APPENDIX B

Internal Analysis - Supplemental Detail

Sample Data Set

File Name: Main Permit Log_v1

Includes only inspections with contract price, affidavit of costs, inspection hours, and total linear feet.

																INSPECTORS		ADMIN SUPPORT		VEHICLES	
G NUMBER	CONTRACT PRICE	FEES ASSESSED @2.5% OF PROJECT TOTAL PRICE	INSPECTION HOURS	LOADED HOURLY RATE (INSPECTORS) (1)	INSPECTION COST	ADMINISTRATION HOURS	LOADED HOURLY RATE (ADMINISTRATION) (2)	ADMINISTRATIVE COST	VEHICLE HOURS	VEHICLE HOURLY RATE	VEHICLE COST (3)	TOTAL COST	TOTAL LINEAR FEET	COST PER LINEAR FOOT	COST PER LINEAR FOOT (LESS ADMIN)	INSPECTION HOURS PER LINEAR FOOT	INSPECTION COST PER LINEAR FOOT	ADMIN HOURS PER LINEAR FOOT	ADMIN COST PER LINEAR FOOT	VEHICLE HOURS PER LINEAR FOOT	VEHICLE COST PER LINEAR FOOT
G-2007-085	$56,728.00	$1,408.00	77.55	$43.68	$3,387.09	14	$37.57	$526.00	77.55	$5.63	$375.65	$4,288.74	1,190	$ 3.6040	$ 3.1620	0.065	$ 2.85	0.012	$ 0.44	0.065	$ 0.316
G-2011-011	$3,125.00	$103.13	10.00	$43.68	$436.78	14	$37.57	$526.00	10.00	$5.63	$375.65	$1,338.41	1,306	$ 1.0248	$ 0.6221	0.008	$ 0.33	0.011	$ 0.40	0.008	$ 0.288
G-2011-010	$110,000.00	$2,750.00	42.00	$43.68	$1,834.40	14	$37.57	$526.00	42.00	$5.63	$375.65	$2,736.05	540	$ 4.9837	$ 4.0256	0.077	$ 3.34	0.026	$ 0.96	0.077	$ 0.684
G-2011-015	$17,901.00	$461.00	34.75	$43.68	$1,517.75	14	$37.57	$526.00	34.75	$5.63	$375.65	$2,419.40	125	$ 19.3552	$ 15.1472	0.278	$ 12.14	0.112	$ 4.21	0.278	$ 3.005
G-2011-013	$28,394.42	$718.69	47.59	$43.68	$2,078.55	14	$37.57	$526.00	47.59	$5.63	$375.65	$2,980.20	89	$ 33.4854	$ 27.5753	0.535	$ 23.35	0.157	$ 5.91	0.535	$ 4.221
G-2010-055	$107,459.00	$2,304.24	64.05	$43.68	$2,797.46	14	$37.57	$526.00	64.05	$5.63	$375.65	$3,699.11	2,051	$ 1.8036	$ 1.5471	0.031	$ 1.36	0.007	$ 0.26	0.031	$ 0.183
G-2011-034	$26,947.55	$661.65	23.22	$43.68	$1,014.16	14	$37.57	$526.00	23.22	$5.63	$375.65	$1,915.81	197	$ 9.7249	$ 7.0549	0.118	$ 5.15	0.071	$ 2.67	0.118	$ 1.907
G-2011-033	$24,707.00	$627.00	39.55	$43.68	$1,727.40	14	$37.57	$526.00	39.55	$5.63	$375.65	$2,629.04	153	$ 17.1833	$ 13.7454	0.258	$ 11.29	0.092	$ 3.44	0.258	$ 2.455
G-2011-021	$66,855.00	$1,655.00	43.50	$43.68	$1,899.92	14	$37.57	$526.00	43.50	$5.63	$375.65	$2,801.56	630	$ 4.4469	$ 3.6320	0.069	$ 3.02	0.022	$ 0.83	0.069	$ 0.596
G-2011-020	$906,672.40	$22,691.81	309.55	$43.68	$13,519.98	14	$37.57	$526.00	309.55	$5.63	$375.65	$14,421.62	239	$ 60.3415	$ 58.1407	1.295	$ 56.57	0.059	$ 2.20	1.295	$ 1.572
G-2011-031	$142,487.50	$3,499.70	65.00	$43.68	$2,838.98	14	$37.57	$526.00	65.00	$5.63	$375.65	$3,740.60	2,285	$ 1.6370	$ 1.4068	0.028	$ 1.24	0.006	$ 0.23	0.028	$ 0.164
G-2011-064	$43,426.58	$1,083.58	50.30	$43.68	$2,196.91	14	$37.57	$526.00	50.30	$5.63	$375.65	$3,098.56	287	$ 10.7964	$ 8.9636	0.175	$ 7.65	0.049	$ 1.83	0.175	$ 1.309
G-2012-025	$294,410.29	$7,205.13	13.00	$43.68	$567.79	14	$37.57	$526.00	13.00	$5.63	$375.65	$1,469.44	200	$ 7.3472	$ 4.7172	0.065	$ 2.84	0.070	$ 2.63	0.065	$ 1.878
G-2012-017	$44,817.50	$1,117.50	36.20	$43.68	$1,581.08	14	$37.57	$526.00	36.20	$5.63	$375.65	$2,482.73	900	$ 2.7586	$ 2.1741	0.040	$ 1.76	0.016	$ 0.58	0.040	$ 0.417
G-2011-058	$59,898.01	$1,487.71	132.00	$43.68	$5,765.20	14	$37.57	$526.00	132.00	$5.63	$375.65	$6,666.91	12,129	$ 0.5497	$ 0.5063	0.011	$ 0.48	0.001	$ 0.04	0.011	$ 0.031
G-2012-058	$177,784.57	$4,360.00	34.50	$43.68	$1,506.83	14	$37.57	$526.00	34.50	$5.63	$375.65	$2,408.48	2,477	$ 0.9723	$ 0.7600	0.014	$ 0.61	0.006	$ 0.21	0.014	$ 0.152
G-2012-062	$242,370.31	$5,935.68	70.00	$43.68	$3,057.34	14	$37.57	$526.00	70.00	$5.63	$375.65	$3,958.98	5,574	$ 0.7103	$ 0.6159	0.013	$ 0.55	0.003	$ 0.09	0.013	$ 0.067
G-2012-070	$108,811.33	$2,676.33	8.00	$43.68	$349.41	14	$37.57	$526.00	8.00	$5.63	$375.65	$1,251.06	1,160	$ 1.0785	$ 0.6250	0.007	$ 0.30	0.012	$ 0.45	0.007	$ 0.324
G-2012-025	$294,410.29	$7,205.13	52.00	$43.68	$2,271.16	14	$37.57	$526.00	52.00	$5.63	$375.65	$3,172.81	2,453	$ 1.2934	$ 1.0790	0.021	$ 0.93	0.006	$ 0.21	0.021	$ 0.153
G-2012-090	$100,035.00	$2,464.27	42.50	$43.68	$1,856.24	14	$37.57	$526.00	42.50	$5.63	$375.65	$2,757.89	1,161	$ 2.3754	$ 1.9224	0.037	$ 1.60	0.012	$ 0.45	0.037	$ 0.324
G-2012-086	$30,045.00	$778.13	16.00	$43.68	$698.82	14	$37.57	$526.00	16.00	$5.63	$375.65	$1,600.47	220	$ 7.2748	$ 4.8839	0.073	$ 3.18	0.064	$ 2.39	0.073	$ 1.707
G-2013-017	$15,859.48	$411.21	13.00	$43.68	$567.79	14	$37.57	$526.00	13.00	$5.63	$375.65	$1,469.44	65	$ 22.6067	$ 14.5144	0.200	$ 8.74	0.215	$ 8.09	0.200	$ 5.779
G-2012-012	$24,210.10	$615.10	15.50	$43.68	$676.98	14	$37.57	$526.00	15.50	$5.63	$375.65	$1,578.63	130	$ 12.1433	$ 8.0971	0.119	$ 5.21	0.108	$ 4.05	0.119	$ 2.890
G-2011-043	$133,676.56	$3,284.60	29.50	$43.68	$1,288.45	14	$37.57	$526.00	29.50	$5.63	$375.65	$2,190.10	2,268	$ 0.9657	$ 0.7337	0.013	$ 0.57	0.006	$ 0.23	0.013	$ 0.166
G-2012-081	$169,036.07	$4,250.90	18.00	$43.68	$786.17	14	$37.57	$526.00	18.00	$5.63	$375.65	$1,687.82	2,284	$ 0.7390	$ 0.5087	0.008	$ 0.34	0.006	$ 0.23	0.008	$ 0.164
G-2012-078	$76,993.49	$1,902.28	11.50	$43.68	$502.28	14	$37.57	$526.00	11.50	$5.63	$375.65	$1,403.92	591	$ 2.3755	$ 1.4855	0.019	$ 0.85	0.024	$ 0.89	0.019	$ 0.636
G-2011-053	$8,100.00	$227.50	15.50	$43.68	$676.98	14	$37.57	$526.00	15.50	$5.63	$375.65	$1,578.63	120	$ 13.1552	$ 8.7719	0.129	$ 5.64	0.117	$ 4.38	0.129	$ 3.130
G-2013-024	$18,815.80	$483.31	13.50	$43.68	$589.63	14	$37.57	$526.00	13.50	$5.63	$375.65	$1,491.28	91	$ 16.3876	$ 10.6074	0.148	$ 6.48	0.154	$ 5.78	0.148	$ 4.128
G-2013-026	$40,744.97	$1,018.17	29.00	$43.68	$1,266.61	14	$37.57	$526.00	29.00	$5.63	$375.65	$2,168.26	463	$ 4.6831	$ 3.5470	0.063	$ 2.74	0.030	$ 1.14	0.063	$ 0.811
G-2012-090	$59,075.76	$1,465.26	20.00	$43.68	$873.52	14	$37.57	$526.00	20.00	$5.63	$375.65	$1,775.17	1,166	$ 1.5224	$ 1.0713	0.017	$ 0.75	0.012	$ 0.45	0.017	$ 0.322
G-2012-104	$79,240.58	$1,957.09	11.00	$43.68	$480.44	14	$37.57	$526.00	11.00	$5.63	$375.65	$1,382.09	759	$ 1.8209	$ 1.1279	0.014	$ 0.63	0.018	$ 0.69	0.014	$ 0.495
G-2011-039	$22,128.10	$554.10	10.50	$43.68	$458.60	14	$37.57	$526.00	10.50	$5.63	$375.65	$1,360.25	80	$ 17.0031	$ 10.4281	0.131	$ 5.73	0.175	$ 6.58	0.131	$ 4.696
G-2011-018	$129,572.29	$3,183.59	55.00	$43.68	$2,402.19	14	$37.57	$526.00	55.00	$5.63	$375.65	$3,303.84	1,530	$ 2.1594	$ 1.8156	0.036	$ 1.57	0.009	$ 0.34	0.036	$ 0.246
G-2013-020	$30,842.62	$770.65	7.50	$43.68	$327.57	14	$37.57	$526.00	7.50	$5.63	$375.65	$1,229.22	169	$ 7.2735	$ 4.1611	0.044	$ 1.94	0.083	$ 3.11	0.044	$ 2.223
G-2013-006	$175,393.64	$4,302.28	29.00	$43.68	$1,266.61	14	$37.57	$526.00	29.00	$5.63	$375.65	$2,168.26	2,319	$ 0.9350	$ 0.7082	0.013	$ 0.55	0.006	$ 0.23	0.013	$ 0.162
G-2013-029	$358,600.34	$8,721.96	50.50	$43.68	$2,205.65	14	$37.57	$526.00	50.50	$5.63	$375.65	$3,107.30	282	$ 11.0188	$ 9.1535	0.179	$ 7.82	0.050	$ 1.87	0.179	$ 1.332
G-2012-013	$62,126.68	$1,530.68	36.00	$43.68	$1,572.34	14	$37.57	$526.00	36.00	$5.63	$375.65	$2,473.99	464	$ 5.3319	$ 4.1983	0.078	$ 3.39	0.030	$ 1.13	0.078	$ 0.810
G-2013-034	$39,705.83	$992.83	14.00	$43.68	$611.47	14	$37.57	$526.00	14.00	$5.63	$375.65	$1,513.11	667	$ 2.2685	$ 1.4799	0.021	$ 0.92	0.021	$ 0.79	0.021	$ 0.563
G-2012-095	$182,899.65	$4,485.37	37.00	$43.68	$1,616.02	14	$37.57	$526.00	37.00	$5.63	$375.65	$2,517.67	2,191	$ 1.1491	$ 0.9090	0.017	$ 0.74	0.006	$ 0.24	0.017	$ 0.171
G-2012-072	$16,172.63	$442.63	18.50	$43.68	$808.01	14	$37.57	$526.00	18.50	$5.63	$375.65	$1,709.66	43	$ 39.7595	$ 27.5269	0.430	$ 18.79	0.326	$ 12.23	0.430	$ 8.736
G-2013-033	$116,934.97	$2,876.47	40.00	$43.68	$1,747.05	14	$37.57	$526.00	40.00	$5.63	$375.65	$2,648.70	1,954	$ 1.3555	$ 1.0863	0.020	$ 0.89	0.007	$ 0.27	0.020	$ 0.192
G-2012-091	$25,844.75	$654.75	35.25	$43.68	$1,539.59	14	$37.57	$526.00	35.25	$5.63	$375.65	$2,441.23	477	$ 5.1179	$ 4.0152	0.074	$ 3.23	0.029	$ 1.10	0.074	$ 0.788
G-2013-059	$133,107.41	$3,270.91	31.50	$43.68	$1,375.80	14	$37.57	$526.00	31.50	$5.63	$375.65	$2,277.45	1,688	$ 1.3492	$ 1.0376	0.019	$ 0.82	0.008	$ 0.31	0.019	$ 0.223
G-2013-061	$192,517.44	$4,719.44	46.00	$43.68	$2,009.11	14	$37.57	$526.00	46.00	$5.63	$375.65	$2,910.75	1,056	$ 2.7564	$ 2.2583	0.044	$ 1.90	0.013	$ 0.50	0.044	$ 0.356
G-2013-066	$199,641.21	$4,893.70	30.50	$43.68	$1,332.13	14	$37.57	$526.00	30.50	$5.63	$375.65	$2,233.77	3,140	$ 0.7114	$ 0.5439	0.010	$ 0.42	0.004	$ 0.17	0.010	$ 0.120
G-2013-112	$41,230.00	$1,030.00	27.00	$43.68	$1,179.26	14	$37.57	$526.00	27.00	$5.63	$375.65	$2,080.90	660	$ 3.1529	$ 2.3559	0.041	$ 1.79	0.021	$ 0.80	0.041	$ 0.569
Total	$5,239,863.10	$129,772.44			$81,063.53			$24,196.00			$37,279.74	$122,539.27	60,032	$ 2.956	$ 2.307	$ 0.042	$ 1.845	$ 0.021	$ 0.793	$ 0.042	$ 0.566

(1) Hourly rate with benefits and overhead for a senior construction inspector

(2) Represents a weighted average rate (including benefits and overhead) for an Engineering Plan Technician (3 hours), an Administrative Support Specialist (10 hours), and a Senior Civil Engineering Assistant (1 hour).

(3) Two-year average (FY 2012 - FY 2013) vehicle costs per inspection.

Pima County Regional Water Reclamation Department
Customer Service Fee Template

Customer Service Fee

Fee Name	Fee Description
Sewer Construction Permit	Internal Cost Recovery of Inspection Services and Permit Issuance (Administration and Support Only)

Estimated Labor - Intake For Process

Task Description	Position Title	Number of Each	Avg Hourly Rate (1)	Number of Hours	Subtotal By Title
Review Plans	ENGINEERING PLANS TECH	1	$37.0926	3	$111.2778
Initiate Permit	ADMIN SUP SPEC	1	$34.7250	2.5	$86.8125
Review Deliverables For Inspector	SR CIVIL ENG ASST	1	$66.8123	1	$66.8123

Estimated Labor - Process Permit for ADEQ After Construction

Task Description	Position Title	Number of Each	Avg Hourly Rate (1)	Number of Hours	Subtotal By Title
Owner Completion Letter	ADMIN SUP SPEC	1	$34.7250	1	$34.7250
ADEQ Submittal Letter (Notice of Cor	ADMIN SUP SPEC	1	$34.7250	2.5	$86.8125
Final Acceptance Letter (Release of A	ADMIN SUP SPEC	1	$34.7250	2	$69.4500
Recording Bill of Sale	ADMIN SUP SPEC	1	$34.7250	1	$34.7250
Bill of Sale Letter (Fully Executed)	ADMIN SUP SPEC	1	$34.7250	1	$34.7250

Labor - Administration and Support (2)	Total	$526.00

Average Hourly Rate **$37.57**

(1) Average hourly rate is calculated by the number of existing workings and their respective salaries.

(2) Rounded up to the nearest dollar

Permit #	G#	Project Name/Description	Inspection Hours	Activity Type	Loaded Hourly Rate (Inspectors) (1)	Inspection Cost	Administrative Cost	Vehicle Cost	Total Cost
		HCS Tap or Stub Out (Smaller Than 12-inch)							
57009		Robins Elem School 4x8 tap 3939 N Magnetite lane	3	HCS	$ 39.29	$ 117.86	$ 54.00	$ 16.90	$ 188.76
								Average	$ 188.76
								Count	1
		Large Line Tap (Larger Than 12-inch)							
56886		Steam Pump Ranch Historical Ranch - Oro Valley, AZ	2	line tap	$ 39.29	$ 78.57	$ 54.00	$ 11.27	$ 143.84
56937		1 E Broadway - 4in line tap into existing 15" line	12.5	Line Tap	$ 39.29	$ 491.09	$ 54.00	$ 70.42	$ 615.50
								Average	$ 379.67
								Count	2
		Existing Manhole Tap							
57378		Linda Ave MH Adjustment #1799-04	5.5	manhole adjustment	$ 39.29	$ 216.08	$ 54.00	$ 30.98	$ 301.06
57365		ADJUST ONE MANHOLE FRAME AND COVER TO GRADE-	24	manhole adjustment	$ 39.29	$ 942.89	$ 54.00	$ 135.20	$ 1,132.09
56817		Mission & Ajo Rim Adjustments (no UPC# needed for phase	7.1	Manhole Adjustments	$ 39.29	$ 278.94	$ 54.00	$ 40.00	$ 372.93
57281		Continental Ranch Parcel 26 - MH Adjustments	1	manhole adjustments	$ 39.29	$ 39.29	$ 54.00	$ 5.63	$ 98.92
56820		Sanchez Nursery 16725 N. Oracle Rd.	6	manhole Tap	$ 39.29	$ 235.72	$ 54.00	$ 33.80	$ 323.52
56845		Houghton Town Center MH Tap - 9044 S Houghton	2	Manhole Tap	$ 39.29	$ 78.57	$ 54.00	$ 11.27	$ 143.84
56845		Houghton Town Center 8412 S. Rita Rd.	2	manhole tap	$ 39.29	$ 78.57	$ 54.00	$ 11.27	$ 143.84
56863		Oro Valley Aquatic Center Phase 1A	3.1	manhole tap	$ 39.29	$ 121.79	$ 54.00	$ 17.46	$ 193.25
56882		Salpointe Catholic High School Softball Field Improvements	3	manhole tap	$ 39.29	$ 117.86	$ 54.00	$ 16.90	$ 188.76
56894		Arizona-Stadium North End-Zone Expansion	4.5	manhole tap	$ 39.29	$ 176.79	$ 54.00	$ 25.35	$ 256.14
56900		Sewailo Golf Course Comfort Station @ Hole #6	3.3	manhole tap	$ 39.29	$ 129.65	$ 54.00	$ 18.59	$ 202.24
56901		Sewailo Golf Course Starter Shack	3.3	manhole tap	$ 39.29	$ 129.65	$ 54.00	$ 18.59	$ 202.24
56914		Borton Primary School - MH Tap	8.5	Manhole Tap	$ 39.29	$ 333.94	$ 54.00	$ 47.88	$ 435.82
56922		Sewailo Golf Course Maintenance Facility	3	Manhole Tap	$ 39.29	$ 117.86	$ 54.00	$ 16.90	$ 188.76
56971		8380 E Old Vail Rd MH Tap #4330-07	4.5	Manhole Tap	$ 39.29	$ 176.79	$ 54.00	$ 25.35	$ 256.14
56979	G-2013-007	Panda Express new manhole 2800 N Campbell	14.5	Manhole Tap	$ 39.29	$ 569.66	$ 54.00	$ 81.68	$ 705.35
56982		Oreilly Auto Parts - MH Tap #8280-08	8	Manhole Tap	$ 39.29	$ 314.30	$ 54.00	$ 45.07	$ 413.36
57073	MH Tap	Rialto Shell Mh Tap # - 320 E Congress	2.5	Manhole Tap	$ 39.29	$ 98.22	$ 54.00	$ 14.08	$ 166.30
57143		Mountain Vail Middle School - 13192 E Mary Ann Cleveland -	5	Manhole Tap	$ 39.29	$ 196.44	$ 54.00	$ 28.17	$ 278.60
57234		Northwest Hospital MH Tap #2868-06	1	manhole tap	$ 39.29	$ 39.29	$ 54.00	$ 5.63	$ 98.92
57256		HANDMAKER ELDER CARE-2221 N ROSEMONT	5	manhole tap	$ 39.29	$ 196.44	$ 54.00	$ 28.17	$ 278.60
57268		Longhorn Steak House MH Tap #8941-04	6	manhole tap	$ 39.29	$ 235.72	$ 54.00	$ 33.80	$ 323.52
57293		Alvord Court Housing 5901 S Park Ave - 1 MH Tap	4	manhole tap	$ 39.29	$ 157.15	$ 54.00	$ 22.53	$ 233.68
57301		LA CIENEGA WARD BUILDING	6	manhole tap	$ 39.29	$ 235.72	$ 54.00	$ 33.80	$ 323.52
57326		CENTRAL TUCSON DES OFFICE-3950 E JUAREZ ST	3.5	manhole tap	$ 39.29	$ 137.51	$ 54.00	$ 19.72	$ 211.22
57346	G-2012-104	FREIGHTLINER-MANHOLE TAP #2996-04	4	manhole tap	$ 39.29	$ 157.15	$ 54.00	$ 22.53	$ 233.68
57351		EL CORREDORE MANHOLE TAP #2729-67 9600 N ORACLE	3	manhole tap	$ 39.29	$ 117.86	$ 54.00	$ 16.90	$ 188.76
57150		LA Fitness Manhole Tap and Manhole Adjustment	27.5	manhole tap & manhole adjustment	$ 39.29	$ 1,080.40	$ 54.00	$ 154.91	$ 1,289.31
57215		Family Dollar 2820 W Los Reales	3	manole tap	$ 39.29	$ 117.86	$ 54.00	$ 16.90	$ 188.76
								Average	$ 323.21
								Count	29
		New Manhole Construction							
56814	G-2012-060	William Clement Ctr. Pool Backwash new MH	4.5	New Manhole	$ 39.29	$ 176.79	$ 54.00	$ 25.35	$ 256.14
56913	G-2012-087	WalMart 8640 E. Broadway (Camino Seco) new MH	15	New Manhole	$ 39.29	$ 589.31	$ 54.00	$ 84.50	$ 727.81
56939	G-2012-097	Plaza Centro Greyhound New Manhole over Existing Sewer	4	New Manhole	$ 39.29	$ 157.15	$ 54.00	$ 22.53	$ 233.68
56973	G-2012-103	Angel Charity Reunion House New MH	5	New Manhole	$ 39.29	$ 196.44	$ 54.00	$ 28.17	$ 278.60
56983	G-2013-008	3rd Street Development 3830 E 3rd St. - New Manhole	6.5	New Manhole	$ 39.29	$ 255.37	$ 54.00	$ 36.62	$ 345.98
57031	G-2013-018	Encantada at Steam Pump Village New MH	7	New Manhole	$ 39.29	$ 275.01	$ 54.00	$ 39.43	$ 368.44
57156	G-2013-071	Kino Pool New MH	6	New Manhole	$ 39.29	$ 235.72	$ 54.00	$ 33.80	$ 323.52
57177	G-2013-075	Bella Vista Apts New Manhole	4.5	New Manhole	$ 39.29	$ 176.79	$ 54.00	$ 25.35	$ 256.14
57236	G-2013-114	DC CONCRETE WAREHOUSE, 114 E RILLITO/SAHUARO ST,	4	new manhole	$ 39.29	$ 157.15	$ 54.00	$ 22.53	$ 233.68
57180		3D7L1A Davis School 2 new MH & 1 MH tap	7.5	new manhole & manhole adjustment	$ 39.29	$ 294.65	$ 54.00	$ 42.25	$ 390.90
57103	G2013-045	U of A Recreation Center (center field)	4	new manole	$ 39.29	$ 157.15	$ 54.00	$ 22.53	$ 233.68
								Average	$ 331.69
								Count	11

THE SEAL OF PIMA COUNTY
ARIZONA

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Memo

To: Mary Allen Hamilton, Special Assistance Office

From: Bart Kreps, Senior Manager, Raftelis Financial Consultants, Inc.

Date: December 8, 2014

Re: Technical Memorandum #1: Special Facilities Agreement for Pump Stations

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This memorandum documents our review and examination of Pima County Regional Wastewater Reclamation Department's (PCRWRD) methodology for recovering the costs associated with Special Facilities Agreements for Pump Stations. The analysis described below is a component of a broader study conducted by Raftelis Financial Consultants, Inc. (RFC) to review and update various fees for specialized PCRWRD services.

Fee Definition

A Special Facilities Agreement may be negotiated to recover PCRWRD's cost of undertaking the operation and maintenance of a developer installed sanitary sewage pumping facility with associated pressure sewers and other appurtenances.

Ordinance

13.24.035

Existing Fee Structure

PCRWRD may enter into a Special Facilities Agreement on a case-by-case basis whereby the costs of operating and maintaining the related infrastructure are passed onto the private developer or community.

Internal Analysis

PCRWRD's design standards discourage the installation of sewer pump stations rather than gravity sewers to limit the future cost of services. One past practice of attempting to allocate monthly expenditures specific to the related infrastructure presented administrative challenges and implementation issues. PCRWRD would like to consider an approach that would result in a one-time, upfront charge to cover estimated operating and maintenance expenditures over the life of the asset. To facilitate this calculation, PCRWRD identified 9 representative pump stations, which were used as the basis of the analysis to serve as representative pump stations of 2,000 gallons per minute (gpm) or less.

The first step for determining the upfront charge involved escalating costs over a 25-year period; this was assumed as a useful life for a pump station. The escalation factor used was 2.7%, which represents the 25-year average of West Urban CPI according to US Bureau of Labor and Statistics. Projected operating costs were discounted at a rate of 4.86%, which is an estimate for PCRWRD's weighted average cost of capital based on FY 2013 audited results. Exhibit 1 shows the present values of the annual discounted expenditures for each of the 9 pump stations. The present value average of the data set equaled $566,855, and a rounded value of $550,000 is the resulting charge for a Special Facilities Agreement for Pump Stations of 2,000 gpm or less. Larger pump stations or other type of qualifying special facilities should be negotiated on a case-by-case basis.

Exhibit 1: Determination of Special Facilities Agreement Fee for Pump Stations

Pump Station Name	Station ID #	25 Years
Eagle Crest	8BECRST	$488,639
Rancho de Lago #1	8BRDL1	$669,682
Rancho de Lago #2	8BRDL2	$603,130
Los Arroyos	8BLAR1	$553,695
Pima Farms	8BPIMA	$480,299
Prudence	8B6497	$558,845
Quail Creek	8B6511	$558,479
Silverado	8BSILH	$550,115
Tangerine	8B6515	$638,812
	Present Value (Avg)	$566,855
Fee for Pump Station Installation		**$550,000**

External Analysis

RFC performed a comparative analysis (external analysis) of PCRWRD's specialized service fees with other regional utilities. A total of 7 utilities responded to the survey. Exhibit 2 presents the results of the external analysis regarding a Special Facilities Agreement for Pump Stations. The surveyed utilities provided a range of answers. Phoenix and San Diego charge private developers for this type of service, and the Special Facilities Agreements for Pump Stations appear to be negotiated on a case-by-case basis. Henderson only charges the special facility if immediate upgrades are necessary for bringing the facility up to the utility's standards. For El Paso Water Utilities and Peoria, the related costs of the special facility is absorbed into the overall utility's costs and thus recovered from all users. Several utilities indicated that this type of agreement is not applicable to their system.

Exhibit 2: External Analysis – Special Facilities Agreement for Pump Stations

	Charge for Service?		Methodology (if Yes)
	Yes	**No**	
PCRWRD	X		Case by case basis
EPWU		X	Covered by rates for all users
Henderson		X	Exception only if facility is not up to City's standards
Peoria		X	Covered by rates for all users
Phoenix	X		Case-by-case basis
San Diego (City of)	X		Case-by-case basis
Tempe		X	
Tucson Water		X	

Recommendation

It was determined that PCWRD should not implement a specific charge for Special Facilities Agreements for Pump Stations. Rather, it is appropriate to continue addressing Special Facilities Agreements for Pump Stations on a case-by-case basis, with flexibility to assess a charge based on the specific characteristics of the agreement. If necessary, the calculation methodology described in the internal analysis represents a reasonable approach for determining an upfront charge for a Special Facilities Agreement for Pump Stations.

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Memo

To: Mary Allen Hamilton, Special Assistance Office

From: Bart Kreps, Senior Manager, Raftelis Financial Consultants, Inc.

Date: December 8, 2014

Re: Technical Memorandum #2: Connection Fee Discounts, Credits and Rebates

---

This memorandum documents our review and examination of Pima County Regional Wastewater Reclamation Department's (PCRWRD) methodology for providing connection fee discounts, credits, and rebates. The analysis described below is a component of a broader study conducted by Raftelis Financial Consultants, Inc. (RFC) to review and update various fees for specialized PCRWRD services.

Definition

PCRWRD provides connection fee discounts for qualifying sewer projects built by a developer. Connection fee credits are provided for PCRWRD requested oversizing of sewer built by the developer and rebates are provided if a developer installs a sewer which provides at least 51% residual capacity for property other than the area under development.

Ordinance

13.20.045.B, 050

Existing Structure

Connection fee discounts are $1,100 per lot, based on an accrual of 25 feet increments of qualifying sewer construction. Connection fee credits for oversizing are based on contractor bids and construction costs. If a developer uses less than 50% of a pipes capacity, they may request a rebate for up to 100% of the cost of construction.

Internal Analysis

Connection fee discounts are provided only for qualifying public sewer improvements including residential, commercial, industrial, and multi-family facilities directly tributary to the qualifying sewer improvements constructed by the developer. Connection fee credits relate to infrastructure that is oversized in order to accommodate future growth. Rebates are not provided for oversized infrastructure, but relate directly to the level of flow utilized within a pipe that was constructed by a developer.

The internal analysis developed for connection fee credits was based on the most recent version of the schedule of values provided by PCRWRD staff. The schedule of values provides estimated construction costs for different piping and manhole infrastructure of various sizes, which is developed and maintained by PCRWRD staff. In most cases, the average cost of construction was based on the following formula: total cost of pipe + excavation and back fill (10'-20') + cost of bedding material + cost of payment replacement = average cost per foot. This formula was used for each size pipe. Manhole construction costs assume 4ft. and 5ft. diameter manholes less than or equal to 10ft. deep.

Exhibit 1 presents estimated pipe and manhole construction cost based on the schedule of values.

Exhibit 1: Schedule of Values

PVC Piping

Pipe Diameter	Cost Installed ($/lf)	Excavation & Backfill: Up to 10' Deep ($/lf)	10'-20' Deep ($/lf)	20'-30' Deep ($/lf)	Premium for Rock Exc ($/cy)	Bedding Material ($/lf)	Asp Pavement Replace ($/lf)	Conc Pavement Replace ($/lf)	**Summary of Average Costs ($/lf) (1)**
8"	$15.00	$18.50	$53.00	$90.00	$50.00	$1.50	$22.00	$16.50	**$91.50**
10"	$22.00	$19.60	$58.00	$95.00	$50.00	$1.50	$22.00	$16.50	**$103.50**
12"	$28.00	$21.00	$60.00	$102.00	$50.00	$1.50	$22.00	$16.50	**$111.50**
24"	$115.00	$28.00	$80.00	$135.00	$50.00	$2.00	$30.00	$22.00	**$227.00**

(1) Total cost of pipe + cost of excavation and backfill 10'-20' deep + cost of bedding material + cost of Asp pavement replacement.

HDPE Piping

Pipe Diameter	Cost Installed ($/lf)	Excavation & Backfill: Up to 10' Deep ($/lf)	10'-20' Deep ($/lf)	20'-30' Deep ($/lf)	Premium for Rock Exc ($/cy)	Bedding Material ($/lf)	Asp Pavement Replace ($/lf)	Conc Pavement Replace ($/lf)	**Summary of Average Costs ($/lf) (1)**
8"	$38.00	$18.50	$53.00	$90.00	$50.00	$1.50	$22.00	$16.50	**$114.50**
10"	$48.00	$19.60	$58.00	$95.00	$50.00	$1.50	$22.00	$16.50	**$129.50**
12"	$62.00	$21.00	$60.00	$102.00	$50.00	$1.50	$22.00	$16.50	**$145.50**
24"	$98.00	$28.00	$80.00	$135.00	$50.00	$2.00	$30.00	$22.00	**$210.00**

(1) Total cost of pipe + cost of excavation and backfill 10'-20' deep + cost of bedding material + cost of Asp pavement replacement.

Concrete Piping

Pipe Diameter	Cost Installed ($/lf)	Excavation & Backfill: Up to 10' Deep ($/lf)	Excavation & Backfill: 10'-20' Deep ($/lf)	Excavation & Backfill: 20'-30' Deep ($/lf)	T-Lock Liner ($/lf)	Premium for Rock Exc ($/cy)	Bedding Material ($/lf)	Asp Pavement Replace ($/lf)	Conc Pavement Replace ($/lf)	**Summary of Average Costs ($/lf) (1)**
8"	$30.00	$18.50	$53.00	$8.00	$7.00	$50.00	$1.50	$22.00	$16.50	**$113.50**
10"	$30.00	$19.60	$58.00	$95.00	$8.00	$50.00	$1.50	$22.00	$16.50	**$119.50**
12"	$35.00	$21.00	$60.00	$102.00	$10.00	$50.00	$1.50	$22.00	$16.50	**$128.50**
24"	$60.00	$28.00	$80.00	$135.00	$19.00	$50.00	$2.00	$30.00	$22.00	**$191.00**

(1) Total cost of pipe + cost of excavation and backfill 10'-20' deep + cost of T-lock liner + cost of bedding material + cost of Asp pavement replacement.

DIP Piping

Pipe Diameter	Cost Installed ($/lf)	Excavation & Backfill: Up to 10' Deep ($/lf)	Excavation & Backfill: 10'-20' Deep ($/lf)	Excavation & Backfill: 20'-30' Deep ($/lf)	Protection Coating ($/lf)	Polethylene Wrap ($/lf)	Premium for Rock Exc ($/cy)	Bedding Material ($/lf)	Asp Pavement Replace ($/lf)	Conc Pavement Replace ($/lf)	**Summary of Average Costs ($/lf) (1)**
8"	$27.00	$18.50	$53.00	$90.00	$3.00	$0.65	$50.00	$1.50	$22.00	$16.50	**$107.15**
10"	$35.00	$19.60	$58.00	$95.00	$4.00	$0.85	$50.00	$1.50	$22.00	$16.50	**$121.35**
12"	$43.50	$21.00	$60.00	$102.00	$5.00	$1.00	$50.00	$1.50	$22.00	$16.50	**$133.00**
24"	$100.00	$28.00	$80.00	$135.00	$10.00	$1.25	$50.00	$2.00	$30.00	$22.00	**$223.25**

(1) Total cost of pipe + cost of excavation and backfill 10'-20' deep + cost of protection coating + cost of polethylene wrap + cost of bedding material + cost of Asp pavement replacement.

VCP
Piping

Pipe Diameter	Cost Installed ($/lf)	Excavation & Backfill Up to 10' Deep ($/lf)	10'-20' Deep ($/lf)	20'-30' Deep ($/lf)	Premium for Rock Exc ($/cy)	Bedding Material ($/lf)	Asp Pavement Replace ($/lf)	Conc Pavement Replace ($/lf)	**Summary of Average Costs ($/lf) (1)**
8"	$11.00	$18.50	$53.00	$90.00	$50.00	$1.50	$22.00	$16.50	**$87.50**
10"	$17.00	$19.60	$58.00	$95.00	$50.00	$1.50	$22.00	$16.50	**$98.50**
12"	$25.00	$21.00	$60.00	$102.00	$50.00	$1.50	$22.00	$16.50	**$108.50**
24"	$100.00	$28.00	$80.00	$135.00	$50.00	$2.00	$30.00	$22.00	**$212.00**

(1) Total cost of pipe + cost of excavation and backfill 10'-20' deep + cost of bedding material + cost of Asp pavement replacement.

Manholes	Average Distance (ft.)		Cost	Cost ($/lf)
8"	234.7			
10"	262.07	248	$3,100.00	$12.50
12"	292.18			
15"	307.67			
18"	360.5	320	$6,800.00	$21.25

The difference between estimated construction costs by pipe and manhole size were then used to develop the current cost (per linear foot) for connection fee credits for oversized infrastructure (see Exhibit 2).

Exhibit 2: Connection Fee Credits (Oversizing)

Connection Fee Credits
(Oversizing)
Reimbursements to developers for oversizing sewer piping infrastructure beyond what is required to serve their specific development.

PVC Piping		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
8"	10"	$12.00
8"	12"	$20.00
8"	24"	$135.50
10"	12"	$12.00
10"	24"	$123.50
12"	24"	$115.50

HDPE Piping		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
8"	10"	$15.00
8"	12"	$31.00
8"	24"	$95.50
10"	12"	$16.00
10"	24"	$80.50
12"	24"	$64.50

VCP Piping		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
8"	10"	$11.00
8"	12"	$21.00
8"	24"	$124.50
10"	12"	$10.00
10"	24"	$113.50
12"	24"	$103.50

Concrete Piping		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
8"	10"	$6.00
8"	12"	$15.00
8"	24"	$77.50
10"	12"	$9.00
10"	24"	$71.50
12"	24"	$62.50

DIP Piping		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
8"	10"	$14.20
8"	12"	$25.85
8"	24"	$116.10
10"	12"	$11.65
10"	24"	$101.90
12"	24"	$90.25

Manholes		
From Diameter Size	To Diameter Size	Proposed Rate ($ per linear ft.) (1)
4' (8 -10" line)	5' (12 - 18" line)	$8.75

An internal analysis was not developed for connection fee discounts and rebates. Evaluation of these methods of reimbursement were addressed in the external analysis and recommendation sections below.

External Analysis

RFC performed a comparative analysis (external analysis) of PCRWRD's specialized service fees with other regional utilities. A total of 7 utilities responded to the survey. Exhibit 2 presents the results of the external analysis related to Connection Fee Discounts, Credits and Rebates. Among the surveyed utilities, it is common for a utility to provide some form of discount, credit or refund for a variety of reasons. Perhaps the most common benefit for the developer is for oversizing infrastructure. The utility most often benefits from this practice because it allows additional future use of the infrastructure beyond that contained in the developer's plans. San Diego does not have an explicit policy, but will review and award discounts, credits, or refunds on a case-by-case basis.

Additionally, Tucson Water, Peoria and EPWU provide refunds for connection fees paid by the original developer should additional connections be made at a later time. For Tucson Water, this setup is called a "protected main" and remains active for 15 years. The original developer will be refunded partial connection fees based on the front footage of additional connections, but the refund will never amount to more than the connection fees paid.

Exhibit 2: External Analysis - Connection Fee Discounts, Credits and Rebates

	Provide?		Methodology
	Yes	**No**	(if Yes)
PCRWRD	X		Per foot and per lot discounts; credits and rebates vary
EPWU	X		Reimbursement for oversizing; refunds for other connections
Henderson	X		Refunds for oversizing
Peoria	X		Refunds for other connections (10 yrs)
Phoenix		X	No formal policy
San Diego (City of)	X		Case-by-case basis
Tempe		X	
Tucson Water	X		Oversizing rebates available; refunds for other connections (15 yrs)

Recommendation

It is recommended that PCRWRD use a schedule of values to estimate a credit for oversizing infrastructure, as it provides a reasonable and consistent estimation of the differences in construction costs for varying sizes of piping infrastructure. However, there is a potential disconnect in providing discounts on connection fees for local collection infrastructure that is not oversized. Although construction of this infrastructure may be beneficial to the system and/or provide service to future customers, the cost of local collection infrastructure 8-inches and smaller is not included in the connection fee. Based on our experience, it is common for utilities to provide credits to developers for oversizing infrastructure, but less common to provide discounts and/or rebates for infrastructure that is not oversized. While it may be appropriate to provide some recognition of additional costs incurred for infrastructure installed by a developer that may benefit other customers, PCRWRD should review requests on a case-by-case basis. If some form of monetary compensation is provided, it should likely be done in the form of a rebate rather than a discount on connection fees, particularly if the piping diameter is smaller than 10-inches. For piping diameter 10-inches and larger, it may be appropriate for PCRWRD to develop a program, similar to Tucson Water's "protected mains", which provides a funding source for infrastructure investment and a methodology for reimbursing developers as the system grows over time.