

Table 2. Concentrations (mg/L) and Percentage Reductions (%) from Baseline Modelling

Site	NOF Statistic	Baseline	BAU 2025	BAU 2040	BAU 2080	SILVER 2025	SILVER 2040	SILVER 2080	GOLD 2025	GOLD 2040	GOLD 2080
Huangarua River at Ponatahi Bridge	Median (mg/L)	0.0043	0.0042	0.0042	0.0042	0.0039	0.0037	0.0037	0.0037	0.0037	0.0037
	Median (% change from Baseline)		-1.7%	-1.9%	-1.9%	-9.6%	-14.3%	-14.3%	-14.3%	-14.3%	-14.3%
	Av. Daily Max (mg/L)	0.022	0.0219	0.0218	0.0218	0.0201	0.0193	0.0193	0.0193	0.0193	0.0193
	Av. Daily Max (% change from Baseline)		-0.5%	-1.0%	-1.0%	-8.9%	-0.1%	-12.4%	-12.4%	-12.4%	-12.4%
Kopuaranga River at Stuarts	Median (mg/L)	0.0124	0.0124	0.0124	0.0124	0.012	0.0113	0.0113	0.0113	0.0113	0.0113
	Median (% change from Baseline)		-0.0%	-0.0%	-0.0%	-3.2%	-9.0%	-9.0%	-9.0%	-9.0%	-9.0%
	Av. Daily Max (mg/L)	0.0468	0.0468	0.0468	0.0468	0.0459	0.044	0.044	0.044	0.044	0.044
	Av. Daily Max (% change from Baseline)		0.0%	0.0%	0.0%	-2.0%	-0.1%	-6.0%	-6.0%	-6.0%	-6.0%
Makahakaha Stream at Mouth	Median (mg/L)	0.0062	0.0062	0.0062	0.0062	0.006	0.0058	0.0058	0.0058	0.0058	0.0058
	Median (% change from Baseline)		-0.0%	-0.0%	-0.0%	-3.4%	-5.7%	-5.7%	-5.8%	-5.8%	-5.8%
	Av. Daily Max (mg/L)	0.0197	0.0197	0.0197	0.0197	0.0191	0.0186	0.0186	0.0186	0.0186	0.0186
	Av. Daily Max (% change from Baseline)		-0.0%	-0.0%	-0.0%	-3.3%	-0.1%	-5.5%	-5.5%	-5.5%	-5.5%
Mangatarere River at SH2	Median (mg/L)	0.0985	0.0436	0.0452	0.0545	0.0436	0.0409	0.0494	0.0395	0.0409	0.0494
	Median (% change from Baseline)		-55.7%	-54.2%	-44.7%	-55.7%	-58.5%	-49.9%	-59.9%	-58.5%	-49.9%
	Av. Daily Max (mg/L)	0.8842	0.37	0.3823	0.458	0.37	0.3823	0.458	0.37	0.3823	0.458
	Av. Daily Max (% change from Baseline)		-58.2%	-56.8%	-48.2%	-58.2%	-0.6%	-48.2%	-58.2%	-56.8%	-48.2%
Otukura Stream at Mouth	Median (mg/L)	0.001	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009
	Median (% change from Baseline)		-2.3%	-2.3%	-2.3%	-4.1%	-4.9%	-4.9%	-5.0%	-5.0%	-5.0%
	Av. Daily Max (mg/L)	0.0974	0.0972	0.0972	0.0972	0.0972	0.0972	0.0972	0.0972	0.0972	0.0972
	Av. Daily Max (% change from Baseline)		-0.2%	-0.2%	-0.2%	-0.2%	-0.0%	-0.2%	-0.2%	-0.2%	-0.2%
Parkvale Stream at weir	Median (mg/L)	0.0151	0.0156	0.0156	0.0156	0.0156	0.0155	0.0155	0.0155	0.0155	0.0155
	Median (% change from Baseline)		3.4%	3.4%	3.4%	3.2%	3.0%	3.0%	3.0%	3.0%	3.0%
	Av. Daily Max (mg/L)	0.3576	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
	Av. Daily Max (% change from Baseline)		0.7%	0.7%	0.7%	0.7%	0.0%	0.7%	0.7%	0.7%	0.7%
Ruamahanga River at U/S Lake Wai Outlet	Median (mg/L)	0.0121	0.0095	0.0071	0.0075	0.0073	0.0069	0.0073	0.0068	0.0069	0.0073
	Median (% change from Baseline)		-21.6%	-41.4%	-37.4%	-39.3%	-43.2%	-39.1%	-43.8%	-43.2%	-39.1%
	Av. Daily Max (mg/L)	0.043	0.0401	0.036	0.0358	0.0369	0.0335	0.0336	0.0335	0.0335	0.0336
	Av. Daily Max (% change from Baseline)		-6.8%	-16.1%	-16.7%	-14.2%	-0.2%	-21.9%	-22.1%	-22.1%	-21.9%
Ruamahanga River at Pukio	Median (mg/L)	0.0162	0.0128	0.0103	0.011	0.0108	0.0099	0.0106	0.0098	0.0099	0.0106
	Median (% change from Baseline)		-20.7%	-36.2%	-32.2%	-33.3%	-38.6%	-34.8%	-39.3%	-38.6%	-34.8%
	Av. Daily Max (mg/L)	0.0652	0.0459	0.0363	0.0364	0.0378	0.0339	0.0342	0.0338	0.0339	0.0342
	Av. Daily Max (% change from Baseline)		-29.6%	-44.4%	-44.2%	-42.0%	-0.5%	-47.5%	-48.1%	-48.0%	-47.5%
Ruamahanga River at Te Ore Ore	Median (mg/L)	0.0098	0.0098	0.0098	0.0097	0.0095	0.0092	0.0092	0.0092	0.0092	0.0092
	Median (% change from Baseline)		-0.0%	-0.0%	-0.9%	-2.7%	-6.2%	-6.2%	-6.2%	-6.2%	-6.2%
	Av. Daily Max (mg/L)	0.0382	0.0382	0.0382	0.038	0.0376	0.0367	0.0367	0.0367	0.0367	0.0367
	Av. Daily Max (% change from Baseline)		-0.0%	-0.0%	-0.5%	-1.5%	-0.0%	-3.8%	-3.8%	-3.8%	-3.8%
Ruamahanga River at Gladstone Bridge	Median (mg/L)	0.0123	0.0095	0.0084	0.0084	0.0083	0.008	0.008	0.008	0.008	0.008
	Median (% change from Baseline)		-22.7%	-31.9%	-31.5%	-32.8%	-35.3%	-34.6%	-35.3%	-35.3%	-34.6%
	Av. Daily Max (mg/L)	0.0887	0.0656	0.0459	0.0452	0.0479	0.0433	0.0438	0.0433	0.0433	0.0438
	Av. Daily Max (% change from Baseline)		-26.0%	-48.2%	-49.1%	-46.0%	-0.5%	-50.7%	-51.2%	-51.2%	-50.7%
Ruamahanga River at Waihenga	Median (mg/L)	0.0151	0.0119	0.0103	0.0109	0.0105	0.0099	0.0105	0.0098	0.0099	0.0105
	Median (% change from Baseline)		-21.4%	-32.0%	-27.7%	-30.9%	-34.7%	-30.6%	-35.3%	-34.7%	-30.6%
	Av. Daily Max (mg/L)	0.0645	0.0462	0.0366	0.0367	0.0378	0.0342	0.0345	0.0341	0.0342	0.0345
	Av. Daily Max (% change from Baseline)		-28.3%	-43.3%	-43.1%	-41.4%	-0.5%	-46.4%	-47.0%	-47.0%	-46.4%
Ruamahanga River at Wardells	Median (mg/L)	0.0169	0.0126	0.0105	0.0107	0.0105	0.01	0.0102	0.01	0.01	0.0102
	Median (% change from Baseline)		-25.2%	-37.7%	-36.8%	-37.8%	-40.5%	-39.4%	-40.5%	-40.5%	-39.4%
	Av. Daily Max (mg/L)	0.1692	0.1087	0.0596	0.0596	0.0655	0.0564	0.0583	0.0564	0.0564	0.0583
	Av. Daily Max (% change from Baseline)		-35.8%	-64.8%	-64.8%	-61.3%	-0.7%	-65.5%	-66.7%	-66.7%	-65.5%
Tauanui River at Mouth	Median (mg/L)	0.006	0.0061	0.0061	0.0061	0.006	0.006	0.006	0.006	0.006	0.006
	Median (% change from Baseline)		0.6%	0.6%	0.6%	-0.1%	-0.4%	-0.4%	-0.4%	-0.4%	-0.4%
	Av. Daily Max (mg/L)	0.0436	0.0436	0.0436	0.0436	0.0435	0.0434	0.0434	0.0434	0.0434	0.0434
	Av. Daily Max (% change from Baseline)		0.1%	0.1%	0.1%	-0.1%	-0.0%	-0.5%	-0.5%	-0.5%	-0.5%
Tauherenikau River at Websters	Median (mg/L)	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037
	Median (% change from Baseline)		1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
	Av. Daily Max (mg/L)	0.0312	0.0312	0.0312	0.0312	0.0312	0.0312	0.0312	0.0312	0.0312	0.0312
	Av. Daily Max (% change from Baseline)		0.2%	0.2%	0.2%	0.2%	0.0%	0.2%	0.2%	0.2%	0.2%
Taueru River at Gladstone	Median (mg/L)	0.012	0.012	0.012	0.012	0.0116	0.0109	0.0109	0.0109	0.0109	0.0109
	Median (% change from Baseline)		-0.0%	-0.0%	-0.0%	-3.4%	-8.7%	-8.7%	-8.7%	-8.7%	-8.7%
	Av. Daily Max (mg/L)	0.0355	0.0355	0.0355	0.0355	0.0345	0.0327	0.0327	0.0327	0.0327	0.0327
	Av. Daily Max (% change from Baseline)		-0.0%	-0.0%	-0.0%	-2.8%	-0.1%	-7.9%	-7.9%	-7.9%	-7.9%
Turanganui River at Mouth	Median (mg/L)	0.0092	0.0092	0.009	0.009	0.0088	0.0088	0.0088	0.0088	0.0088	0.0088
	Median (% change from Baseline)		-0.0%	-2.2%	-2.2%	-4.1%	-4.5%	-4.5%	-4.5%	-4.5%	-4.5%
	Av. Daily Max (mg/L)	0.0472	0.0472	0.0462	0.0462	0.0454	0.0453	0.0453	0.0453	0.0453	0.0453
	Av. Daily Max (% change from Baseline)		-0.0%	-2.1%	-2.1%	-3.8%	-0.0%	-4.1%	-4.1%	-4.1%	-4.1%
Waingawa River at South Rd	Median (mg/L)	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036
	Median (% change from Baseline)		0.2%	0.2%	-0.2%	-0.0%	-0.2%	-0.2%	-0.2%	-0.2%	-0.2%
	Av. Daily Max (mg/L)	0.0273	0.0273	0.0273	0.0272	0.0272	0.0272	0.0272	0.0272	0.0272	0.0272
	Av. Daily Max (% change from Baseline)		0.0%	0.0%	-0.1%	-0.0%	-0.0%	-0.2%	-0.2%	-0.2%	-0.2%
Waiohine River at Bicknells	Median (mg/L)	0.0154	0.0111	0.0113	0.0124	0.0111	0.0104	0.0113	0.0102	0.0104	0.0113
	Median (% change from Baseline)		-28.1%	-26.8%	-19.2%	-28.1%	-32.5%	-26.4%	-33.6%	-32.5%	-26.4%
	Av. Daily Max (mg/L)	0.1237	0.0435	0.0448	0.0525	0.0435	0.0431	0.0501	0.042	0.0431	0.0501
	Av. Daily Max (% change from Baseline)		-64.8%	-63.8%	-57.5%	-64.8%	-0.7%	-59.5%	-66.1%	-65.2%	-59.5%
Waipoua River at Colombo Rd Bridge	Median (mg/L)	0.0053	0.0053	0.0053	0.0053	0.0051	0.005	0.005	0.005	0.005	0.005
	Median (% change from Baseline)		0.2%	0.2%	-1.1%	-3.9%	-5.4%	-5.4%	-5.4%	-5.4%	-5.4%
	Av. Daily Max (mg/L)	0.0352	0.0352	0.0352	0.0349	0.0343	0.034	0.034	0.034	0.034	0.034
	Av. Daily Max (% change from Baseline)		0.1%	0.1%	-0.9%	-2.6%	-0.0%	-3.5%	-3.5%	-3.5%	-3.5%
Whangaehu River at 250m from Ruamahanga Confluence	Median (mg/L)	0.0043	0.0044	0.0044	0.0044	0.0042	0.004	0.004	0.004	0.004	0.004
	Median (% change from Baseline)		1.3%	1.3%	1.3%	-3.7%	-8.2%	-8.2%	-8.2%	-8.2%	-8.2%
	Av. Daily Max (mg/L)	0.0695	0.0695	0.0695	0.0695	0.0677	0.0642	0.0642	0.0642	0.0642	0.0642
	Av. Daily Max (% change from Baseline)		0.1%	0.1%	0.1%	-2.6%	-0.1%	-7.6%	-7.6%	-7.6%	-7.6%

Table 3. Current landuse area in ha (% of total)

Site	Dairy	Dairy Support	Arable	Sheep and Beef	Native Bush	Other	Total
Huangularua River at Ponatahi Bridge	-	46 (0.2%)	-	25581 (84.6%)	693 (2.3%)	3918 (13.0%)	30239
Kopuaranga River at Stuarts	808 (4.8%)	281 (1.7%)	-	14103 (84.5%)	154 (0.9%)	1339 (8.0%)	16686
Makahakaha Stream at Mouth	129 (2.1%)	389 (6.3%)	38 (0.6%)	5155 (83.3%)	4 (0.1%)	477 (7.7%)	6192
Mangatarere River at SH2	2842 (23.8%)	357 (3.0%)	40 (0.3%)	2515 (21.0%)	4190 (35.1%)	2003 (16.8%)	11947
Otukura Stream at Mouth	2790 (29.8%)	2454 (26.2%)	-	1611 (17.2%)	83 (0.9%)	2428 (25.9%)	9366
Parkvale Stream at weir	1246 (24.9%)	553 (11.0%)	-	980 (19.6%)	42 (0.8%)	2185 (43.6%)	5006
Ruamahanga River at Gladstone Bridge	3564 (2.7%)	2095 (1.6%)	791 (0.6%)	81249 (60.8%)	20401 (15.3%)	25593 (19.1%)	133694
Ruamahanga River at Pukio	14438 (5.9%)	5867 (2.4%)	1556 (0.6%)	132684 (53.9%)	45104 (18.3%)	46717 (19.0%)	246366
Ruamahanga River at Te Ore Ore	1115 (3.6%)	549 (1.8%)	3 (0.0%)	17950 (57.8%)	7487 (24.1%)	3974 (12.8%)	31078
Ruamahanga River at U/S Lake Wai Outlet	16146 (6.3%)	6139 (2.4%)	1556 (0.6%)	136133 (53.5%)	47016 (18.5%)	47506 (18.7%)	254496
Ruamahanga River at Waihenga	13451 (5.7%)	5413 (2.3%)	1487 (0.6%)	128058 (54.2%)	44818 (19.0%)	42862 (18.2%)	236089
Ruamahanga River at Wardells	2322 (3.6%)	1518 (2.4%)	161 (0.3%)	38490 (59.9%)	10298 (16.0%)	11495 (17.9%)	64284
Tauanui River at Mouth	-	-	-	617 (14.9%)	2535 (61.0%)	1003 (24.1%)	4155
Taueru River at Gladstone	298 (0.6%)	246 (0.5%)	587 (1.2%)	39655 (80.5%)	242 (0.5%)	8217 (16.7%)	49244
Tauherenikau River at Websters	267 (1.8%)	419 (2.9%)	-	944 (6.5%)	11255 (77.7%)	1596 (11.0%)	14481
Turanganui River at Mouth	260 (3.9%)	38 (0.6%)	-	1810 (26.8%)	3491 (51.8%)	1141 (16.9%)	6740
Waingawa River at South Rd	215 (1.4%)	127 (0.9%)	-	2389 (16.0%)	9856 (65.8%)	2382 (15.9%)	14969
Waiohine River at Bicknells	6070 (15.4%)	1036 (2.6%)	227 (0.6%)	3595 (9.1%)	23641 (60.1%)	4750 (12.1%)	39320
Waipoua River at Colombo Rd Bridge	173 (1.0%)	670 (3.8%)	113 (0.6%)	9862 (56.5%)	2802 (16.1%)	3832 (22.0%)	17452
Whangaehu River at 250m from Ruamahanga Confluence	915 (6.3%)	299 (2.1%)	45 (0.3%)	10335 (70.9%)	5 (0.0%)	2979 (20.4%)	14578

Table 4. Retirement (area in ha)

Site	BAU 2025	BAU 2040	BAU 2080	SILVER 2025	SILVER 2040	SILVER 2080	GOLD 2025	GOLD 2040	GOLD 2080
Huangularua River at Ponatahi Bridge	107	107	107	2285	3240	3240	3240	3240	3240
Kopuaranga River at Stuarts	0	0	0	353	1068	1068	1068	1068	1068
Makahakaha Stream at Mouth	0	0	0	218	341	341	341	341	341
Mangatarere River at SH2	0	0	0	0	0	0	0	0	0
Otukura Stream at Mouth	0	0	0	0	1	1	1	1	1
Parkvale Stream at weir	0	0	0	0	0	0	0	0	0
Ruamahanga River at U/S Lake Wai Outlet	107	245	347	5634	11092	11092	11092	11092	11092
Ruamahanga River at Pukio	107	245	347	5376	10812	10812	10812	10812	10812
Ruamahanga River at Te Ore Ore	0	52	61	452	1244	1244	1244	1244	1244
Ruamahanga River at Gladstone Bridge	0	138	231	2468	6340	6340	6340	6340	6340
Ruamahanga River at Waihenga	107	245	347	5272	10637	10637	10637	10637	10637
Ruamahanga River at Wardells	0	132	225	1241	3008	3008	3008	3008	3008
Tauanui River at Mouth	0	0	0	5	8	8	8	8	8
Tauherenikau River at Websters	0	0	0	0	0	0	0	0	0
Taueru River at Gladstone	0	0	0	1213	3310	3310	3310	3310	3310
Turanganui River at Mouth	2	67	152	123	131	131	131	131	131
Waingawa River at South Rd	0	7	7	0	5	5	5	5	5
Waiohine River at Bicknells	0	0	0	0	0	0	0	0	0
Waipoua River at Colombo Rd Bridge	0	79	163	314	454	454	454	454	454
Whangaehu River at 250m from Ruamahanga Confluence	0	0	0	452	1286	1286	1286	1286	1286

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