

### **APPENDIX 3**

An updated version of Table 3.11-1 for 11 sites in the Upper Waikato FMU, showing amended freshwater objectives and a supplementary table of nutrient loads for limit and target setting purposes.

Objectives are amended to account for discrepancies in current state and issues associated with precision and accuracy discussed in my evidence.

Table 3.11-1 Short and long-term freshwater objectives

Site	Attributes																													
	Annual median chlorophyll a (mg/m <sup>3</sup> )			Annual maximum chlorophyll a (mg/m <sup>3</sup> )			Annual median total nitrogen (mg/m <sup>3</sup> )			Annual median total phosphorus (mg/m <sup>3</sup> )			Annual median nitrate (mg NO <sub>3</sub> -N/L)			Annual 95 <sup>th</sup> percentile nitrate (mg NO <sub>3</sub> -N/L)			Annual median ammonia (mg NH <sub>4</sub> -N/L)			Annual maximum ammonia (mg NH <sub>4</sub> -N/L)			95 <sup>th</sup> percentile E. coli (E. coli/100ml)			Clarity (m)		
	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year	Current state	Short term	80 year
73	Waikato River (Ohaaki)	NA	NA	NA	134	134	134	12	12	12	12	0.04	0.04	0.04	0.08	0.08	0.08	0.01	0.01	0.01	0.05	0.02	0.02	73	70	70	3.5	3.5	3.5	
66a	Waikato River (Tahorakuri)	NA	NA	NA	200	160	160	28	15	15	15	0.09	0.09	0.09	0.25	0.20	0.15	0.01	0.01	0.01	0.10	0.03	0.02	102	102	102	ND	3.0	3.5	
66b	Waikato River (Ohaakuri)	3.1	3.2	11	216	206	160	20	20	17	20	0.08	0.08	0.08	0.17	0.17	0.17	0.01	0.01	0.01	0.10	0.05	0.05	15	15	15	2.3	2.5	3.0	
67	Waikato River (Whakamanu)	7	4	15	256	260	200	22	22	20	22	0.08	0.08	0.08	0.24	0.24	0.24	0.01	0.01	0.01	0.03	0.02	0.02	60	60	60	1.9	2.0	3.0	
74	Puato Strm Broadlands Rd Br	NA	NA	NA	540	540	500	93	85	50	85	0.45	0.45	0.40	0.47	0.53	0.50	0.01	0.01	0.01	0.03	0.02	0.02	82	90	90	1.6	1.8	3.0	
72	Torepatutahi Strm Vaile Rd Br	NA	NA	NA	625	600	500	96	90	50	90	0.50	0.50	0.45	0.82	0.80	0.80	0.01	0.01	0.01	0.03	0.02	0.02	168	220	200	ND	2.0	3.0	
65	Waicetapu Strm Homestead Br Rd	NA	NA	NA	1860	1800	800	101	100	50	100	1.29	1.26	1.00	1.66	1.60	1.50	0.11	0.03	0.03	0.55	0.20	0.20	266	280	280	ND	2.0	3.0	
69	Mangakara Strm (Reporoa) SH5	NA	NA	NA	1580	1550	800	74	70	50	70	1.30	1.27	1.00	1.66	2.50	1.50	0.01	0.01	0.01	0.51	0.06	0.05	1630	1600	540	0.86	0.9	1.6	
62	Kawanui Strm SH5 Br	NA	NA	NA	2990	2500	800	82	80	50	80	2.60	2.60	2.40	3.01	2.90	1.50	0.01	0.01	0.01	0.50	0.10	0.05	1578	2000	540	1.23	1.4	1.6	
58	Waioctapu Strm Campbell Rd Br	NA	NA	NA	1955	1900	800	73	70	50	70	0.92	0.92	0.92	1.13	1.10	1.10	0.29	0.24	0.24	1.10	0.35	0.05	15	20	20	1.2	1.2	1.6	
59	Otamakokore Strm Hossack Rd	NA	NA	NA	990	950	800	144	140	50	140	0.74	0.74	0.74	1.33	1.30	1.30	0.01	0.01	0.01	0.08	0.03	0.02	437	540	540	1.1	1.2	1.6	
56	Whirinaki Strm Corbett Rd	NA	NA	NA	810	800	500	63	60	50	60	0.77	0.77	0.77	0.88	0.90	0.90	0.01	0.01	0.01	0.076	0.03	0.02	49	100	100	2.7	2.7	3.0	

NA – Attribute is not applicable to the sub-catchment

ND – No data for the sub-catchment

Supplementary table to Table 3.11-1 showing nutrient loads for limit and target setting purposes.

	Site	TN load (t/yr)			TP load (t/yr)		
		Current state	Short term	80 year	Current state	Short term	80 year
73	Waikato River (Ohaaki)	760	TBC	TBC	68	TBC	TBC
66a	Waikato River (Tahorakuri)*	1600	TBC	TBC	170	TBC	TBC
66b	Waikato River (Ohakuri)	1200	TBC	TBC	120	TBC	TBC
67	Waikato River (Whakamaru)	1700	TBC	TBC	140	TBC	TBC
74	Pueto Stm Broadlands Rd Br	85	TBC	TBC	15	TBC	TBC
72	Torepatutahi Stm Vaile Rd Br	93	TBC	TBC	17	TBC	TBC
65	Waiotapu Stm Homestead Br Rd	470	TBC	TBC	25	TBC	TBC
69	Mangakara Stm (Reporoa) SH5	36	TBC	TBC	2	TBC	TBC
62	Kawanui Stm SH5 Br	38	TBC	TBC	2	TBC	TBC
58	Waiotapu Stm Campbell Rd Br	110	TBC	TBC	4	TBC	TBC
59	Otamakokore Stm Hossack Rd	35	TBC	TBC	5	TBC	TBC
56	Whirinaki Stm Corbett Rd	7	TBC	TBC	1	TBC	TBC

\* Loads for Waikato River (Tahorakuri) based on best available data (i.e. not monitored by WRC).

TBC – to be confirmed in Block 3 evidence when an alternative approach is presented.

