Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
268	0.0582	Shale Hills Woodland	0.2506	2.22	28.14	0.00	30.36	100	25	155.359	Medium
270	0.3113	Shale Hills Woodland	0.0865	16.33	12.92	2.31	31.56	100	25	156.558	Medium
273	0.5309	Shale Plains Woodland	0.0563	30.85	20.35	7.98	59.18	100	50	209.180	Medium
275	0.4861	Alluvial Woodland	0.0547	7.26	39.55	8.37	55.17	62.5	75	192.675	Medium
277	0.5880	Shale Hills Woodland	0.0489	28.63	12.92	12.50	54.05	100	25	179.049	Medium
280	3.3342	Shale Plains Woodland	0.0245	18.15	36.57	43.46	98.18	125	75	298.177	Medium
281	0.7766	Shale Plains Woodland	0.0506	22.38	35.51	13.37	71.26	100	100	271.257	Medium
282	2.2370	Alluvial Woodland	0.0300	35.48	29.01	35.96	100.45	115	75	290.452	Medium
284	1.3518	Shale Hills Woodland	0.0613	23.39	12.92	14.52	50.83	100	25	175.826	Medium
288	0.8883	Shale Plains Woodland	0.0478	0.20	12.92	15.77	28.89	100	25	153.891	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
291	0.5086	Alluvial Woodland	0.0609	35.89	36.92	6.54	79.35	62.5	75	216.849	Medium
292	1.4023	Shale Hills Woodland	0.0453	6.05	12.92	21.63	40.60	100	25	165.603	Medium
297	1.6430	Alluvial Woodland	0.0374	30.24	36.03	28.46	94.73	100	50	244.729	Medium
299	1.1730	Alluvial Woodland	0.0521	32.46	33.91	16.92	83.29	75	75	233.293	Medium
300	0.9730	Shale Plains Woodland	0.0517	0.00	12.92	14.62	27.54	100	50	177.535	Medium
301	1.1455	Shale Hills Woodland	0.0573	11.69	35.03	14.13	60.86	150	75	285.860	Medium
302	4.5328	Shale Plains Woodland	0.0329	25.60	34.20	40.87	100.67	125	75	300.669	High
303	0.7882	Shale Plains Woodland	0.0783	27.02	12.92	7.12	47.05	100	25	172.051	Medium
306	3.6532	Shale Plains Woodland	0.0323	16.13	34.84	40.19	91.16	100	50	241.161	Medium
308	1.8137	Shale Plains Woodland	0.0494	19.35	12.92	22.69	54.97	100	25	179.967	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
313	1.0473	Shale Plains Woodland	0.0527	23.99	31.06	14.81	69.86	100	50	219.857	Medium
315	1.4513	Shale Plains Woodland	0.0512	27.62	12.92	19.81	60.35	100	25	185.349	Medium
316	0.5570	Shale Plains Woodland	0.0549	5.04	17.02	9.04	31.10	100	50	181.098	Medium
319	0.5588	Shale Hills Woodland	0.0529	40.20	35.80	10.10	86.10	100	100	286.097	Medium
323	0.5560	Shale Plains Woodland	0.0491	0.20	12.92	11.83	24.95	100	25	149.949	Low
326	3.6029	Shale Plains Woodland	0.0386	7.66	32.12	35.58	75.35	100	75	250.354	Medium
327	1.3610	Shale Plains Woodland	0.0407	3.63	12.92	23.65	40.20	100	25	165.203	Medium
329	0.6970	Alluvial Woodland	0.0581	2.02	36.92	9.13	48.07	87.5	75	210.574	Medium
330	1.1160	Shale Plains Woodland	0.0424	1.81	36.22	20.00	58.03	100	100	258.032	Medium
331	0.6058	Shale Plains Woodland	0.0559	3.02	36.22	9.04	48.28	100	100	248.281	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
334	0.7620	Shale Plains Woodland	0.0492	5.44	34.42	13.65	53.52	100	25	178.520	Medium
359	1.4082	Shale Plains Woodland	0.0365	20.97	30.00	27.31	78.28	100	75	253.275	Medium
360	0.5399	Shale Plains Woodland	0.0575	11.69	30.00	7.79	49.48	100	50	199.482	Medium
361	1.3196	Shale Hills Woodland	0.0416	44.15	29.55	22.31	96.01	100	50	246.012	Medium
362	1.5774	Shale Plains Woodland	0.0315	6.85	30.87	32.21	69.93	100	50	219.932	Medium
363	1.5480	Alluvial Woodland	0.0463	37.30	28.08	22.60	87.97	62.5	75	225.471	Medium
364	1.6139	Shale Plains Woodland	0.0409	7.46	12.92	25.58	45.96	100	25	170.957	Medium
365	1.8387	Shale Plains Woodland	0.0350	3.23	42.34	31.25	76.82	100	100	276.816	Medium
366	3.6529	Shale Hills Woodland	0.0319	18.75	35.16	40.58	94.49	100	125	319.487	High

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
367a[1]	1.3790	Alluvial Woodland	0.0351	13.71	19.55	27.88	61.15	80	50	191.146	Medium
367b[1]	0.4935	Alluvial Woodland	0.0745	13.71	19.55	4.71	37.97	80	50	167.973	Medium
368	0.0676	Shale Hills Woodland	0.2072	1.61	12.92	0.19	14.73	100	25	139.725	Low
369	1.7236	Shale Plains Woodland	0.0306	29.23	26.83	33.46	89.52	100	100	289.522	Medium
370	1.4111	Shale Plains Woodland	0.0367	38.51	35.32	27.21	101.04	125	150	376.040	High
371	3.5819	Shale Plains Woodland	0.0257	43.75	21.06	43.94	108.75	125	25	258.750	Medium
372	3.3043	Shale Plains Woodland	0.0270	19.76	21.41	41.92	83.09	100	25	208.091	Medium
373	3.3293	Shale Hills Woodland	0.0248	4.03	33.14	43.17	80.35	100	75	255.346	Medium
374	0.9020	Shale Hills	0.0411	9.68	27.31	18.65	55.64	100	75	230.639	Medium

[1] The Connectivity Scores were assigned considering these vegetation areas as one. The area separating these two vegetation areas is minimal. If the two areas were considered as discrete communities, the difference between Connectivity Scores would

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
		Woodland									
375	1.1054	Shale Plains Woodland	0.0558	32.06	19.87	13.94	65.87	100	50	215.871	Medium
376	1.1498	Shale Plains Woodland	0.0395	38.71	32.53	22.98	94.22	100	100	294.223	Medium
377	0.6396	Shale Plains Woodland	0.0596	5.65	36.92	8.08	50.65	100	50	200.645	Medium
378	2.9246	Shale Plains Woodland	0.0295	27.82	25.93	40.10	93.85	100	25	218.848	Medium
379	2.1474	Shale Plains Woodland	0.0271	37.70	35.32	37.40	110.43	125	25	260.426	Medium
380	0.4360	Shale Plains Woodland	0.0937	21.17	12.92	2.31	36.40	100	25	161.397	Medium
381	1.0401	Shale Hills Woodland	0.0395	7.86	30.16	21.35	59.37	100	75	234.369	Medium
382	0.9881	Shale Plains Woodland	0.0430	5.24	25.84	18.37	49.45	100	50	199.447	Medium
383	0.8419	Shale Plains Woodland	0.0536	10.28	12.92	12.31	35.51	100	25	160.510	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
384	0.6216	Shale Plains Woodland	0.0656	10.48	12.92	6.83	30.23	100	25	155.231	Medium
385	1.9023	Alluvial Woodland	0.0359	11.09	42.69	31.15	84.93	62.5	100	247.435	Medium
386	1.9901	Shale Plains Woodland	0.0531	0.20	12.92	21.73	34.85	100	25	159.852	Medium
387	0.8363	Shale Hills Woodland	0.0499	15.93	35.80	13.94	65.67	100	75	240.671	Medium
398	2.6301	Shale Plains Woodland	0.0292	48.99	50.00	39.04	138.03	125	125	388.030	High
404	2.3531	Shale Hills Woodland	0.0295	47.18	50.00	37.21	134.39	125	125	384.389	High
405	5.1124	Alluvial Woodland	0.0245	49.19	50.00	46.35	145.54	105	125	375.540	High
411	1.3923	Shale Hills Woodland	0.0362	41.33	29.55	27.31	98.19	100	50	248.190	Medium
412	1.9159	Alluvial Woodland	0.0409	39.31	32.82	27.12	99.25	105	100	304.250	High
414	2.3070	Shale Plains Woodland	0.0262	14.72	30.93	38.37	84.01	100	50	234.013	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
417	0.2576	Shale Hills Woodland	0.1294	15.52	12.92	0.87	29.31	100	25	154.310	Medium
421	2.3823	Shale Plains Woodland	0.0286	30.65	37.40	38.27	106.32	125	100	331.318	High
427	0.4667	Shale Plains Woodland	0.0959	18.95	67.56	2.60	89.11	150	75	314.112	High
431	0.6933	Alluvial Woodland	0.0497	16.94	39.55	12.79	69.28	80	75	224.275	Medium
432	0.7026	Shale Plains Woodland	0.0631	20.77	19.87	7.98	48.62	100	50	198.619	Medium
434	1.1653	Alluvial Woodland	0.0660	40.12	21.83	12.21	74.16	80	25	179.159	Medium
437	0.9493	Alluvial Woodland	0.0788	39.52	38.59	8.65	86.76	100	75	261.760	Medium
441	0.9260	Alluvial Woodland	0.0660	25.00	34.78	9.42	69.20	75	25	169.199	Medium
485	2.4708	Shale Plains Woodland	0.0326	44.76	50.00	35.77	130.53	125	125	380.527	High
494	3.3034	Shale Plains Woodland	0.0308	22.78	40.80	39.33	102.91	125	75	302.911	High

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
496	2.6481	Shale Plains Woodland	0.0572	38.31	40.80	23.37	102.47	125	100	327.473	High
500	0.5692	Shale Plains Woodland	0.0533	35.28	29.55	10.00	74.83	100	50	224.834	Medium
503	0.8848	Alluvial Woodland	0.0658	33.27	32.82	9.04	75.13	100	100	275.125	Medium
505	2.3920	Shale Plains Woodland	0.0260	32.66	24.46	39.42	96.54	100	100	296.539	Medium
508	0.2509	Shale Plains Woodland	0.0924	20.56	12.92	1.25	34.73	100	25	159.735	Medium
509	1.2356	Shale Plains Woodland	0.0554	16.53	30.19	15.67	62.40	100	50	212.398	Medium
516	2.0780	Shale Plains Woodland	0.0319	26.61	24.10	34.52	85.23	100	75	260.235	Medium
517	2.1226	Shale Plains Woodland	0.0522	43.55	12.92	22.69	79.16	100	25	204.161	Medium
519	0.4690	Shale Plains Woodland	0.0641	48.39	43.75	5.38	97.52	100	100	297.522	Medium
527	0.4117	Shale Plains Woodland	0.0677	18.55	15.00	3.75	37.30	100	25	162.298	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
532	0.6765	Shale Plains Woodland	0.0501	1.41	28.14	12.31	41.86	100	25	166.860	Medium
536	2.9006	Shale Hills Woodland	0.0281	32.26	24.81	40.67	97.74	100	25	222.739	Medium
537	2.2788	Alluvial Woodland	0.0411	46.37	27.60	28.08	102.04	100	25	227.044	Medium
540	2.2477	Shale Plains Woodland	0.0366	31.65	21.06	31.54	84.25	125	75	284.249	Medium
541	2.9354	Shale Plains Woodland	0.0482	24.19	34.01	28.75	86.95	100	50	236.954	Medium
546	1.6799	Shale Plains Woodland	0.0585	27.22	35.45	18.08	80.74	100	75	255.743	Medium
547	0.8160	Shale Plains Woodland	0.0605	33.67	12.92	9.52	56.11	100	25	181.109	Medium
548	0.4415	Shale Plains Woodland	0.0839	6.75	12.92	3.08	22.75	100	50	172.748	Medium
550	4.2986	Alluvial Woodland	0.0364	46.17	43.53	38.37	128.06	125	100	353.060	High
551	3.3412	Shale Plains Woodland	0.0409	34.91	12.92	32.79	80.62	100	75	255.620	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
553	1.5228	Shale Hills Woodland	0.0540	17.42	36.63	18.94	73.00	100	100	272.999	Medium
558	0.8447	Shale Hills Woodland	0.0615	25.81	33.72	9.52	69.04	100	75	244.044	Medium
567	0.5351	Shale Plains Woodland	0.0555	12.50	36.63	8.46	57.60	100	100	257.596	Medium
569	2.5154	Shale Plains Woodland	0.0240	27.16	36.63	41.15	104.94	100	100	304.944	High
582	1.3492	Shale Plains Woodland	0.0367	31.25	30.00	26.15	87.40	125	50	262.404	Medium
583	1.2237	Shale Plains Woodland	0.0462	41.94	30.00	19.62	91.55	125	75	291.551	Medium
584	4.0210	Shale Plains Woodland	0.0249	27.42	31.35	44.81	103.57	125	125	353.573	High
585	1.8590	Shale Hills Woodland	0.0524	25.40	28.01	21.63	75.05	100	50	225.051	Medium
586	8.2150	Shale Plains Woodland	0.0289	49.40	32.60	45.10	127.09	125	100	352.088	High
587	1.1444	Shale Plains Woodland	0.0452	10.89	28.01	19.52	58.42	100	25	183.419	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
588	2.0160	Alluvial Woodland	0.0385	6.25	25.22	29.42	60.90	62.5	50	173.397	Medium
589	1.1151	Shale Hills Woodland	0.0382	21.57	36.35	23.08	81.00	100	100	280.996	Medium
590	4.5212	Shale Plains Woodland	0.0263	41.13	27.53	44.71	113.37	125	75	313.373	High
591	2.8013	Shale Plains Woodland	0.0307	46.57	12.92	38.46	97.95	100	25	222.951	Medium
593	1.2588	Shale Hills Woodland	0.0360	31.05	12.92	26.44	70.41	100	25	195.411	Medium
594	6.4552	Shale Plains Woodland	0.0277	29.44	50.00	45.10	124.53	125	100	349.532	High
595	3.4698	Shale Plains Woodland	0.0320	11.90	22.18	39.81	73.88	100	25	198.882	Medium
596	3.3832	Alluvial Woodland	0.0261	37.10	34.13	43.08	114.31	125	100	339.308	High
597	0.6699	Shale Hills Woodland	0.0824	32.86	12.92	5.48	51.26	100	25	176.264	Medium
598	0.8262	Shale Hills Woodland	0.0596	34.07	29.42	9.81	73.30	100	75	248.303	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
599	1.5320	Shale Hills Woodland	0.0344	8.87	24.10	30.00	62.97	100	75	237.974	Medium
600	2.3525	Shale Plains Woodland	0.0465	20.16	36.57	26.15	82.89	100	75	257.886	Medium
601	5.2056	Shale Plains Woodland	0.0237	8.67	36.63	46.73	92.03	100	125	317.035	High
602	0.2819	Alluvial Woodland	0.0776	17.54	12.92	2.60	33.06	62.5	25	120.556	Low
603	0.4469	Alluvial Woodland	0.0643	17.74	12.92	4.90	35.57	75	25	135.566	Low
604	0.8907	Alluvial Woodland	0.0586	35.69	38.30	10.87	84.85	100	75	259.852	Medium
605	0.4721	Shale Plains Woodland	0.0878	35.08	12.92	3.27	51.27	100	25	176.270	Medium
606	1.3339	Shale Plains Woodland	0.0438	39.11	25.16	21.54	85.81	100	75	260.812	Medium
607	2.6846	Shale Plains Woodland	0.0455	29.64	23.69	28.75	82.07	125	50	257.073	Medium
608	1.4358	Shale Plains Woodland	0.0391	39.72	12.92	25.96	78.60	100	25	203.599	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
609	1.0122	Alluvial Woodland	0.0509	43.95	26.41	15.38	85.75	100	100	285.747	Medium
610	2.3932	Shale Plains Woodland	0.0801	33.47	25.84	18.75	78.06	100	50	228.058	Medium
612	0.7314	Shale Plains Woodland	0.0609	35.89	12.92	8.85	57.65	100	25	182.653	Medium
613	4.2358	Shale Plains Woodland	0.0303	19.15	34.13	42.21	95.50	100	75	270.499	Medium
614	2.8500	Alluvial Woodland	0.0402	9.27	31.06	32.12	72.45	75	50	197.447	Medium
615	3.3695	Shale Plains Woodland	0.0292	13.91	23.97	41.44	79.33	100	50	229.328	Medium
616	4.6449	Alluvial Woodland	0.0228	26.41	40.67	46.83	113.91	115	75	303.911	High
617	31.4768	Shale/Gravel Transition Forest	0.0083	49.80	50.00	49.71	149.51	115	125	389.510	High
623	12.7041	Alluvial Woodland	0.0158	42.74	30.00	48.85	121.59	140	75	336.588	High
626	9.7228	Alluvial Woodland	0.0241	45.77	50.00	47.60	143.36	140	125	408.362	High

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
648	1.1325	Shale Hills Woodland	0.0391	46.98	50.00	22.88	119.86	125	125	369.860	High
652	2.5288	Shale Plains Woodland	0.0419	47.98	35.32	29.81	113.11	125	100	338.112	High
658	4.0749	Shale Plains Woodland	0.0308	40.93	31.89	41.73	114.55	125	50	289.549	Medium
674	9.0502	Shale Plains Woodland	0.0191	36.29	12.92	48.17	97.38	100	25	222.383	Medium
675	3.5928	Shale Plains Woodland	0.0303	41.53	32.34	41.35	115.22	125	25	265.218	Medium
679	4.0337	Shale Hills Woodland	0.0234	32.17	36.63	45.96	114.77	100	100	314.766	High
681	2.3736	Shale Plains Woodland	0.0355	24.80	35.03	33.37	93.20	100	75	268.196	Medium
699	0.2857	Shale Hills Woodland	0.1303	20.36	29.04	1.06	50.46	100	75	225.459	Medium
700	1.8313	Shale Plains Woodland	0.0320	19.96	39.97	33.17	93.10	100	50	243.101	Medium
701	0.9148	Alluvial Woodland	0.0894	34.68	12.92	7.60	55.19	62.5	25	142.694	Low

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
702	1.3480	Shale Hills Woodland	0.0381	28.43	26.06	25.38	79.87	100	25	204.870	Medium
703	4.3088	Alluvial Woodland	0.0235	41.73	37.53	46.25	125.52	105	150	380.516	High
704	3.9748	Shale Plains Woodland	0.0334	48.59	43.75	39.81	132.15	125	100	357.146	High
705	1.8119	Shale Plains Woodland	0.0484	45.36	37.82	23.17	106.36	125	100	331.356	High
706	3.4500	Shale Plains Woodland	0.0331	8.27	19.10	38.94	66.31	100	25	191.311	Medium
707	1.3983	Shale Plains Woodland	0.0383	36.49	25.38	25.67	87.55	100	100	287.550	Medium
708	3.0510	Alluvial Woodland	0.0248	33.87	36.92	42.50	113.29	125	100	338.294	High
709	3.2247	Alluvial Woodland	0.0280	34.48	34.42	41.35	110.25	87.5	75	272.745	Medium
710	1.2531	Shale Hills Woodland	0.0408	13.51	25.29	22.69	61.49	100	25	186.489	Medium
711	1.8538	Shale Plains Woodland	0.0316	31.45	35.32	33.65	100.43	125	50	275.426	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
712	0.2822	Shale Plains Woodland	0.0745	4.23	12.92	2.98	20.13	75	25	120.135	Low
713	0.4107	Shale Plains Woodland	0.0611	15.12	25.77	5.10	45.99	100	25	170.986	Medium
714	3.3205	Shale Hills Woodland	0.0299	36.09	28.30	40.38	104.77	125	75	304.775	High
716	1.0239	Shale Plains Woodland	0.0422	37.50	39.26	19.23	95.99	100	125	320.994	High
717	0.4530	Shale Plains Woodland	0.0762	26.01	20.77	3.85	50.62	100	50	200.623	Medium
718	1.0416	Alluvial Woodland	0.0545	28.02	35.61	14.13	77.77	87.5	50	215.268	Medium
720	5.5354	Shale Plains Woodland	0.0271	44.96	50.00	45.10	140.06	125	125	390.056	High
734	2.8664	Shale Plains Woodland	0.0296	47.38	50.00	39.62	136.99	125	125	386.994	High
758	1.4205	Shale Plains Woodland	0.0443	37.90	31.89	22.60	92.39	100	50	242.390	Medium
759a	3.5567	Alluvial Woodland	0.0339	48.79	25.99	38.94	113.73	130	100	343.726	High

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
759b	1.5125	Alluvial Woodland	0.0593	48.79	12.92	16.83	78.54	125	0	203.537	Medium
760	7.9178	Alluvial Woodland	0.0157	46.77	42.28	48.27	137.32	105	125	367.319	High
761	1.7331	Shale Hills Woodland	0.0366	17.34	22.79	29.52	69.65	100	25	194.646	Medium
762	1.0094	Shale Plains Woodland	0.0521	36.69	39.49	14.71	90.89	100	100	290.892	Medium
763	2.3526	Shale Plains Woodland	0.0302	36.90	31.41	36.63	104.94	125	100	329.940	High
777	2.4507	Shale Plains Woodland	0.0368	48.19	25.99	32.69	106.87	125	100	331.871	High
778	18.0367	Alluvial Woodland	0.0134	45.97	50.00	49.33	145.29	115	125	385.295	High
779	21.4404	Alluvial Woodland	0.0237	0.00	47.58	48.37	95.95	150	100	345.946	High
782	17.6023	Alluvial Woodland	0.0168	50.00	50.00	48.75	148.75	115	125	388.750	High
787	7.8242	Alluvial Woodland	0.0291	45.56	43.40	44.81	133.77	140	100	373.770	High

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
788	2.6525	Shale Plains Woodland	0.0405	38.10	44.36	31.35	113.81	150	100	363.810	High
789	7.6764	Shale Plains Woodland	0.0382	39.92	40.26	38.27	118.45	125	100	343.445	High
790	3.9215	Shale Plains Woodland	0.0344	42.54	39.78	39.13	121.45	150	100	371.451	High
791	1.0820	Shale Plains Woodland	0.0549	0.20	29.07	14.13	43.41	100	50	193.407	Medium
792	2.3255	Shale Hills Woodland	0.0438	21.37	12.92	27.50	61.79	100	25	186.791	Medium
793	2.5031	Shale Plains Woodland	0.0322	33.47	31.83	36.35	101.64	125	125	351.641	High
794	3.3814	Alluvial Woodland	0.0439	42.34	12.92	31.63	86.89	75	25	186.893	Medium
795	3.0677	Shale Plains Woodland	0.0334	22.58	38.24	37.69	98.51	100	75	273.510	Medium
796	2.9191	Shale Plains Woodland	0.0421	44.56	12.92	31.15	88.63	100	25	213.630	Medium
797	2.8565	Shale Plains Woodland	0.0322	21.77	12.92	37.69	72.39	100	25	197.387	Medium

Site ID (Note 1)	Area	Vegetation Type	Perimeter / Area Ratio	Connectivity Score	Structural Score	GeoSpatial Score	Functional Conservation Value	Threatened Species Value	Recovery Potential Value	Total Ecological Value	Vegetation Community Quality
798	3.3794	Shale Plains Woodland	0.0247	30.44	35.32	43.65	109.42	125	50	284.418	Medium
991	9.4840	Shale Plains Woodland	0.0326	46.20	12.92	42.60	101.72	100	75	276.716	Medium
1213	4.9868	Shale Hills Woodland	0.0340	39.62	36.63	40.58	116.83	150	125	391.829	High
1214	8.2336	Shale Plains Woodland	0.0166	37.61	36.63	48.27	122.52	100	125	347.517	High
1215	2.4018	Shale Plains Woodland	0.0291	0.00	36.63	38.27	74.90	100	100	274.904	Medium

Note 1: Site ID refers to sites shown in Figures 1 and 2 of this appendix. Only those sites wholly within the study site and assessed by Cardno during fieldwork are included within this table.

Appendix O

Water Quality Sampling Results

Water quality measurements taken *in situ* at 13 sites within the Study Area (Recorded by Cardno Ecology Lab 19/08/10).

Site	Waterway	Replicate	Temperature (°C)	Conductivity (µs/cm)	Salinity (ppt)	pH	ORP (mV)	Dissolved Oxygen (% sat.)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)
1	Bonds Creek	1	10.82	3235	1.64	7.47	425	50.5	5.5	20.2	20.0	20.0
		2	10.81	3241	1.64	7.46	424	49.7	5.5	20.0	19.7	19.2
2	Bonds Creek	1	10.97	1887	0.89	7.68	423	71.2	7.8	8.4	8.6	8.6
		2	10.94	1889	0.89	7.67	423	67.9	7.4	8.1	8.4	8.6
3	Scalabrini Creek	1	11.78	2085	0.98	7.71	421	61.3	6.5	44.8	45.2	45.0
		2	11.77	2055	0.98	7.70	421	60.2	6.4	44.3	44.5	44.8
4	Kemps Creek	1	12.35	2687	1.31	7.77	427	82.1	8.7	15.8	16.0	15.1
		2	12.32	2678	1.31	7.76	425	75.0	7.9	14.6	13.9	14.2
5	Kemps Creek	1	12.04	3527	1.82	7.60	422	81.0	8.7	3.9	3.9	3.9
		2	12.02	3542	1.82	7.57	422	77.8	8.5	8.8	8.8	9.0
6	Bonds Creek	1	12.71	2459	1.18	7.62	407	59.5	6.1	6.0	6.3	6.4
		2	12.70	2470	1.21	7.61	407	57.9	6.0	6.0	6.0	6.3
7	Bonds Creek	1	14.09	2334	1.11	7.86	406	106.5	10.9	12.1	13.5	13.0
		2	14.08	2332	1.14	7.85	406	103.6	10.8	12.3	12.1	13.0
8	Bonds Creek	1	13.93	3094	1.56	7.87	419	99.4	10.1	8.1	7.4	7.2
		2	13.94	3094	1.56	7.85	419	97.3	10.0	7.4	8.6	7.7
9	Unnamed	1	13.99	944	0.37	7.52	404	50.3	5.1	21.6	22.5	21.2
		2	13.98	640	0.37	7.91	402	48.1	5.0	21.6	21.1	21.3
10	Unnamed	1	14.09	980	0.39	7.66	409	92.2	9.4	39.7	39.2	38.4
		2	14.08	981	0.39	7.65	409	85.0	8.6	38.3	38.7	38.7
11	Bonds Creek	1	15.20	3317	1.68	7.81	418	79.8	7.9	6.7	6.3	6.7
		2	15.19	3318	1.70	7.81	418	76.8	7.5	6.7	6.5	7.0
12	Kemps Creek	1	13.10	3366	1.71	7.62	422	64.8	6.7	12.3	12.8	12.8
		2	13.08	3369	1.71	7.61	422	60.1	6.2	12.8	12.8	11.8
13	Unnamed	1	15.27	2169	1.05	7.73	421	74.2	7.5	2.8	2.6	2.8

Appendix P

Threatened Aquatic Species Likelihood of Occurrence

The table below presents a summary of the ecological characteristics of the threatened aquatic species identified as potentially occurring on site and a subsequent likelihood of occurrence.

Species	Ecology*	Likelihood of Occurrence
Macquarie Perch (***Macquaria australasica***)	Macquarie perch is listed as endangered under the EPBC Act and as vulnerable under the FM Act. There are two distinct populations of Macquarie perch in NSW, a western form found in the Murray-Darling Basin, and an eastern form found in south-eastern coastal NSW, including the Hawkesbury-Nepean catchment (DPI 2005). Macquarie perch have also been translocated into a number of river systems. Macquarie perch usually inhabit the upper reaches of clear, freshwater courses containing deep, rocky pools with upstream riffle and pool sequences for spawning (DPI 2005). They migrate upstream to spawn in October - November and their eggs settle and develop in the gravel and cobble found in riffle habitat. The distribution of the eastern form can also be a function of interactions with other species. For example, if Australian bass are found in a watercourse then typically Macquarie perch will generally only be found upstream of the bass population (McDowall 1996). Macquarie perch is threatened by: ▪ Changes in water quality associated with agriculture and forestry; ▪ Modification of natural river flows and temperatures as a result of the construction of dams and weirs; ▪ Spawning failures resulting from cold water releases from dams; ▪ Competition from introduced fish species;	Given the altitude, presence of instream barriers, modifications to the natural flow regimes and the degraded state of the aquatic habitat the chance of Macquarie perch occurring within the Study Area is considered extremely low.

Species	Ecology*	Likelihood of Occurrence
	▪ Diseases, such as epizootic haematopoietic necrosis, which is carried by redfin perch; and ▪ Over-fishing in the past. Australian bass are relatively common within the lower elevation reaches of the Hawkesbury – Nepean system, the furthest downstream record of Macquarie perch from the Nepean River, however, is from just below Pheasants Nests Weir (60 km south at 160 m AHD).	
Australian Grayling (***Prototroctes maraena***)	Australian grayling is listed as vulnerable under the *EPBC Act* and as a protected species by the *FM Act*. Australian grayling (*P. maraena*) prefer watercourses with low turbidity and gravel substrata, and occupy lowland rivers through to high elevation reaches at 1000 m AHD (McDowall 1996). Grayling occur in streams and rivers on the eastern and southern flanks of the Great Dividing Range from Sydney southwards to the Otway Ranges in Victoria, and in Tasmania (McDowall 1996, DPI 2006). The species has an amphidromous life cycle; newly-hatched larvae are photo tactic and swim to the surface where they are swept downstream to estuarine/marine waters. They only migrate back to adult freshwater habitats at the age of 6 months. Populations are therefore very susceptible to barriers to passage. Adults suffer heavy post-spawning mortality so it is possible after a few years without juvenile recruitment, that local populations will become extinct (Morris *et al.*, 2001). Threats to Australian grayling include:	It is extremely unlikely that Australian grayling inhabit the Study Area. The Hawkesbury – Nepean drainage system represents the northern extent of the grayling's historical distribution. Despite considerable sampling within the region, the species has not been recorded from the catchment since the 1950s (Morris *et al.* 2001). It is likely that river regulation and habitat degradation are responsible for its disappearance.

Species	Ecology*	Likelihood of Occurrence
	▪ Construction of weirs and dams, which prevent downstream and upstream migration; ▪ Land clearing that degrades water quality and causes siltation; ▪ Smothering of gravel beds by fine sediment; ▪ Competition from the introduced brown trout.	
Southern (Giant) Barred Frog **(*Mixophyes iterates*)**	The southern barred frog is listed as endangered by the *EPBC Act*. The southern barred frog is a large, dark coloured frog that grows to 115 mm. Its historical distribution ranged from Belli Creek, south-east Queensland south to Warrimoo, in NSW's Blue Mountains (DSEWPC 2010a). It has suffered severe population declines in the southern portion of its range in the Sydney Basin and there are no recent records from the Blue Mountains. There are no records of southern barred frog from the Study Area. The Southern Barred Frog occurs along shallow rocky streams in rainforest, wet sclerophyll forest and farmland riparian strips, between 100 and 1000m or in deep, slow moving streams with steep banks in lowland areas (DSEWPC 2010). Populations have been found in disturbed areas with vegetated riparian strips on cattle farms and in regenerated logged areas. Threats to the southern barred frog include: ▪ Upstream clearing; ▪ Changes to flow regimes;	The degraded aquatic and riparian habitat within the Study Area is unlikely to support a viable population of southern barred frog.

Species	Ecology*	Likelihood of Occurrence
	▪ Degradation of water quality; ▪ Disturbance to riparian vegetation; ▪ Feral animals and domestic stock; and ▪ Weed invasion. Disturbance to riparian vegetation is particularly important and chytridiomycosis (infection with the chytrid fungus) may also have contributed to the decline of the species (DSEWPC 2010). Regional degradation of water quality, riparian vegetation and aquatic habitat has contributed to the disappearance of southern barred frog from the southern section of its range.	
Green and Golden Bell Frog **(*Litoria aurea*)**	The green and golden bell frog is listed as vulnerable under the *EPBC Act* and as endangered under the *TSC Act*. The green and golden bell frog ranges from 45 to 100 mm in length and has olive to emerald green colouration with brassy brown to gold splotches. The species is found mainly along coastal lowland areas of eastern NSW and Victoria. Its distribution ranges from Yuraygir National Park near Grafton, in northern NSW and south to Lakes Entrance in south-eastern Victoria. Since 1990, green and golden bell frogs have been recorded at approximately 50 locations in NSW, including the metropolitan areas of NSW, including some with disturbed habitats (DECC 2005a). There are no recorded populations from the Study Area but the species is known from the Cumberland sub-catchment of the Hawkesbury – Nepean Catchment Management Region	Potential habitat for this species occurs within the Study Area, however it has been degraded considerably. Mosquitofish were also highly abundant at every site surveyed, and are known to predate on this species. Although the possibility of the green and golden bell frog occurring within the Study Area is considered low, it is recommended that appropriate targeted surveys be carried out as a precautionary measure.

Species	Ecology*	Likelihood of Occurrence
	and the adjacent Sydney Metro Catchment Management Area. The green and golden bell frog inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha* spp.) or spikerushes (*Eleocharis* spp.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as mosquitofish (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. In NSW, the species commonly occupies disturbed habitats, and breeds largely in ephemeral ponds Major threats identified for the Green and Golden Bell Frog include (DEWHA 2009): ▪ habitat loss, fragmentation or degradation (including siltation, changes to aquatic vegetation diversity or structure reducing shelter, increased light and noise, grazing, mowing, fire); ▪ reduction in water quality (e.g. pollution, siltation and erosion); ▪ changes to hydrology (e.g. changes to drainage patterns or timing, duration or frequency of flood events); ▪ predation by exotic animals (e.g. mosquitofish, cats and foxes); ▪ disease (e.g. infection with chytrid fungus resulting in chytridiomycosis); and ▪ introduction or intensification of public access to Green and Golden Bell Frog habitats. Predation by Gambusia holbrooki (plague minnow)' has been listed as a key	

Species	Ecology*	Likelihood of Occurrence
	threatening process on Schedule 3 of the TSC Act as it has been implicated in the decline of a number of threatened Litorid frog species, including the green and golden bell frog. Breeding and persistence of populations has also been observed at locations where mosquitofish are present, suggesting that certain site conditions may reduce the impact of their predation (White and Pyke 2008).	
Growling Grass Frog **(*Litoria raniformis*)**	The growling grass frog, also known as the southern bell frog in NSW, is listed as vulnerable under the *EPBC Act* and as vulnerable under the *TSC Act*. The growling grass frog is one of the largest frog species in Australia, reaching up to 104 mm (DECC 2005b). It was historically distributed across a large area of south-east Australia, including NSW, Victoria, Tasmania and South Australia. In NSW, growling grass frog was once distributed along the Murray and Murrumbidgee Rivers and their tributaries, the southern slopes of the Monaro district and the central southern tablelands as far north as Tarana, near Bathurst. The species has experienced a pronounced decline in NSW and is currently only known to exist in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. Adults are usually found close to or in water or very wet areas in woodlands, shrublands, and open and disturbed areas. Eggs and tadpoles are found in permanent lakes, swamps, dams, and lagoons with still water.	The growling grass frog has not been recorded from the Study Area, and indeed, the Study Area appears to be outside the historical and existing range of the species. The identification of this species as potentially being present within the Kemps Creek catchment by the DSEWPC Environmental Reporting Tool may reflect an error in the database. The growling grass frog is considered unlikely to occur within the Study Area.
Giant Burrowing Frog	The giant burrowing frog is listed as vulnerable under the EBPC Act and	Giant burrowing frogs have not been observed in

Species	Ecology*	Likelihood of Occurrence
(***Heleioporus australicus***)	vulnerable under the *TSC Act*. The giant burrowing frog is a large, powerfully-built species that grows to approximately 10 cm in length. It is confined to the eastern slopes of the Great Dividing Range and coastal regions, and ranges from Wollemi National Park in NSW, south to Walhalla in the central highlands of eastern Victoria (DSEWPC 2010b). The species appears to exist as two distinct populations: the northern population is confined largely to the sandstone geology of the Sydney Basin and extends as far south as Ulladulla, and the southern population occurring from north of Narooma through to Walhalla, Victoria (DECC 2005c). The current taxonomy of this species is under investigation. The giant burrowing frog has been found from near sea level up to 1000 m, from the coast to almost 100 km inland. They are found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based (DECC 2005c). The frog spends 95 % of its time in burrows below the soil surface or in the leaf litter, but immediately before or after heavy rain move into nearby pools in first or second order streams to breed. Threats to the giant burrowing frog include: ▪ habitat loss through clearing for residential, agricultural and urban infrastructure development; ▪ reduction of water quality generally in the vicinity of urban development; ▪ climate change; ▪ disease (chytrid fungus);	the Study Area and the nearest record is 15 km to the west in the relatively undisturbed Gulguer Nature Reserve and the Bents Basin Conservation Area that borders the Nepean River. The Study Area has been substantially modified for small-scale agriculture and low-density residential purposes, resulting in degraded aquatic and riparian habitat and is potentially dominated by clay-based soils. As such the likelihood of the occurrence of giant burrowing frog within the Study Area is considered low, either due to a lack of suitable habitat or the highly modified nature of their preferred habitat.

Species	Ecology*	Likelihood of Occurrence
	▪ fragmentation of populations and consequent susceptibility to stochastic events; and ▪ forest disturbance associated with forestry operations.	
Tall Knotweed **(*Persicaria elatior*)**	Tall knotweed is listed as vulnerable under the *EPBC Act* and as vulnerable under the *TSC Act*. Tall knotweed grows on sandy, alluvial soil in swampy areas and riparian herblands along watercourses and lake edges. Associated plant species include *Melaleuca linarifolia*, *M. quinquenervia*, *Pseudognaphalium luteoalbum*, *Persicaria hydropiper* and *Floydia praealta*. Knotweed has been recorded in the North Coast, Central Coast, and South Coast botanical subdivisions of NSW (DEWHA 2008a). There are two records of the species from the Hawkesbury – Nepean drainage system and both are from the upper parts of the catchment at Picton Lakes and the upper Avon River catchment. Major threats to tall knotweed include localised disturbance from clearing, track maintenance and changes to hydrology (DECC 2005d).	Neither tall knotweed, nor its commonly associated plant species, were observed at any of the proposed works sites during targeted surveys. The likelihood of the occurrence of tall knotweed within the Study Area is considered low due to a lack of suitable habitat.
Red-crowned toadlet **(*Pseudophryne australis*)**	The red-crowned toadlet is listed as vulnerable under the *TSC Act*. The red-crowned toadlet is a small frog, usually measuring less than 30 mm long. The species is confined to the Sydney Basin, ranging from Pokolbin in the north to the Nowra area in the south, and west to Mt Victoria in the Blue Mountains (DECC 2005e). Red-crowned toadlets are found under rocks and in dense vegetation or leaf	It is considered unlikely that red-crowned toadlet inhabit the Study Area as their preferred habitat is either absent or significantly degraded. The Study Area contains relatively few distinct ridges and it has a relatively low-gradient geography and the geology is dominated by Wianamatta Shales (not Sandstone formations). Moreover, the riparian

Species	Ecology*	Likelihood of Occurrence
	litter beside ephemeral creeks and in wet drainage lines located below ridges in open forests (usually on Hawkesbury and Narrabeen Sandstones). The species is quite localised, as populations are restricted largely to the immediate vicinity of suitable breeding habitat. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks (DECC 2005e). The eggs are laid in moist leaf litter, from where they are washed by heavy rain; a large proportion of the development of the tadpoles takes place in the egg. Breeding of red-crowned toadlets has not been observed in mildly polluted waters or those with a pH outside the range 5.5 to 6.5. Outside of the breeding period they are found under rocks and logs on sandstone ridges and forage amongst leaf-litter. Threats to red-crowned toadlet include: ▪ climate change; ▪ clearing of habitat, particularly along ridges; ▪ reduction in water quality flowing from ridges, particularly near urban areas; ▪ high frequency fire, resulting in changing vegetation structure and composition; ▪ collection of bush rock; and ▪ disease (chytrid fungus).	vegetation and bank structure along the waterways within the Study Area is highly degraded. Water quality is low at most sites, with conductivity levels outside the ANZECC and ARMCANZ threshold limits and pH levels at all sites surveyed are outside the preferred breeding range of the red-crowned toadlet.

Species	Ecology*	Likelihood of Occurrence
Sydney Hawk Dragonfly **(*Austrocordulia leonardi*)**	Historically the Sydney hawk dragonfly (*Austrocordulia leonardi*) was known from only a few sites, one of which was the Nepean River at Maldon Bridge near Wilton, which is located approximately 60 km south of the study area. Numbers of the Sydney hawk dragonfly have declined at the Maldon Bridge site, but it has since been recorded in the upper Hawkesbury-Nepean catchment at O'Hares Creek. This dragonfly spends most of its life as an aquatic larva, with adults emerging from the water and living for only a few weeks or months. The larvae appear to have specific habitat requirements and have been found only under rocks in deep, cool, shady pools (DPI 2007b). This species is threatened by: ▪ River regulation and changes in flows that cause the disappearance of natural deep pools; ▪ Habitat degradation associated with removal of riparian vegetation, drainage works and sedimentation; ▪ Water pollution and sedimentation due to land clearing, waste disposal and stormwater runoff from urban, industrial and agricultural development in the catchment; and ▪ Chance events such as natural disasters (drought) that eliminate the remaining local populations.	The Sydney hawk dragonfly was not identified from macroinvertebrate samples taken during the current survey. Given previous dragonfly sampling has failed to find specimens in the area and the considerable local disturbance to waterways, it is considered highly unlikely that the species occurs in the Study Area.
Adam's emerald	Adam's emerald dragonfly has only been collected at four localities in NSW,	Adam's emerald dragonfly was not collected in the

Species	Ecology*	Likelihood of Occurrence
dragonfly **(*Archaeophya adamsi*)**	one of which was Bedford Creek in the Lower Blue Mountains. Bedford Creek flows into Erskine Creek which eventually discharges into the Nepean River downstream of the Warragamba River and Nepean River confluence. The aquatic larvae of Adam's emerald dragonfly were found in small creeks with gravel or sandy bottoms, in narrow, shaded riffle zones with moss and rich riparian vegetation (DPI 2009). Adam's emerald dragonfly larvae live for 7 years or so and undergo various moults before metamorphosing into adults. Adult dragonflies generally fly away from the water to mature before returning to breed. Males congregate at breeding sites and often guard a territory. Females probably lay their eggs into the water (DPI 2009). Threats to this species include: ▪ Habitat degradation resulting from the loss of riparian vegetation and drainage works; ▪ Water pollution and siltation due to land clearing, waste disposal and stormwater runoff from urban, industrial and agricultural development in the catchment; ▪ Chance events such as natural disasters.	Study Area during the current survey. Given the species' rarity, the absence of suitable habitat within the Study Area and the considerable disturbance within the catchment, it is considered extremely unlikely that Adam's emerald dragonfly inhabits the Study Area or that suitable habitat for them occurs in the Study Area. Protected Species and Habitats
Stuttering Frog **(*Mixophyes balbus*)**	Stuttering Barred Frogs occur along the east coast of Australia from southern Queensland to north-eastern Victoria. It is thought to have disappeared from Victoria and to have undergone considerable range contraction in NSW, particularly in south-east NSW. It is the only *Mixophyes* species that occurs in south-east NSW and in recent surveys it has only been recorded at three	The degraded aquatic and riparian habitat within the Study Area does not represent core habitat for this species is unlikely to support a viable population of stuttering frog.

Species	Ecology*	Likelihood of Occurrence
	locations south of Sydney. The Dorrigo region, in north-east NSW maintains the largest populations (DECC, 2005f). The species is typically found within rainforest, and wet, tall open forest on the eastern side of the dividing range. As such they prefer thick lead litter and dense understorey vegetation. Breeding occurs within streams with eggs laid on rock shelves or riffles in small, flowing streams. Threats to this species include: ▪ Modification and loss of habitat. ▪ Changes to natural water flows and water quality. ▪ Predation of eggs and tadpoles by introduced fish. ▪ Disease - chytrid fungus.	
Heath Frog ***(Litoria littlejohni)***	Littlejohn's Tree Frog is confined to eastern New South Wales and north-east Victoria. The Frog occurs in scattered locations between the Watagan Mountains, New South Wales, to Buchan in Victoria. Despite its very large distribution there are very few records of Littlejohn's Tree Frog, and it is one of the least known frogs in New South Wales (DEWHA 2008b). The species is not associated with any specific vegetation types. However it is known to inhabit forest, coast woodland and heath from 100 – 950m above sea level. Breeding is typically done within standing water such as dams or pools.	The degraded aquatic and riparian habitat within the Study Area does not represent core habitat for this species is unlikely to support a viable population of heath frog.

Species	Ecology*	Likelihood of Occurrence
	Land clearance is considered to be a significant threat to this species, with most sightings occurring only in relatively undisturbed forest and un-polluted water supplies. The species is considered to be susceptible to the chytrid fungus.	

*all references are provided in Section 9 of the main document to which this is an appendix.

Appendix Q

Strategic Assessment Consistency Report

NSW GOVERNMENT | Planning & Infrastructure

Growth Centres Strategic Assessment Program

Assessment of Consistency between the Commitments of the Strategic Assessment Program and the Austral and Leppington North Precincts

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1. Introduction

In December 2011 the Federal Government endorsed the Sydney Growth Centres Strategic Assessment Program Report and in February 2012 approved the classes of actions in the Growth Centres that if undertaken in accordance with the approved program do not require separate approval under the *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*

The Program includes a range of commitments for matters of national environmental significance protected under the EPBC Act. The commitments are drawn from the analysis in the Supplementary Assessment Report and Draft Strategic Assessment Report (Part B), and build upon the Relevant Biodiversity Measures for the Growth Centres Biodiversity Certification.

This report has been prepared to assess of the consistency of proposed precinct plans with the commitments of the Strategic Assessment Program and to satisfy the evaluation and reporting requirements for the Program. Consistency with the Strategic Assessment Program is required to ensure proposals in the Growth Centres benefit from the Commonwealth approval.

This report has been prepared in a table format and addresses all commitments that are relevant to precinct planning. It is noted that some of the commitments are not specific to precinct planning and have therefore not been included in the report.

The Strategic Assessment Program can be viewed in full at http://www.growthcentres.nsw.gov.au/strategicassessment-94.html

Where the report indicates that precinct planning is inconsistent with the Biodiversity Certification or the Strategic Assessment Program, full justification for the inconsistency is provided as part of the ecological assessment for the precinct.

Both the Growth Centres Biodiversity Certification Relevant Biodiversity Measures and Strategic Assessment require a consistency report be prepared and publicly exhibited when the precinct plan is exhibited.

The draft Austral and Leppington North Precinct Plan was publicly exhibited from 26 October to 2 December 2011, prior to the Sydney Growth Centres Strategic Assessment Program coming into effect. Therefore, a consistency report was not part of the public exhibition. This report has been prepared since exhibition and is based on the final Precinct Plan (the final Indicative Layout Plan is at **Annex B**).

Definitions

Terms defined below appear in **bold** in the table. Where the terms are also defined in the Biodiversity Certification Order, the definitions provided are consistent with those in the Order.

- Biodiversity Certification Maps means the maps marked "North West Growth Centre – Biodiversity Certification" and "South West Growth Centre – Biodiversity Certification" dated November 2007 and included in Schedule 2 of the Biodiversity Certification Order.
- *Certified Area* means an area marked as a certified area on a biodiversity certification map.
- *Clearing* of vegetation means any one or more of the following:

  a) cutting down, felling, thinning, logging or removing native vegetation in whole or in part,

  b) killing, destroying, poisoning, ringbarking, uprooting or burning native vegetation in whole or in part.
- *Commitments* means the commitments set out in section 4 of the Sydney Growth Centres Strategic Assessment Program Report.
- *DECCW* means the Department of Environment, Climate Change and Water (which is now the Office of Environment and Heritage).
- *EPBC Act* means Environmental Protection and Biodiversity Conservation Act 1999
- *GCC* means the Growth Centres Commission constituted under the *Growth Centres (Development Corporations) Act 1974* (which is now the Department of Planning and Infrastructure).
- *Minister* means the Minister administering the EPBC Act.
- *Protection or Protected* in relation to land means land that is protected by a land use zoning under an environmental planning instrument or public ownership arrangements that provide for the protection of biodiversity values as a priority, or another arrangement that provides in perpetuity security for biodiversity on the subject land.
- *Relevant Biodiversity Measures* means the conditions in Schedule 1 of the Biodiversity Certification Order.
- *TSC Act* means the *Threatened Species Conservation Act 1995.*

2. Assessment

Table 1: Assessment of consistency between the commitments of the Strategic Assessment Program and the Austral and Leppington North Precincts.

	Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
Review of Zoning				
3	Review the provisions of the Environment Conservation and Public Recreation - Regional zones in the Growth Centres SEPP to confirm they are adequate for conservation purposes. Note this commitment is being undertaken for the Growth Centres as one exercise as does not need to be addressed separately for each precinct.	Undertake a review of the zone objectives, permitted land uses and development controls to ensure the conservation values of the land are adequately protected.	Yes	
Threatened Ecological Communities				
4	Retention and protection of a minimum 998 ha of CPW within the Growth Centres, including a minimum of 363 ha of HMV CPW. i) Retention and protection of CPW in the following areas of the Growth Centres: a) 138 ha within Flood Prone Land to be protected through the vegetation clearing controls under the Growth Centres SEPP or through zoning and/or development controls following completion of precinct planning. b) 424 ha within Environment Conservation and Public Recreation – Regional zoning to be protected. • RBM 12 which states that clearing of these areas is not	The total area of Commonwealth listed CPW as mapped in the Strategic Assessment in the precincts is 88 ha. Of this 2.65 ha is in the Kemps Creek Nature Reserve and 3.35 ha is within the former Western Sydney Parklands Area. The Kemps Creek Nature Reserve area has been excluded from all further calculations, and the Western Sydney Parklands Area is addressed under condition 4i)c) below. Of the 138 hectares of CPW to be protected across the Growth Centres, 22.13ha is within the Austral and Leppington North Precincts. None of the CPW in the Precincts is HMV CPW. This is the 'target' amount of CPW to be protected to maintain consistency with condition 4(i)(a) of the Strategic Assessment.	Yes	**Annex A** contains a map showing the current boundaries of non-certified land in the Precincts, and ENV that is required to be protected. **Annex D** highlights ENV in non-certified areas that is proposed to be impacted by the Precinct Plan, and ENV in certified areas that is proposed to be protected by the Precinct Plan. **Annex E** shows

	Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
	permitted unless it is in accordance with a Plan of Management endorsed by DECCW; • the zoning and vegetation clearing controls under the Growth Centres SEPP; and • the Growth Centres Conservation Fund which provides funding to acquire the land.	Cardno's groundtruthing identified 121.84 ha of CPW in the precincts which is mapped as ENV. Of this 3.03 ha is in Kemps Creek Nature Reserve and 6.39 ha is within the former Western Sydney Parklands area. (These areas are based on vegetation community mapping as per the strategic assessment). Using the Ground-truthed mapping of CPW, under the Precinct Plan, 39.62 ha of CPW is to be protected. Of this: • 24.55ha of CPW that is currently non-certified is to be protected. • 15.07ha of CPW is to be protected in currently certified areas. • 3.17ha of CPW that is currently non-certified is proposed to be cleared.		proposed amendments to the certified/non-certified land boundaries to ensure protection of ENV as proposed by the Precinct Plan. The Land Zoning Map and Native Vegetation Protection Map give effect to provisions in the Precinct Plan that will protect the 39.62 hectares of ENV in the Precincts. Protection measures are further described in the **Conclusion** of this report.
	c) 280 ha to be protected within existing reserved areas including the Westlink M7 Motorway Offsets area, the Kemps Creek Nature Reserve, and the Western Sydney Parklands.	A small part of the Kemps Creek Nature Reserve (which is subject to RBM 12 and condition 4(i)(c) of the Strategic Assessment) is within the Austral Precinct (refer to Figure 1 and **Annex A**). There is 3.03ha of ground truthed CPW mapped within this part of the Precinct. The Precinct Plan does not apply to this land (see **Annex B**) and there will be no impacts on it. Therefore, this vegetation is not included in the calculations in this report. In the former Western Sydney Parklands, there is 3.39 ha of Commonwealth listed CPW while ground truthed CPW, classified as ENV, shows 6.39 ha. All of the 6.39 ha of CPW ENV will be		Some ENV within the former Western Sydney Parklands area will be impacted by the South West Rail Line construction. These impacts have been separately assessed and offset in accordance with the Minister's Conditions of Approval for the project. ENV to be protected within this area takes into account the impacts of the rail line. The protection measures

	Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
		protected by the Precinct Plan.		maps at **Annex C** identify ENV that is proposed to be protected in the former Parklands area. **Annex E** shows proposed amendments to the certified/non-certified land boundaries.
	d) 79 ha to be protected within protected zones within Edmondson Park. e) 77 ha to be retained within non-certified and transitional lands. These areas will be retained subject to the confirmation of the presence of the community through survey at the precinct planning stage. ii) If for any reason the above targets cannot be achieved then the NSW Government will ensure that 998 ha of CPW is protected within the Growth Centres through the measures contained in either RBM 8a or 8b.	Not Applicable	Not Applicable	Not Applicable
5	Assessment of 14 ha HMV CPW within Marsden Park & Marsden Park Industrial Precincts to confirm its presence and if present protect, shown in red hatching on the **Biodiversity Certification maps** a) Assessment of the HMV CPW in accordance with RBM 14 and 15. b) Based on the outcomes of the assessment, DECCW will advise the NSW Minister for the Environment whether the area should be protected in accordance with RBM 16.	Not Applicable	Not Applicable	Not Applicable

	Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
Shale Sandstone Transition Forest (SSTF)				
8	Retention and protection of a minimum of 58 ha of SSTF within the Growth Centres. i) Retention and protection of SSTF in the following areas of the North West Growth Centre: a) 5.5 ha within Flood Prone Land to be protected through the vegetation clearing controls under the Growth Centres SEPP. b) 5.5 ha within Public Recreation – Regional zoning to be protected. • RBM 12 which states that clearing of these areas is not permitted unless it is in accordance with a Plan of Management endorsed by DECCW; • the zoning and vegetation clearing controls under the Growth Centres SEPP; and • the Growth Centres Conservation Fund which provides funding to acquire the land. c) 0.5 ha within the Westlink M7 Motorway Offsets area to be protected through maintenance of the existing conservation area (purchased by the RTA for transfer to DECCW as part of the Westlink M7 Motorway offsets). d) 46.5 ha within the E3 Environmental	There is no mapped Shale Sandstone Transition Forest in the Austral and Leppington North Precincts.	Not Applicable	Not Applicable

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
	Management zone in North Kellyville to be protected under the existing native vegetation and native vegetation retention controls under the North Kellyville Precinct Plan.				
Additional conservation actions within the Growth Centres – plants					
11. and 12.	During or before the preparation of the relevant precinct plan(s) under the Growth Centres Development Code relating to the areas referred to in the table below, the following actions must be undertaken:		While RBM 17- *Acacia pubescens* refers to areas in the Austral Precinct, the area mapped under this condition is adjacent to the Austral Precinct, within the Western Sydney Parklands and Sydney Catchment Authority Upper Canal. As the land covered by this condition is not in the Precincts, this condition is not relevant to this report.	Not Applicable	
15. and 30.	***Species***	***Required action***			
	Acacia pubescens	Known populations at Kemps Creek and Austral – as shown in red hatching on the **Biodiversity Certification maps**: • survey to confirm the presence of the population in the Kemps Creek and Austral precincts, and • if the species is present and the population is identified as significant relative to the adjacent property by DECCW, provide for the **protection** of the area of suitable habitat for the species to the satisfaction of the **DECCW**.			
	Dillwynia tenuifolia	Retention and protection of habitat supporting the four important			

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
	Pultenaea parviflora	populations of *Dillwynia tenuifolia* and *Pultenaea parviflora* known to occur within the Growth Centres through acquisition of land for environmental conservation. a) Protection of the Marsden Park North population within Environment Conservation zoning in accordance with the measures outlined in commitment 8.b) b) Protection of the population within the Air Services Australia site at Shanes Park (noting that at the time of finalising the Program the site is still under care of the Commonwealth) through: • RBM 12 which states that clearing of these areas is not permitted unless it is in accordance with a Plan of Management endorsed by DECCW; and • the zoning and vegetation clearing controls under the Growth Centres SEPP. c) Protection of the majority of the large population within Kemps Creek in accordance with the measures outlined in commitment 15.b) above. d) Protection of the large population that occurs within the Westlink M7 Motorway			
27.					
17.					

Assessment of consistency between Relevant Biodiversity Measures of the Biodiversity Certification Order and Austral and Leppington North Precincts

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
18. and 19.		offset adjacent to the Colebee Precinct through maintenance of the existing conservation area (purchased by the RTA for transfer to DECCW as part of the Westlink M7 Motorway offsets).			
23. 24. and 25.	*Pimelea spicata*	Potential populations at Denham Court Road within the East Leppington Precinct - as shown in red hatching on the **Biodiversity Certification maps**: • survey to confirm the presence of population, and • if the population is present and identified as significant relative to adjacent property by DECCW, provide for the **protection** of the area of suitable habitat for the species to the satisfaction of the **DECCW**.			
20.	*Grevillea parviflora subsp. parviflora* *Persoonia nutans*	Retention and protection of habitat supporting the population known to occur within the Growth Centres through acquisition of land in Kemps Creek. a) Protection of the majority of the large population within Kemps Creek through: • RBM 12 which states that clearing of these areas is not permitted unless it is in			

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
		accordance with a Plan of Management endorsed by DECCW; and • the zoning and vegetation clearing controls under the Growth Centres SEPP. Potential populations at Kemps Creek Precinct - as shown in red hatching on the **Biodiversity Certification maps**: • survey to confirm the presence of population, and • if the species is present and population is identified as significant relative to adjacent property by DECCW, provide for the **protection** of the area of suitable habitat for the species to the satisfaction of the **DECCW**.			
22.	*Micromyrtus minutiflora*	Retention and protection of habitat supporting the two important populations known to occur within the Growth Centres. a) Protection of the Marsden Park North population within Environment Conservation zoning through: • RBM 12 which states that clearing of these areas is not permitted unless it is in accordance with a Plan of Management			

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
14.		endorsed by DECCW; • the zoning and vegetation clearing controls under the Growth Centres SEPP; and • the Growth Centres Conservation Fund which provides funding to acquire the land. b) Protection of the population within the Air Services Australia site at Shanes Park (noting that at the time of finalising the Program the site is still under care of the Commonwealth) through: • RBM 12 which states that clearing of these areas is not permitted unless it is in accordance with a Plan of Management endorsed by DECCW; and • the zoning and vegetation clearing controls under the Growth Centres SEPP.			
	Persoonia hirsuta	Potential habitat at North Kellyville – as shown in red hatching on the **Biodiversity Certification maps**: • survey to confirm the presence of the species, and • if the species is present,			

	Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
	provide for the **protection** of the habitat within the Precinct through zoning as E3 Environmental Management and existing native vegetation or native vegetation retention development controls. *Darwinia biflora* — Known populations at North Kellyville - as shown in red hatching on the **Biodiversity Certification maps**: • survey to confirm the extent of the populations, and • provide for the protection and ongoing management of key populations within the Precinct through zoning as E3 Environmental Management and existing native vegetation controls. Note: On completion of the above actions the **Minister** may decide that it is appropriate to amend the boundaries of the area subject to biodiversity certification, in accordance with condition 3.			
Additional conservation actions within the Growth Centres – animals				
32.	During or before the preparation of the relevant precinct plan(s) under the Growth Centres Development Code relating to the area referred to in the table below, the following actions must be undertaken: ***Species*** — ***Required action*** *Swift Parrot* — Protection of potential habitat for the Swift Parrot within the Growth	Commitments in relation to the Swift Parrot and Grey-Headed Flying Fox are relevant and have been satisfied for the Austral and Leppington North Precincts by the protection of 116.62 hectares of ENV across the Precincts, this is 10 hectares more ENV than is required to maintain parity with the 2,000 hectares of ENV across the Growth Centres	Yes	116.62 hectares of ENV will be protected in the Austral and Leppington North Precincts, this is 10 hectares more ENV than is required to maintain parity with the target identified in the draft

		Commitment	Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
34. and 35.		Centres. a) Protection of 2,000 ha native vegetation within the Growth Centres through: • RBM 6 which requires a minimum of 2,000 ha of existing native vegetation to be retained; and • the relevant development controls under the Growth Centres SEPP that relate to the retention of native vegetation.	in accordance with RBM 6. This will include any existing potential habitat for the Swift Parrot and Grey-headed Flying Fox found within this area.		Growth Centres Conservation Plan. Refer to the Maps in Annex B and C which show the Indicative Layout Plan and zoning. The Maps at Annex D shown ENV that is proposed to be protected, including currently non-certified ENV proposed to be cleared and currently certified ENV that is to be protected.
36. *38.*	*Green and Golden Bell Frog*	Potential population at Riverstone – as shown in red hatching on the **Biodiversity Certification maps**: a) Incorporation of habitat protection and enhancement features (as per the agreed concept design) in the Riverstone Precinct Development Control Plan for the trunk drainage land. b) Inclusion of provisions in the Riverstone Precinct Plan and Development Control Plan to require the design and assessment of development on subject lands to be consistent with any recovery plan for the species and the Best Practice Guidelines for Green and Golden Bell Frog			

	Commitment		Austral and Leppington North Precincts – Comment	Consistent with Commitment	Justification
		Habitat (DECC 2008b). Retention of major drainage lines and associated vegetation throughout the Growth Centres through Growth Centres SEPP development controls for major creeks and flood prone areas.			
	Large-eared Pied Bat	Retention of potential roosting habitat and immediately adjacent potential foraging habitat along Cattai Creek in North Kellyville through development controls associated with the E3 Environmental Management and E4 Environmental Living zones.			
	Grey-headed Flying Fox	Protection of potential habitat for the Grey-headed Flying Fox within the Growth Centres. b) Protection of 2,000 ha native vegetation within the Growth Centres through: • RBM 6 which requires a minimum of 2,000 ha of existing native vegetation to be retained; and • the relevant development controls under the Growth Centres SEPP that relate to the retention of native vegetation.			
	Note: On completion of the above actions the **Minister** may decide that it is appropriate to amend the boundaries of the area subject to biodiversity certification, in accordance with condition 3.				

3. Conclusion

This report has undertaken an assessment of the consistency of the Austral and Leppington North Precinct Plan with the Strategic Assessment and the applicable commitments.

It is concluded that the Austral and Leppington North Precinct Plan is consistent with the Strategic Assessment of the Growth Centres SEPP, as follows:

- 116.62 hectares of ENV will be protected by the Precinct Plan, 10 hectares more than is required under the Biodiversity Certification.
- 24.55 hectares of CPW ENV that is currently non-certified will be protected by the Precinct Plan.
- 3.17 hectares of non-certified CPW ENV is proposed to be cleared to enable efficient urban development of the Precincts and to ensure that essential infrastructure can be constructed. To more than offset these impacts, 15.07 hectares of CPW ENV that is currently certified will be protected by the Precinct Plan and by amendments to the boundaries of certified and non-certified land.
- The total area of ENV (that is also Cumberland Plain Woodland as mapped under the Strategic Assessment Program) protected by the Precinct Plan is 39.62 hectares. This is 17.49 hectares more than the amount of CPW ENV (22.13 hectares) that is currently on non-certified land. The 39.62 hectares of CPW ENV will be protected by a combination of zoning, vegetation clearing controls and amendments to the boundaries of non-certified land. The proposed zoning of protected ENV is explained below.
- Amendments to the certification maps are proposed to ensure that all ENV that is protected by the Precinct Plan is also on non-certified land (see **Annex E**).

Land use zones have been selected based on advice from the OEH in relation to appropriate zoning of land containing ENV, and with consideration of other land use planning factors, including the future ownership, acquisition and use of land in accordance with the draft Precinct Plan and the EP&A Act. While the use of Environment Protection zones is preferred by OEH, in many cases it is not possible to apply this zoning to land containing ENV because of restrictions on the ability of Council to acquire the land under section 94 of the EP&A Act. In accordance with the hierarchy of land use zones preferred by OEH, land use zones have been applied to ENV that is proposed to be protected as follows:

- Where ENV to be protected is on land that is currently in Council or State Government ownership, the E2 Environmental Conservation zone has been used. The exception to this is Craik Park, in the centre of the Precincts, which is an existing Council reserve that contains a sports field and remnant ENV. The RE1 Public Recreation zone has been applied to this land to enable continued use of the sports fields.
- Where ENV to be protected is within large land holdings (and the area of ENV comprises only small part of the total area of land in the one ownership) the E2 zone has been applied. This land is not proposed to be acquired by a public authority, but the land owner may seek to dedicate the land to Council subject to Council agreement, and if this did occur, the ENV would be

protected by the combination of zoning and public ownership. Regardless, the application of the E2 zone to land that is to remain in private ownership is consistent with OEH requirements for protection of ENV.

- Within flood affected land along Kemps Creek and Bonds Creek, and adjacent to a number of other unnamed watercourses, existing rural properties that partly contain ENV are proposed to have a "split" zoning, with the land containing ENV zoned E2 Environmental Conservation and the remainder of the property zoned for a purpose that enables some commercial return either through limited subdivision or construction of a dwelling, or continued agricultural production. Generally, where the existing rural lot is partly within and partly outside the 100 year ARI flood extent, the combination of E4 Environmental Living and E2 (for the land that contains ENV) has been used. This approach also applies to a property on the eastern side of the Precincts at Eighth Avenue, which contains patches of ENV that are linked to a large remnant to the north and east in land owned by the Sydney Catchment Authority. This enables limited subdivision and construction of dwellings on relatively large lots consistent with the flooding and vegetation constraints on the land. Where the existing rural lot is entirely affected by flooding (such as along the northern parts of the Kemps Creek floodplain) the RU6 Rural Transition zone and E2 zone (for the land that contains ENV) has been used. The Rural Transition zone will enable agricultural uses that do not cause significant amenity impacts for nearby residential areas. The ability to further subdivide this land is limited, with minimum lot size controls established to limit further subdivision of land that contains ENV. In both these situations, the land that contains ENV is anticipated to remain in private ownership.
- Where land that contains ENV is to be acquired as part of a larger acquisition for a public purpose (usually for public recreation or drainage) the RE1 Public Recreation and SP2 Infrastructure (drainage zones) have been used. These approaches have generally been applied along the larger watercourses (eg. Bonds Creek and Scalabrini Creek) where the creek channel and margins are to be acquired by Council as part of the drainage network or where ENV is located on land that is to be acquired for public parks and sporting fields (these are often located within floodprone land near the major creeks). Land in these zones will be acquired by the relevant Council.

Annex A

Biodiversity Certification Map for the Austral and Leppington North Precincts

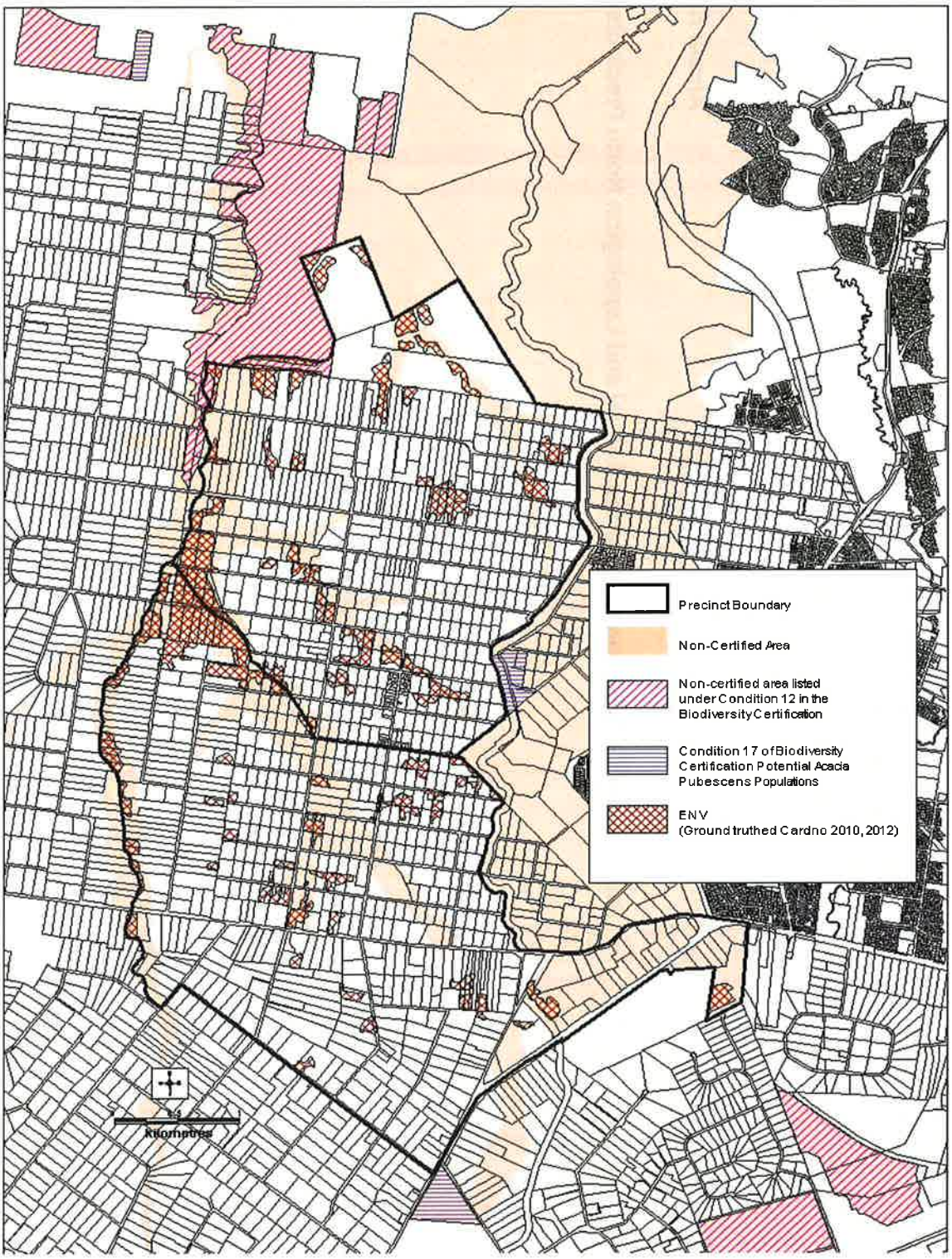

Figure 1: Austral and Leppington North Precincts – Biodiversity Certification Map showing Existing Native Vegetation (as confirmed by 2010 and 2012 ground truthing) and areas listed under Condition 12 and Condition 17 of the Biodiversity Certification.

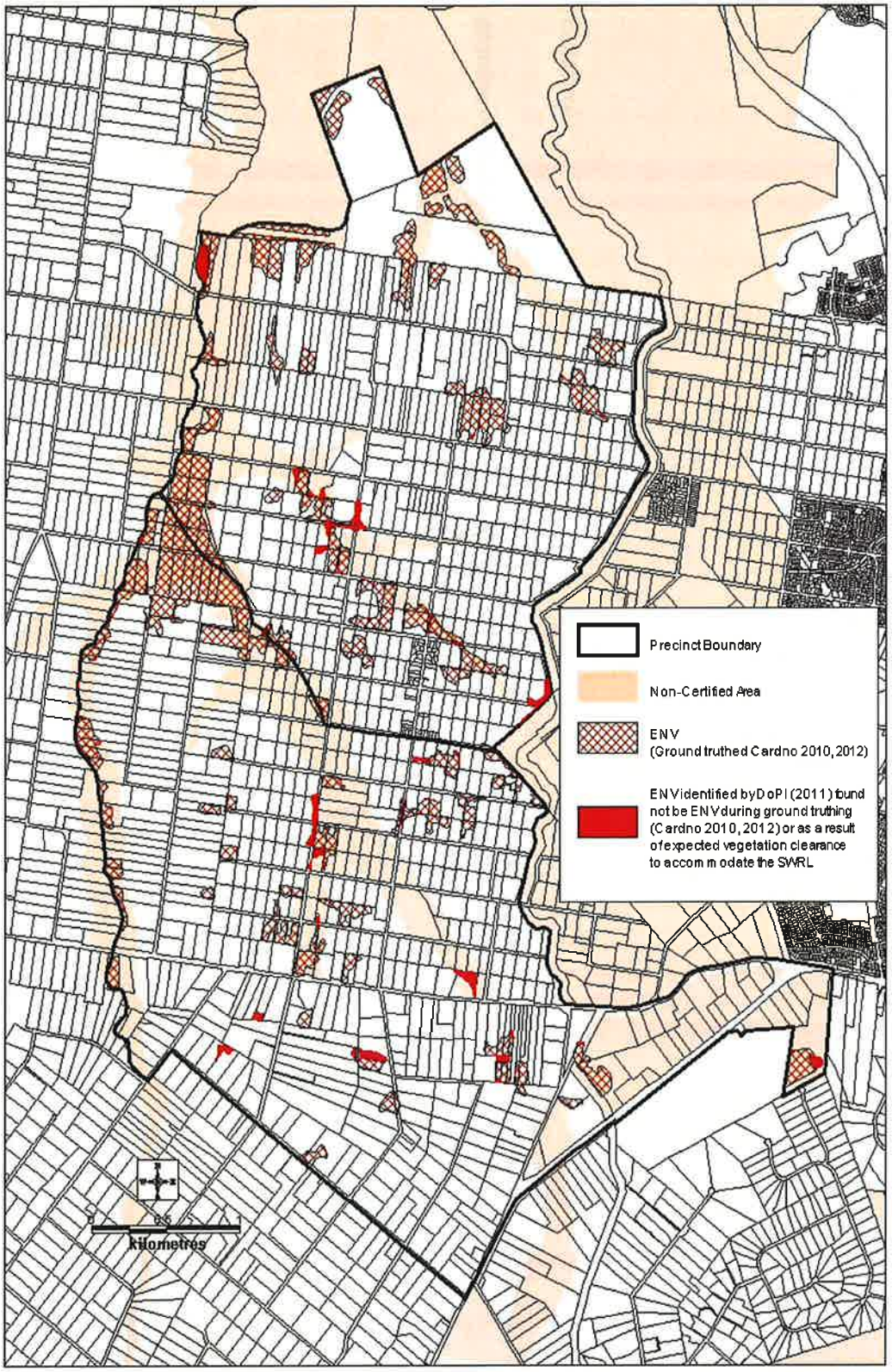

Figure 2 Existing Native Vegetation and vegetation areas found not to meet the criteria of ENV during ground truthing in 2010, 2012.

Annex B

Indicative Layout Plan for the Austral and Leppington North Precincts

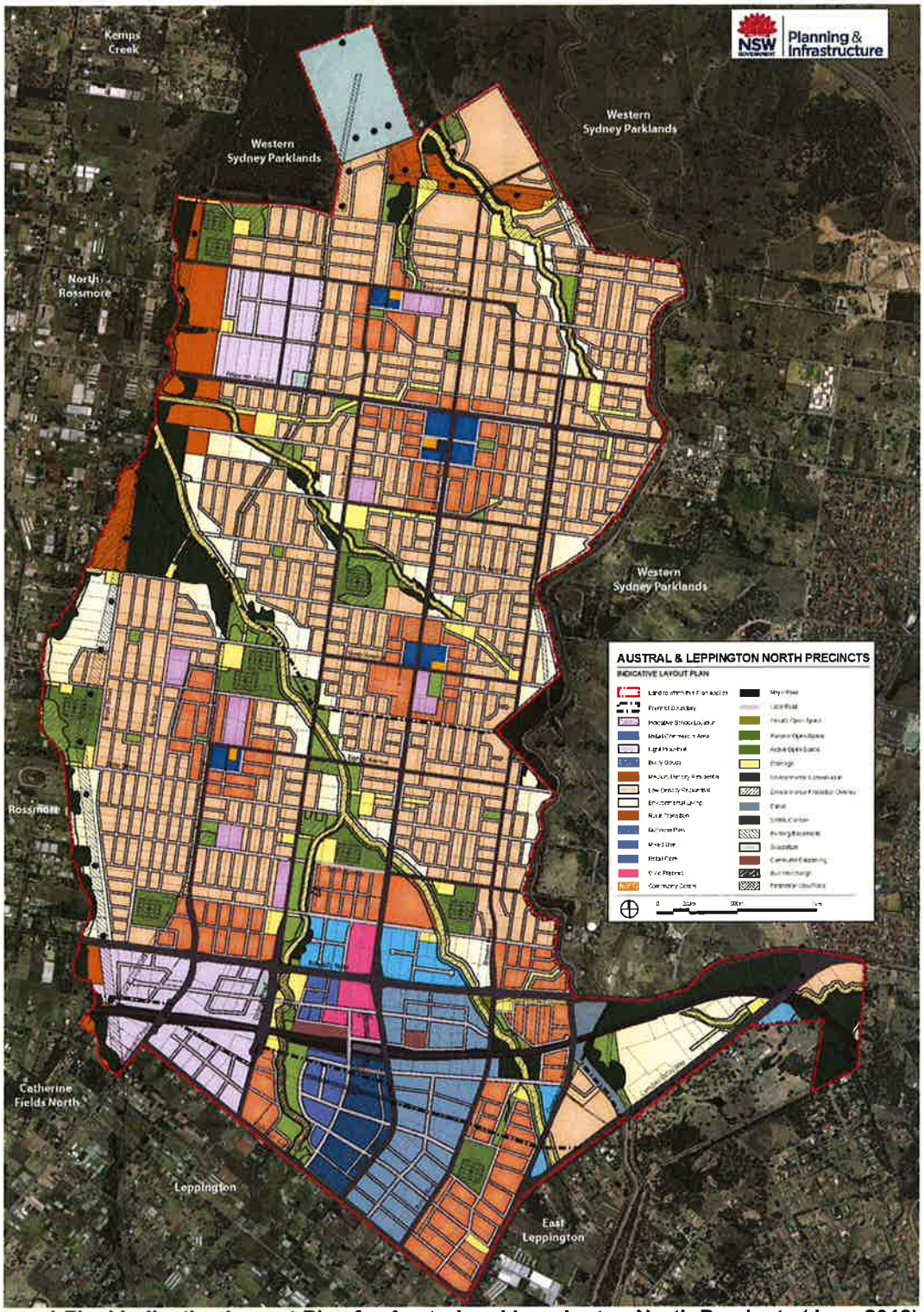

Figure 1 Final Indicative Layout Plan for Austral and Leppington North Precincts (June 2012).

Annex C

Proposed Protection Measures Plan for the Austral and Leppington North Precincts

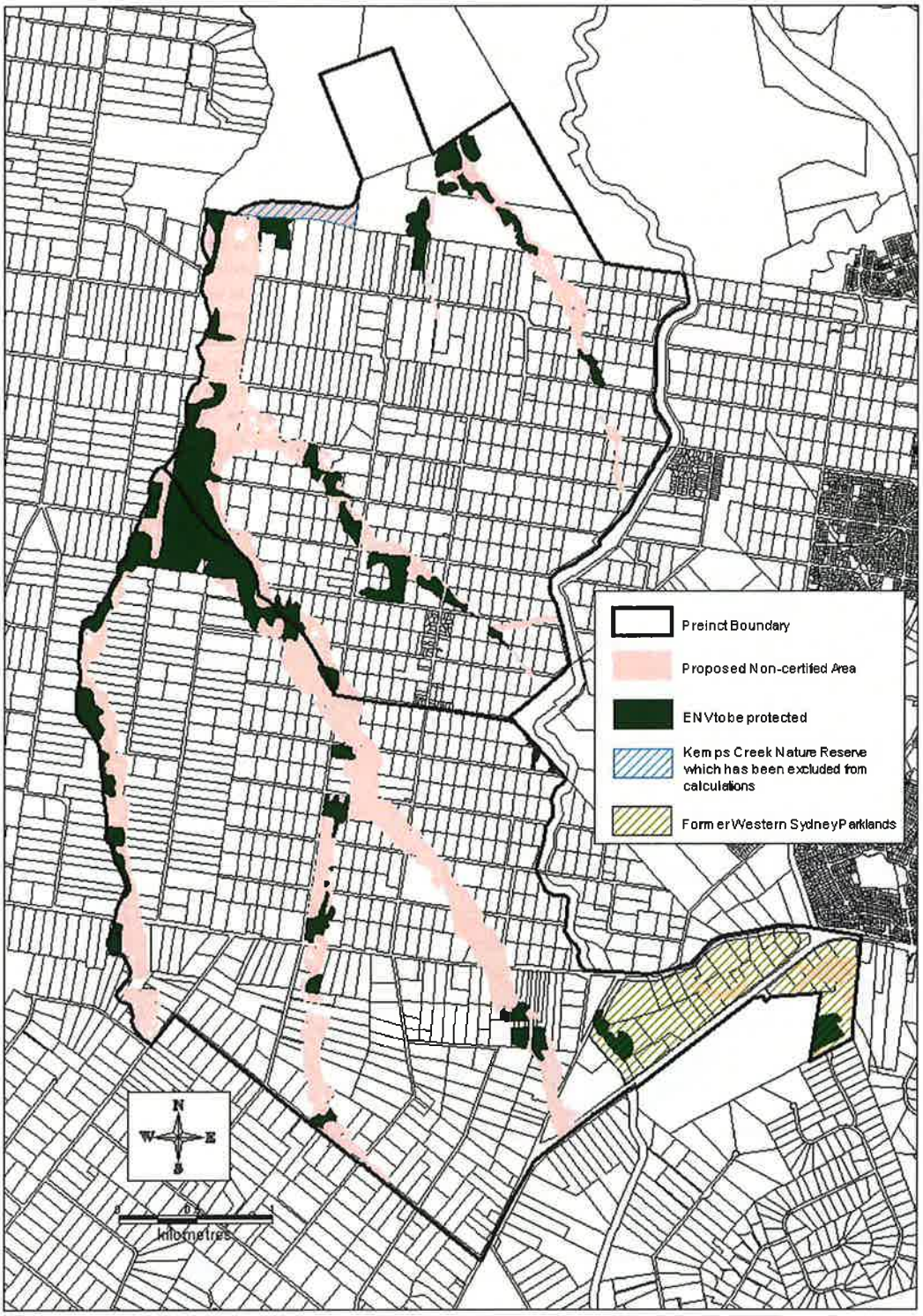

Figure 1 ENV to be protected

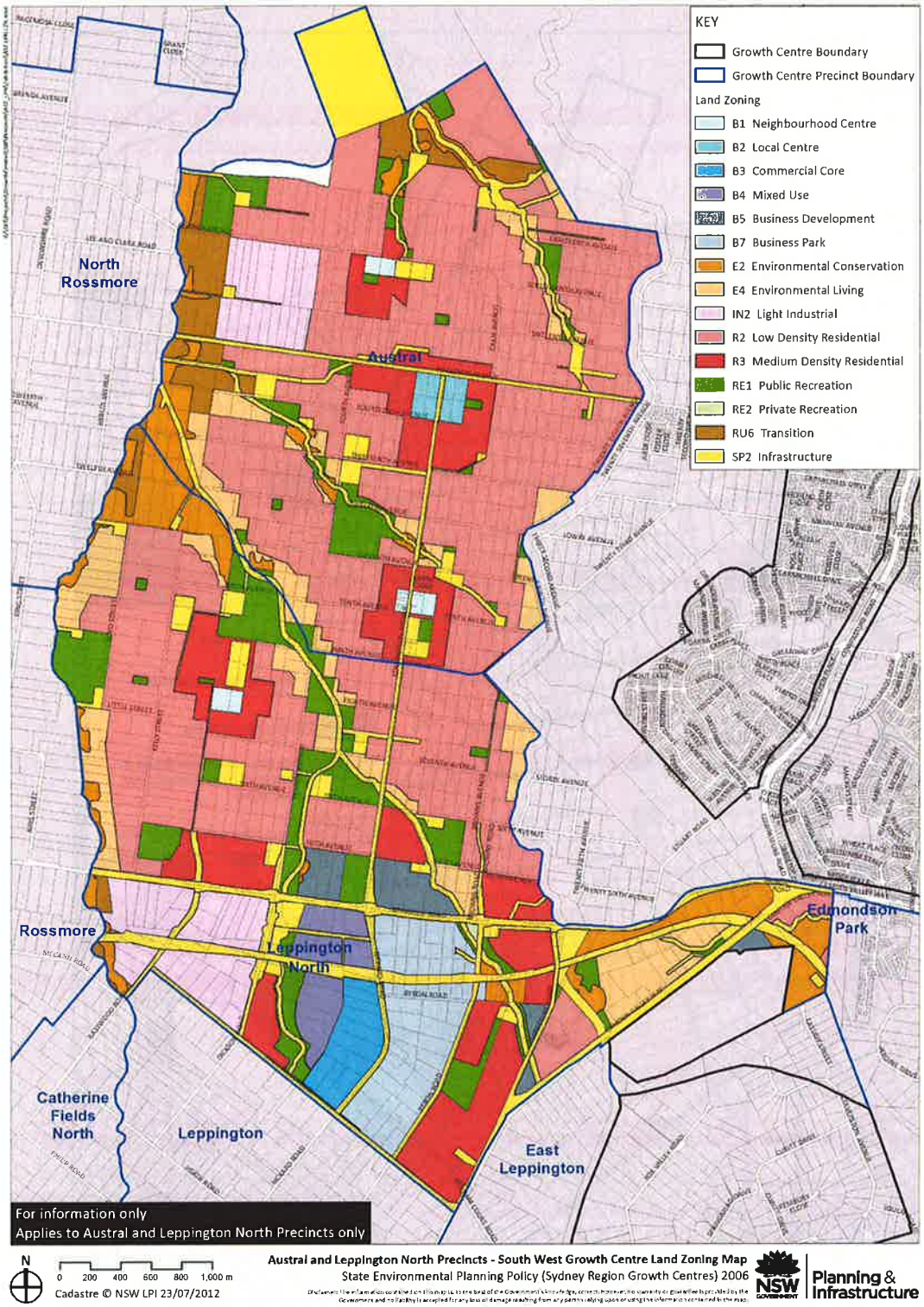

Figure 2 Land Zoning Map

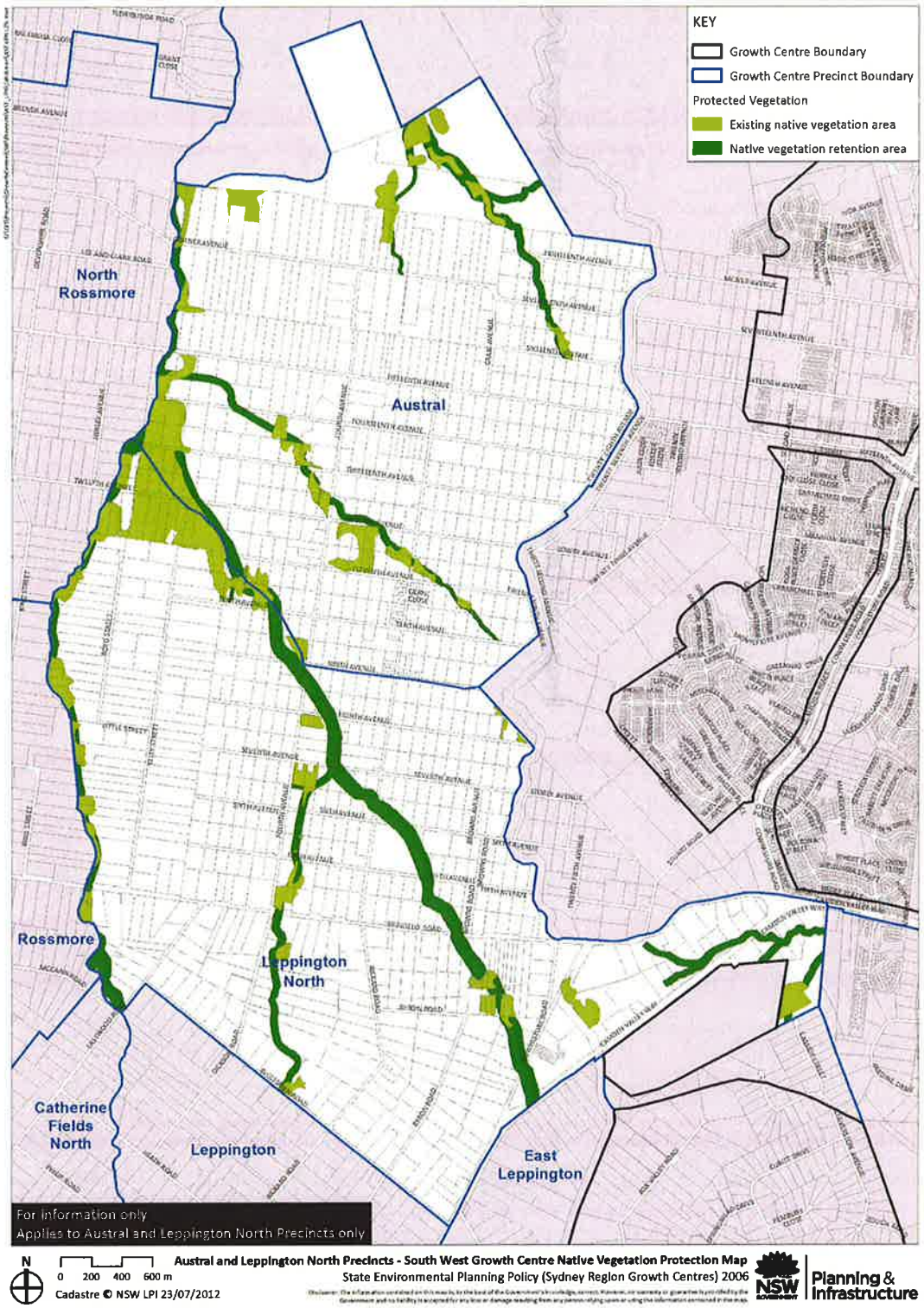

Figure 3 Native Vegetation Protection Areas Map

Annex D

Proposed Offsets Areas the Austral and Leppington North Precincts

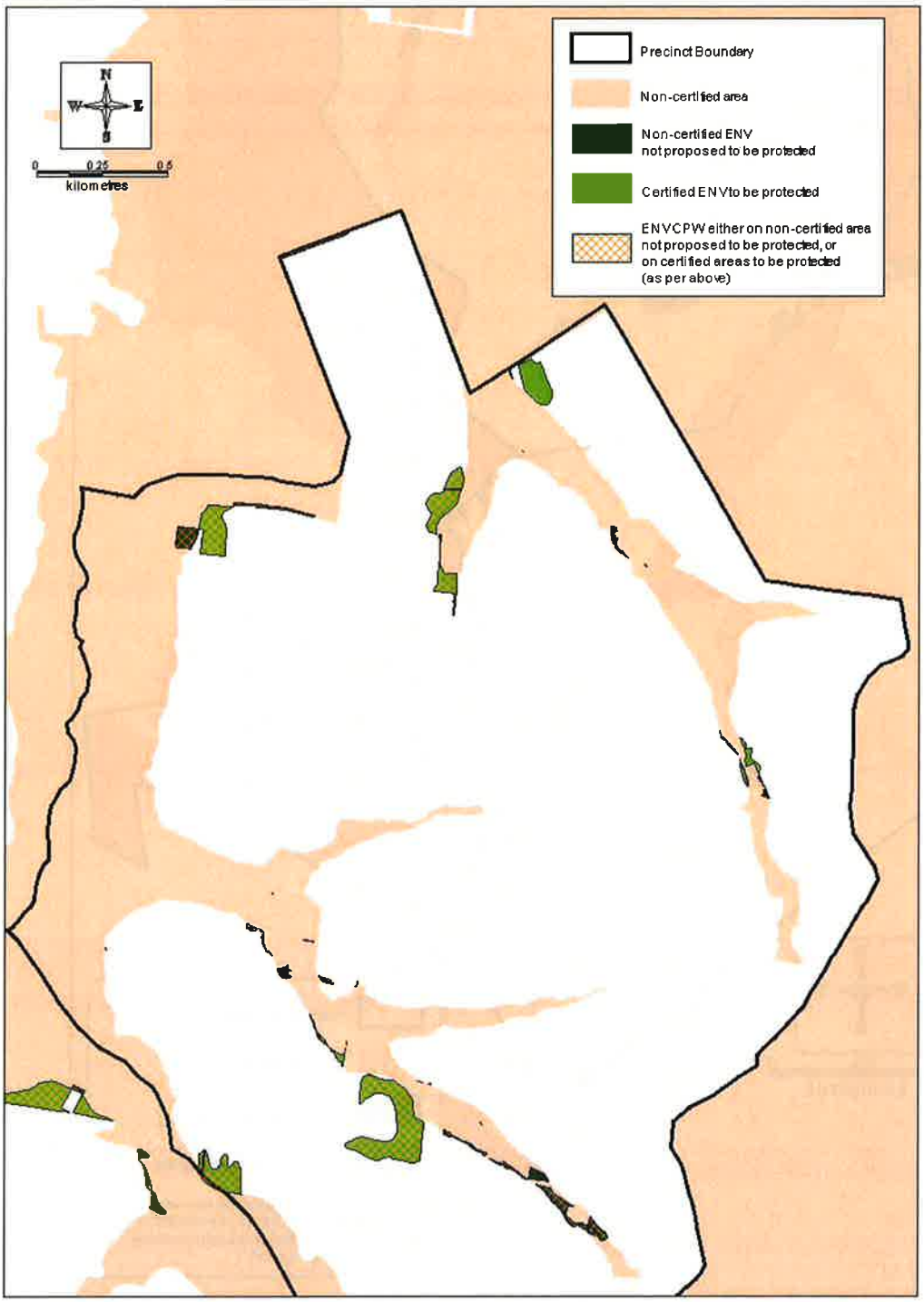

Figure 1: Certified ENV to be protected and Non-certified ENV not proposed to be protected in Austral

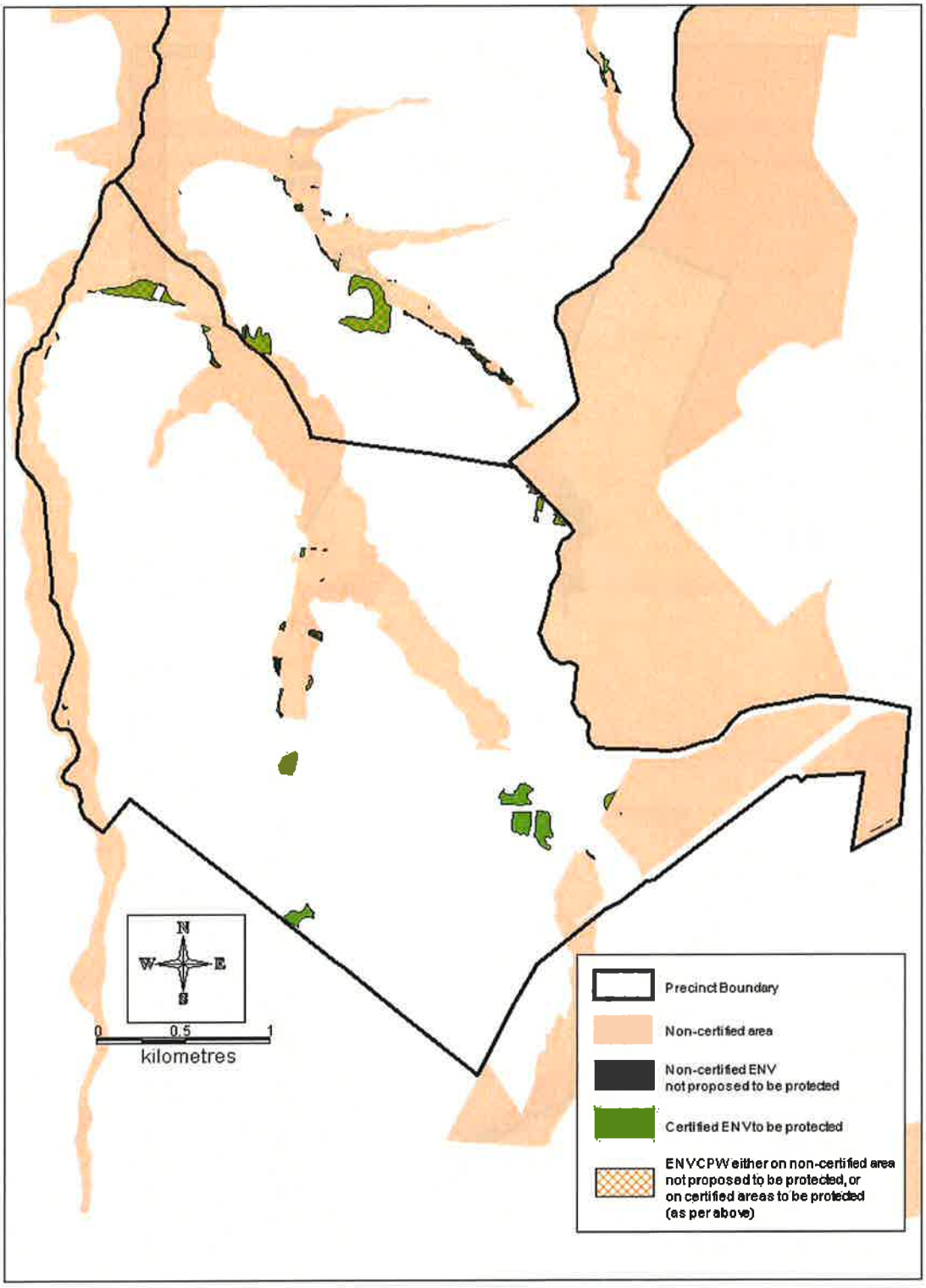

Figure 2: Certified ENV to be protected and Non-certified ENV not proposed to be protected in Leppington

Annex E

Proposed Amendments to Biodiversity Certification Map

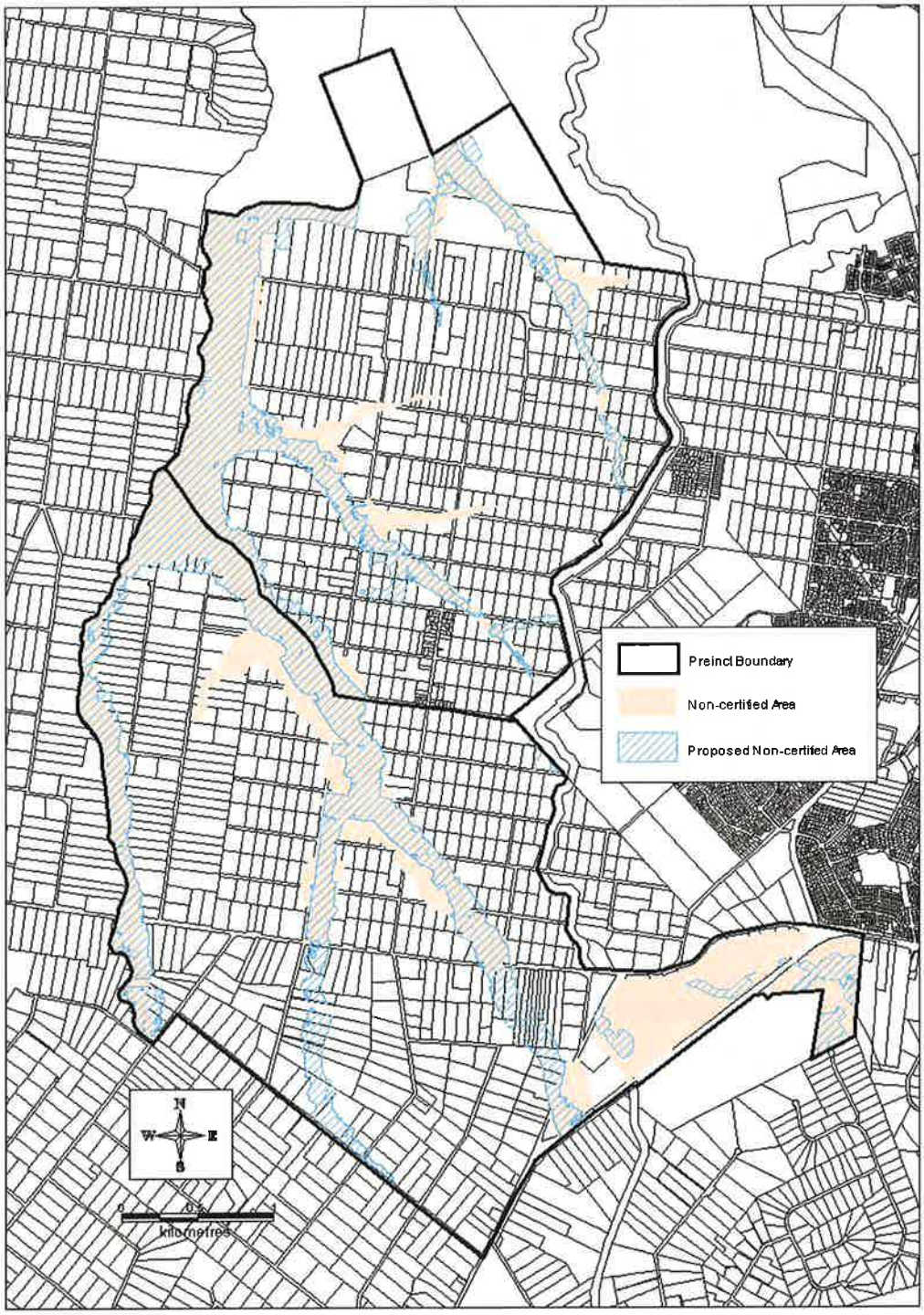

Figure 1: Proposed new boundaries of non-certified area and current non-certified area within the Austral and Leppington North precincts