Appendix D
SWP Financial Model

ESA

SWP Financial Model

Metropolitan Water District of Southern California (WDSC) developed the financial model with the intent to evaluate the possible changes in State Water Contractors' (Contractors) annual charges resulting from implementing revisions to water contract provisions under the Water Supply Contract Extension Project (proposed project). The Transportation Capital, Conservation Capital and Conservation Minimum charges are the cost components that are being evaluated in this model analysis. The Contractors will continue to return to the State those State Water Project (SWP) costs incurred for the purpose of construction, operation and maintenance allocable to water supply. The model provides a view and compares how SWP costs will be repaid under two repayment methodologies (the current Water Supply Contracts (Contract) and proposed project) described below. The financial model does not evaluate future charges for the following cost components since these cost components will have little or no change in their computations resulting from the proposed project (see Chapter 3, Section 3.3.1, Water Supply Contract Cost Recovery).

1) Transportation Variable Operations Maintenance Power and Replacement,
2) Transportation Minimum Operations and Maintenance
3) Transportation Off Aqueduct Minimum Operations and Maintenance
4) Capital and Minimum Operations and Maintenance for the East Branch Enlargement and East Branch Extension and,
5) Capital for the Coastal Branch Extension, South Bay Aqueduct Enlargement and Tehachapi Second Afterbay.

The model is structured to evaluate the differences in charges under the two repayment methodologies for a) all contractors, b) individual Contractors, and c) the two contractor categories of Agricultural (Ag) Contractors and Municipal & Industrial (M&I) Contractors. The model computes and studies contractor charges through 2085 for the proposed project. For illustrative purposes, the model does compute charges through 2090 only to illustrate what the charges may be after an additional contract extension beyond 2085.

1. Assumptions

Future SWP expenditures were derived by extrapolating actual and projected cost information from the California Department of Water Resources (DWR) Bulletin 132-14 Management of the State Water Project, Appendix B Tables.

The total amount of SWP estimated expenditures to be recovered via current or proposed recovery methods remain the same. The differences in computing contractor charges are based on (a) the difference between the provisions and methods of

recovery under the current contract and the proposed project and (b) the difference in recovery periods during which expenditures are amortized. Each recovery method has its own unique calculations with corresponding interest rates.

Under the proposed project, calculations of capital charges for both M&I Contractors and Ag Contractors use the same methodology, since both set of contractors will repay capital obligations using the capital recovery periods of the issued bonds. Under the current contract, there are differing capital recovery periods for both M&I Contractors, and Ag Contractors

Only existing SWP facilities and associated expenses are included in this model evaluation and no expenditures for additional SWP facilities are included as part of this analysis.

The following financial terms and rates are used;

- Average Rate, 4.00percent, assumed future interest rate used to calculate the present value calculation for "Annual Repayment for Capital Costs."
- Capital Reserve Requirement Rate, 4.22percent, cost associated with debt issuance by DWR.
- Cost of Issuance Rate, 0.80percent, administrative costs of issuing revenue bonds.
- Escalation Rate of 3.00percent, Inflation Escalation Rate is the Construction Cost Index as of June 2012.
- Inflation and Cost Escalation Rate-Conservation Minimum Tabs, 3.40percent, Inflation and Cost Escalation Rate is the difference between the 4.4percent historical rate of cost increase and the 1percent escalation rate included in Table B-13.
- Debt Service Coverage Requirement, 25.00percent.
- Average Percentage Share Factor,
    - Transportation: The allocation is calculated using a Contractor's total capital transportation costs from Table B-10 based on Table B-2 (Factors for Distributing Reach Minimum OMP&R Costs among Contractors) as a percentage of the total capital transportation costs based on Table B-2.
    - Conservation: The allocation calculated using contractor's 2016-2035 Table A amounts from Table B-4 as a percentage of the total Table A amounts (from "Grand Total" column).

Assumptions for Current Contract:

- Capital expenditures beginning in 2036, all Contracts are extended on a year by year basis and capital costs are repaid directly without amortization.
- Bond Debt Financing Period – Under the current Contract repayment provisions, DWR’s policy is to limit the bond term on all new Water System Revenue bonds to the number of years remaining on the contract, not to exceed 2035.

- Repayment of Capital Expenditures – Contractor capital costs through 2035 are amortized based on an Ag or M&I repayment schedules).

Assumptions for Proposed Project:

- Proposed Amortization Period for Future Capital Costs - Under the proposed project a 30 year bond amortization period for all future capital costs beginning in 2016.
- Bond Debt Financing Period – Under the proposed Contract repayment provisions, DWR's policy to limit the repayment term on all new Water System Revenue bonds to the number of years remaining on the extended term of the contract will continue. After the proposed extended term expires in 2085, without a new Contract extension, the term would be one year.
- Debt Service Repayment – All debt service obligations will be charged to the Contractors on a pay as you go method. Contractors will be charged each year for the amount of the annual debt service required to be paid in such year.

In addition to the current and proposed project methodologies the model also included provisions to illustrate how costs would be recovered if there were a future contract extension beyond the current proposal (extension beyond 2085).

2. Findings and Conclusions by Category of Cost Components:

a) Conservation and Transportation Capital

The model runs did not reveal any unexpected results between the two methods of repayment and the resulting annual Contractor charges. Projected Contractor charges showed no disparities or impacts among Contractors and the resulting allocations of SWP costs. Charges under the proposed project methodology are consistent with the contractor allocation provisions of the Contracts, and those of the current recovery method. The only impact in Contractor capital charges, results directly from the differences in the amortization terms with the current Contract methodology having a compaction, or shorter amortization, of SWP costs.

Figure D1 provides a comparison of the Transportation and Conservation Capital charges from 2016 to 2038 and Figure D2 provides a comparison of the Transportation and Conservation Capital charges from 2039 to 2090.

For both of the Transportation and Conservation capital components, the capital charges to contractors at the end of each Contract period (2035 and 2085) could increase if Contracts are not extended in adequate time, resulting in the issuance of bonds with shorter debt recovery periods for projects that may have longer asset lives.

The spikes in projected charges towards the end of each Contract repayment period result from the decreasing time available to recover the cost of SWP capital projects

(financing compression) as they are constructed or refurbished. Under the current Contract the financing compression period started in 2006, with an accelerated spike in charges anticipated under the current Contract as the current Contract approaches 2035. The same cycle could repeat under the proposed Contract amendments with the financing compression starting in 2057.

There is also a difference in the charges starting in 2036 and forward. The difference is the result of the difference in financing terms for the same costs. The current Contract would charge for actual capital costs starting in 2036 without amortizing; there would be no financing and no interest cost under the current Contract since bonds would not be issued after 2035. Under the proposed project, there will be financing principal and interest over a 30 year repayment term.

The proposed project would involve a rolling 30-year amortization of capital expenditures. The model begins in the year 2016, the assumed year for the proposed project implementation. Under the proposed project, the 2016-2035 capital charges would decrease (61 percent lower from its peak in 2035 if no contract extension) and the fluctuation in the repayment of capital obligations would be lessened and spread more evenly over the long-term capital repayment horizon (2016–2085).

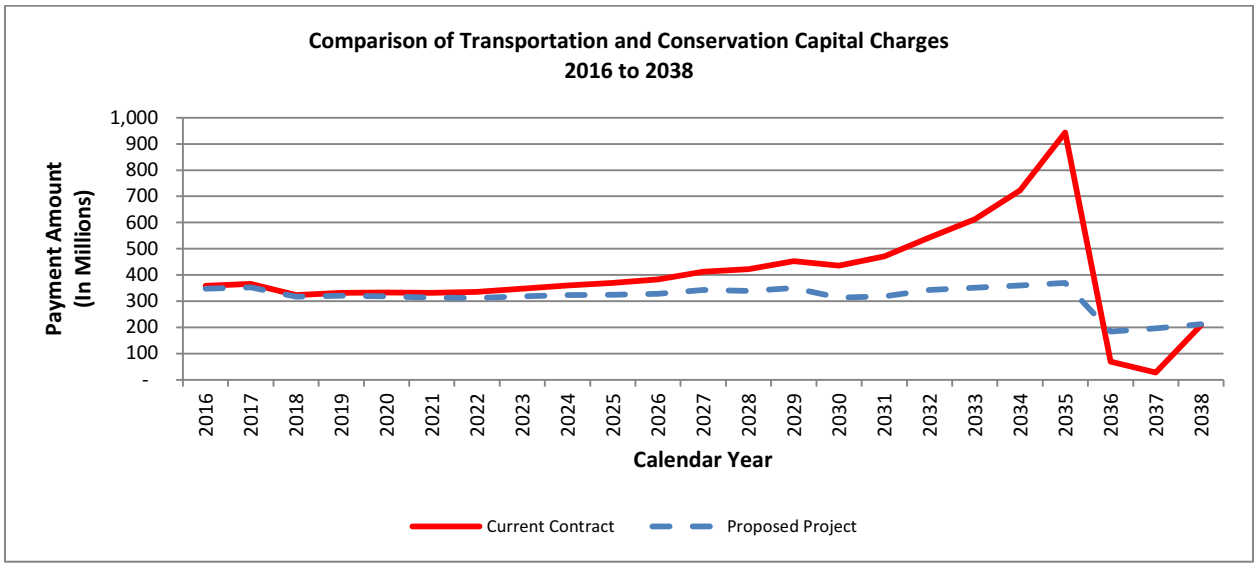

Figure D1. Comparison of Transportation and Conservation Capital Charges 2016 to 2038

The analysis presented in the financial model concludes that extending the Contract terms now under the proposed project would eliminate the increasing extreme financial repayment obligations between 2016 and 2035 that would otherwise occur under the current Contracts. However, the proposed project will not eliminate the compression caused by bonds sold prior to 2016, since such bonds have been sold with maturity dates that do not extend beyond 2035.

Overall, the proposed project would substantially reduce the annual capital charges that otherwise would continue to increase as the contracts approach 2035. This would allow Contractors to better assess their future rate structures, and thereby facilitate their planning process. It is expected that with the proposed project, the Contractors would continue their current practice of paying their SWP bills, since there is no anticipated change to the overall charges that the Contractors will be responsible for under the Contracts. Rather, the proposed project would result in a leveling out of future capital payments that would be due from the Contractors.

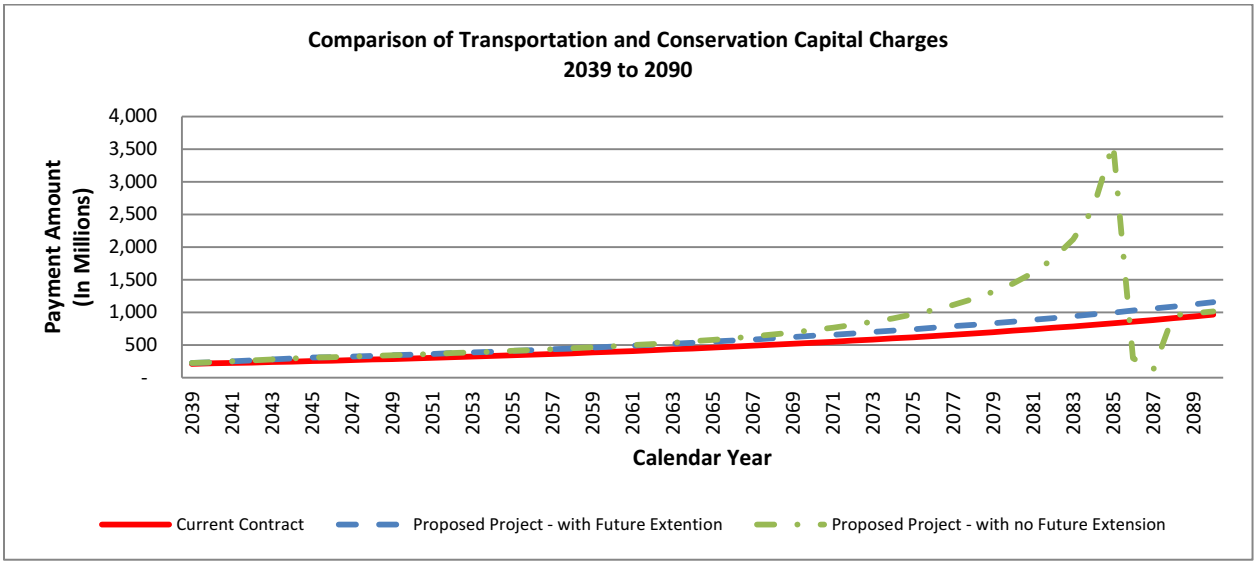

Figure D2. Comparison of Transportation and Conservation Capital Charges 2039 to 2090

b) Conservation Minimum Operations Maintenance Power and Replacement

Model comparison of the Conservation Minimum Charges shows minimal impacts among contractors under each methodology. The fluctuation in charges from year-to-year between current and proposed project is the direct result of matching the conservation program costs with revenues; thus eliminating the amortizing and averaging of cost under the current contract. Both current and proposed project repayments methodologies allocate Conservation Minimum costs to contractors similarly; the only difference in methods is that the proposed methodology allocates annual costs in the year incurred, while the current methodology recovers the cost in an average (levelized) basis from now through 2035. Figure D3 shows the comparison of conservation minimum charges between the current Contract and the proposed project.

Due to the amortizing and averaging of costs, and the mismatch of conservation minimum cost and revenues under the current contract billing methodology, there remains an unpaid portion of the historical conservation costs that will need to be recovered from 2016 to 2035. Under the proposed project, the Conservation Minimum

Charge will include the conservation minimum annual costs for the year incurred, plus a charge through 2035 to recover the remaining historical project operations and maintenance costs.

For both the current Contracts and proposed project, the model used the same projected costs for conservation minimum from 2016 to 2085. The proposed project would involve marginally lower Conservation Minimum Charges in the near-term (2016–2035) than the current contract, and estimated Conservation Minimum Charges from 2035 to 2085 would be the same for the current Contract and proposed project.

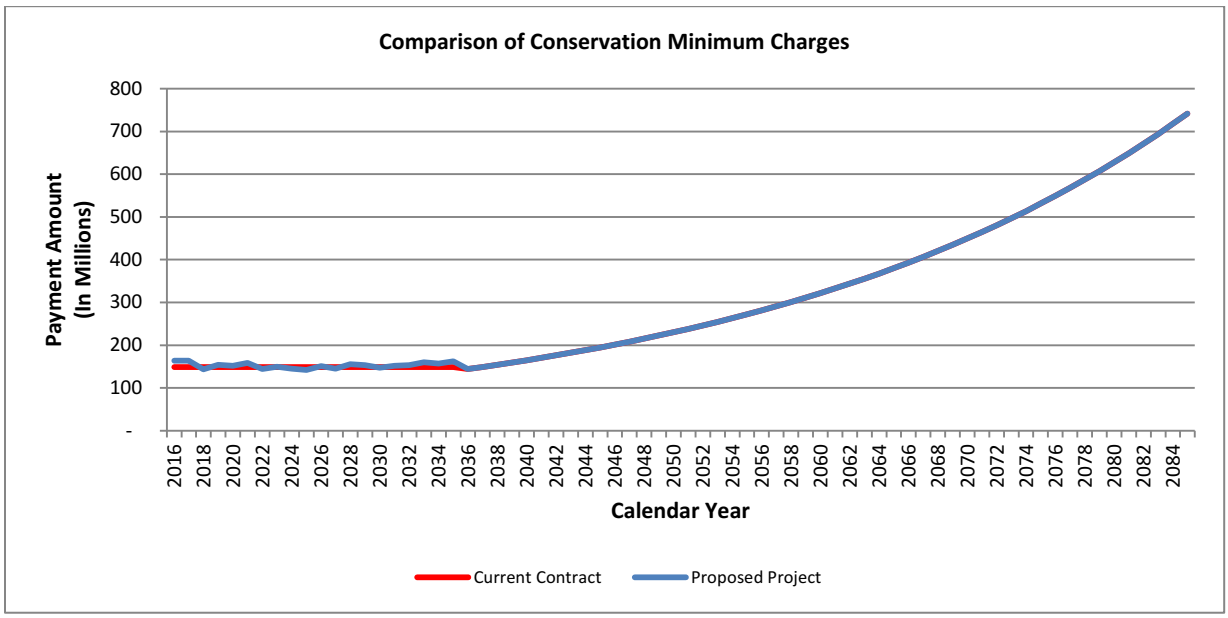

Figure D3. Comparison of Conservation Minimum Charges

Summary

Evaluations of contractor Annual Charges were computed using the following eight categories.

Under the current contract terms:

1. Conservation capital charges
2. Transportation capital charges
3. Conservation minimum charges

Under the proposed project:

1. Conservation capital charges with extension beyond 2085
2. Conservation capital charges without extension beyond 2085
3. Transportation capital charges with extension beyond 2085
4. Transportation capital charges without extension beyond 2085

5. Conservation minimum charges

Overall study results indicate no shift in the proportionate costs or charges among Contractors from extending the Contracts under the proposed project. However, the proposed project would eliminate the compression of capital charges that would otherwise continue to increase as the contracts approach 2035 with marginally lower Conservation Minimum Charges from 2016 thru 2035.

Contractors allocated costs and annual charges were used only for relative and comparison purposes between both the current Contract and proposed project methods and should not be used as a forecast of actual amounts of annual charges in the future. Future annual charges will be directly based on future needs of SWP expenditures.