

**Program 1, 2, and 3
Utility Cost Analysis and
Utility and Developer Cost Analysis**

SUMMARY OF RESULTS - PETALUMA WITH RECYCLE OPTIONS (Utility Fees)

RW to A,C,E,G

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
WCP1																				
Total Costs:		\$ 903,298.98	\$ 843,829.30	\$ 903,425	\$ 845,575.53	\$ 790,956.38	\$ 859,274.14	\$ 858,915.21	\$ 787,380.97	\$ 634,585.15	\$ 636,727.05	\$ 221,178.22	\$ 159,664.87	\$ 158,139.79	\$ 161,724.51	\$ 162,018.81	\$ 150,339.32	\$ 150,497.89	\$ 150,656.51	
Present Worth (2006 \$'s)	Average	\$ 802,569.44	\$ 727,894.56	\$ 756,604.16	\$ 687,530.29	\$ 624,388.27	\$ 658,562.08	\$ 639,113.58	\$ 568,820.77	\$ 445,085.26	\$ 433,580.13	\$ 146,224.86	\$ 102,482.80	\$ 98,547.49	\$ 97,845.99	\$ 95,168.98	\$ 85,736.41	\$ 83,327.03	\$ 80,985.30	
Total Water Savings (mgd):		1.192	0.323	0.503	0.655	0.794	0.909	1.024	1.135	1.193	1.239	1.285	1.299	1.311	1.322	1.334	1.345	1.356	1.367	1.378
Total Wastewater Savings (mgd):		0.495	0.130	0.213	0.277	0.330	0.371	0.413	0.451	0.490	0.505	0.520	0.528	0.536	0.543	0.551	0.558	0.566	0.573	0.581
Total External Savings (mgd):		0.697	0.193	0.290	0.378	0.464	0.538	0.611	0.683	0.703	0.734	0.765	0.770	0.778	0.783	0.787	0.791	0.794	0.798	
ADMM reduction (mgd)		2.238	0.612	0.939	1.224	1.491	1.716	1.940	2.159	2.249	2.341	2.432	2.455	2.476	2.490	2.509	2.527	2.544	2.560	2.577
Total MG/Y		435	117.81	183.61	239.24	289.76	331.74	373.67	414.13	435.43	452.31	469.00	473.99	478.65	482.42	486.76	491.10	495.08	499.09	503.13

Use 3% Value of Money

80 Year PW (in 2006 \$s) = \$9,414,663

starting in 2008

PW=(\$ in future year in 2006 \$s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$s) = \$311,736

Annualized 80 Year PW (in 2006 \$s) / MG per year = \$717

Annualized 80 Year PW (in 2006 \$s) / acre-ft per year = \$234

WCP2

Total Costs:		\$ 910,284.52	\$ 850,805.10	\$ 959,606	\$ 902,018.49	\$ 847,390.29	\$ 915,699.69	\$ 915,332.99	\$ 843,791.51	\$ 686,492.66	\$ 688,634.20	\$ 273,085.03	\$ 211,571.34	\$ 160,831.47	\$ 164,818.01	\$ 165,111.85	\$ 153,431.91	\$ 153,590.04	\$ 153,748.23	
Present Worth (2006 \$'s)	Average	\$ 808,776.00	\$ 733,911.95	\$ 803,655.10	\$ 733,423.58	\$ 668,937.72	\$ 701,807.56	\$ 681,093.71	\$ 609,572.94	\$ 481,492.14	\$ 468,926.38	\$ 180,541.37	\$ 135,799.59	\$ 100,224.86	\$ 99,717.61	\$ 96,985.81	\$ 87,500.07	\$ 85,039.08	\$ 82,647.25	
Total Water Savings (mgd):		0.331	0.519	0.679	0.826	0.949	1.072	1.191	1.257	1.306	1.355	1.372	1.388	1.401	1.415	1.429	1.442	1.455	1.468	
Total Wastewater Savings (mgd):		0.569	0.138	0.229	0.300	0.409	0.457	0.503	0.548	0.565	0.583	0.593	0.603	0.613	0.622	0.632	0.641	0.651	0.661	
Total External Savings (mgd):		0.706	0.193	0.290	0.379	0.466	0.541	0.615	0.688	0.709	0.741	0.773	0.779	0.786	0.788	0.793	0.797	0.801	0.804	0.807
ADMM reduction (mgd)		2.338	0.620	0.955	1.250	1.527	1.763	1.997	2.225	2.323	2.421	2.517	2.544	2.569	2.586	2.607	2.628	2.647	2.665	2.684
Total MG/Y		465	120.73	189.29	247.94	301.56	346.56	391.39	434.69	458.75	476.81	494.66	500.85	506.72	511.30	516.41	521.52	526.27	531.04	535.85

Use 3% Value of Money

80 Year PW (in 2006 \$s) = \$9,887,042

starting in 2008

PW=(\$ in future year in 2006 \$s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$s) = \$327,377

Annualized 80 Year PW (in 2006 \$s) / MG per year = \$704

Annualized 80 Year PW (in 2006 \$s) / acre-ft per year = \$229

WCP3

Total Costs:		\$ 938,362.19	\$ 879,453.63	\$ 1,052,520	\$ 996,355.43	\$ 943,029.06	\$ 1,012,640.29	\$ 1,013,575.43	\$ 943,335.79	\$ 782,721.31	\$ 785,353.86	\$ 358,872.41	\$ 297,741.21	\$ 178,754.59	\$ 183,657.63	\$ 184,104.33	\$ 160,321.53	\$ 160,479.66	\$ 160,637.85	
Present Worth (2006 \$'s)	Average	\$ 833,722.65	\$ 758,624.43	\$ 881,468.81	\$ 810,128.14	\$ 744,435.85	\$ 776,104.46	\$ 754,195.31	\$ 681,485.84	\$ 548,984.98	\$ 534,787.77	\$ 237,256.94	\$ 191,108.75	\$ 111,393.95	\$ 111,115.89	\$ 108,141.89	\$ 91,429.13	\$ 88,853.70	\$ 86,350.76	
Total Water Savings (mgd):		0.335	0.527	0.694	0.848	0.977	1.106	1.230	1.302	1.357	1.411	1.433	1.454	1.469	1.485	1.502	1.517	1.532	1.547	
Total Wastewater Savings (mgd):		0.611	0.140	0.233	0.309	0.374	0.427	0.480	0.530	0.579	0.600	0.621	0.634	0.647	0.658	0.668	0.678	0.688	0.698	0.708
Total External Savings (mgd):		0.742	0.195	0.294	0.385	0.474	0.550	0.626	0.701	0.723	0.757	0.790	0.799	0.807	0.817	0.823	0.829	0.834	0.839	
ADMM reduction (mgd)		2.469	0.628	0.969	1.274	1.560	1.805	2.047	2.284	2.391	2.496	2.599	2.634	2.668	2.689	2.715	2.741	2.764	2.787	2.811
Total MG/Y		494	122.34	192.38	253.47	309.45	356.70	403.72	449.13	475.29	495.25	514.96	522.95	530.62	536.06	542.08	548.10	553.54	559.02	564.54

Use 3% Value of Money

80 Year PW (in 2006 \$s) = \$10,780,853

starting in 2008

PW=(\$ in future year in 2006 \$s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$s) = \$356,973

Annualized 80 Year PW (in 2006 \$s) / MG per year = \$723

Annualized 80 Year PW (in 2006 \$s) / acre-ft per year = \$236

SUMMARY OF RESULTS - PETALUMA WITH RECYCLE OPTIONS (Utility + Developer Fees)

RW to A,C,E,G		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WCP1																			
Total Costs:		\$ 3,732,521	\$ 3,575,038	\$ 3,636,312	\$ 3,396,669	\$ 3,309,998	\$ 3,355,781	\$ 3,342,284	\$ 2,822,423	\$ 1,511,531	\$ 1,511,300	\$ 778,909	\$ 717,396	\$ 715,871	\$ 748,874	\$ 749,168	\$ 737,490	\$ 737,649	\$ 737,808
Present Worth (2006 \$'s)	Average	\$ 3,316,297	\$ 3,083,860	\$ 3,045,354	\$ 2,761,803	\$ 2,612,943	\$ 2,571,926	\$ 2,486,973	\$ 2,038,979	\$ 1,060,157	\$ 1,029,122	\$ 514,951	\$ 460,469	\$ 446,107	\$ 453,081	\$ 440,057	\$ 420,580	\$ 408,418	\$ 396,608
Total Water Savings (mgd):		1.192	0.323	0.503	0.655	0.794	0.909	1.024	1.135	1.193	1.239	1.285	1.299	1.311	1.322	1.334	1.345	1.356	1.367
Total Wastewater Savings (mgd):		0.495	0.130	0.213	0.277	0.330	0.371	0.413	0.451	0.490	0.505	0.520	0.528	0.536	0.543	0.551	0.558	0.566	0.573
Total External Savings (mgd):		0.697	0.193	0.290	0.378	0.464	0.538	0.611	0.683	0.734	0.765	0.770	0.776	0.778	0.783	0.787	0.791	0.794	0.798
ADMM reduction (mgd)		2.238	0.612	0.939	1.224	1.491	1.716	1.940	2.249	2.341	2.432	2.455	2.476	2.490	2.509	2.527	2.544	2.560	2.577
Total MG/Y		435	117.81	183.61	239.24	289.76	331.74	373.67	414.13	435.43	452.31	469.00	473.99	478.65	482.42	486.76	491.10	495.08	499.09

Use 3% Value of Money

80 Year PW (in 2006 \$'s) = **\$29,827,881.32** starting in 2008
PW=(\$ in future year in 2006 \$'s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$'s) = **\$987,653**

Annualized 80 Year PW (in 2006 \$'s) / MG per year = **\$2,270**

Annualized 80 Year PW (in 2006 \$'s) / acre-ft per year = **\$740**

WCP2																			
Total Costs:		\$ 3,753,478	\$ 3,595,966	\$ 3,706,427	\$ 3,467,569	\$ 3,380,871	\$ 3,426,628	\$ 3,413,109	\$ 2,893,226	\$ 1,568,824	\$ 1,568,593	\$ 836,201	\$ 774,687	\$ 723,946	\$ 758,154	\$ 758,448	\$ 746,767	\$ 746,925	\$ 747,083
Present Worth (2006 \$'s)	Average	\$ 3,334,917	\$ 3,101,912	\$ 3,104,074	\$ 2,819,451	\$ 2,668,891	\$ 2,626,225	\$ 2,539,673	\$ 2,090,128	\$ 1,100,342	\$ 1,068,135	\$ 552,827	\$ 497,242	\$ 451,140	\$ 458,696	\$ 445,508	\$ 425,871	\$ 413,554	\$ 401,594
Total Water Savings (mgd):		0.569	0.331	0.519	0.679	0.826	0.949	1.072	1.191	1.257	1.306	1.355	1.372	1.388	1.401	1.415	1.429	1.442	1.455
Total Wastewater Savings (mgd):		0.138	0.229	0.300	0.360	0.409	0.457	0.503	0.548	0.565	0.583	0.593	0.603	0.613	0.622	0.632	0.641	0.651	0.661
Total External Savings (mgd):		0.706	0.193	0.290	0.379	0.466	0.541	0.615	0.688	0.709	0.741	0.773	0.779	0.786	0.788	0.793	0.797	0.801	0.804
ADMM reduction (mgd)		2.338	0.620	0.955	1.250	1.527	1.763	1.997	2.225	2.323	2.421	2.517	2.544	2.569	2.586	2.607	2.628	2.647	2.665
Total MG/Y		465	120.73	189.29	247.94	301.56	346.56	391.39	434.69	458.75	476.81	494.66	500.85	506.72	511.30	516.41	521.52	526.27	531.04

Use 3% Value of Money

80 Year PW (in 2006 \$'s) = **\$30,427,168** starting in 2008
PW=(\$ in future year in 2006 \$'s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$'s) = **\$1,007,497**

Annualized 80 Year PW (in 2006 \$'s) / MG per year = **\$2,165**

Annualized 80 Year PW (in 2006 \$'s) / acre-ft per year = **\$706**

WCP3																			
Total Costs:		\$ 3,842,617	\$ 3,685,676	\$ 3,860,402	\$ 3,624,182	\$ 3,538,786	\$ 3,585,845	\$ 3,573,627	\$ 3,055,047	\$ 1,689,263	\$ 1,689,522	\$ 946,198	\$ 885,066	\$ 766,079	\$ 808,840	\$ 809,286	\$ 785,503	\$ 785,661	\$ 785,819
Present Worth (2006 \$'s)	Average	\$ 3,414,116	\$ 3,179,296	\$ 3,233,026	\$ 2,946,792	\$ 2,793,550	\$ 2,748,252	\$ 2,659,114	\$ 2,207,031	\$ 1,184,815	\$ 1,150,482	\$ 625,548	\$ 568,090	\$ 477,395	\$ 489,361	\$ 475,370	\$ 447,961	\$ 435,001	\$ 422,416
Total Water Savings (mgd):		0.335	0.527	0.694	0.848	0.977	1.106	1.230	1.302	1.357	1.411	1.433	1.454	1.469	1.485	1.502	1.517	1.532	1.547
Total Wastewater Savings (mgd):		0.611	0.140	0.233	0.309	0.374	0.427	0.480	0.530	0.579	0.600	0.621	0.634	0.647	0.658	0.668	0.678	0.688	0.698
Total External Savings (mgd):		0.742	0.195	0.294	0.385	0.474	0.550	0.626	0.701	0.723	0.757	0.790	0.799	0.807	0.811	0.817	0.823	0.829	0.834
ADMM reduction (mgd)		2.469	0.628	0.969	1.274	1.560	1.805	2.047	2.284	2.391	2.496	2.599	2.634	2.668	2.689	2.715	2.741	2.764	2.787
Total MG/Y		494	122.34	192.38	253.47	309.45	356.70	403.72	449.13	475.29	495.25	514.96	522.95	530.62	536.06	542.08	548.10	553.54	559.02

Use 3% Value of Money

80 Year PW (in 2006 \$'s) = **\$31,888,882** starting in 2008
PW=(\$ in future year in 2006 \$'s)/((1+.03)^future year)

Annualized 80 Year PW (in 2006 \$'s) = **\$1,055,897**

Annualized 80 Year PW (in 2006 \$'s) / MG per year = **\$2,138**

Annualized 80 Year PW (in 2006 \$'s) / acre-ft per year = **\$697**

**Recommended Program
Utility Cost Analysis and
Utility and Developer Cost Analysis**

Recommended Program

SUMMARY OF DSS MODEL RESULTS - PETALUMA WITH RECYCLE OPTIONS

RW to A,C,E,G

	Average (2008-2087)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Recommended Water Conservation Plan (Utility Cost Only)																			
Total (Capital and Operations) Costs:		\$ 466,730	\$ 462,268	\$ 582,924	\$ 523,891	\$ 461,465	\$ 529,118	\$ 535,417	\$ 541,717	\$ 383,805	\$ 385,039	\$ 281,192	\$ 219,858	\$ 149,884	\$ 153,954	\$ 154,155	\$ 150,951	\$ 151,109	\$ 151,267
Capital Cost (Utility)		\$ 372,859	\$ 367,997	\$ 458,754	\$ 412,719	\$ 360,837	\$ 414,491	\$ 419,061	\$ 423,633	\$ 309,840	\$ 310,801	\$ 220,696	\$ 171,593	\$ 121,642	\$ 125,163	\$ 125,323	\$ 122,760	\$ 122,887	\$ 123,013
Operations Cost (Utility)		\$ 93,872	\$ 94,271	\$ 124,170	\$ 111,172	\$ 100,628	\$ 114,627	\$ 116,355	\$ 118,084	\$ 73,965	\$ 74,238	\$ 60,496	\$ 48,266	\$ 28,241	\$ 28,791	\$ 28,831	\$ 28,191	\$ 28,222	\$ 28,254
Present Worth in 2006 \$'s		\$ 439,938	\$ 423,041	\$ 517,920	\$ 451,913	\$ 386,470	\$ 430,222	\$ 422,663	\$ 415,181	\$ 285,587	\$ 278,160	\$ 197,222	\$ 149,713	\$ 99,091	\$ 98,817	\$ 96,064	\$ 91,328	\$ 88,761	\$ 86,266
Total Water Savings (mgd):	1.14	0.30	0.47	0.61	0.74	0.85	0.95	1.06	1.12	1.17	1.21	1.23	1.25	1.26	1.27	1.29	1.30	1.31	1.33
Total Wastewater Savings (mgd):	0.46	0.12	0.20	0.26	0.31	0.35	0.38	0.42	0.45	0.46	0.48	0.49	0.50	0.51	0.52	0.52	0.53	0.54	0.55
Total External Savings (mgd):	0.68	0.18	0.27	0.35	0.43	0.50	0.57	0.64	0.67	0.70	0.74	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.78
ADMM reduction (mgd)	2.17	0.58	0.88	1.15	1.40	1.60	1.81	2.02	2.12	2.22	2.32	2.35	2.37	2.39	2.41	2.43	2.45	2.47	2.49
Average Water Savings (MG/Y)	418	111	172	224	272	310	348	386	409	426	443	450	456	460	465	470	475	479	484
Savings in 2025 (MG/Y)	484																		

Use 3% Value of Money

80 Year PW (in 2006 \$'s) =

\$6,990,103

starting in 2008

$PW = (\$ \text{ in future year in 2006 } \$'s) / ((1+.03)^{\text{future year}})$

Annualized 80 Year PW (in 2006 \$'s) =

\$231,455

Annualized 80 Year PW (in 2006 \$'s) / MG per year =

\$554

Annualized 80 Year PW (in 2006 \$'s) / acre-ft per year =

\$180

	Average (2008-2087)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Recommended Water Conservation Plan (Utility + Developer Cost)																			
Total (Capital and Operations) Costs:		\$ 2,873,098	\$ 2,665,920	\$ 2,787,466	\$ 2,555,144	\$ 2,493,698	\$ 2,562,332	\$ 2,569,613	\$ 2,576,896	\$ 1,405,069	\$ 1,406,673	\$ 698,659	\$ 637,325	\$ 567,349	\$ 607,430	\$ 607,630	\$ 604,425	\$ 604,582	\$ 604,740
Capital Cost (Utility + Developer)		\$ 2,779,226	\$ 2,571,649	\$ 2,663,296	\$ 2,443,973	\$ 2,393,070	\$ 2,447,705	\$ 2,453,258	\$ 2,458,813	\$ 1,331,103	\$ 1,332,435	\$ 638,163	\$ 589,059	\$ 539,108	\$ 578,639	\$ 578,799	\$ 576,234	\$ 576,360	\$ 576,485
Operations Cost (Utility + Developer)		\$ 93,872	\$ 94,271	\$ 124,170	\$ 111,172	\$ 100,628	\$ 114,627	\$ 116,355	\$ 118,084	\$ 73,965	\$ 74,238	\$ 60,496	\$ 48,266	\$ 28,241	\$ 28,791	\$ 28,831	\$ 28,191	\$ 28,222	\$ 28,254
Present Worth in 2006 \$'s		\$ 2,708,170	\$ 2,439,694	\$ 2,476,628	\$ 2,204,090	\$ 2,088,433	\$ 2,083,411	\$ 2,028,476	\$ 1,974,977	\$ 1,045,503	\$ 1,016,211	\$ 490,025	\$ 433,987	\$ 375,085	\$ 389,886	\$ 378,655	\$ 365,687	\$ 355,128	\$ 344,875
Total Water Savings (mgd):	1.14	0.30	0.47	0.61	0.74	0.85	0.95	1.06	1.12	1.17	1.21	1.23	1.25	1.26	1.27	1.29	1.30	1.31	1.33
Total Wastewater Savings (mgd):	0.46	0.12	0.20	0.26	0.31	0.35	0.38	0.42	0.45	0.46	0.48	0.49	0.50	0.51	0.52	0.52	0.53	0.54	0.55
Total External Savings (mgd):	0.68	0.18	0.27	0.35	0.43	0.50	0.57	0.64	0.67	0.70	0.74	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.78
ADMM reduction (mgd)	2.17	0.57	0.88	1.14	1.40	1.60	1.81	2.02	2.12	2.22	2.32	2.35	2.37	2.39	2.41	2.43	2.45	2.47	2.49
Average Water Savings (MG/Y)	418	111	172	224	271	310	348	386	409	426	443	450	456	460	465	470	475	479	484
Savings in 2025 (MG/Y)	484																		

Use 3% Value of Money

80 Year PW (in 2006 \$'s) =

\$25,230,667

starting in 2008

$PW = (\$ \text{ in future year in 2006 } \$'s) / ((1+.03)^{\text{future year}})$

Annualized 80 Year PW (in 2006 \$'s) =

\$835,431

Annualized 80 Year PW (in 2006 \$'s) / MG per year =

\$1,999

Annualized 80 Year PW (in 2006 \$'s) / acre-ft per year =

\$651