APPENDIX A

SUMMARY OF FLOOD FREQUENCY ANALYSIS

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

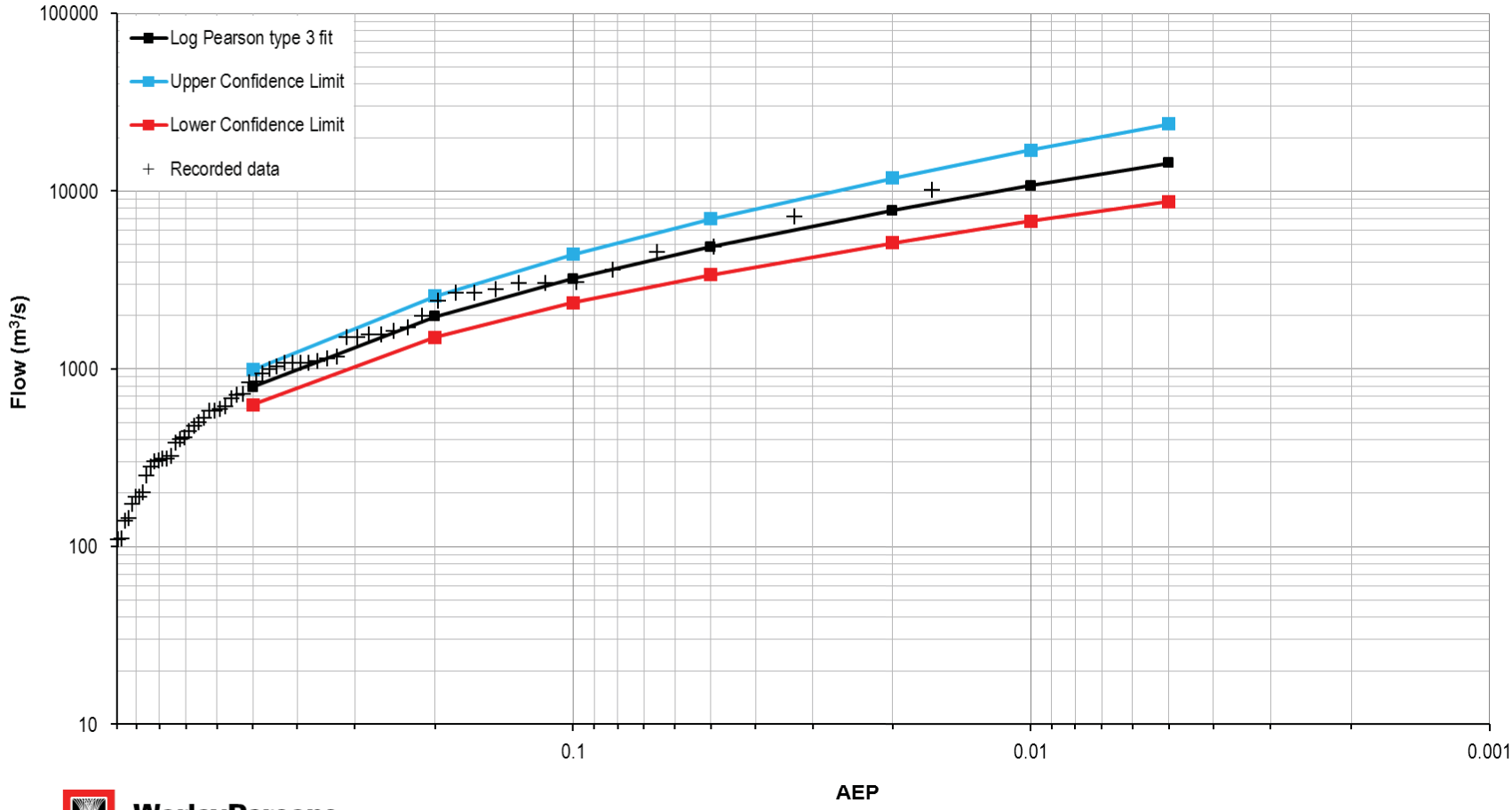
PARTIAL SERIES FLOOD FREQUENCY ANALYSIS FOR CAMDEN – INCLUDING HIGHEST THREE VALUES

Average Flow	Sum of $\{(\log Q - avg(\log Q))^2\}$	Variance
121699	12.71	0.2154
Average(Log(Q))	Sum of $\{(\log Q - avg(\log Q))^3\}$	Standard Deviation
4.84	0.74	0.4642
Number of Records		Skew Coefficient
60		0.1302
Number of Years		
139		

Rank	Date	Flow	Flow	Log(Q)	$\{(\log Q - avg(\log Q))^2\}$	$\{(\log Q - avg(\log Q))^3$	Return Period	Exceedence Probability	Plotting Position	Adjusted Plotting Position
		[ML/day]	[m^3/s]				[years]	[%]		
1	25/2/1873	869184	10060	5.9391	1.2008	1.3159	61	1.64%	0.0043	0.0100
2	14/2/1898	619488	7170	5.7920	0.9001	0.8540	31	3.28%	0.0115	0.0266
3	18/10/1860	419904	4860	5.6232	0.6082	0.4743	20	4.92%	0.0187	0.0433
4	12/06/1964	389664	4510	5.5907	0.5586	0.4175	15	6.56%	0.0259	0.0599
5	20/03/1978	309312	3580	5.4904	0.4188	0.2710	12	8.20%	0.0330	0.0766
6	30/04/1988	263520	3050	5.4208	0.3335	0.1926	10	9.84%	0.0402	0.0932
7	5/04/1972	261792	3030	5.4180	0.3303	0.1898	9	11.48%	0.0474	0.1098
8	21/06/1975	261792	3030	5.4180	0.3303	0.1898	8	13.11%	0.0546	0.1265
9	18/06/1949	240192	2780	5.3806	0.2887	0.1551	7	14.75%	0.0618	0.1431
10	5/06/1950	229824	2660	5.3614	0.2684	0.1391	6	16.39%	0.0690	0.1598
11	11/02/1956	229824	2660	5.3614	0.2684	0.1391	6	18.03%	0.0761	0.1764
12	19/02/1956	208224	2410	5.3185	0.2259	0.1073	5	19.67%	0.0833	0.1931
13	27/07/1952	170208	1970	5.2310	0.1503	0.0583	5	21.31%	0.0905	0.2097
14	14/11/1969	147744	1710	5.1695	0.1064	0.0347	4	22.95%	0.0977	0.2263
15	30/08/1963	139968	1620	5.1460	0.0917	0.0277	4	24.59%	0.1049	0.2430
16	7/04/1950	134784	1560	5.1296	0.0820	0.0235	4	26.23%	0.1121	0.2596
17	28/08/1974	134784	1560	5.1296	0.0820	0.0235	4	27.87%	0.1193	0.2763
18	2/08/1990	129740	1502	5.1131	0.0728	0.0196	3	29.51%	0.1264	0.2929
19	29/04/1963	129600	1500	5.1126	0.0725	0.0195	3	31.15%	0.1336	0.3096
20	11/06/1991	100436	1162	5.0019	0.0252	0.0040	3	32.79%	0.1408	0.3262
21	18/08/1998	98678	1142	4.9942	0.0228	0.0034	3	34.43%	0.1480	0.3428
22	4/03/1977	95040	1100	4.9779	0.0181	0.0024	3	36.07%	0.1552	0.3595
23	7/08/1967	93312	1080	4.9699	0.0160	0.0020	3	37.70%	0.1624	0.3761
24	27/05/1974	93312	1080	4.9699	0.0160	0.0020	3	39.34%	0.1695	0.3928
25	2/06/1978	93312	1080	4.9699	0.0160	0.0020	2	40.98%	0.1767	0.4094
26	6/08/1986	93312	1080	4.9699	0.0160	0.0020	2	42.62%	0.1839	0.4261
27	25/10/1987	88992	1030	4.9494	0.0113	0.0012	2	44.26%	0.1911	0.4427
28	10/02/1992	85736	992	4.9332	0.0081	0.0007	2	45.90%	0.1983	0.4593
29	12/03/1974	81216	940	4.9096	0.0044	0.0003	2	47.54%	0.2055	0.4760
30	5/03/1976	72576	840	4.8608	0.0003	0.0000	2	49.18%	0.2126	0.4926
31	6/07/1986	71712	830	4.8556	0.0002	0.0000	2	50.82%	0.2198	0.5093
32	14/06/1962	62208	720	4.7938	0.0024	-0.0001	2	52.46%	0.2270	0.5259
33	4/02/1990	61470	711	4.7887	0.0030	-0.0002	2	54.10%	0.2342	0.5426
34	5/06/1963	58752	680	4.7690	0.0055	-0.0004	2	55.74%	0.2414	0.5592
35	20/03/1963	52704	610	4.7218	0.0147	-0.0018	2	57.38%	0.2486	0.5758
36	4/07/1975	50976	590	4.7074	0.0185	-0.0025	2	59.02%	0.2557	0.5925
37	16/04/1969	50112	580	4.6999	0.0205	-0.0029	2	60.66%	0.2629	0.6091
38	11/03/1975	50112	580	4.6999	0.0205	-0.0029	2	62.30%	0.2701	0.6258
39	24/10/1999	45367	525	4.6567	0.0348	-0.0065	2	63.93%	0.2773	0.6424
40	9/11/1966	43200	500	4.6355	0.0432	-0.0090	2	65.57%	0.2845	0.6591
41	16/06/2007	40966	474	4.6124	0.0533	-0.0123	1	67.21%	0.2917	0.6757
42	19/04/1990	38459	445	4.5850	0.0667	-0.0172	1	68.85%	0.2989	0.6923
43	7/09/1967	35424	410	4.5493	0.0864	-0.0254	1	70.49%	0.3060	0.7090
44	8/11/1984	34560	400	4.5386	0.0928	-0.0283	1	72.13%	0.3132	0.7256
45	9/04/1978	32832	380	4.5163	0.1069	-0.0350	1	73.77%	0.3204	0.7423
46	23/04/1964	27648	320	4.4417	0.1613	-0.0648	1	75.41%	0.3276	0.7589
47	13/12/1963	26784	310	4.4279	0.1726	-0.0717	1	77.05%	0.3348	0.7756
48	13/01/1974	26784	310	4.4279	0.1726	-0.0717	1	78.69%	0.3420	0.7922
49	25/09/1995	26378	305	4.4212	0.1781	-0.0752	1	80.33%	0.3491	0.8088
50	18/05/1995	26031	301	4.4155	0.1830	-0.0783	1	81.97%	0.3563	0.8255
51	8/03/2012	24136	279	4.3827	0.2122	-0.0977	1	83.61%	0.3635	0.8421
52	31/08/1996	21514	249	4.3327	0.2607	-0.1331	1	85.25%	0.3707	0.8588
53	15/01/1972	17280	200	4.2375	0.3669	-0.2223	1	86.89%	0.3779	0.8754
54	24/01/1976	16416	190	4.2153	0.3944	-0.2477	1	88.52%	0.3851	0.8920
55	17/10/1976	16416	190	4.2153	0.3944	-0.2477	1	90.16%	0.3922	0.9087
56	25/05/1990	14958	173	4.1749	0.4468	-0.2986	1	91.80%	0.3994	0.9253
57	11/02/2012	12396	143	4.0933	0.5625	-0.4219	1	93.44%	0.4066	0.9420
58	19/04/2012	11947	138	4.0773	0.5868	-0.4495	1	95.08%	0.4138	0.9586
59	22/03/2011	9505	110	3.9780	0.7488	-0.6479	1	96.72%	0.4210	0.9753
60	14/12/1991	9409	109	3.9736	0.7564	-0.6579	1	98.36%	0.4282	0.9919

Required ARI				
ARI	k	log Q	Q	Q
			[ML/day]	[m^3/s]
2	-0.0218	4.8331	68100	788
5	0.8342	5.2305	170009	1968
10	1.2947	5.4442	278116	3219
20	1.6811	5.6236	420329	4865
50	2.1227	5.8285	673802	7799
100	2.4217	5.9673	927532	10735
200	2.6980	6.0956	1246208	14424

FIGURE A.1



Flood Frequency Analysis
Nepean River at Camden Weir

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

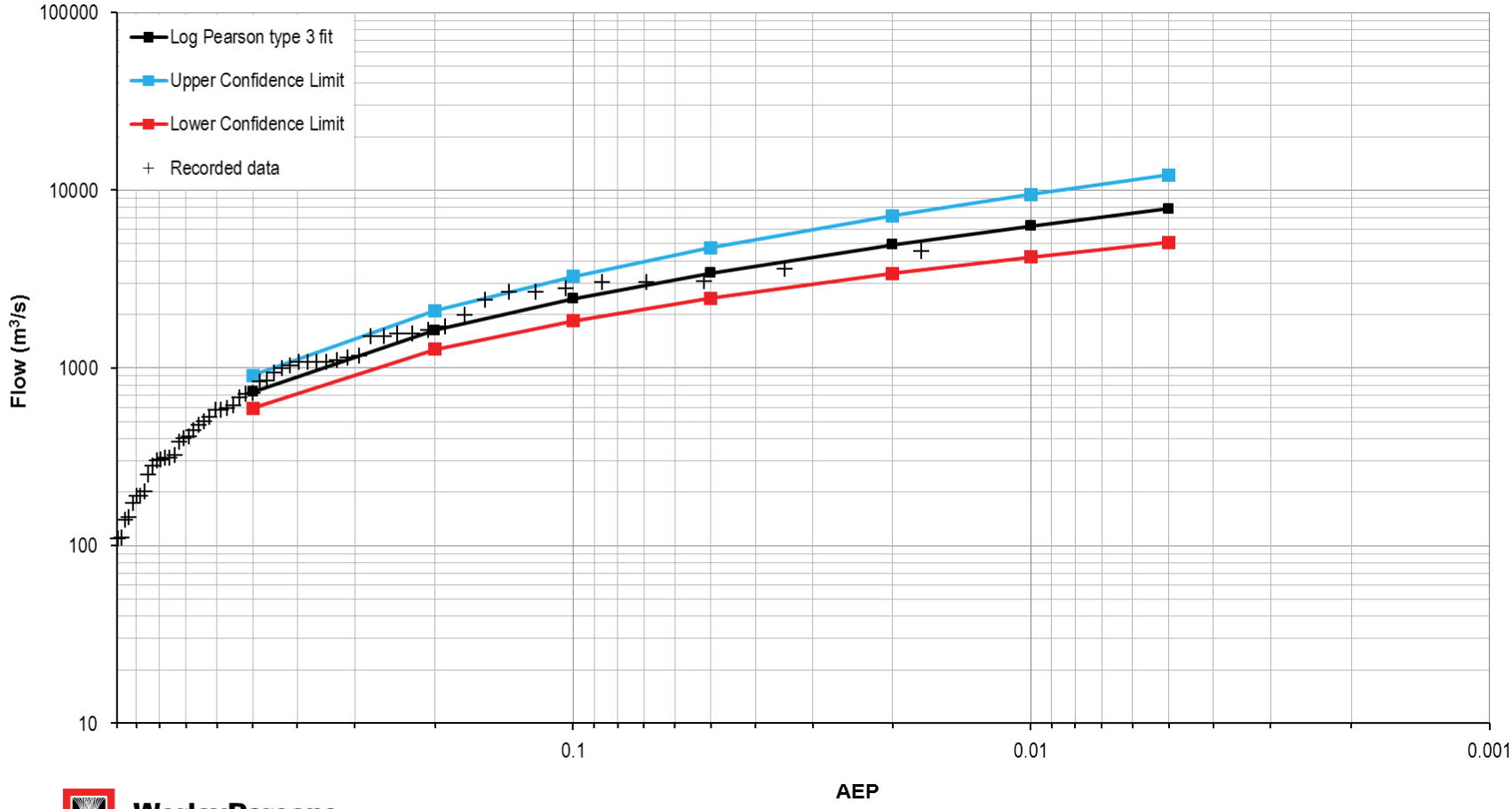
PARTIAL SERIES FLOOD FREQUENCY ANALYSIS FOR CAMDEN – EXCLUDING HIGHEST THREE VALUES

Average Flow	Sum of $\{(\log Q - \text{avg}(\log Q))^2\}$	Variance
94620	9.86	0.1761
Average(Log(Q))	**Sum of $\{(\log Q - \text{avg}(\log Q))^3\}$**	**Standard Deviation**
4.79	-0.43	0.4196
Number of Records		**Skew Coefficient**
57		-0.1074
Number of Years		
63		

Rank	Date	Flow	Flow	Log(Q)	$\{(\log Q - \text{avg}(\log Q))^2\}$	$\{(\log Q - \text{avg}(\log Q))^3$	Return Period	Exceedence Probability	Plotting Position	Adjusted Plotting Position
		[ML/day]	[m^3/s]				[years]	[%]		
1	12/06/1964	389664	4510	5.5907	0.6351	0.5062	58	1.72%	0.0095	0.0105
2	20/03/1978	309312	3580	5.4904	0.4853	0.3381	29	3.45%	0.0253	0.0280
3	30/04/1988	263520	3050	5.4208	0.3932	0.2466	19	5.17%	0.0411	0.0455
4	5/04/1972	261792	3030	5.4180	0.3897	0.2432	15	6.90%	0.0570	0.0630
5	21/06/1975	261792	3030	5.4180	0.3897	0.2432	12	8.62%	0.0728	0.0804
6	18/06/1949	240192	2780	5.3806	0.3444	0.2021	10	10.34%	0.0886	0.0979
7	5/06/1950	229824	2660	5.3614	0.3222	0.1829	8	12.07%	0.1044	0.1154
8	11/02/1956	229824	2660	5.3614	0.3222	0.1829	7	13.79%	0.1203	0.1329
9	19/02/1956	208224	2410	5.3185	0.2754	0.1445	6	15.52%	0.1361	0.1504
10	27/07/1952	170208	1970	5.2310	0.1912	0.0836	6	17.24%	0.1519	0.1679
11	14/11/1969	147744	1710	5.1695	0.1412	0.0531	5	18.97%	0.1677	0.1854
12	30/08/1963	139968	1620	5.1460	0.1241	0.0437	5	20.69%	0.1835	0.2029
13	7/04/1950	134784	1560	5.1296	0.1128	0.0379	4	22.41%	0.1994	0.2204
14	28/08/1974	134784	1560	5.1296	0.1128	0.0379	4	24.14%	0.2152	0.2378
15	2/08/1990	129740	1502	5.1131	0.1020	0.0326	4	25.86%	0.2310	0.2553
16	29/04/1963	129600	1500	5.1126	0.1017	0.0324	4	27.59%	0.2468	0.2728
17	11/06/1991	100436	1162	5.0019	0.0433	0.0090	3	29.31%	0.2627	0.2903
18	18/08/1998	98678	1142	4.9942	0.0402	0.0081	3	31.03%	0.2785	0.3078
19	4/03/1977	95040	1100	4.9779	0.0339	0.0062	3	32.76%	0.2943	0.3253
20	7/08/1967	93312	1080	4.9699	0.0311	0.0055	3	34.48%	0.3101	0.3428
21	27/05/1974	93312	1080	4.9699	0.0311	0.0055	3	36.21%	0.3259	0.3603
22	2/06/1978	93312	1080	4.9699	0.0311	0.0055	3	37.93%	0.3418	0.3777
23	6/08/1986	93312	1080	4.9699	0.0311	0.0055	3	39.66%	0.3576	0.3952
24	25/10/1987	88992	1030	4.9494	0.0242	0.0038	2	41.38%	0.3734	0.4127
25	10/02/1992	85736	992	4.9332	0.0194	0.0027	2	43.10%	0.3892	0.4302
26	12/03/1974	81216	940	4.9096	0.0134	0.0016	2	44.83%	0.4051	0.4477
27	5/03/1976	72576	840	4.8608	0.0045	0.0003	2	46.55%	0.4209	0.4652
28	6/07/1986	71712	830	4.8556	0.0038	0.0002	2	48.28%	0.4367	0.4827
29	14/06/1962	62208	720	4.7938	0.0000	0.0000	2	50.00%	0.4525	0.5002
30	4/02/1990	61470	711	4.7887	0.0000	0.0000	2	51.72%	0.4684	0.5177
31	5/06/1963	58752	680	4.7690	0.0006	0.0000	2	53.45%	0.4842	0.5351
32	20/03/1963	52704	610	4.7218	0.0052	-0.0004	2	55.17%	0.5000	0.5526
33	4/07/1975	50976	590	4.7074	0.0075	-0.0006	2	56.90%	0.5158	0.5701
34	16/04/1969	50112	580	4.6999	0.0088	-0.0008	2	58.62%	0.5316	0.5876
35	11/03/1975	50112	580	4.6999	0.0088	-0.0008	2	60.34%	0.5475	0.6051
36	24/10/1999	45367	525	4.6567	0.0188	-0.0026	2	62.07%	0.5633	0.6226
37	9/11/1966	43200	500	4.6355	0.0250	-0.0040	2	63.79%	0.5791	0.6401
38	16/06/2007	40966	474	4.6124	0.0329	-0.0060	2	65.52%	0.5949	0.6576
39	19/04/1990	38459	445	4.5850	0.0436	-0.0091	1	67.24%	0.6108	0.6750
40	7/09/1967	35424	410	4.5493	0.0597	-0.0146	1	68.97%	0.6266	0.6925
41	8/11/1984	34560	400	4.5386	0.0651	-0.0166	1	70.69%	0.6424	0.7100
42	9/04/1978	32832	380	4.5163	0.0770	-0.0214	1	72.41%	0.6582	0.7275
43	23/04/1964	27648	320	4.4417	0.1239	-0.0436	1	74.14%	0.6741	0.7450
44	13/12/1963	26784	310	4.4279	0.1338	-0.0490	1	75.86%	0.6899	0.7625
45	13/01/1974	26784	310	4.4279	0.1338	-0.0490	1	77.59%	0.7057	0.7800
46	25/09/1995	26378	305	4.4212	0.1387	-0.0517	1	79.31%	0.7215	0.7975
47	18/05/1995	26031	301	4.4155	0.1431	-0.0541	1	81.03%	0.7373	0.8150
48	8/03/2012	24136	279	4.3827	0.1690	-0.0695	1	82.76%	0.7532	0.8324
49	31/08/1996	21514	249	4.3327	0.2125	-0.0980	1	84.48%	0.7690	0.8499
50	15/01/1972	17280	200	4.2375	0.3093	-0.1720	1	86.21%	0.7848	0.8674
51	24/01/1976	16416	190	4.2153	0.3346	-0.1936	1	87.93%	0.8006	0.8849
52	17/10/1976	16416	190	4.2153	0.3346	-0.1936	1	89.66%	0.8165	0.9024
53	25/05/1990	14958	173	4.1749	0.3830	-0.2370	1	91.38%	0.8323	0.9199
54	11/02/2012	12396	143	4.0933	0.4906	-0.3436	1	93.10%	0.8481	0.9374
55	19/04/2012	11947	138	4.0773	0.5133	-0.3678	1	94.83%	0.8639	0.9549
56	22/03/2011	9505	110	3.9780	0.6655	-0.5429	1	96.55%	0.8797	0.9724
57	14/12/1991	9409	109	3.9736	0.6727	-0.5517	1	98.28%	0.8956	0.9898

Required ARI				
ARI	k	log Q	Q	Q
			[ML/day]	[m^3/s]
2	0.0182	4.8014	63294	733
5	0.8463	5.1489	140888	1631
10	1.2691	5.3263	211985	2454
20	1.6138	5.4709	295761	3423
50	1.9959	5.6313	427865	4952
100	2.2465	5.7365	545086	6309
200	2.4750	5.8324	679768	7868

FIGURE A.2



Flood Frequency Analysis
Nepean River at Camden Weir

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

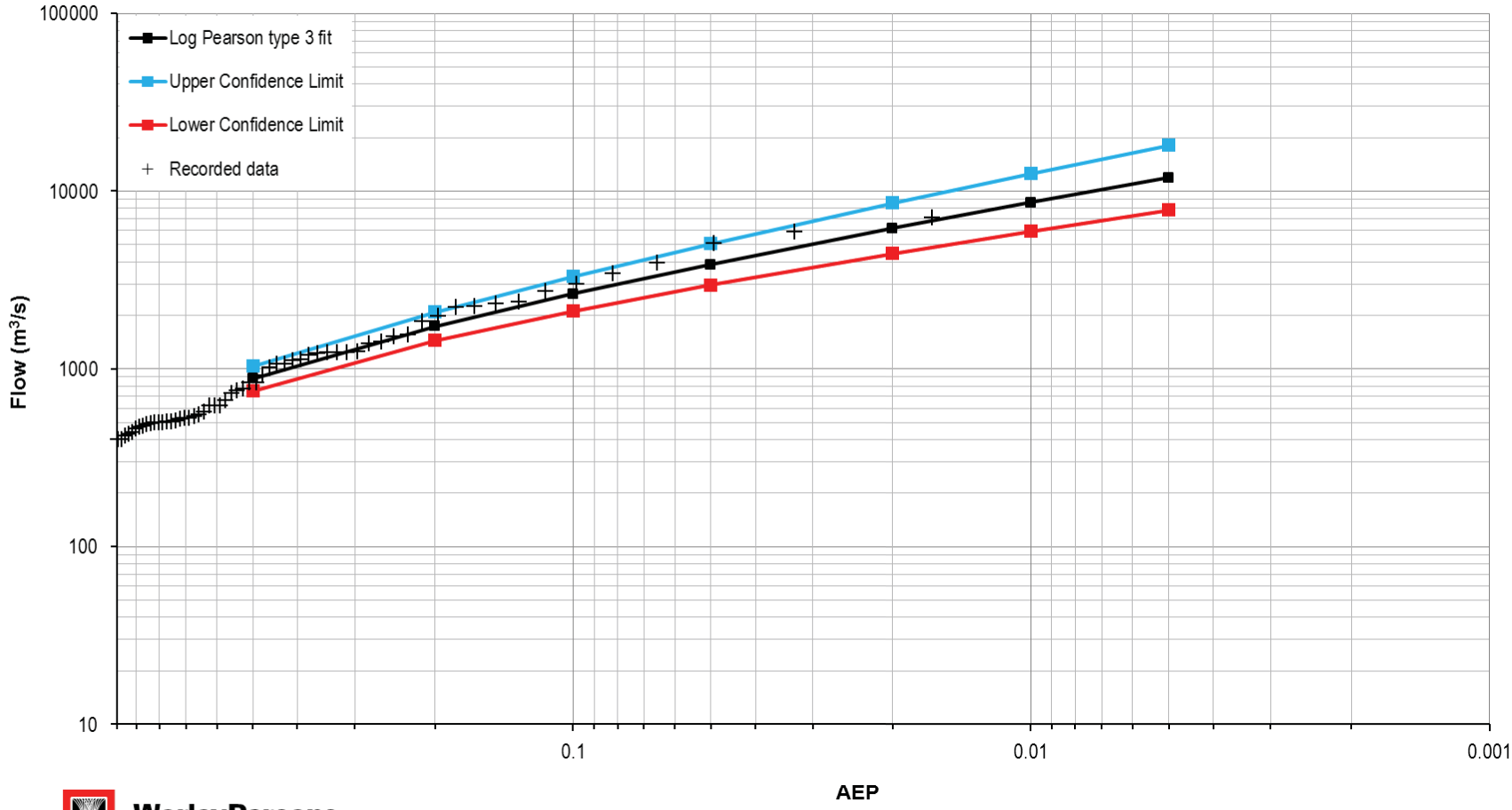
PARTIAL SERIES FLOOD FREQUENCY ANALYSIS FOR WALLACIA – INCLUDING HIGHEST THREE VALUES

Average Flow	Sum of $\{(\log Q - avg(\log Q))^2\}$	Variance
116344	6.14	0.1040
Average(Log(Q))	Sum of $\{(\log Q - avg(\log Q))^3\}$	Standard Deviation
4.93	1.65	0.3225
Number of Records		Skew Coefficient
60		0.8629
Number of Years		
139		

Rank	Date	Flow	Flow	Log(Q)	$\{(\log Q - avg(\log Q))^2\}$	$\{(\log Q - avg(\log Q))^3$	Return Period	Exceedence Probability	Plotting Position	Adjusted Plotting Position
		[ML/day]	[m^3/s]				[years]	[%]		
1	2/1873	611712	7080	5.7865	0.7387	0.6349	61	1.64%	0.0043	0.0100
2	2/1898	509760	5900	5.7074	0.6088	0.4751	31	3.28%	0.0115	0.0266
3	10/1860	439776	5090	5.6432	0.5129	0.3673	20	4.92%	0.0187	0.0433
4	11/06/1964	340416	3940	5.5320	0.3659	0.2214	15	6.56%	0.0259	0.0599
5	11/1961	297216	3440	5.4731	0.2981	0.1628	12	8.20%	0.0330	0.0766
6	21/03/1978	258956	2997	5.4132	0.2363	0.1149	10	9.84%	0.0402	0.0932
7	05/1988	234307	2712	5.3698	0.1960	0.0868	9	11.48%	0.0474	0.1098
8	2/08/1990	205248	2376	5.3123	0.1484	0.0572	8	13.11%	0.0546	0.1265
9	06/1949	200448	2320	5.3020	0.1406	0.0527	7	14.75%	0.0618	0.1431
10	02/1956	192672	2230	5.2848	0.1280	0.0458	6	16.39%	0.0690	0.1598
11	06/1975	190944	2210	5.2809	0.1252	0.0443	6	18.03%	0.0761	0.1764
12	06/1925	171072	1980	5.2332	0.0937	0.0287	5	19.67%	0.0833	0.1931
13	07/1952	158976	1840	5.2013	0.0752	0.0206	5	21.31%	0.0905	0.2097
14	12/06/1991	133840	1549	5.1266	0.0398	0.0079	4	22.95%	0.0977	0.2263
15	7/08/1986	131611	1523	5.1193	0.0369	0.0071	4	24.59%	0.1049	0.2430
16	25/10/1987	122688	1420	5.0888	0.0262	0.0042	4	26.23%	0.1121	0.2596
17	25/10/1987	119539	1384	5.0775	0.0226	0.0034	4	27.87%	0.1193	0.2763
18	11/1969	108000	1250	5.0334	0.0113	0.0012	3	29.51%	0.1264	0.2929
19	30/08/1963	107136	1240	5.0299	0.0106	0.0011	3	31.15%	0.1336	0.3096
20	10/02/1992	106204	1229	5.0261	0.0098	0.0010	3	32.79%	0.1408	0.3262
21	18/08/1998	106178	1229	5.0260	0.0098	0.0010	3	34.43%	0.1480	0.3428
22	06/1950	105408	1220	5.0229	0.0092	0.0009	3	36.07%	0.1552	0.3595
23	06/1974	102816	1190	5.0121	0.0072	0.0006	3	37.70%	0.1624	0.3761
24	07/1922	96768	1120	4.9857	0.0034	0.0002	3	39.34%	0.1695	0.3928
25	3/06/1978	96526	1117	4.9846	0.0033	0.0002	2	40.98%	0.1767	0.4094
26	30/03/1963	91584	1060	4.9618	0.0012	0.0000	2	42.62%	0.1839	0.4261
27	7/07/1988	91554	1060	4.9617	0.0012	0.0000	2	44.26%	0.1911	0.4427
28	02/1934	87264	1010	4.9408	0.0002	0.0000	2	45.90%	0.1983	0.4593
29	5/03/1977	79445	920	4.9001	0.0007	0.0000	2	47.54%	0.2055	0.4760
30	05/1925	71712	830	4.8556	0.0051	-0.0004	2	49.18%	0.2126	0.4926
31	06/1956	71712	830	4.8556	0.0051	-0.0004	2	50.82%	0.2198	0.5093
32	4/02/1990	66287	767	4.8214	0.0112	-0.0012	2	52.46%	0.2270	0.5259
33	06/1974	64800	750	4.8116	0.0133	-0.0015	2	54.10%	0.2342	0.5426
34	08/1967	63072	730	4.7998	0.0162	-0.0021	2	55.74%	0.2414	0.5592
35	05/1943	57024	660	4.7561	0.0292	-0.0050	2	57.38%	0.2486	0.5758
36	01/1951	53568	620	4.7289	0.0393	-0.0078	2	59.02%	0.2557	0.5925
37	05/1955	53568	620	4.7289	0.0393	-0.0078	2	60.66%	0.2629	0.6091
38	03/1974	53568	620	4.7289	0.0393	-0.0078	2	62.30%	0.2701	0.6258
39	5/03/1976	49373	571	4.6935	0.0546	-0.0127	2	63.93%	0.2773	0.6424
40	04/1933	47520	550	4.6769	0.0626	-0.0157	2	65.57%	0.2845	0.6591
41	9/11/1984	46787	542	4.6701	0.0660	-0.0170	1	67.21%	0.2917	0.6757
42	10/1929	45792	530	4.6608	0.0709	-0.0189	1	68.85%	0.2989	0.6923
43	05/1962	45792	530	4.6608	0.0709	-0.0189	1	70.49%	0.3060	0.7090
44	08/1969	44928	520	4.6525	0.0754	-0.0207	1	72.13%	0.3132	0.7256
45	07/1959	44064	510	4.6441	0.0801	-0.0227	1	73.77%	0.3204	0.7423
46	3/04/1989	43700	506	4.6405	0.0821	-0.0235	1	75.41%	0.3276	0.7589
47	20/04/1990	43552	504	4.6390	0.0830	-0.0239	1	77.05%	0.3348	0.7756
48	05/1919	43200	500	4.6355	0.0850	-0.0248	1	78.69%	0.3420	0.7922
49	04/1921	43200	500	4.6355	0.0850	-0.0248	1	80.33%	0.3491	0.8088
50	04/1927	43200	500	4.6355	0.0850	-0.0248	1	81.97%	0.3563	0.8255
51	07/1931	42336	490	4.6267	0.0902	-0.0271	1	83.61%	0.3635	0.8421
52	25/10/1999	42170	488	4.6250	0.0912	-0.0276	1	85.25%	0.3707	0.8588
53	19/02/1984	41072	475	4.6136	0.0983	-0.0308	1	86.89%	0.3779	0.8754
54	04/1969	40608	470	4.6086	0.1014	-0.0323	1	88.52%	0.3851	0.8920
55	17/06/2007	39497	457	4.5966	0.1092	-0.0361	1	90.16%	0.3922	0.9087
56	19/10/1976	37929	439	4.5790	0.1212	-0.0422	1	91.80%	0.3994	0.9253
57	04/1978	37152	430	4.5700	0.1275	-0.0455	1	93.44%	0.4066	0.9420
58	01/1966	36288	420	4.5598	0.1349	-0.0496	1	95.08%	0.4138	0.9586
59	01/1918	34560	400	4.5386	0.1509	-0.0586	1	96.72%	0.4210	0.9753
60	07/1928	34560	400	4.5386	0.1509	-0.0586	1	98.36%	0.4282	0.9919

Required ARI				
ARI	k	log Q	Q	Q
			[ML/day]	[m^3/s]
2	-0.1421	4.8813	76080	881
5	0.7731	5.1764	150104	1737
10	1.3379	5.3585	228315	2643
20	1.8516	5.5242	334342	3870
50	2.4813	5.7273	533661	6177
100	2.9325	5.8728	746057	8635
200	3.3679	6.0132	1030864	11931

FIGURE A.3



Flood Frequency Analysis
Nepean River at Wallacia

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

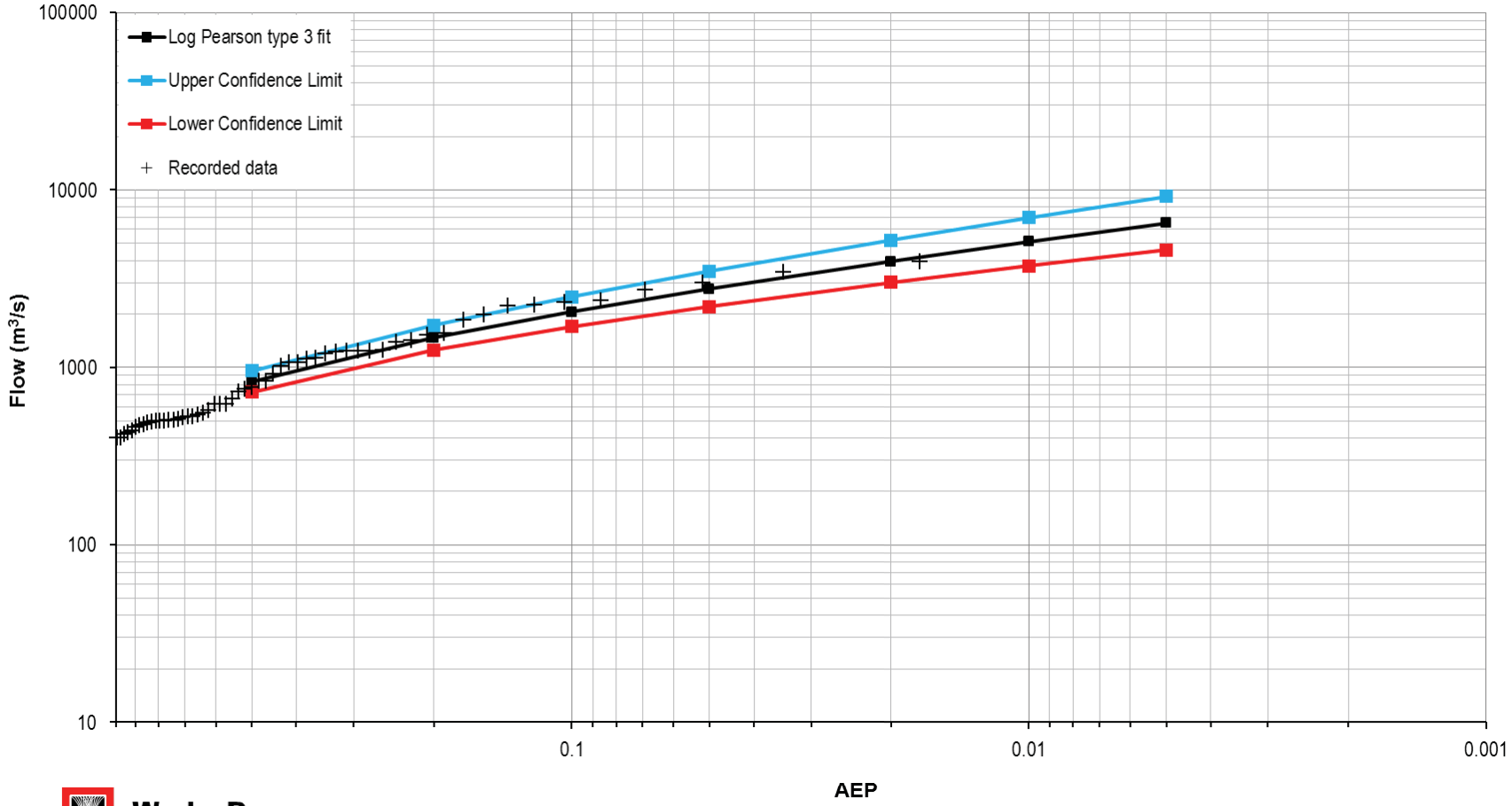
PARTIAL SERIES FLOOD FREQUENCY ANALYSIS FOR WALLACIA – EXCLUDING HIGHEST THREE VALUES

Average Flow	Sum of $\{(\log Q - \text{avg}(\log Q))^2\}$	Variance
95077	4.18	0.0746
Average(Log(Q))	**Sum of $\{(\log Q - \text{avg}(\log Q))^3\}$**	**Standard Deviation**
4.89	0.70	0.2731
Number of Records		**Skew Coefficient**
57		0.6314
Number of Years		
64		

Rank	Date	Flow	Flow	Log(Q)	$\{(\log Q - \text{avg}(\log Q))^2\}$	$\{(\log Q - \text{avg}(\log Q))^3$	Return Period	Exceedence Probability	Plotting Position	Adjusted Plotting Position
		[ML/day]	[m^3/s]				[years]	[%]		
1	11/06/1964	340416	3940	5.5320	0.4177	0.2699	58	1.72%	0.0093	0.0105
2	11/1961	297216	3440	5.4731	0.3449	0.2026	29	3.45%	0.0249	0.0280
3	21/03/1978	258956	2997	5.4132	0.2782	0.1468	19	5.17%	0.0405	0.0455
4	05/1988	234307	2712	5.3698	0.2343	0.1134	15	6.90%	0.0561	0.0630
5	2/08/1990	205248	2376	5.3123	0.1819	0.0776	12	8.62%	0.0717	0.0805
6	06/1949	200448	2320	5.3020	0.1733	0.0721	10	10.34%	0.0872	0.0979
7	02/1956	192672	2230	5.2848	0.1593	0.0636	8	12.07%	0.1028	0.1154
8	06/1975	190944	2210	5.2809	0.1561	0.0617	7	13.79%	0.1184	0.1329
9	06/1925	171072	1980	5.2332	0.1207	0.0419	6	15.52%	0.1340	0.1504
10	07/1952	158976	1840	5.2013	0.0996	0.0314	6	17.24%	0.1495	0.1679
11	12/06/1991	133840	1549	5.1266	0.0580	0.0140	5	18.97%	0.1651	0.1854
12	7/08/1986	131611	1523	5.1193	0.0545	0.0127	5	20.69%	0.1807	0.2029
13	25/10/1987	122688	1420	5.0888	0.0412	0.0084	4	22.41%	0.1963	0.2204
14	25/10/1987	119539	1384	5.0775	0.0368	0.0071	4	24.14%	0.2118	0.2379
15	11/1969	108000	1250	5.0334	0.0218	0.0032	4	25.86%	0.2274	0.2553
16	30/08/1963	107136	1240	5.0299	0.0208	0.0030	4	27.59%	0.2430	0.2728
17	10/02/1992	106204	1229	5.0261	0.0197	0.0028	3	29.31%	0.2586	0.2903
18	18/08/1998	106178	1229	5.0260	0.0197	0.0028	3	31.03%	0.2741	0.3078
19	06/1950	105408	1220	5.0229	0.0188	0.0026	3	32.76%	0.2897	0.3253
20	06/1974	102816	1190	5.0121	0.0160	0.0020	3	34.48%	0.3053	0.3428
21	07/1922	96768	1120	4.9857	0.0100	0.0010	3	36.21%	0.3209	0.3603
22	3/06/1978	96526	1117	4.9846	0.0098	0.0010	3	37.93%	0.3364	0.3778
23	30/03/1963	91584	1060	4.9618	0.0058	0.0004	3	39.66%	0.3520	0.3953
24	7/07/1988	91554	1060	4.9617	0.0058	0.0004	2	41.38%	0.3676	0.4127
25	02/1934	87264	1010	4.9408	0.0030	0.0002	2	43.10%	0.3832	0.4302
26	5/03/1977	79445	920	4.9001	0.0002	0.0000	2	44.83%	0.3988	0.4477
27	05/1925	71712	830	4.8556	0.0009	0.0000	2	46.55%	0.4143	0.4652
28	06/1956	71712	830	4.8556	0.0009	0.0000	2	48.28%	0.4299	0.4827
29	4/02/1990	66287	767	4.8214	0.0041	-0.0003	2	50.00%	0.4455	0.5002
30	06/1974	64800	750	4.8116	0.0055	-0.0004	2	51.72%	0.4611	0.5177
31	08/1967	63072	730	4.7998	0.0074	-0.0006	2	53.45%	0.4766	0.5352
32	05/1943	57024	660	4.7561	0.0168	-0.0022	2	55.17%	0.4922	0.5527
33	01/1951	53568	620	4.7289	0.0246	-0.0039	2	56.90%	0.5078	0.5701
34	05/1955	53568	620	4.7289	0.0246	-0.0039	2	58.62%	0.5234	0.5876
35	03/1974	53568	620	4.7289	0.0246	-0.0039	2	60.34%	0.5389	0.6051
36	5/03/1976	49373	571	4.6935	0.0370	-0.0071	2	62.07%	0.5545	0.6226
37	04/1933	47520	550	4.6769	0.0436	-0.0091	2	63.79%	0.5701	0.6401
38	9/11/1984	46787	542	4.6701	0.0465	-0.0100	2	65.52%	0.5857	0.6576
39	10/1929	45792	530	4.6608	0.0506	-0.0114	1	67.24%	0.6012	0.6751
40	05/1962	45792	530	4.6608	0.0506	-0.0114	1	68.97%	0.6168	0.6926
41	08/1969	44928	520	4.6525	0.0544	-0.0127	1	70.69%	0.6324	0.7101
42	07/1959	44064	510	4.6441	0.0584	-0.0141	1	72.41%	0.6480	0.7276
43	3/04/1989	43700	506	4.6405	0.0602	-0.0148	1	74.14%	0.6636	0.7450
44	20/04/1990	43552	504	4.6390	0.0609	-0.0150	1	75.86%	0.6791	0.7625
45	05/1919	43200	500	4.6355	0.0626	-0.0157	1	77.59%	0.6947	0.7800
46	04/1921	43200	500	4.6355	0.0626	-0.0157	1	79.31%	0.7103	0.7975
47	04/1927	43200	500	4.6355	0.0626	-0.0157	1	81.03%	0.7259	0.8150
48	07/1931	42336	490	4.6267	0.0671	-0.0174	1	82.76%	0.7414	0.8325
49	25/10/1999	42170	488	4.6250	0.0680	-0.0177	1	84.48%	0.7570	0.8500
50	19/02/1984	41072	475	4.6136	0.0741	-0.0202	1	86.21%	0.7726	0.8675
51	04/1969	40608	470	4.6086	0.0768	-0.0213	1	87.93%	0.7882	0.8850
52	17/06/2007	39497	457	4.5966	0.0836	-0.0242	1	89.66%	0.8037	0.9024
53	19/10/1976	37929	439	4.5790	0.0941	-0.0289	1	91.38%	0.8193	0.9199
54	04/1978	37152	430	4.5700	0.0997	-0.0315	1	93.10%	0.8349	0.9374
55	01/1966	36288	420	4.5598	0.1063	-0.0346	1	94.83%	0.8505	0.9549
56	01/1918	34560	400	4.5386	0.1205	-0.0418	1	96.55%	0.8660	0.9724
57	07/1928	34560	400	4.5386	0.1205	-0.0418	1	98.28%	0.8816	0.9899

Required ARI				
ARI	k	log Q	Q	Q
			[ML/day]	[m^3/s]
2	-0.1043	4.8572	71986	833
5	0.7969	5.1034	126885	1469
10	1.3296	5.2489	177386	2053
20	1.8039	5.3785	239048	2767
50	2.3741	5.5342	342157	3960
100	2.7767	5.6442	440751	5101
200	3.1606	5.7491	561123	6494

FIGURE A.4

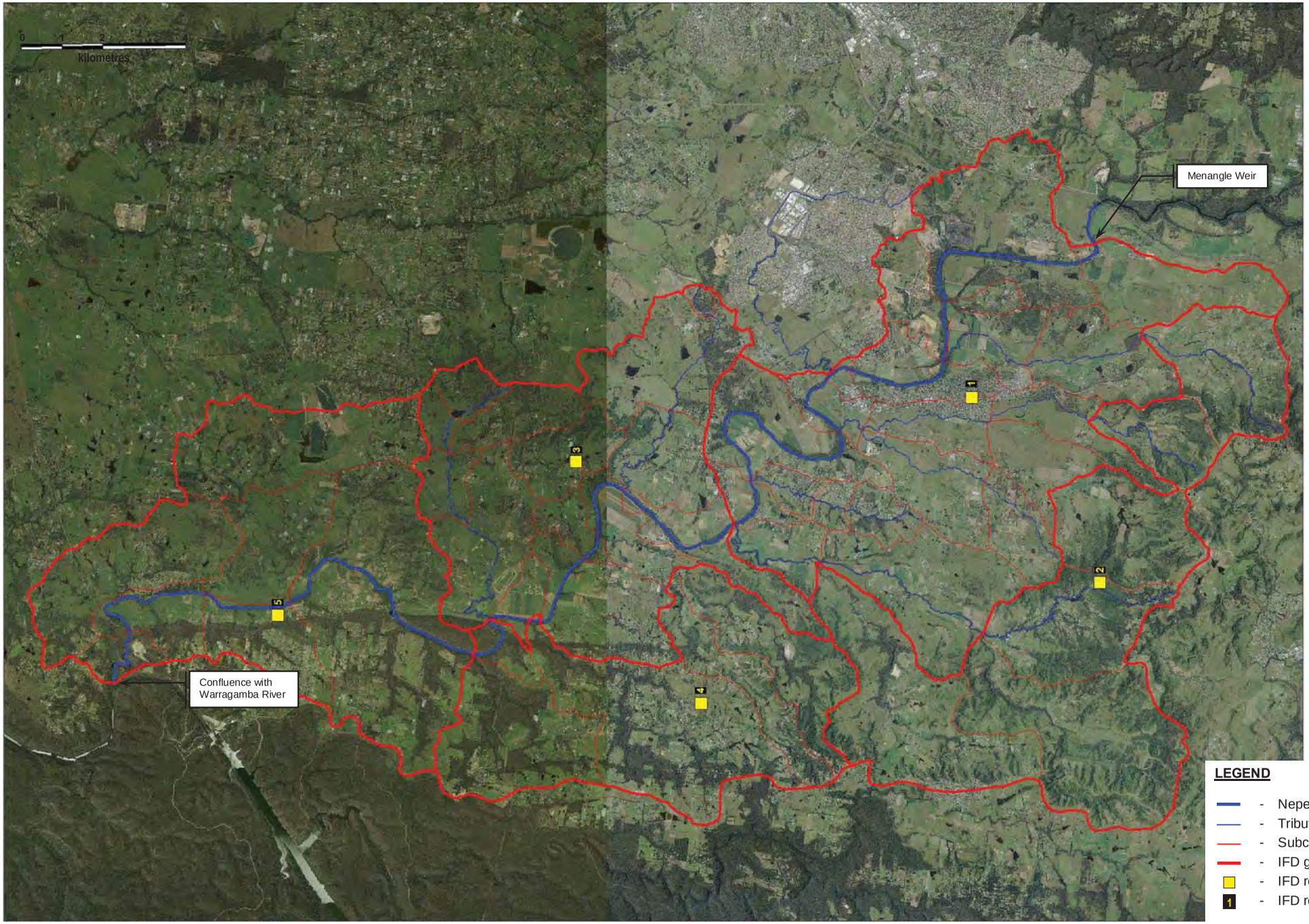


Flood Frequency Analysis
Nepean River at Wallacia

APPENDIX B

SUMMARY OF HYDROLOGIC MODEL SUBCATCHMENT PARAMETERS

FIGURE B.1



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301015-03107 – Nepean River Flood Study
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LOCATION OF INTENSITY-FREQUENCY DURATION (IFD) REFERENCE POINTS USED IN HYDROLOGIC MODEL

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

HYDROLOGIC MODEL PARAMETERS

Watercourse	Sub	ID	TUFLOW Boundary	Area	Stream Length	U/S Elev	D/S Elev	Slope	Reach Length	Reach U/S Elev	Reach D/S Elev	AR&R Lag	Bransby Lag	Average Lag	IFD Category	1978 Calibration Rainfall	1988 Calibration Rainfall	1990 Calibration Rainfall	PMP Rainfall
				[sq km]	[km]	[mAHD]	[mAHD]	[%]	[km]	[mAHD]	[mAHD]	[mins]	[mins]	[mins]					
Navigation Creek	A	NAVI A		11.450	6.45	305	95	3.26	-	-	-	-	-	-	2	Narellan	Camden Park	West Camden	PMP1.25
Navigation Creek	B	NAVI B	US_Navigation	8.811	5.61	180	70	1.96	4.05	95	70	63	63	63	1	Narellan	Camden Park	West Camden	PMP1.15
Navigation Creek	C	NAVI C	Navigation_C	4.769	3.46	110	55	1.59	3.40	70	55	50	59	54	1	Narellan	Camden Park	West Camden	PMP1.15
Narellan Creek			US_Narellan																
Narellan Creek		NARELL DS	DS_Narellan	5.316	3.90	110	55	1.41	0.84	55	55	52	15	33	1	Narellan	West Camden	West Camden	PMP1.15
Matahil Creek East	A	MAT E A		6.267	5.02	300	100	3.99	-	-	-	-	-	-	2	Narellan	West Camden	West Camden	PMP1.25
Matahil Creek East	B	MAT E B		11.460	7.30	310	95	2.95	-	-	-	-	-	-	2	Oakdale	Camden Park	West Camden	PMP1.25
Matahil Creek East	C	MAT E C		5.281	6.66	280	75	3.08	3.76	100	75	51	56	54	1	Narellan	Camden Park	West Camden	PMP1.15
Matahil Creek East	D	MAT E D	US_MatahilE	5.161	4.23	125	75	1.18	3.13	95	75	51	57	54	1	Narellan	West Camden	West Camden	PMP1.25
Matahil Creek East	E	MAT E E	MatahilE_E	4.649	4.44	75	60	0.34	4.44	75	60	49	105	77	1	Narellan	West Camden	West Camden	PMP1.15
Matahil Creek West	A	MAT W A	US_MatahilW	4.631	3.91	200	80	3.07	-	-	-	-	-	-	1	Oakdale	West Camden	West Camden	PMP1.25
Matahil Creek West	B	MAT W B	MatahilW_B	7.395	5.94	120	60	1.01	4.87	80	60	59	88	73	1	Narellan	West Camden	West Camden	PMP1.15
Sickles Creek	A	SICKLES A	Sickles_A	2.769	2.46	115	80	1.42	-	-	-	-	-	-	1	Narellan	West Camden	West Camden	PMP1.25
Sickles Creek	B	SICKLES B	Sickles_B	1.372	1.68	100	65	2.08	1.13	80	65	31	21	26	1	Narellan	West Camden	West Camden	PMP1.15
Sickles Creek	C	SICKLES C	Sickles_C	1.911	3.02	90	50	1.33	2.57	65	50	35	50	43	1	Narellan	West Camden	West Camden	PMP1.15
Cobbitty Creek	A	COBBITTY A	US_Cobbitty	0.611	1.23	120	90	2.44	-	-	-	-	-	-	3	Pondicherry	Pondicherry	Pondicherry	PMP1.05
Cobbitty Creek	B	COBBITTY B	Cobbitty_B	11.690	4.35	130	65	1.49	3.73	90	65	70	60	65	3	Pondicherry	Pondicherry	Pondicherry	PMP1.15
Cobbitty Creek	C	COBBITTY C	Cobbitty_C	7.085	4.97	95	50	0.91	4.44	65	50	58	82	70	3	Pondicherry	Brownlow	Brownlow	PMP1.15
Wattle Creek	A	UNNAMED1A		7.099	10.40	300	55	2.36	-	-	-	-	-	-	4	Pondicherry	Brownlow	Brownlow	PMP1.45
Wattle Creek	B	UNNAMED1B	US_Unnamed1	10.730	10.99	290	55	2.14	-	-	-	-	-	-	4	Pondicherry	Brownlow	Brownlow	PMP1.35
Wattle Creek	C	UNNAMED1C	Unnamed1_C	4.599	3.98	55	50	0.13	2.27	50	50	49	65	57	3	Pondicherry	Brownlow	Brownlow	PMP1.25
Unnamed Trib2		UNNAMED2	Unnamed2	5.367	3.70	150	60	2.43	-	-	-	-	-	-	3	Pondicherry	Pondicherry	Pondicherry	PMP1.15
Bringelly Creek	A	BRING A		2.426	2.02	120	90	1.49	-	-	-	-	-	-	3	Pondicherry	Pondicherry	Pondicherry	PMP1.15
Bringelly Creek	B	BRING B		4.564	5.71	150	75	1.31	-	-	-	-	-	-	3	Pondicherry	Pondicherry	Pondicherry	PMP1.15
Bringelly Creek	C1	BRING C1	US_Bringelly	1.501	2.07	115	75	1.93	1.27	90	75	32	24	28	3	Pondicherry	Pondicherry	Pondicherry	PMP1.25
Bringelly Creek	C2	BRING C2	Bringelly_C2	3.118	3.04	110	65	1.48	2.89	75	65				3	Pondicherry	Pondicherry	Pondicherry	PMP1.25
Bringelly Creek	D	BRING D	Bringelly_D	10.080	8.92	115	50	0.73	5.87	65	50	66	110	88	3	Pondicherry	Pondicherry	Pondicherry	PMP1.25
Mt Hunter Rivulet	A	MT HUNT A		12.020	8.34	290	85	2.46	-	-	-	-	-	-	2	Oakdale	West Camden	West Camden	PMP1.35
Mt Hunter Rivulet	B	MT HUNT B		21.310	9.91	300	85	2.17	-	-	-	-	-	-	2	Oakdale	West Camden	West Camden	PMP1.45
Mt Hunter Rivulet	C	MT HUNT C	US_MtHunter	13.880	7.17	200	70	1.81	6.03	85	70	74	91	83	1	Oakdale	West Camden	West Camden	PMP1.35
Mt Hunter Rivulet	D	MT HUNT D	MtHunter_D	4.035	5.36	90	50	0.75	4.41	70	50	46	90	68	2	Pondicherry	Brownlow	Brownlow	PMP1.25
Flaggy Creek		FLAGGY		20.050	13.18	280	70	1.59	-	-	-	-	-	-	2	Oakdale	Brownlow	Brownlow	PMP1.35
Eagle Creek		EAGLE	US_Eagle	21.490	12.62	300	50	1.98	0.31	50	50	88	4	46	4	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.45
Forest Hill Creek		FOREST	US_Forest	13.630	6.65	260	45	3.23	-	-	-	-	-	-	4	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.53
Duncans Creek	A	DUNCANS A	Duncans_A	15.170	8.18	105	45	0.73	-	-	-	-	-	-	5	Badgerys	Badgerys	Badgerys	PMP1.25
Duncans Creek	B	DUNCANS B	Duncans_B	8.739	7.79	90	30	0.77	7.55	50	30	62	142	102	5	Badgerys	Badgerys	Badgerys	PMP1.35
Jerrys Creek		JERRYS	Jerrys	13.960	6.31	95	25	1.11	1.40	25	25	75	23	49	5	Badgerys	Badgerys	Badgerys	PMP1.45
Nepean River	A	NEPEAN A	US_Nepean_A	9.304	7.50	170	60	1.47	0.86	60	60	64	14	39	1	Narellan	Camden Park	West Camden	PMP1.15
Nepean River	B	NEPEAN B	Nepean_B	17.850	7.20	160	60	1.39	5.55	60	60	82	86	84	1	Narellan	Camden Park	West Camden	PMP1.05
Nepean River	C1	NEPEAN C1	Nepean_C1	6.034	4.51	130	60	1.55	1.77	60	60	54	30	42	1	Narellan	West Camden	West Camden	PMP1.05
Nepean River	C2	NEPEAN C2	Nepean_C2	6.213	4.21	80	55	0.59	3.23	60	55	55	66	60	1	Narellan	West Camden	West Camden	PMP1.15
Nepean River	D1	NEPEAN D1	Nepean_D1	3.049	2.68	60	55	0.19	2.26	55	55	42	63	52	1	Narellan	West Camden	West Camden	PMP1.15
Nepean River	D2	NEPEAN D2	Nepean_D2	10.300	7.87	105	50	0.70	6.73	55	50	66	127	97	1	Pondicherry	West Camden	West Camden	PMP1.15
Nepean River	D3	NEPEAN D3	Nepean_D3	2.414	3.29	90	50	1.21	1.60	50	50	38	31	35	1	Pondicherry	Brownlow	Brownlow	PMP1.15
Nepean River	E	NEPEAN E	Nepean_E	6.869	8.47	140	50	1.06	4.19	50	50	57	76	66	3	Pondicherry	Brownlow	Brownlow	PMP1.25
Nepean River	F1	NEPEAN F1	Nepean_F1	2.480	2.72	90	50	1.47	0.86	50	50	39	16	27	3	Pondicherry	Brownlow	Brownlow	PMP1.25
Nepean River	F2	NEPEAN F2	Nepean_F2	10.400	5.75	165	50	2.00	2.34	50	50	67	36	51	3	Pondicherry	Brownlow	Brownlow	PMP1.35
Nepean River	G	NEPEAN G	Nepean_G	30.120	11.08	245	25	1.99	7.37	45	25	100	101	100	5	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.25
Nepean River	H	NEPEAN H	Nepean_H	5.094	5.90	160	25	2.29	4.12	25	25	51	66	58	5	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.53
Nepean River	I	NEPEAN I	Nepean_I	2.437	3.12	140	15	4.01	2.06	25	15	38	32	35	5	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.53
Nepean River	J	NEPEAN J	Nepean_J	2.22	2.92	80	50	1.03	1.16	50	50	37	24	30	3	Pondicherry	Brownlow	Brownlow	PMP1.35
Nepean River	K	NEPEAN K	Nepean_K	2.12	3.31	180	40	4.23	1.84	50	40	36	28	32	4	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.45
Nepean River	L	NEPEAN L	Nepean_L	7.11	5.65	190	30	2.83	2.69	30	30	58	40	49	5	Warragamba Met	Warragamba Met	Warragamba Met	PMP1.45

= upstream boundary for TUFLOW hydrodynamic model
= local inflow on Nepean River
= local inflow on tributary
= inflows derived from Narellan Creek model

INTENSITY-FREQUENCY-DURATION (IFD) DATA CATEGORIES FOR THE CATCHMENT

01	Easting	287,328	>>> From BoM	DURATION	1 year	2 years	5 years	10 years	20 years	50 years	100 years	Into XP-RAFTS>>>	59.4	12	3.96		
	Northing	6,226,956		5 mins	76	98.3	127	144	167	196	219						
				6 mins	71	91.8	119	135	156	184	205		29.9	5.77	1.75		
	Long	150.700 E		10 mins	58	74.9	97.2	110	127	150	167						
	Lat	34.075 S		20 mins	42.5	54.8	70.9	80.2	92.6	109	121						
				30 mins	34.5	44.5	57.5	65.1	75.1	88.2	98.3			Location Skew	0.01	f2	4.29
				1 hour	23.2	29.9	38.7	43.8	50.6	59.4	66.2					f50	15.79
				2 hours	14.9	19.2	24.9	28.3	32.7	38.5	42.9						
				3 hours	11.3	14.6	19	21.6	25	29.4	32.8						
				6 hours	7.05	9.14	11.9	13.6	15.7	18.6	20.8						
				12 hours	4.44	5.77	7.59	8.67	10.1	12	13.4						
				24 hours	2.84	3.71	4.94	5.68	6.63	7.91	8.88						
				48 hours	1.8	2.36	3.19	3.7	4.35	5.23	5.9						
				72 hours	1.33	1.75	2.39	2.78	3.28	3.96	4.49						

02	Easting	281,973	>>> From BoM	DURATION	1 year	2 years	5 years	10 years	20 years	50 years	100 years	Into XP-RAFTS>>>	59.4	12.9	4.52		
	Northing	6,222,287		5 mins	74.7	96.7	126	143	166	195	218						
				6 mins	69.8	90.5	118	134	155	183	205		29.6	6.49	1.86		
	Long	150.625 E		10 mins	57.1	73.9	96.2	109	127	149	167						
	Lat	34.125 S		20 mins	41.7	53.8	69.8	79.3	91.6	108	120						
				30 mins	33.8	43.7	56.6	64.3	74.3	87.5	97.6			Location Skew	0.02	f2	4.29
				1 hour	22.9	29.6	38.4	43.6	50.4	59.4	66.2					f50	15.78
				2 hours	15.1	19.6	25.3	28.7	33.2	39.1	43.5						
				3 hours	11.8	15.3	19.7	22.4	25.8	30.3	33.8						
				6 hours	7.76	10	12.9	14.5	16.7	19.7	21.9						
				12 hours	5.03	6.49	8.4	9.53	11	12.9	14.4						
				24 hours	3.17	4.13	5.48	6.28	7.34	8.74	9.81						
				48 hours	1.92	2.54	3.49	4.08	4.85	5.88	6.69						
				72 hours	1.4	1.86	2.61	3.09	3.69	4.52	5.17						

03	Easting	285,497	>>> From BoM	DURATION	1 year	2 years	5 years	10 years	20 years	50 years	100 years	Into XP-RAFTS>>>	59.9	12.9	3.99		
	Northing	6,237,575		5 mins	74.5	96.5	126	144	167	197	220						
				6 mins	69.7	90.3	118	135	156	184	206		29.5	6.31	1.89		
	Long	150.675 E		10 mins	56.9	73.8	96.5	110	127	150	168						
	Lat	33.975 S		20 mins	41.5	53.7	70.1	79.8	92.5	109	122						
				30 mins	33.6	43.6	56.9	64.7	75	88.6	99			Location Skew	0.02	f2	4.3
				1 hour	22.8	29.5	38.5	43.8	50.8	59.9	67					f50	15.78
				2 hours	15	19.4	25.3	28.8	33.3	39.4	44						
				3 hours	11.6	15	19.6	22.3	25.9	30.6	34.2						
				6 hours	7.53	9.75	12.7	14.5	16.8	19.8	22.1						
				12 hours	4.87	6.31	8.25	9.39	10.9	12.9	14.4						
				24 hours	3.13	4.07	5.34	6.09	7.08	8.38	9.39						
				48 hours	1.96	2.55	3.37	3.86	4.49	5.35	6						
				72 hours	1.45	1.89	2.5	2.87	3.35	3.99	4.48						

04	Easting	278,449	>>> From BoM	DURATION	1 year	2 years	5 years	10 years	20 years	50 years	100 years	Into XP-RAFTS>>>	60.5	14	4.6		
	Northing	6,233,913		5 mins	75.1	97.2	127	144	167	197	221						
				6 mins	70.2	90.9	119	135	157	185	207		29.7	6.62	1.9		
	Long	150.600 E		10 mins	57.4	74.3	97	110	128	151	169						
	Lat	34.000 S		20 mins	41.8	54.1	70.5	80.1	92.8	109	122						
				30 mins	33.9	43.9	57.2	65	75.3	88.8	99.2			Location Skew	0.02	f2	4.3
				1 hour	23	29.7	38.8	44.2	51.2	60.5	67.7					f50	15.77
				2 hours	15.2	19.7	25.8	29.4	34.1	40.4	45.2						
				3 hours	11.9	15.5	20.2	23.1	26.8	31.7	35.5						
				6 hours	7.82	10.2	13.3	15.2	17.7	21	23.5						
				12 hours	5.08	6.62	8.76	10.1	11.7	14	15.7						
				24 hours	3.22	4.22	5.69	6.58	7.74	9.29	10.5						
				48 hours	1.96	2.59	3.58	4.2	4.99	6.07	6.91						
				72 hours	1.43	1.9	2.66	3.15	3.76	4.6	5.27						

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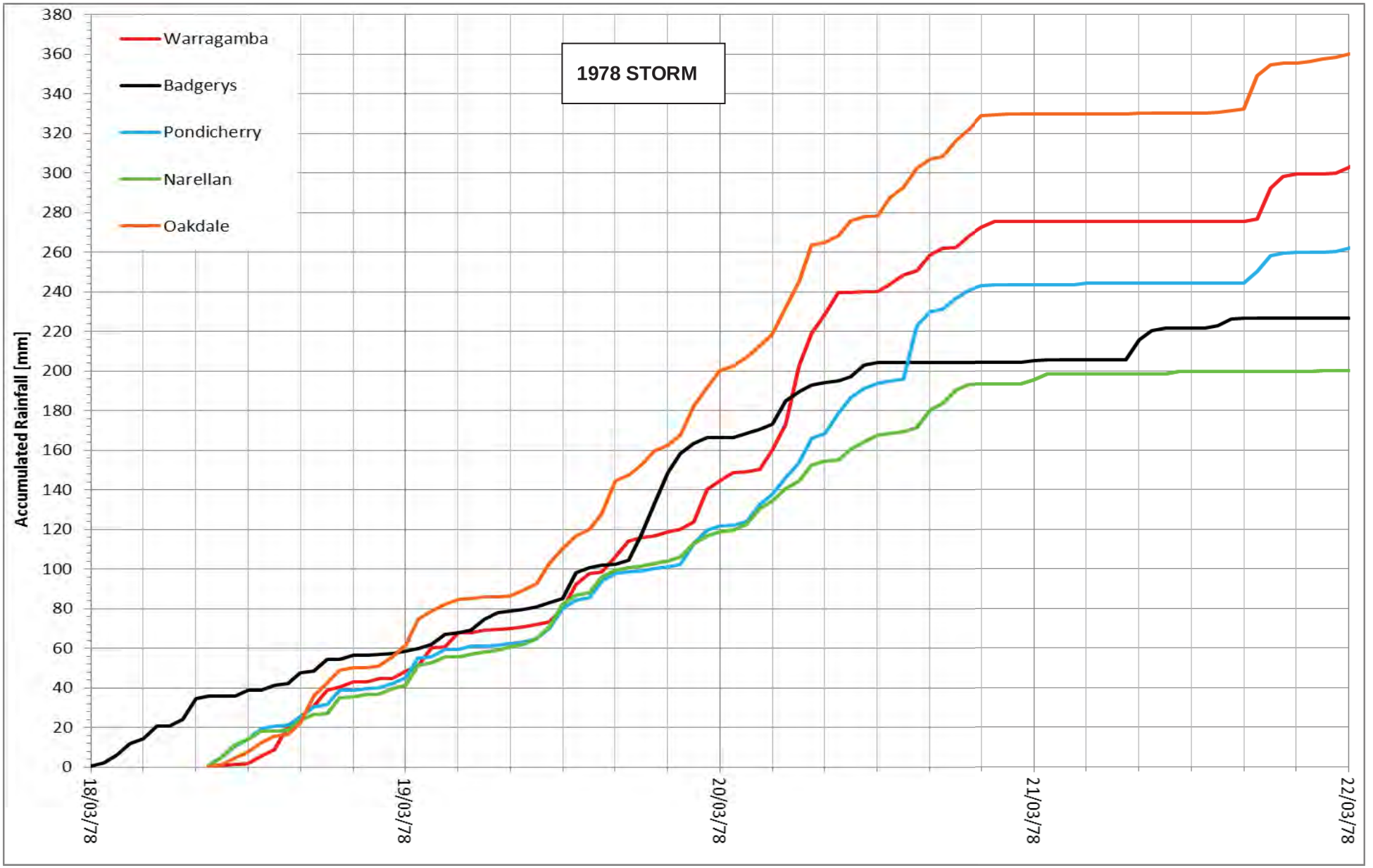
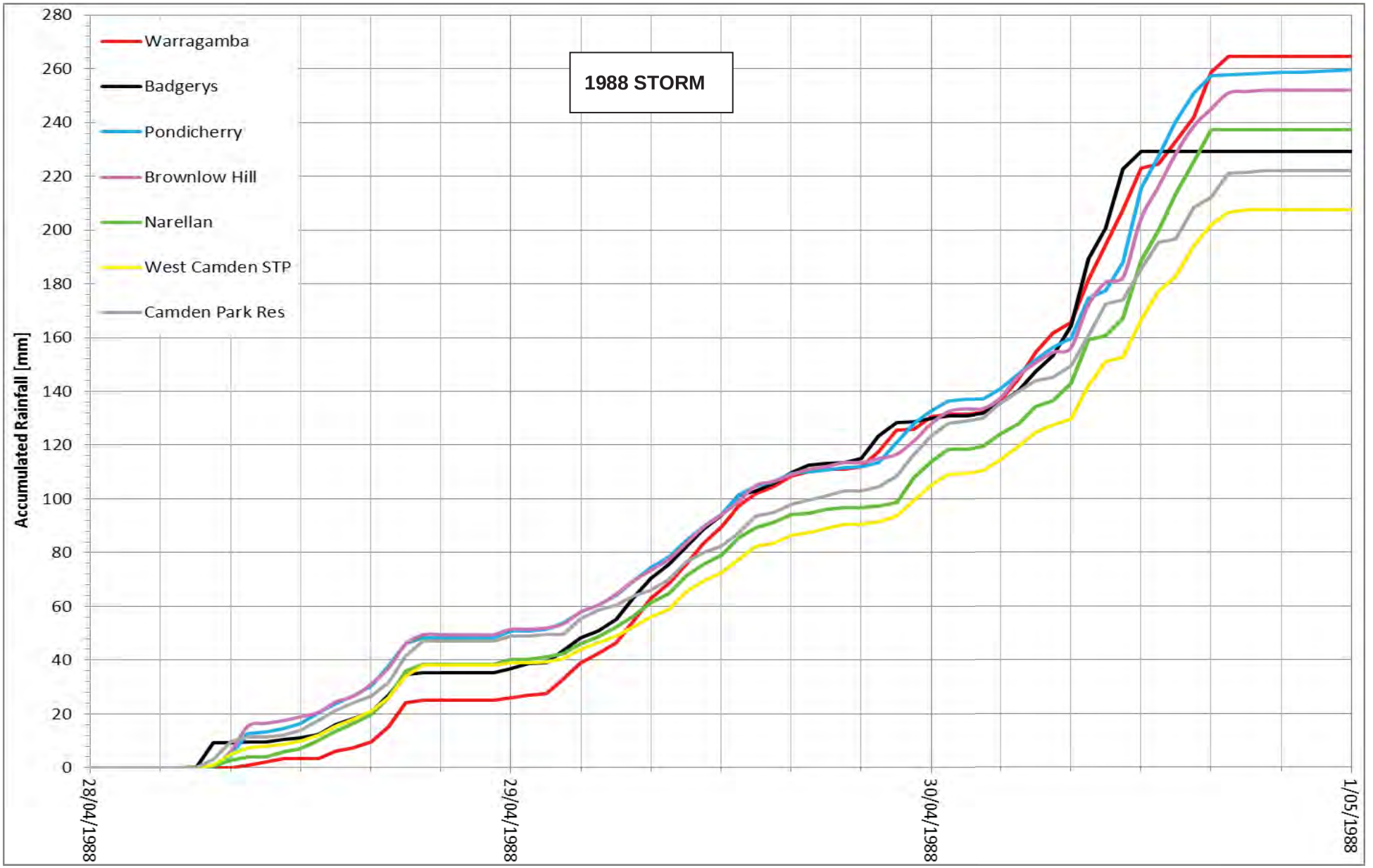
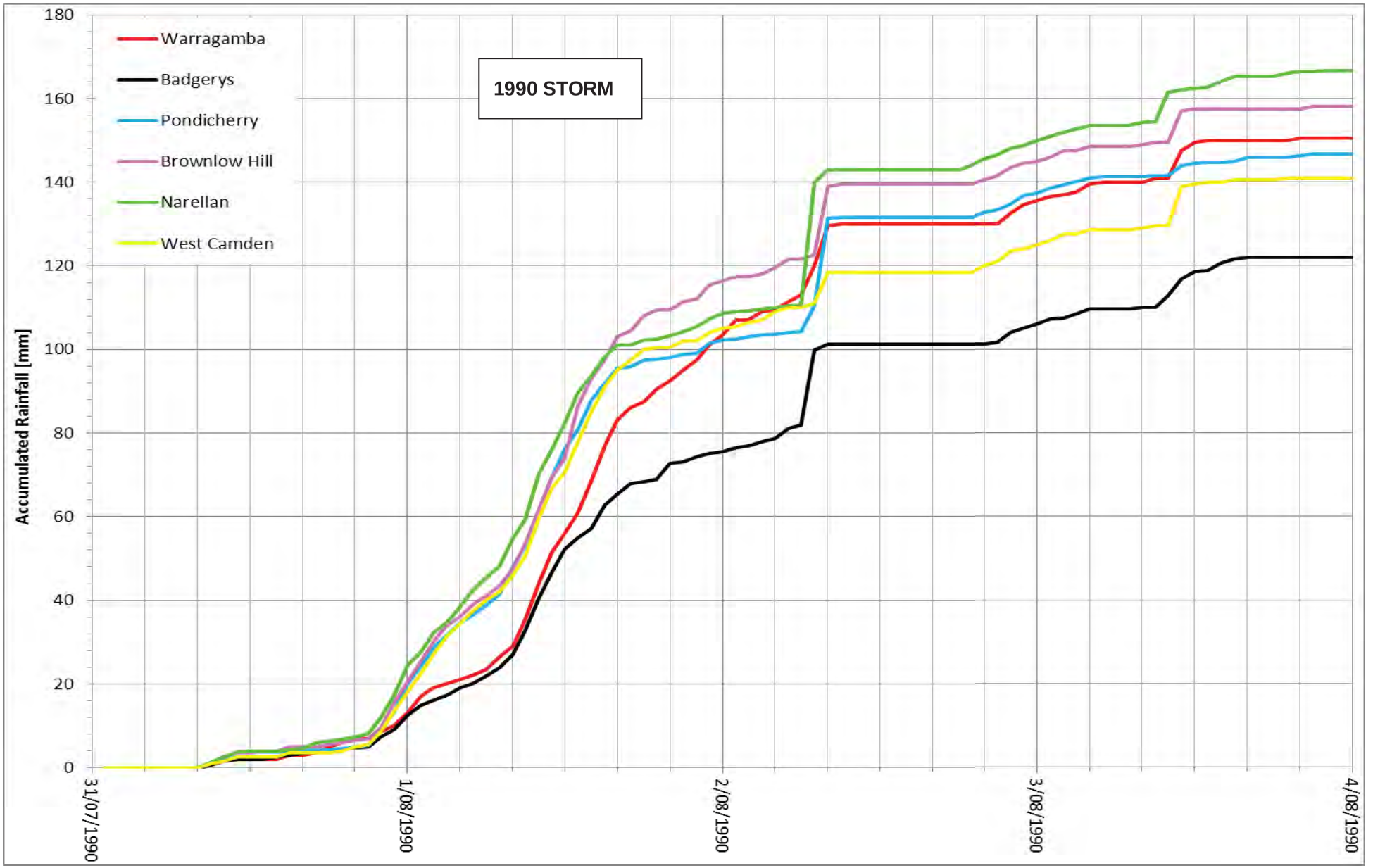
05	Easting	281,012		>>> From BoM	DURATION	1 year	2 years	5 years	10 years	20 years	50 years	100 years		Into XP-RAFTS>>>	60.6	14.1	4.66			
	Northing	6,246,272			5 mins	74	96.1	126	144	167	198	221								
					6 mins	69.3	89.9	118	135	157	185	208			29.4	6.85	2			
	Long	150.625 E			10 mins	56.7	73.5	96.4	110	128	151	170								
	Lat	33.900 S			20 mins	41.1	53.4	69.8	79.7	92.6	110	123								
					30 mins	33.3	43.3	56.6	64.6	75.1	88.9	99.5				Location Skew	0.03		f2	4.3
					1 hour	22.7	29.4	38.6	44	51.2	60.6	67.9							f50	15.78
					2 hours	15.2	19.7	25.8	29.4	34.2	40.5	45.4								
					3 hours	12	15.6	20.3	23.2	26.9	31.9	35.7								
					6 hours	8.01	10.4	13.5	15.4	17.9	21.2	23.7								
					12 hours	5.28	6.85	8.98	10.2	11.9	14.1	15.8								
					24 hours	3.37	4.4	5.86	6.74	7.88	9.4	10.6								
					48 hours	2.06	2.71	3.69	4.31	5.08	6.14	6.97								
					72 hours	1.51	2	2.75	3.23	3.84	4.66	5.31								

APPENDIX C

RECORDED RAINFALL USED IN HYDROLOGIC MODEL CALIBRATION


1978 STORM
Warragamba
Badgerys
Pondicherry
Narellan
Oakdale
Accumulated Rainfall [mm]
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
18/03/78
19/03/78
20/03/78
21/03/78
22/03/78


1988 STORM
Warragamba
Badgerys
Pondicherry
Brownlow Hill
Narellan
West Camden STP
Camden Park Res
Accumulated Rainfall [mm]
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
28/04/1988
29/04/1988
30/04/1988
1/05/1988


1990 STORM
Warragamba
Badgerys
Pondicherry
Brownlow Hill
Narellan
West Camden
Accumulated Rainfall [mm]
0
20
40
60
80
100
120
140
160
180
31/07/1990
1/08/1990
2/08/1990
3/08/1990
4/08/1990

APPENDIX D

SUMMARY OF HYDROLOGIC MODEL CALIBRATION

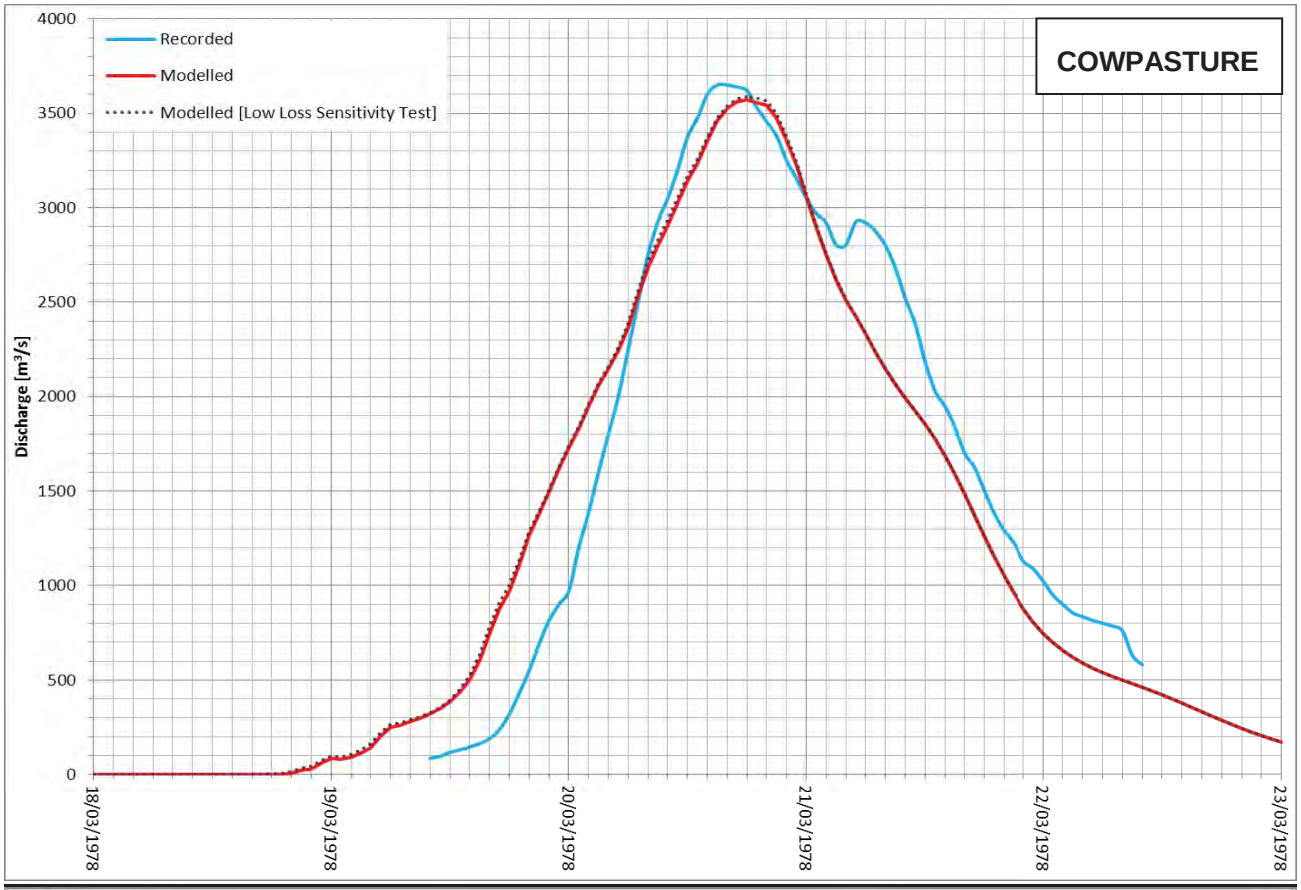
CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

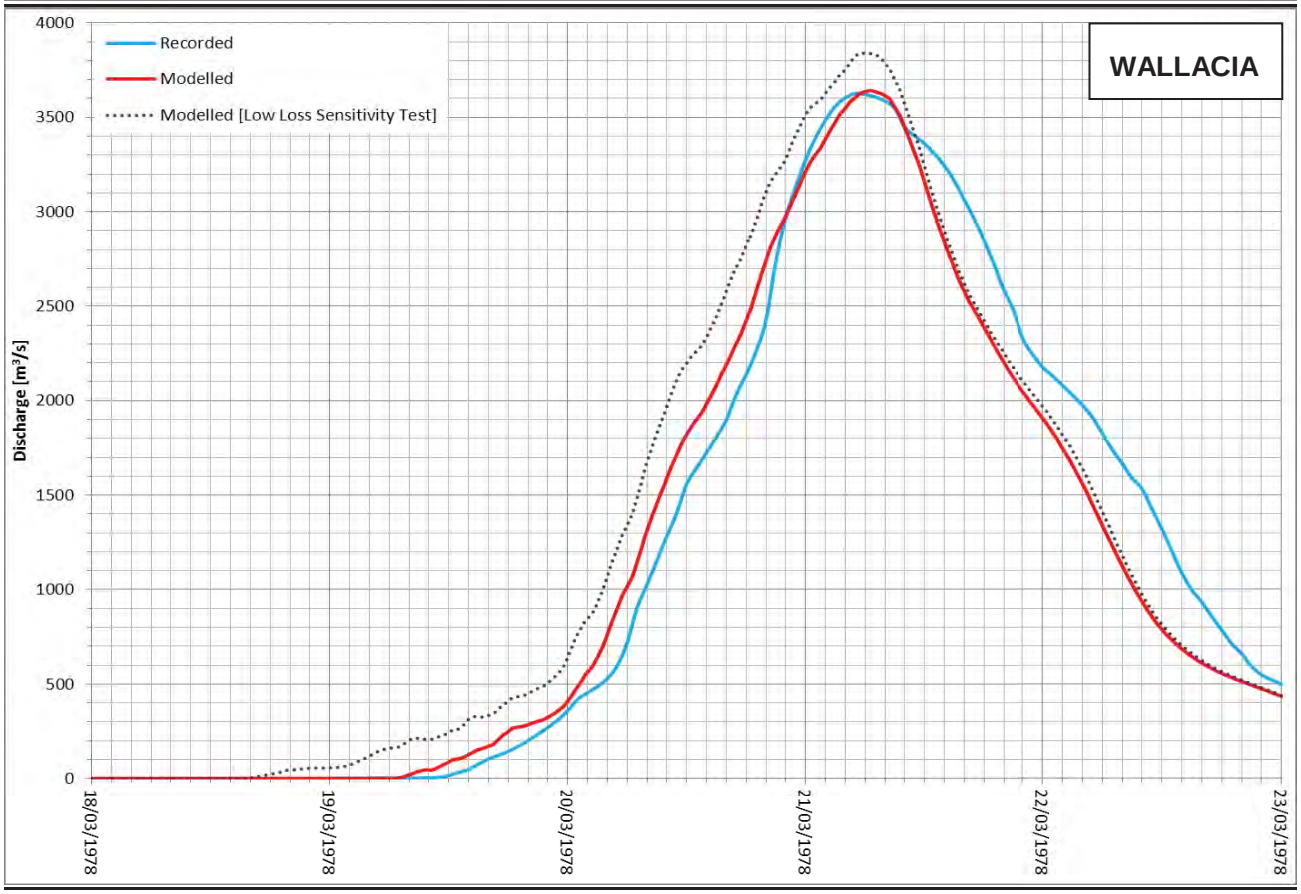
HYDROLOGIC MODEL CALIBRATION PARAMETERS

				1978				1988				1990				ADOPTED		
	Total [km²]	Slope [%]	Lag [mins]	IL	CL	n	Storm	IL	CL	n	Storm	IL	CL	n	Storm	IL	CL	n
NEPEAN A	930.40	1.47		60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_CamdenPk	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NEPEAN B	1791.00	1.39	84	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_CamdenPk	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NAVI A	1145.00	3.26		60	10.0	0.06	1978_Narellan	15	2.5	0.06	1988_CamdenPk	15	2.5	0.06	1990_WCamden	15	2.5	0.06
NAVI B	881.10	1.96	63	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_CamdenPk	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NAVI C	476.90	1.59	54	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_CamdenPk	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NEPEAN C1	625.10	1.55	42	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NEPEAN C2	621.80	0.59	60	60	10.0	0.03	1978_Narellan	15	2.5	0.03	1988_WCamden	15	2.5	0.03	1990_WCamden	15	2.5	0.03
NARELL DS	71.90	1.41		60	10.0	0.03	1978_Narellan	15	2.5	0.03	1988_WCamden	15	2.5	0.03	1990_WCamden	15	2.5	0.03
MAT E A	626.70	3.99		60	10.0	0.06	1978_Narellan	15	2.5	0.06	1988_WCamden	15	2.5	0.06	1990_WCamden	15	2.5	0.06
MAT E B	1146.00	2.95		60	10.0	0.06	1978_Oakdale	15	2.5	0.06	1988_WCamden	15	2.5	0.06	1990_WCamden	15	2.5	0.06
MAT E C	528.10	3.08	54	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
MAT E D	516.10	1.18	54	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
MAT E E	464.90	0.34	77	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
MAT W A	463.10	3.07		60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_Narellan	15	2.5	0.04	1990_WCamden	15	2.5	0.04
MAT W B	739.50	1.01	73	60	10.0	0.04	1978_Oakdale	15	2.5	0.04	1988_Narellan	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NEPEAN D1	306.20	0.19	52	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
NEPEAN D2	1028.00	0.70	97	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
SICKLES B	137.20	2.08	26	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
SICKLES A	276.90	1.42		60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
MT HUNT A	1202.00	2.46		60	10.0	0.06	1978_Oakdale	15	2.5	0.06	1988_WCamden	15	2.5	0.06	1990_WCamden	15	2.5	0.06
MT HUNT B	2131.00	2.17		60	10.0	0.06	1978_Oakdale	15	2.5	0.06	1988_WCamden	15	2.5	0.06	1990_WCamden	15	2.5	0.06
MT HUNT C	1388.00	1.81	83	60	10.0	0.04	1978_Oakdale	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
FLAGGY	2005.00	1.59		60	10.0	0.04	1978_Oakdale	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
MT HUNT D	403.50	0.75	68	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
NEPEAN D3	241.40	1.21	35	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
NEPEAN E	686.90	1.06	66	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
COBBITTY A	62.70	2.44		60	10.0	0.06	1978_Pondi	15	2.5	0.06	1988_Pondi	15	2.5	0.06	1990_Pondi	15	2.5	0.06
COBBITTY B	1167.00	1.49	65	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
COBBITTY C	708.50	0.91	70	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
UNNAMED 1C	4599.00	0.13	63	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
NEPEAN F1	248.00	1.47	27	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
NEPEAN F2	1040.00	2.00	51	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
EAGLE	2149.00	1.98		60	10.0	0.06	1978_WarraMet	15	2.5	0.06	1988_WarraMet	15	2.5	0.06	1990_WarraMet	15	2.5	0.06
NEPEAN K	212.20	4.23	32	60	10.0	0.06	1978_WarraMet	15	2.5	0.06	1988_WarraMet	15	2.5	0.06	1990_WarraMet	15	2.5	0.06
FOREST	1363.00	3.23		60	10.0	0.06	1978_WarraMet	15	2.5	0.06	1988_WarraMet	15	2.5	0.06	1990_WarraMet	15	2.5	0.06
NEPEAN J	221.80	1.03	30	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
BRING D	1008.00	0.73	88	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
BRING C2	311.80	1.48	47	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
BRING C1	150.10	1.93	28	60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
BRING A	242.60	1.49		60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
BRING B	456.40	1.31		60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
UNNAMED 2	536.70	2.43		60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Pondi	15	2.5	0.04	1990_Pondi	15	2.5	0.04
NEPEAN G	3012.00	1.99	100	60	10.0	0.04	1978_WarraMet	15	2.5	0.04	1988_WarraMet	15	2.5	0.04	1990_WarraMet	15	2.5	0.04
DUNCANS A	1517.00	0.73		60	10.0	0.04	1978_Badgerys	15	2.5	0.04	1988_Badgerys	15	2.5	0.04	1990_Badgerys	15	2.5	0.04
DUNCANS B	873.90	0.77	102	60	10.0	0.04	1978_Badgerys	15	2.5	0.04	1988_Badgerys	15	2.5	0.04	1990_Badgerys	15	2.5	0.04
NEPEAN L	711.40	2.83	49	60	10.0	0.04	1978_WarraMet	15	2.5	0.04	1988_WarraMet	15	2.5	0.04	1990_WarraMet	15	2.5	0.04
NEPEAN H	509.40	2.29	58	60	10.0	0.06	1978_WarraMet	15	2.5	0.06	1988_WarraMet	15	2.5	0.06	1990_WarraMet	15	2.5	0.06
NEPEAN I	243.70	4.01	35	60	10.0	0.04	1978_WarraMet	15	2.5	0.04	1988_WarraMet	15	2.5	0.04	1990_WarraMet	15	2.5	0.04
JERRYS	1396.00	1.11		60	10.0	0.04	1978_Badgerys	15	2.5	0.04	1988_Badgerys	15	2.5	0.04	1990_Badgerys	15	2.5	0.04
SICKLES C	191.10	1.33	43	60	10.0	0.04	1978_Narellan	15	2.5	0.04	1988_WCamden	15	2.5	0.04	1990_WCamden	15	2.5	0.04
UNNAMED 1A	709.90	2.36		60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04
UNNAMED 1B	1073.00	2.14		60	10.0	0.04	1978_Pondi	15	2.5	0.04	1988_Brownlow	15	2.5	0.04	1990_Brownlow	15	2.5	0.04

CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

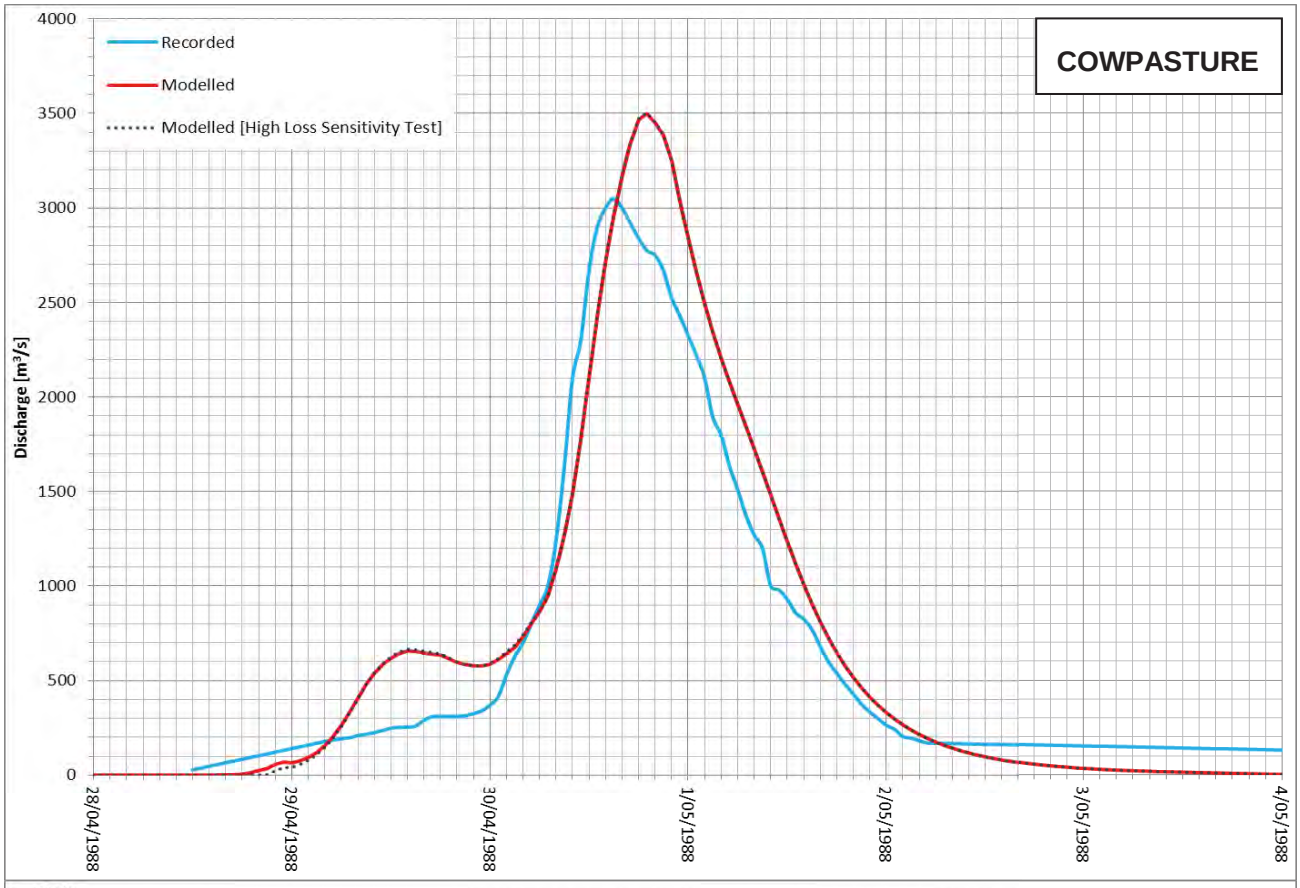
MARCH 1978 FLOOD EVENT

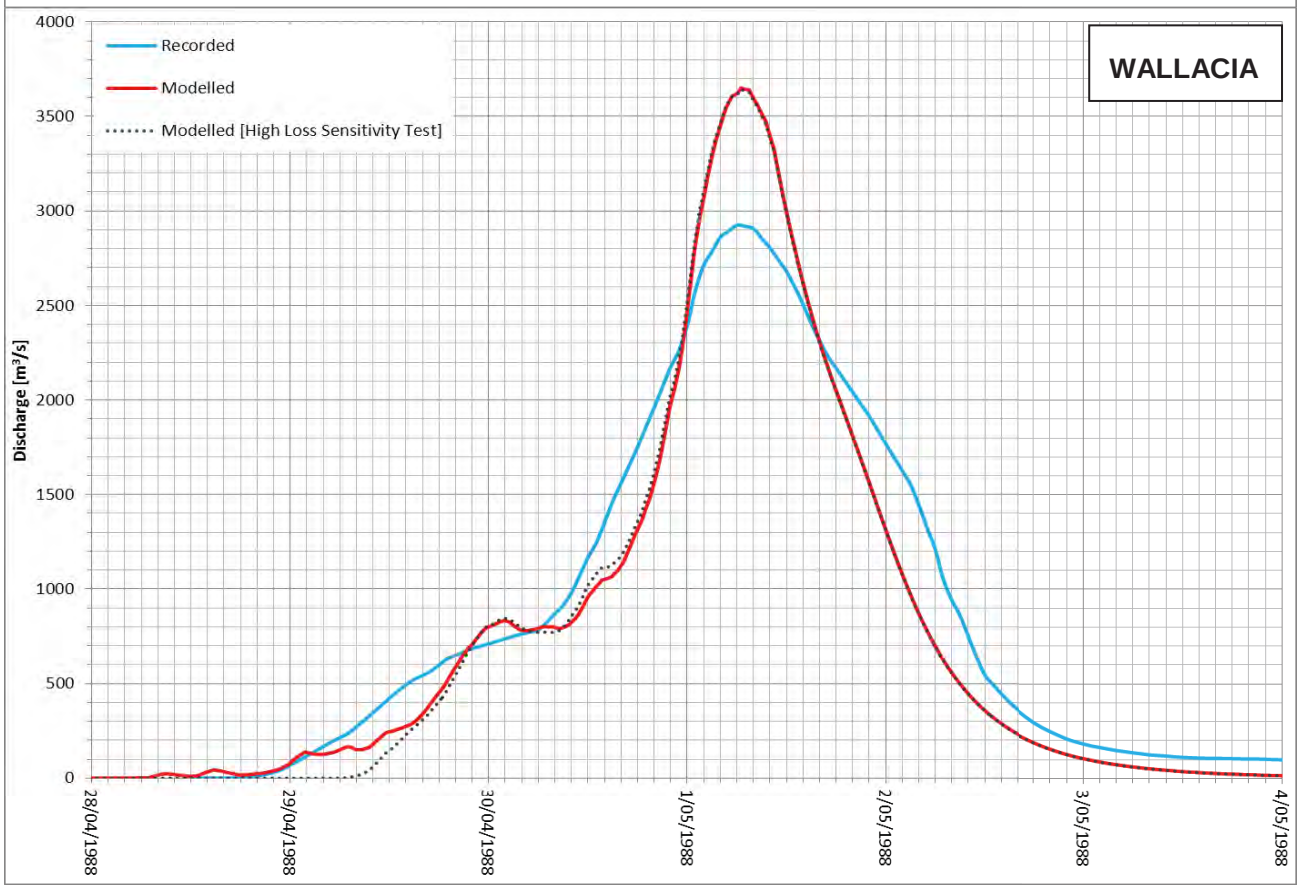




CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

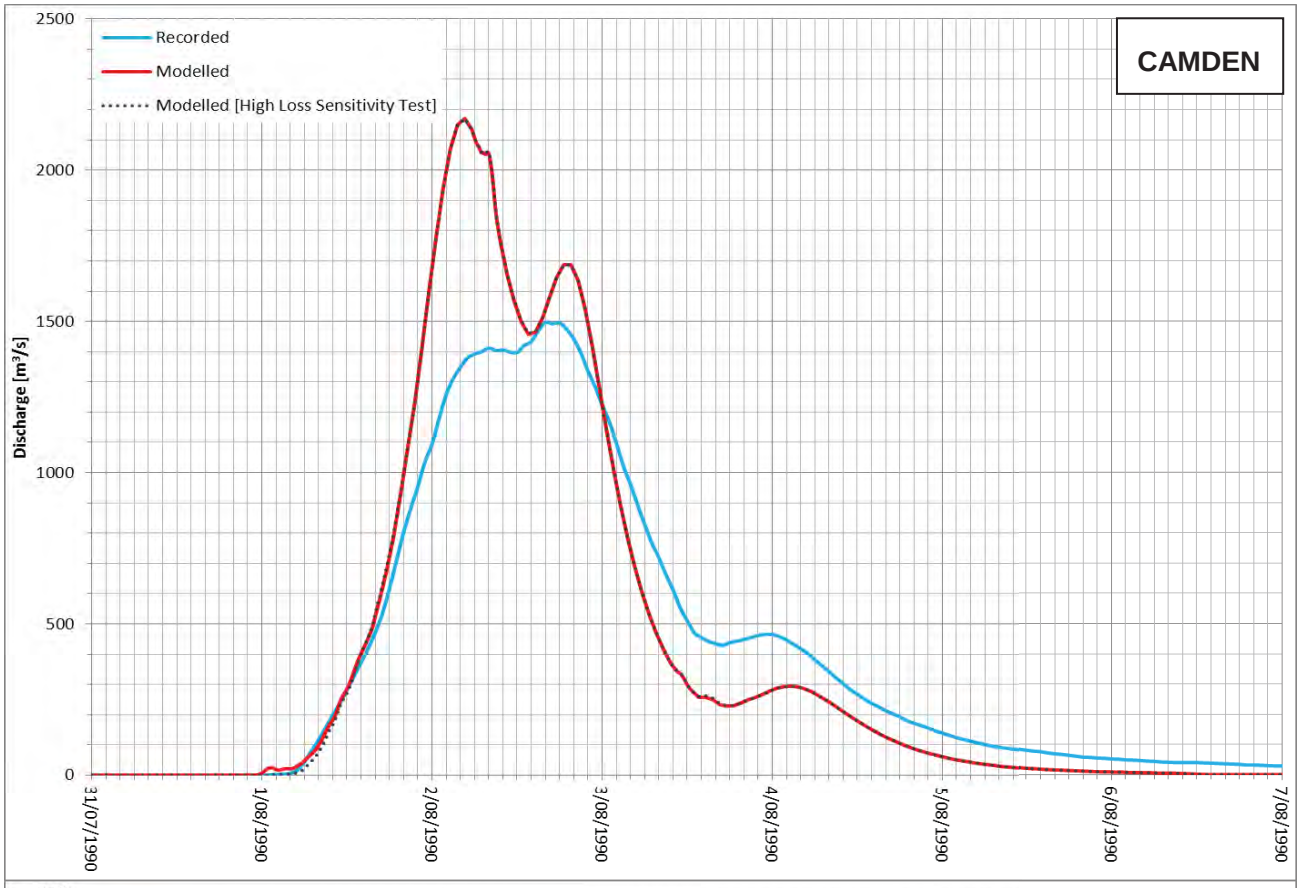
APRIL1988 FLOOD EVENT

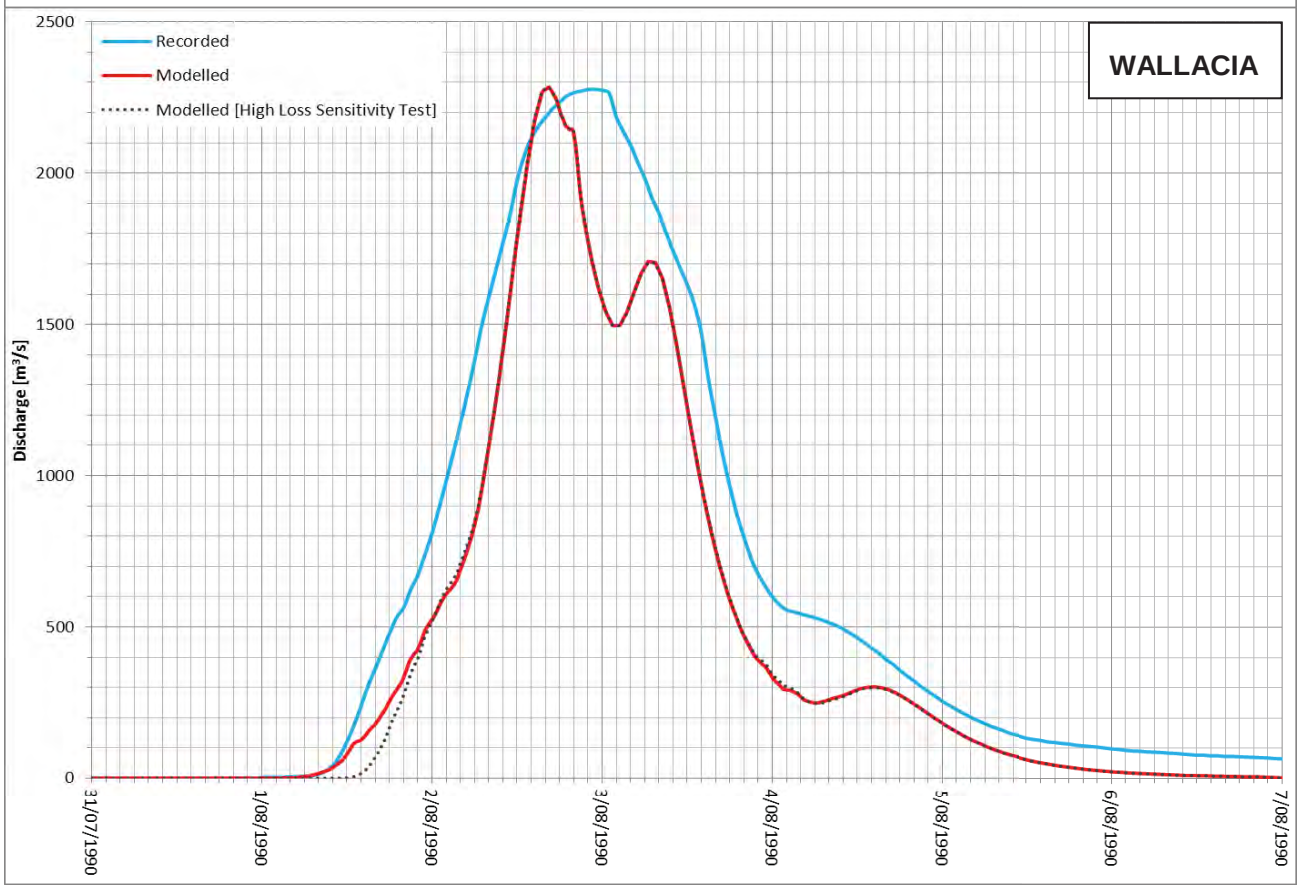




CAMDEN COUNCIL
NEPEAN RIVER FLOOD STUDY

AUGUST 1990 FLOOD EVENT

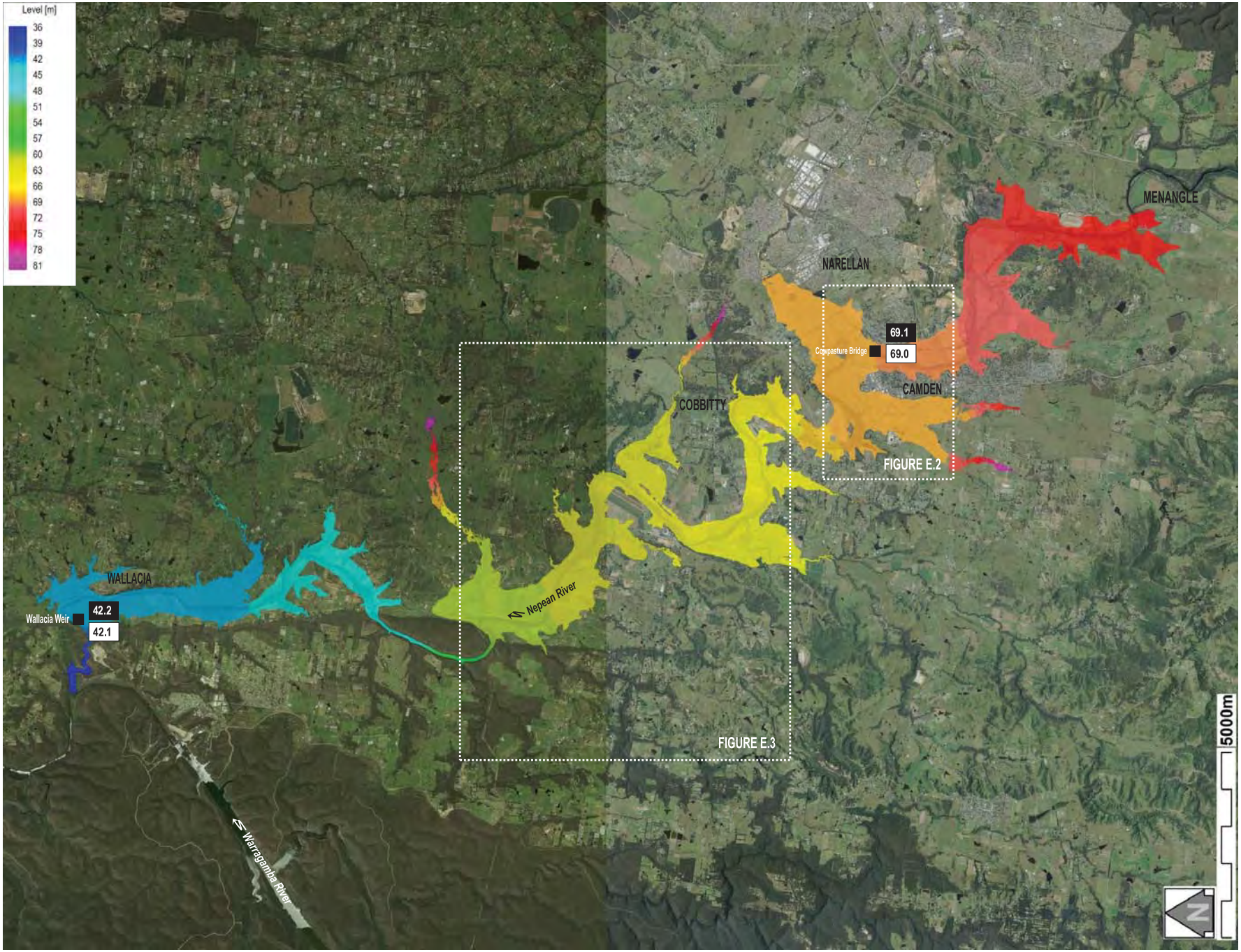




APPENDIX E

SUMMARY OF TUFLOW MODEL CALIBRATION

FIGURE E.1



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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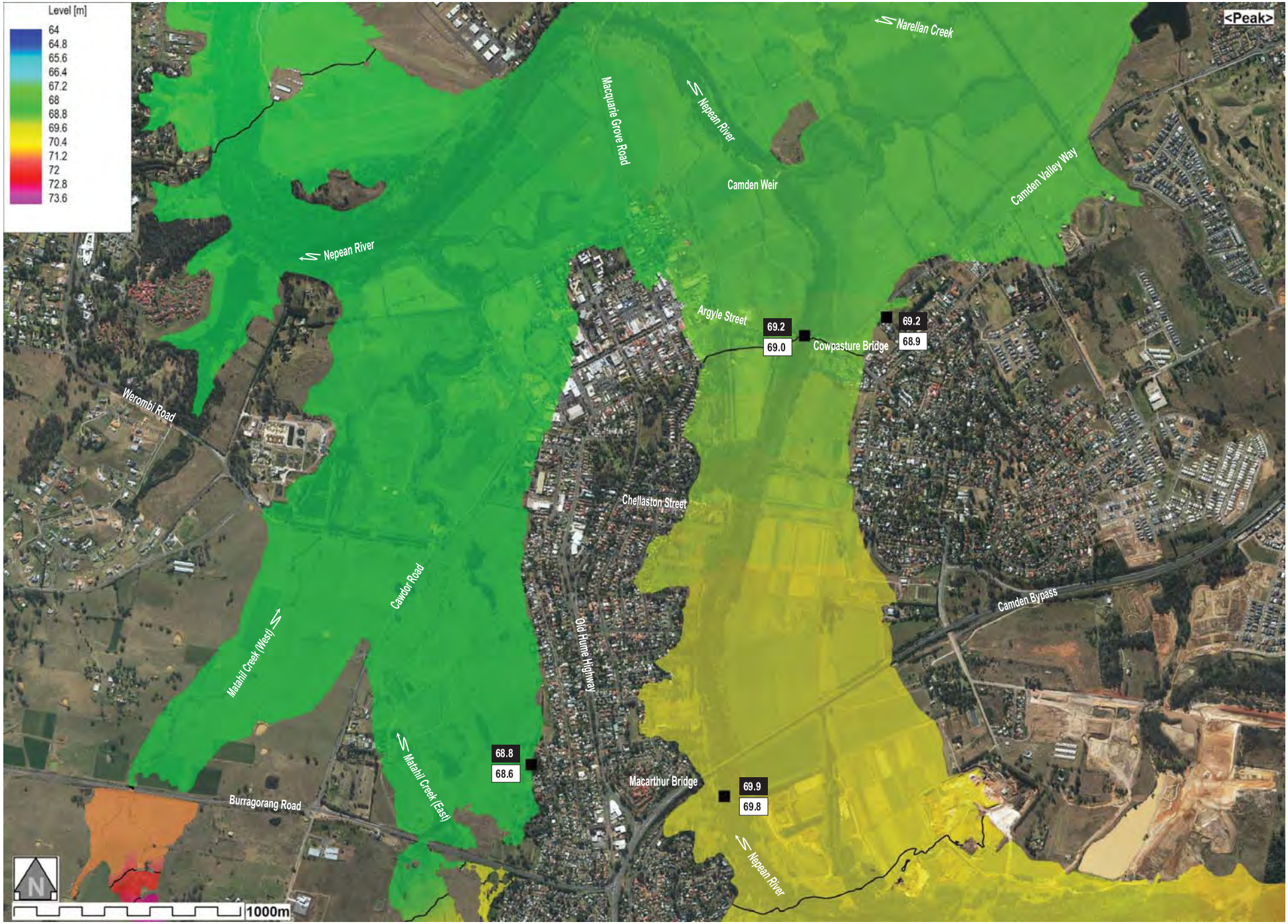
MODELLED FLOOD LEVELS AT THE PEAK OF THE 1978 EVENT

FIGURE E.2



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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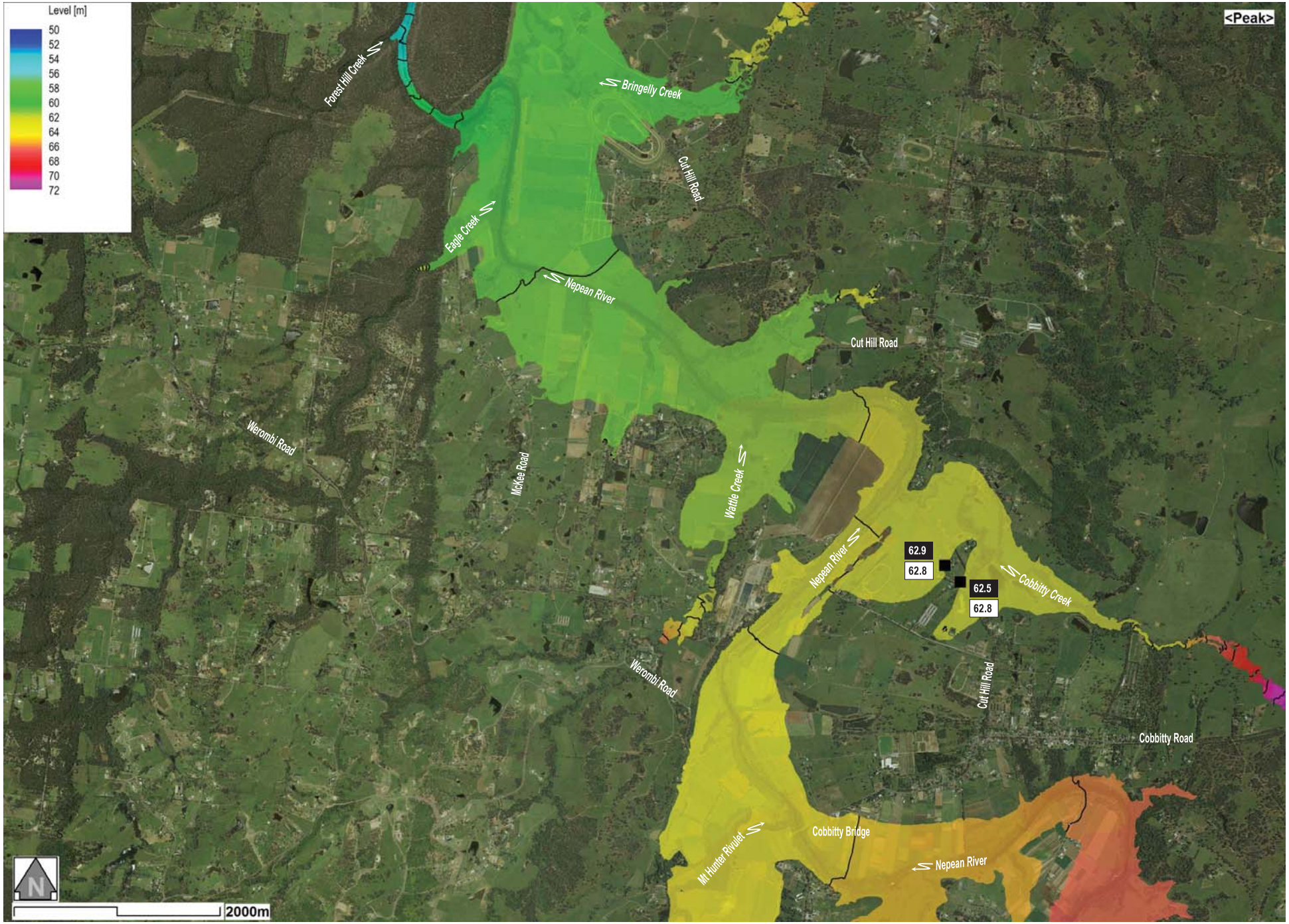
COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1978 EVENT (CAMDEN)

FIGURE E.3



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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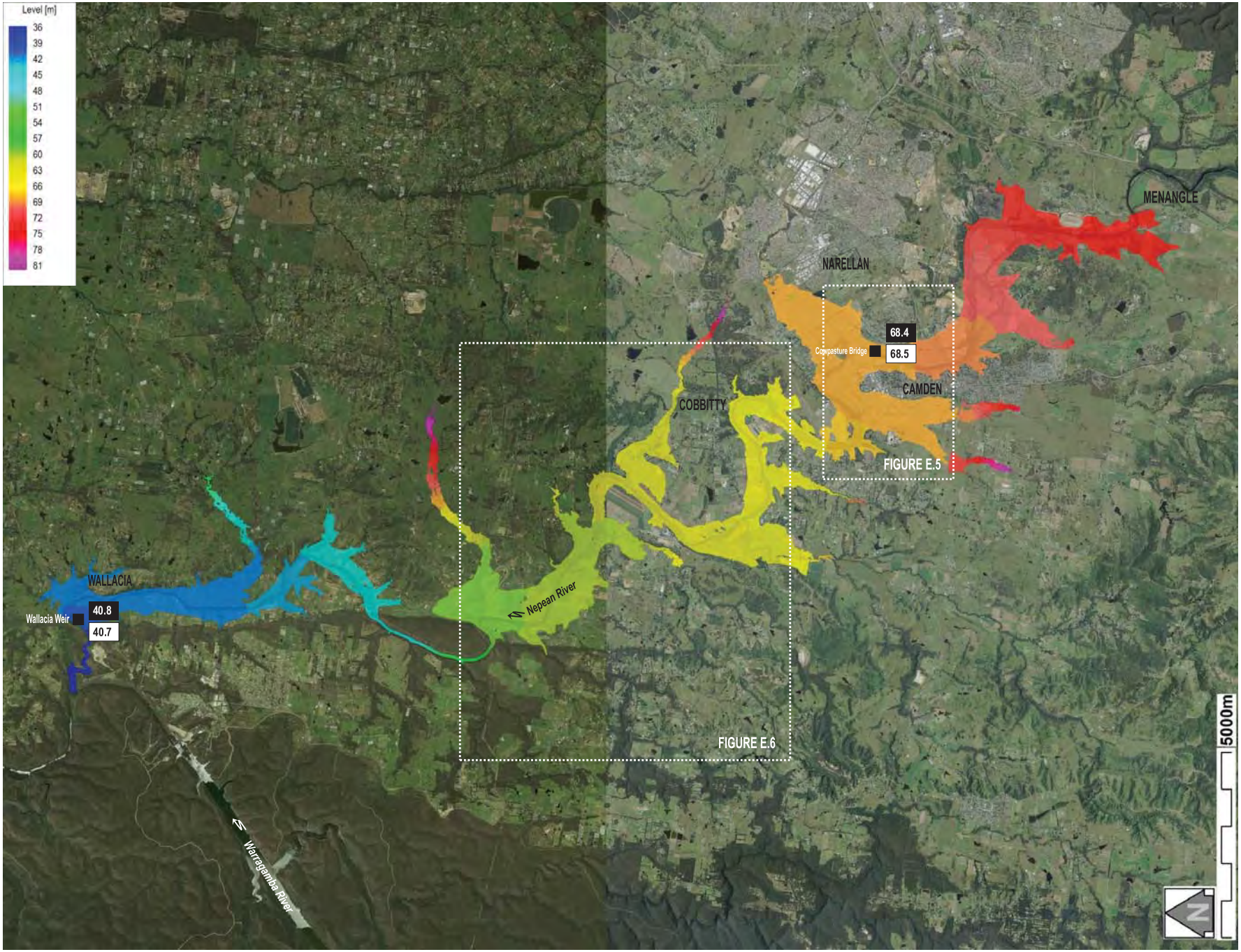
301015-03107 – Nepean River Flood Study (Camden Council)
E.03_fg301015-03107nm130611-Cobbitty Cali 1978.doc

COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1978 EVENT (COBBITTY)

FIGURE E.4



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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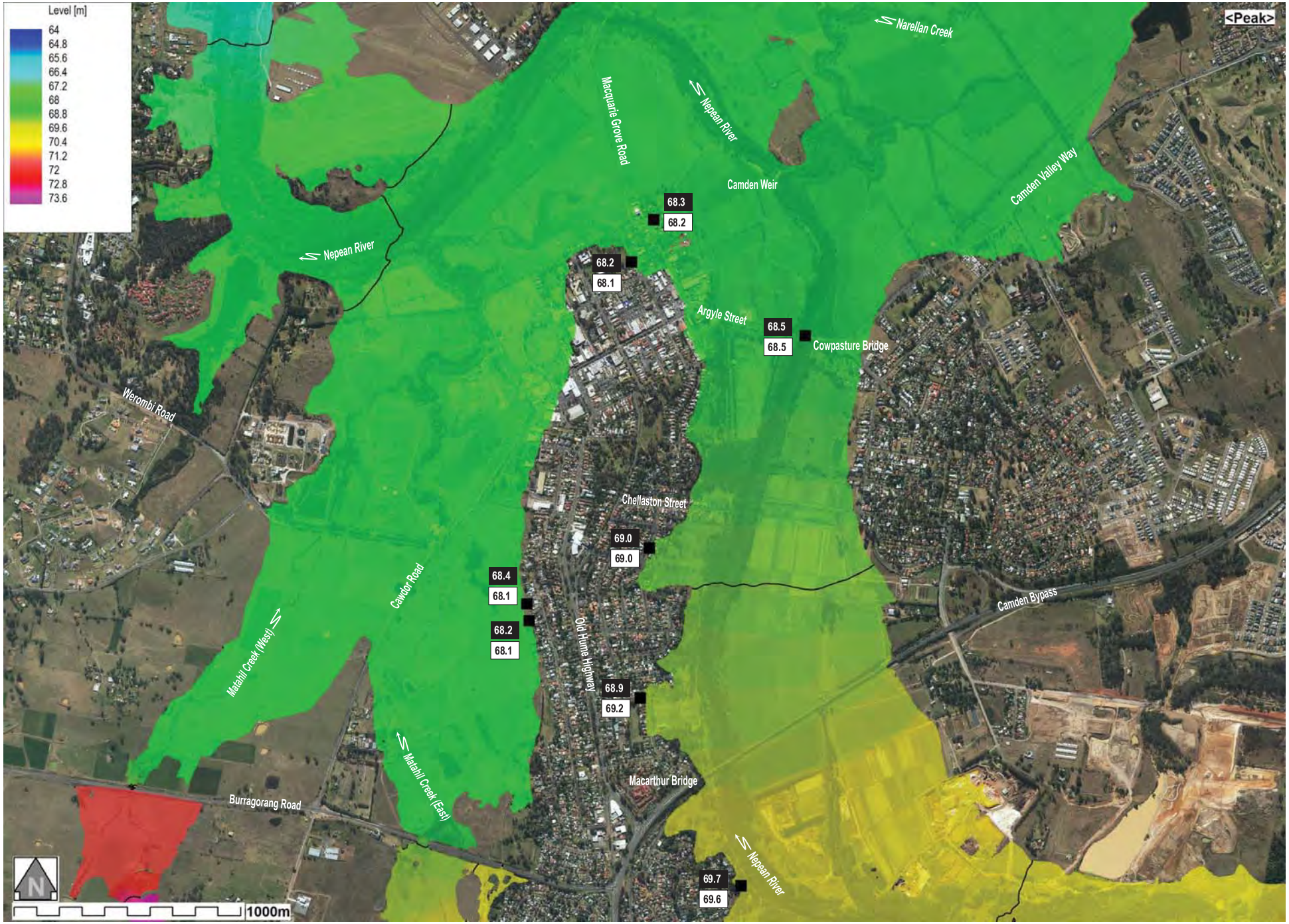
301015-03107 – Nepean River Flood Study
E.04_fg301015-03107nm130628-1988 Overview.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 1988 EVENT

FIGURE E.5



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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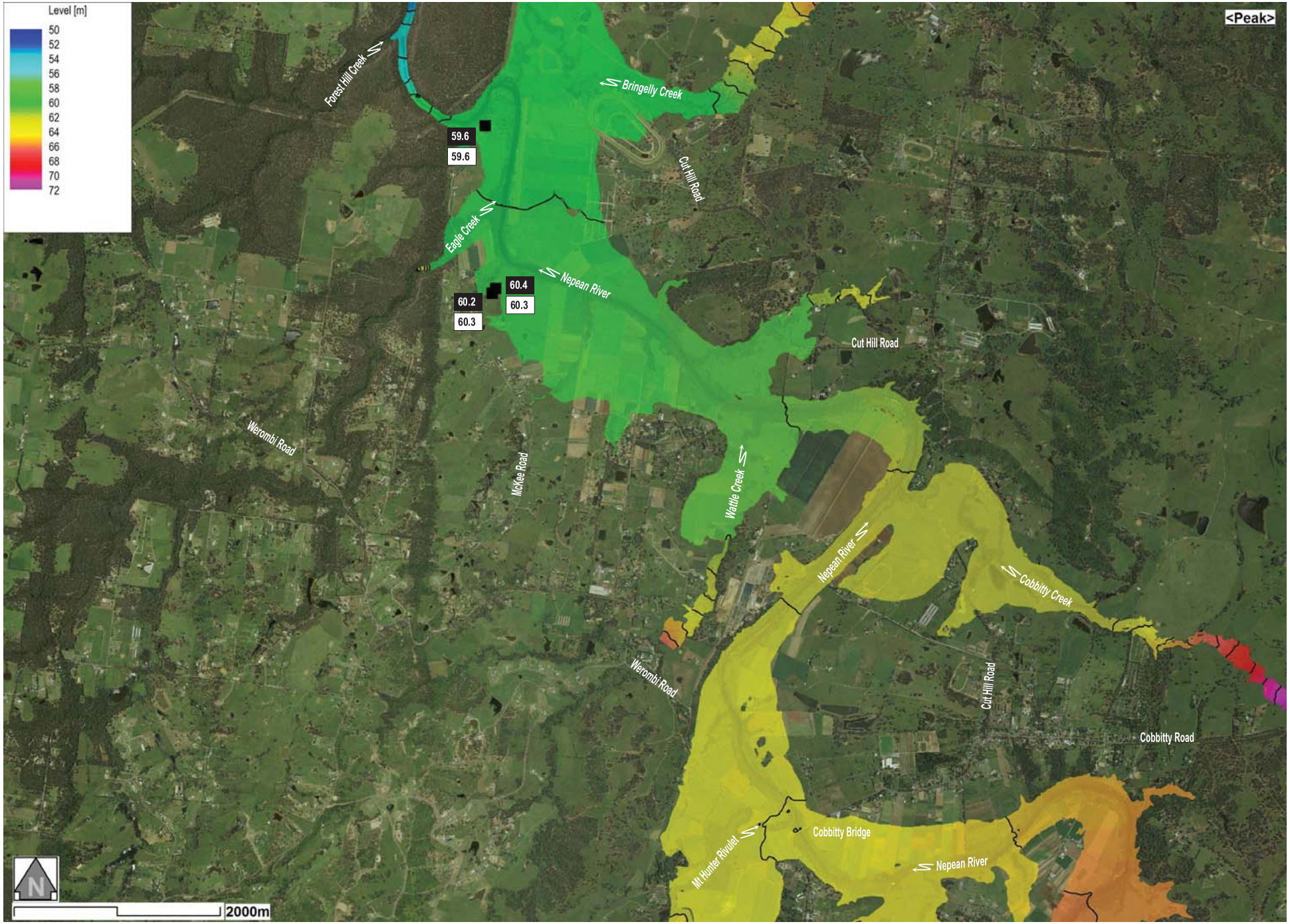
301015-03107 – Nepean River Flood Study (Camden Council)
E.05_fg301015-03107nm130712-Camden Cali 1988.doc

COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1988 EVENT (CAMDEN)

FIGURE E.6



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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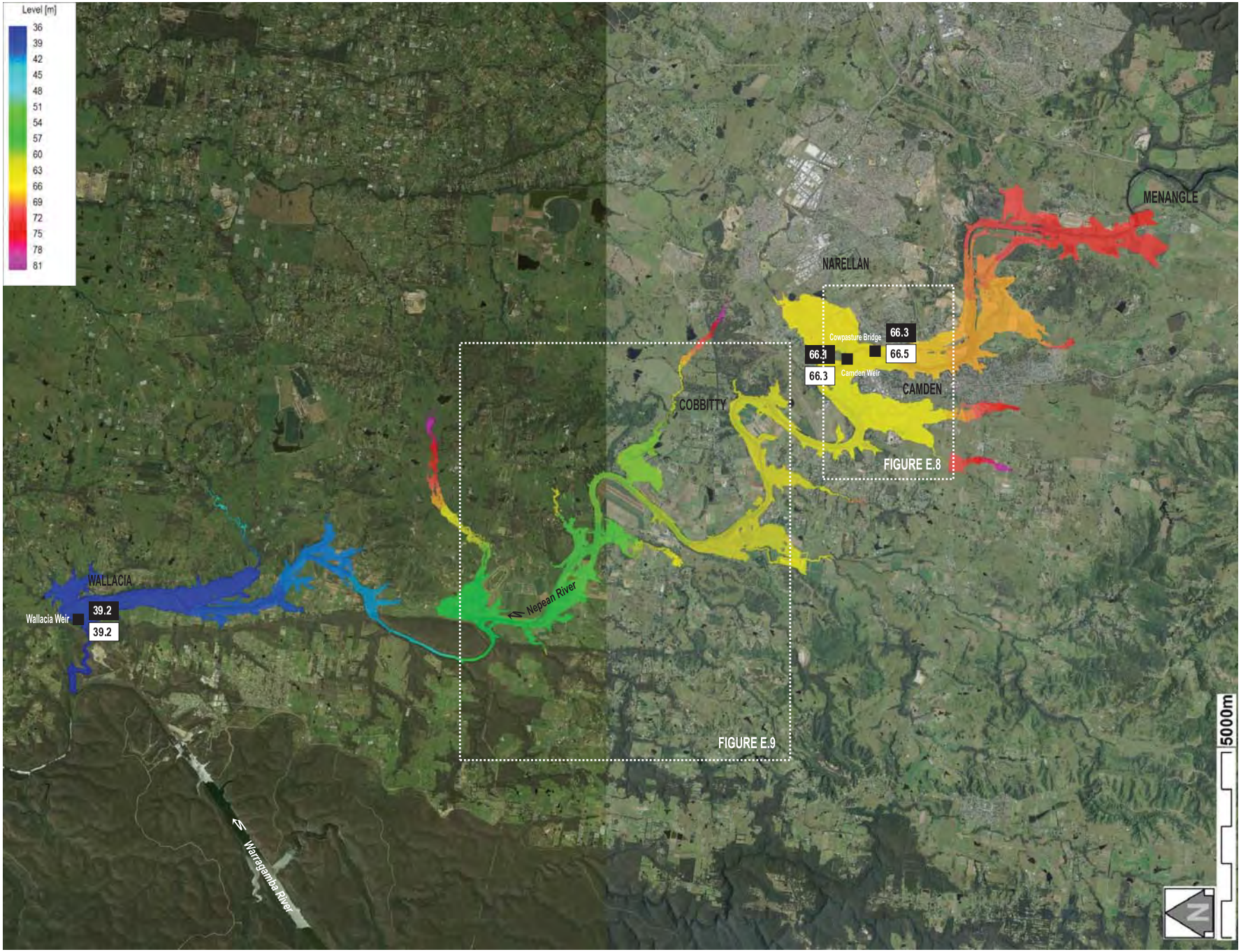
301015-03107 – Nepean River Flood Study (Camden Council)
E.06_fg301015-03107nm130611-Cobbitty Cali 1988.doc

COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1988 EVENT (COBBITTY)

FIGURE E.7



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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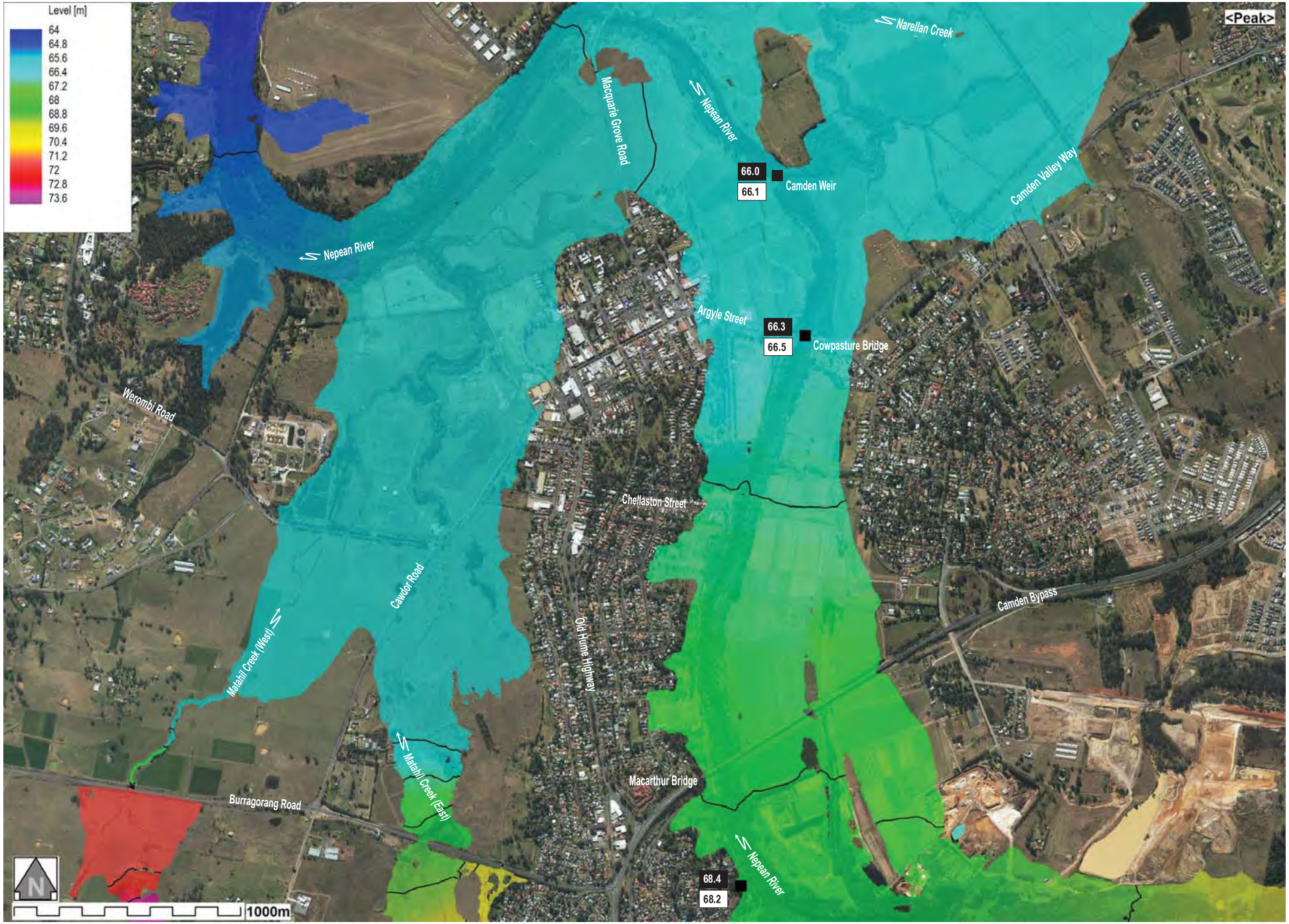
MODELLED FLOOD LEVELS AT THE PEAK OF THE 1990 EVENT

FIGURE E.8



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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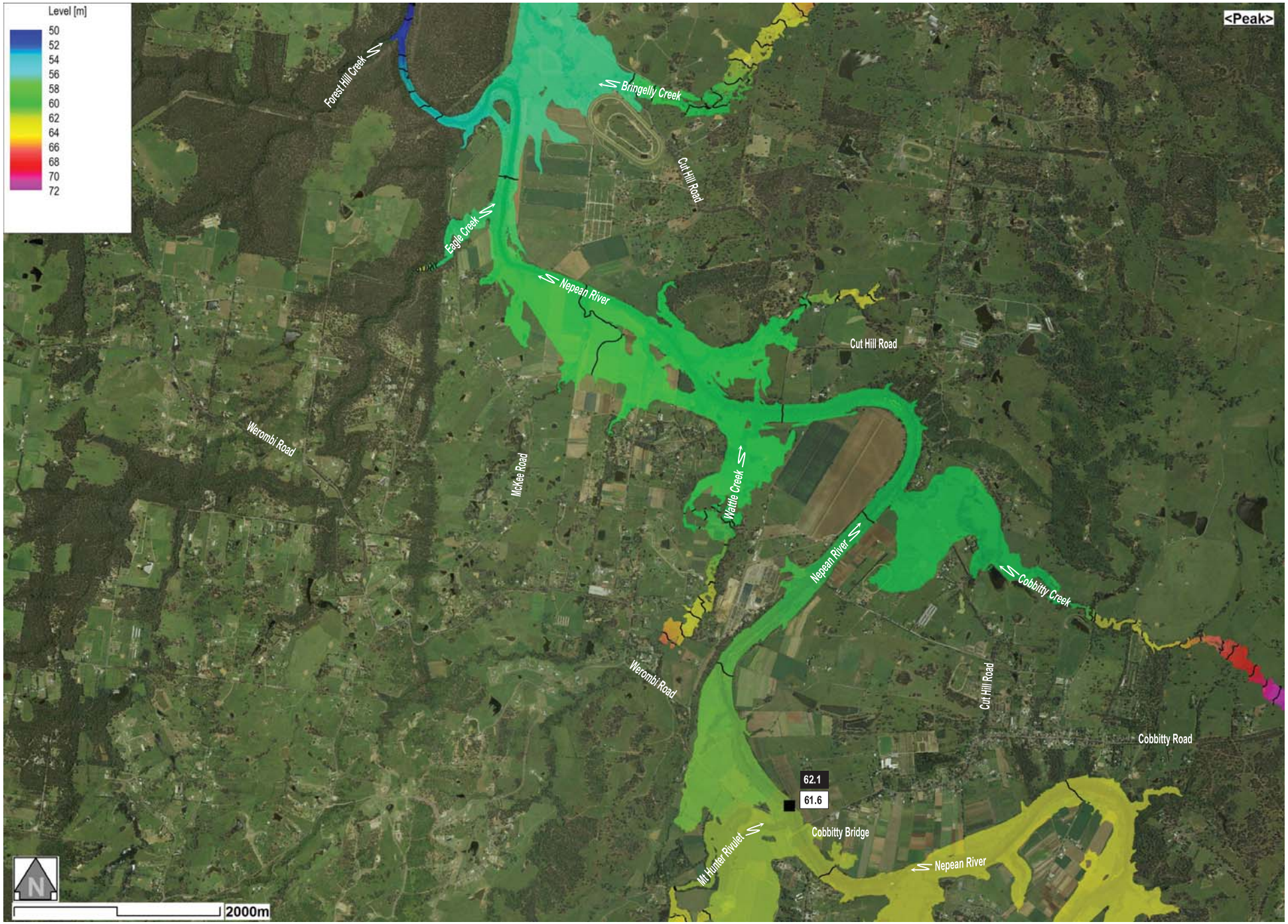
COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1990 EVENT (CAMDEN)

FIGURE E.9



LEGEND:

- Observed level location
- 99.9 Observed peak stream level [mAHD]
- 99.9 Modelled peak stream level [mAHD]

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COMPARISON OF MODELLED & OBSERVED FLOOD LEVELS AT THE PEAK OF THE 1990 EVENT (COBBITTY)

APPENDIX F

NOTES ON PROBABILITY TERMINOLOGY FOR DESIGN EVENTS

A draft discussion paper prepared as part of the current Australian Rainfall & Runoff revision project attempts to clarify the terminology currently in use and that proposed for future use (*Engineers Australia, 2013*).

The range of available terminology is shown **Table F.1** below. The terminology preferred by the National Committee on Water Engineering and the National Flood Risk Advisory Group (*NFRAG*) is highlighted in green. Annual Exceedance Probability (*AEP*) has been adopted as the preferred terminology for this study. Despite the minor discrepancies in probability shown below, the adopted 50% and 20% AEP events are assumed to be equivalent to the 2 and 5 year ARI events, respectively (*and to the 0.5 and 0.2 EY*).

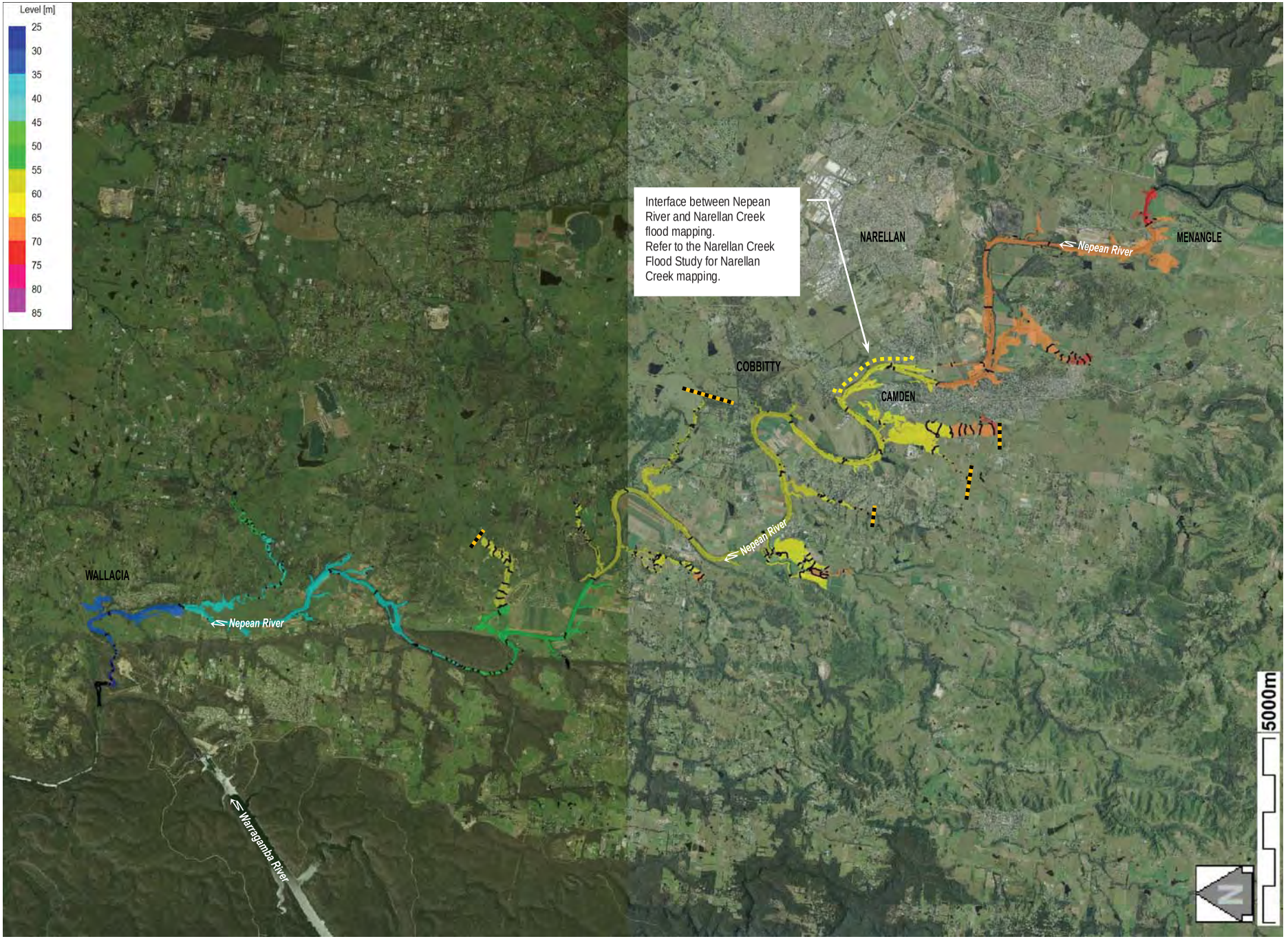
Table F.1 COMPARISON OF COMMON FLOOD PROBABILITY TERMINOLOGY

EXCEEDANCES PER YEAR (*EY*)	ANNUAL EXCEEDANCE PROBABILITY (*AEP %*)	ANNUAL EXCEEDANCE PROBABILITY (*1 in X*)	AVERAGE RECURRENCE INTERVAL (*ARI*)
6	99.75	1.002	0.17
4	98.17	1.02	0.25
3	95.02	1.05	0.33
2	86.47	1.16	0.5
1	63.21	1.58	1
0.69	**50**	2	1.44
0.5	39.35	2.54	**2**
0.22	**20**	5	4.48
0.2	18.13	5.52	**5**
0.11	10	10	9.49
0.05	5	20	19.5
0.02	2	50	49.5
0.01	1	100	99.5
0.005	0.5	200	199.5
0.002	0.2	500	499.5
0.001	0.1	1000	999.5
0.0005	0.05	2000	1999.5
0.0002	0.02	5000	4999.5

APPENDIX G

FLOOD LEVEL MAPPING

FIGURE G.1



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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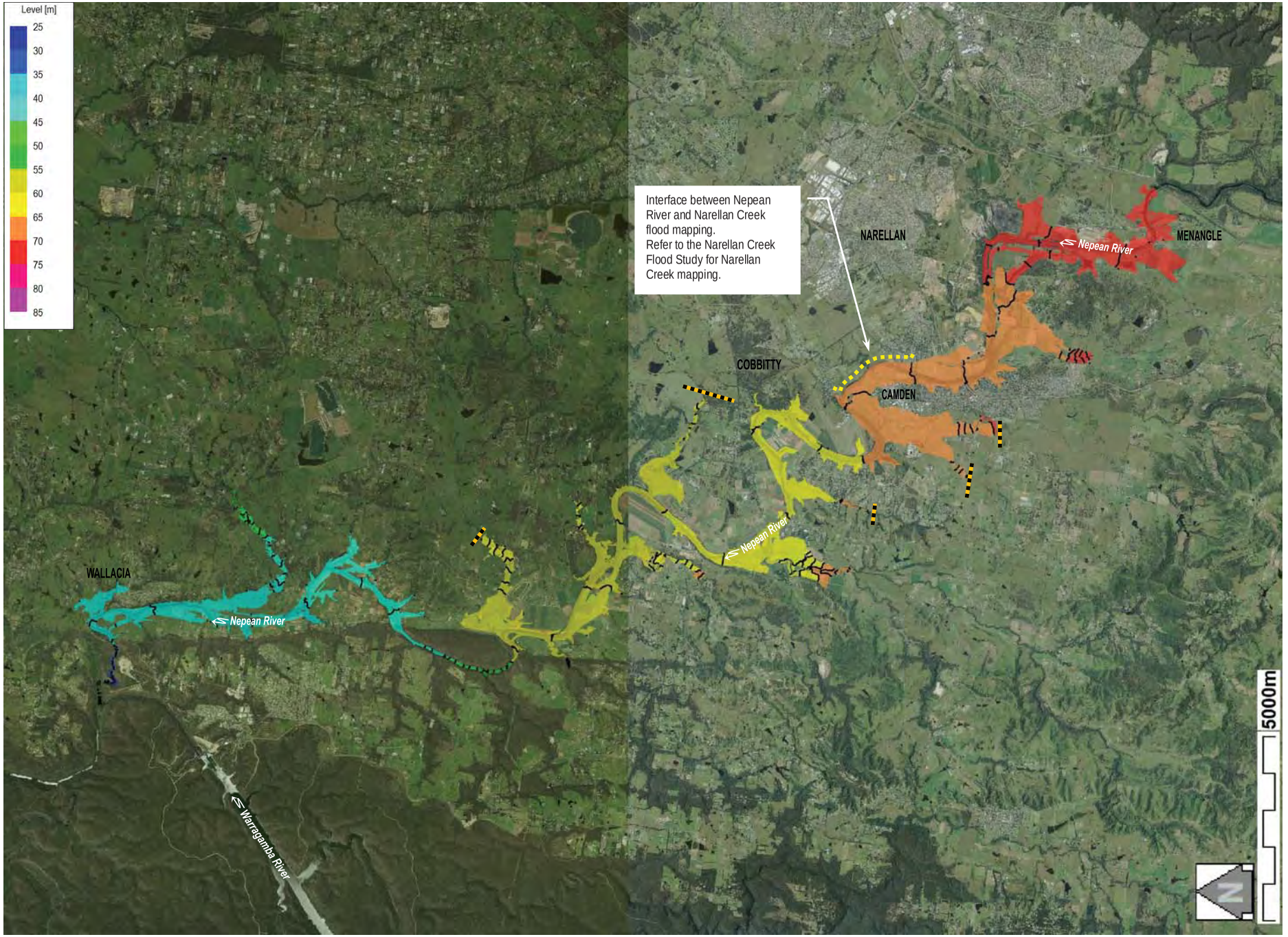
MODELLED FLOOD LEVELS AT THE PEAK OF THE 50% AEP EVENT

FIGURE G.2



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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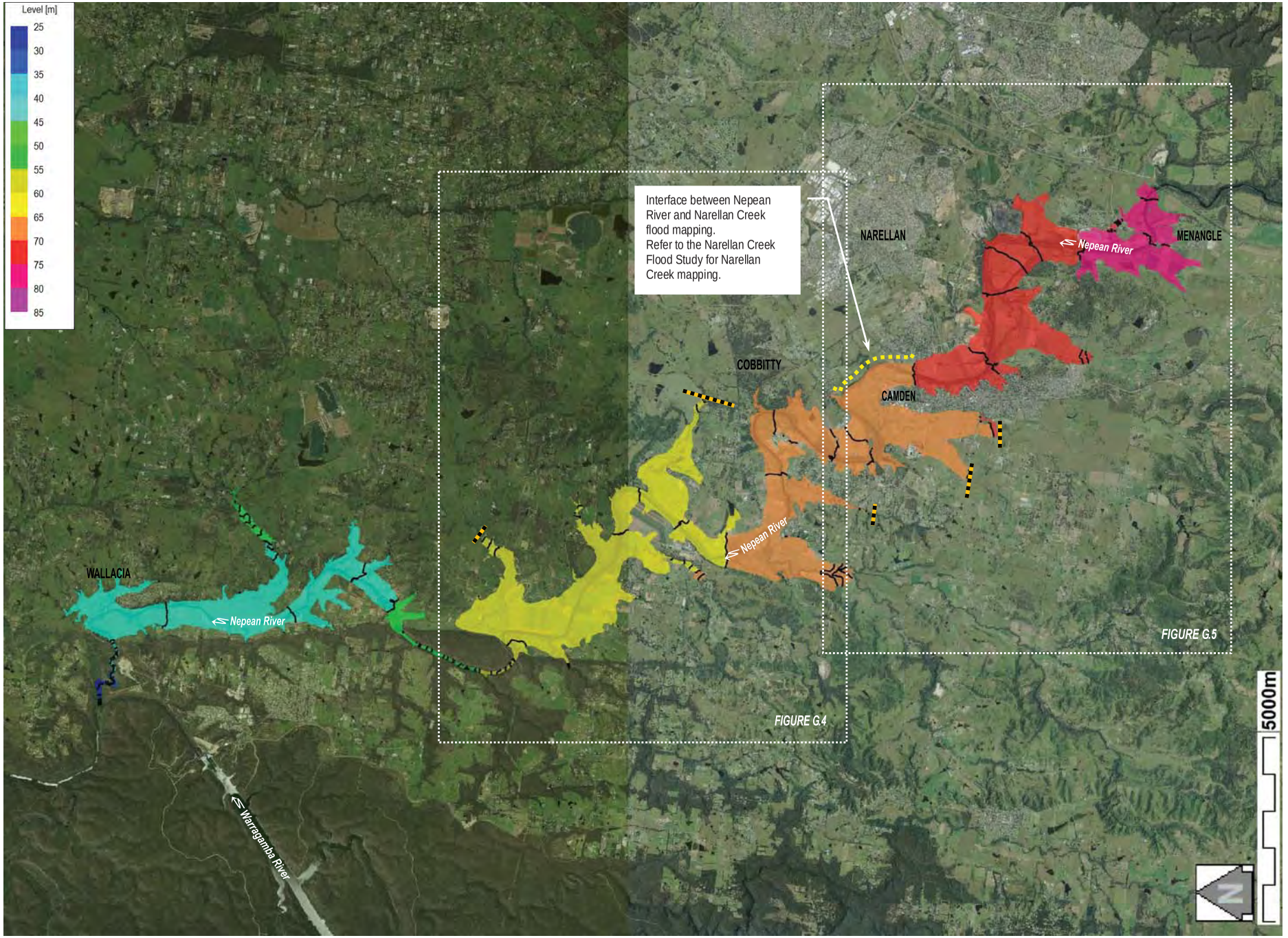
301015-03107 – Nepean River Flood Study
G.02_fg301015-03107eh150326-Level_005yr_ALL.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 20% AEP EVENT

FIGURE G.3



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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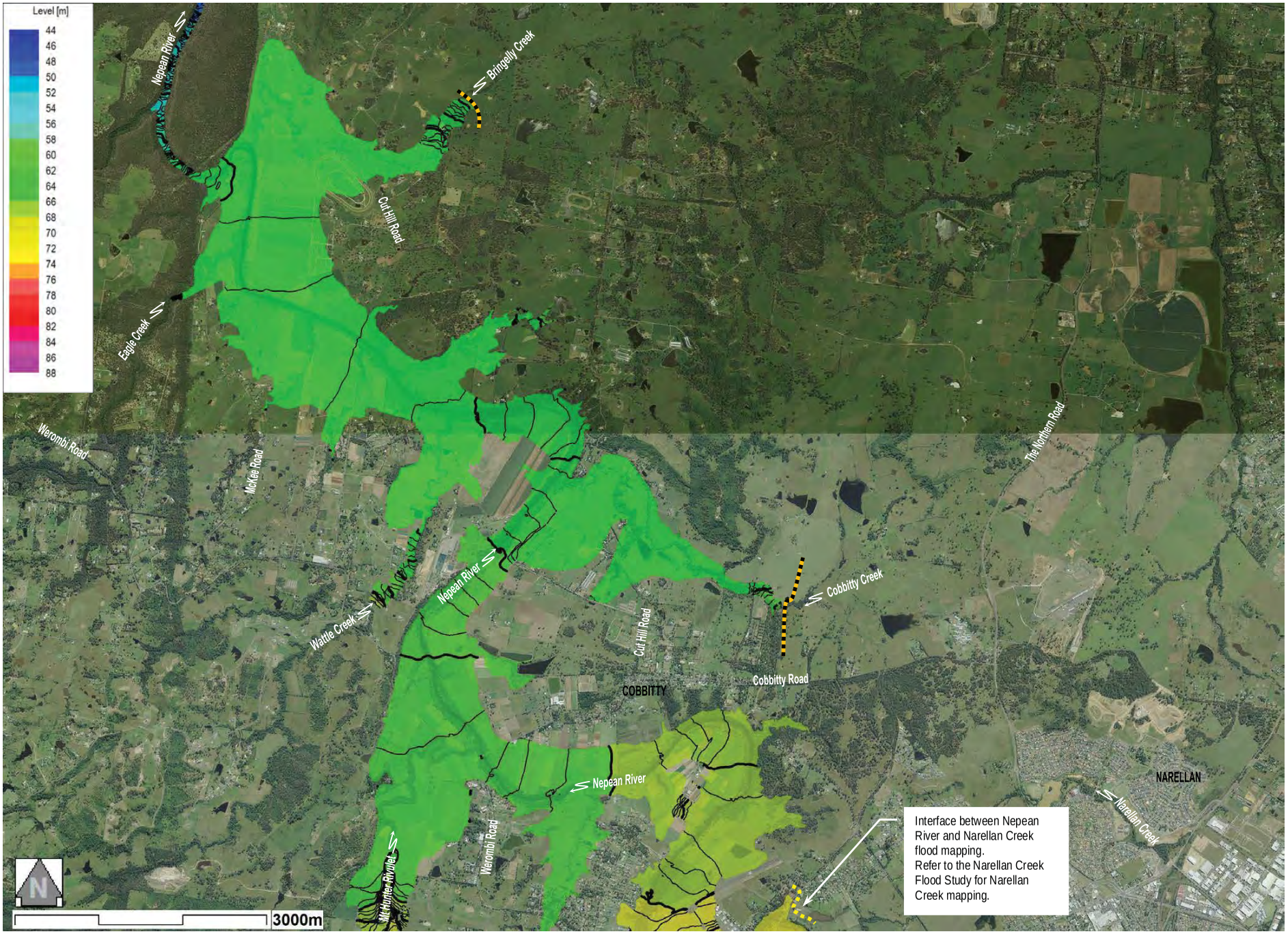
301015-03107 – Nepean River Flood Study
G.03_fg301015-03107eh150326-Level_020yr_ALL.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 5% AEP EVENT

FIGURE G.4



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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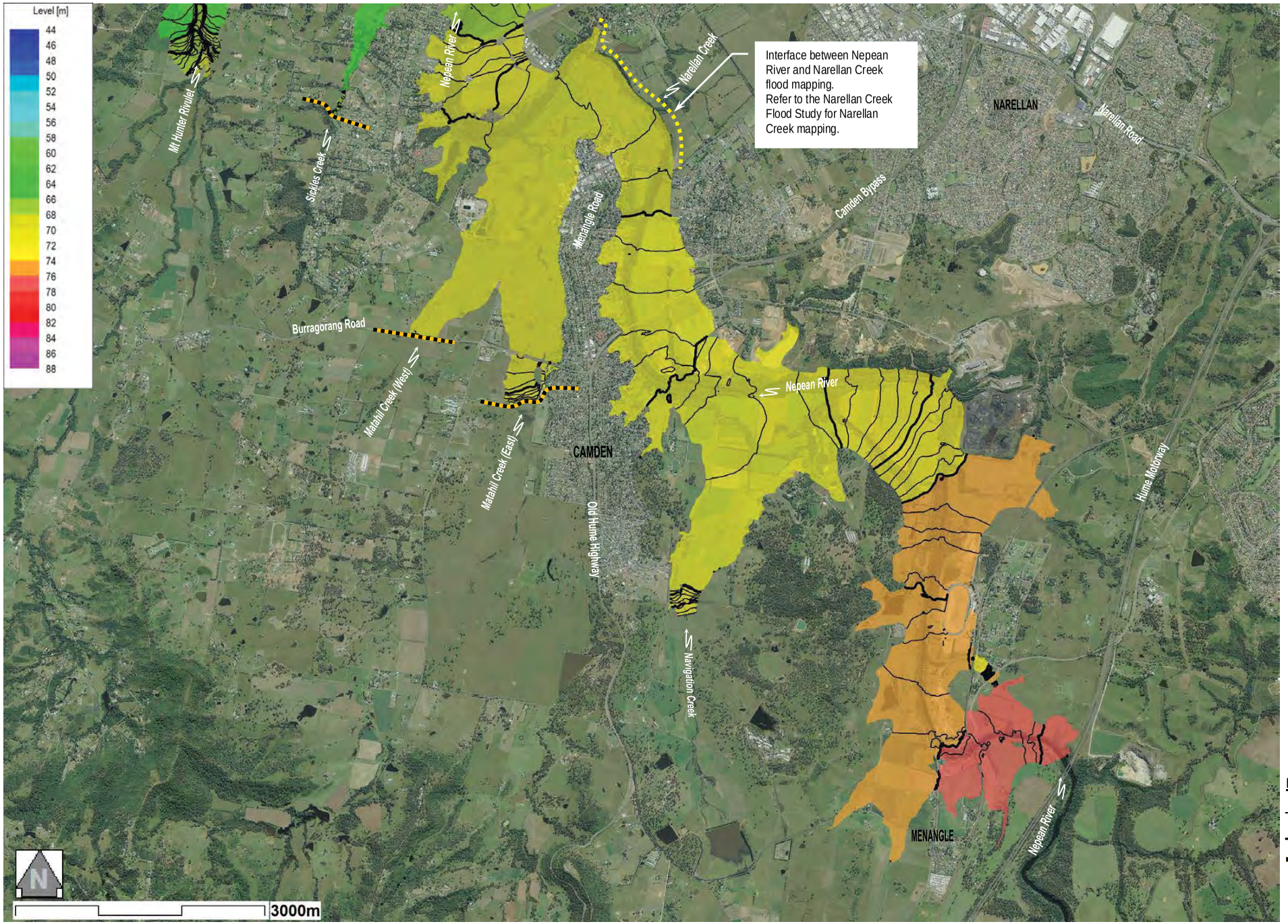
MODELLED FLOOD LEVELS AT THE PEAK OF THE 5% AEP EVENT (NORTH)

FIGURE G.5



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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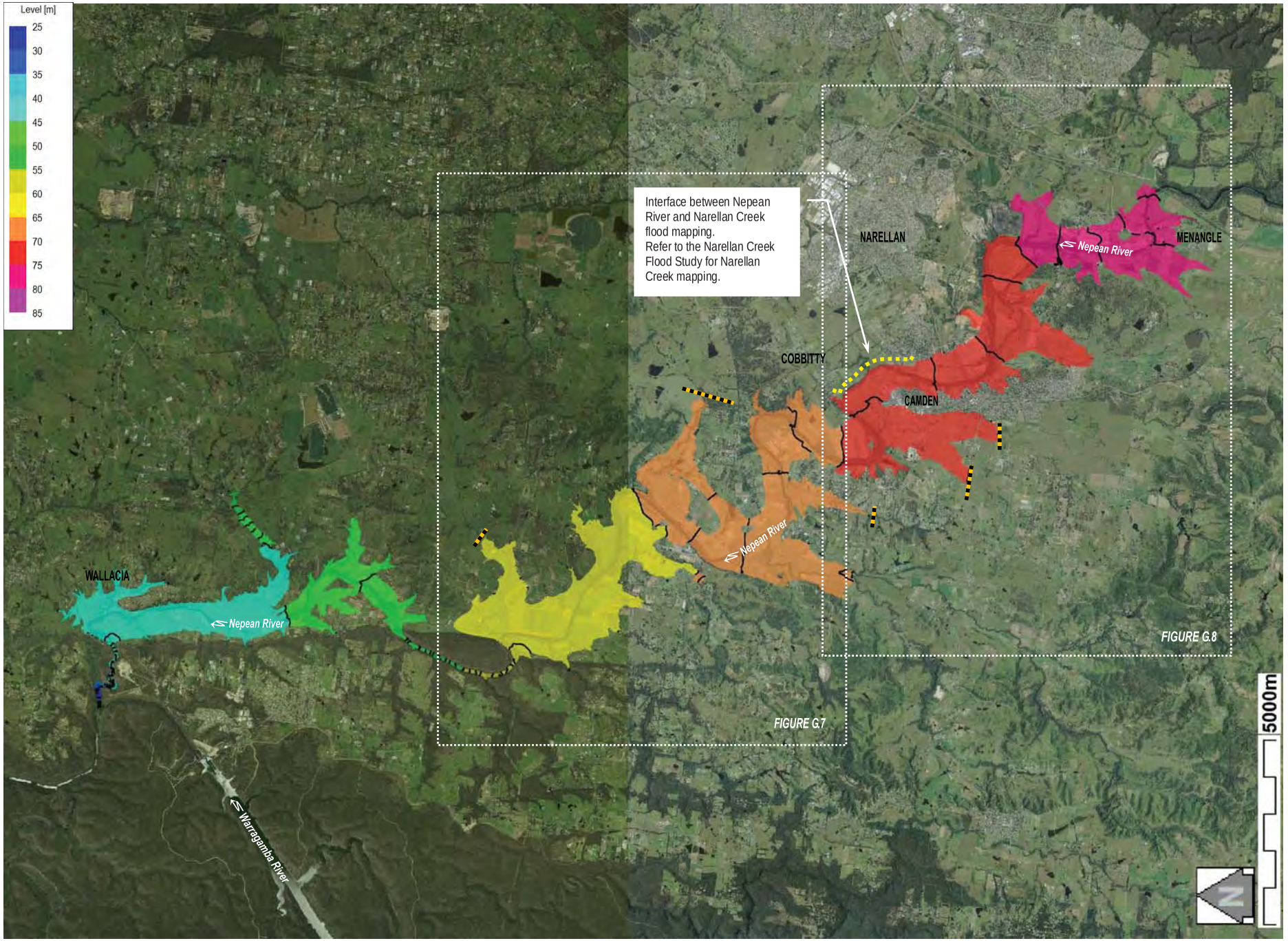
301015-03107 – Nepean River Flood Study (Camden Council)
G.05_fg301015-03107nm_eh140625-Level_020yr_South.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 5% AEP EVENT (SOUTH)

FIGURE G.6



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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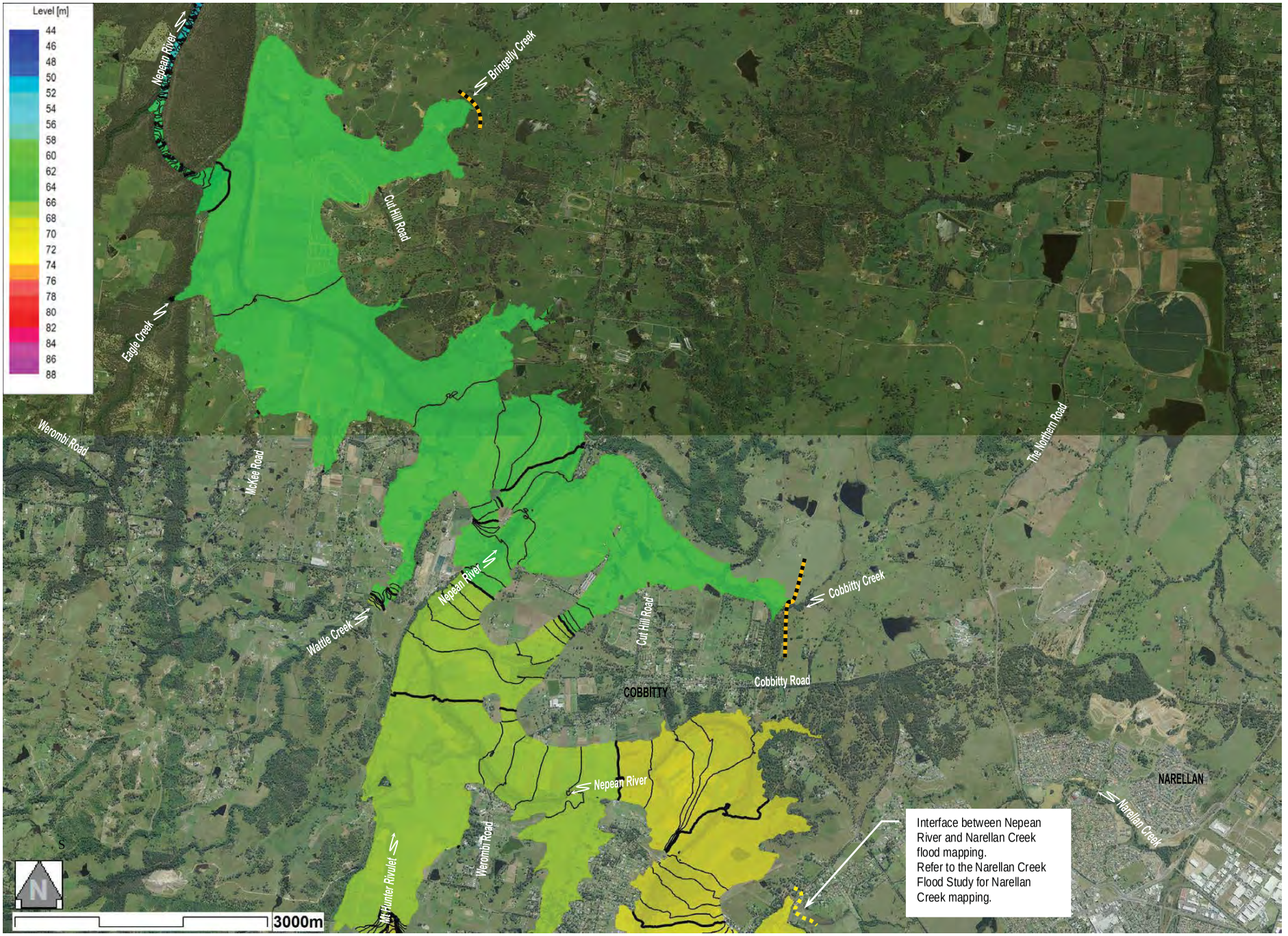
301015-03107 – Nepean River Flood Study
G.06_fg301015-03107eh150325-Level_100yr_ALL.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 1% AEP EVENT

FIGURE G.7



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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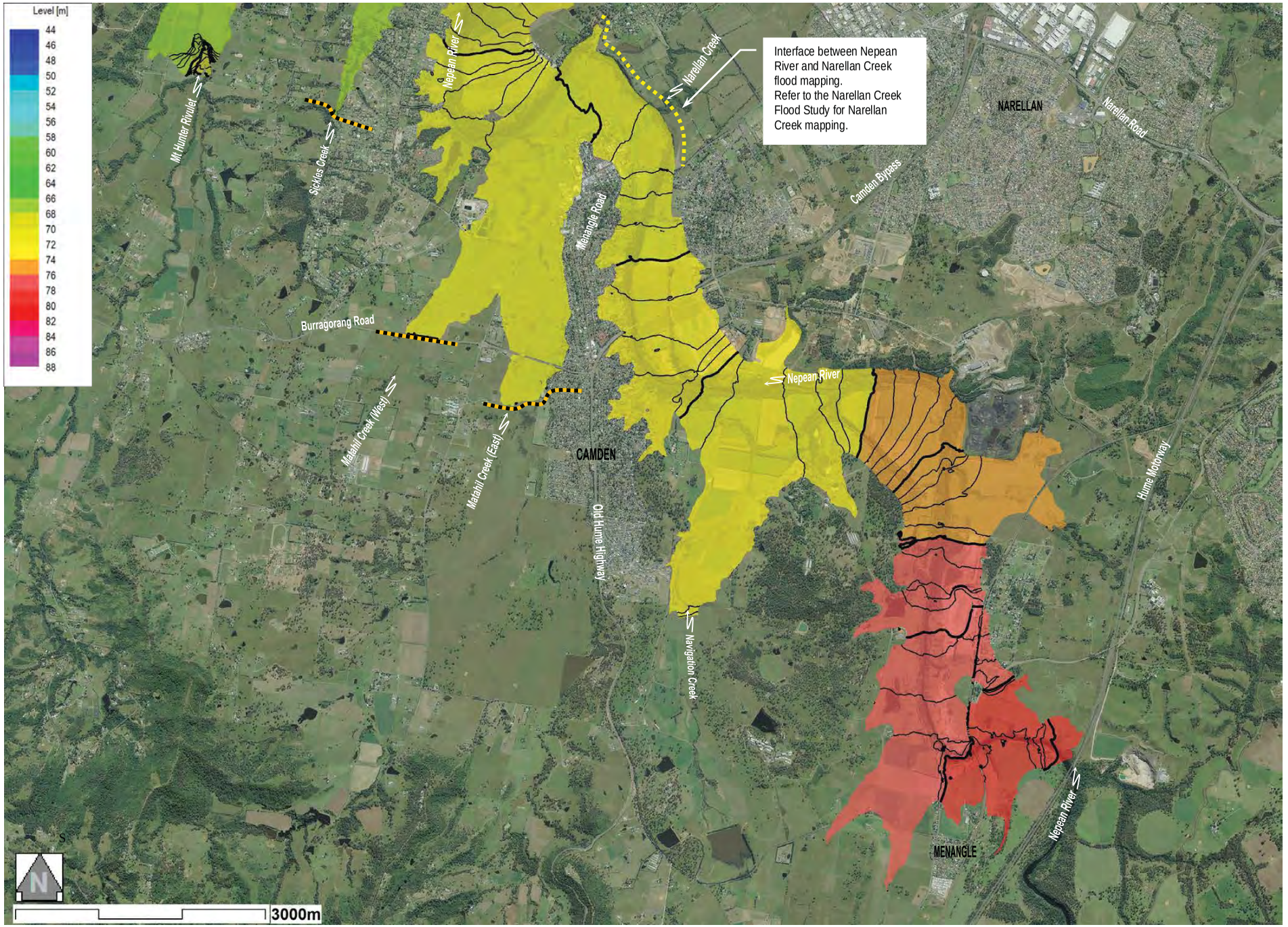
301015-03107 – Nepean River Flood Study (Camden Council)
G.07_fg301015-03107eh150325-Level_100yr_North.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 1% AEP EVENT (NORTH)

FIGURE G.8



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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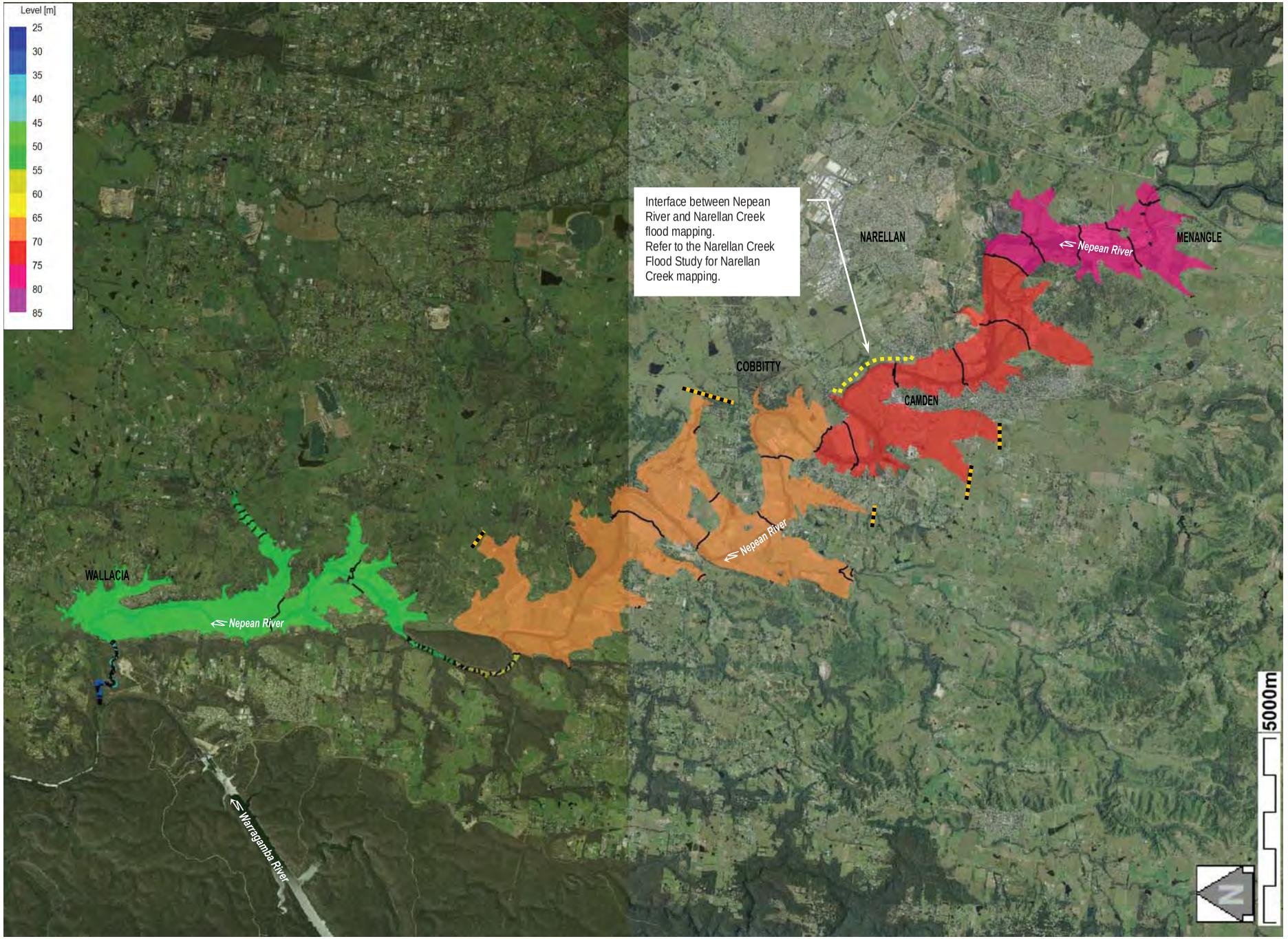
301015-03107 – Nepean River Flood Study (Camden Council)
G.08_fg301015-03107eh150326-Level_100yr_South.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 1% AEP EVENT (SOUTH)

FIGURE G.9



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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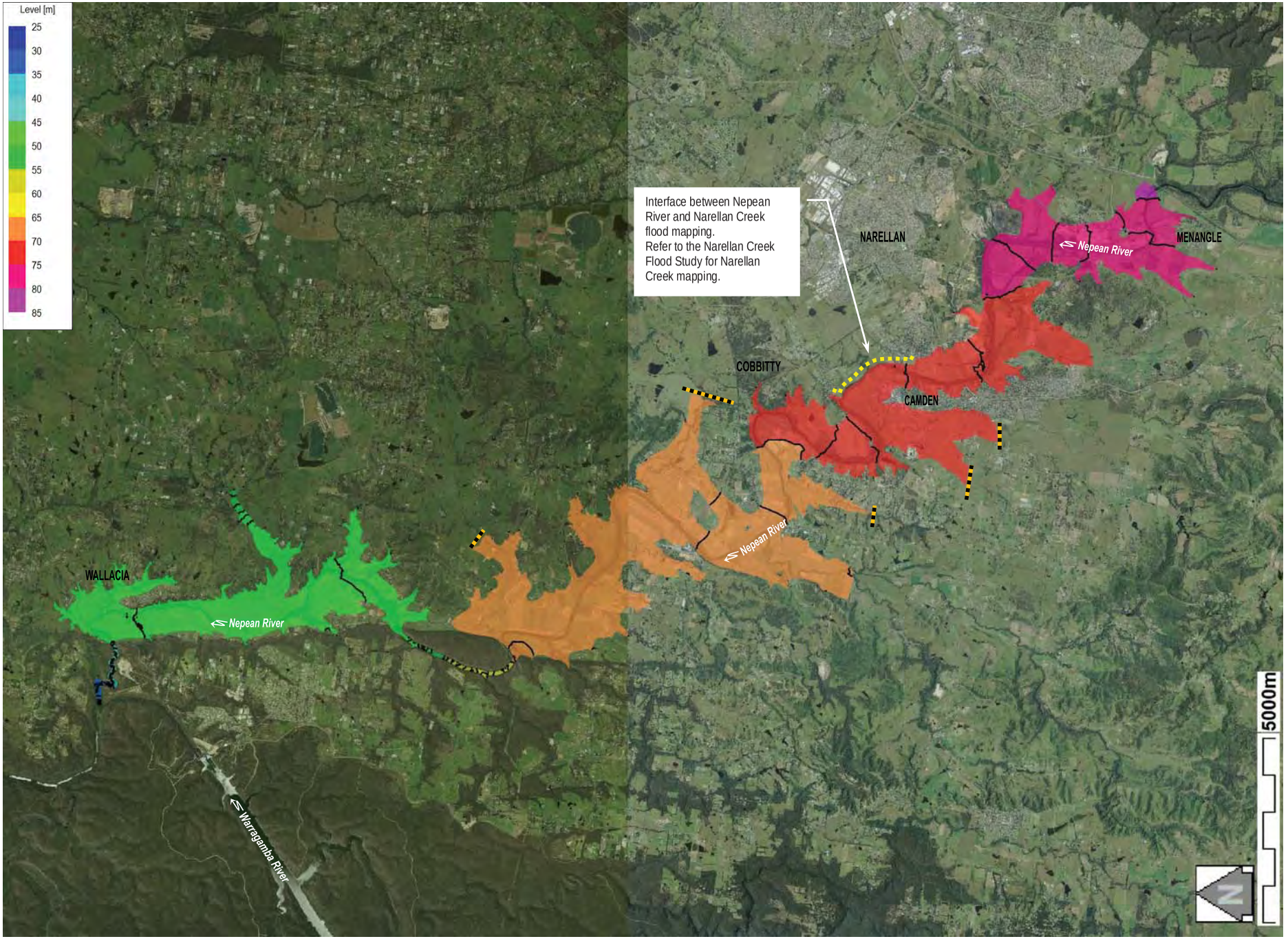
301015-03107 – Nepean River Flood Study
G.09_fg301015-03107eh150325-Level_200yr_ALL.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE 0.5% AEP EVENT

FIGURE G.10



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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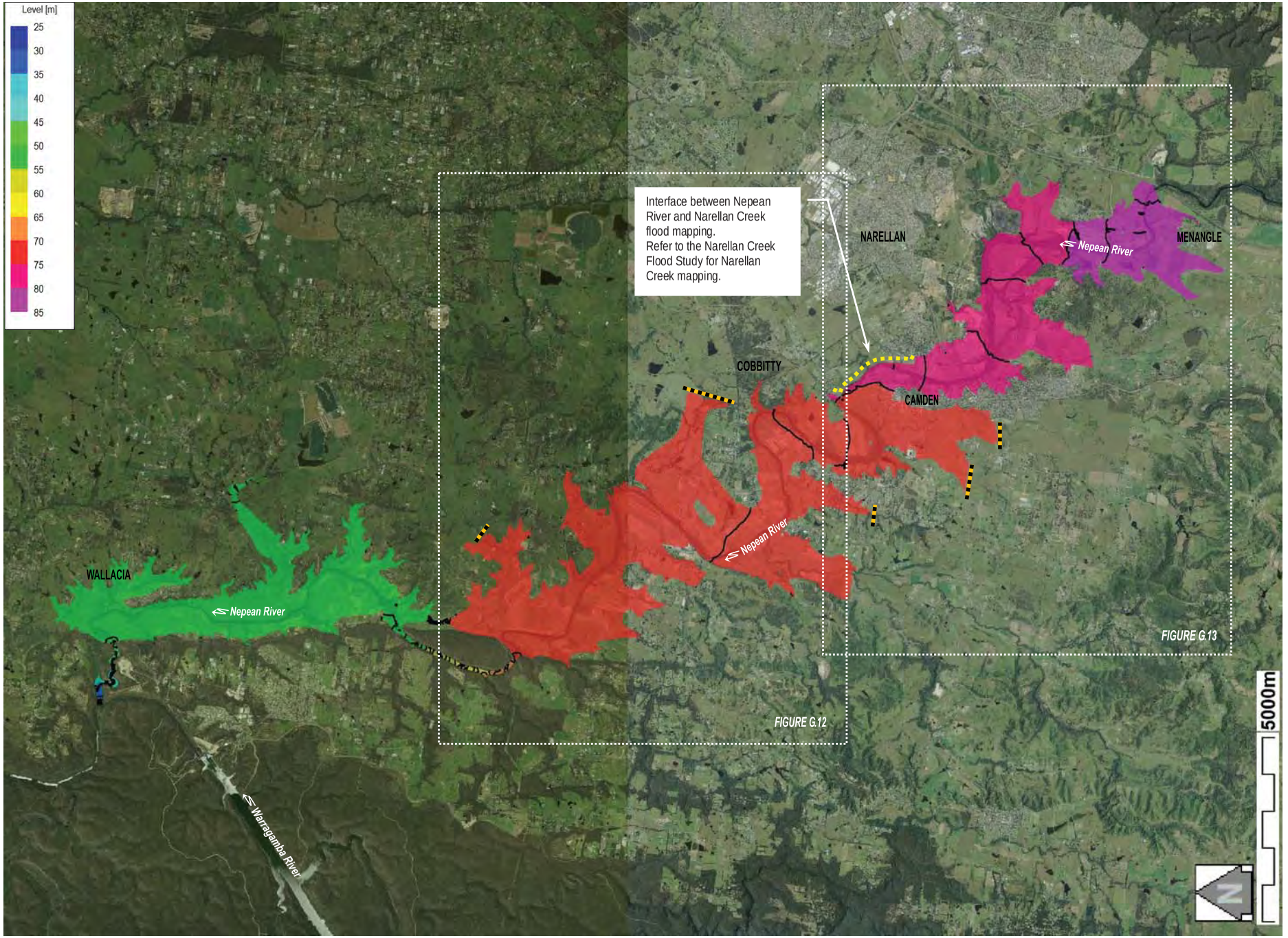
MODELLED FLOOD LEVELS AT THE PEAK OF THE 0.2% AEP EVENT

FIGURE G.11



LEGEND:

- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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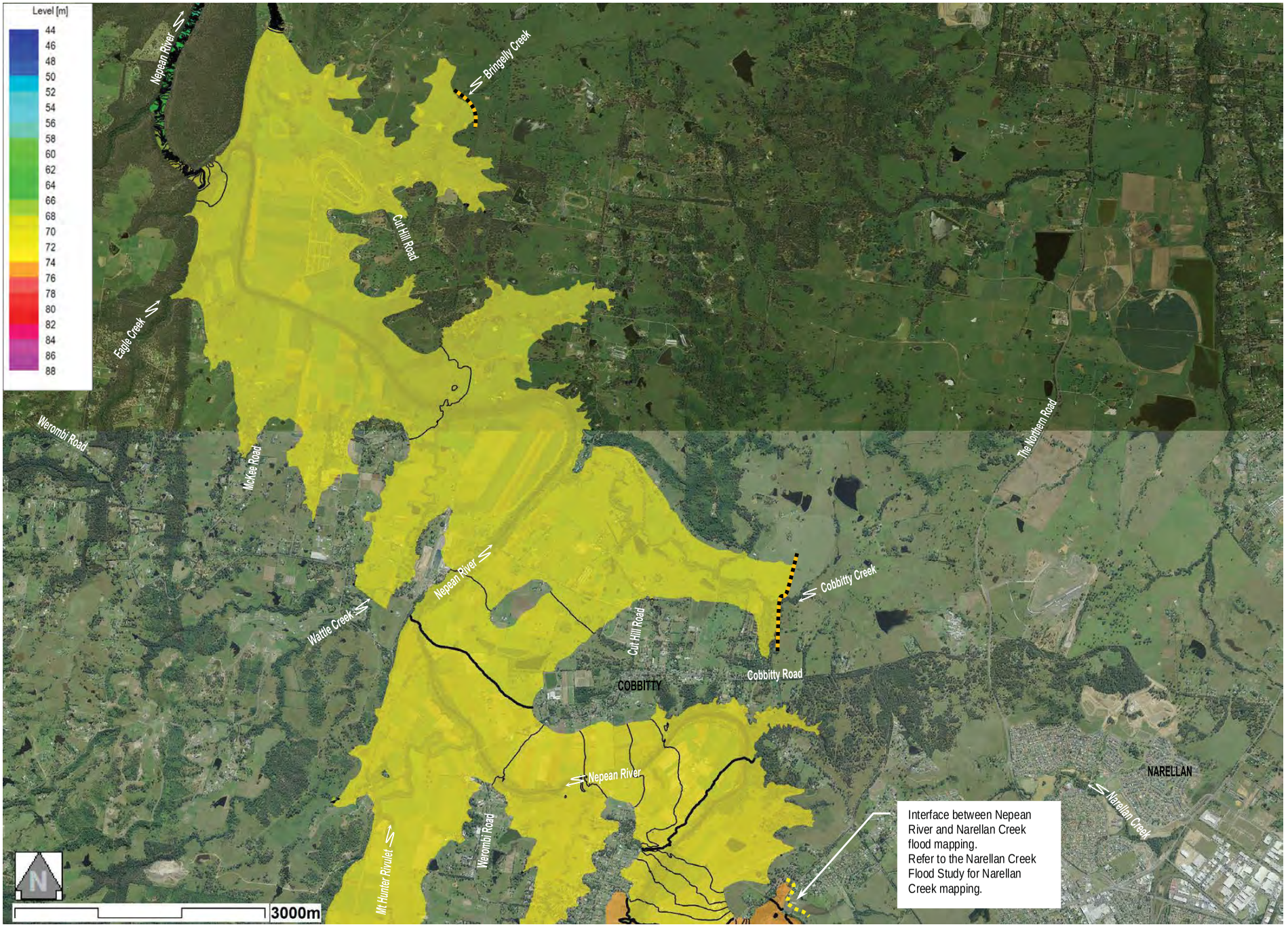
MODELLED FLOOD LEVELS AT THE PEAK OF THE PMF EVENT

FIGURE G.12



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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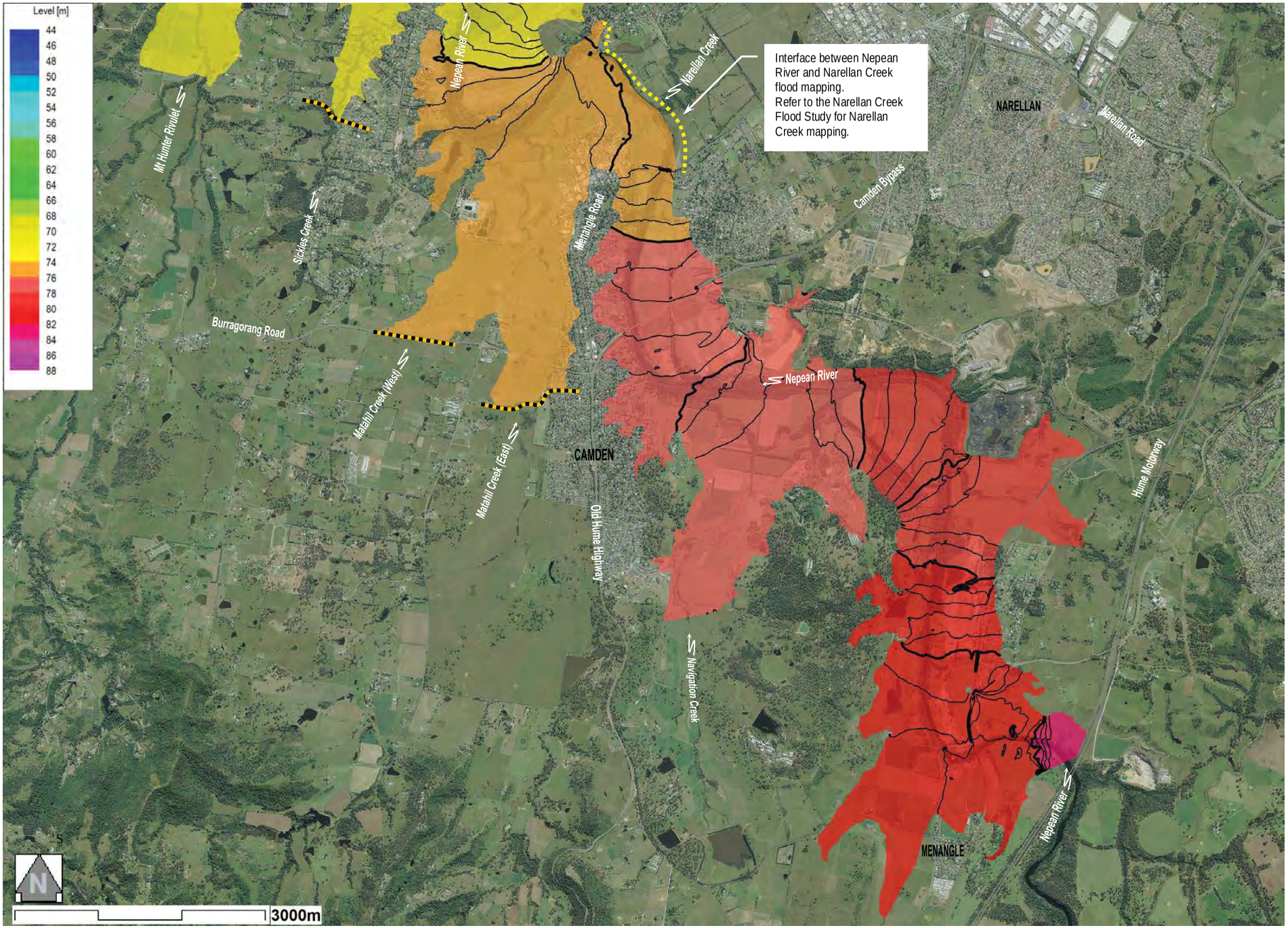
301015-03107 – Nepean River Flood Study (Camden Council)
G.12_fg301015-03107eh150326-Level_PMF_North.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE PMF EVENT (NORTH)

FIGURE G.13



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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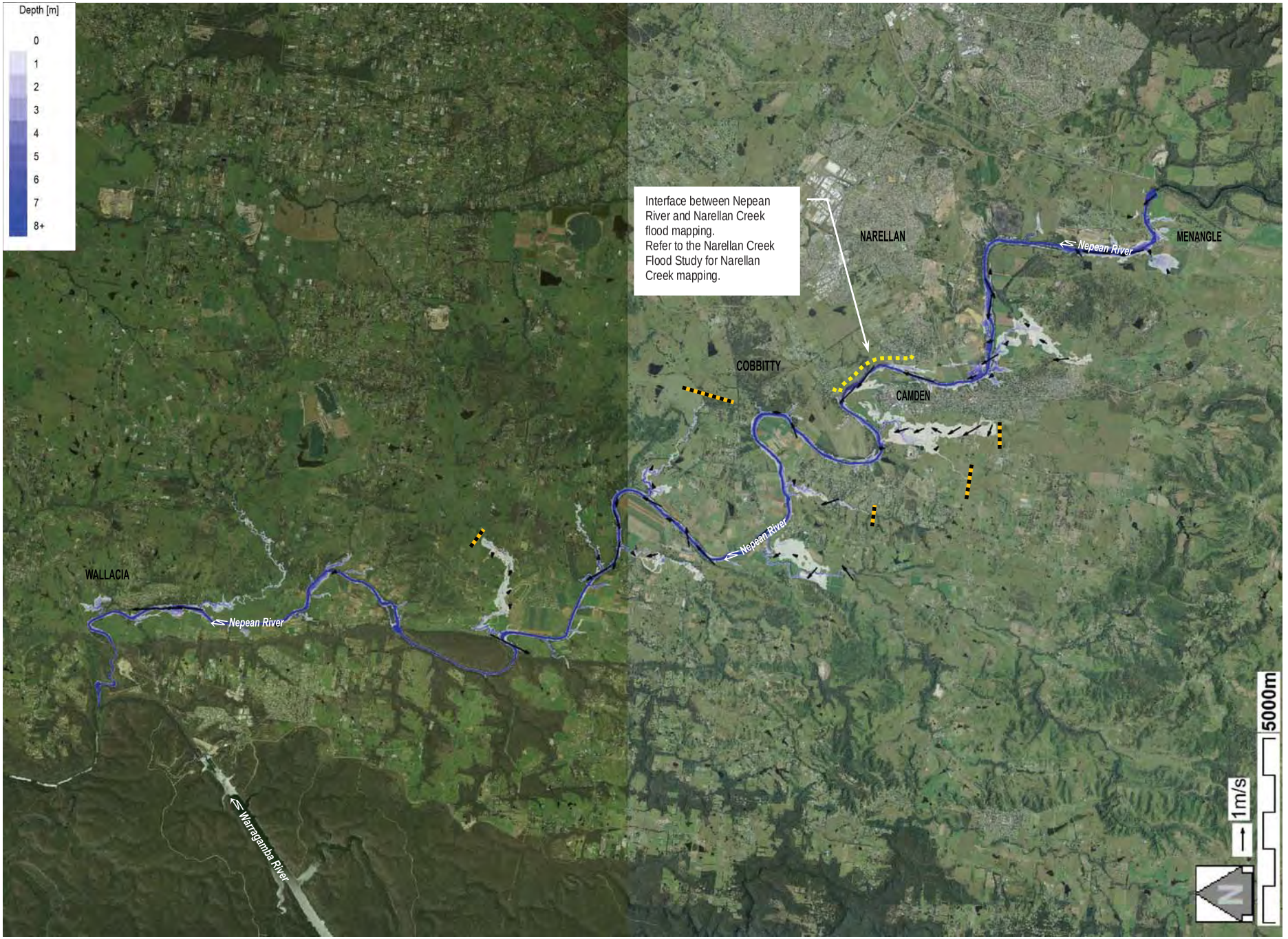
301015-03107 – Nepean River Flood Study (Camden Council)
G.13_fg301015-03107nm_eh140625-Level_PMF_South.doc

MODELLED FLOOD LEVELS AT THE PEAK OF THE PMF EVENT (SOUTH)

APPENDIX H

DEPTH & VELOCITY VECTOR MAPPING

FIGURE H.1



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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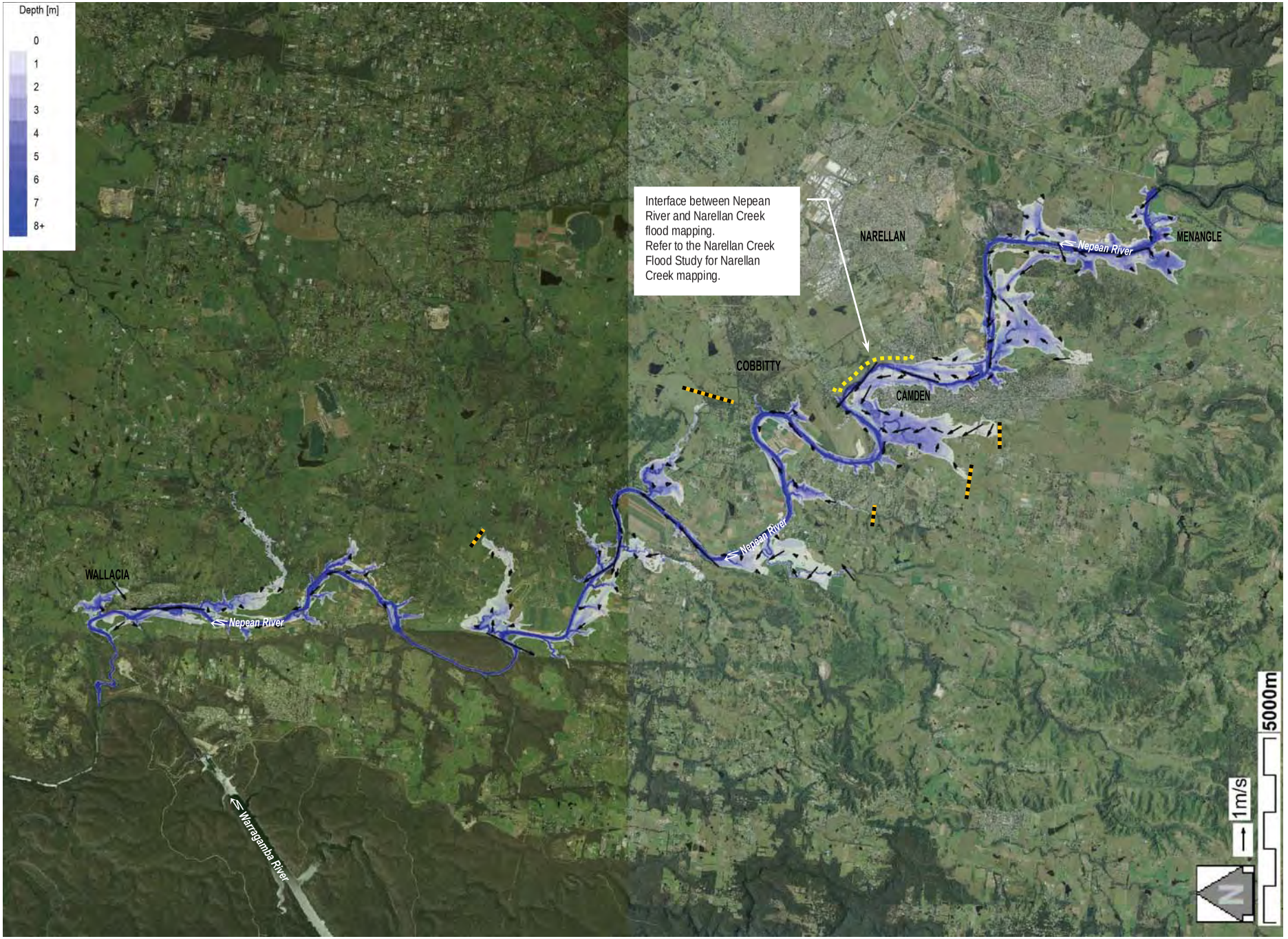
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 50% AEP EVENT

FIGURE H.2



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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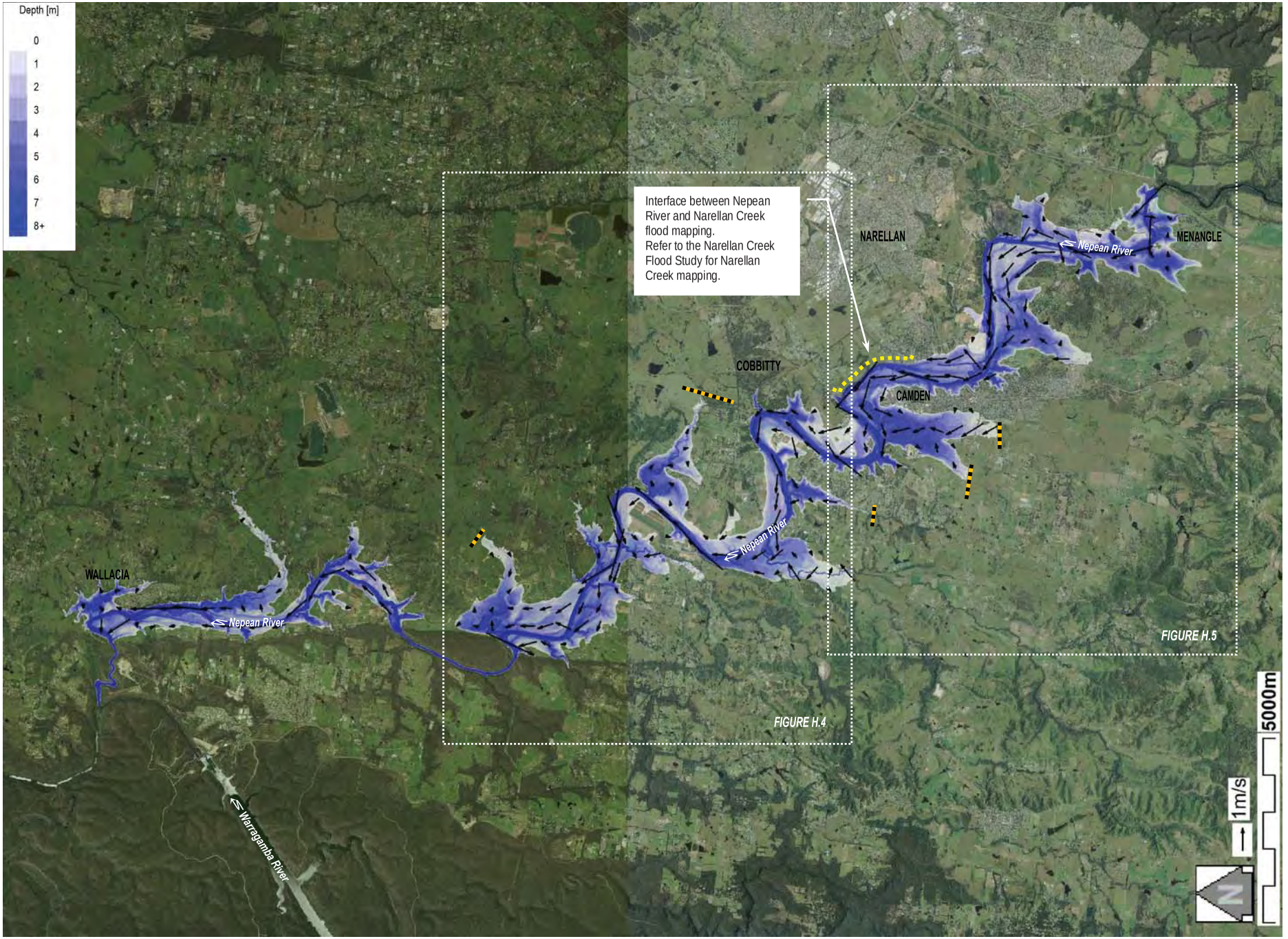
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 20% AEP EVENT

FIGURE H.3



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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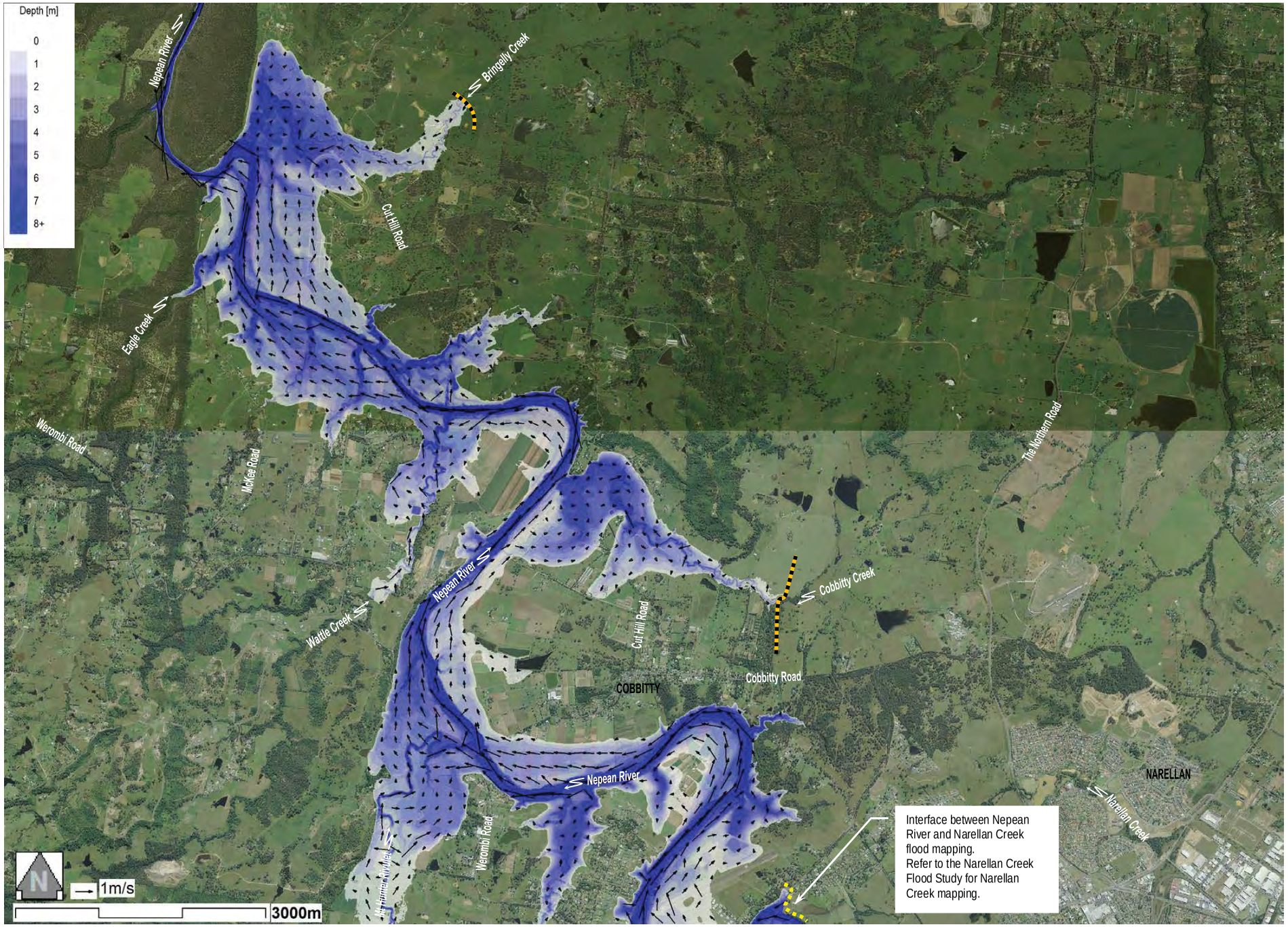
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 5% AEP EVENT

FIGURE H.4



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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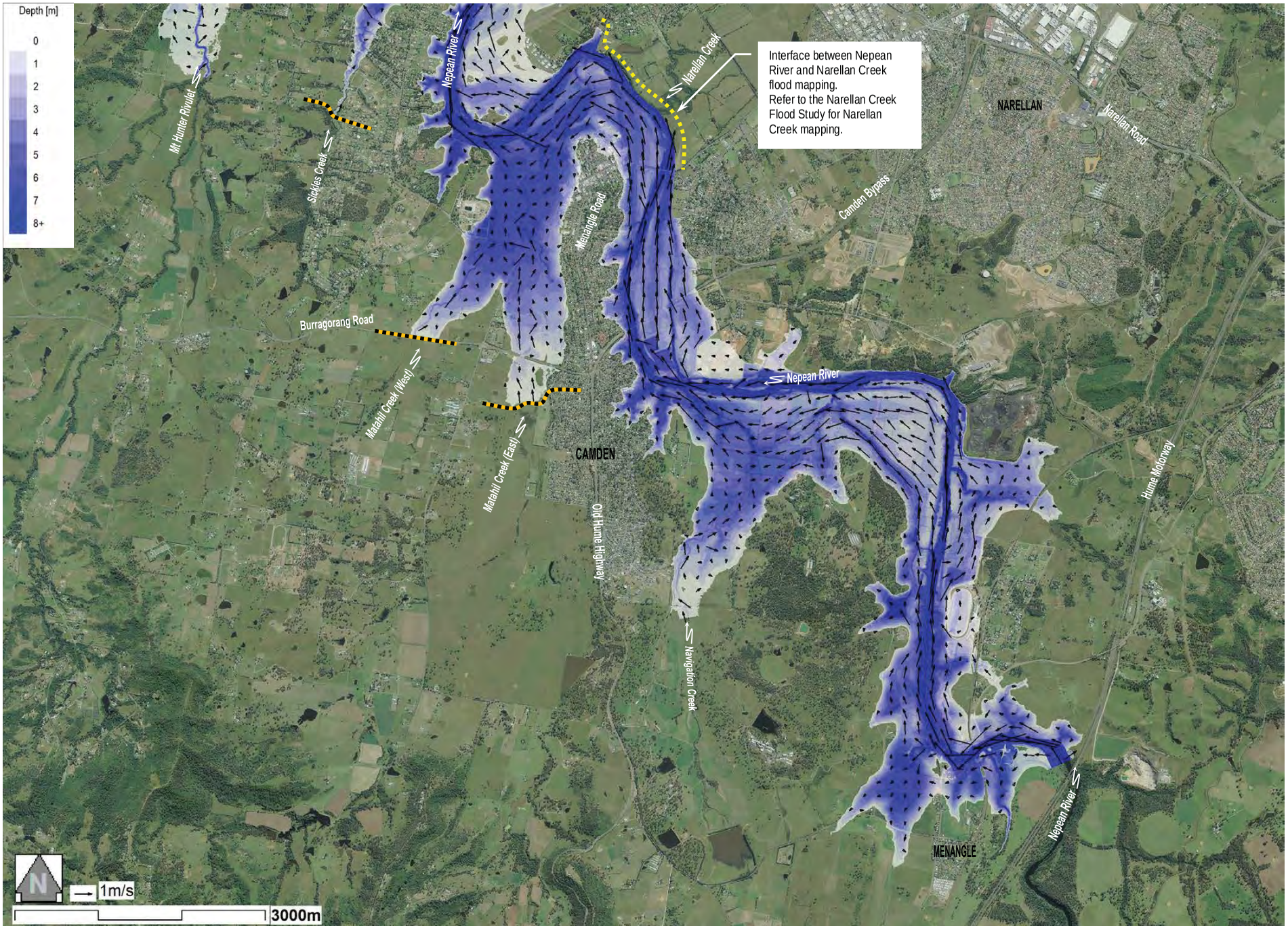
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 5% AEP EVENT (NORTH)

FIGURE H.5



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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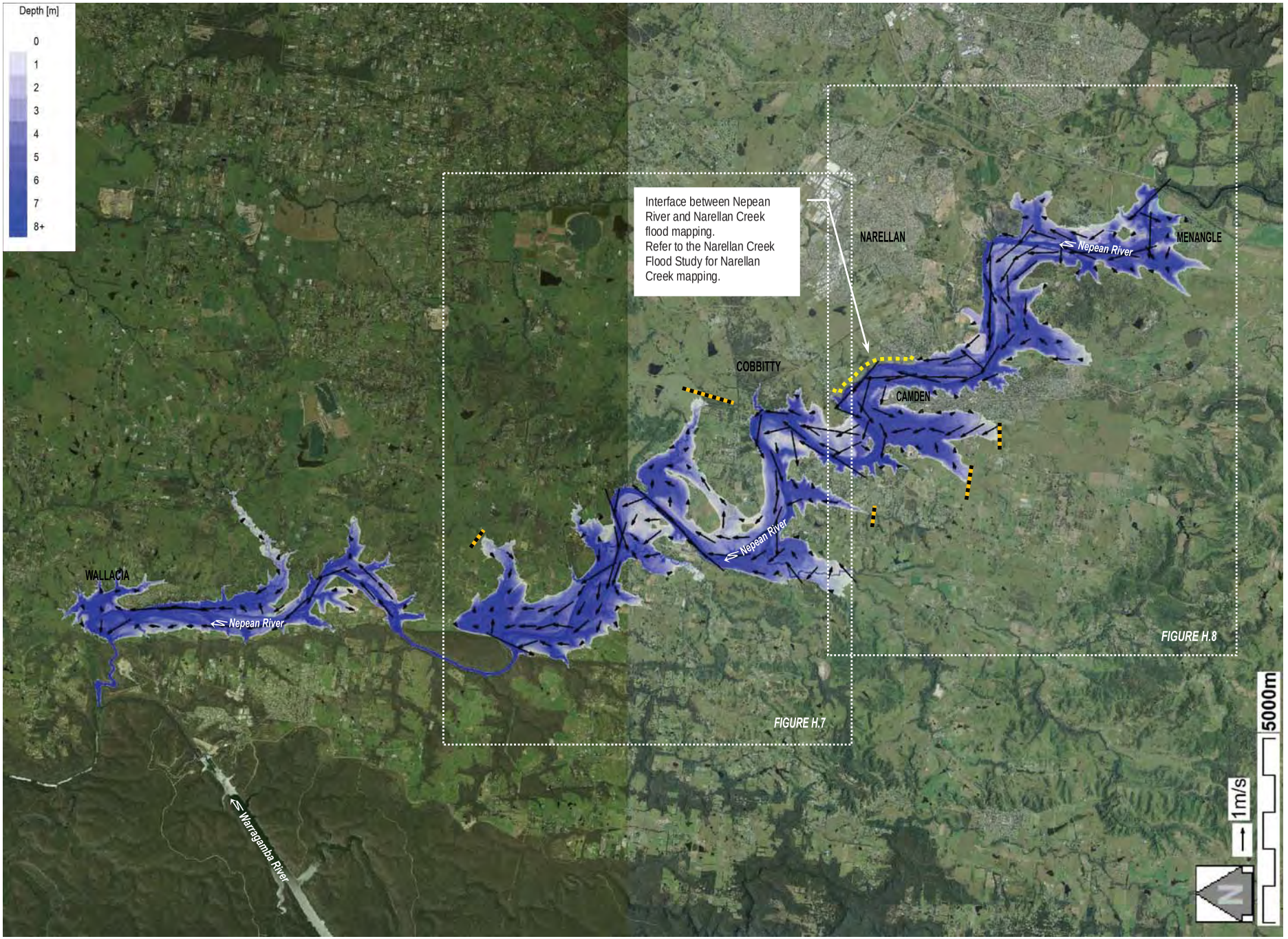
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 5% AEP EVENT (SOUTH)

FIGURE H.6



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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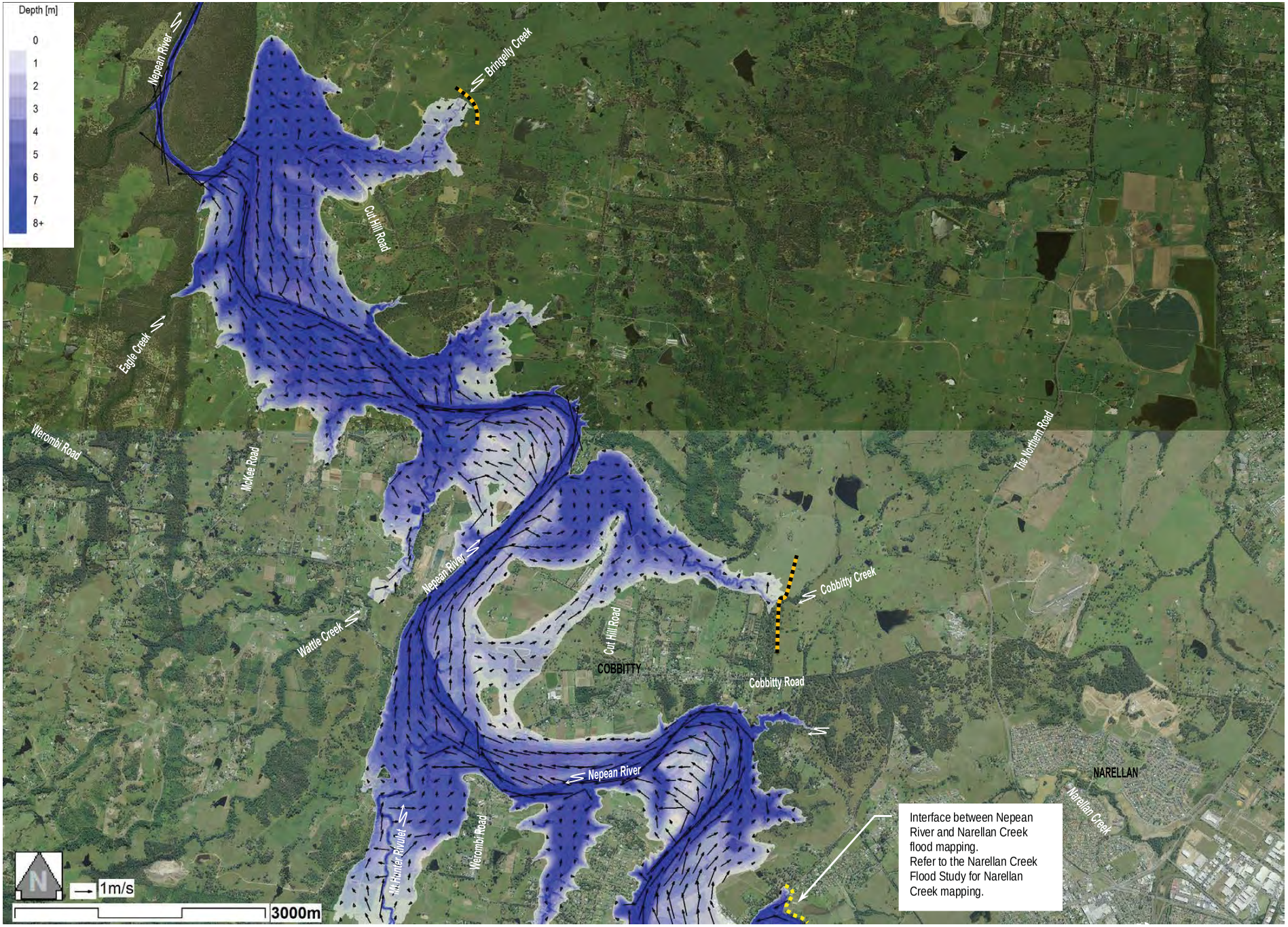
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 1% AEP EVENT

FIGURE H.7



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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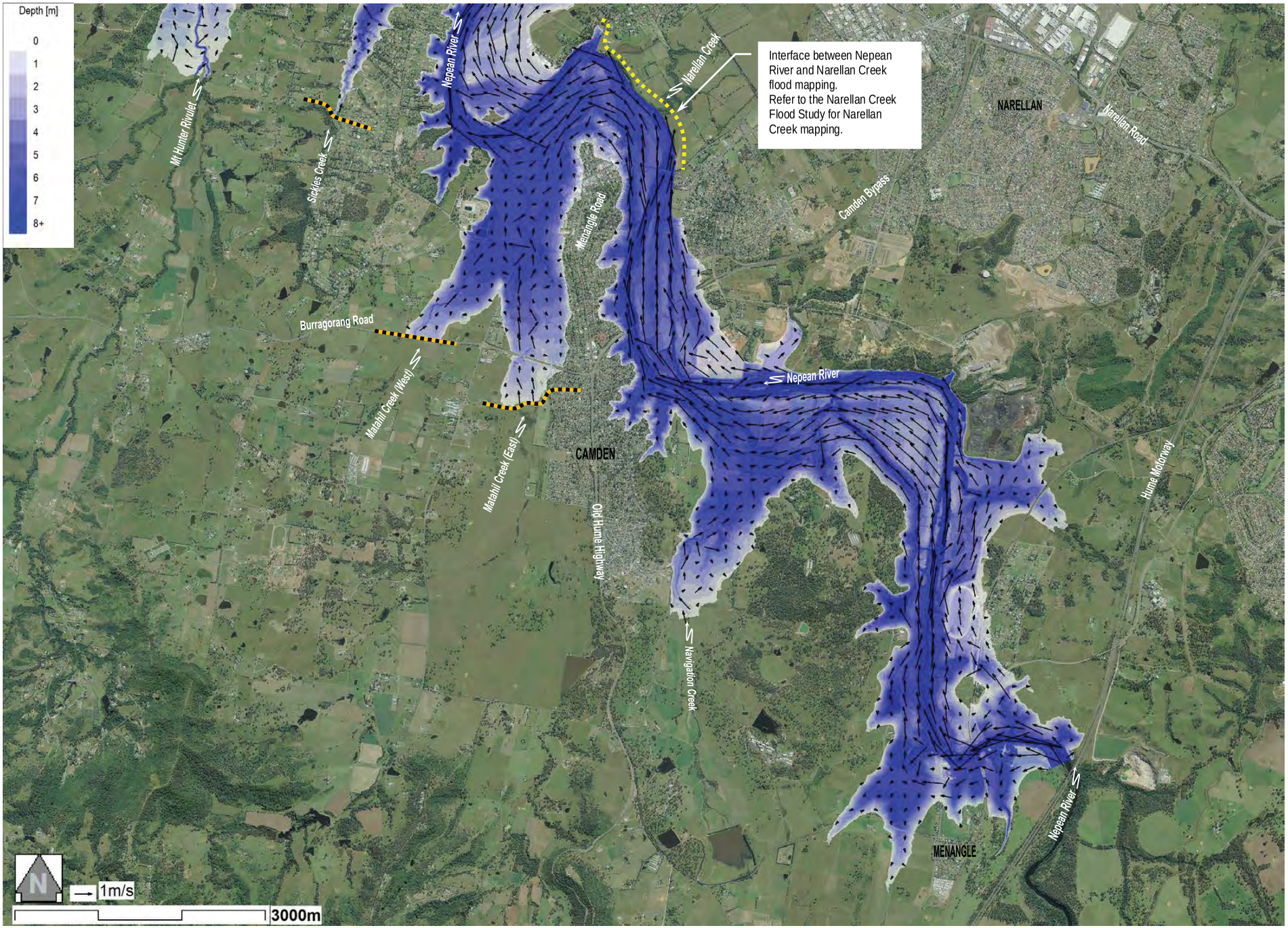
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 1% AEP EVENT (NORTH)

FIGURE H.8



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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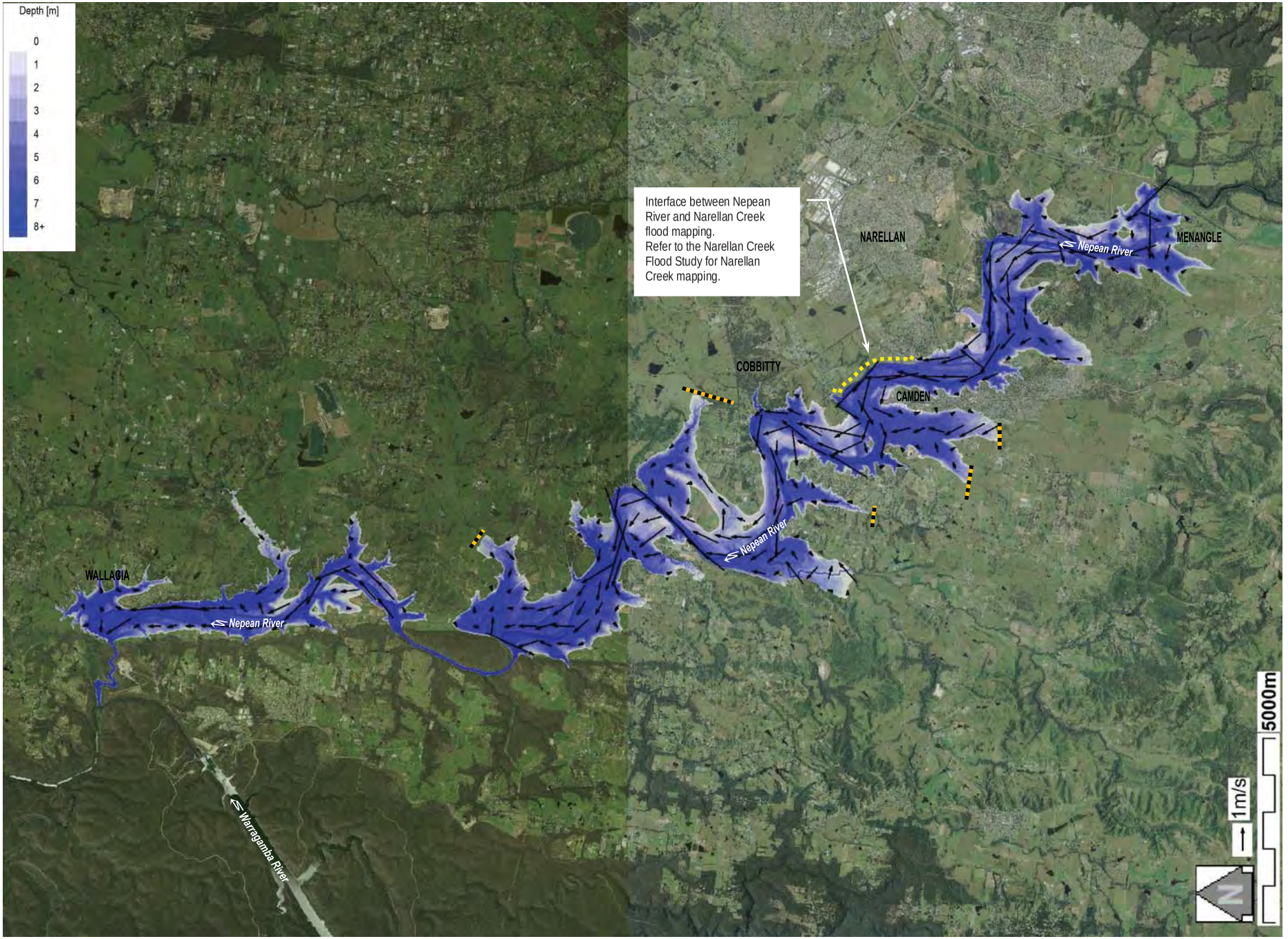
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 1% AEP EVENT (SOUTH)

FIGURE H.9



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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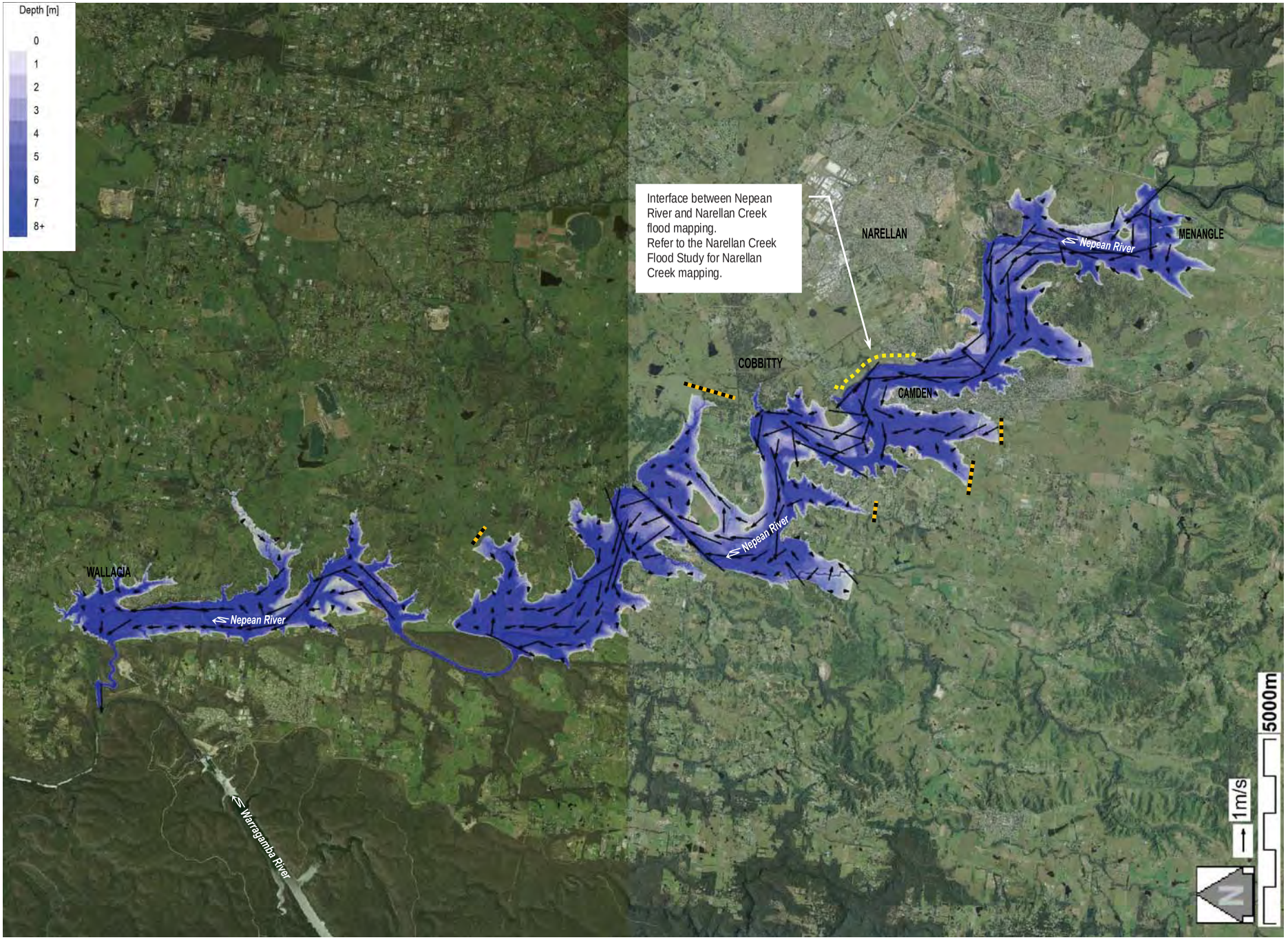
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 0.5% AEP EVENT

FIGURE H.10



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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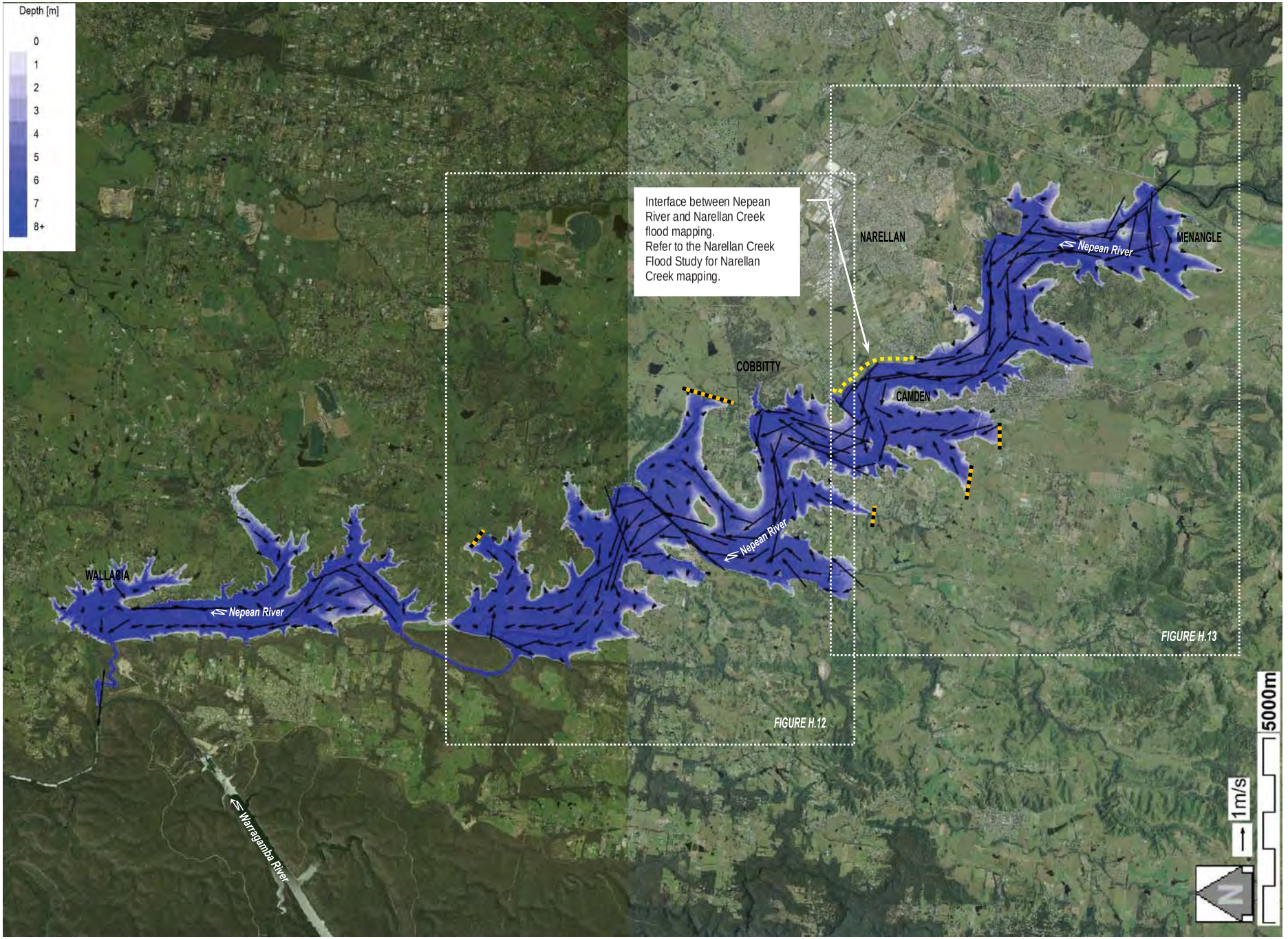
MODELLED FLOOD DEPTHS AT THE PEAK OF THE 0.2% AEP EVENT

FIGURE H.11



NOTES:

- Flood depths greater than 8 meters shown as darkest blue
- For flood mapping for Narellan Creek refer to the Narellan Creek Flood Study.

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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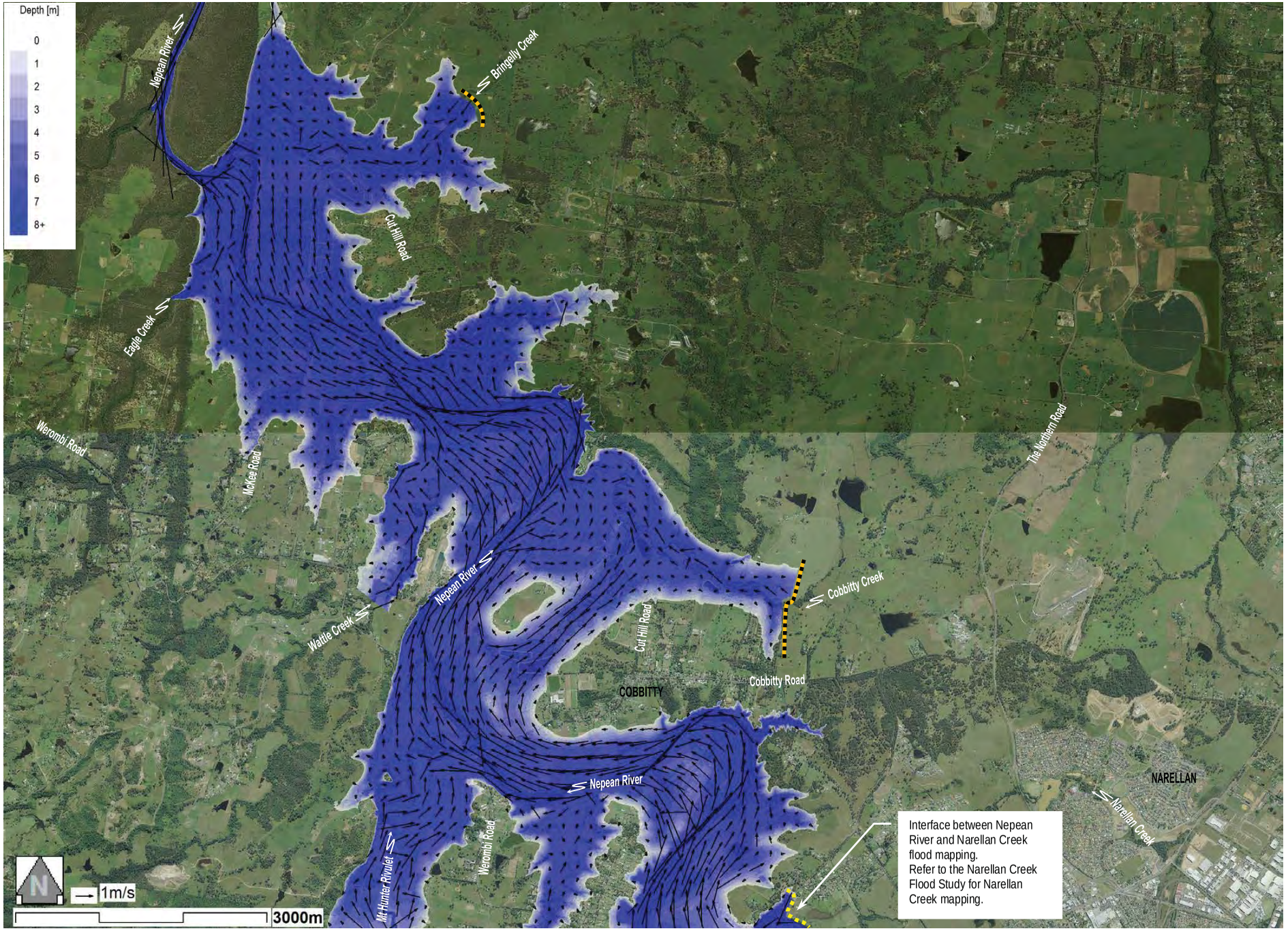
MODELLED FLOOD DEPTHS AT THE PEAK OF THE PMF EVENT

FIGURE H.12



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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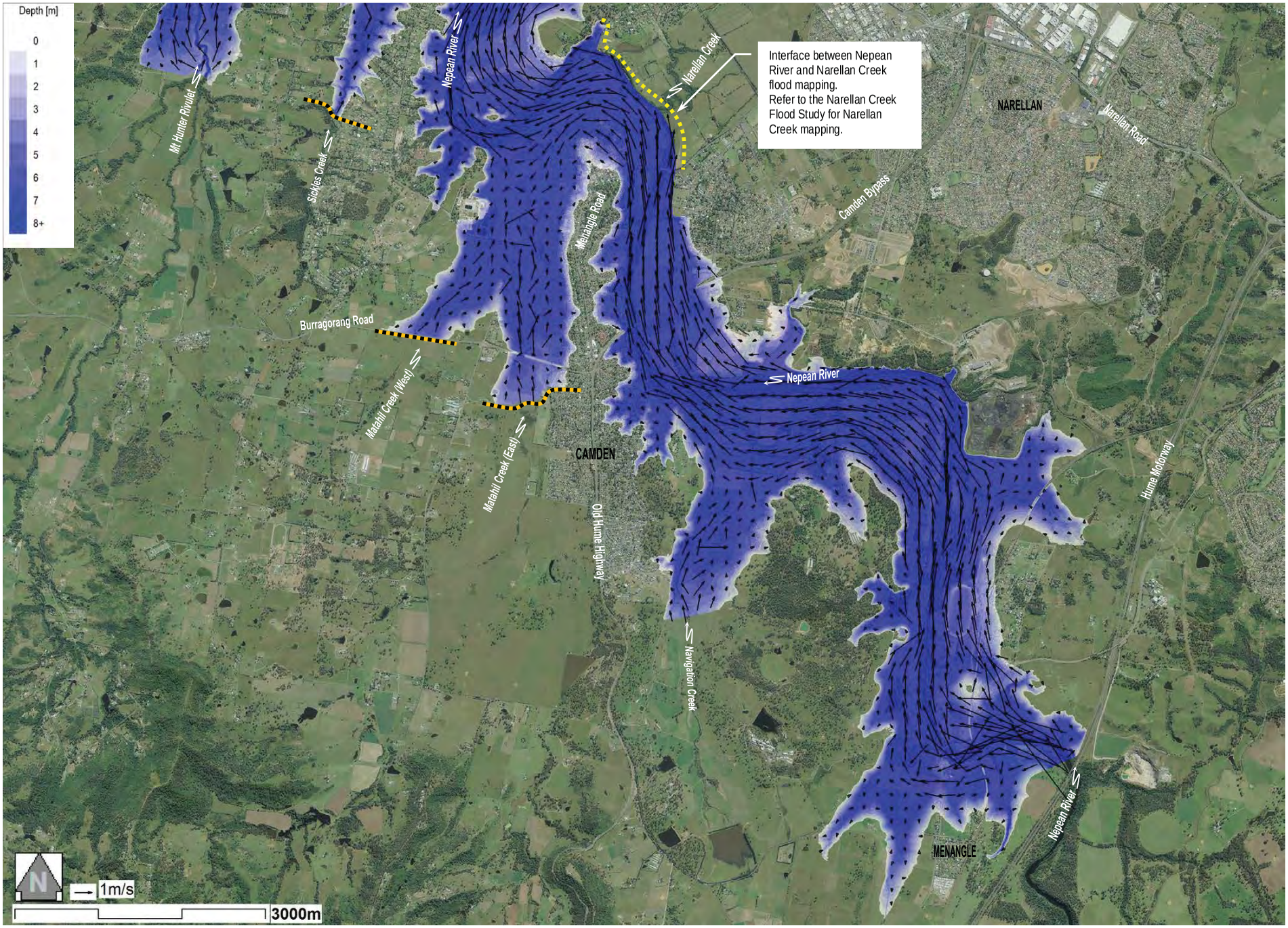
MODELLED FLOOD DEPTHS AT THE PEAK OF THE PMF EVENT (NORTH)

FIGURE H.13



NOTES:

- Flood depths greater than 8 meters shown as darkest blue

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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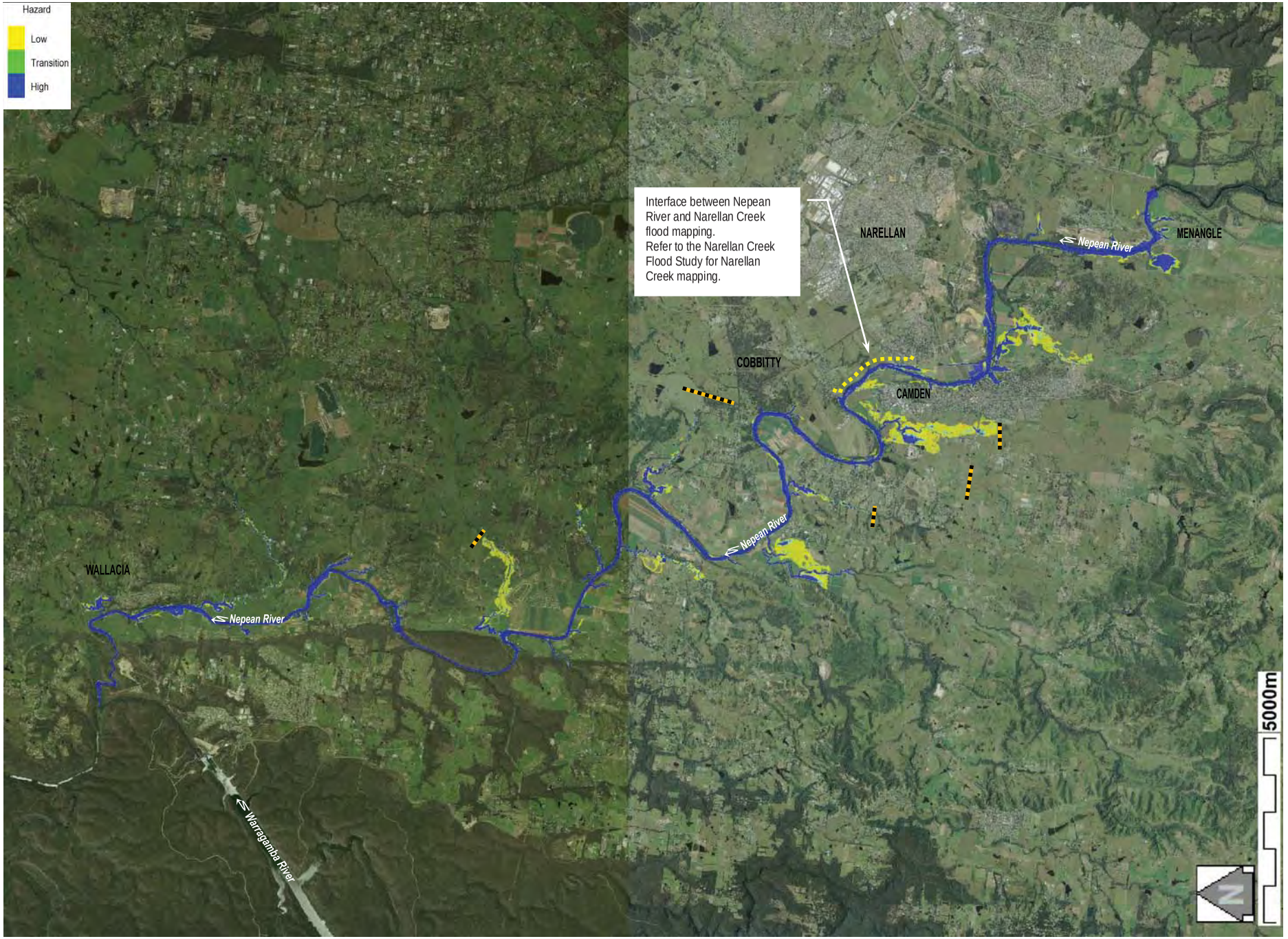
MODELLED FLOOD DEPTHS AT THE PEAK OF THE PMF EVENT (SOUTH)

APPENDIX I

PROVISIONAL FLOOD HAZARD MAPPING

FIGURE I.1



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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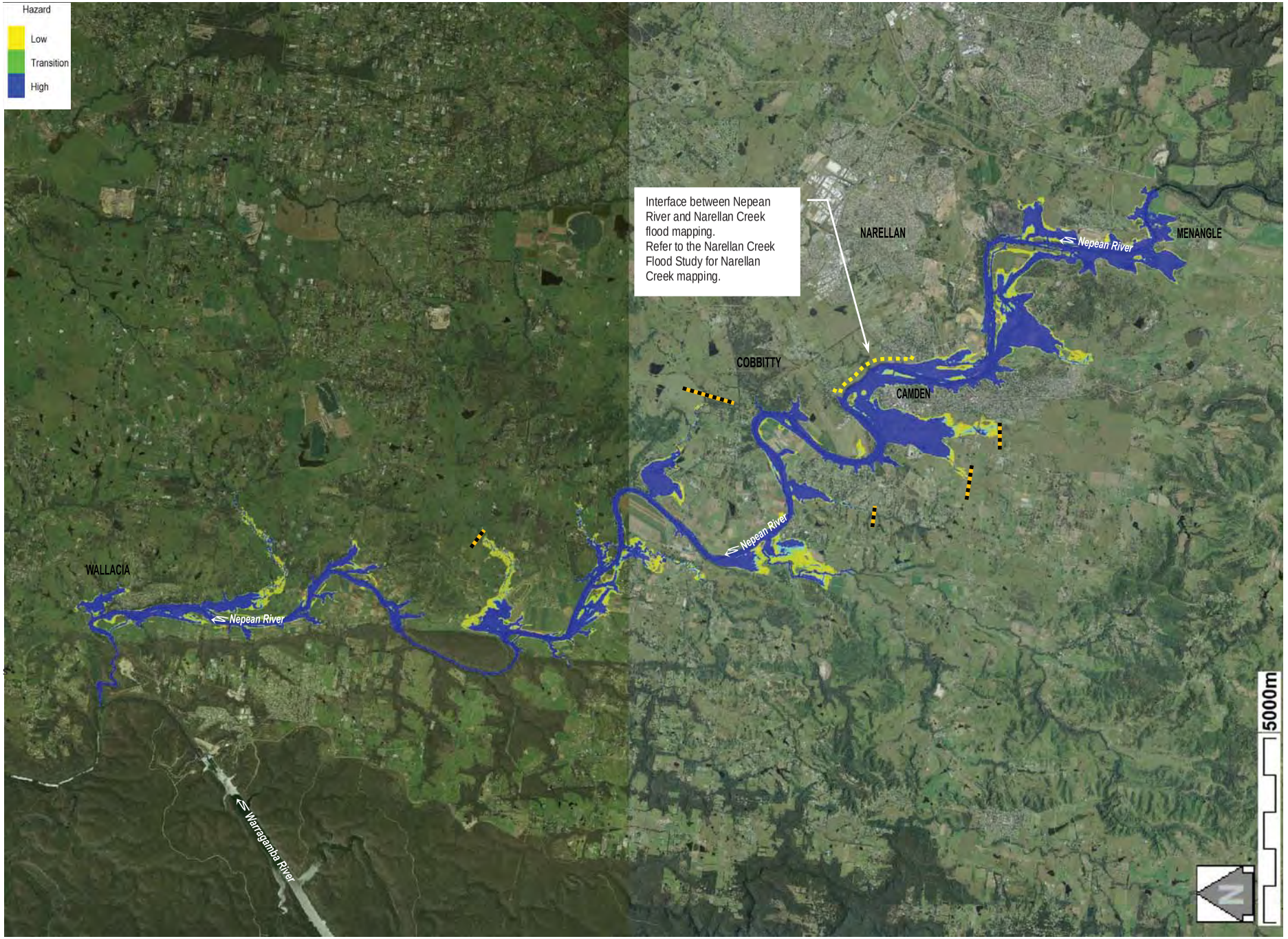
PROVISIONAL FLOOD HAZARD MAPPING FOR THE 50% AEP EVENT

FIGURE I.2



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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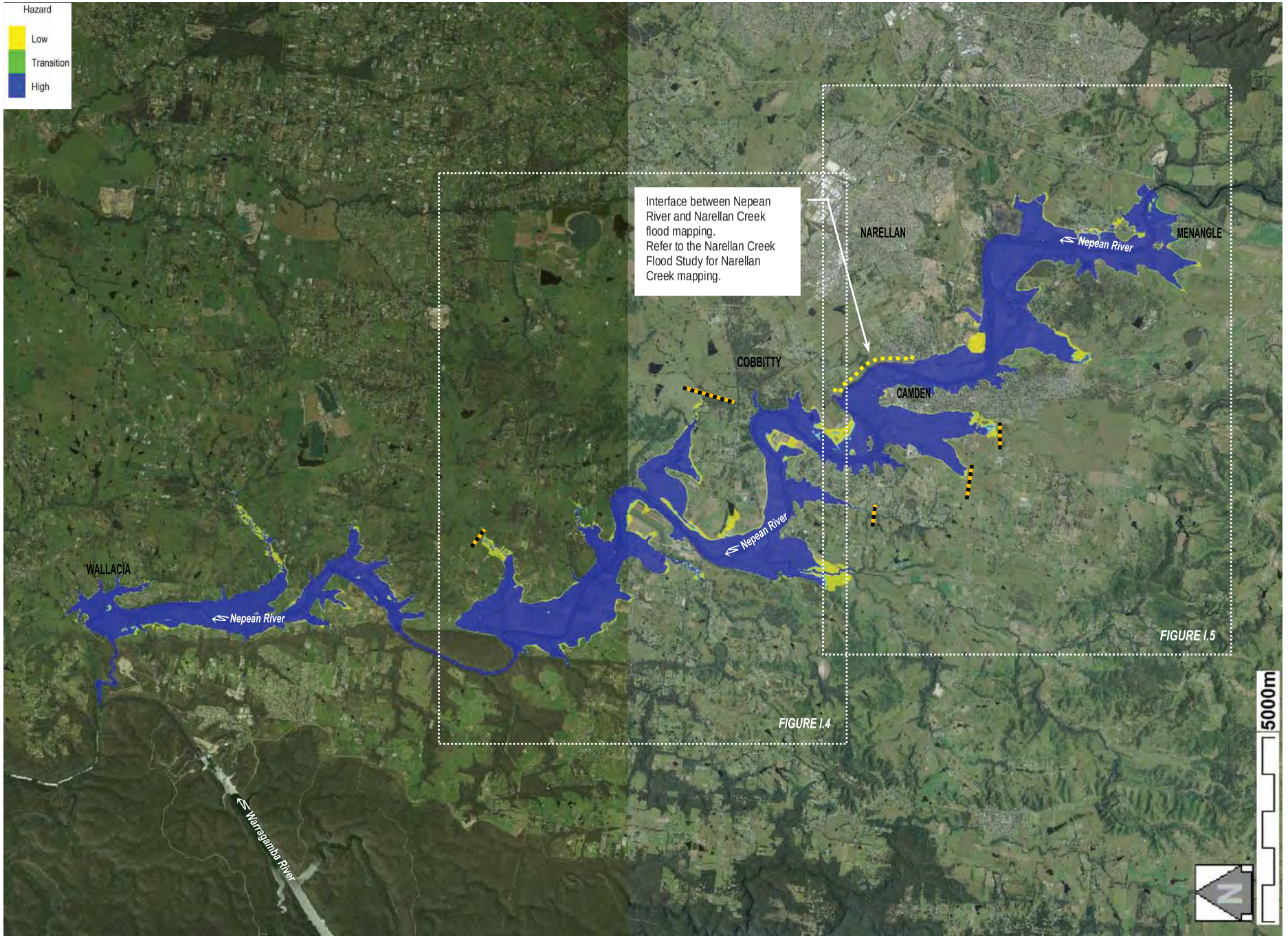
PROVISIONAL FLOOD HAZARD MAPPING FOR THE 20% AEP EVENT

FIGURE I.3



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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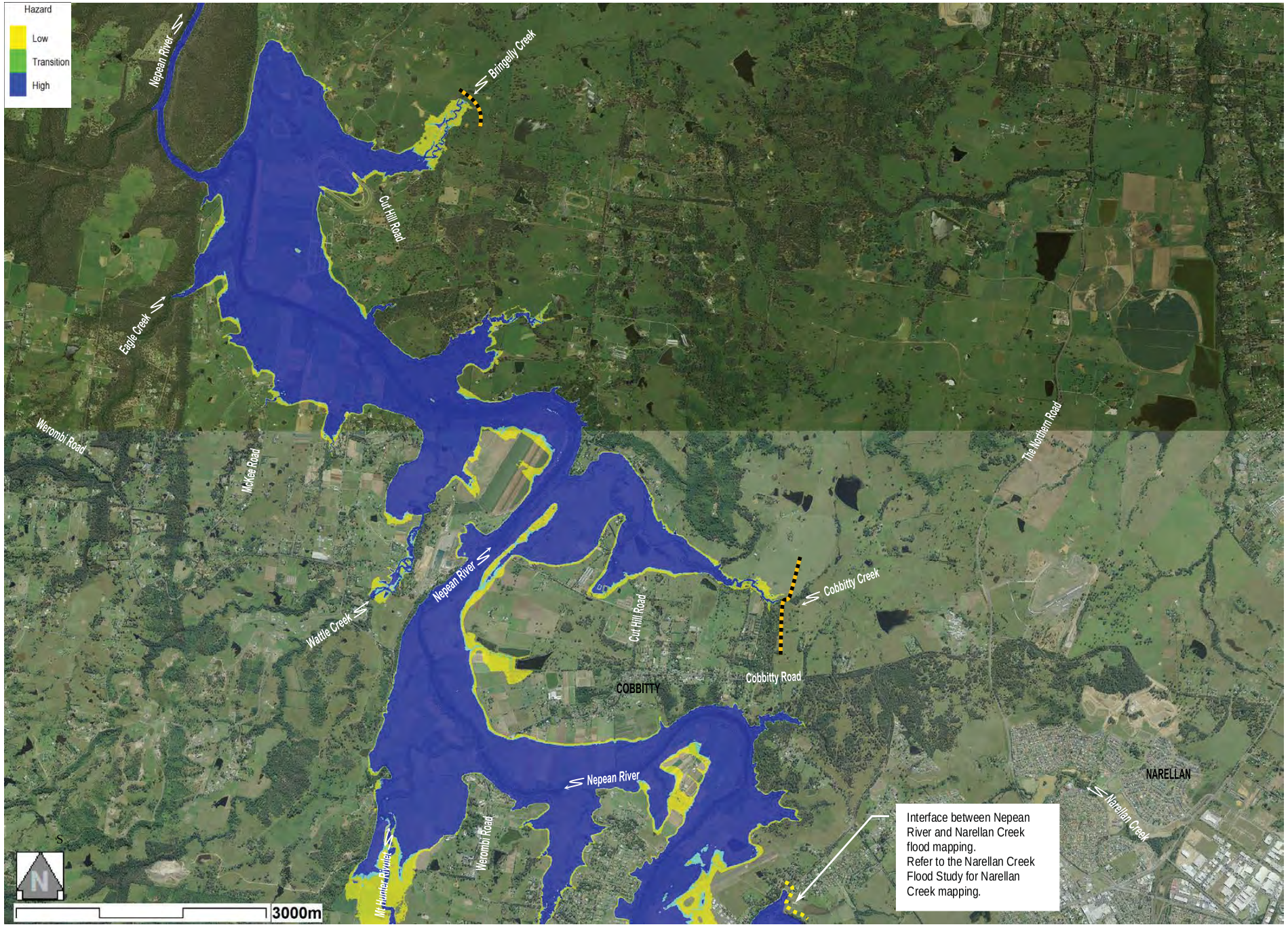
PROVISIONAL FLOOD HAZARD MAPPING FOR THE 5% AEP EVENT

FIGURE I.4



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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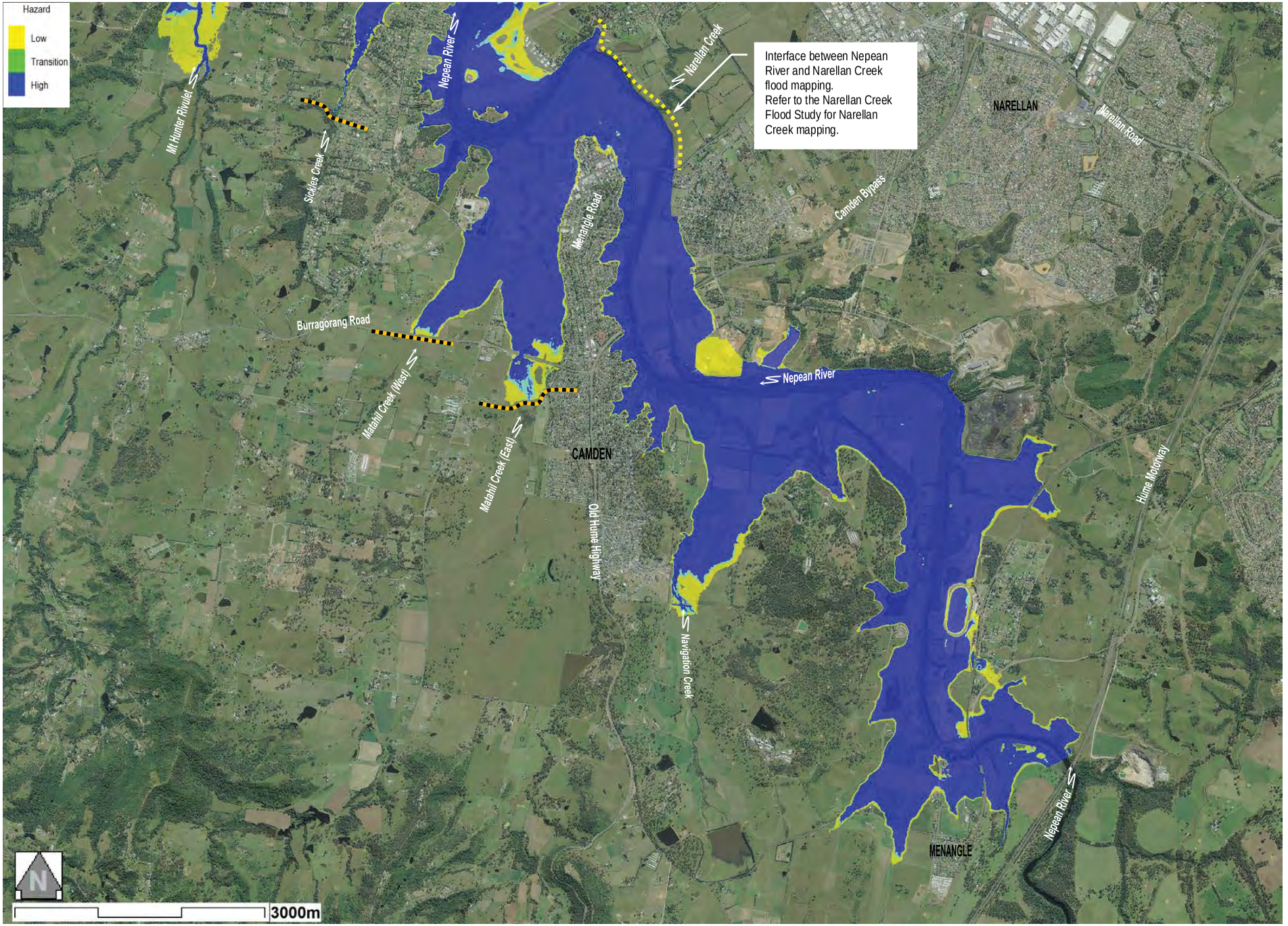
301015-03107 – Nepean River Flood Study (Camden Council)
I.04_fg301015-03107eh150326-Hazard_020yr_North.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE 5% AEP EVENT (NORTH)

FIGURE I.5



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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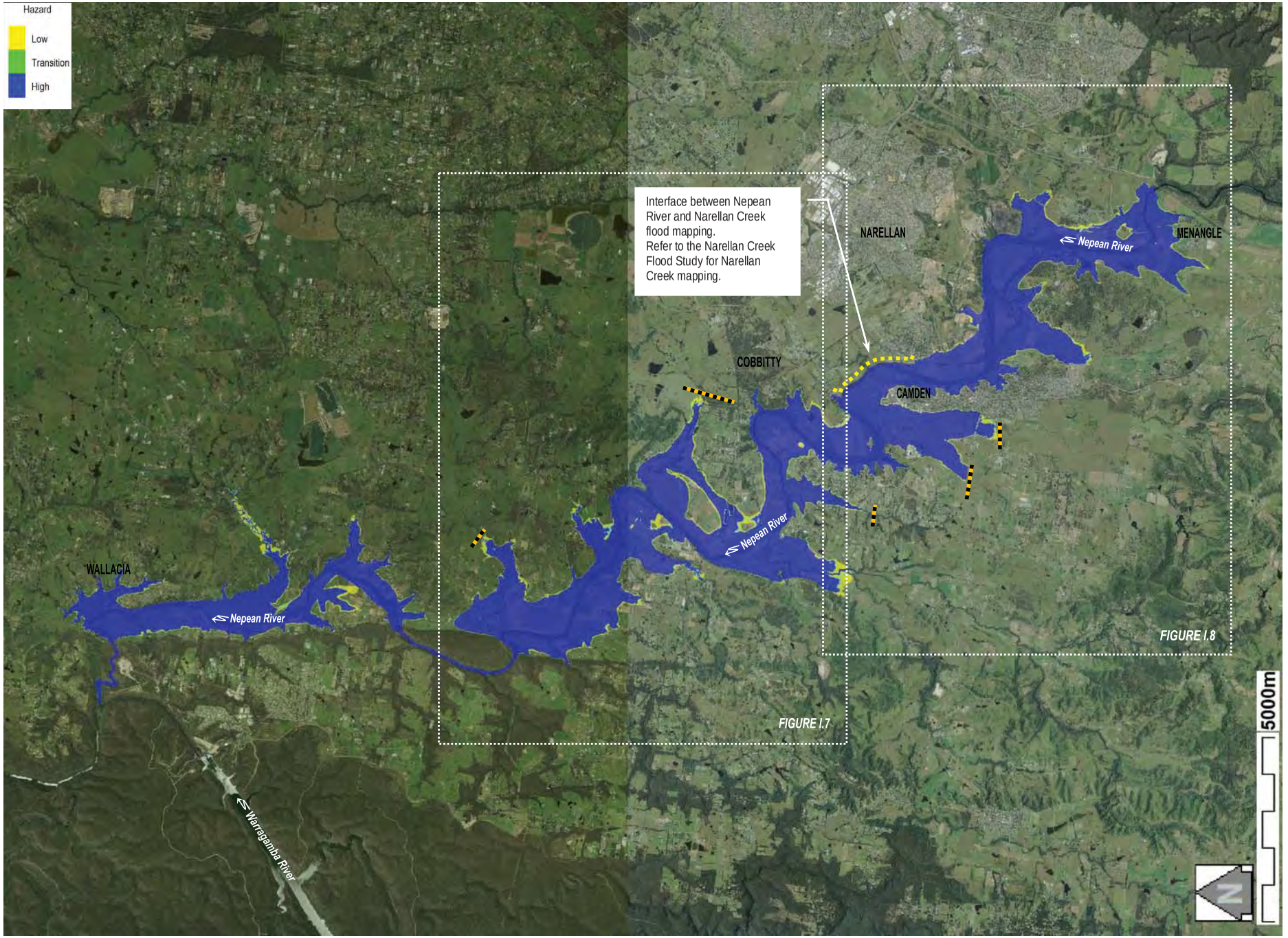
301015-03107 – Nepean River Flood Study (Camden Council)
I.05_fg301015-03107eh140619-Hazard_020yr_South.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE 5% AEP EVENT (SOUTH)

FIGURE I.6



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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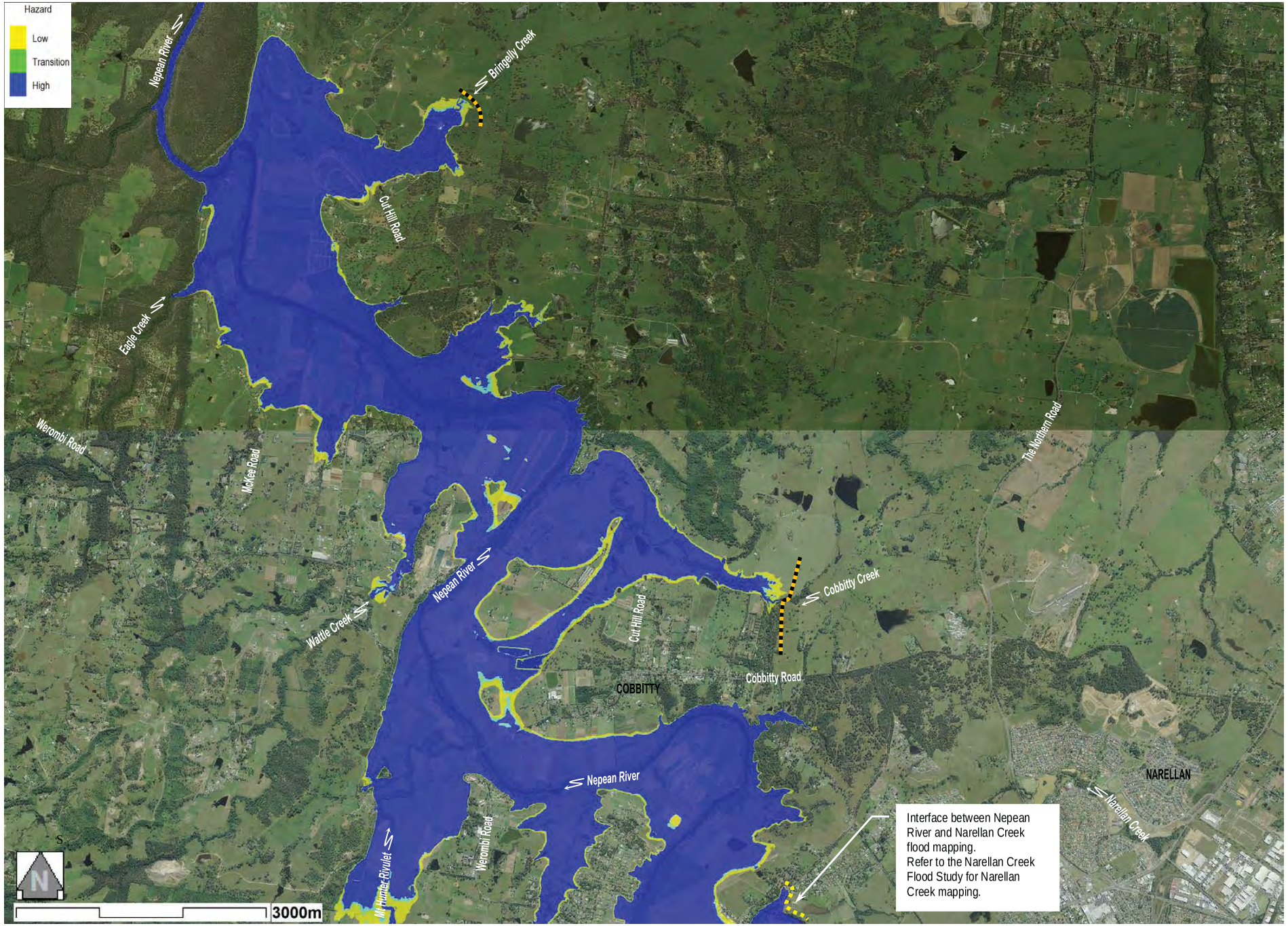
PROVISIONAL FLOOD HAZARD MAPPING FOR THE 1% AEP EVENT

FIGURE I.7



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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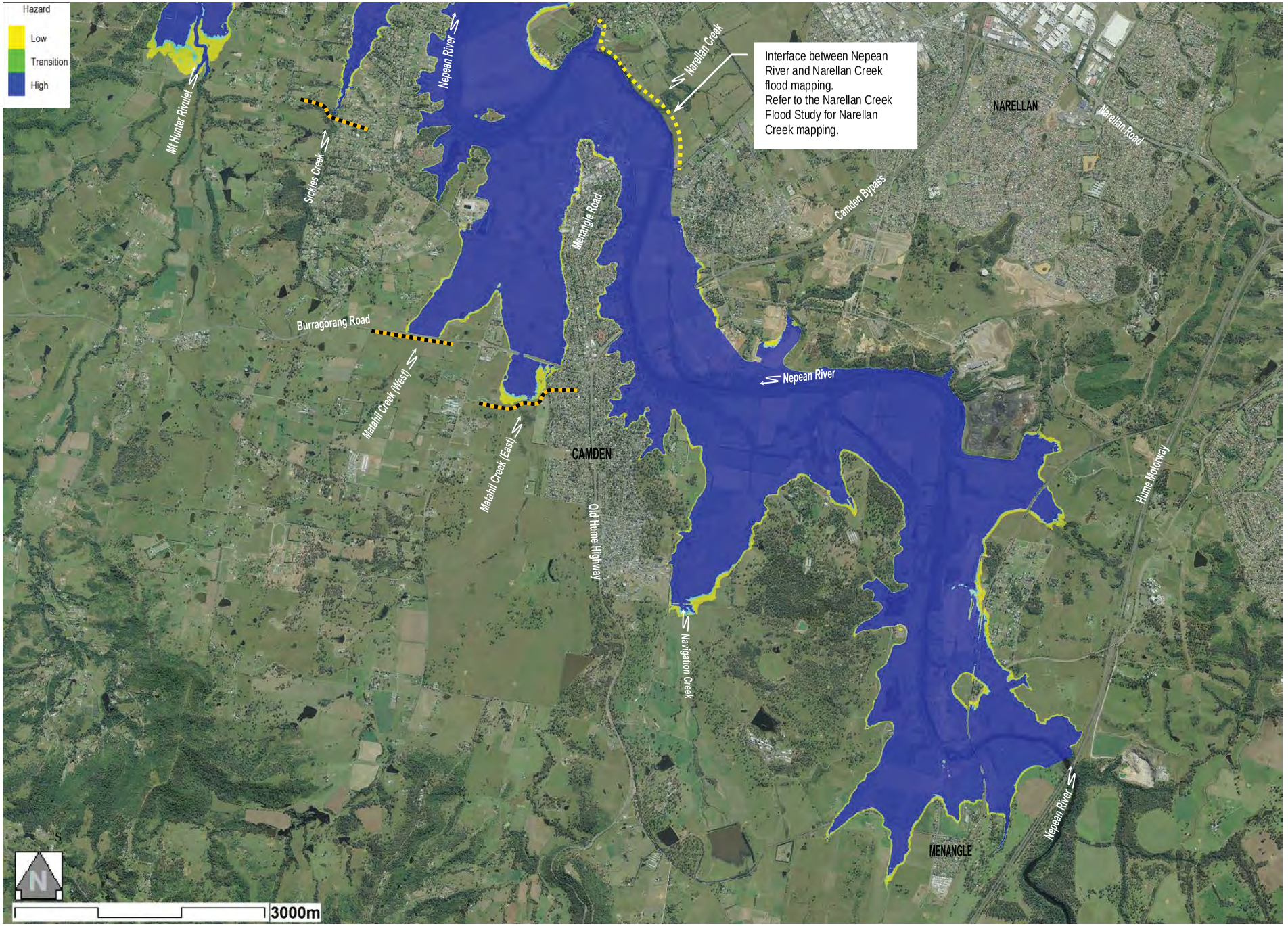
301015-03107 – Nepean River Flood Study (Camden Council)
I.07_fg301015-03107eh150326-Hazard_100yr_North.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE 1% AEP EVENT (NORTH)

FIGURE I.8



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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301015-03107 – Nepean River Flood Study (Camden Council)
I.08_fg301015-03107eh150326-Hazard_100yr_South.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE 1% AEP EVENT (SOUTH)

FIGURE I.9

LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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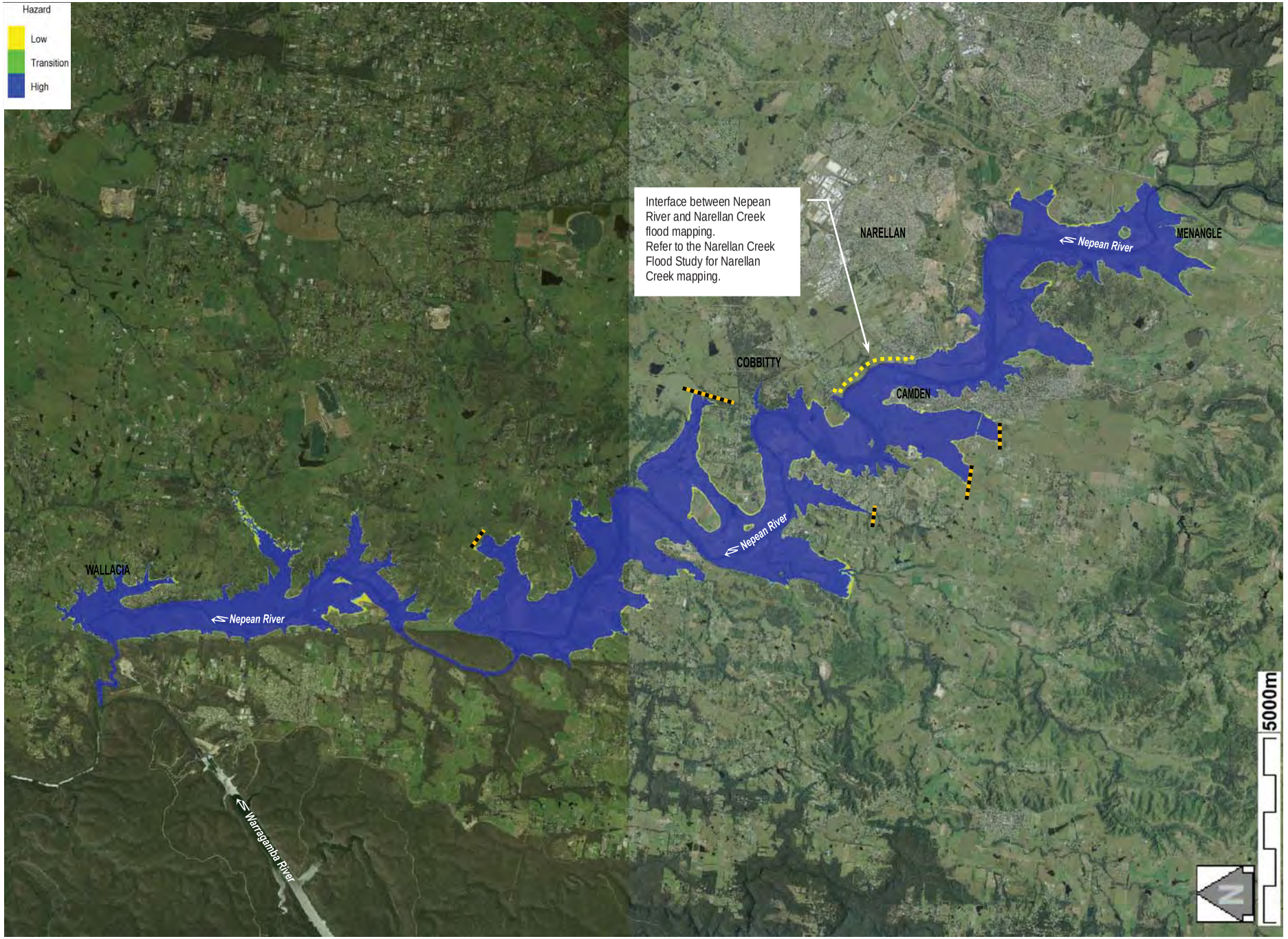
301015-03107 – Nepean River Flood Study
I.09_fg301015-03107eh150326-Hazard_200yr_ALL.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE 0.5% AEP EVENT

FIGURE I.10



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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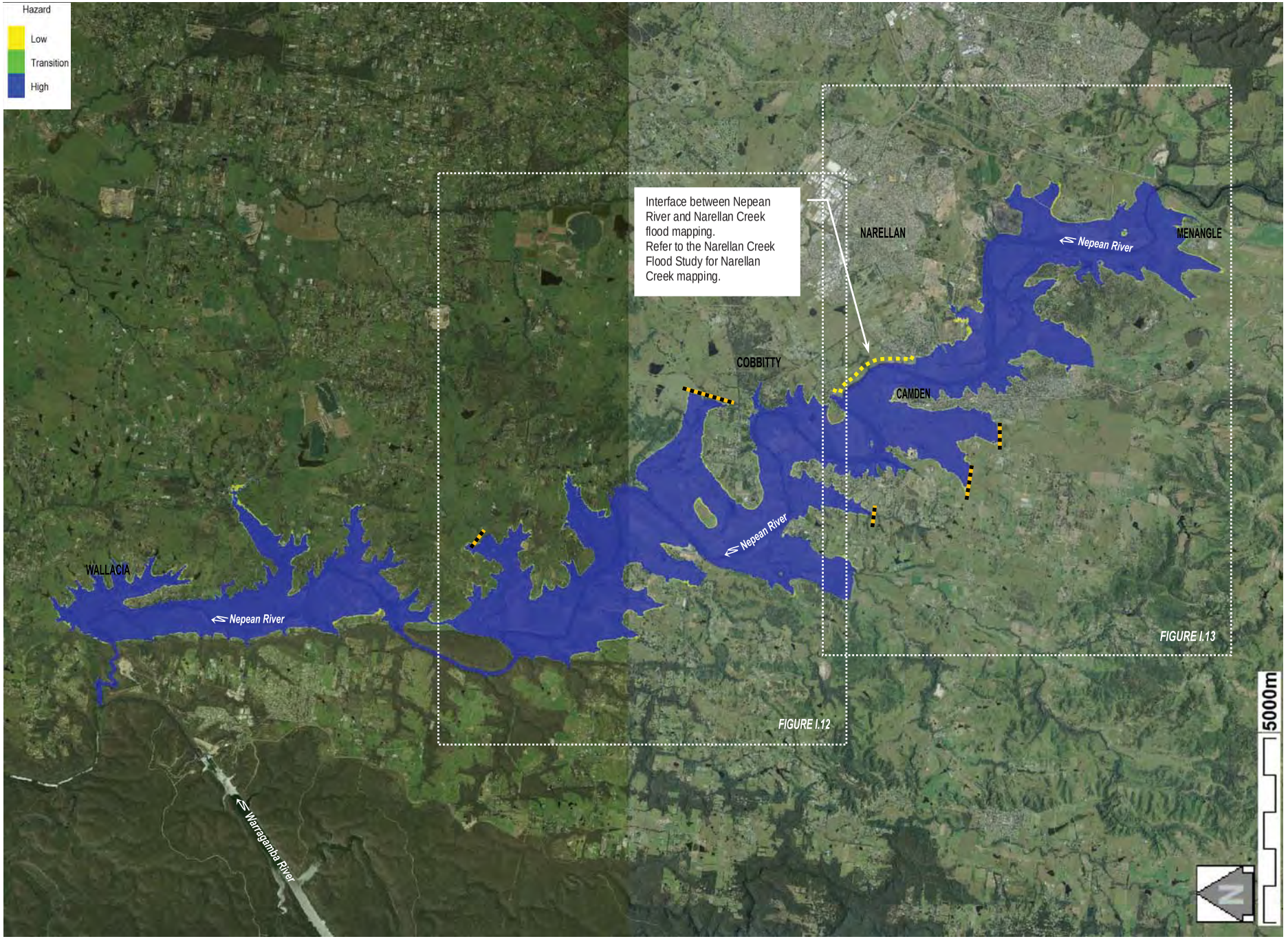
PROVISIONAL FLOOD HAZARD MAPPING FOR THE 0.2% AEP EVENT

FIGURE I.11



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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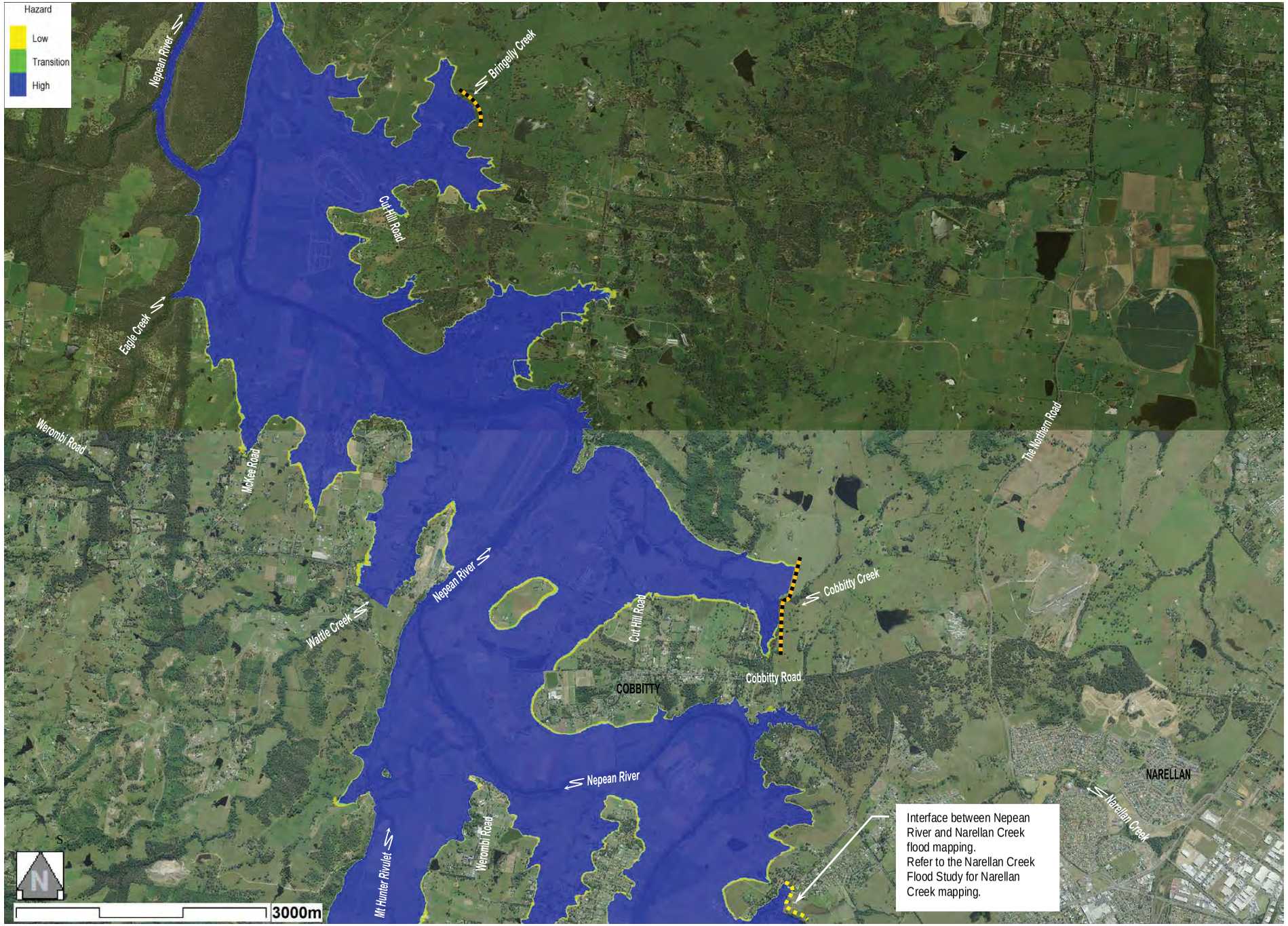
PROVISIONAL FLOOD HAZARD MAPPING FOR THE PMF EVENT

FIGURE I.12



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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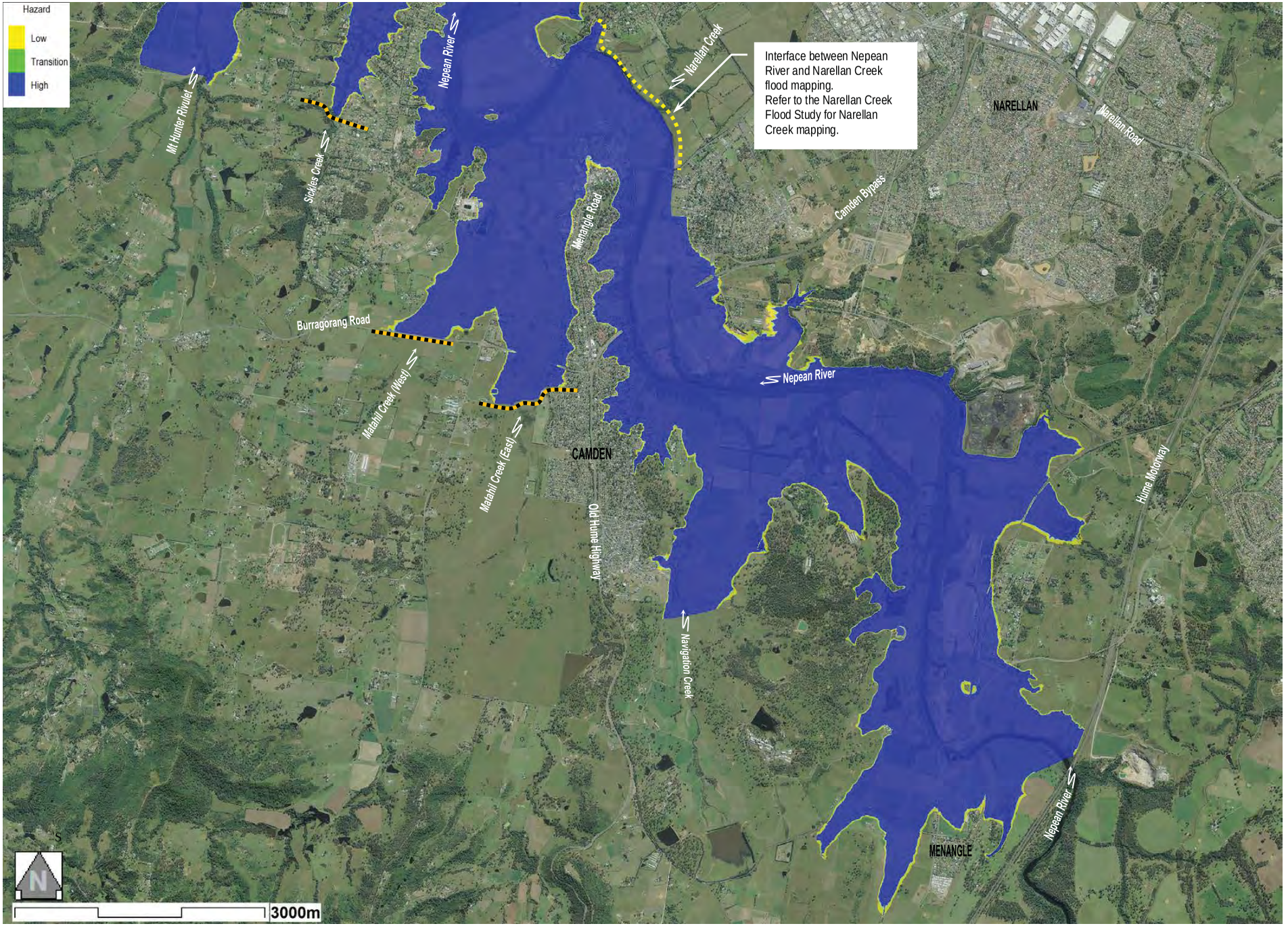
PROVISIONAL FLOOD HAZARD MAPPING FOR THE PMF EVENT (NORTH)

FIGURE I.13



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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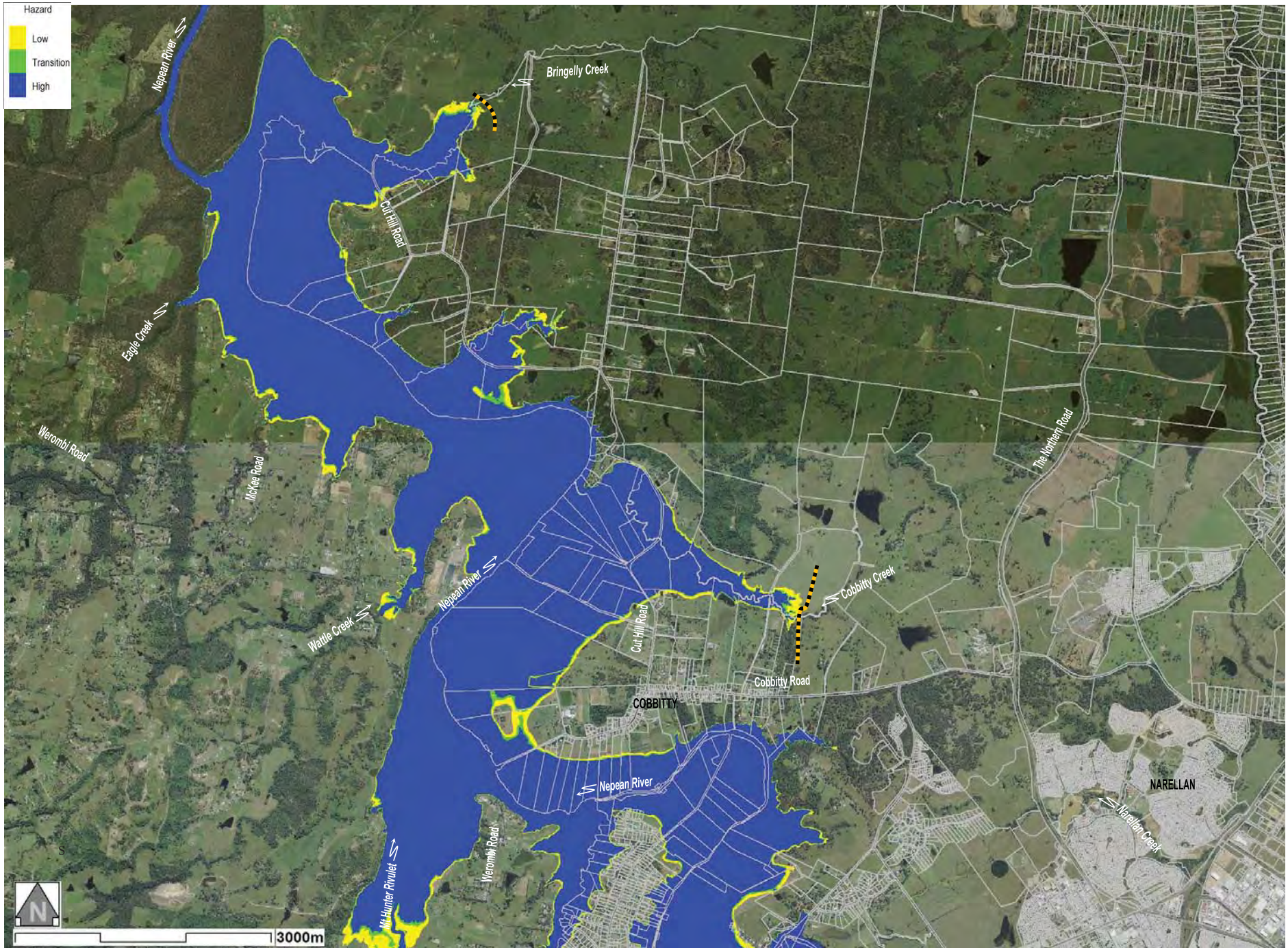
I.13_fg301015-03107eh150326-Hazard_PMF_South.doc

PROVISIONAL FLOOD HAZARD MAPPING FOR THE PMF EVENT (SOUTH)

APPENDIX J

PRELIMINARY TRUE HAZARD MAPPING

FIGURE J.1



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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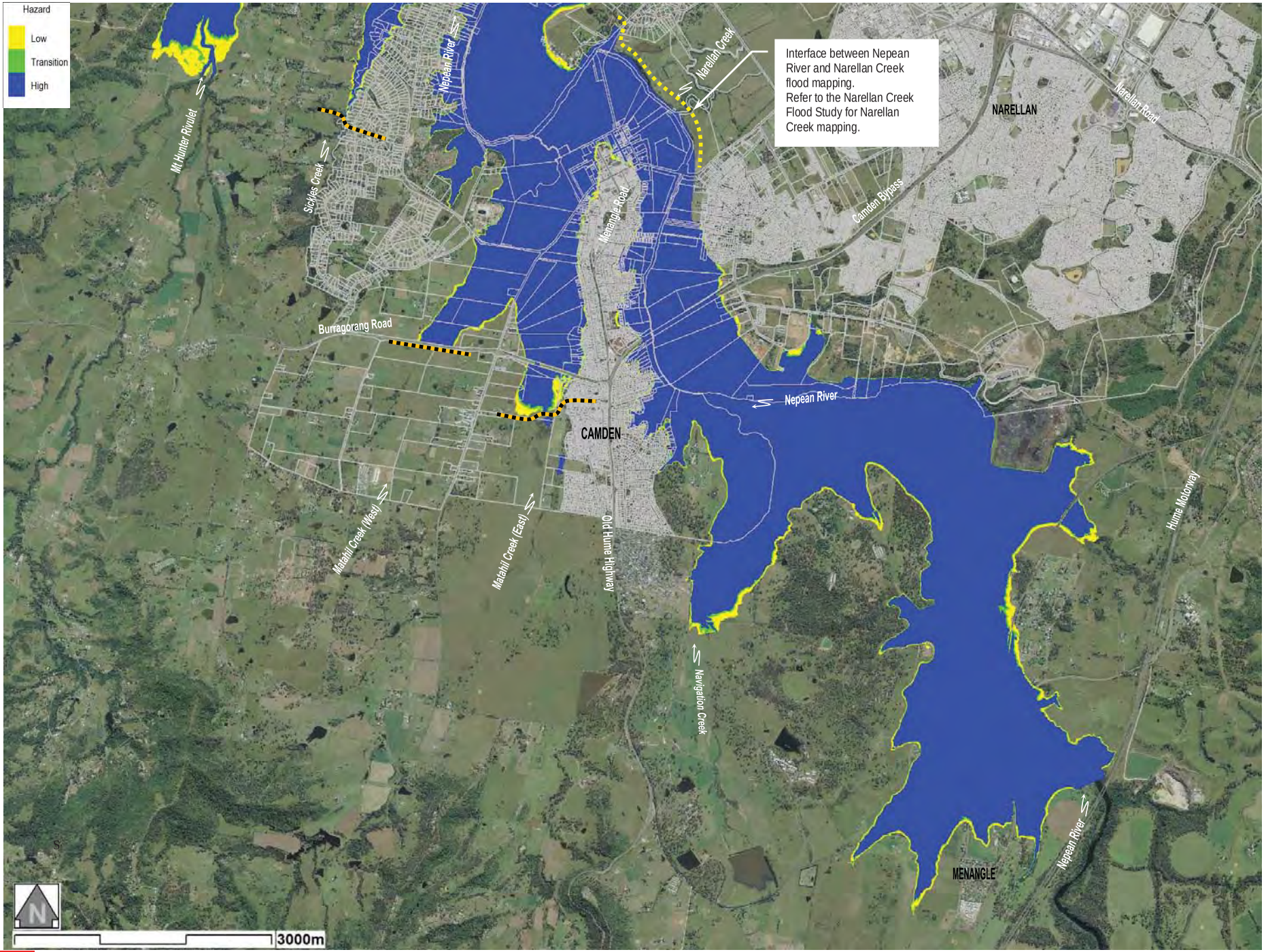
301015-03107 – Nepean River Flood Study (Camden Council)
J.01_fg301015-03107nm140224-TrueHazard_100yr_North.doc

PRELIMINARY TRUE HAZARD MAPPING FOR THE 1% AEP EVENT (NORTH)

FIGURE J.2



LEGEND:

Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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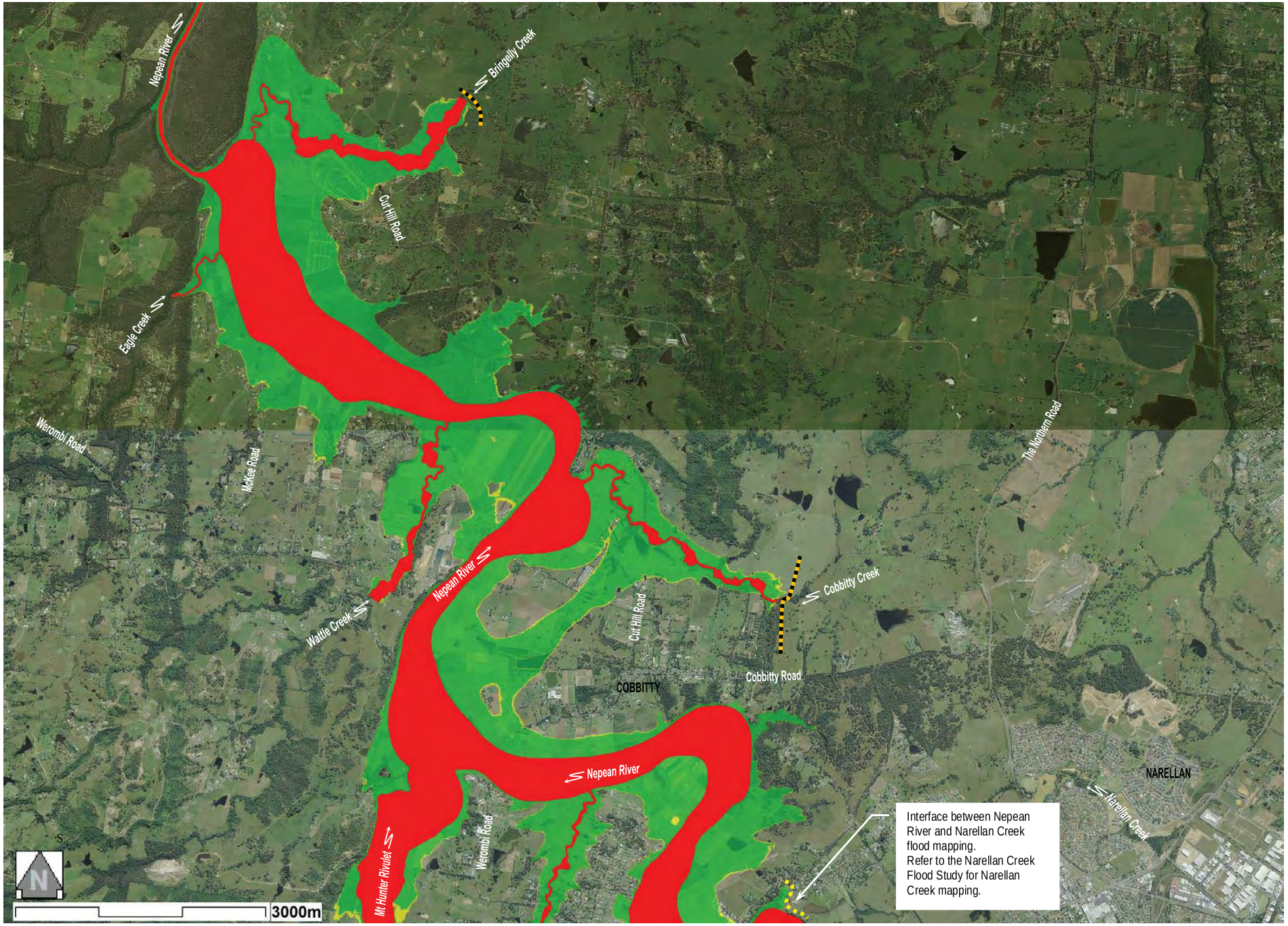
301015-03107 – Nepean River Flood Study (Camden Council)
J.02_fg301015-03107nm140224-TrueHazard_100yr_South.doc

PRELIMINARY TRUE HAZARD MAPPING FOR THE 1% AEP EVENT (SOUTH)

APPENDIX K

PROVISIONAL HYDRAULIC CATEGORY MAPPING

FIGURE K.1



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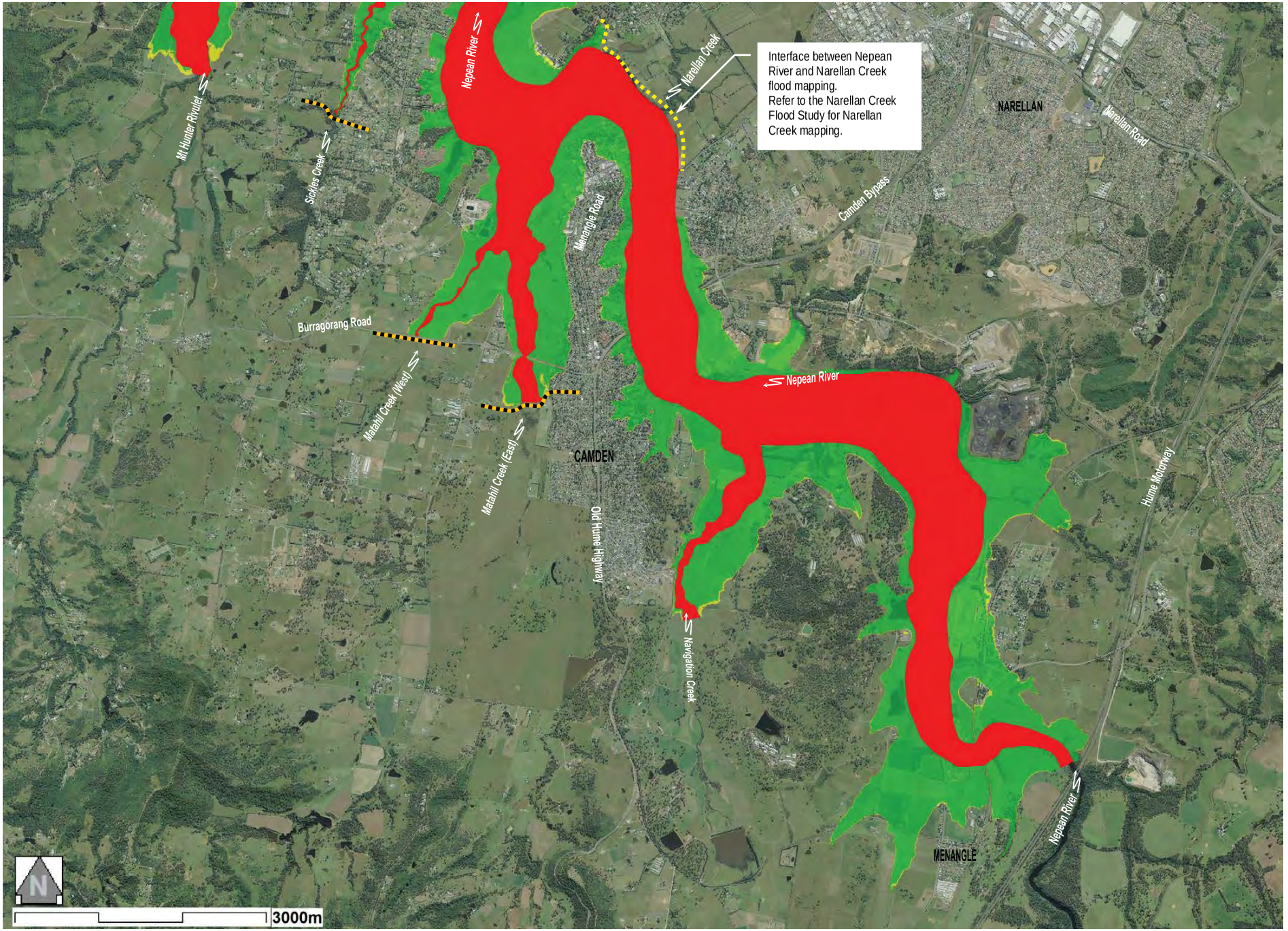
301015-03107 – Nepean River Flood Study (Camden Council)
K.01_fg301015-03107eh150326-Floodway_100yr_North.doc

HYDRAULIC CATEGORY MAPPING (NORTH)

FIGURE K.2



LEGEND:

- Floodway
- Flood Storage
- Flood Fringe
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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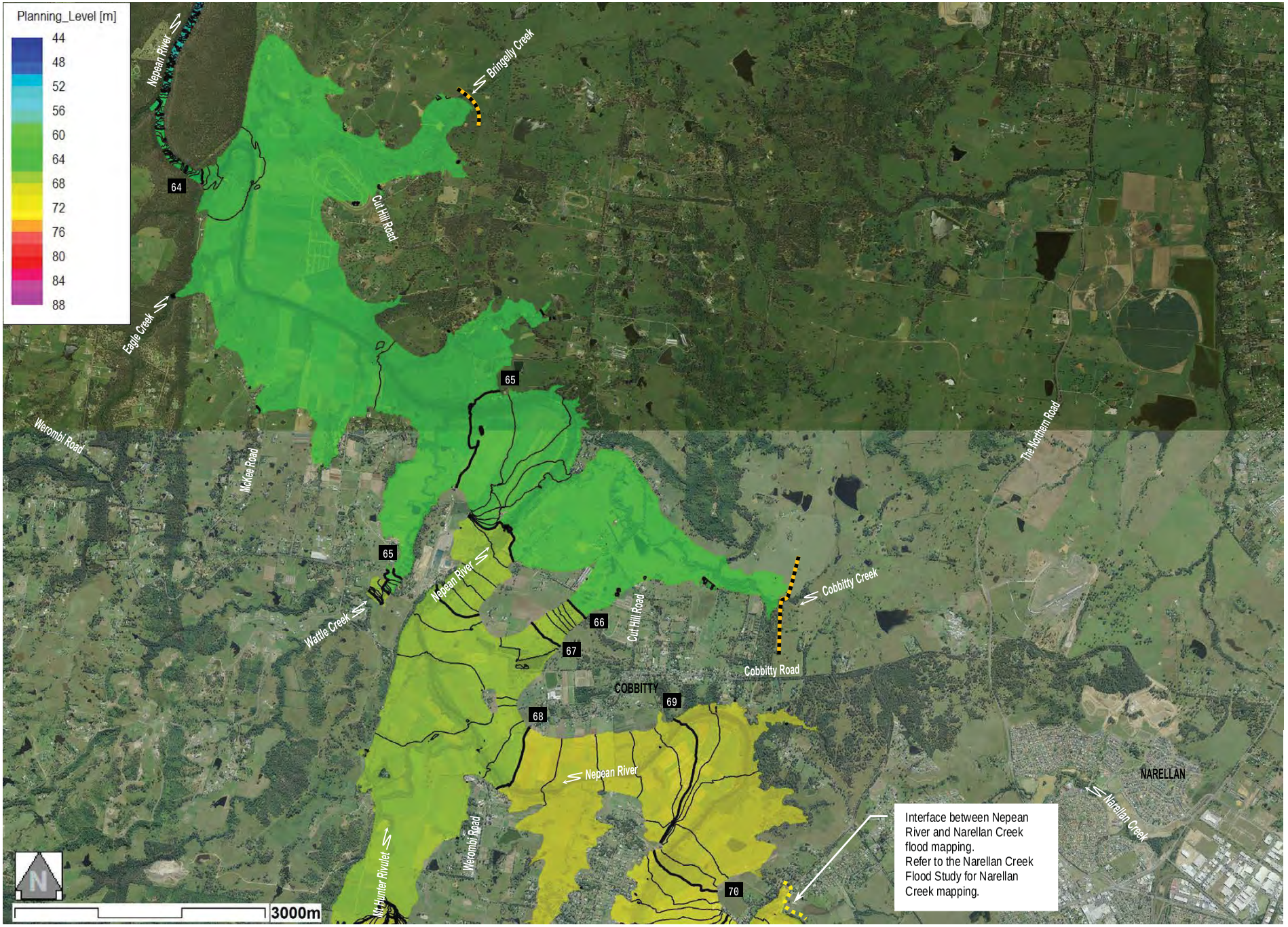
HYDRAULIC CATEGORY MAPPING (SOUTH)

APPENDIX L

FLOOD PLANNING AREA MAPPING

FIGURE L.1



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- 99 Flood Planning Level [*mAHD*]
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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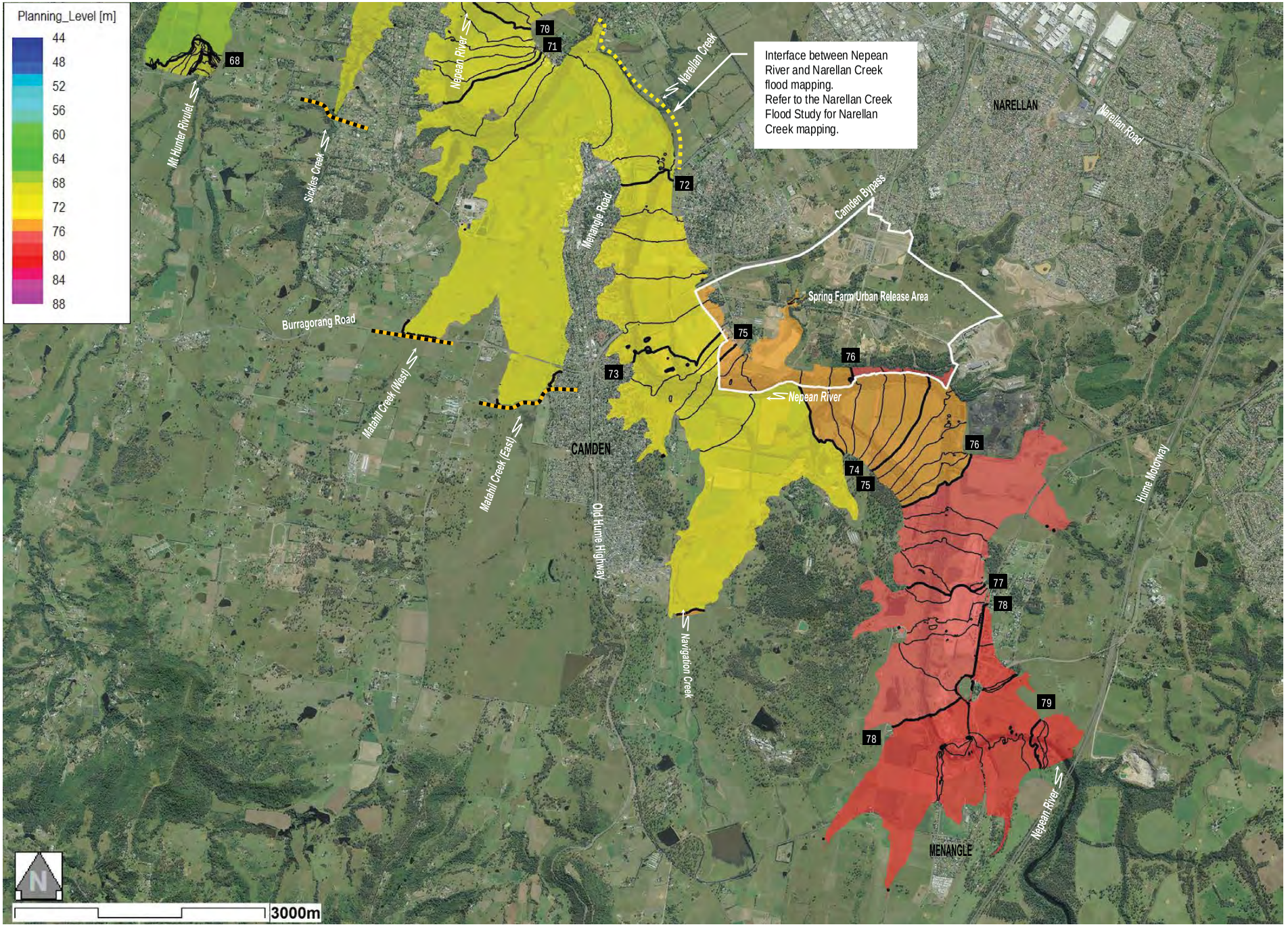
FLOOD PLANNING LEVEL MAPPING (NORTH)

FIGURE L.2



LEGEND:

- 0.2 metre contour line
- 1.0 metre contour line
- 99 Flood Planning Level [*mAHD*]
- Upstream extent of tributary flood mapping. Local catchment flooding to be investigated in future studies.

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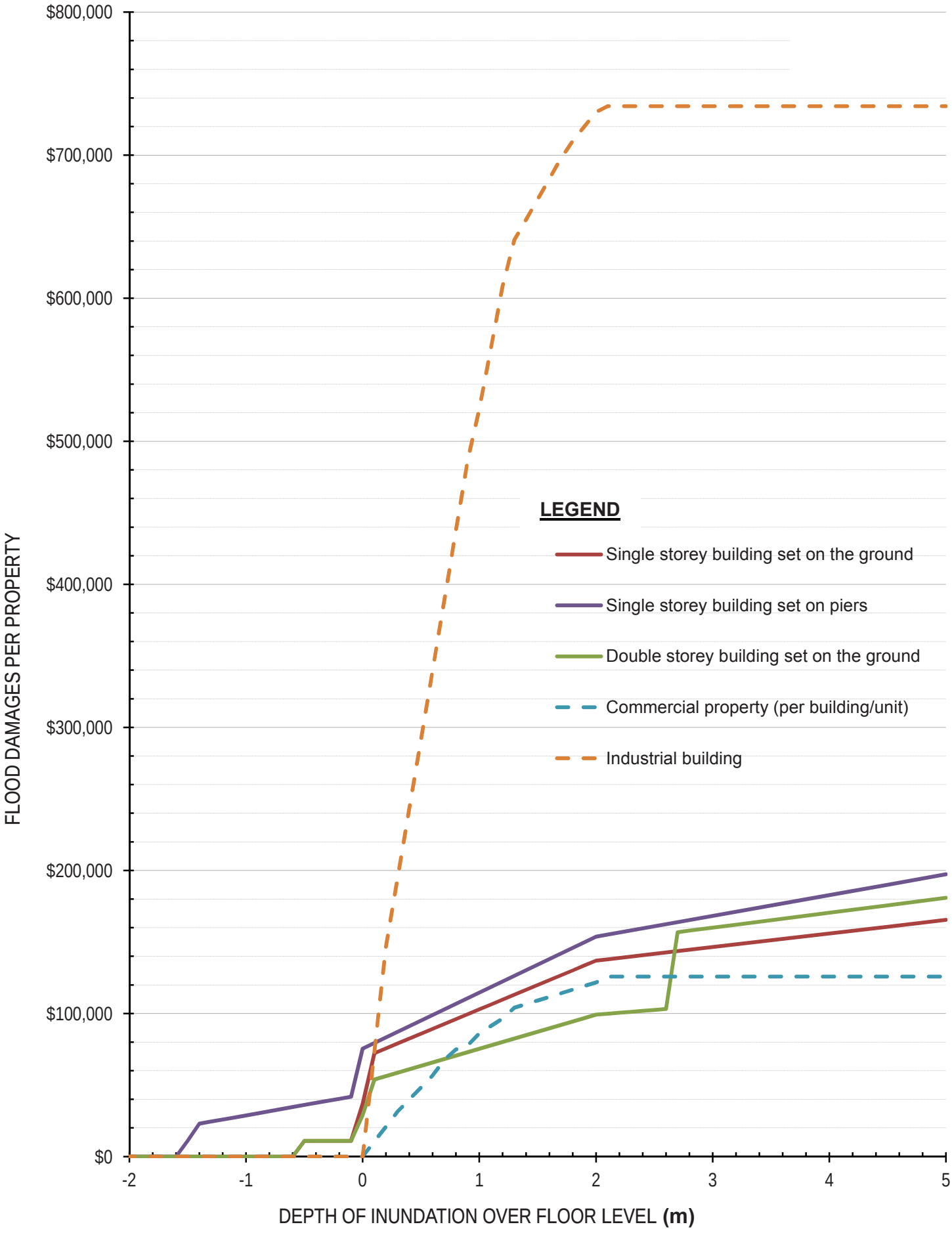
FLOOD PLANNING LEVEL MAPPING (SOUTH)

APPENDIX M

STAGE-DAMAGE CURVES

FIGURE M1



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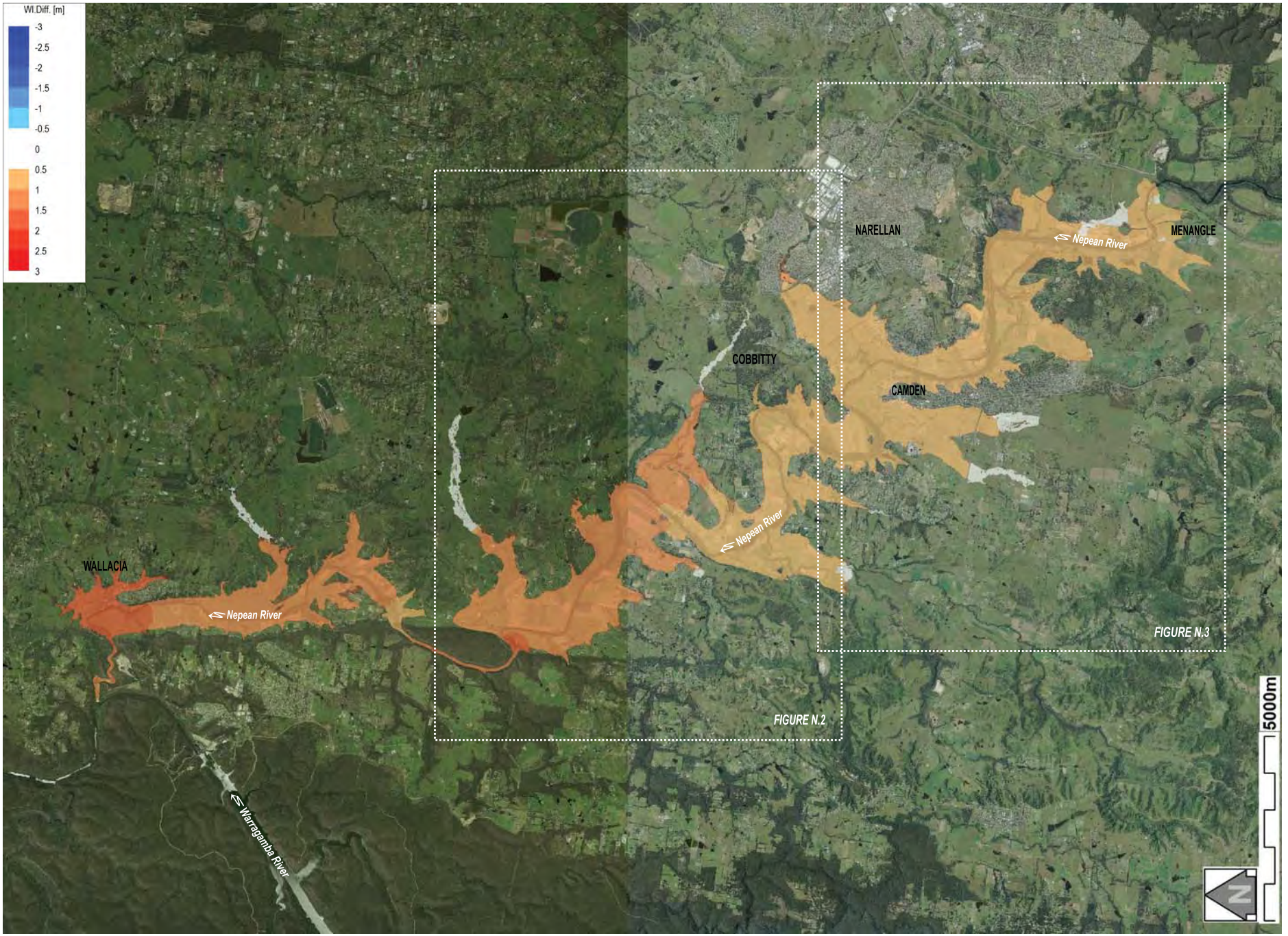
301015-03107 - Nepean River FS
DamageCurves_OEH.xlsx

ADOPTED STAGE DAMAGE CURVES FOR NEPEAN RIVER

APPENDIX N

SENSITIVITY TESTING MAPPING

FIGURE N.1



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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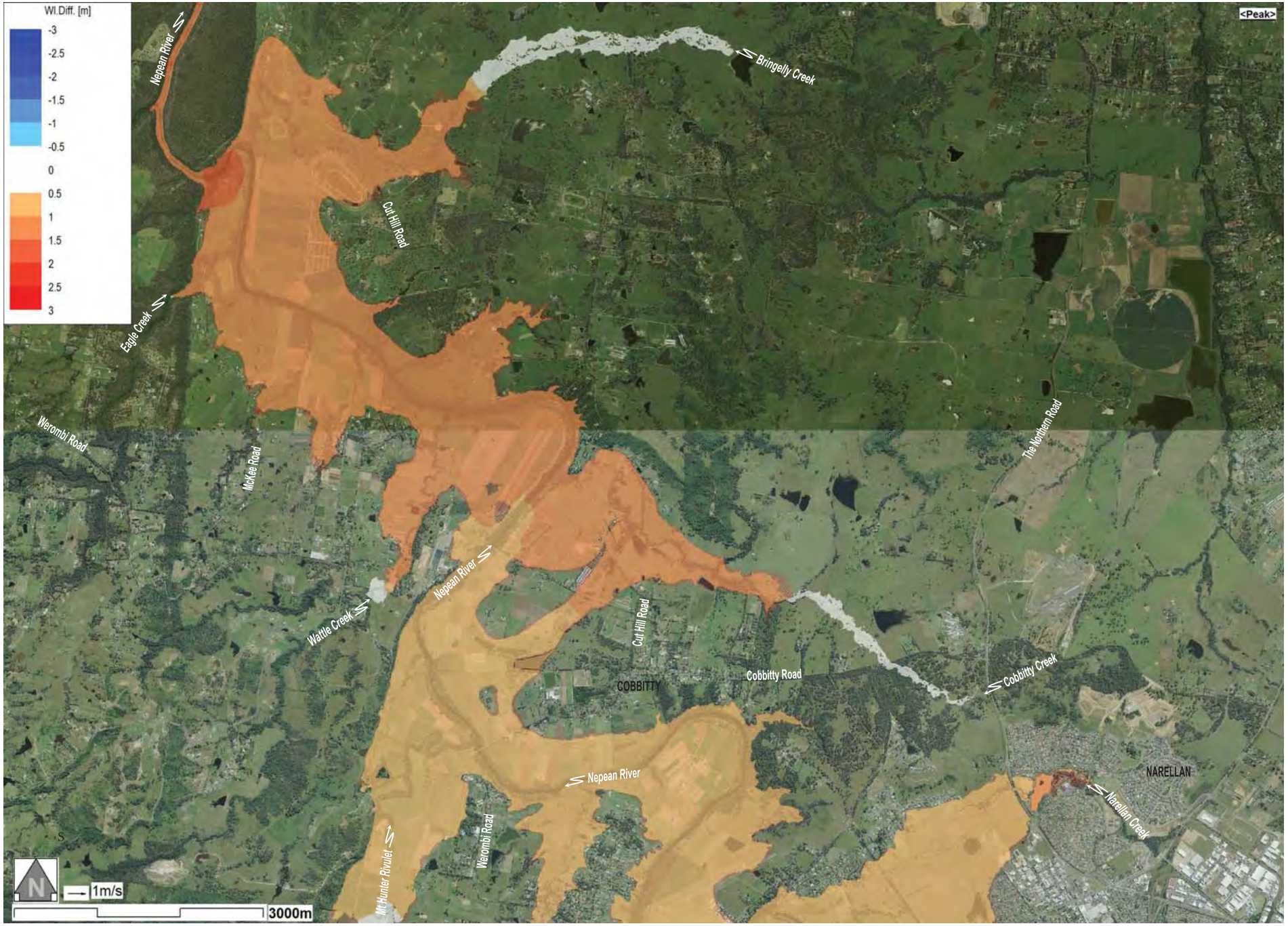
301015-03107 – Nepean River Flood Study
N.01_fg301015-03107nm140224-CC_100yr+10%_ALL.doc

CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 10% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT

FIGURE N.2



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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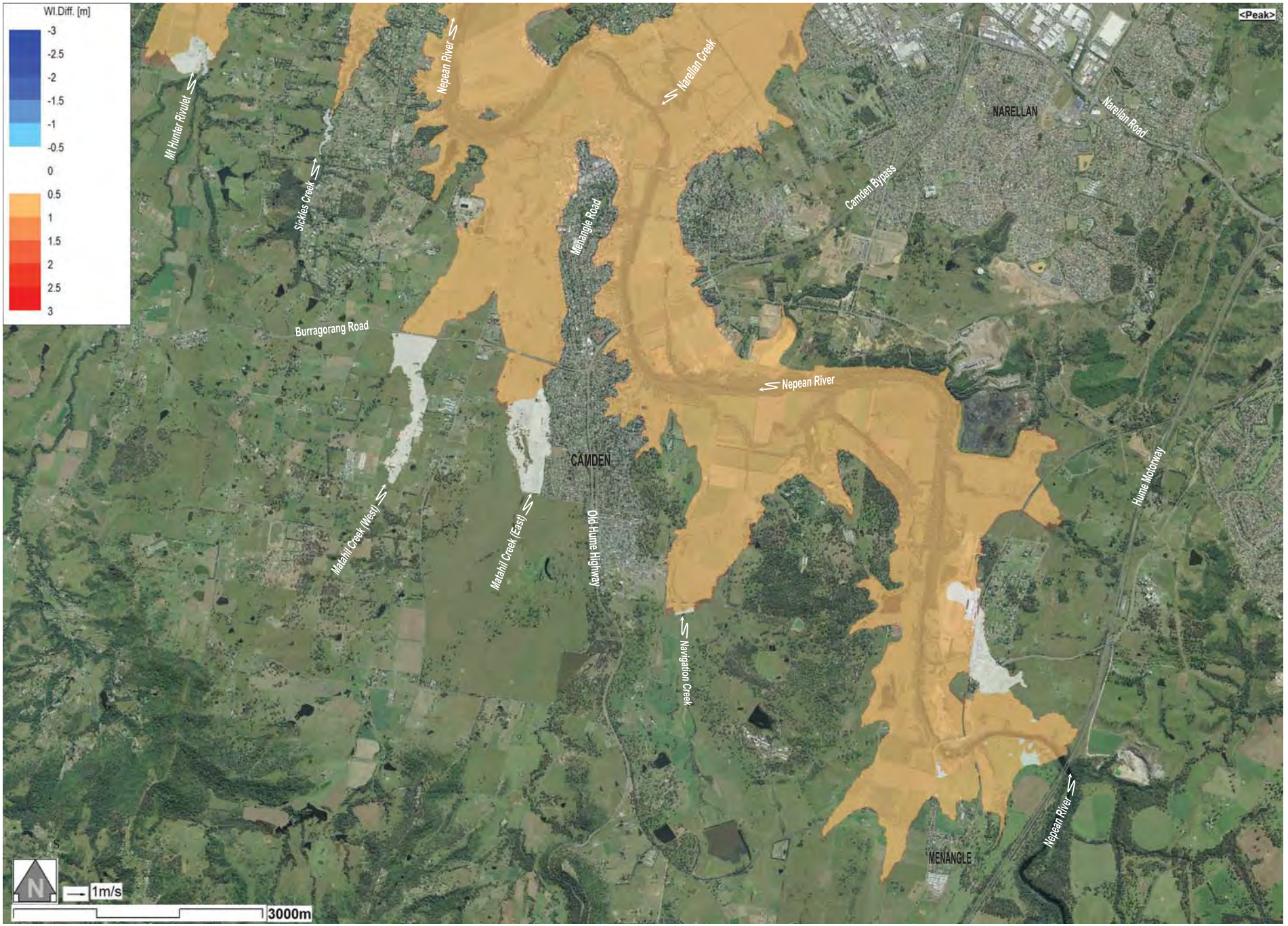
CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 10% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT (NORTH)

FIGURE N.3



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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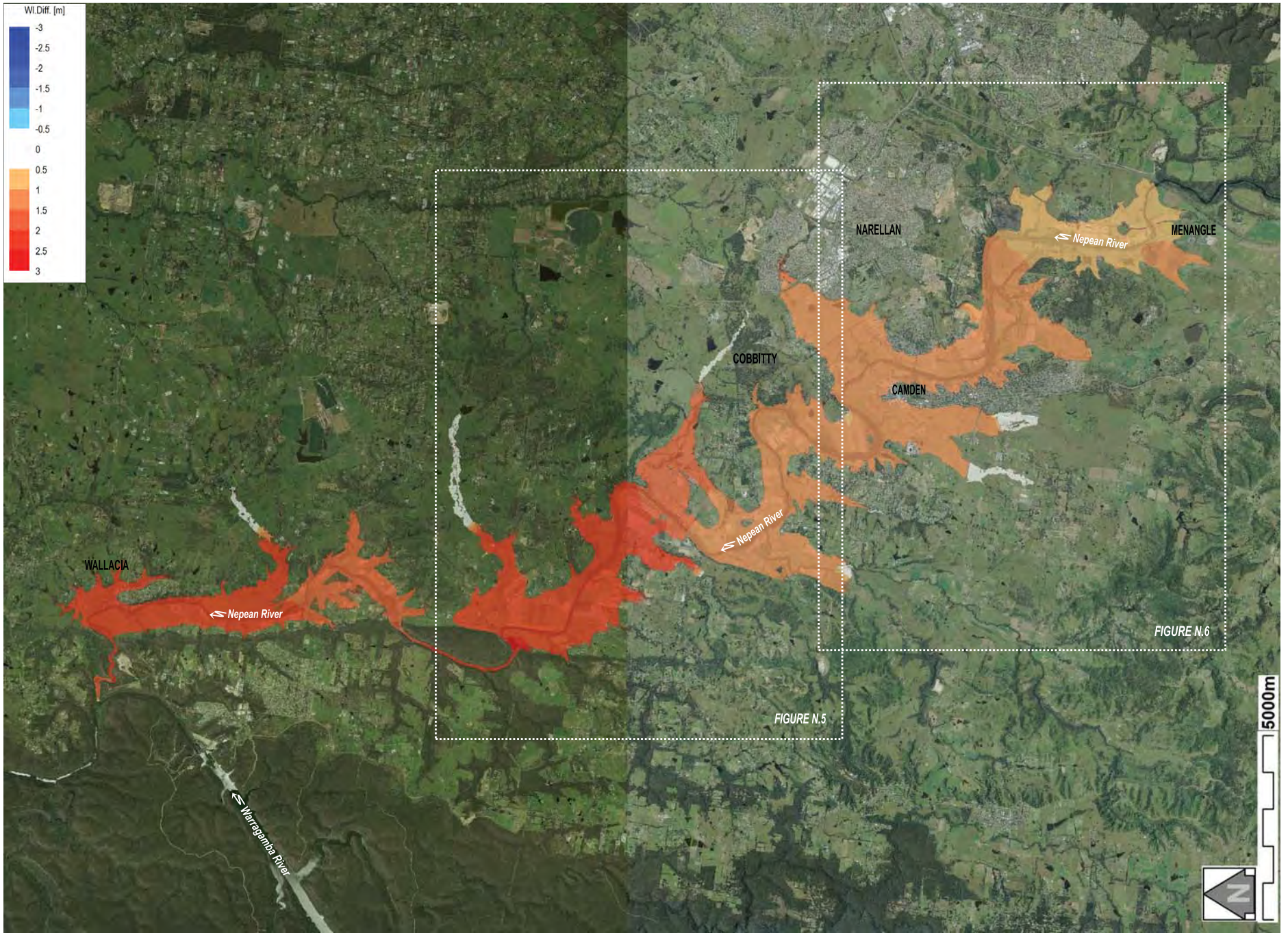
CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 10% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT (SOUTH)

FIGURE N.4



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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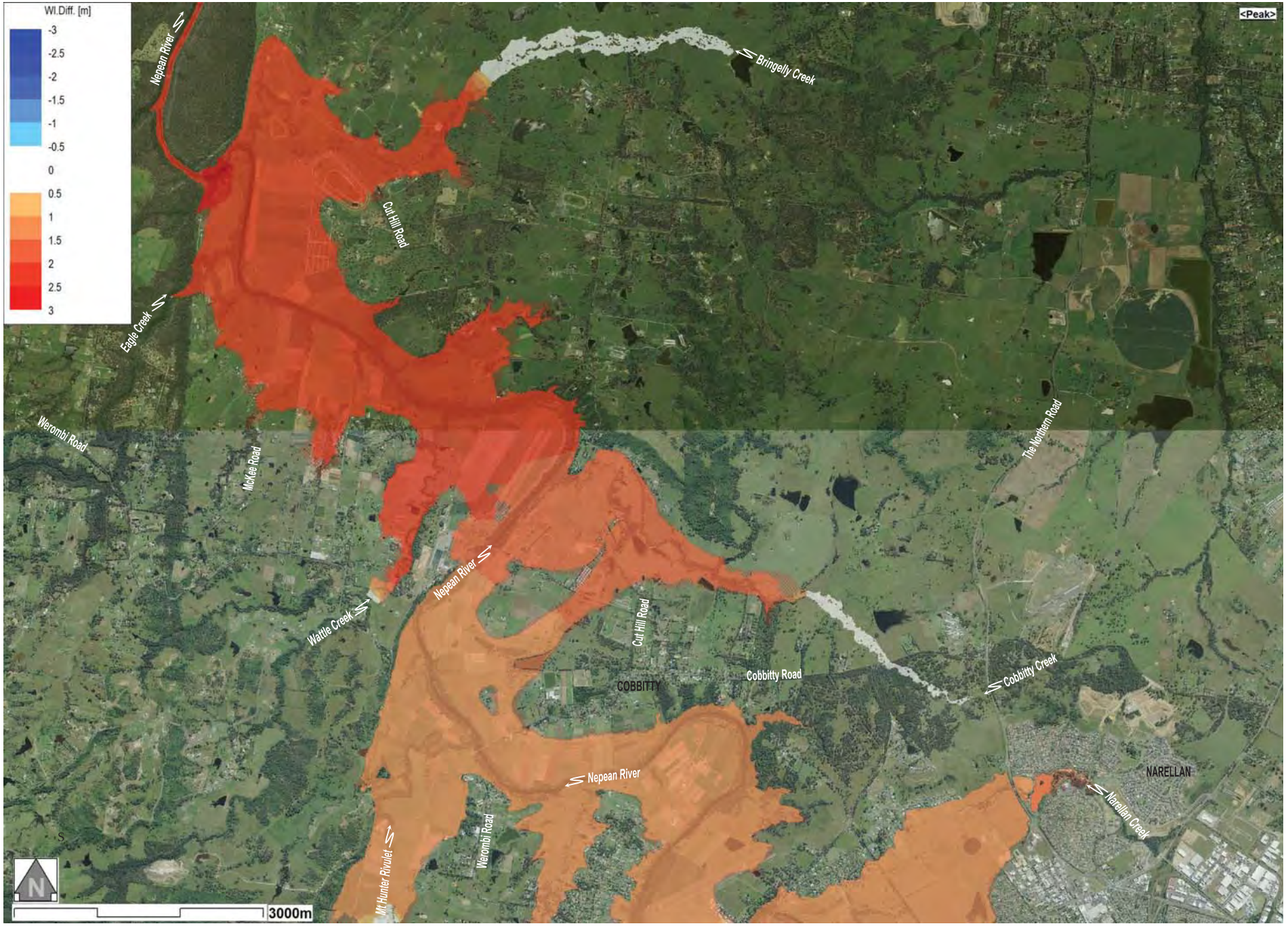
CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 20% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT

FIGURE N.5
DRAFT



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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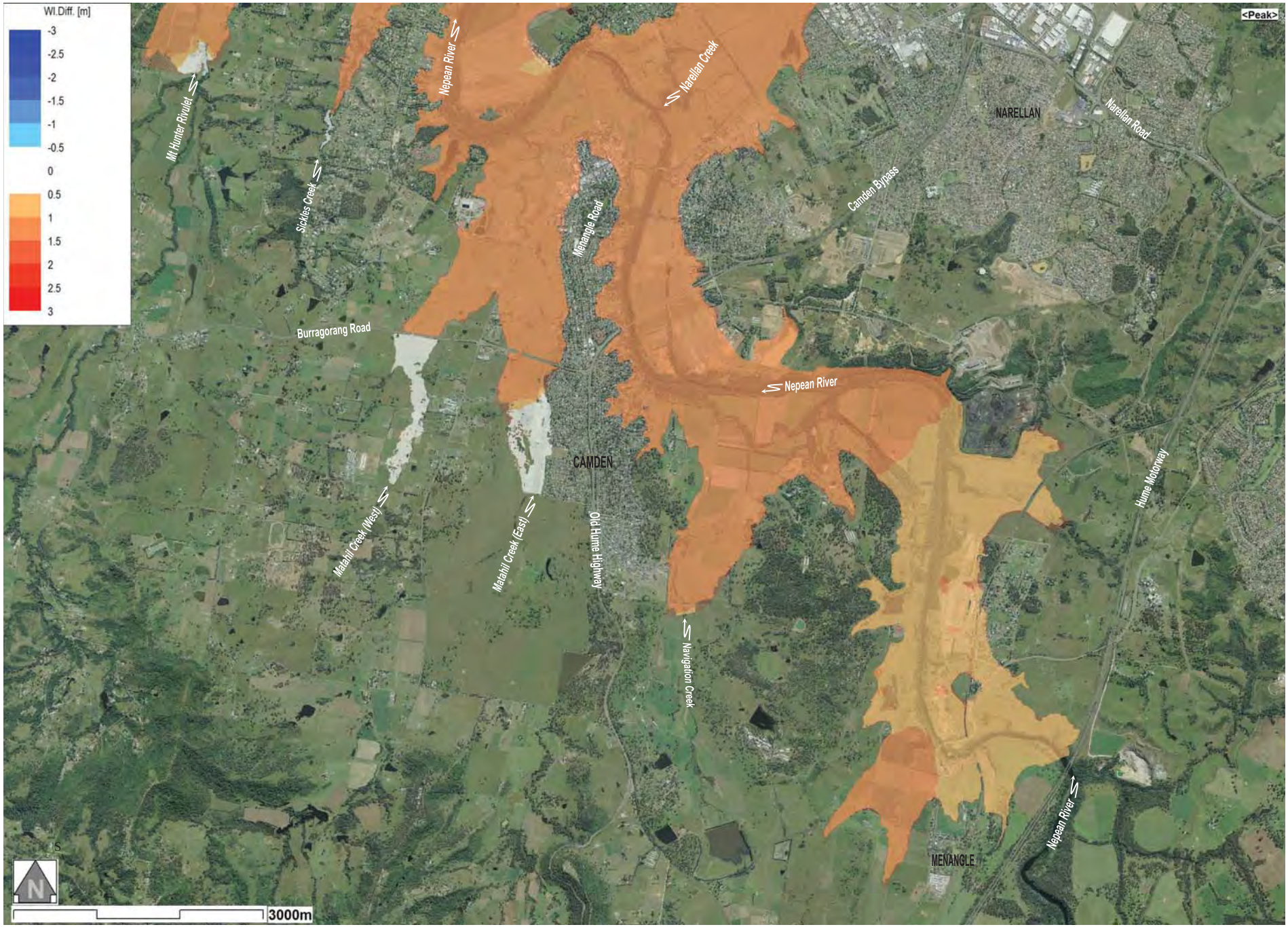
301015-03107 – Nepean River Flood Study (Camden Council)
N.05_fg301015-03107nm140224-CC_100yr+20%_North.doc

CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 20% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT (NORTH)

FIGURE N.6
DRAFT



NOTES:

Hatching indicates land that is inundated during the climate change scenario that remains dry during the present day scenario

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CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 20% INCREASE IN RAINFALL INTENSITIES DURING THE 1% AEP EVENT (SOUTH)

FIGURE N.7
DRAFT

NOTES:

Hatching indicates land that is inundated during the blockage scenario that remains dry during the standard scenario

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CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 50% BLOCKAGES IN STRUCTURES DURING THE 1% AEP EVENT (NORTH)

FIGURE N.8
DRAFT

NOTES:

Hatching indicates land that is inundated during the blockage scenario that remains dry during the standard scenario

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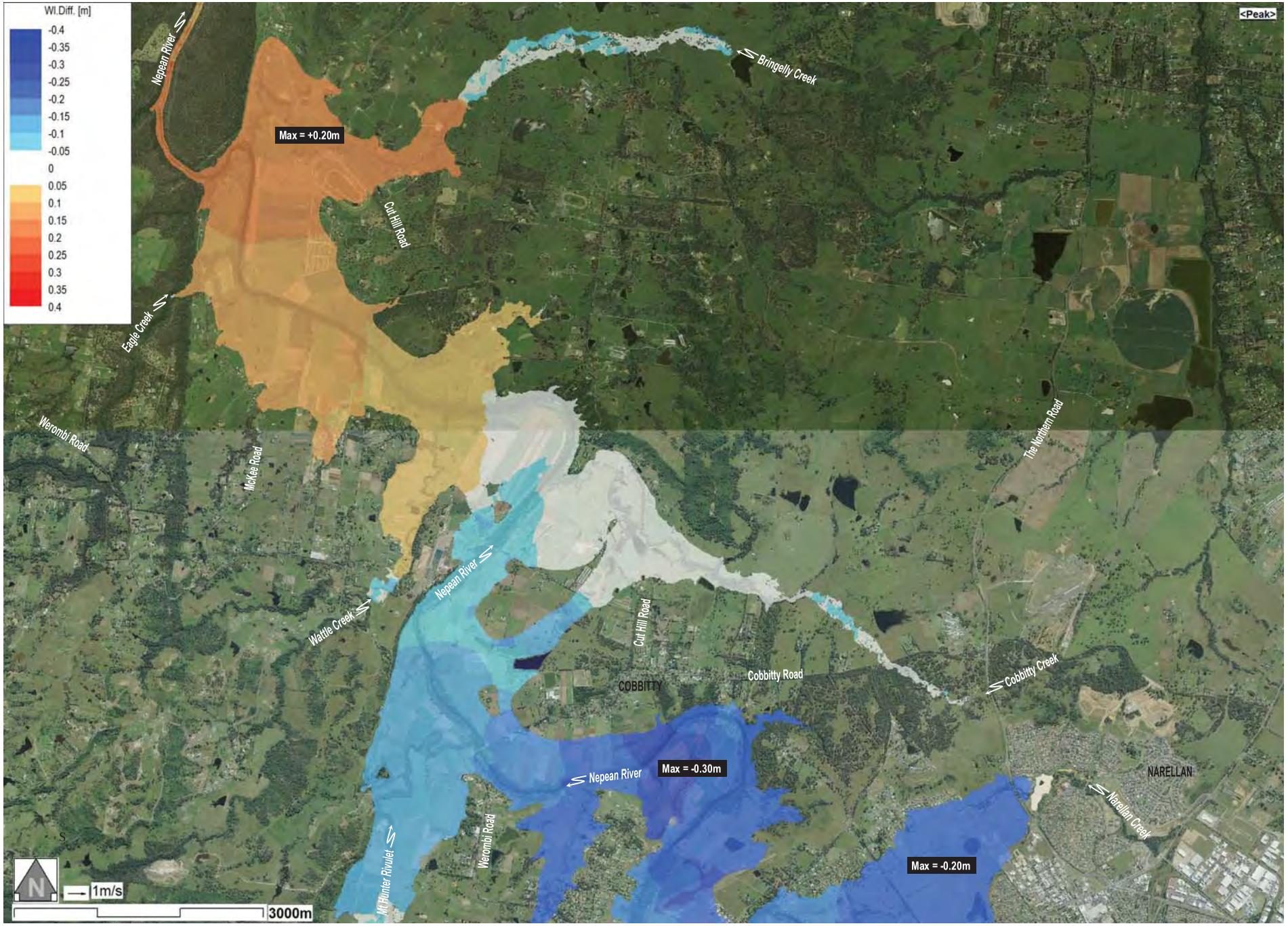
CHANGE IN PEAK FLOOD LEVEL RESULTING FROM 50% BLOCKAGES IN STRUCTURES DURING THE 1% AEP EVENT (SOUTH)

FIGURE N.9
DRAFT



NOTES:

Hatching indicates land that is inundated during the reduced roughness scenario that remains dry during the standard scenario

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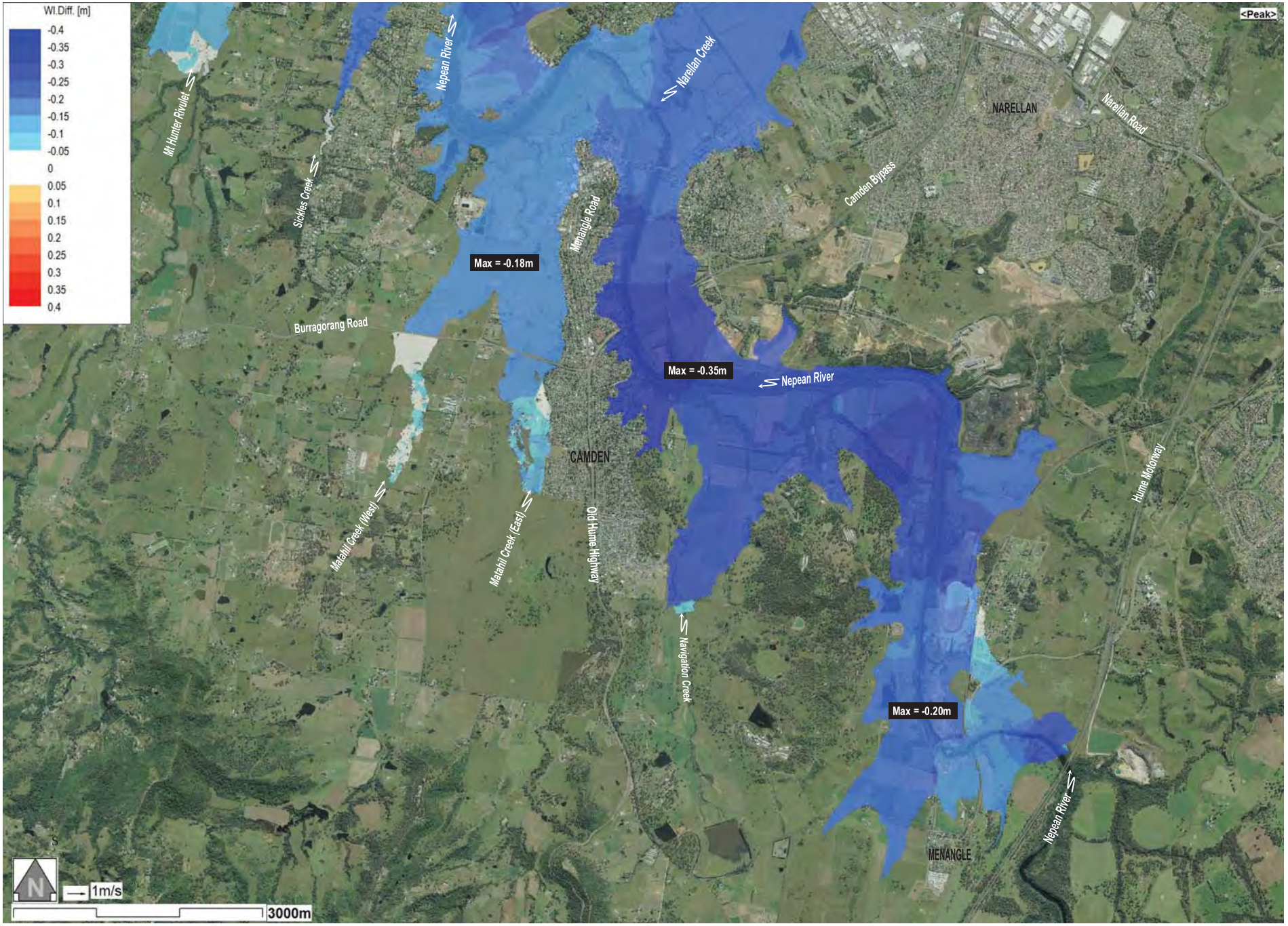
N.09_fg301015-03107nm140224-Roughness_100yr_North.doc

CHANGE IN PEAK FLOOD LEVEL RESULTING FROM REDUCED FLOODPLAIN ROUGHNESS DURING THE 1% AEP EVENT (NORTH)

FIGURE N.10
DRAFT



NOTES:

Hatching indicates land that is inundated during the reduced roughness scenario that remains dry during the standard scenario

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CHANGE IN PEAK FLOOD LEVEL RESULTING FROM REDUCED FLOODPLAIN ROUGHNESS DURING THE 1% AEP EVENT (SOUTH)