EXHIBIT 2-A

# Monterey Peninsula Water Supply Project
# A.12-04-019



# Evaluation of Financing Alternatives

Prepared by Monterey Peninsula Water Management District

August 2012

(Version 3)

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# Introduction

California American Water Company ("Cal-Am") has filed an application for the Monterey Peninsula Water Supply Project, A.12-04-019. In the application, four alternative project scenarios are examined:

(i) 9.0 MGD plant with no GRW and no State Revolving Fund ("SRF")
(ii) 9.0 MGD plant with no GRW and using SRF
(iii) 5.4 MGD plant with GRW and no SRF
(iv) 5.4 MGD plant with GRW and using SRF

In the two alternatives that include SRF loans, the proposed capital financing structure is as follows:

| | 9.0 MGD plant w/o GRW w/ SRF | 5.4 MGD plant w/ GRW w/ SRF |
|---|---|---|
| Surcharge 2 (Pay-as-You-Go) | $99.1 million | $99.1 million |
| Long Term Debt | $56.2 million | $56.2 million |
| Equity | $63.6 million | $63.6 million |

Both scenarios utilize $20 million of low-cost commercial paper for additional funding in the early phases of construction, which is ultimately taken-out by permanent long-term funding.

The purpose of this report is four-fold:

1) Demonstrate that the District has a high caliber model capable of analyzing the project financing structure in a manner consistent with Cal-Am's model, as well as to provide analysis of alternatives;

2) Identify mechanisms and approaches that can improve upon the proposed Cal-Am financing plan to the benefit of ratepayers, without jeopardizing the project schedule;

3) Identify and examine risks or uncertainties to the Cal-Am proposal and quantify potential impacts; and

4) To compare the proposed financing structure to that of a theoretical traditional publicly-owned project structure.

Two key measures are used to compare scenarios: (i) the total 40-year lifecycle cost, and (ii) the discounted net present value of future lifecycle costs in 2012 dollars. In several instances, the impact on the 2017 revenue requirement is also examined.

## Recommendations

The District recommends that the California Public Utilities Commission, in its Decision for A.12-04-019, instruct Cal-Am to do the following with respect to financing of the project:

a) If available, use State Revolving Fund loans for 100% of the project;
b) If SRF loans are not available for 100%, then consider a public agency contribution in lieu of equity and/or debt;
c) Consider use of a public agency "backstop" to improve the credit rating and reduce the cost of borrowing; and
d) Evaluate market conditions at the time of permanent financing, and require use of tax-exempt debt if it reduces cost to ratepayers.

## Key Conclusions

**Calibration of District Model to Cal-Am Model**

The District model and the Cal-Am model produce sufficiently identical results to allow the District model to be used for analysis of alternative scenarios and assessment of variations to Cal-Am's assumptions.

**Making Cal-Am's Financing Plan Better**

If SRF loans are not available, then in today's market the use of Cal-Am tax-exempt debt instead of taxable corporate debt would reduce the cost to ratepayers. This advantage will improve in the future if the tax-exempt marketplace returns to a more traditional relationship to the taxable marketplace. Hence, based on market conditions at the time, Cal-Am should consider the benefits of tax-exempt debt.

If SRF loans are not available, then providing a public credit "backstop" to Cal-Am's credit rating would reduce the cost to ratepayers by $813,000 to $1,298,000 in the first test year 2017. Overall lifecycle savings would be $13.3 million to $21.5 million, or $6.7 to $10.8 million in 2012 dollars.

If SRF loans are substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $8.0 to $11.3 million in the first test year 2017. Overall lifecycle savings would be $137 million to $193 million, or $64 to $91 million in 2012 dollars. However, the ability of Cal-Am to secure sufficient SRF loans in the amounts and timing required, is questionable.

If fixed rate tax-exempt debt is substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $8 million to $12 million in the first test year 2017. Overall lifecycle savings would be $111 million to $156 million, or $60 to $86 million in 2012 dollars.

If variable rate tax-exempt debt is substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $9.7 million to $14 million in the first test year 2017. Overall lifecycle savings would be $147 million to $207 million, or $76 to $107 million in 2012 dollars.

**Uncertainties in Cal-Am's Proposed Financing Plan**

If, by 2016 the cost of corporate debt rises and Cal-Am borrows at its proposed authorized rate of 6.63% it would increase the cost to ratepayers by $0.9 million to $1.3 million in the first test year 2017. Overall increased lifecycle costs (a loss) would be $15 million to $21 million, or $7 to $10 million in 2012 dollars. Therefore, financing decisions should be made in the context of the then-prevailing market conditions.

If the burden of financing is shifted from current ratepayers to future beneficiaries by reducing Surcharge 2 by half, it would increase the cost to ratepayers by $7.5 million in the first test year 2017. Overall lifecycle loss would be $99 million, or $26 million in 2012 dollars. Therefore, it is less expensive overall to have a higher surcharge, but that must be balanced against fairness issues. The current customer versus future customer problem is compounded by the inclusion of Surcharge 1 as discussed below.

The addition of Surcharge 1 to recover the stranded costs of the RDP affects current ratepayers because it is recovered over the next five years. It would increase the overall additional lifecycle costs (a loss) to $41 million, or $35 million in 2012 dollars. Reducing Surcharge 2 by a like amount would be one mechanism to recover the same dollars over the beneficial life of the new project – and allow the cost of water to be reflective of the total cost of the new plus stranded costs. By capturing the true cost of stranded RDP costs in future rates, the relative value of GWR as compared to desalination would improve.

The desalination project will have 6 to 8 wells in 2-3 well clusters. The average life of the well casings may be 20 years, but the well equipment may need replacement every 7 to 10 years. It does not appear that these future capital costs have been included in the Cal-Am analysis, but would increase the future cost to ratepayers. Further, by incorporating Groundwater Replenishment either fewer wells would be required for desalination source water or the wells could be operated at a lower capacity, which would reduce the future replacement costs and improve the relative value of GWR as compared to desalination.

**Public Ownership v. Private Ownership**

A public owned project using traditional public financing that borrows all interest during construction (capitalized interest) without the advantages of pay-as-you-go capital during the construction period such as a Surcharge 2, or other methods to reduce the burden of interest cost during construction, still competes favorably with Cal-Am's financing proposal. Overall lifecycle savings would be $47 million to $73 million, or $70 to $95 million in 2012 dollars.

If pay-as-you-go monies can be provided to a public owned project, either through direct collections from constituents (ratepayers) through a Proposition 218 process, or have the CPUC allow direct contributions from ratepayers through a Surcharge 2 mechanism, then the publicly-financed project is more advantageous to ratepayers. Overall lifecycle savings would be $142 million to $168 million, or $67 to $93 million in 2012 dollars.

Even without the availability of pay-as-you-go monies during construction, if a public owned project uses State Revolving Fund loans in the same manner and amount as Cal-Am, then a publicly-financed project is more advantageous to ratepayers. Overall lifecycle savings would be $12 million to $53 million, or

$60 to $83 million in 2012 dollars. Present value savings are greater than overall lifecycle savings due to the largest savings occurring in early years and little or no savings occurring in later years.

As would be expected, public financing with pay-as-you-go monies (Surcharge 2) and SRF loans is the most advantageous to ratepayers. Overall lifecycle savings would be $48 million to $106 million, or $58 to $80 million in 2012 dollars. Compared to the previous scenario, the reason the lifecycle savings are so much greater is due to the reduced borrowing size, yet the present value cost in 2012 dollars is approximately the same because the surcharge becomes part of the revenue requirement in the first five years, which has a larger impact on present value.

The use of bond anticipation notes at a lower borrowing cost provides savings of over $1.5 million on a present value basis (2012 dollars), but those savings might easily be offset by interest rate risk – for example, a ten basis point (0.10%) increase in the future cost of borrowing would more than offset the savings on a present value basis. Hence, it is likely not worth the risk of a short-term borrowing followed by a long-term borrowing in three years.

## Assumptions

| | |
|---|---|
| Cal-Am Debt: | 47% debt ratio per A.11-05-003 *(Stephenson A.11, A.51)* |
| | 5.00% interest rate for Cal-Am's model and initial testimony *(Linam A.13)* |
| | 6.63% interest rate for Cal-Am's authorized debt cost *(Stephenson A.11, A.51)* |
| | 4.70% interest rate if using tax-exempt debt backed by AWW Capital Corp |
| | 3.70% interest rate if using tax-exempt debt with public credit backstop |
| | Baa2 credit rating for American Water Works Capital Corp backed debt *(per Moody's 8/15/12 Credit Opinion)* |
| | Cal-Am's stand-alone credit rating would be below investment grade. "On a stand-alone basis, … several key metrics are below those expected for an investment grade rating from Moody's" *(Testimony of Bente Villadsen in A.11-05-003)* |
| Cal-Am Equity: | 53% equity ratio per A.11-05-003 *(Stephenson A.11, A.51)* |
| | 9.99% equity rate of return *(Stephenson A.11, A.51)* |
| State Revolving Funds: | 2.50% interest rate *(Linam A.13)* |
| | 20 year term |
| | It should be noted that typically the SRF moneys are limited by the State to $50 million annually to a recipient. Recipients may receive funds in multiple years. This limitation may affect the ability to use SRF monies as proposed. |
| Public Debt: | 3.70% (Based on actual market data 8/16/12) |
| | 30 year term |
| | 1.25% annual rate coverage requirement |
| Effective Tax Rate: | 40.75% *(Linam A.12)* |
| | 35% Federal tax rate *(Linam A.12)* |
| | 8.84% California tax rate *(Linam A.12)* |
| Ad Valorem Tax Rate: | 1.05% *(Stephenson A.57; Linam A.12)* |
| Uncollectibles: | 0.2643% *(Stephenson A.36; Linam A.12)* |

Depreciation: 40 year plant life / 2.50% (Linam A.12)

25 year tax life / 4.00% (Linam A.12)

AFUDC Rate: 1.00% thru 2015 *(approximation based on Stephenson Attachment 5)*

4.40% - 4.98% in 2016 for 9.0 MGD *(approximation based on Stephenson Attachment 5)*

3.20% - 3.60% in 2016 for 5.4 MGD *(approximation based on Stephenson Attachment 5)*

O&M: $9,720,000 in 2017 for 9.0MGD (assumes an avoided cost of $2.28 million)

$6,920,000 in 2017 for 5.4MGD (assumes avoided cost of $2.28 million)

3% escalation rate

Purchased Water: For 5.4 MGD desal facility, assume 3,500 acre-feet of GWR purchased

$2,500 per acre-foot if financed with SRF loans in Cal-Am's model

$3,000 per acre-foot if financed without SRF loans in Cal-Am's model

For Calibrating against Cal-Am's model assume cost of GWR water escalates at ½ the O&M escalation rate

However, the District believes the simplified cost of water assumptions in the Cal-Am testimony are incorrect for GWR scenarios. Rather, the fixed costs of financing GWR should be separated from the variable costs of O&M. The example herein examines capital costs of $76,288,000 amortized over the period of the borrowing for the GWR project and O&M costs of $3,108,180 (2017 dollars) escalated for inflation over time. These assumptions will likely change as the GWR project evolves, but represent the high end of current estimates. Such corrected scenarios are used in the analysis of alternatives, whereas the Cal-Am assumptions are used for calibrating the models.

Surcharge 2:

| Year | Amount |
|---|---|
| 2013 | $7,500,000 |
| 2014 | $27,040,000 |
| 2015 | $31,830,000 |
| 2016 | $32,780,000 |

Construction Draws:

| Year | 9.0 MGD Amount | 5.4 MGD Amount |
|---|---|---|
| 2013 | $13,110,000 | $11,920,000 |
| 2014 | $32,940,000 | $27,460,000 |
| 2015 | $61,470,000 | $50,010,000 |
| 2016 | $152,480,000 | $123,610,000 |
| | $260,000,000 | $213,000,000 |

Tax Treatment on Contributions:

Contributions such as SRF loans or tax-exempt debt are treated as repaid through a surcharge, and that portion is removed from rate base and not subject to a return. This model does not subject the interest component to gross-up for taxes and does not treat the interest expense as a deductible expense item. The debt is included in the revenue requirement for analytical purposes, but in the case of a contribution repaid directly from public entity revenues, rather than a surcharge, it would not actually be part of the Cal-Am revenue requirement for ratemaking purposes. Rather, is included here to gather the overall cost to ratepayers.

## Calibration of District Model to Cal-Am Model

The District's model evaluates costs over the 40-year lifecycle of the desalination plant, focused on the overall lifecycle costs, as well as the discounted present value of future lifecycle costs. The Cal-Am model only presents results through the first year following the in-service date, focused on the revenue requirement in the first test year after the asset is used and useful. Both models incorporate the financing costs, O&M costs, and the cost of purchased water.

In order to utilize the District's model, it was imperative to ensure its results were consistent with the modeling techniques used by Cal-Am in its testimony for A. 12-04-019. To do so, we analyzed four scenarios based on assumptions and results featured in the testimony of Jeffrey T. Linam filed April 23, 2012 and compared District results to Cal-Am's results.

The scenarios are:

Scenario 1: 9.0 MGD Plant, 53% Equity / 47% Debt / No SRF Funding
Scenario 2: 9.0 MGD Plant, 53% Equity / 47% Debt / With SRF Funding
Scenario 3: 5.4 MGD Plant, 53% Equity / 47% Debt / No SRF Funding
Scenario 4: 5.4 MGD Plant, 53% Equity / 47% Debt / With SRF Funding

For each of the scenarios, several key indicators were compared to calibrate the model, as shown below:

Scenario 1: 9.0 MGD Plant, 53% Equity / 47% Debt / No SRF Funding

| | Cal-Am Model | District Model |
|---|---|---|
| Amount of Debt | n/a | $80.5 million |
| Amount of Equity | n/a | $90.9 million |
| AFUDC Computed | $10.59 million | $10.58 million |
| 2017 Revenue Requirement | $34.18 million | $34.59 million |

Scenario 2: 9.0 MGD Plant, 53% Equity / 47% Debt / With SRF Funding

| | Cal-Am Model | District Model |
|---|---|---|
| Amount of Debt | $79.9 million | $80.04 million |
| Amount of Equity | $90.4 million | $90.26 million |
| AFUDC Computed | $9.5 million | $9.46 million |
| 2017 Revenue Requirement | $31.38 million | $31.77 million |

Scenario 3: 5.4 MGD Plant, 53% Equity / 47% Debt / No SRF Funding

| | Cal-Am Model | District Model |
|---|---|---|
| Amount of Debt | n/a | $56.59 million |
| Amount of Equity | n/a | $63.81 million |
| AFUDC Computed | $6.59 million | $6.55 million |
| 2017 Revenue Requirement | $34.69 million | $34.87 million |

Scenario 4: 5.4 MGD Plant, 53% Equity / 47% Debt / With SRF Funding

| | Cal-Am Model | District Model |
|---|---|---|
| Amount of Debt | $56.2 million | $56.3 million |
| Amount of Equity | $63.6 milli0on | $63.5 million |
| AFUDC Computed | $5.9 million | $5.92 million |
| 2017 Revenue Requirement | $31.06 million | $31.31 million |

**Conclusion:** There appear to be slight differences in the manner in which total plant in service is allocated to debt and equity based on the ratios cited, in this case the District model being more accurate, and in the calculation of AFUDC, in that case the District model being less accurate. There are also likely slight differences in the calculation of tax depreciation and the impacts of deferred taxes and ad valorem taxes on rate base. On the whole, the differences are inconsequential and the two models produce sufficiently identical results to allow the District model to be used for analysis of alternative scenarios and assessment of variations to Cal-Am's assumptions.

Summary output pages of the District model used for calibration appear in Appendix A.

# Making Cal-Am's Financing Plan Better

**Improve the Cost of Borrowing using Tax-Exempt Borrowing**

If State Revolving Fund loans are not available, then Cal-Am's model assumes a 5.0% cost of debt, which appears to be the current market rate using American Water Works' Baa2 credit rating. The authorized Cal-Am borrowing cost for taxable corporate debt would be higher, 6.63%, if A.11-05-003 is approved. However, using current market rates is appropriate for the current analysis and application as long as the approved Decision reflects current market conditions at the time, and weighs potential market conditions at the time of issuance of the permanent long term debt.

There is compression between taxable and tax-exempt yields in today's marketplace. In fact, over the past year, longer term tax-exempt interest rates were actually higher than taxable interest rates. This current situation reduces the efficacy of tax-exempt borrowing. However, current Baa2 tax exempt yields are approximately 30 to 50 basis points better than taxable yields. This "yield spread" could widen by the time actual permanent financing is undertaken. In this scenario the comparison is to substitute a lower cost of debt in the Cal-Am model without SRF financing.

Tax-exempt debt is allowable for private companies that provide water supply and distribution, as these are considered exempt facilities under the tax code. Typically, debt issued under this exemption would be subject to the alternative minimum tax (AMT) for income reporting purposes, hence carry a 30 to 40 basis point premium over traditional public project debt, but nevertheless gets the advantages of tax-exempt interest rates. Cal-Am could access the tax-exempt marketplace through the California Pollution Control Finance Authority or the District could act as the conduit issuer of debt instead of CPCFA, without requiring an ownership interest in the plant.

Tax-Exempt Cal-Am Debt / No SRF Loans / with Surcharge 2

| 9.0 MGD | Cal-Am 5% Debt | Cal-Am Tax-Exempt Debt |
|---|---|---|
| 2017 Revenue Requirement | $34,593,591 | $34,291,478 |
| Total Lifecycle Cost | $1,314,818,599 | $1,309,830,580 |
| Net Present Value Cost | $528,251,923 | $525,734,586 |

| 5.4 MGD (corrected for GWR) | Cal-Am 5% Debt | Cal-Am Tax-Exempt Debt |
|---|---|---|
| 2017 Revenue Requirement | $31,725,729 | $31,510,191 |
| Total Lifecycle Cost | $1,317,404,947 | $1,313,891,925 |
| Net Present Value Cost | $520,124,984 | $518,340,493 |

**Conclusion:** If SRF loans are not available, then in today's market the use of Cal-Am tax-exempt debt instead of taxable corporate debt would reduce the cost to ratepayers. This advantage will improve in the future if the tax-exempt marketplace returns to a more traditional relationship to the taxable marketplace. Hence, based on market conditions at the time, Cal-Am should consider the benefits of tax-exempt debt.

**Improve the Cost of Borrowing using a Public Credit Backstop**

Enhancing Cal-Am's credit rating by using a District stand-by water purchase agreement, or backstop, would raise the credit rating to approximately A1/A+ and reduce borrowing costs. A stand-by water purchase agreement is essentially a commitment that the District would step in and ensure deliveries of the water from the plant should Cal-Am fail to meet its obligations. The stand-by commitment does not have to be funded today and is merely a promise by the District to raise necessary rates and charges in the future using a Proposition 218 process in order to produce the revenues required.

The "yield spread" between a Baa2 and an A1 credit rating in today's market is approximately 100 to 130 basis points (1.0% to 1.3%.) Hence, in this instance the comparison is to substitute a lower cost of publicly-backstopped debt in the Cal-Am model without SRF financing. It could be done for either taxable or tax-exempt debt. Furthermore, additional savings could occur if the debt were to be wrapped with a surety contract, or bond insurance, from companies such as Assured rated Aa3/AA- or the new BAM (Build America) rated AA.

If tax-exempt, the District could act as the conduit issuer of debt instead of CPCFA without requiring an ownership interest in the plant.

Public Backstop for Debt / No SRF Loans / with Surcharge 2

| 9.0 MGD | Cal-Am 5% Debt | Public "Backstop" |
|---|---|---|
| 2017 Revenue Requirement | $34,593,591 | $33,295,055 |
| Total Lifecycle Cost | $1,314,818,599 | $1,293,358,624 |
| Net Present Value Cost | $528,251,923 | $517,425,795 |

| 5.4 MGD (corrected for GWR) | Cal-Am 5% Debt | Public "Backstop" |
|---|---|---|
| 2017 Revenue Requirement | $31,725,729 | $30,912,980 |
| Total Lifecycle Cost | $1,317,404,947 | $1,304,109,138 |
| Net Present Value Cost | $520,124,984 | $513,391,915 |

**Conclusion:** If SRF loans are not available, then providing a public credit "backstop" to Cal-Am's credit rating would reduce the cost to ratepayers by $813,000 to $1,298,000 in the first test year 2017. Overall lifecycle savings would be $13.3 million to $21.5 million, or $6.7 to $10.8 million in 2012 dollars.

**Substitute SRF Loan for Equity**

Cal-Am presently states that it will use SRF loans for the permanent 47% debt financing, but the remaining 53% will be financed with corporate equity. It might be suggested that the equity be replaced by additional SRF funds. Cal-Am would argue that this would unduly harm their overall debt-to-equity ratios state-wide, however this is addressed in the section below titled "Discussion: Debt to Equity Ratio." Hence, in this instance the comparison is to substitute a lower cost of additional SRF loans for the equity component in the Cal-Am model with SRF financing.

It should be noted that typically the SRF moneys are limited by the State to $50 million annually to a recipient. Recipients may receive funds in multiple years. This limitation may affect the ability to use SRF monies as proposed.

100% SRF Loans / with Surcharge 2

| 9.0 MGD | Cal-Am w/Equity | Cal-Am 100% SRF Loans |
|---|---|---|
| 2017 Revenue Requirement | $31,773,519 | $20,437,143 |
| Total Lifecycle Cost | $1,241,011,679 | $1,047,818,499 |
| Net Present Value Cost | $501,723,767 | $410,884,038 |

| 5.4 MGD (corrected for GWR) | Cal-Am w/Equity | Cal-Am 100% SRF Loans |
|---|---|---|
| 2017 Revenue Requirement | $30,558,871 | $22,573,726 |
| Total Lifecycle Cost | $1,244,672,055 | $1,107,668,924 |
| Net Present Value Cost | $500,609,055 | $436,442,757 |

**Conclusion:** If SRF loans are substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $8.0 to $11.3 million in the first test year 2017. Overall lifecycle savings would be $137 million to $193 million, or $64 to $91 million in 2012 dollars. However, the ability of Cal-Am to secure sufficient SRF loans in the amounts and timing required, is questionable.

**Substitute Public Debt for Equity – Repaid by Surcharge or Repaid Directly by Public Agency**

Cal-Am presently states that it will use SRF loans for the permanent 47% debt financing, but the remaining 53% will be financed with corporate equity. It might be suggested that the equity be replaced by a contribution of funds by a public agency. The contribution would be tax-exempt financing secured and repaid by a Cal-Am surcharge with a public credit backstop, as discussed earlier. As in the previous section, Cal-Am would argue that this would unduly harm their overall debt-to-equity ratios state-wide, however this is addressed in the section below titled "Discussion: Debt to Equity Ratio." Hence, in this instance the comparison is to substitute a lower cost of debt in the Cal-Am model for the equity component, with SRF financing included as originally proposed, as well as Surcharge 2 as proposed in the application.

If repaid by a surcharge, the surcharge could be a reinstatement of MPWMD's 7.125% "User Fee" but set at the amount necessary to repay the debt annually, which could be less than 7.125%. That pre-existing User Fee pre-dates the Proposition 218 requirement and can be set without a protest hearing. The District would issue bonds for its contribution secured by the surcharge paid by Cal-Am, and backstopped with the District's standby willingness to enter into a Proposition 218 revenue raise should Cal-Am fail on its obligation.

Alternatively, the debt would be repaid by the public agency through its own fees and not part of the Cal-Am revenue requirement. In this instance the comparison is to substitute a lower cost of debt in the Cal-Am model for the equity component, with SRF financing included as originally proposed, as well as Surcharge 2 as proposed in the application.

Public Debt instead of Equity Repaid by Public Agency Fees or Surcharge / SRF Loans / with Surcharge 2
Fixed Rate Debt

| 9.0 MGD | Cal-Am w/Equity | Public Agency Contribution |
|---|---|---|
| 2017 Revenue Requirement | $31,773,519 | $19,797,027 |
| Total Lifecycle Cost | $1,241,011,679 | $1,084,752,689 |
| Net Present Value Cost | $501,723,767 | $416,231,749 |

| 5.4 MGD (corrected for GWR) | Cal-Am w/Equity | Public Agency Contribution |
|---|---|---|
| 2017 Revenue Requirement | $30,558,871 | $22,115,222 |
| Total Lifecycle Cost | $1,244,672,055 | $1,133,905,288 |
| Net Present Value Cost | $500,609,055 | $440,219,086 |

**Conclusion:** If fixed rate tax-exempt debt is substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $8 million to $12 million in the first test year 2017. Overall lifecycle savings would be $111 million to $156 million, or $60 to $86 million in 2012 dollars.

If not done as a reinstatement of the previously existing surcharge, then the District would likely have to undertake another Proposition 218 revenue raise to satisfy this obligation in the ratepayers' interest.

The same scenario could be executed using variable rate public agency debt. For example, in 1992 the District issued $33.9 million of variable rate debt for the Wastewater Reclamation Project, which produces advance treated wastewater that the District sells for non-potable use within the Del Monte Forest, primarily to golf courses. The 5-year average interest rate July 2007 through June 2012 has been 0.95%. There is variability, for example the high was 8.00% during the economic crisis of September 2008, and the low of 0.08% was reached 4 times during that period. However, the long term average cost of debt is very low.

Public Debt instead of Equity Repaid by Public Agency Fees or Surcharge / SRF Loans / with Surcharge 2
Variable Rate Debt

| 9.0 MGD | Cal-Am w/Equity | Public Agency Contribution |
|---|---|---|
| 2017 Revenue Requirement | $31,773,519 | $18,073,228 |
| Total Lifecycle Cost | $1,241,011,679 | $1,034,134,333 |
| Net Present Value Cost | $501,723,767 | $394,590,666 |

| 5.4 MGD (corrected for GWR) | Cal-Am w/Equity | Public Agency Contribution |
|---|---|---|
| 2017 Revenue Requirement | $30,558,871 | $20,880,018 |
| Total Lifecycle Cost | $1,244,672,055 | $1,097,671,448 |
| Net Present Value Cost | $500,609,055 | $424,794,397 |

**Conclusion:** If variable rate tax-exempt debt is substituted for Cal-Am's proposed equity component, it would reduce the cost to ratepayers by $9.7 million to $14 million in the first test year 2017. Overall lifecycle savings would be $147 million to $207 million, or $76 to $107 million in 2012 dollars.

**Discussion: Debt to Equity Ratio**

The concept of financing the desalination project entirely with debt, SRF loans or tax-exempt public agency debt, clearly reduces the cost to the ratepayer. However, Cal-Am may be concerned about their debt to equity ratio statewide, being impacted solely by the Monterey County District. We do not believe that this is a significant concern for three reasons:

First, the debt to equity ratio is already undergoing a significant swing as a result of A.11-05-003, which signifies that shifts in the ratio due to exogenous factors are already familiar and acceptable to Cal-Am. The current debt to equity ratio is 58% - 42%, but A.11-05-003 would change that to 47% - 53%, a large inversion.

Second, Cal-Am intends to invest more than $400 million in infrastructure over the next five years *(Testimony of Bente Villadsen in A.11-05-003)*. According to Table A2 of the proposed decision in A.10-07-007 Cal-Am's adopted rate base is$374.4 million. If it is assumed that existing rate base was financed as 58% - 42% debt to equity, the current authorized structure, and new investment will be 47% - 53%, then in the case of the 5.4 MGD plant where a full $119.8 million could be debt financed, would result in a 60% - 40% debt to equity ratio for Cal-Am overall, which is less than 5% different than the current debt to equity structure of Cal-Am.

And third, when there is an equity portion coupled with SRF loans or outside contributions, an amount equal to the contributions is removed from the rate base resulting in 100% of the undepreciated rate base that remains earning an authorized equity rate of return, rather than a return based on the debt to equity ratio. The contribution repayment is done via a surcharge and the interest component is not adjusted for taxes in the revenue requirement calculation, as traditional debt would. It is unclear if the SRF loan or contribution can even be considered a debt or how the treatment is consistent with maintaining company-wide debt to equity ratios.

There may also be ways to isolate the financing of the desalination plant from the rest of Cal-Am through accounting methods, special purpose corporation, or a financing subsidiary.

Reports for scenarios reflecting improvements to Cal-Am's financing plan may be found in Appendix B.

## Uncertainties in Cal-Am's Proposed Financing Plan

The risk in evaluating a financing plan today is that actual results will be influenced by future market conditions, as well as by the CPUC's decisions regarding the request. In the scenarios which follow, certain risks or uncertainties are evaluated.

**Interest Rate Risk: Using Cal-Am's Corporate Debt Rate Instead of 5%**

Today's market conditions where US Treasury yields are very low and the cost of corporate borrowing is low may not exist in 2016 when Cal-Am proposes to execute the majority of its permanent financing.

Cost of Debt goes from 5.00% to 6.63%

| 9.0 MGD | Cal-Am 5% Debt | Cal-Am Tax-Exempt Debt |
|---|---|---|
| 2017 Revenue Requirement | $34,593,591 | $35,873,473 |
| Total Lifecycle Cost | $1,314,818,599 | $1,335,835,032 |
| Net Present Value Cost | $528,251,923 | $538,859,316 |

| 5.4 MGD (corrected for GWR) | Cal-Am 5% Debt | Cal-Am Tax-Exempt Debt |
|---|---|---|
| 2017 Revenue Requirement | $31,725,729 | $32,622,333 |
| Total Lifecycle Cost | $1,317,404,947 | $1,332,111,106 |
| Net Present Value Cost | $520,124,984 | $527,551,271 |

If, by 2016 the cost of corporate debt rises and Cal-Am borrows at its proposed authorized rate of 6.63% it would increase the cost to ratepayers by $0.9 million to $1.3 million in the first test year 2017. Overall lifecycle loss would be $15 million to $21 million, or $7 to $10 million in 2012 dollars. Therefore, financing decisions should be made in the context of the then-prevailing market conditions.

**Fairness Issues: What if Surcharge 2 is Reduced by the CPUC?**

In a 2010 decision in A.10-01-012, with respect to a District capital project for Aquifer Storage and Recovery, CPUC Administrative Law Judge Bushey wrote "The Management District's Chief Financial Officer stated that the Management District Board has decided to fund this project on a "pay-as-you-go" basis rather than incurring debt. While the Management District's decision has the advantage of avoiding debt costs, such a decision results in current customers paying the full costs of a project that is expected to provide service for many years. This is not consistent with the Commission's ratemaking standards." Yet through the use of Surcharge 2 Cal-Am is proposing exactly that – current customers paying 35% to 47% of the full cost of a project that is expected to provide service for many years. This appears to be contradictory to the CPUC's "ratemaking standards," at least as described by the ALJ in this instance.

It is likely that many intervenors will argue to reduce the burden on current customers over the next four years. Yet reducing the available surcharge increases the portion that must be financed with debt and equity, increasing the pre-tax return required and the revenue requirement. In the following scenario, the available Surcharge 2 monies are reduced by half.

Surcharge 2 Reduced by Half

| 9.0 MGD | Full Surcharge 2 | Surcharge 2 Reduced |
|---|---|---|
| 2017 Revenue Requirement | $34,593,591 | $42,103,645 |
| Total Lifecycle Cost | $1,314,818,599 | $1,413,615,273 |
| Net Present Value Cost | $528,251,923 | $554,546,725 |

| 5.4 MGD (corrected for GWR) | Full Surcharge 2 | Surcharge 2 Reduced |
|---|---|---|
| 2017 Revenue Requirement | $31,725,729 | $39,198,619 |
| Total Lifecycle Cost | $1,317,404,947 | $1,415,051,902 |
| Net Present Value Cost | $520,124,984 | $545,961,239 |

If the burden of financing is shifted from current ratepayers to future beneficiaries by reducing Surcharge 2 by half, it would increase the cost to ratepayers by $7.5 million in the first test year 2017. Overall lifecycle loss would be $99 million, or $26 million in 2012 dollars. Therefore, it is less expensive overall to have a higher surcharge, but that must be balanced against fairness issues. The current customer versus future customer problem is compounded by the inclusion of Surcharge 1 as discussed below.

**What About Stranded Costs from the Regional Project?**

One could argue that the overall cost of desalinated water on the Peninsula should include the stranded costs of the Regional Desalination Project that are to be recovered through Cal-Am's rates.

Cal-Am testimony identifies almost $45 million of stranded costs for the Regional Desal Project, including estimated "wrap-up costs," as shown below. Many of these have already been approved for recovery from ratepayers and have a portion has already been paid.

$26,568,651 RDP approved for recovery
5,354,229 RDP filed and pending recovery
860,098 RDP not yet filed for recovery
12,000,000 RDP "Wrap-Up Costs" for un-winding
$44,782,978 RDP Sunk Costs

The Linam testimony indicates the following schedule of future Surcharge 1 recovery:

| Year | Amount |
|---|---|
| 2013 | $7,790,000 |
| 2014 | $7,950,000 |
| 2015 | $8,270,000 |
| 2016 | $8,310,000 |
| 2017 | $8,350,000 |

There has also been identified $ 7,926,000 of pre-construction costs for the new project, but it is unclear to the author whether this is a Surcharge 1 or Surcharge 2 cost, so it has been left out of the analysis.

Because the surcharge affects the construction period primarily, the effects are not shown in the 40-year lifecycle chart, but are included in the totals.

Surcharge 1 Included

| 9.0 MGD | Without Surcharge 1 | Surcharge 1 Included |
|---|---|---|
| 2017 Revenue Requirement | $34,593,591 | (n/a - distorts 2017 total) |
| Total Lifecycle Cost | $1,314,818,599 | $1,355,488,599 |
| Net Present Value Cost | $528,251,923 | $563,404,893 |

| 5.4 MGD (corrected for GWR) | Without Surcharge 1 | Surcharge 1 Included |
|---|---|---|
| 2017 Revenue Requirement | $31,725,729 | (n/a - distorts 2017 total) |
| Total Lifecycle Cost | $1,317,404,947 | $1,358,074,947 |
| Net Present Value Cost | $520,124,984 | $555,277,954 |

The addition of Surcharge 1 to recover the stranded costs of the RDP affects current ratepayers because it is recovered over the next five years. It would increase the overall lifecycle loss to $41 million, or $35 million in 2012 dollars. Reducing Surcharge 2 by a like amount would be one mechanism to recover the same dollars over the beneficial life of the new project – and allow the cost of water to be reflective of the total cost of the new plus stranded costs. By capturing the true cost of stranded RDP costs in future rates, the relative value of GWR as compared to desalination would improve.

**What About Future Costs of Well Replacement?**

The project will have 6 to 8 wells in 2-3 well clusters. The average life of the well casings may be 20 years, but the well equipment may need replacement every 7 to 10 years. It does not appear that these future capital costs have been included in the Cal-Am analysis, but would increase the future cost to ratepayers. Further, by incorporating Groundwater Replenishment either few wells would be required or the wells could be operated at a lower capacity, which would reduce the future replacement costs and improve the relative value of GWR as compared to desalination.

## Public Ownership v. Private Ownership

Public ownership is often equated to access to low cost public financing using tax-exempt bonds. While true, the Cal-Am financing plan has included four features that reduce the cost of the project:

i) The use of low-cost commercial paper to reduce the interest cost during the early years of construction;
ii) Pay-as-you-go funding through the use of Surcharge 2 during the construction period;
iii) The assumed use of State Revolving Fund loans for a portion of the construction costs; and
iv) For scenarios where there are no SRF loans, the assumption of a 5.0% borrowing rate, rather than the authorized rate of 6.63%, reflects current market conditions.

If publicly owned, the public entity would be faced with having to pay interest during construction, because there would be no revenues from a wholesale water purchase agreement until the project is in service. In addition, as in the Regional Desalination Project, the Surcharge 2 moneys may not be available to a public entity. The public entity would either:

i) Execute a single borrowing, which would include additional funds to pay interest during construction;
ii) Execute a series of borrowings when needed. However, this exposes the public agency to interest rate risk for future borrowings;
iii) Issue a short-term bond anticipation note, taken out with permanent financing when the largest amounts are needed. However, this also exposes the public agency to interest rate risk for the future borrowing;
iv) Develop a pay-as-you-go funding source either through direct collections from constituents (ratepayers) through a Proposition 218 process, or have the CPUC allow direct contributions from ratepayers through a Surcharge 2 mechanism; and
v) Seek to utilize SRF loans in the same manner and amounts as Cal-Am.

These issues, with the exception of item "ii" (a series of borrowings) were examined and the following scenarios were developed for both the 9.0 MGD and 5.4 MGD plant sizes:

Public Debt / No SRF Loans / No Surcharge 2 for Public Owned
Public Debt / No SRF Loans / with Surcharge 2
Public Debt and SRF Loans / No Surcharge 2 for Public Owned
Public Debt and SRF Loans / with Surcharge 2
Public Debt / No SRF Loans / No Surcharge 2 for Public Owned / With BANs @ 1.0%

Please note, the District believes the simplified cost-of-water assumptions used in the Cal-Am application are incorrect for GWR scenarios. Rather, capital costs of $76,288,000 should be amortized over the period of the borrowing for the GWR project and O&M costs of $3,108,180 (2017 dollars) should be escalated for inflation over time. Such corrected scenarios are used in the analysis of alternatives herein.

Two key measures are used to compare scenarios: (i) the total 40-year lifecycle cost, and (ii) the discounted net present value of future lifecycle costs in 2012 dollars. Comparing the year 2017 revenue

requirement is not a good measure, because in the public finance model, extra earnings captured during the construction period become available to reduce O&M expenses in the first year of operations.

Public Debt / No SRF Loans / No Surcharge 2 for Public Owned

| 9.0 MGD | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,314,818,599 | $1,241,177,403 |
| Net Present Value Cost | $528,251,923 | $433,173,783 |

| 5.4 MGD (corrected for GWR) | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,317,404,947 | $1,270,456,820 |
| Net Present Value Cost | $520,124,984 | $450,667,093 |

**Conclusion:** A public owned project using traditional public financing that borrows all interest during construction (capitalized interest) without the advantages of pay-as-you-go capital during the construction period such as a Surcharge 2, or other methods to reduce the burden of interest cost during construction, still competes favorably with Cal-Am's financing proposal. Overall lifecycle savings would be $47 million to $73 million, or $70 to $95 million in 2012 dollars.

Public Debt / No SRF Loans / with Surcharge 2

| 9.0 MGD | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,314,818,599 | $1,146,059,235 |
| Net Present Value Cost | $528,251,923 | $435,595,030 |

| 5.4 MGD (corrected for GWR) | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,317,404,947 | $1,175,323,127 |
| Net Present Value Cost | $520,124,984 | $453,081,609 |

**Conclusion:** If pay-as-you-go monies can be provided to a public owned project, either through direct collections from constituents (ratepayers) through a Proposition 218 process, or have the CPUC allow direct contributions from ratepayers through a Surcharge 2 mechanism, then the publicly-financed project is more advantageous to ratepayers. Overall lifecycle savings would be $142 million to $168 million, or $67 to $93 million in 2012 dollars.

Public Debt and SRF Loans / No Surcharge 2 for Public Owned

| 9.0 MGD | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,241,011,679 | $1,187,897,664 |
| Net Present Value Cost | $501,723,767 | $418,913,975 |

| 5.4 MGD (corrected for GWR) | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,244,672,055 | $1,232,977,044 |
| Net Present Value Cost | $500,609,055 | $440,634,099 |

**Conclusion:** Even without the availability of pay-as-you-go monies during construction, if a public owned project uses State Revolving Fund loans in the same manner and amount as Cal-Am, then a

publicly-financed project is more advantageous to ratepayers. Overall lifecycle savings would be $12 million to $53 million, or $60 to $83 million in 2012 dollars. Present value savings are greater than overall lifecycle savings due to the largest savings occurring in early years and little or no savings occurring in later years.

Public Debt and SRF Loans / with Surcharge 2

| 9.0 MGD | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,241,011,679 | $1,092,779,495 |
| Net Present Value Cost | $501,723,767 | $421,335,222 |

| 5.4 MGD (corrected for GWR) | Cal-Am Owned | Public Owned |
|---|---|---|
| Total Lifecycle Cost | $1,244,672,055 | $1,137,843,350 |
| Net Present Value Cost | $500,609,055 | $443,048,615 |

**Conclusion:** As would be expected, public financing with pay-as-you-go monies (Surcharge 2) and SRF loans is the most advantageous to ratepayers. Overall lifecycle savings would be $48 million to $106 million, or $58 to $80 million in 2012 dollars. Compared to the previous scenario, the reason the lifecycle savings are so much greater is due to the reduced borrowing size, yet the present value cost in 2012 dollars is approximately the same because the surcharge becomes part of the revenue requirement in the first five years, which has a larger impact on present value.

**Exploring Methods to Reduce Interest Cost During Construction for Public Financed Project**

We examined the issuance a short-term 3-year bond anticipation note, assumed to carry an interest rate of 1.0%, taken out in 2016 with permanent financing which also funds the 2016 construction draw and bond issuance costs. This exposes the public agency to interest rate risk for the future borrowing, but we have assumed that the cost of tax-exempt debt in 2016 is the same as today, 4.0%. This scenario does not have the advantage of building up extra earnings captured during the construction period, over and above what might be required to fund a rate stabilization fund to provide on-going debt service "coverage" such that almost $19 million of additional revenues would be required over the first 9 years to provide such coverage, while also building up the balance in the rate stabilization fund to provide the coverage each year beginning year 10.

Public Bonds / No SRF Loans / No Surcharge 2 for Public Owned / With BANs @ 1.0%

| 9.0 MGD | Cal-Am Owned | Public Owned | Public Owned w/BANs |
|---|---|---|---|
| Total Lifecycle Cost | $1,314,818,599 | $1,241,177,403 | $1,221,564,879 |
| Net Present Value Cost | $528,251,923 | $433,173,783 | $431,671,710 |

**Conclusion:** The use of bond anticipation notes at a lower borrowing cost provides savings of over $1.5 million on a present value basis (2012 dollars), but those savings might easily be offset by interest rate risk – for example, a ten basis point (0.10%) increase in the future cost of borrowing would more than offset the savings on a present value basis. Hence, it is likely not worth the risk of a short-term borrowing followed by a long-term borrowing in three years.