



Appendix P

Whipple Creek Watershed-Scale Stormwater Plan Report

Financial Analysis Technical Memorandum

Prepared by

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To: Tim Kraft, Otak
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RE: Whipple Creek Basin Stormwater Funding

INTRODUCTION

This high level financial feasibility analysis incorporates the cost of capital projects and associated O&M defined in the Whipple Creek (Clark County) Basin Stormwater Plan. This analysis considers the current and projected future customer base in the Whipple Creek Basin, and assesses the financial impacts of Plan implementation on those customers.

ASSUMPTIONS

The analysis reflects the assumption that all three future scenarios and the channel restoration projects identified in the Stormwater Plan, totaling \$345.77 million in capital costs and \$4.04 million in annual O&M costs, will be implemented in the Basin over time.

With input from Otak and County staff, a number of assumptions were made to forecast customer growth, cost inflation, and implementation timelines.

- **General Cost Inflation** is based on average historical values from the Consumer Price Index (CPI) and is applied to O&M costs. This analysis assumes 1.77 percent cost escalation per year, based on the 10-year average increase in CPI.
- **Construction Cost Inflation** is based on average historical values from the Engineering News Records (ENR) Construction Cost Index (CCI) and is applied to capital project costs. This analysis assumes 2.92 percent cost escalation per year, based on the 10-year average increase in CCI.
- **Customer Growth** is based on Basin buildout projections and measured in Equivalent Residential Units (ERUs). This analysis assumes annual growth of 1.53 percent for thirty years (to Basin buildout), with zero growth after year thirty.
- **Baseline ERU and Revenue** numbers are based on county data.
- **O&M Implementation** is assumed to occur over a thirty year period, with no additional O&M assumed for the first five years of the analysis. Each subsequent year, O&M costs increase by 1/25th of the proposed annual O&M cost (plus general cost inflation) until reaching full implementation in year thirty of the plan, assumed to be 2047.
- **Capital Implementation** is assumed to occur over a thirty year period on a straight-line basis: each year, 1/30th of the proposed total capital cost is implemented (plus construction cost inflation).

RESULTS

Using current reported revenue for the Basin and assumed customer growth, we project total rate revenue of \$534,844 in year one of implementation, assumed to be 2018. With the addition of planned capital projects, the revenue requirement would increase to \$12,397,435. Results are summarized in the following table:

Table 1. Total Cost Summary

	2018	2019	2020	2021	2022	2027	2037	2047
Base Revenue	\$534,844	\$543,035	\$551,352	\$559,797	\$568,370	\$613,249	\$713,916	\$831,109
Additional O&M Cost	0	0	0	0	0	962,962	3,442,929	6,838,717
Additional Capital Cost	11,862,591	12,209,400	12,566,348	12,933,731	13,311,856	15,374,903	20,509,732	27,359,464
Adjusted Revenue	12,397,435	12,752,435	13,117,700	13,493,528	13,880,226	16,951,114	24,666,578	35,029,289
Percentage Increase	2218%	2248%	2279%	2310%	2342%	2664%	3355%	4115%

Using the current ERU count and reported revenue for the Basin, we project an annual bill per ERU of \$49.83 (estimated) in year one of implementation, assumed to be 2018. With the addition of planned capital projects, the annual rate would increase to \$1,155.04. Rate results are summarized in the following table:

Table 2. Total Annual Bill Impact per ERU

	2018	2019	2020	2021	2022	2027	2037	2047
Base Bill	\$49.83	\$50.08	\$50.34	\$50.59	\$50.84	\$52.08	\$54.39	\$56.56
Additional O&M Cost	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$81.77	\$262.31	\$465.40
Additional Capital Cost	\$1,105	\$1,126	\$1,147	\$1,168	\$1,190	\$1,305	\$1,562	\$1,861
Adjusted Bill	\$1,155	\$1,176	\$1,197	\$1,219	\$1,241	\$1,439	\$1,879	\$2,383
Percentage Increase	2218%	2248%	2279%	2310%	2342%	2664%	3355%	4115%