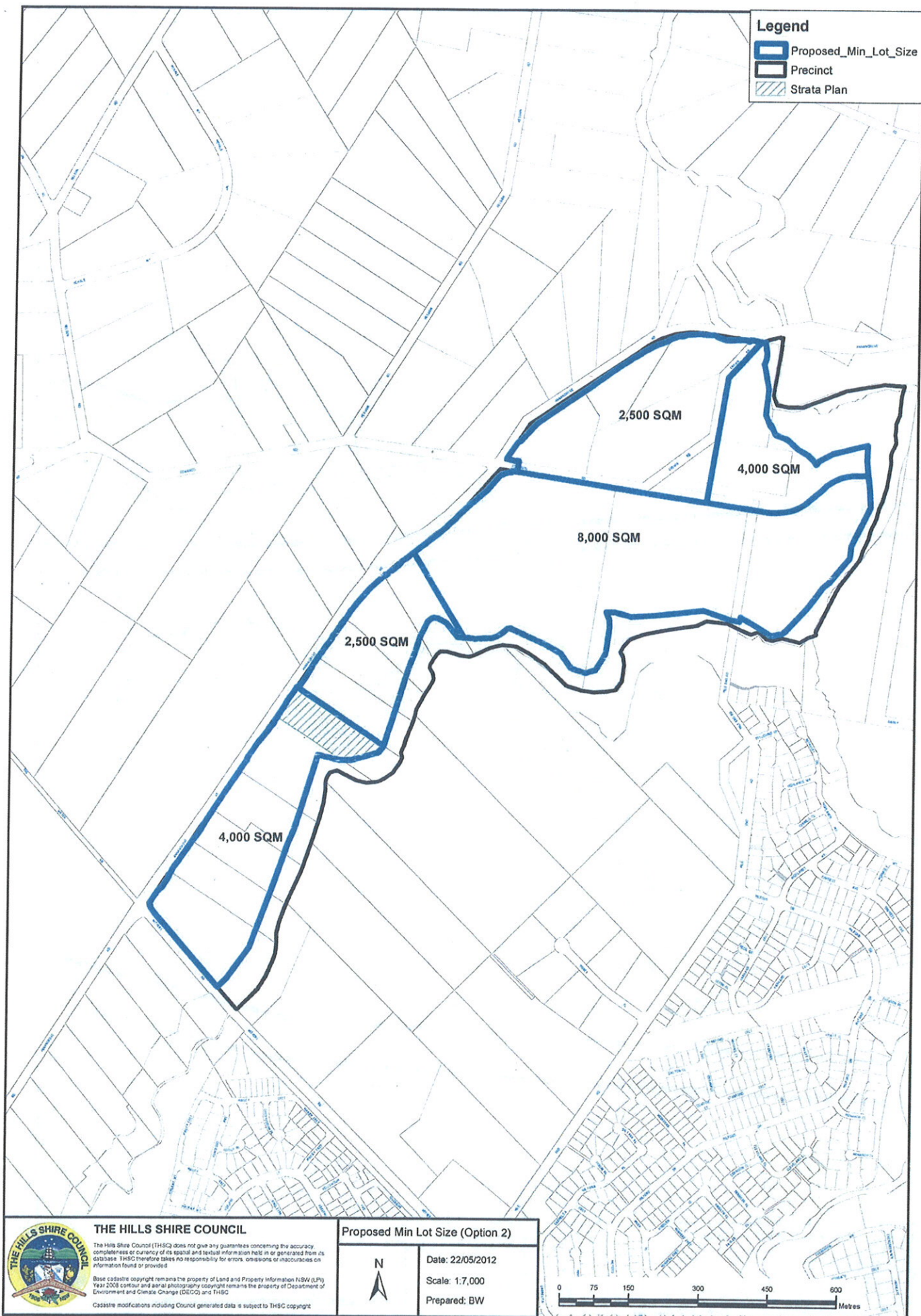
PROPOSED MASTER PLAN FOR EDWARDS ROAD PRECINCT

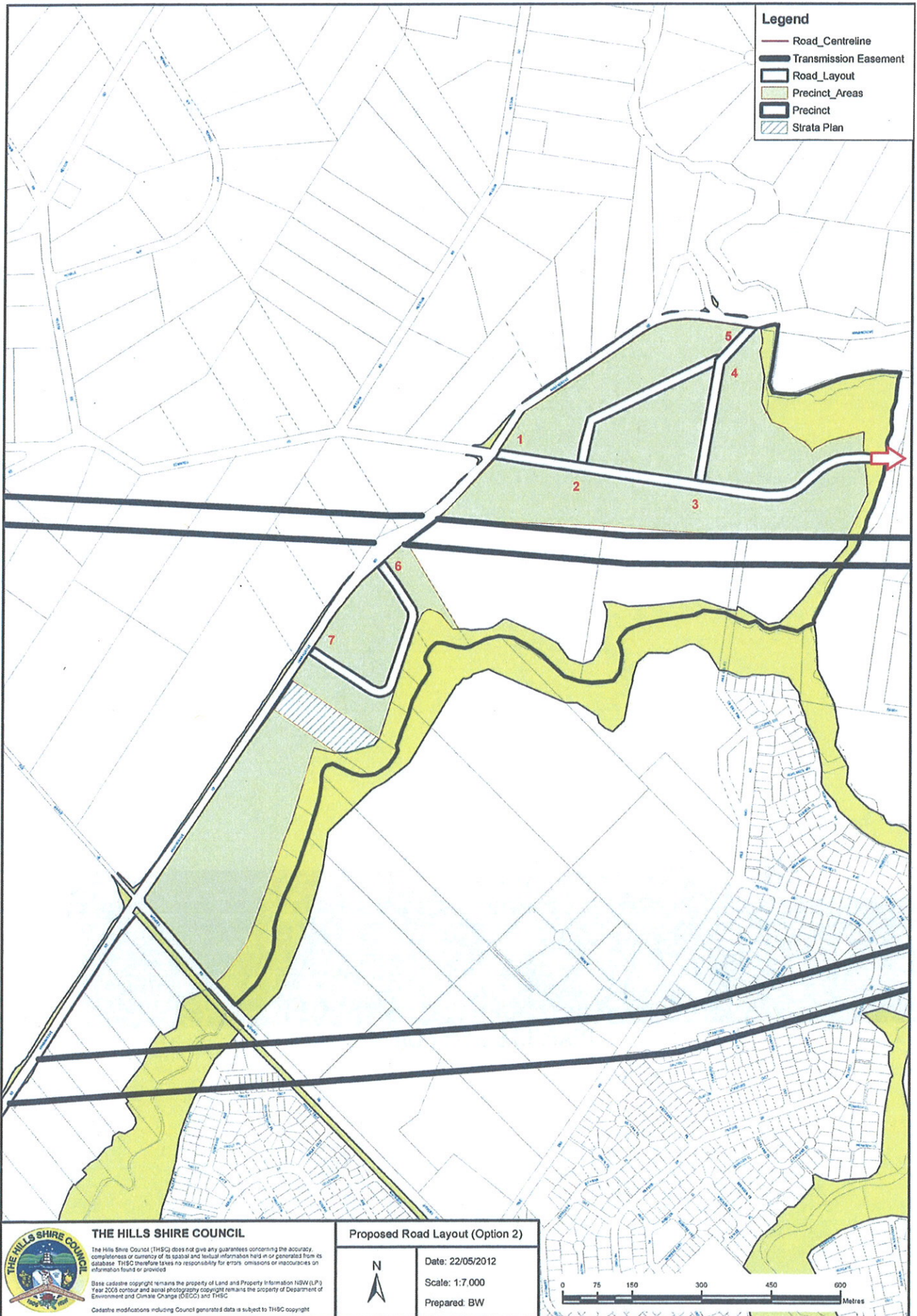












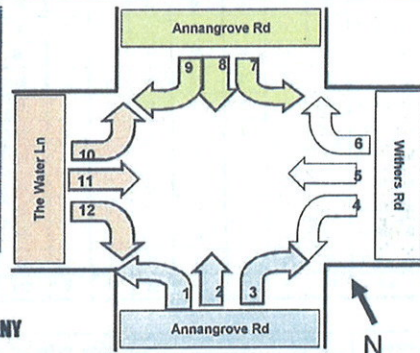


APPENDIX B

TRAFFIC SURVEY DATA



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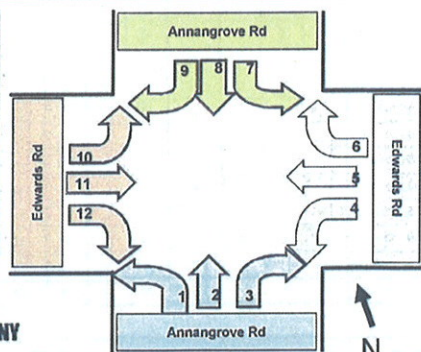
Approach	Annangrove Rd												Withers Rd											
Direction	Direction 1 (Left turn)				Direction 2 (Through)				Direction 3 (Right turn)				Direction 4 (Left turn)				Direction 5 (Through)				Direction 6 (Right turn)			
Time Period 15mins	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 7:15	0	0	0	0	25	1	0	26	9	0	0	9	19	1	0	20	0	0	0	0	24	0	0	24
7:15 to 7:30	0	0	0	0	28	1	0	29	8	0	0	8	20	0	0	20	0	0	0	0	28	1	1	30
7:30 to 7:45	0	0	0	0	26	1	0	27	15	1	1	17	18	0	0	18	0	0	0	0	28	0	0	28
7:45 to 8:00	0	0	0	0	25	5	0	30	10	0	0	10	28	0	0	28	0	0	0	0	20	1	1	22
8:00 to 8:15	0	0	0	0	24	3	1	28	16	0	0	16	25	1	0	26	0	0	0	0	38	0	0	38
8:15 to 8:30	0	0	0	0	23	3	0	26	9	0	0	9	28	0	0	28	0	0	0	0	35	1	2	38
8:30 to 8:45	1	0	0	1	25	3	0	28	14	2	0	16	24	2	0	26	0	0	0	0	38	0	2	40
8:45 to 9:00	0	0	0	0	22	3	0	25	4	0	0	4	15	4	0	19	0	0	0	0	43	1	1	45
9:00 to 9:15	0	0	0	0	39	2	1	42	10	1	0	11	16	0	0	16	0	0	0	0	31	0	0	31
9:15 to 9:30	0	0	0	0	27	7	0	34	5	0	0	5	7	0	0	7	0	0	0	0	25	2	0	27
9:30 to 9:45	0	0	0	0	22	8	0	30	7	0	0	7	15	1	0	16	0	0	0	0	17	1	0	18
9:45 to 10:00	0	0	0	0	15	5	0	20	8	1	0	9	6	0	0	6	0	0	0	0	13	1	0	14
AM Totals	1	0	0	1	301	42	2	345	115	5	1	121	221	9	0	230	0	0	0	0	340	8	7	355
15:00 to 15:15	0	0	0	0	20	0	1	21	8	0	2	10	8	0	0	8	0	0	0	0	32	0	0	32
15:15 to 15:30	0	0	0	0	28	0	0	28	6	1	1	8	10	0	0	10	0	0	0	0	29	0	0	29
15:30 to 15:45	0	0	0	0	26	2	0	28	5	1	2	8	6	0	2	8	0	0	0	0	25	1	0	26
15:45 to 16:00	0	0	0	0	27	0	0	27	18	1	0	19	8	2	0	10	0	0	0	0	35	1	0	36
16:00 to 16:15	0	0	0	0	40	3	0	43	13	1	0	14	17	0	0	17	0	0	0	0	45	1	2	48
16:15 to 16:30	0	1	0	1	24	3	0	27	11	0	0	11	16	0	0	16	0	0	0	0	44	1	0	45
16:30 to 16:45	0	0	0	0	25	1	0	26	15	0	0	15	15	3	0	18	0	1	0	1	43	1	0	44
16:45 to 17:00	0	0	0	0	29	4	0	33	16	1	0	17	15	0	0	15	0	0	0	0	34	1	0	35
17:00 to 17:15	0	0	0	0	39	2	0	41	22	0	0	22	21	0	0	21	0	0	0	0	49	0	0	49
17:15 to 17:30	0	0	0	0	23	2	0	25	20	0	1	21	12	0	0	12	0	0	0	0	30	1	1	32
17:30 to 17:45	0	0	0	0	28	0	0	28	17	0	0	17	12	0	0	12	0	0	0	0	41	0	0	41
17:45 to 18:00	0	0	0	0	15	0	0	15	12	0	0	12	17	0	0	17	0	0	0	0	24	0	0	24
18:00 to 18:15	0	0	0	0	30	1	1	32	11	0	0	11	21	0	0	21	0	0	0	0	27	1	0	28
18:15 to 18:30	0	0	0	0	26	1	0	27	9	1	0	10	9	0	0	9	0	0	0	0	28	0	0	28
18:30 to 18:45	0	0	0	0	20	2	0	22	3	0	0	3	15	0	0	15	0	0	0	0	36	0	0	36
18:45 to 19:00	0	0	0	0	28	1	0	29	7	0	0	7	11	0	0	11	0	0	0	0	19	0	0	19
PM Totals	0	1	0	1	428	22	2	452	193	8	6	205	213	5	2	220	0	1	0	1	541	8	3	552

[illegible]

Client:	Lambert & Rehbein
Site:	Annangrove Rd
	Edwards Rd
Day:	29.03.2012 (Thursday)
Description:	Traffic Counts (15mins & 1hour Data)
Weather:	Fine
AM Peak:	8:15 to 9:15
PM Peak:	15:45 to 16:45



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Approach	Annangrove Rd												Edwards Rd											
	Direction 1 (Left turn)				Direction 2 (Through)				Direction 3 (Right turn)				Direction 4 (Left turn)				Direction 5 (Through)				Direction 6 (Right turn)			
Time Period 15mins	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 7:15	8	1	0	9	32	3	1	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 to 7:30	7	0	1	8	27	2	0	29	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
7:30 to 7:45	7	0	0	7	39	1	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 to 8:00	6	0	0	6	29	2	1	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 to 8:15	12	1	0	13	37	0	1	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 to 8:30	10	1	0	11	38	5	3	46	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
8:30 to 8:45	13	0	0	13	40	3	1	44	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
8:45 to 9:00	13	0	0	13	58	4	1	63	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0
9:00 to 9:15	15	1	1	17	64	2	2	68	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
9:15 to 9:30	16	0	0	16	43	4	1	48	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
9:30 to 9:45	12	1	0	13	55	2	0	57	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
9:45 to 10:00	10	1	0	11	37	2	0	39	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
AM Totals	129	6	2	137	499	30	11	540	14	1	0	15	2	0	0	2	0	1	0	1	0	0	0	0
15:00 to 15:15	22	2	0	24	27	0	1	28	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
15:15 to 15:30	34	1	0	35	20	0	0	20	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
15:30 to 15:45	25	0	2	27	25	3	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 to 16:00	29	2	0	31	38	0	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 to 16:15	36	0	1	37	45	4	1	50	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
16:15 to 16:30	40	2	0	42	32	2	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 to 16:45	25	1	0	26	46	1	0	47	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
16:45 to 17:00	37	0	1	38	32	5	0	37	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
17:00 to 17:15	24	0	0	24	55	2	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 to 17:30	28	2	0	30	39	1	1	41	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
17:30 to 17:45	26	0	0	26	40	0	0	40	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
17:45 to 18:00	25	0	2	27	20	0	0	20	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
18:00 to 18:15	22	0	0	22	28	2	1	31	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
18:15 to 18:30	29	1	1	31	22	0	0	22	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0
18:30 to 18:45	31	1	0	32	26	1	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45 to 19:00	22	1	0	23	27	0	0	27	1	0	0	1	3	0	0	3	0	0	0	0	0	0	0	0
PM Totals	455	13	7	475	522	21	4	547	9	0	0	9	12	0	0	12	0	0	0	0	0	0	0	0

Approach	Annangrove Rd												Edwards Rd											
	Direction 7 (Left turn)				Direction 8 (Through)				Direction 9 (Right turn)				Direction 10 (Left turn)				Direction 11 (Through)				Direction 12 (Right turn)			
Time Period 15mins	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 7:15	0	0	0	0	54	2	0	56	30	2	1	33	45	1	1	47	0	0	0	0	18	1	0	19
7:15 to 7:30	0	0	0	0	48	1	0	49	28	2	0	30	49	0	1	50	0	0	0	0	15	0	0	15
7:30 to 7:45	0	0	0	0	40	4	0	44	42	1	0	43	46	0	3	49	0	0	0	0	22	0	0	22
7:45 to 8:00	0	0	0	0	52	5	0	57	53	0	0	53	57	1	1	59	0	0	0	0	15	1	0	16
8:00 to 8:15	0	0	0	0	53	2	0	55	50	1	1	52	61	2	3	66	0	0	0	0	43	0	0	43
8:15 to 8:30	0	0	0	0	48	2	0	50	35	1	1	37	58	6	0	64	0	0	0	0	26	4	1	31
8:30 to 8:45	0	0	0	0	66	8	0	74	21	1	2	24	55	1	1	57	0	1	0	1	40	0	0	40
8:45 to 9:00	0	0	0	0	39	8	3	50	25	2	1	28	34	2	0	36	4	0	0	4	31	1	0	32
9:00 to 9:15	0	0	0	0	45	3	2	50	47	0	0	47	58	0	2	60	2	0	0	2	25	2	1	28
9:15 to 9:30	0	0	0	0	34	4	0	38	35	2	0	37	47	3	0	50	4	0	0	4	43	0	0	43
9:30 to 9:45	0	0	0	0	25	2	2	29	38	1	1	40	46	2	1	49	3	0	0	3	38	0	1	39
9:45 to 10:00	0	0	0	0	37	4	1	42	26	1	2	29	42	1	2	45	5	0	0	5	24	1	0	25
AM Totals	0	0	0	0	541	45	8	594	430	14	9	453	598	19	15	632	18	1	0	19	340	10	3	353
15:00 to 15:15	0	0	0	0	25	0	3	28	42	0	1	43	38	1	2	41	0	0	0	0	6	0	0	6
15:15 to 15:30	0	0	0	0	22	0	2	24	48	2	2	52	48	2	1	51	2	0	0	2	9	1	0	10
15:30 to 15:45	0	0	0	0	29	2	2	33	56	0	3	59	45	0	0	45	0	0	0	0	13	0	1	14
15:45 to 16:00	0	0	0	0	30	1	4	35	52	1	3	56	46	0	2	48	2	0	0	2	14	0	0	14
16:00 to 16:15	0	0	0	0	32	0	2	34	40	0	1	41	39	2	3	44	0	0	0	0	10	1	0	11

16:15 to 16:30	0	0	0	0	49	2	1	52	57	2	0	59	45	1	0	46	3	0	0	3	5	2	0	7
16:30 to 16:45	0	0	0	0	43	2	0	45	45	0	2	47	42	2	2	46	2	0	0	2	8	0	1	9
16:45 to 17:00	0	0	0	0	45	0	0	45	49	2	0	51	37	2	0	39	0	0	0	0	6	0	0	6
17:00 to 17:15	0	0	0	0	30	0	2	32	56	0	1	57	30	1	1	32	0	0	0	0	9	0	0	9
17:15 to 17:30	0	0	0	0	25	2	0	27	52	1	0	53	25	0	0	25	0	0	0	0	8	1	0	9
17:30 to 17:45	0	0	0	0	39	1	0	40	43	0	2	45	27	2	1	30	2	0	0	2	5	0	0	5
17:45 to 18:00	0	0	0	0	22	1	1	24	35	1	0	36	25	1	0	26	0	0	0	0	8	0	0	8
18:00 to 18:15	0	0	0	0	40	0	0	40	38	0	1	39	23	1	2	26	1	0	0	1	9	0	1	10
18:15 to 18:30	0	0	0	0	27	0	0	27	46	1	0	47	28	2	1	31	0	0	0	0	12	1	0	13
18:30 to 18:45	0	0	0	0	18	1	0	19	35	0	2	37	26	2	1	29	0	0	0	0	15	0	0	15
18:45 to 19:00	0	0	0	0	22	0	1	23	38	1	2	41	22	1	1	24	0	0	0	0	10	0	0	10
PM Totals	0	0	0	0	498	12	18	528	732	11	20	763	547	20	17	584	12	0	0	12	147	6	3	156

Approach	Annangrove Rd												Edwards Rd											
Direction	Direction 1 (Left turn)				Direction 2 (Through)				Direction 3 (Right turn)				Direction 4 (Left turn)				Direction 5 (Through)				Direction 6 (Right turn)			
Time Period 1h	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 8:00	28	1	1	30	127	8	2	137	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
7:15 to 8:15	32	1	1	34	132	5	2	139	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
7:30 to 8:30	35	2	0	37	143	8	5	156	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
7:45 to 8:45	41	2	0	43	144	10	5	160	1	0	0	1	1	0	0	1	0	1	0	1	0	0	0	0
8:00 to 9:00	48	2	0	50	173	12	6	191	3	1	0	4	1	0	0	1	0	1	0	1	0	0	0	0
8:15 to 9:15	51	2	1	54	200	14	7	221	5	1	0	6	1	0	0	1	0	1	0	1	0	0	0	0
8:30 to 9:30	57	1	1	59	205	13	5	223	6	1	0	7	0	0	0	0	0	1	0	1	0	0	0	0
8:45 to 9:45	56	2	1	59	220	12	4	236	10	1	0	11	0	0	0	0	0	0	0	0	0	0	0	0
9:00 to 10:00	53	3	1	57	199	10	3	212	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0
AM Total	129	6	2	137	499	30	11	540	14	1	0	15	2	0	0	2	0	1	0	1	0	0	0	0
15:00 to 16:00	110	5	2	117	110	3	1	114	1	0	0	1	2	0	0	2	0	0	0	0	0	0	0	0
15:15 to 16:15	124	3	3	130	128	7	1	136	1	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0
15:30 to 16:30	130	4	3	137	140	9	1	150	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
15:45 to 16:45	130	5	1	136	161	7	1	169	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0
16:00 to 17:00	138	3	2	143	155	12	1	168	2	0	0	2	3	0	0	3	0	0	0	0	0	0	0	0
16:15 to 17:15	126	3	1	130	165	10	0	175	2	0	0	2	2	0	0	2	0	0	0	0	0	0	0	0
16:30 to 17:30	114	3	1	118	172	9	1	182	2	0	0	2	3	0	0	3	0	0	0	0	0	0	0	0
16:45 to 17:45	115	2	1	118	166	8	1	175	3	0	0	3	1	0	0	1	0	0	0	0	0	0	0	0
17:00 to 18:00	103	2	2	107	154	3	1	158	5	0	0	5	1	0	0	1	0	0	0	0	0	0	0	0
17:15 to 18:15	101	2	2	105	127	3	2	132	5	0	0	5	2	0	0	2	0	0	0	0	0	0	0	0
17:30 to 18:30	102	1	3	106	110	2	1	113	5	0	0	5	3	0	0	3	0	0	0	0	0	0	0	0
17:45 to 18:45	107	2	3	112	96	3	1	100	4	0	0	4	3	0	0	3	0	0	0	0	0	0	0	0
18:00 to 19:00	104	3	1	108	103	3	1	107	1	0	0	1	6	0	0	6	0	0	0	0	0	0	0	0
PM Total	455	13	7	475	522	21	4	547	9	0	0	9	12	0	0	12	0	0	0	0	0	0	0	0

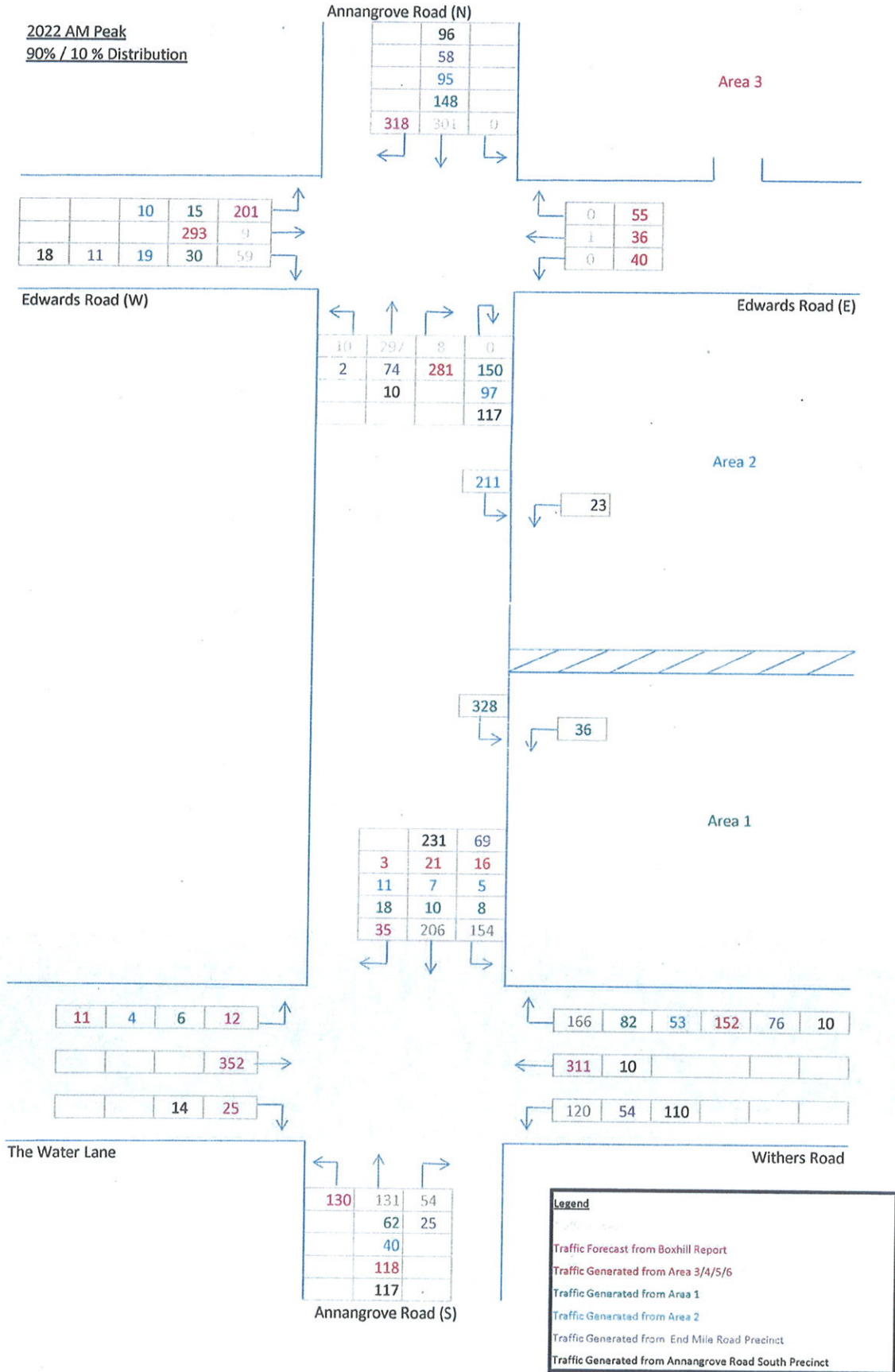
Approach	Annangrove Rd												Edwards Rd											
Direction	Direction 7 (Left turn)				Direction 8 (Through)				Direction 9 (Right turn)				Direction 10 (Left turn)				Direction 11 (Through)				Direction 12 (Right turn)			
Time Period 1h	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 8:00	0	0	0	0	194	12	0	206	153	5	1	159	197	2	6	205	0	0	0	0	70	2	0	72
7:15 to 8:15	0	0	0	0	193	12	0	205	173	4	1	178	213	3	8	224	0	0	0	0	95	1	0	96
7:30 to 8:30	0	0	0	0	193	13	0	206	180	3	2	185	222	9	7	238	0	0	0	0	106	5	1	112
7:45 to 8:45	0	0	0	0	219	17	0	236	159	3	4	166	231	10	5	246	0	1	0	1	124	5	1	130
8:00 to 9:00	0	0	0	0	206	20	3	229	131	5	5	141	208	11	4	223	4	1	0	5	140	5	1	146
8:15 to 9:15	0	0	0	0	198	21	5	224	128	4	4	136	205	9	3	217	6	1	0	7	122	7	2	131
8:30 to 9:30	0	0	0	0	184	23	5	212	128	5	3	136	194	6	3	203	10	1	0	11	139	3	1	143
8:45 to 9:45	0	0	0	0	143	17	7	167	145	5	2	152	185	7	3	195	13	0	0	13	137	3	2	142
9:00 to 10:00	0	0	0	0	141	13	5	159	146	4	3	153	193	6	5	204	14	0	0	14	130	3	2	135
AM Total	0	0	0	0	541	45	8	594	430	14	9	453	598	19	15	632	18	1	0	19	340	10	3	353
15:00 to 16:00	0	0	0	0	106	3	11	120	198	3	9	210	178	3	5	186	4	0	0	4	42	1	1	44
15:15 to 16:15	0	0	0	0	113	3	10	126	196	3	9	208	179	4	6	189	4	0	0	4	46	2	1	49
15:30 to 16:30	0	0	0	0	140	5	9	154	205	3	7	215	176	3	5	184	5	0	0	5	42	3	1	46
15:45 to 16:45	0	0	0	0	154	5	7	166	194	3	6	203	172	5	7	184	7	0	0	7	37	3	1	41
16:00 to 17:00	0	0	0	0	169	4	3	176	191	4	3	198	163	7	5	175	5	0	0	5	29	3	1	33
16:15 to 17:15	0	0	0	0	167	4	3	174	207	4	3	214	154	6	3	163	5	0	0	5	28	2	1	31
16:30 to 17:30	0	0	0	0	143	4	2	149	202	3	3	208	134	5	3	142	2	0	0	2	31	1	1	33
16:45 to 17:45	0	0	0	0	139	3	2	144	200	3	3	206	119	5	2	128	2	0	0	2	28	1	0	29
17:00 to 18:00	0	0	0	0	116	4	3	123	186	2	3	191	107	4	2	113	2	0	0	2	30	1	0	31
17:15 to 18:15	0	0	0	0	126	4	1	131	168	2	3	173	100	4	3	107	3	0	0	3	30	1	1	32
17:30 to 18:30	0	0	0	0	128	2	1	131	162	2	3	167	103	6	4	113	3	0	0	3	34	1	1	36
17:45 to 18:45	0	0	0	0	107	2	1	110	154	2	3	159	102	6	4	112	1	0	0	1	44	1	1	46
18:00 to 19:00	0	0	0	0	107	1	1	109	157	2	5	164	99	6	5	110	1	0	0	1	45	1	1	48
PM Total	0	0	0	0	498	12	18	528	732	11	20	763	547	20	17	584	12	0	0	12	147	6	3	156



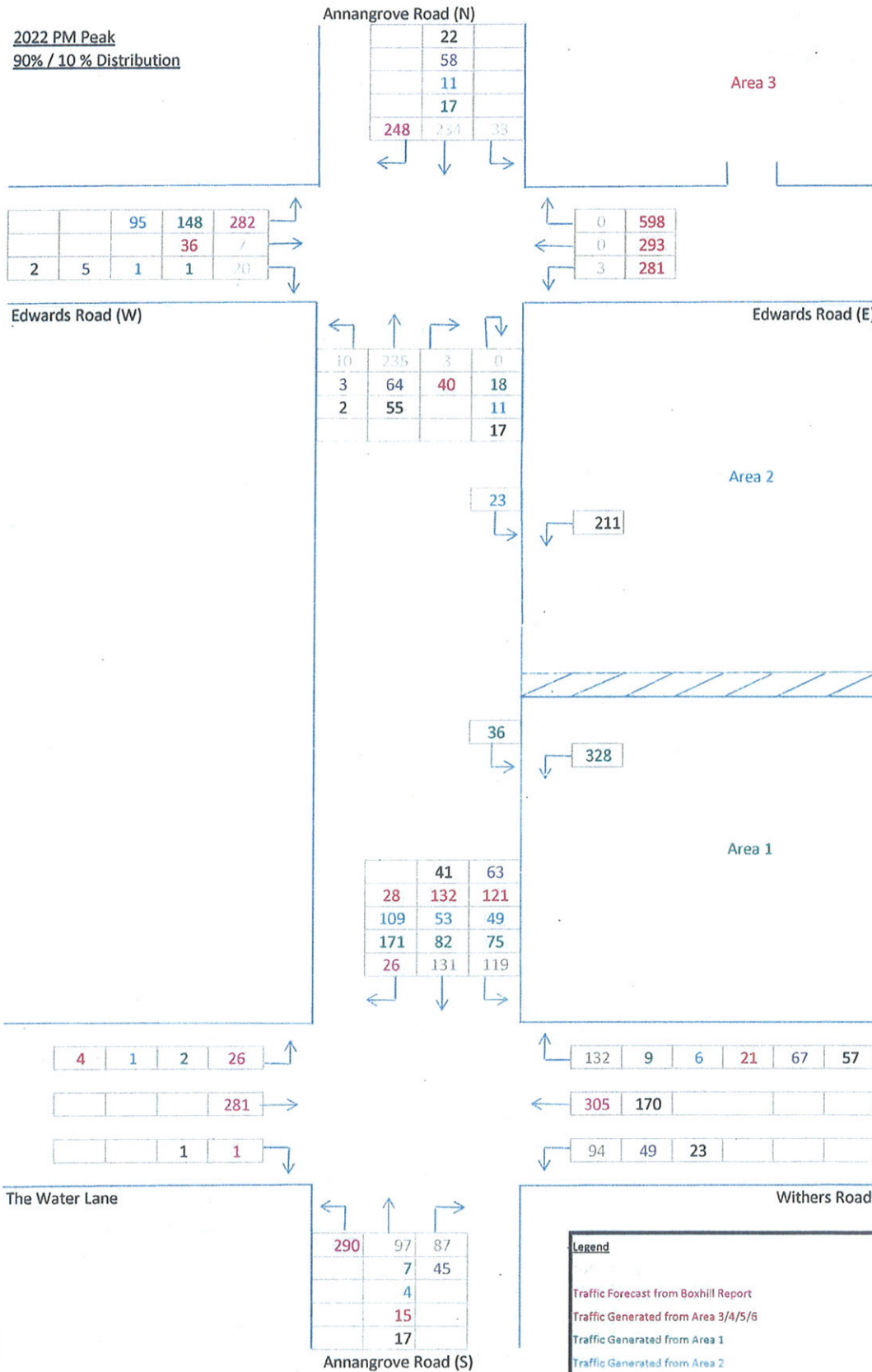
APPENDIX C

TRAFFIC GENERATION AND DISTRIBUTION PLANS

2022 AM Peak
90% / 10 % Distribution



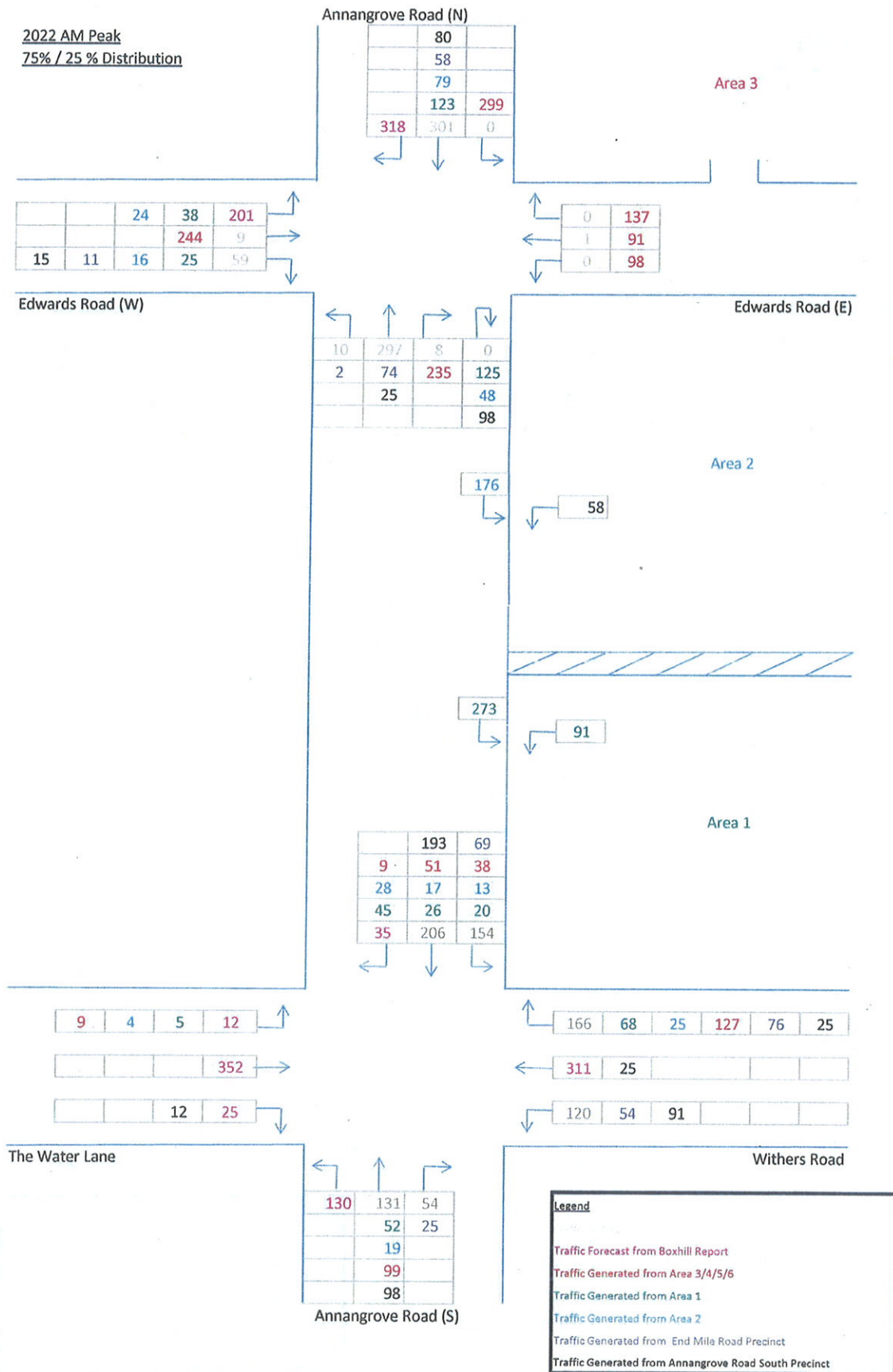
2022 PM Peak
90% / 10 % Distribution



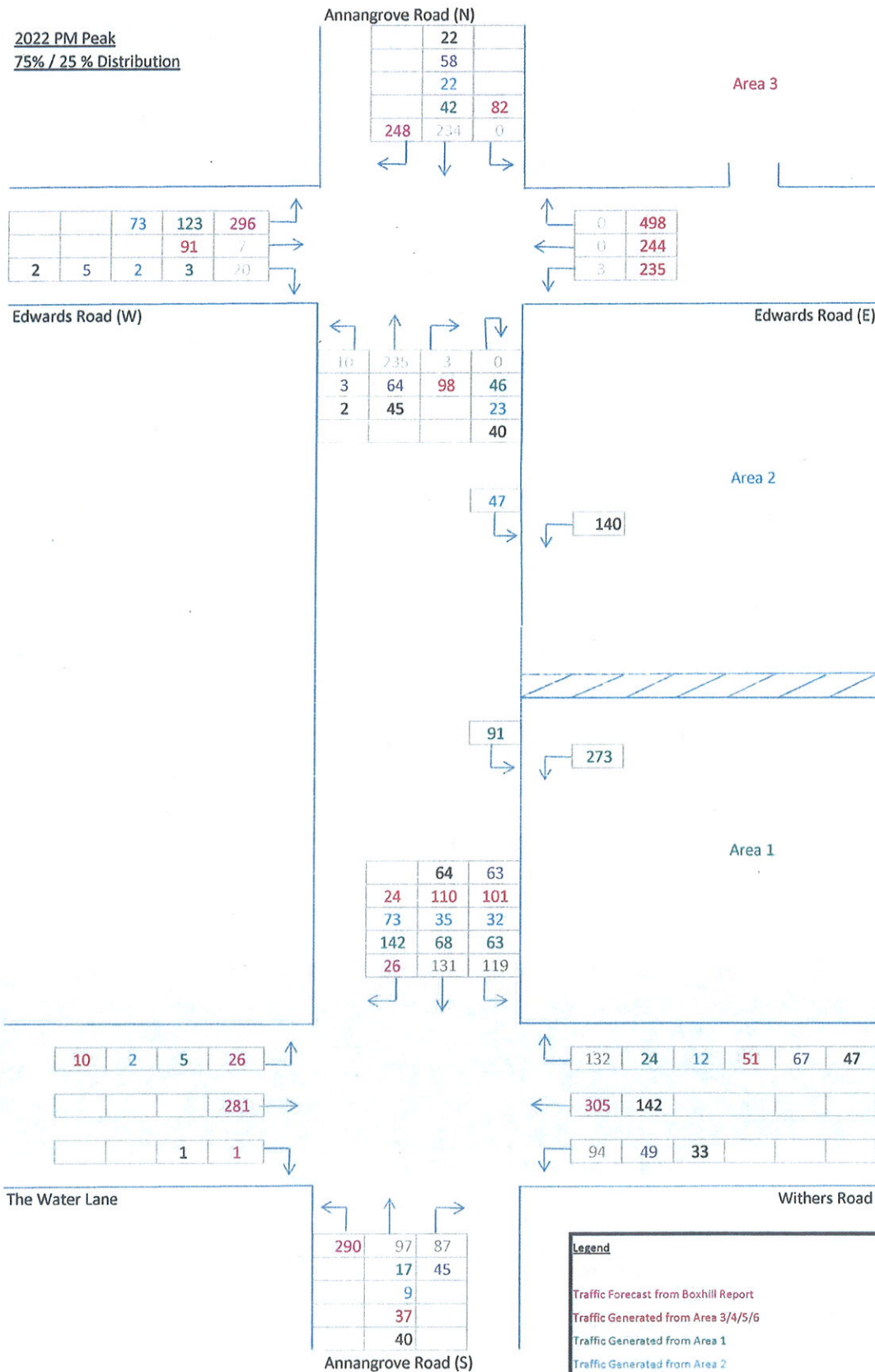
Legend

- Traffic Forecast from Boxhill Report
- Traffic Generated from Area 3/4/5/6
- Traffic Generated from Area 1
- Traffic Generated from Area 2
- Traffic Generated from End Mile Road Precinct
- Traffic Generated from Annangrove Road South Precinct

2022 AM Peak
75% / 25 % Distribution



2022 PM Peak
75% / 25 % Distribution



Legend

- Traffic Forecast from Boxhill Report
- Traffic Generated from Area 3/4/5/6
- Traffic Generated from Area 1
- Traffic Generated from Area 2
- Traffic Generated from End Mile Road Precinct
- Traffic Generated from Annangrove Road South Precinct

APPENDIX D

SIDRA ANALYSIS OUTPUT TABLES

MOVEMENT SUMMARY

Site: 2012 AM Base Case

Annangrove Road / Withers Road

2012 AM Base Case

Giveway / Yield (Two-Way)

Design Life Analysis (Practical Capacity): Results for 20 years

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	1	0.0	0.165	12.4	LOS A	1.2	9.2	0.58	0.45	52.1
2	T	169	9.9	0.165	3.4	LOS A	1.2	9.2	0.58	0.00	55.5
3	R	56	7.5	0.165	12.8	LOS A	1.2	9.2	0.58	1.01	52.1
Approach		227	9.3	0.165	5.8	NA	1.2	9.2	0.58	0.25	54.7
East: Withers Road											
4	L	125	6.7	0.270	11.8	LOS A	0.6	4.6	0.47	0.78	47.0
5	T	1	0.0	0.644	25.2	LOS B	4.4	31.8	0.82	1.15	34.8
6	R	216	4.5	0.644	27.5	LOS B	4.4	31.8	0.82	1.17	35.5
Approach		342	5.3	0.644	21.8	LOS B	4.4	31.8	0.70	1.03	39.0
North: Annangrove Road (N)											
7	L	256	2.2	0.275	10.1	LOS A	2.0	15.2	0.52	0.43	52.5
8	T	241	12.2	0.275	1.0	LOS A	2.0	15.2	0.52	0.00	55.7
9	R	1	0.0	0.275	10.2	LOS A	2.0	15.2	0.52	0.79	52.8
Approach		498	7.0	0.275	5.7	NA	2.0	15.2	0.52	0.22	54.0
West: The Water Lane											
10	L	1	0.0	0.010	15.2	LOS B	0.0	0.2	0.50	0.59	43.7
11	T	1	0.0	0.010	13.2	LOS A	0.0	0.2	0.50	0.70	43.6
12	R	1	0.0	0.010	15.3	LOS B	0.0	0.2	0.50	0.78	43.8
Approach		4	0.0	0.010	14.6	LOS B	0.0	0.2	0.50	0.69	43.7
All Vehicles		1071	6.9	0.644	10.9	NA	4.4	31.8	0.59	0.49	48.1

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

Processed: Thursday, June 07, 2012 3:46:33 PM

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MOVEMENT SUMMARY

Site: 2012 PM Base Case

Annangrove Road / Withers Road
2012 PM Base Case
Giveaway / Yield (Two-Way)
Design Life Analysis (Practical Capacity): Results for 20 years

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	1	100.0	0.181	14.5	LOS B	1.1	8.2	0.43	0.63	50.2
2	T	178	7.9	0.181	1.5	LOS A	1.1	8.2	0.43	0.00	58.3
3	R	91	1.5	0.181	10.7	LOS A	1.1	8.2	0.43	0.90	53.3
Approach		270	6.2	0.181	4.6	NA	1.1	8.2	0.43	0.31	56.5
East: Withers Road											
4	L	98	4.3	0.183	10.2	LOS A	0.4	2.8	0.33	0.68	48.3
5	T	1	100.0	0.581	23.2	LOS B	4.1	29.0	0.73	1.02	37.4
6	R	242	1.7	0.581	21.6	LOS B	4.1	29.0	0.73	1.10	39.0
Approach		342	2.9	0.581	18.4	LOS B	4.1	29.0	0.62	0.98	41.2
North: Annangrove Road (N)											
7	L	146	1.0	0.154	10.0	LOS A	1.0	7.5	0.47	0.47	52.6
8	T	137	8.2	0.154	0.9	LOS A	1.0	7.5	0.47	0.00	56.8
9	R	1	0.0	0.154	10.1	LOS A	1.0	7.5	0.47	0.80	52.8
Approach		284	4.4	0.154	5.6	NA	1.0	7.5	0.47	0.24	54.6
West: The Water Lane											
10	L	1	0.0	0.008	13.2	LOS A	0.0	0.2	0.46	0.59	45.5
11	T	1	0.0	0.008	11.2	LOS A	0.0	0.2	0.46	0.65	45.5
12	R	1	0.0	0.008	13.3	LOS A	0.0	0.2	0.46	0.75	45.5
Approach		4	0.0	0.008	12.6	LOS A	0.0	0.2	0.46	0.66	45.5
All Vehicles		900	4.4	0.581	10.2	NA	4.1	29.0	0.51	0.54	49.0

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2012 AM Base Case

Annangrove Road / Edwards Road
2012 AM Base Case
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	54	5.6	0.157	10.8	LOS A	1.2	9.3	0.49	0.57	53.8
2	T	221	9.5	0.157	1.5	LOS A	1.2	9.3	0.49	0.00	57.5
3	R	6	16.7	0.157	11.4	LOS A	1.2	9.3	0.49	0.99	54.1
Approach		281	8.9	0.157	3.5	NA	1.2	9.3	0.49	0.13	56.7
East: Edwards Road (E)											
4	L	1	0.0	0.022	33.1	LOS C	0.1	0.6	0.74	0.62	32.6
5	T	1	100.0	0.022	34.9	LOS C	0.1	0.6	0.74	0.89	32.1
6	R	1	0.0	0.022	33.2	LOS C	0.1	0.6	0.74	0.91	32.7
Approach		3	33.3	0.022	33.7	LOS C	0.1	0.6	0.74	0.80	32.5
North: Annangrove Road (N)											
7	L	1	0.0	0.252	10.7	LOS A	1.6	12.4	0.46	0.52	53.0
8	T	224	11.6	0.252	1.7	LOS A	1.6	12.4	0.46	0.00	57.4
9	R	136	5.9	0.252	11.1	LOS A	1.6	12.4	0.46	0.89	53.1
Approach		361	9.4	0.252	5.2	NA	1.6	12.4	0.46	0.34	55.8
West: Edwards Road (W)											
10	L	217	5.5	0.421	11.4	LOS A	1.2	8.7	0.41	0.75	47.4
11	T	7	14.3	0.444	22.1	LOS B	2.2	16.5	0.77	0.99	37.0
12	R	131	6.9	0.444	24.0	LOS B	2.2	16.5	0.77	1.03	37.6
Approach		355	6.2	0.444	16.2	LOS B	2.2	16.5	0.55	0.86	43.1
All Vehicles		1000	8.2	0.444	8.7	NA	2.2	16.5	0.50	0.47	50.6

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

Processed: Wednesday, April 04, 2012 4:16:24 PM
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MOVEMENT SUMMARY

Site: 2012 PM Base Case

Annangrove Road / Edwards Road
2012 PM Base Case
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	136	4.4	0.166	10.0	LOS A	1.1	8.1	0.43	0.53	52.9
2	T	169	4.7	0.166	0.8	LOS A	1.1	8.1	0.43	0.00	57.9
3	R	1	0.0	0.166	10.0	LOS A	1.1	8.1	0.43	0.83	53.1
Approach		306	4.6	0.166	4.9	NA	1.1	8.1	0.43	0.24	55.6
East: Edwards Road (E)											
4	L	3	0.0	0.010	13.3	LOS A	0.0	0.2	0.41	0.60	45.4
5	T	1	0.0	0.010	11.3	LOS A	0.0	0.2	0.41	0.66	45.5
6	R	1	0.0	0.010	13.4	LOS A	0.0	0.2	0.41	0.79	45.4
Approach		5	0.0	0.010	12.9	LOS A	0.0	0.2	0.41	0.65	45.4
North: Annangrove Road (N)											
7	L	1	0.0	0.283	10.9	LOS A	1.7	12.7	0.48	0.45	52.3
8	T	166	7.2	0.283	1.8	LOS A	1.7	12.7	0.48	0.00	56.4
9	R	203	4.4	0.283	11.2	LOS A	1.7	12.7	0.48	0.84	52.4
Approach		370	5.7	0.283	7.0	NA	1.7	12.7	0.48	0.46	54.2
West: Edwards Road (W)											
10	L	184	6.5	0.358	10.8	LOS A	0.8	6.2	0.38	0.71	48.0
11	T	7	0.0	0.150	16.6	LOS B	0.5	4.1	0.67	0.85	40.6
12	R	41	9.8	0.150	19.2	LOS B	0.5	4.1	0.67	0.91	41.0
Approach		232	6.9	0.358	12.4	LOS A	0.8	6.2	0.44	0.75	46.4
All Vehicles		913	5.6	0.358	7.7	NA	1.7	12.7	0.45	0.46	52.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.11.2079

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MOVEMENT SUMMARY

Site: 2022 AM Upgrade 10/90
Diamond

Annangrove Road / Withers Road

2022 AM Upgrade

Signals - Fixed Time Cycle Time = 115 seconds (Optimum Cycle Time - Shortest Queue)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	130	8.0	0.677	51.6	LOS D	15.5	116.2	0.96	0.86	27.2
2	T	468	8.0	0.677	43.1	LOS D	15.5	116.2	0.96	0.82	28.6
3	R	79	8.0	0.481	44.2	LOS D	3.3	25.0	0.99	0.76	28.9
Approach		677	8.0	0.677	44.8	LOS D	15.5	116.2	0.97	0.82	28.4
East: Withers Road											
4	L	284	8.0	0.545	13.2	LOS A	4.7	35.1	0.38	0.71	45.9
5	T	321	8.0	0.474	46.1	LOS D	8.2	61.3	0.94	0.77	25.4
6	R	539	8.0	0.782	30.6	LOS C	20.5	153.4	0.93	0.89	34.0
Approach		1144	8.0	0.782	30.6	LOS C	20.5	153.4	0.80	0.81	33.2
North: Annangrove Road (N)											
7	L	252	8.0	0.794	55.2	LOS D	21.2	158.6	0.99	0.91	25.6
8	T	475	8.0	0.794	47.8	LOS D	21.2	158.6	1.00	0.92	27.0
9	R	67	8.0	0.341	42.4	LOS C	2.8	21.0	0.94	0.75	29.6
Approach		794	8.0	0.794	49.7	LOS D	21.2	158.6	0.99	0.90	26.7
West: The Water Lane											
10	L	33	8.0	0.097	19.1	LOS B	0.8	5.7	0.51	0.69	41.2
11	T	352	8.0	0.520	46.5	LOS D	9.1	67.9	0.95	0.78	25.3
12	R	39	8.0	0.111	22.4	LOS B	1.0	7.3	0.60	0.71	38.8
Approach		424	8.0	0.520	42.2	LOS C	9.1	67.9	0.89	0.77	27.1
All Vehicles		3039	8.0	0.794	40.4	LOS C	21.2	158.6	0.90	0.83	29.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	50	51.7	LOS E	0.2	0.2	0.95	0.95
P3	Across E approach	50	45.2	LOS E	0.1	0.1	0.89	0.89
P5	Across N approach	50	51.7	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	50	45.2	LOS E	0.1	0.1	0.89	0.89
All Pedestrians		200	48.4	LOS E			0.92	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Processed: Monday, July 16, 2012 4:25:54 PM

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MOVEMENT SUMMARY

Site: 2022 PM Upgrade 10/90
Diamond

Annangrove Road / Withers Road

2022 PM Upgrade

Signals - Fixed Time Cycle Time = 90 seconds (Optimum Cycle Time - Shortest Queue)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	290	6.0	0.376	27.9	LOS B	8.6	63.4	0.72	0.81	36.6
2	T	140	6.0	0.269	27.5	LOS B	4.8	35.6	0.82	0.67	36.2
3	R	132	6.0	0.402	29.1	LOS C	3.4	25.2	0.93	0.78	36.0
Approach		562	6.0	0.402	28.1	LOS B	8.6	63.4	0.79	0.77	36.4
East: Withers Road											
4	L	166	6.0	0.281	12.2	LOS A	2.1	15.2	0.37	0.70	46.7
5	T	475	6.0	0.542	33.3	LOS C	9.3	68.8	0.93	0.78	29.9
6	R	292	6.0	0.756	39.3	LOS C	10.5	77.0	0.96	0.95	30.2
Approach		933	6.0	0.756	31.4	LOS C	10.5	77.0	0.84	0.82	32.1
North: Annangrove Road (N)											
7	L	427	6.0	0.728	36.0	LOS C	18.8	138.3	0.92	0.88	32.5
8	T	439	6.0	0.728	32.4	LOS C	18.8	138.3	0.96	0.85	33.1
9	R	334	6.0	0.754	31.0	LOS C	10.8	79.2	0.93	0.88	34.9
Approach		1200	6.0	0.754	33.3	LOS C	18.8	138.3	0.94	0.87	33.4
West: The Water Lane											
10	L	33	6.0	0.044	10.6	LOS A	0.3	1.9	0.28	0.66	48.3
11	T	281	6.0	0.321	31.3	LOS C	5.2	38.2	0.87	0.71	30.9
12	R	2	6.0	0.006	28.9	LOS C	0.1	0.4	0.80	0.63	34.9
Approach		316	6.0	0.321	29.1	LOS C	5.2	38.2	0.81	0.70	32.2
All Vehicles		3011	6.0	0.756	31.3	LOS C	18.8	138.3	0.87	0.82	33.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	50	39.2	LOS D	0.1	0.1	0.93	0.93
P3	Across E approach	50	34.7	LOS D	0.1	0.1	0.88	0.88
P5	Across N approach	50	39.2	LOS D	0.1	0.1	0.93	0.93
P7	Across W approach	50	34.7	LOS D	0.1	0.1	0.88	0.88
All Pedestrians		200	36.9	LOS D			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

Project: M:\Jobs\12000\12006\SIDRA\Withers Road\Annangrove Road_Withers Road.sip

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MOVEMENT SUMMARY

Site: 2022 AM Upgrade 10/90

Annangrove Road / Edwards Road
2022 AM Upgrade
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	12	8.0	0.473	11.0	LOS A	3.1	23.1	0.68	0.83	51.6
2	T	381	8.0	0.473	10.8	LOS A	3.1	23.1	0.68	0.79	51.9
3	R	653	8.0	0.652	17.9	LOS B	6.2	46.3	0.78	0.89	45.7
Approach		1046	8.0	0.652	15.2	LOS B	6.2	46.3	0.74	0.86	47.8
East: Edwards Road (E)											
4	L	40	8.0	0.175	15.1	LOS B	1.0	7.6	0.88	0.96	44.5
5	T	37	8.0	0.175	13.2	LOS A	1.0	7.6	0.88	0.94	43.9
6	R	55	8.0	0.164	21.3	LOS B	0.8	6.3	0.85	0.96	40.2
Approach		132	8.0	0.175	17.1	LOS B	1.0	7.6	0.87	0.95	42.4
North: Annangrove Road (N)											
7	L	359	8.0	0.307	9.4	LOS A	1.7	12.8	0.59	0.72	51.6
8	T	698	8.0	0.753	23.2	LOS B	10.0	75.0	1.00	1.25	41.2
9	R	318	8.0	0.753	30.0	LOS C	8.4	62.6	0.99	1.24	36.3
Approach		1375	8.0	0.753	21.2	LOS B	10.0	75.0	0.89	1.11	42.0
West: Edwards Road (W)											
10	L	226	8.0	0.544	13.6	LOS A	3.6	27.2	0.84	1.01	45.8
11	T	302	8.0	0.544	12.3	LOS A	3.6	27.2	0.84	0.98	44.6
12	R	137	8.0	0.544	19.3	LOS B	3.4	25.4	0.83	1.05	42.2
Approach		665	8.0	0.544	14.1	LOS A	3.6	27.2	0.84	1.00	44.4
All Vehicles		3218	8.0	0.753	17.6	LOS B	10.0	75.0	0.83	1.00	44.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 2022 PM Upgrade 10/90

Annangrove Road / Edwards Road
2022 PM Upgrade
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	15	6.0	0.552	15.1	LOS B	4.0	29.7	0.87	1.03	47.6
2	T	354	6.0	0.552	14.9	LOS B	4.0	29.7	0.87	1.02	48.5
3	R	89	6.0	0.226	20.8	LOS B	1.0	7.5	0.75	0.94	43.2
Approach		458	6.0	0.552	16.0	LOS B	4.0	29.7	0.85	1.00	47.3
East: Edwards Road (E)											
4	L	284	6.0	0.651	12.8	LOS A	4.9	35.9	0.74	0.99	46.4
5	T	293	6.0	0.651	10.9	LOS A	4.9	35.9	0.74	0.95	46.0
6	R	598	6.0	0.610	16.3	LOS B	4.3	31.8	0.71	0.99	43.8
Approach		1175	6.0	0.651	14.2	LOS A	4.9	35.9	0.73	0.98	44.9
North: Annangrove Road (N)											
7	L	55	6.0	0.042	7.7	LOS A	0.2	1.1	0.18	0.54	54.4
8	T	342	6.0	0.210	8.3	LOS A	1.1	8.0	0.30	0.56	54.6
9	R	248	6.0	0.210	12.8	LOS A	1.1	7.7	0.31	0.69	48.8
Approach		645	6.0	0.210	10.0	LOS A	1.1	8.0	0.29	0.61	52.2
West: Edwards Road (W)											
10	L	525	6.0	0.794	26.4	LOS B	10.5	77.4	1.00	1.34	36.2
11	T	43	6.0	0.183	14.2	LOS A	0.9	6.5	0.76	0.87	42.9
12	R	29	6.0	0.183	20.6	LOS B	0.9	6.5	0.76	0.96	41.2
Approach		597	6.0	0.794	25.2	LOS B	10.5	77.4	0.97	1.28	36.8
All Vehicles		2875	6.0	0.794	15.8	LOS B	10.5	77.4	0.70	0.96	44.6

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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INTERSECTION

MOVEMENT SUMMARY

Site: 2022 AM Peak 90_10

Edwards Road East Intersection 2
2022 AM Peak 90/10
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	76	8.0	0.090	8.0	LOS A	0.4	3.3	0.36	0.57	48.5
6	R	20	8.0	0.090	12.3	LOS A	0.4	3.3	0.36	0.74	45.7
Approach		96	8.0	0.090	8.9	LOS A	0.4	3.3	0.36	0.61	47.9
North:											
7	L	20	8.0	0.060	10.0	LOS A	0.3	2.4	0.61	0.66	46.8
9	R	30	8.0	0.060	14.6	LOS B	0.3	2.4	0.61	0.77	43.7
Approach		50	8.0	0.060	12.8	LOS A	0.3	2.4	0.61	0.72	44.9
West: Edwards Road Extension (W)											
10	L	269	8.0	0.201	7.2	LOS A	1.2	8.8	0.12	0.54	49.9
11	T	440	8.0	0.349	5.7	LOS A	2.5	18.3	0.12	0.43	51.3
12	R	156	8.0	0.349	13.2	LOS A	2.5	18.3	0.12	0.90	45.0
Approach		865	8.0	0.349	7.5	LOS A	2.5	18.3	0.12	0.55	49.6
All Vehicles		1011	8.0	0.349	7.9	LOS A	2.5	18.3	0.17	0.56	49.1

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 PM Peak 90_10

Edwards Road East Intersection 2
2022 AM Peak 90/10
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	679	6.0	0.636	10.2	LOS A	6.0	44.4	0.70	0.74	46.8
6	R	1	6.0	0.636	14.1	LOS A	6.0	44.4	0.70	0.84	44.3
Approach		680	6.0	0.636	10.2	LOS A	6.0	44.4	0.70	0.74	46.8
North:											
7	L	1	6.0	0.201	7.9	LOS A	1.1	7.9	0.19	0.57	48.6
9	R	269	6.0	0.201	11.3	LOS A	1.1	7.9	0.19	0.68	45.8
Approach		270	6.0	0.201	11.3	LOS A	1.1	7.9	0.19	0.68	45.8
West: Edwards Road Extension (W)											
10	L	30	6.0	0.021	8.4	LOS A	0.1	0.8	0.02	0.67	48.9
11	T	55	6.0	0.032	6.9	LOS A	0.2	1.3	0.02	0.56	50.5
12	R	1	6.0	0.032	12.4	LOS A	0.2	1.3	0.02	0.96	45.2
Approach		86	6.0	0.032	7.5	LOS A	0.2	1.3	0.02	0.61	49.9
All Vehicles		1036	6.0	0.636	10.3	LOS A	6.0	44.4	0.51	0.71	46.8

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 AM Peak 90_10

Edwards Road East Intersection 3
2022 AM Peak 90/10
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	31	8.0	0.035	1.0	LOS A	0.2	1.3	0.33	0.00	53.1
6	R	20	8.0	0.035	9.6	LOS A	0.2	1.3	0.33	0.80	48.4
Approach		51	8.0	0.035	4.4	NA	0.2	1.3	0.33	0.31	51.2
North: Crown Road											
7	L	140	8.0	0.188	12.5	LOS A	0.8	5.7	0.35	0.88	45.7
9	R	25	8.0	0.188	12.4	LOS A	0.8	5.7	0.35	0.95	45.8
Approach		165	8.0	0.188	12.5	LOS A	0.8	5.7	0.35	0.89	45.7
West: Edwards Road Extension (W)											
10	L	89	8.0	0.122	8.5	LOS A	0.0	0.0	0.00	0.87	49.0
11	T	133	8.0	0.122	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		222	8.0	0.122	3.4	NA	0.0	0.0	0.00	0.35	55.0
All Vehicles		438	8.0	0.188	6.9	NA	0.8	5.7	0.17	0.55	50.7

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 PM Peak 90_10

Edwards Road East Intersection 3
2022 AM Peak 90/10
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	273	6.0	0.160	0.1	LOS A	1.0	7.0	0.12	0.00	57.6
6	R	20	6.0	0.160	8.7	LOS A	1.0	7.0	0.12	1.01	48.9
Approach		293	6.0	0.160	0.7	NA	1.0	7.0	0.12	0.07	56.9
North: Crown Road											
7	L	13	6.0	0.354	16.0	LOS B	1.9	13.8	0.40	0.73	42.5
9	R	186	6.0	0.354	15.9	LOS B	1.9	13.8	0.40	1.00	42.6
Approach		199	6.0	0.354	15.9	LOS B	1.9	13.8	0.40	0.99	42.6
West: Edwards Road Extension (W)											
10	L	12	6.0	0.016	8.4	LOS A	0.0	0.0	0.00	0.87	49.0
11	T	18	6.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		30	6.0	0.016	3.4	NA	0.0	0.0	0.00	0.35	55.0
All Vehicles		522	6.0	0.354	6.7	NA	1.9	13.8	0.22	0.44	50.4

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

Processed: Friday, July 06, 2012 4:49:31 PM

SIDRA INTERSECTION 5.1.12.2089

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MOVEMENT SUMMARY

Site: 2022 AM Upgrade 25/75
Diamond

Annangrove Road / Withers Road
2022 AM Upgrade
Signals - Fixed Time Cycle Time = 115 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	130	8.0	0.538	47.5	LOS D	12.9	96.4	0.90	0.86	28.5
2	T	399	8.0	0.538	39.1	LOS C	12.9	96.4	0.91	0.77	30.2
3	R	79	8.0	0.463	42.4	LOS C	3.2	24.0	0.98	0.76	29.6
Approach		608	8.0	0.538	41.3	LOS C	12.9	96.4	0.92	0.79	29.8
East: Withers Road											
4	L	265	8.0	0.524	13.4	LOS A	4.5	33.5	0.39	0.71	45.7
5	T	336	8.0	0.496	46.3	LOS D	8.6	64.5	0.95	0.77	25.4
6	R	487	8.0	0.756	31.0	LOS C	18.4	137.9	0.93	0.87	33.9
Approach		1088	8.0	0.756	31.4	LOS C	18.4	137.9	0.80	0.80	32.7
North: Annangrove Road (N)											
7	L	294	8.0	0.768	50.6	LOS D	22.0	164.7	0.97	0.90	27.0
8	T	493	8.0	0.768	43.9	LOS D	22.0	164.7	0.98	0.89	28.3
9	R	117	8.0	0.488	40.6	LOS C	4.9	36.6	0.92	0.78	30.3
Approach		904	8.0	0.768	45.7	LOS D	22.0	164.7	0.97	0.88	28.1
West: The Water Lane											
10	L	30	8.0	0.080	16.7	LOS B	0.6	4.5	0.45	0.68	42.9
11	T	352	8.0	0.520	46.5	LOS D	9.1	67.9	0.95	0.78	25.3
12	R	37	8.0	0.110	24.0	LOS B	1.0	7.4	0.64	0.71	37.7
Approach		419	8.0	0.520	42.4	LOS C	9.1	67.9	0.89	0.77	27.0
All Vehicles		3019	8.0	0.768	39.2	LOS C	22.0	164.7	0.89	0.82	29.8

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	50	51.7	LOS E	0.2	0.2	0.95	0.95
P3	Across E approach	50	42.6	LOS E	0.1	0.1	0.86	0.86
P5	Across N approach	50	51.7	LOS E	0.2	0.2	0.95	0.95
P7	Across W approach	50	42.6	LOS E	0.1	0.1	0.86	0.86
All Pedestrians		200	47.1	LOS E			0.90	0.90

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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SIDRA INTERSECTION 5.1.12.2089

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INTERSECTION

MOVEMENT SUMMARY

Site: 2022 PM Upgrade 25/75
Diamond

Annangrove Road / Withers Road
2022 PM Upgrade
Signals - Fixed Time Cycle Time = 90 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	290	6.0	0.396	28.1	LOS B	9.0	66.4	0.73	0.82	36.6
2	T	200	6.0	0.396	29.7	LOS C	9.0	66.4	0.87	0.72	34.9
3	R	132	6.0	0.459	31.3	LOS C	3.8	27.6	0.95	0.78	34.8
Approach		622	6.0	0.459	29.3	LOS C	9.0	66.4	0.82	0.78	35.6
East: Withers Road											
4	L	176	6.0	0.281	11.7	LOS A	2.0	14.7	0.35	0.70	47.2
5	T	447	6.0	0.510	33.0	LOS C	8.7	64.1	0.92	0.77	30.1
6	R	333	6.0	0.717	31.7	LOS C	11.2	82.8	0.92	0.85	33.5
Approach		956	6.0	0.717	28.6	LOS C	11.2	82.8	0.81	0.78	33.6
North: Annangrove Road (N)											
7	L	378	6.0	0.708	36.8	LOS C	17.2	126.5	0.92	0.87	32.2
8	T	408	6.0	0.708	33.1	LOS C	17.2	126.5	0.96	0.84	32.7
9	R	265	6.0	0.714	32.2	LOS C	8.6	63.6	0.94	0.85	34.2
Approach		1051	6.0	0.714	34.2	LOS C	17.2	126.5	0.94	0.86	32.9
West: The Water Lane											
10	L	43	6.0	0.072	11.9	LOS A	0.5	3.5	0.35	0.67	47.0
11	T	281	6.0	0.321	31.3	LOS C	5.2	38.2	0.87	0.71	30.9
12	R	2	6.0	0.005	26.0	LOS B	0.1	0.4	0.75	0.63	36.5
Approach		326	6.0	0.321	28.7	LOS C	5.2	38.2	0.80	0.70	32.4
All Vehicles		2955	6.0	0.717	30.8	LOS C	17.2	126.5	0.86	0.80	33.6

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	50	39.2	LOS D	0.1	0.1	0.93	0.93
P3	Across E approach	50	36.5	LOS D	0.1	0.1	0.90	0.90
P5	Across N approach	50	39.2	LOS D	0.1	0.1	0.93	0.93
P7	Across W approach	50	36.5	LOS D	0.1	0.1	0.90	0.90
All Pedestrians		200	37.8	LOS D			0.92	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 2022 AM Upgrade 25/75

Annangrove Road / Edwards Road
2022 AM Upgrade
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	12	8.0	0.493	11.8	LOS A	3.2	24.1	0.70	0.90	51.2
2	T	396	8.0	0.493	11.6	LOS A	3.2	24.1	0.70	0.86	51.8
3	R	514	8.0	0.549	17.6	LOS B	4.1	30.4	0.73	0.92	45.9
Approach		922	8.0	0.549	15.0	LOS B	4.1	30.4	0.72	0.90	48.3
East: Edwards Road (E)											
4	L	98	8.0	0.354	14.1	LOS A	2.1	15.7	0.86	0.97	45.4
5	T	91	8.0	0.354	12.2	LOS A	2.1	15.7	0.86	0.94	44.8
6	R	137	8.0	0.328	19.9	LOS B	1.7	13.0	0.84	0.97	41.2
Approach		326	8.0	0.354	16.0	LOS B	2.1	15.7	0.85	0.96	43.3
North: Annangrove Road (N)											
7	L	299	8.0	0.244	9.0	LOS A	1.3	9.7	0.53	0.69	52.0
8	T	641	8.0	0.587	14.7	LOS B	5.5	41.2	0.88	1.01	48.7
9	R	318	8.0	0.587	20.5	LOS B	4.9	36.7	0.87	1.07	42.8
Approach		1258	8.0	0.587	14.8	LOS B	5.5	41.2	0.80	0.95	47.7
West: Edwards Road (W)											
10	L	263	8.0	0.496	12.8	LOS A	3.1	23.3	0.80	0.98	46.4
11	T	253	8.0	0.496	11.5	LOS A	3.1	23.3	0.80	0.95	45.2
12	R	126	8.0	0.496	18.3	LOS B	2.9	21.9	0.80	1.03	42.9
Approach		642	8.0	0.496	13.4	LOS A	3.1	23.3	0.80	0.97	45.2
All Vehicles		3148	8.0	0.587	14.7	LOS B	5.5	41.2	0.78	0.94	46.8

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 PM Upgrade 25/75

Annangrove Road / Edwards Road
2022 PM Upgrade
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Annangrove Road (S)											
1	L	15	6.0	0.487	13.2	LOS A	3.3	24.0	0.81	0.98	49.6
2	T	344	6.0	0.487	13.0	LOS A	3.3	24.0	0.81	0.96	50.5
3	R	210	6.0	0.362	19.1	LOS B	1.9	14.2	0.76	0.96	44.6
Approach		569	6.0	0.487	15.2	LOS B	3.3	24.0	0.79	0.96	48.1
East: Edwards Road (E)											
4	L	235	6.0	0.592	12.8	LOS A	4.1	29.9	0.75	0.98	46.4
5	T	244	6.0	0.592	10.9	LOS A	4.1	29.9	0.75	0.94	46.0
6	R	498	6.0	0.548	16.3	LOS B	3.6	26.6	0.72	0.98	43.8
Approach		977	6.0	0.592	14.1	LOS A	4.1	29.9	0.74	0.97	44.9
North: Annangrove Road (N)											
7	L	82	6.0	0.062	8.0	LOS A	0.3	1.9	0.29	0.56	53.6
8	T	378	6.0	0.254	9.0	LOS A	1.4	10.7	0.47	0.63	53.3
9	R	248	6.0	0.254	13.6	LOS A	1.4	10.1	0.49	0.75	48.2
Approach		708	6.0	0.254	10.5	LOS A	1.4	10.7	0.46	0.66	51.4
West: Edwards Road (W)											
10	L	492	6.0	0.700	18.6	LOS B	6.8	50.0	0.92	1.15	41.2
11	T	98	6.0	0.305	13.4	LOS A	1.5	10.8	0.76	0.88	43.8
12	R	32	6.0	0.305	19.8	LOS B	1.5	10.8	0.76	0.98	41.9
Approach		622	6.0	0.700	17.9	LOS B	6.8	50.0	0.89	1.10	41.6
All Vehicles		2876	6.0	0.700	14.3	LOS A	6.8	50.0	0.71	0.92	46.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 AM Peak 75_25

Edwards Road East Intersection 2
2022 AM Peak 90/10
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	189	8.0	0.204	8.5	LOS A	1.1	8.3	0.44	0.62	48.1
6	R	20	8.0	0.204	12.6	LOS A	1.1	8.3	0.44	0.80	45.6
Approach		209	8.0	0.204	8.9	LOS A	1.1	8.3	0.44	0.63	47.8
North:											
7	L	20	8.0	0.117	11.2	LOS A	0.6	4.6	0.60	0.73	45.8
9	R	75	8.0	0.117	14.4	LOS A	0.6	4.6	0.60	0.78	43.5
Approach		95	8.0	0.117	13.7	LOS A	0.6	4.6	0.60	0.77	44.0
West: Edwards Road Extension (W)											
10	L	225	8.0	0.178	8.6	LOS A	1.0	7.7	0.12	0.64	48.4
11	T	368	8.0	0.320	7.1	LOS A	2.2	16.6	0.13	0.52	49.8
12	R	156	8.0	0.320	12.8	LOS A	2.2	16.6	0.13	0.83	45.0
Approach		749	8.0	0.320	8.7	LOS A	2.2	16.6	0.13	0.62	48.3
All Vehicles		1053	8.0	0.320	9.2	LOS A	2.2	16.6	0.23	0.63	47.8

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 PM Peak 75_25

Edwards Road East Intersection 2
2022 AM Peak 90/10
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	566	6.0	0.610	11.3	LOS A	5.7	41.7	0.75	0.82	46.0
6	R	20	6.0	0.610	15.3	LOS B	5.7	41.7	0.75	0.90	43.4
Approach		586	6.0	0.610	11.4	LOS A	5.7	41.7	0.75	0.82	45.9
North:											
7	L	20	6.0	0.238	9.5	LOS A	1.3	9.7	0.47	0.66	47.2
9	R	225	6.0	0.238	12.7	LOS A	1.3	9.7	0.47	0.73	44.9
Approach		245	6.0	0.238	12.4	LOS A	1.3	9.7	0.47	0.72	45.1
West: Edwards Road Extension (W)											
10	L	75	6.0	0.068	8.5	LOS A	0.4	2.7	0.13	0.63	48.4
11	T	134	6.0	0.163	7.0	LOS A	1.0	7.6	0.12	0.51	49.9
12	R	130	6.0	0.163	12.7	LOS A	1.0	7.6	0.12	0.80	45.0
Approach		339	6.0	0.163	9.5	LOS A	1.0	7.6	0.12	0.65	47.5
All Vehicles		1170	6.0	0.610	11.1	LOS A	5.7	41.7	0.51	0.75	46.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

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MOVEMENT SUMMARY

Site: 2022 AM Peak 75_25

Edwards Road East Intersection 3
2022 AM Peak 90/10
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	76	8.0	0.058	0.8	LOS A	0.3	2.5	0.32	0.00	53.7
6	R	20	8.0	0.058	9.5	LOS A	0.3	2.5	0.32	0.87	48.8
Approach		96	8.0	0.058	2.6	NA	0.3	2.5	0.32	0.18	52.6
North: Crown Road											
7	L	116	8.0	0.212	12.8	LOS A	0.9	6.6	0.36	0.86	45.4
9	R	56	8.0	0.212	12.7	LOS A	0.9	6.6	0.36	0.95	45.5
Approach		172	8.0	0.212	12.8	LOS A	0.9	6.6	0.36	0.89	45.4
West: Edwards Road Extension (W)											
10	L	75	8.0	0.103	8.5	LOS A	0.0	0.0	0.00	0.87	49.0
11	T	112	8.0	0.103	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		187	8.0	0.103	3.4	NA	0.0	0.0	0.00	0.35	55.0
All Vehicles		455	8.0	0.212	6.8	NA	0.9	6.6	0.20	0.52	50.5

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

Processed: Friday, July 06, 2012 4:50:04 PM

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MOVEMENT SUMMARY

Site: 2022 PM Peak 75_25

Edwards Road East Intersection 3
2022 AM Peak 90/10
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Edwards Road Extension (E)											
5	T	227	6.0	0.136	0.3	LOS A	0.8	6.0	0.20	0.00	56.1
6	R	20	6.0	0.136	8.9	LOS A	0.8	6.0	0.20	0.96	48.9
Approach		247	6.0	0.136	1.0	NA	0.8	6.0	0.20	0.08	55.4
North: Crown Road											
7	L	32	6.0	0.306	14.8	LOS B	1.4	10.3	0.40	0.77	43.5
9	R	153	6.0	0.306	14.7	LOS B	1.4	10.3	0.40	0.98	43.6
Approach		185	6.0	0.306	14.7	LOS B	1.4	10.3	0.40	0.94	43.6
West: Edwards Road Extension (W)											
10	L	29	6.0	0.040	8.4	LOS A	0.0	0.0	0.00	0.87	49.0
11	T	45	6.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		74	6.0	0.040	3.3	NA	0.0	0.0	0.00	0.34	55.1
All Vehicles		506	6.0	0.306	6.4	NA	1.4	10.3	0.24	0.43	50.4

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model used.

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INTERSECTION



APPENDIX E

INTERSECTION CONCEPT DESIGN

DRG No. S12006-CSK2 & S12006-CSK3

LOT 2
DP 1071664

LOT 1
DP 546798

DRG No. S12006-CSK2 & S12006-CSK3 (INSET 'A')

ANNANGROVE ROAD

ANNANGROVE ROAD

LOT 58
DP 834048

LOT 1
DP 839875

LOT 1
DP 1088407

LOT 13
DP 833069

LOT 12
DP 833069

LOT 34
DP 834050

LOT 33
DP 834050

WITHERS ROAD

LEGEND:

- CONCEPT INTERSECTION LAYOUT PREPARED BY LAMBERT & REHBEIN
- PREVIOUS CORRIDOR PLANNING PREPARED BY GHD
- PREVIOUS CORRIDOR PLANNING PREPARED BY CARROO
- PROPERTY BOUNDARY AS COMPILED FROM SURVEY PROVIDED
- PROPERTY ADJUSTMENT LINE
- SURVEY FEATURES

NOTES:

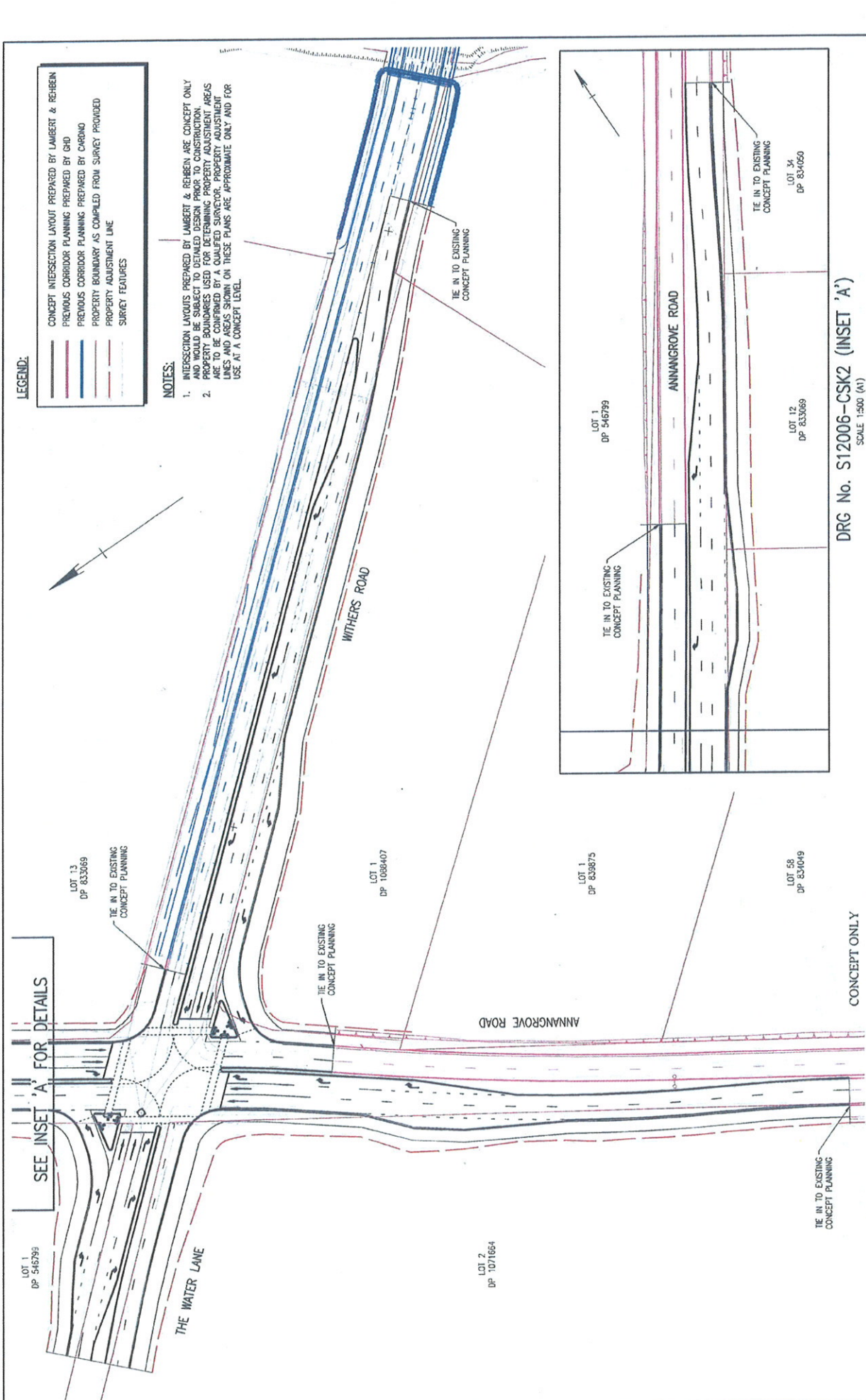
- INTERSECTION LAYOUTS PREPARED BY LAMBERT & REHBEIN ARE CONCEPT ONLY AND WOULD BE SUBJECT TO DETAILED DESIGN PRIOR TO CONSTRUCTION.
- PROPERTY BOUNDARIES USED FOR DETERMINING PROPERTY ADJUSTMENT AREAS ARE TO BE CONFIRMED BY LAMBERT & REHBEIN SURVEYOR. PROPERTY ADJUSTMENT LINES AND AREAS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND FOR USE AT A CONCEPT LEVEL.

CONCEPT ONLY

0 10 20 30 40m SCALE 1:1000 (A1)		THE HILLS SHIRE COUNCIL	
Project: ANNANGROVE RD LIGHT INDUSTRIAL AREA TRAFFIC & ACCESSIBILITY STUDY		Client: THE HILLS SHIRE COUNCIL	
Title: ANNANGROVE RD / WITHERS RD INTERSECTION - CONCEPT DESIGN		Drawn: A1 S12006-CSK1	
Engineer: JAS SHOWN		Scale: 1/1000	
Check: JAS SHOWN		Date: 16/7/12	
Approved: JAS SHOWN		Author: JAS SHOWN	
Project: ANNANGROVE RD LIGHT INDUSTRIAL AREA TRAFFIC & ACCESSIBILITY STUDY		Client: THE HILLS SHIRE COUNCIL	
Title: ANNANGROVE RD / WITHERS RD INTERSECTION - CONCEPT DESIGN		Drawn: A1 S12006-CSK1	
Engineer: JAS SHOWN		Scale: 1/1000	
Check: JAS SHOWN		Date: 16/7/12	
Approved: JAS SHOWN		Author: JAS SHOWN	

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LEGEND:

- CONCEPT INTERSECTION LAYOUT PREPARED BY LAMBERT & REHBEIN
- PREVIOUS CORRIDOR PLANNING PREPARED BY GHD
- PREVIOUS CORRIDOR PLANNING PREPARED BY CARDNO
- PROPERTY BOUNDARY AS COMPILED FROM SURVEY PROVIDED
- PROPERTY ADJUSTMENT LINE
- SURVEY FEATURES

NOTES:

- INTERSECTION LAYOUTS PREPARED BY LAMBERT & REHBEIN ARE CONCEPT ONLY AND WOULD BE SUBJECT TO DETAILED DESIGN PRIOR TO CONSTRUCTION.
- PROPERTY BOUNDARIES USED FOR DETERMINING PROPERTY ADJUSTMENT AREAS ARE TO BE CONFIRMED BY A QUALIFIED SURVEYOR. PROPERTY ADJUSTMENT LINES AND AREAS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND FOR USE AT A CONCEPT LEVEL.

SEE INSET 'A' FOR DETAILS

CONCEPT ONLY

DRG No. S12006-CSK2 (INSET 'A')

SCALE 1:500 (A1)

THE HILLS SHIRE COUNCIL

Project: ANNANGROVE RD LIGHT INDUSTRIAL AREA
TRAFFIC & ACCESSIBILITY STUDY

Title: ANNANGROVE RD / WITHERS RD
INTERSECTION - CONCEPT DESIGN

Scale: AS SHOWN

Date: 16/7/12

Sheet: A1

Drawn by: S12006-CSK2

LAMBERT & REHBEIN

ENGINEERS • MANAGERS • SCIENTISTS

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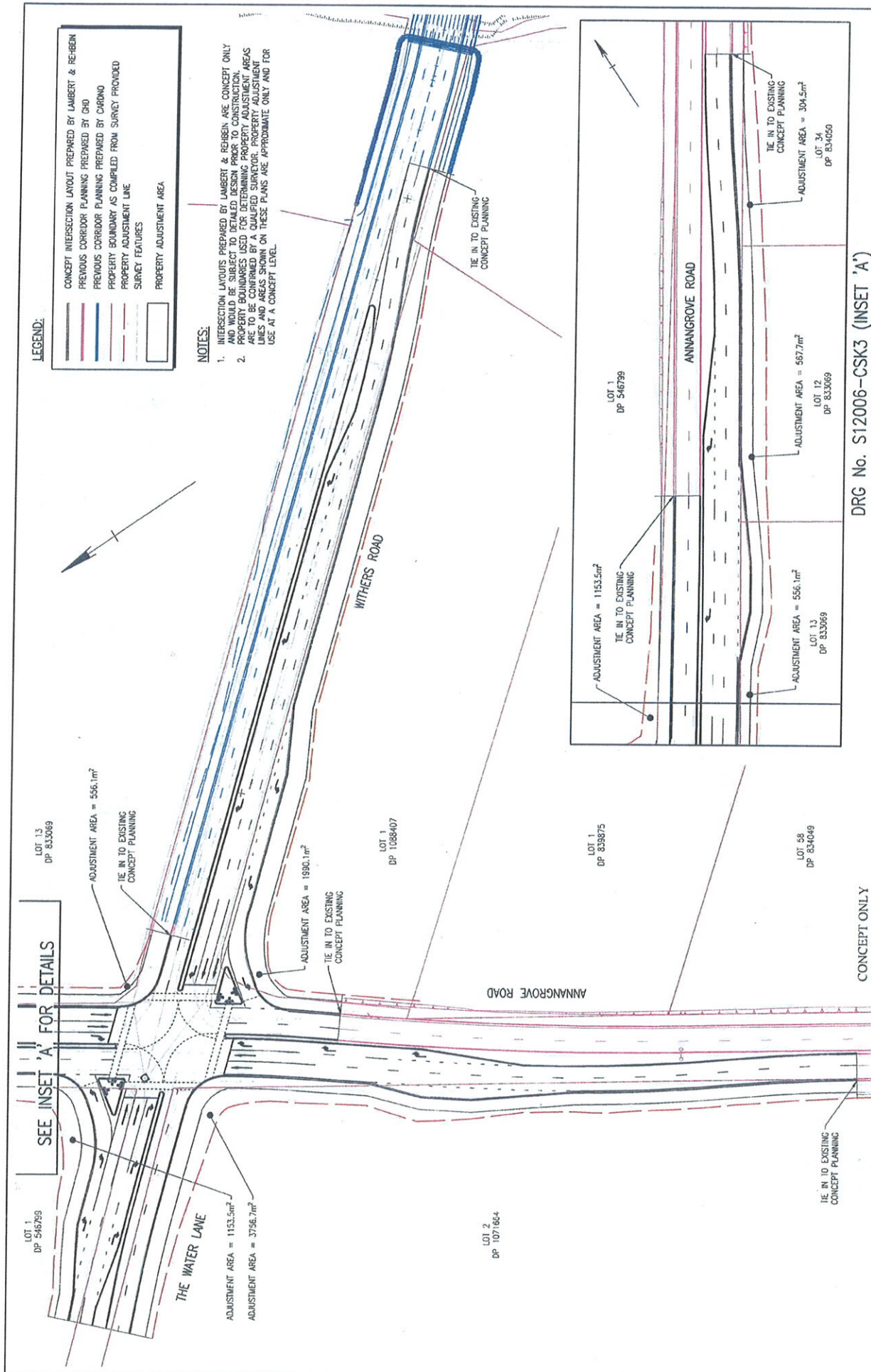
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0 5 10 15 20m

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LEGEND:

- CONCEPT INTERSECTION LAYOUT PREPARED BY LAMBERT & REHBEIN
- PREVIOUS CORRIDOR PLANNING PREPARED BY CHD
- PREVIOUS CORRIDOR PLANNING PREPARED BY CARDNO
- PROPERTY BOUNDARY AS COMPILED FROM SURVEY PROVIDED
- PROPERTY ADJUSTMENT LINE
- SURVEY FEATURES
- PROPERTY ADJUSTMENT AREA

NOTES:

- INTERSECTION LAYOUTS PREPARED BY LAMBERT & REHBEIN ARE CONCEPT ONLY AND WOULD BE SUBJECT TO DETAILED DESIGN PROPOSAL FOR CONSTRUCTION.
- PROPERTY BOUNDARIES USED FOR DETERMINING PROPERTY ADJUSTMENT AREAS ARE TO BE CONFIRMED BY A QUALIFIED SURVEYOR. PROPERTY ADJUSTMENT LINES AND AREAS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND FOR USE AT A CONCEPT LEVEL.

DRG No. S12006-CSK3 (INSET 'A')

SCALE 1:500 (A1)

Project: ANNANGROVE RD LIGHT INDUSTRIAL AREA
TRAFFIC & ACCESSIBILITY STUDY

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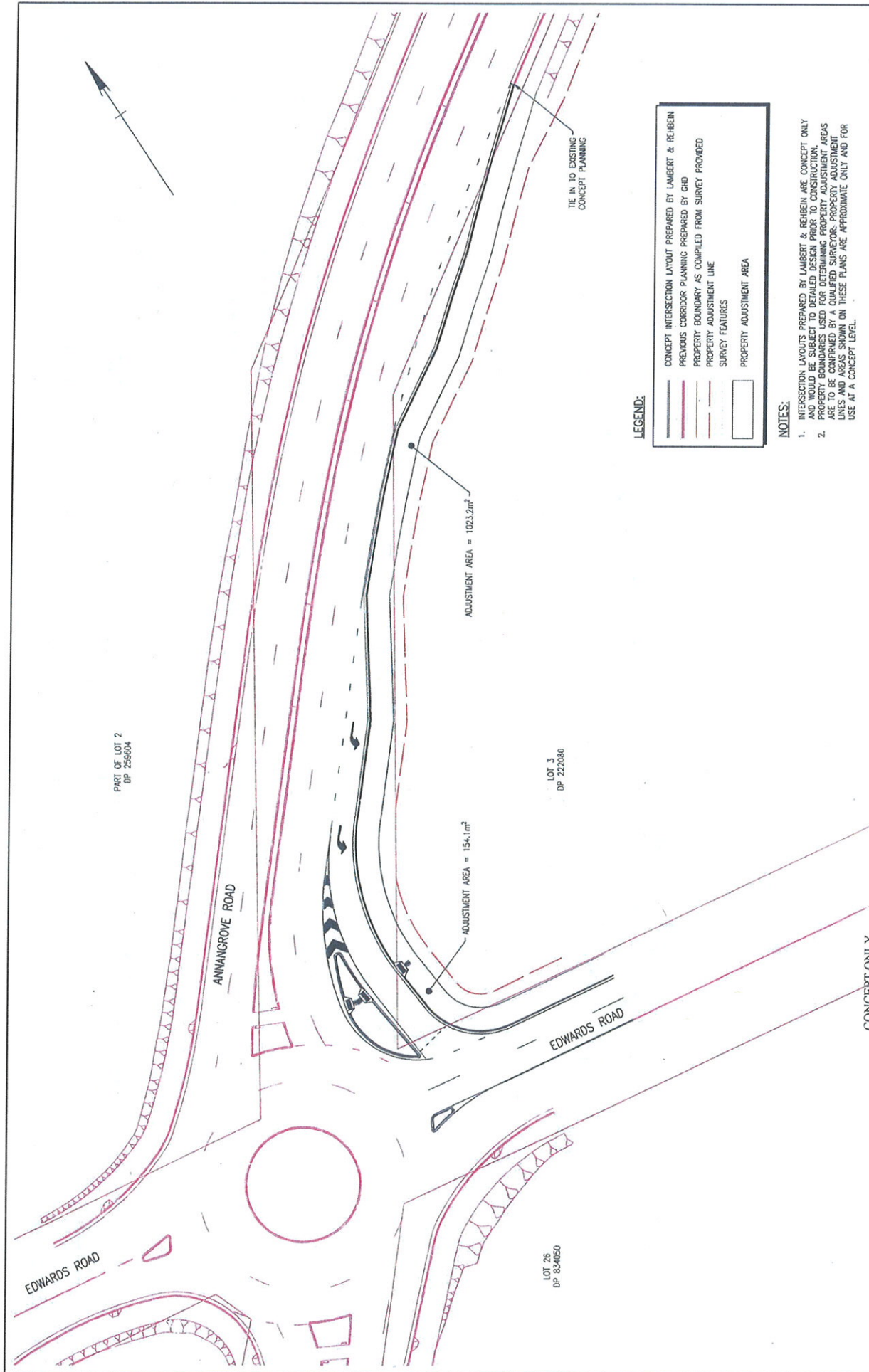
Drawn By	Checked By	Scale	Date
AP	AP	AS SHOWN	16/7/12
AP	AP	AS SHOWN	16/7/12
AP	AP	AS SHOWN	16/7/12

File: ANNANGROVE RD / WITHERS RD
LAND ACQUISITION PLAN

Rev	Date	By	Description
1	16/7/12	AP	ORIGINAL ISSUE
2	16/7/12	AP	UPDATED PROPERTY BOUNDARIES

0 5 10 15 20m
SCALE 1:500 (A1)

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0 2 4 6 8 10m SCALE 1:250 (A1)		CONCEPT ONLY	
PROJECT: ANNANGROVE RD LIGHT INDUSTRIAL AREA TRAFFIC & ACCESSIBILITY STUDY		CLIENT: THE HILLS SHIRE COUNCIL	
LAMBERT & REHBEIN ENGINEERS • MANAGERS • SCIENTISTS LEVEL 1, 11 HILLS STREET P.O. BOX 177, COWES, NSW 2644 A.C.N. 610 955 314		TITLE: ANNANGROVE RD / EDWARDS RD LAND ACQUISITION PLAN	
PREPARED BY: [] CHECKED BY: [] DATE: 15/12/12	DESIGNED BY: [] CHECKED BY: [] DATE: 14/7/12	DRAWN BY: [] CHECKED BY: [] DATE: 14/7/12	SCALE: AS SHOWN