

Ruamahanga_WWTP_19Nov17_v1.5

SUMMARY TABLE

Annualized WWTP Upgrade Costs ('000 \$/yr)

District	BAU 2080	Silver 2025	Silver 2040	Silver 2080	Gold 2025	Gold 2040	Gold 2080
Masterton	8,178	5,873	8,241	8,178	8,146	8,241	8,178
Carterton	2,243	2,149	3,105	3,111	2,980	3,105	3,111
Martinborough	1,202	839	1,202	1,202	1,164	1,202	1,202
Greytown	1,181	824	1,181	1,181	1,143	1,181	1,181
Featherston	0	758	1,086	1,086	1,051	1,086	1,086
Total	12,805	10,443	14,816	14,758	14,483	14,816	14,758

SCENARIOS & COSTS

% Discharge to Land

Assumptions: taking the max needed for summer months as the facilities will need to be large enough to meet the summer volumes.

Note: that even when a WWTP plant has reached 100% discharge to land in one period we have listed there is a cost in the next period. This is to indicate that if a decision to not undertake an upgrade was made in one period then the cost would still be borne in the next period (e.g. if upgrades were not made in 2040 but instead held off to 2080). Therefore, please note if a capital upgrade was made to achieve the 100% discharge to land in 2040 then these costs would not occur in 2080; only maintenance costs which are assumed to be the same over time would occur)

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	0	60%	100%	100%	60%	100%	100%	100%	100%	100%
Carterton	0	35%	35%	60%	60%	100%	100%	100%	100%	100%
Martinborough	0	24%	100%	100%	60%	100%	100%	100%	100%	100%
Greytown	0	20%	100%	100%	60%	100%	100%	100%	100%	100%
Featherston	0	0%	0%	0%	60%	100%	100%	100%	100%	100%

Costs per 1000 people (estimated based on the Carterton cost graph trend line)

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	\$0	\$2,459	\$3,410	\$3,410	\$2,459	\$3,410	\$3,410	\$3,410	\$3,410	\$3,410
Carterton	\$0	\$1,864	\$1,864	\$2,459	\$2,459	\$3,410	\$3,410	\$3,410	\$3,410	\$3,410
Martinborough	\$0	\$1,603	\$3,410	\$3,410	\$2,459	\$3,410	\$3,410	\$3,410	\$3,410	\$3,410
Greytown	\$0	\$1,508	\$3,410	\$3,410	\$2,459	\$3,410	\$3,410	\$3,410	\$3,410	\$3,410
Featherston	\$0	\$0	\$0	\$0	\$2,459	\$3,410	\$3,410	\$3,410	\$3,410	\$3,410

Total costs (if all upgrade costs incurred all in just given year)

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	\$0	\$62,696,850	\$87,975,420	\$87,293,440	\$62,696,850	\$87,975,420	\$87,293,440	\$86,952,450	\$87,975,420	\$87,293,440
Carterton	\$0	\$17,393,155	\$18,120,200	\$23,947,738	\$22,939,671	\$33,144,228	\$33,212,426	\$31,814,367	\$33,144,228	\$33,212,426
Martinborough	\$0	\$5,838,116	\$12,835,838	\$12,835,838	\$8,956,693	\$12,835,838	\$12,835,838	\$12,421,779	\$12,835,838	\$12,835,838
Greytown	\$0	\$5,394,696	\$12,609,323	\$12,609,323	\$8,798,634	\$12,609,323	\$12,609,323	\$12,202,571	\$12,609,323	\$12,609,323
Featherston	\$0	\$0	\$0	\$0	\$8,087,367	\$11,590,007	\$11,590,007	\$11,216,135	\$11,590,007	\$11,590,007
Total	\$0	\$91,322,817	\$131,540,781	\$136,686,339	\$111,479,214	\$158,154,815	\$157,541,033	\$154,607,302	\$158,154,815	\$157,541,033

Interest Rate	8%
Years	25

Total Annualized Costs (\$/yr)

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	\$0	\$5,873,364	\$8,241,430	\$8,177,543	\$5,873,364	\$8,241,430	\$8,177,543	\$8,145,599	\$8,241,430	\$8,177,543
Carterton	\$0	\$1,629,370	\$1,697,478	\$2,243,395	\$2,148,960	\$3,104,911	\$3,111,300	\$2,980,331	\$3,104,911	\$3,111,300
Martinborough	\$0	\$546,908	\$1,202,446	\$1,202,446	\$839,052	\$1,202,446	\$1,202,446	\$1,163,657	\$1,202,446	\$1,202,446
Greytown	\$0	\$505,369	\$1,181,226	\$1,181,226	\$824,245	\$1,181,226	\$1,181,226	\$1,143,122	\$1,181,226	\$1,181,226
Featherston	\$0	\$0	\$0	\$0	\$757,615	\$1,085,738	\$1,085,738	\$1,050,714	\$1,085,738	\$1,085,738
Total	\$0	\$8,555,010	\$12,322,580	\$12,804,609	\$10,443,237	\$14,815,750	\$14,758,252	\$14,483,423	\$14,815,750	\$14,758,252

Percent of total costs borne by each district (if all upgrade costs incurred all in just given year)

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	0%	69%	67%	64%	56%	56%	55%	56%	56%	55%
Carterton	0%	19%	14%	18%	21%	21%	21%	21%	21%	21%
Martinborough	0%	6%	10%	9%	8%	8%	8%	8%	8%	8%
Greytown	0%	6%	10%	9%	8%	8%	8%	8%	8%	8%
Featherston	0%	0%	0%	0%	7%	7%	7%	7%	7%	7%
Total	0%	100%								

WWTP mitigation costs per person per year for each WWTP

	BAU				Silver			Gold		
	Now	2025	2040	2080	2025	2040	2080	2025	2040	2080
Masterton	\$ -	\$ 230	\$ 319	\$ 319	\$ 230	\$ 319	\$ 319	\$ 319	\$ 319	\$ 319
Carterton	\$ -	\$ 175	\$ 175	\$ 230	\$ 230	\$ 319	\$ 319	\$ 319	\$ 319	\$ 319
Martinborough	\$ -	\$ 150	\$ 319	\$ 319	\$ 230	\$ 319	\$ 319	\$ 319	\$ 319	\$ 319
Greytown	\$ -	\$ 141	\$ 319	\$ 319	\$ 230	\$ 319	\$ 319	\$ 319	\$ 319	\$ 319
Featherston	\$ -	\$ -	\$ -	\$ -	\$ 230	\$ 319	\$ 319	\$ 319	\$ 319	\$ 319
Total	\$ -	\$ 696	\$ 1,133	\$ 1,189	\$ 1,152	\$ 1,597				

POPULATION

Population estimates and projections from Stats NZ <http://nzdotstat.stats.govt.nz/WBOS/Index.aspx?DataSetCode=TABLECODE7545>

Assumptions: Assume that the %change is same within the South Wairarapa district. Thus taken the % change in South Wairarapa projections to calculate projections for Martinborough, Greytown and Featherston

Area	2013	2014	2015	2016	2018	2023	2028	2033	2038	2043	2044-2080
Masterton	24,100	24,200	24,400	24,600	25,000	25,500	25,800	25,900	25,800	25,600	25,600
Carterton	8,490	8,680	8,790	8,900	9,070	9,330	9,530	9,670	9,720	9,740	9,740
South Wairarapa district	9,800	9,920	10,000	10,100	10,250	10,500	10,650	10,800	10,850	10,850	10,850
Martinborough	3,400	3,430	3,490	3,530	3,556	3,643	3,695	3,747	3,764	3,764	3,764
Greytown	3,340	3,410	3,410	3,410	3,493	3,579	3,630	3,681	3,698	3,698	3,698
Featherston	3,070	3,080	3,110	3,150	3,211	3,289	3,336	3,383	3,399	3,399	3,399
Catchment Total	42,400	42,800	43,200	43,590	44,330	45,341	45,991	46,381	46,381	46,201	46,201

%CHANGE

	2018	2023	2028	2033	2038	2043
South Wairarapa	5%	2%	1%	1%	0%	0%
	5%	7%	9%	10%	11%	11%

