Contaminant Load Model

Version MAY06

Auckland Regional Council
TE RAUHITANGA TAIAO

SOURCE	SOURCE TYPE		Source Area (m^2)	First management option	Second management option	Third management option	Fraction of area draining to train	Sediment Yield (g m^{-2} a^{-1})	Sediment Initial load (g a^{-1})	Sediment Load reduction efficiency	Sediment Reduced load (g a^{-1})	Zinc Yield (g m^{-2} a^{-1})	Zinc Initial load (g a^{-1})	Zinc Load reduction efficiency	Zinc Reduced load (g a^{-1})	Copper Yield (g m^{-2} a^{-1})	Copper Initial load (g a^{-1})	Copper Load reduction efficiency	Copper Reduced load (g a^{-1})	Total Petroleum Hydrocarbons Yield (g m^{-2} a^{-1})	Total Petroleum Hydrocarbons Initial load (g a^{-1})	Total Petroleum Hydrocarbons Load reduction efficiency	Total Petroleum Hydrocarbons Reduced load (g a^{-1})
	Site area (m^2)		**21143130**	**Source contaminant management train**				**Contaminant yields, loads, and load reduction efficiencies**															
Roofs	Galvanised unpainted		12633					5	63163	0.00	63163	2.200	27791.9	0.00	27791.89	0.0008	10.1	0.00	10.1				
	Galvanised steel poor paint		20129					5	100644	0.00	100644	1.600	32206.2	0.00	32206.20	0.0008	16.1	0.00	16.1				
	Galvanised well painted		16602					5	83009	0.00	83009	0.150	2490.3	0.00	2490.27	0.0008	13.3	0.00	13.3				
	Zinc/aluminium unpainted		394					5	1968	0.00	1968	0.300	118.1	0.00	118.05	0.0008	0.3	0.00	0.3				
	Colorsteel/colorcote		133208					5	666040	0.00	666040	0.040	5328.3	0.00	5328.32	0.0008	106.6	0.00	106.6				
	Concrete							10	0	0.00	0	0.020	0.0	0.00	0.00	0.0013	0.0	0.00	0.0				
	Clay							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Slate							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Copper							5	0	0.00	0	0.000	0.0	0.00	0.00	3.0000	0.0	0.00	0.0				
	Decramastic		66407					5	332036	0.00	332036	0.200	13281.4	0.00	13281.44	0.0017	112.9	0.00	112.9				
	Other materials		433811					5	2169055	0.00	2169055	0.020	8676.2	0.00	8676.22	0.0008	347.0	0.00	347.0				
	Unknown (no galvanised steel/copper)							7	0	0.00	0	0.200	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
Roads		*Length (m)*																					
	<1000	31114	528935					4	2115739	0.00	2115739	0.021	11356.5	0.00	11356.54	0.0070	3690.9	0.00	3690.9	0.11	56782.7	0.00	56782.7
	1000-500	8711	148079					30	4451066	0.00	4451066	0.107	15896.7	0.00	15896.66	0.0349	5166.4	0.00	5166.4	0.54	79483.3	0.00	79483.3
Vehicles/day	5000-20000	7554	128424					150	19301423	0.00	19301423	0.537	68933.7	0.00	68933.65	0.1744	22403.4	0.00	22403.4	2.68	344668.3	0.00	344668.3
	20000-50	4525	92759					299	27746355	0.00	27746355	1.068	99094.1	0.00	99094.12	0.3472	32205.6	0.00	32205.6	5.34	495470.6	0.00	495470.6
	50000-100000		0					300	0	0.00	0	2.281	0.0	0.00	0.00	0.7414	0.0	0.00	0.0	11.41	0.0	0.00	0.0
	>100000		0					300	0	0.00	0	3.532	0.0	0.00	0.00	1.1480	0.0	0.00	0.0	17.66	0.0	0.00	0.0
Paved Surfaces other than roads	Residential		1545314					20	30906280	0.00	30906280	0.070	108172.0	0.00	108171.98	0.0100	15453.1	0.00	15453.1				
	Industrial		8569					50	428463	0.00	428463	0.100	856.9	0.00	856.93	0.1300	1114.0	0.00	1114.0				
	Commercial		6967					100	696661	0.00	696661	0.050	348.3	0.00	348.33	0.0500	348.3	0.00	348.3				
Urban Grass lands		<10	2952937					35	103352780	0.00	103352780				3617.3				723.5				
	Slope	10-20						80	0	0.00	0				0.0				0.0				
		>20						160	0	0.00	0				0.0				0.0				
Urban Stream Channel	*length x width*							6000	0	0.00	0				0.0				0.0				
	Urban area without construction sites		**6095166.294**					**Totals**	**192414682**	**0.00**	**192414682**	**Totals**	**394550.6**	**-0.01**	**398167.9**	**Totals**	**80988.1**	**-0.01**	**81711.6**	**Totals**	**976404.9**	**0.00**	**976404.9**
Construction Site (1) open for 2 months/year		<10						400	0	0.00	0				0.0				0.0				
	Slope	10-20						2500	0	0.00	0				0.0				0.0				
		>20						7000	0	0.00	0				0.0				0.0				
Construction Site (2) open for 6 months/year		<10						1300	0	0.00	0				0.0				0.0				
	Slope	10-20						7500	0	0.00	0				0.0				0.0				
		>20						20000	0	0.00	0				0.0				0.0				
Construction Site (3) open for 12 months/year		<10						2500	0	0.00	0				0.0				0.0				
	Slope	10-20						15000	0	0.00	0				0.0				0.0				
		>20						40000	0	0.00	0				0.0				0.0				
	Urban area with construction sites		**6095166**					**Totals**	**192414682**	**0.00**	**192414682**	**Totals**	**394550.6**	**-0.01**	**398167.9**	**Totals**	**80988.1**	**-0.01**	**81711.6**	**Totals**	**976404.9**	**0.00**	**976404.9**
Exotic production forest		<10	589408					10	5894077	0.00	5894077				206.3				41.3				
		10-20	374170					60	22450198	0.00	22450198				785.8				157.2				
	Slope	20-30	221378					200	44275517	0.00	44275517				1549.6				309.9				
		>30	769345					500	384672676	0.00	384672676				13463.5				2692.7				
Stable bush		<10	1699584					5	8497920	0.00	8497920				297.4				59.5				
		10-20	672535					30	20176058	0.00	20176058				706.2				141.2				
	Slope	20-30	779184					100	77918447	0.00	77918447				2727.1				545.4				
		>30	1814385					250	453596218	0.00	453596218				15875.9				3175.2				
Farmed pasture		<10	6628072					50	331403600	0.00	331403600				11599.1				2319.8				
		10-20	1258093					100	125809282	0.00	125809282				4403.3				880.7				
	Slope	20-30	184772					500	92386171	0.00	92386171				3233.5				646.7				
		>30	29803					1000	29803364	0.00	29803364				1043.1				208.6				
Retired pasture		<10						20	0	0.00	0				0.0				0.0				
		10-20						100	0	0.00	0				0.0				0.0				
	Slope	20-30						200	0	0.00	0				0.0				0.0				
		>30						500	0	0.00	0				0.0				0.0				
Horticulture		Volcanic						50	0	0.00	0				0.0				0.0				
	Soil type	Sediment						100	0	0.00	0				0.0				0.0				
		Unknown	27234					100	2723356	0.00	2723356				95.3				19.1				
	Total area of sources (m^2)		**21143130**					**Site totals**	**1792021567**	**0.00**	**1792021567**	**Site totals**	**394550.6**	**-0.15**	**454154.2**	**Site totals**	**80988.1**	**-0.15**	**92908.8**	**Site totals**	**976404.9**	**0.00**	**976404.9**

ERROR!!! Site and source area's do not agree
Difference = 0

Bottom of Site contaminant management train				Bottom of Site out-fall Loads (kg a^{-1})				Average yields				Average concentrations (mg kg^{-1})			
First management option	Second management option	Third management option	Fraction of area draining to train	TSS	Zn	Cu	TPH	TSS kg ha^{-1} a^{-1}	Zn g ha^{-1} a^{-1}	Cu g ha^{-1} a^{-1}	TPH g ha^{-1} a^{-1}	TSS	Zn	Cu	TPH
				1792021.6	454.2	92.9	976.4	848	215	44	462		253	52	545

Ngarara Stream Catchment – Existing

Contaminant Load Model

Version MAY06

Auckland Regional Council
TE RAUHITANGA TAIAO

SOURCE	Site area (m^2)		21143130	Source contaminant management train				Contaminant yields, loads, and load reduction efficiencies															
								Sediment				Zinc				Copper				Total Petroleum Hydrocarbons			
	SOURCE TYPE		Source Area (m^2)	First management option	Second management option	Third management option	Fraction of area draining to train	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})
Roofs	Galvanised unpainted		12633					5	63163	0.00	63163	2.200	27791.9	0.00	27791.89	0.0008	10.1	0.00	10.1				
	Galvanised steel poor paint		20129					5	100644	0.00	100644	1.600	32206.2	0.00	32206.20	0.0008	16.1	0.00	16.1				
	Galvanised well painted		16602					5	83009	0.00	83009	0.150	2490.3	0.00	2490.27	0.0008	13.3	0.00	13.3				
	Zinc/aluminium unpainted		394					5	1968	0.00	1968	0.300	118.1	0.00	118.05	0.0008	0.3	0.00	0.3				
	Colorsteel/colorcote		133208					5	666040	0.00	666040	0.040	5328.3	0.00	5328.32	0.0008	106.6	0.00	106.6				
	Concrete							10	0	0.00	0	0.020	0.0	0.00	0.00	0.0013	0.0	0.00	0.0				
	Clay							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Slate							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Copper							5	0	0.00	0	0.000	0.0	0.00	0.00	3.0000	0.0	0.00	0.0				
	Decramastic		66407					5	332036	0.00	332036	0.200	13281.4	0.00	13281.44	0.0017	112.9	0.00	112.9				
	Other materials		433811					5	2169055	0.00	2169055	0.020	8676.2	0.00	8676.22	0.0008	347.0	0.00	347.0				
	Unknown (no galvanised steel/copper)							7	0	0.00	0	0.200	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
Roads		Length (m)																					
	<1000	31114	528935					4	2115739	0.00	2115739	0.021	11356.5	0.00	11356.54	0.0070	3690.9	0.00	3690.9	0.11	56782.7	0.00	56782.7
	1000-500	8181	139078					30	4180514	0.00	4180514	0.107	14930.4	0.00	14930.41	0.0349	4852.4	0.00	4852.4	0.54	74652.0	0.00	74652.0
	Vehicles/day 5000-20000	19532	332037					150	49903280	0.00	49903280	0.537	178226.0	0.00	178226.00	0.1744	57923.4	0.00	57923.4	2.68	891130.0	0.00	891130.0
	20000-50000		0					299	0	0.00	0	1.068	0.0	0.00	0.00	0.3472	0.0	0.00	0.0	5.34	0.0	0.00	0.0
	50000-100000		0					300	0	0.00	0	2.281	0.0	0.00	0.00	0.7414	0.0	0.00	0.0	11.41	0.0	0.00	0.0
	>100000		0					300	0	0.00	0	3.532	0.0	0.00	0.00	1.1480	0.0	0.00	0.0	17.66	0.0	0.00	0.0
Paved Surfaces other than roads	Residential		1546171					20	30923410	0.00	30923410	0.070	108231.9	0.00	108231.94	0.0100	15461.7	0.00	15461.7				
	Industrial		8569					50	428463	0.00	428463	0.100	856.9	0.00	856.93	0.1300	1114.0	0.00	1114.0				
	Commercial		6967					100	696661	0.00	696661	0.050	348.3	0.00	348.33	0.0500	348.3	0.00	348.3				
Urban Grass lands		<10	2952937					35	103352780	0.00	103352780				3617.3				723.5				
	Slope	10-20						80	0	0.00	0				0.0				0.0				
		>20						160	0	0.00	0				0.0				0.0				
Urban Stream Channel	*length x width*							6000	0	0.00	0				0.0				0.0				
	Urban area without construction sites		**6197875.863**					**Totals**	**195016763**	**0.00**	**195016763**	**Totals**	**403842.5**	**-0.01**	**407459.9**	**Totals**	**83997.1**	**-0.01**	**84720.5**	**Totals**	**1022564.7**	**0.00**	**1022564.7**
Construction Site (1) open for 2 months/year		<10						400	0	0.00	0				0.0				0.0				
	Slope	10-20						2500	0	0.00	0				0.0				0.0				
		>20						7000	0	0.00	0				0.0				0.0				
Construction Site (2) open for 6 months/year		<10						1300	0	0.00	0				0.0				0.0				
	Slope	10-20						7500	0	0.00	0				0.0				0.0				
		>20						20000	0	0.00	0				0.0				0.0				
Construction Site (3) open for 12 months/year		<10						2500	0	0.00	0				0.0				0.0				
	Slope	10-20						15000	0	0.00	0				0.0				0.0				
		>20						40000	0	0.00	0				0.0				0.0				
	Urban area with construction sites		**6197876**					**Totals**	**195016763**	**0.00**	**195016763**	**Totals**	**403842.5**	**-0.01**	**407459.9**	**Totals**	**83997.1**	**-0.01**	**84720.5**	**Totals**	**1022564.7**	**0.00**	**1022564.7**
Exotic production forest		<10	589408					10	5894077	0.00	5894077				206.3				41.3				
		10-20	357275					60	21436515	0.00	21436515				750.3				150.1				
	Slope	20-30	221378					200	44275517	0.00	44275517				1549.6				309.9				
		>30	769345					500	384672676	0.00	384672676				13463.5				2692.7				
Stable bush		<10	1699584					5	8497920	0.00	8497920				297.4				59.5				
		10-20	666276					30	19988286	0.00	19988286				699.6				139.9				
	Slope	20-30	779184					100	77918447	0.00	77918447				2727.1				545.4				
		>30	1814385					250	453596218	0.00	453596218				15875.9				3175.2				
Farmed pasture		<10	6628072					50	331403600	0.00	331403600				11599.1				2319.8				
		10-20	1178537					100	117853703	0.00	117853703				4124.9				825.0				
	Slope	20-30	184772					500	92386171	0.00	92386171				3233.5				646.7				
		>30	29803					1000	29803364	0.00	29803364				1043.1				208.6				
Retired pasture		<10						20	0	0.00	0				0.0				0.0				
		10-20						100	0	0.00	0				0.0				0.0				
	Slope	20-30						200	0	0.00	0				0.0				0.0				
		>30						500	0	0.00	0				0.0				0.0				
Horticulture		Volcanic						50	0	0.00	0				0.0				0.0				
	Soil type	Sediment						100	0	0.00	0				0.0				0.0				
		Unknown	27234					100	2723356	0.00	2723356				95.3				19.1				
	Total area of sources (m^2)		**21143130**					**Site totals**	**1785466613**	**0.00**	**1785466613**	**Site totals**	**403842.5**	**-0.15**	**463125.6**	**Site totals**	**83997.1**	**-0.14**	**95853.7**	**Site totals**	**1022564.7**	**0.00**	**1022564.7**

ERROR!!! Site and source area's do not agree
Difference = 0

Bottom of Site contaminant management train				Bottom of Site out-fall Loads (kg a^{-1})				Average yields				Average concentrations (mg kg^{-1})			
First management option	Second management option	Third management option	Fraction of area draining to train	TSS	Zn	Cu	TPH	TSS kg ha^{-1} a^{-1}	Zn g ha^{-1} a^{-1}	Cu g ha^{-1} a^{-1}	TPH g ha^{-1} a^{-1}	TSS	Zn	Cu	TPH
				1785466.6	463.1	95.9	1022.6	844	219	45	484		259	54	573

Ngarara Stream Catchment – Future (2031) with Expressway – Unmitigated

Contaminant Load Model

Version MAY06

Auckland Regional Council
TE RAUHITANGA TAIAO

SOURCE	Site area (m^2)		21143130	Source contaminant management train				Contaminant yields, loads, and load reduction efficiencies															
								Sediment				Zinc				Copper				Total Petroleum Hydrocarbons			
	SOURCE TYPE		Source Area (m^2)	First management option	Second management option	Third management option	Fraction of area draining to train	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})	Yield (g $m^{-2}a^{-1}$)	Initial load (g a^{-1})	Load reduction efficiency	Reduced load (g a^{-1})
Roofs	Galvanised unpainted		12633					5	63163	0.00	63163	2.200	27791.9	0.00	27791.89	0.0008	10.1	0.00	10.1				
	Galvanised steel poor paint		20129					5	100644	0.00	100644	1.600	32206.2	0.00	32206.20	0.0008	16.1	0.00	16.1				
	Galvanised well painted		16602					5	83009	0.00	83009	0.150	2490.3	0.00	2490.27	0.0008	13.3	0.00	13.3				
	Zinc/aluminium unpainted		394					5	1968	0.00	1968	0.300	118.1	0.00	118.05	0.0008	0.3	0.00	0.3				
	Colorsteel/colorcote		133208					5	666040	0.00	666040	0.040	5328.3	0.00	5328.32	0.0008	106.6	0.00	106.6				
	Concrete							10	0	0.00	0	0.020	0.0	0.00	0.00	0.0013	0.0	0.00	0.0				
	Clay							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Slate							5	0	0.00	0	0.020	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
	Copper							5	0	0.00	0	0.000	0.0	0.00	0.00	3.0000	0.0	0.00	0.0				
	Decramastic		66407					5	332036	0.00	332036	0.200	13281.4	0.00	13281.44	0.0017	112.9	0.00	112.9				
	Other materials		433811					5	2169055	0.00	2169055	0.020	8676.2	0.00	8676.22	0.0008	347.0	0.00	347.0				
	Unknown (no galvanised steel/copper)							7	0	0.00	0	0.200	0.0	0.00	0.00	0.0008	0.0	0.00	0.0				
Roads		*Length (m)*																					
	Vehicles/day <1000	31114	528935					4	2115739	0.00	2115739	0.021	11356.5	0.00	11356.54	0.0070	3690.9	0.00	3690.9	0.11	56782.7	0.00	56782.7
	1000-500	8181	139078					30	4180514	0.00	4180514	0.107	14930.4	0.00	14930.41	0.0349	4852.4	0.00	4852.4	0.54	74652.0	0.00	74652.0
	5000-20000	19532	332037	Swale			0.31	150	49903280	0.75	38300767	0.537	178226.0	0.47	152258.47	0.1744	57923.4	0.57	47688.4	2.68	891130.0	0.47	761292.4
	20000-50000		0					299	0	0.00	0	1.068	0.0	0.00	0.00	0.3472	0.0	0.00	0.0	5.34	0.0	0.00	0.0
	50000-100000		0					300	0	0.00	0	2.281	0.0	0.00	0.00	0.7414	0.0	0.00	0.0	11.41	0.0	0.00	0.0
	>100000		0					300	0	0.00	0	3.532	0.0	0.00	0.00	1.1480	0.0	0.00	0.0	17.66	0.0	0.00	0.0
Paved Surfaces other than roads	Residential		1546171					20	30923410	0.00	30923410	0.070	108231.9	0.00	108231.94	0.0100	15461.7	0.00	15461.7				
	Industrial		8569					50	428463	0.00	428463	0.100	856.9	0.00	856.93	0.1300	1114.0	0.00	1114.0				
	Commercial		6967					100	696661	0.00	696661	0.050	348.3	0.00	348.33	0.0500	348.3	0.00	348.3				
Urban Grass lands	Slope	<10	2952937					35	103352780	0.00	103352780				3617.3				723.5				
		10-20						80	0	0.00	0				0.0				0.0				
		>20						160	0	0.00	0				0.0				0.0				
Urban Stream Channel	*length x width*							6000	0	0.00	0				0.0				0.0				
	Urban area without construction sites		**6197875.863**					**Totals**	**195016763**	**0.06**	**183414250**	**Totals**	**403842.5**	**0.06**	**381492.3**	**Totals**	**83997.1**	**0.11**	**74485.5**	**Totals**	**1022564.7**	**0.13**	**892727.1**
Construction Site (1) open for 2 months/year	*Slope*	<10						400	0	0.00	0				0.0				0.0				
		10-20						2500	0	0.00	0				0.0				0.0				
		>20						7000	0	0.00	0				0.0				0.0				
Construction Site (2) open for 6 months/year	*Slope*	<10						1300	0	0.00	0				0.0				0.0				
		10-20						7500	0	0.00	0				0.0				0.0				
		>20						20000	0	0.00	0				0.0				0.0				
Construction Site (3) open for 12 months/year	*Slope*	<10						2500	0	0.00	0				0.0				0.0				
		10-20						15000	0	0.00	0				0.0				0.0				
		>20						40000	0	0.00	0				0.0				0.0				
	Urban area with construction sites		**6197876**					**Totals**	**195016763**	**0.06**	**183414250**	**Totals**	**403842.5**	**0.06**	**381492.3**	**Totals**	**83997.1**	**0.11**	**74485.5**	**Totals**	**1022564.7**	**0.13**	**892727.1**
Exotic production forest	*Slope*	<10	589408					10	5894077	0.00	5894077				206.3				41.3				
		10-20	357275					60	21436515	0.00	21436515				750.3				150.1				
		20-30	221378					200	44275517	0.00	44275517				1549.6				309.9				
		>30	769345					500	384672676	0.00	384672676				13463.5				2692.7				
Stable bush	*Slope*	<10	1699584					5	8497920	0.00	8497920				297.4				59.5				
		10-20	666276					30	19988286	0.00	19988286				699.6				139.9				
		20-30	779184					100	77918447	0.00	77918447				2727.1				545.4				
		>30	1814385					250	453596218	0.00	453596218				15875.9				3175.2				
Farmed pasture	*Slope*	<10	6628072					50	331403600	0.00	331403600				11599.1				2319.8				
		10-20	1178537					100	117853703	0.00	117853703				4124.9				825.0				
		20-30	184772					500	92386171	0.00	92386171				3233.5				646.7				
		>30	29803					1000	29803364	0.00	29803364				1043.1				208.6				
Retired pasture	*Slope*	<10						20	0	0.00	0				0.0				0.0				
		10-20						100	0	0.00	0				0.0				0.0				
		20-30						200	0	0.00	0				0.0				0.0				
		>30						500	0	0.00	0				0.0				0.0				
Horticulture	*Soil type*	Volcanic						50	0	0.00	0				0.0				0.0				
		Sediment						100	0	0.00	0				0.0				0.0				
		Unknown	27234					100	2723356	0.00	2723356				95.3				19.1				
	Total area of sources (m^2)		**21143130**					**Site totals**	**1785466613**	**0.01**	**1773864101**	**Site totals**	**403842.5**	**-0.08**	**437158.1**	**Site totals**	**83997.1**	**-0.02**	**85618.6**	**Site totals**	**1022564.7**	**0.13**	**892727.1**

ERROR!!! Site and source area's do not agree

Difference = 0

Bottom of Site contaminant management train				Bottom of Site out-fall Loads (kg a^{-1})				Average yields				Average concentrations (mg kg^{-1})			
First management option	Second management option	Third management option	Fraction of area draining to train	TSS	Zn	Cu	TPH	TSS kg ha^{-1} a^{-1}	Zn g ha^{-1} a^{-1}	Cu g ha^{-1} a^{-1}	TPH g ha^{-1} a^{-1}	TSS	Zn	Cu	TPH
				1773864.1	437.2	85.6	892.7	839	207	40	422		246	48	503

Ngarara Stream Catchment – Future (2031) with Expressway – Mitigated