

---

## FINANCIAL ANALYSIS

This chapter includes financial information related to the Proposed Alternative, Alternative 1F1 – Storage Out of Basin. The components of project cost are described, including construction, engineering, property acquisition, and O&M. Life cycle cost computations are described in this chapter. Finally, this chapter describes how the project will be financed.

### 7.1 CAPITAL COSTS

This section includes planning -level construction, engineering, property acquisition, and O&M costs for the project in 2010 dollars. Estimated quantities are based on schematic plans presented in Chapter 6.

#### 7.1.1 Construction Cost Estimate

The planning-level cost estimates is based on quantity takeoffs developed for the conceptual facilities shown in Chapter 6. These costs were developed in 2010 dollars, then escalated to develop total project costs, including general contractor overhead and profit, an estimating contingency and allied costs (including engineering, legal, and administrative costs).

During development of the Proposed Alternative, quantities and project details were developed further, and unit costs were refined. This resulted in updates to the cost estimates presented in Chapter 5 of this report. The estimating contingency of 30 percent is derived from the cost estimate classification system defined by the Association for Advancement of Cost Engineering (AACE) International. Class 4 estimate accuracy ranges from minus 30 percent to plus 50 percent due to the preliminary nature of project data and engineering. The estimating contingency of 30 percent reflects the recommended standard contingency for the preliminary stage of the project.

Key cost factors include:

- Basis Year: 2010
- ENR CCI: 8645.
- Allied Costs: 30 percent.
- Contractor markups: included.
- Sales tax: 9.5 percent.

Table 7.1 summarizes the construction cost estimate for this alternative. A more detailed estimate is provided in Appendix E.

<b>Table 7.1 Construction Cost Summary</b>		
<b>Item</b>	<b>Description</b>	<b>Amount</b>
Base Cost	Construction cost including contractor's overhead, profit, general conditions	\$16,200,000
Contingency	Construction contingency, 30% without escalation to 2014	\$ 4,900,000
<b>Total</b>		<b>\$21,100,000</b>

#### **7.1.1.1 Total Project Costs**

Table 7.2 summarizes total project costs including engineering, construction assistance, and county administrative costs.

<b>Table 7.2 Project Cost Summary</b>		
<b>Item</b>	<b>Description</b>	<b>Amount</b>
Construction	See Table 7.1	\$21,100,000
Additional costs	Includes construction contingency, project contingency, tax, allied cost, permit fee and miscellaneous cost	\$15,400,000
Land Acquisition	Acquisition	\$ 2,200,000
<b>Total</b>		<b>\$38,700,000</b>

## **7.2 OPERATIONS AND MAINTENANCE COSTS**

The basis of O&M costs for purposes of planning level estimates and input to life cycle cost spreadsheets was developed using information supplied by the county and a memo prepared by the county ("South Samammish Basin Conveyance Facility O&M Assumptions", Brown and Caldwell, March 4, 2002.) Relevant assumptions are summarized below. Assumptions are those in the memo, unless otherwise stated.

Costs and labor rates were quoted in 2002 dollars in the memorandum, updated to current labor rates, and escalated to 2015 dollars for the life cycle cost calculations. Cost assumptions and unit costs are shown in Appendix C. Labor and materials associated with annual O&M are shown in Appendix C.

Table 7.3 summarizes annual O&M units costs by CSO facility type in man-hours/year (Mh/yr) for the life cycle cost. Minimum effort is rounded up to 0.1 Mh/yr. Table 7.4 summarizes O&M costs for the first year of operation in 2016. Subsequent years are escalated at 3 percent per annum for the life cycle cost calculations shown in Appendix C.

**Table 7.3 O&M Unit Cost Summary**

Item	Annual Labor Cost Basis	Value
Rectangular Tank (annual plus prorated 5-yr major maintenance cycle)	mh/MG/yr	440
Gravity sewers, trenchless pressure sewers	mh /LF/yr	0.01
Flow Control Structures	mh /ea/yr	192

**Table 7.4 Annual O&M Cost Summary**

Item	\$/yr, 2015
Operations and Maintenance <sup>1</sup> (Tank, diversion structure, door control, sewer) and prorated labor, 5-year major maintenance cycle	\$ 102,000
Electrical (ventilation, power)	\$ 1,000
Chemicals (activated carbon replacement once per two years)	\$ 11,000
Materials (annual cost for 5-year major maintenance cycle)	\$55,000
Generator (annual fuel cost)	\$5,000
<b>Total</b>	<b>\$174,000</b>
<u>Notes:</u>	
1. Labor hour rate is \$52.65/hr for 2016 and increases 1% per annum thereafter.	

## 7.3 LIFE CYCLE COSTS

Life cycle costs are based on a 20-year capital cost repayment, and operations and maintenance over a 35-year project life (2015-2049) using a Wastewater Treatment Division Business Case Evaluation calculation method (King County, 2009.) A county discount rate of 2.7 percent was used for the analysis. The net life cycle cost for the project is estimated to be \$34,000,000. The average annual project cost is estimated to be \$1,700,000. Life cycle costs are included in Appendix E.

## 7.4 PROJECT FINANCING

This section describes methods of financing projects.

### 7.4.1 Project Financing

The County's Wastewater Treatment Division (WTD) capital improvement program (CIP) is funded primarily through proceeds from sewer revenue bond sales, variable-rate short-term borrowing, capacity charge revenues, and transfers from the operating fund. Additionally, some low-interest loan programs such as the State Revolving Fund (SRF) and the Public Works Trust Fund (PWTF) are available to fund all or part of the project. However, loan

applications must go through a competitive ranking process and rank high enough to receive available loan funds. Approximately 84 percent of WTD's total operating revenues are from monthly sewer charges collected from WTD's component agencies. Transfers of operating funds to the capital program are the result of the additional cash generated to meet the financial policy requirement of maintaining a debt service coverage ratio of no less than 1.15 times all debt service requirements. WTD uses these transfers to reduce the amount of borrowing necessary to finance the capital program.

Standard & Poor's and Moody's Investor Services are leading global financial firms that rate corporate stocks and municipal bonds according to risk profiles. In 2009, the firms confirmed the ratings to the Wastewater Treatment Division's bonds, citing:

- Strong management practices.
- Continued positive financial performance.
- Solid rate base and large service area.
- Commitment to a capital improvement plan.

The Moody's rating for WTD's sewer revenue bonds, as well as similar bonds issued in the past, remained at Aa3 while the Standard and Poor's rating remained at AA+. These favorable credit ratings lower the cost of borrowing by reducing the amount of debt service, which, in turn, reduces impacts to the rate.

Prior to facility operation, the capital costs associated with the CWWTF will be financed through the resources available for costs associated with any new facilities and in accordance with the financial policies of the County and the WTD. The actual mix and cost of these instruments will reflect economic and financial conditions, WTD's financial position, and the appropriateness of the project for securing below-market rate resources.

#### **7.4.2 Capital Financing Plan**

The capital costs associated with the South Magnolia CSO Facility will be financed through the resources available for capital improvements in accordance with the financial policies of the County and the WTD. The actual financing mix and cost of these instruments will reflect economic and financial conditions, WTD's financial position, and the appropriateness of the project for securing below-market-rate resources.

#### **7.4.3 Customer Charges**

The costs associated with construction plus operation and maintenance of the facility will be reimbursed or supported through a combination of user charges. These include the regular monthly sewer rate and the capacity charge which is levied on customers establishing new connections to the system. The monthly rate is a uniform amount levied on all system customers or customer equivalents. The capacity charge is levied on new connections to the system for a period of 15 years, with the option of payoff at a discount.

Annually, the County Executive proposes a sewer rate and capacity charge reflecting the current forecast of monetary requirements. In accordance with long-term contracts with the component sewer agencies, the monthly sewer rate must be adopted by the Council by June

30 of each year.. In June 2010, the County Council adopted a monthly wholesale sewer rate of \$36.10 and a capacity charge of \$50.45 commencing January 1, 2011. In accordance with the financial plan associated with the 2011 adopted sewer rate and the proposed 2011 capital budget covering the period of 2011 to 2016, the revenues generated by this rate, capacity charge and subsequent planned increases in each will provide the funding for the construction of the South Magnolia CSO Facility.

***This page intentionally left blank***