BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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Application of California-American Water Company (U210W) for Approval of the Monterey Peninsula Water Supply Project and Authorization to Recover All Present and Future Costs in Rates	A.12-04- (Filed April 23, 2012)

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APPLICATION OF CALIFORNIA-AMERICAN WATER COMPANY (U210W) FOR APPROVAL OF THE MONTEREY PENINSULA WATER SUPPLY PROJECT AND AUTHORIZATION TO RECOVER ALL PRESENT AND FUTURE COSTS IN RATES

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I. INTRODUCTION

Pursuant to Sections 451 and 1001 of the California Public Utilities Code and Articles 2 and 3 of the California Public Utilities Commission ("Commission") Rules of Practice and Procedure, California-American Water Company ("California American Water" or "Company") hereby files this application for approval of the Monterey Peninsula Water Supply Project ("Project"). California American Water seeks authorization to initially size the desalination plant portion of the Monterey Peninsula Water Supply Project at 9.0 million gallons per day ("mgd"). However, if the Monterey Peninsula Groundwater Replenishment Project ("Groundwater Replenishment Project"), a joint project between the Monterey Regional Water Pollution Control Agency ("MRWPCA") and the Monterey Peninsula Water Management District ("MPWMD"), reaches certain milestones by the time California American Water is ready to construct the desalination plant (currently estimated to be the near the end of 2014), and the cost of Groundwater Replenishment Project water is reasonable, California American Water seeks authorization to file an advice letter to reduce the size of the desalination plant component of the Project to 5.4 mgd and supplement water supplies with water purchased from the Groundwater Replenishment Project. California American Water is also seeking to modify existing cost recovery mechanisms to allow recovery of the cost of the Monterey Peninsula

Water Supply Project in rates and interim relief to recover costs for a test well and other pre-construction activities associated with the Project.

The Commission has previously recognized the "urgent need to find an alternative water supply" for California American Water's Monterey County District.[1] The State Water Resources Control Board ("SWRCB") has ordered California American Water to find a replacement for approximately 70 percent of its water supply by December 2016.[2] Failure to meet this deadline could have harmful consequences for California American Water, its customers, and the community.[3] Assuming reasonable permitting times and limited litigation, either version of the Monterey Peninsula Water Supply Project can be approved, financed, and constructed by the SWRCB's 2016 deadline. It will satisfy the SWRCB's requirements and provide a cost-effective solution based on low-cost financing, government-subsidized loans, tax benefits and use of regulatory opportunities. With the December 2016 deadline looming, California American Water requests that the Commission timely authorize it to implement the Monterey Peninsula Water Supply Project and recover the associated costs in rates.

II. HISTORY

California American Water has been attempting to address Monterey's water supply constraints for nearly two decades. In 1995, SWRCB found that California American Water did not have the legal right to about 10,730 acre-feet annually of its then-current diversions from the Carmel River and that the diversions were having an adverse effect on the public trust resources of the river.[4] At first, California American Water hoped that it would be able to obtain the necessary water from MPWMD's proposed New Los Padres Dam, but when

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[1] D.10-12-016, *In the Matter of the Application of California-American Water Company (U210W) for a Certificate of Public Convenience and Necessity to Construct and Operate its Coastal Water Project to Resolve the Long-Term Water Supply Deficit in its Monterey District and to Recover All Present and Future Costs in Connection Therewith in Rates*, 2010 Cal. PUC LEXIS 548 ("D.10-12-016, 2010 Cal. PUC LEXIS 548"), *35.
[2] SWRCB Order 2009-0060, p. 57, *available at* http://www.waterboards.ca.gov/waterrights/water_issues/programs/hearings/caw_cdo/docs/wro2009_0060.pdf.
[3] D.10-12-016, 2010 Cal. PUC LEXIS 548, **62-63, 250, Findings of Fact ¶ 65.
[4] SWRCB Order 95-10, pp. 25, 33-34, 39, *available at* http://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/1995/wro95-10.pdf

MPWMD was unable to secure public support for funding, California American Water filed Application 97-03-052 for its own project, the Carmel River Dam.

After California American Water filed its application, the state legislature adopted legislation directing the Commission to identify a long-term water supply contingency plan to replace the 10,730-acre feet of water from the Carmel River.[5] The Commission engaged consultants to assist in the development of the water supply alternative, commonly referred to as "Plan B," and issued its report in August 2002.

In 2003, California American Water filed to modify its application to request a Certificate of Public Convenience and Necessity ("CPCN") to construct a desalination facility and aquifer storage and recovery component instead of the previously proposed Carmel River Dam. In D.03-09-022, the Commission designated itself as the lead agency for environmental review of the desalination project, resolved certain ratemaking issues, and dismissed the Carmel River Dam application without prejudice.[6] As part of the ratemaking approvals, the Commission approved a memorandum account to track all costs related to the development of a long-term water supply solution for the Monterey County District.[7]

California American Water filed Application 04-09-019 on September 20, 2004, in which it sought a CPCN for its desalination project (the Coastal Water Project) and approval of certain ratemaking mechanisms to fund construction of the long-term water supply solution. In D.06-12-040, the Commission approved Surcharge 1 for the collection of approved costs tracked in the memorandum account and Surcharge 2 to fund the construction of the water supply solution on a pay-as-you-go basis.[8]

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[5] Keeley, Assem. Bill No. 1182 (Stats. 1998), Ch. 797.

[6] D.03-09-022, *In the Matter of the Application of California-American Water Company (U 210 W) for a Certificate that the Present and Future Public Convenience and Necessity Requires Applicant to Construct and Operate the 24,000 acre foot Carmel River Dam and Reservoir in its Monterey Division and to Recover All Present and Future Costs in Connection Therewith in Rates*, 1997 Cal. PUC LEXIS 1279 ("D.03-09-022, 1997 Cal. PUC LEXIS 1279"), *42, Ordering ¶ 1.

[7] D.06-12-040, *In the Matter of the Application of California-American Water Company for a Certificate of Public Convenience and Necessity to Construct and Operate its Coastal Water Project to Resolve the Long-Term Water Supply Deficit in its Monterey District and to Recover All Present and Future Costs in Connection Therewith in Rates. (U 210 W)*, 2006 Cal. PUC LEXIS 422 ("D.06-12-040, 2006 Cal. PUC LEXIS 422"), *57, Ordering ¶ 1.

[8] D.06-12-040, 2006 Cal. PUC LEXIS 422, *57, Ordering ¶¶ 1, 2.

As part of that proceeding, the Commission conducted environmental review of the Coastal Water Project, the North Marina Project, and the Regional Desalination Project, and certified the Environmental Impact Report ("EIR") in December 2009.[9] A year later, in D.10-12-016, the Commission approved implementation of the Regional Desalination Project by California American Water, Marina Coast Water District ("MCWD"), Monterey County Water Resources Agency ("MCWRA") and the related Water Purchase Agreement.[10] Generally, the Water Purchase Agreement required MCWRA to construct, own and operate wells to pump intruded seawater from the Salinas Groundwater Basin, MCWD to construct, own and operate the desalination plant to treat that water, and California American Water to construct, own and operate the California American Water-only facilities to distribute the treated water to its customers.[11]

Unfortunately, issues arose during the implementation of the Regional Desalination Project that led to the inability to move forward with that project in a timely and efficient manner.[12] It became clear that the Regional Desalination Project was no longer viable and would not allow California American Water to meet the SWRCB December 2016 deadline. On September 28, 2011 California American Water terminated the Water Purchase Agreement and related agreements based on MCWRA's repudiation of those agreements resulting from the alleged conflict of interest concerning Stephen Collins. Although California American Water, MCWD and MCWRA participated in mediation for a total of almost five months, a variety of obstacles remained, including failure to obtain test well permits, water rights lawsuits, lack of

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[9] D.09-12-017, *In the Matter of the Application of California-American Water Company (U210W) for a Certificate of Public Convenience and Necessity to Construct and Operate its Coastal Water Project to Resolve the Long-Term Water Supply Deficit in its Monterey District and to Recover All Present and Future Costs in Connection Therewith in Rates*, 2009 Cal. PUC LEXIS 764, *34 ("D.09-12-017, 2009 Cal. PUC LEXIS 764"), Ordering ¶ 1.

[10] D.10-12-016, 2010 Cal. PUC LEXIS 548, *301, Ordering ¶ 1.

[11] A.04-09-019, *Marina Coast Water District's Notice of Filing of Conformed Copy of Water Purchase Agreement Containing Previously-Announced Revisions Acceptable to the Signatories*, filed August 30, 2010, Appendix A, *Water Purchase Agreement* ("Water Purchase Agreement"), pp. 23-24, § 3.

[12] California American Water discussed these issues in multiple pleadings in A.04-09-019: *California-American Water Company Compliance Filing - Mediation Update*, filed January 18, 2012, pp. 1-2; *Status Report of California-American Water Company*, filed March 1, 2012, pp. 2-3; *California-American Water Company Compliance Filing*, filed March 1, 2012, pp. 2-5; *California-American Water Company Response to the Separate Status Report of Marina Coast Water District*, filed March 15, 2012, pp. 2-9.

financing, and a ruling from the Monterey County Superior Court that the EIR was not valid for use by MCWD as lead agency. On January 17, 2012, California American Water announced publicly that it withdrew its support for the Regional Desalination Project and would propose an alternative project.

III. WATER SUPPLY REPLACEMENT

The purpose of the Monterey Peninsula Water Supply Project is to replace a significant portion of the existing water supply from the Carmel River, as directed by the SWRCB. The total replacement supply needed is the difference between customer demand and California American Water's legal rights on the Carmel River and within its adjudicated rights in the Seaside basin. As stated in the source of supply analysis in the EIR, California American Water must be able to meet a customer demand of 15,250 acre feet per year (afy).[13] As shown in the table below, California American Water estimates the current supply deficit at approximately 9,000 afy. California American Water is proposing a three-pronged approach to replace the water supply reductions ordered by the SWRCB. The three prongs consist of: (1) desalination, (2) groundwater replenishment, and (3) aquifer storage and recovery ("ASR").

The desalination prong is the Monterey Peninsula Water Supply Project. The Project is a variation of the North Marina Project, which the Commission reviewed and analyzed in A.04-09-019, and incorporates the California American Water-only facilities previously approved by the Commission.[14] It will consist of slant intake wells, brackish water pipelines, the desalination plant, product water pipelines, brine disposal facilities, and related appurtenant facilities.

The Groundwater Replenishment Project is the second prong. The Groundwater Replenishment Project will create a drought-proof underground reservoir that can be used as a source of supply by taking the effluent from MRWPCA's plant, filtering it through a new advanced water treatment plant, and injecting the highly treated product water into the Seaside

[13] A.04-09-019, Reference Exh. B, *Final Environmental Impact Report*, dated October 30, 2009, p. 2-10.
[14] D.10-12-016, 2010 Cal. PUC LEXIS, 548, **195-200.

Basin Aquifer, where it would be diluted and stored. California American Water has entered into a Memorandum of Understanding with the MRWPCA and MPWMD to collaborate on developing the Groundwater Replenishment Project, included as Appendix A. If the Groundwater Replenishment Project has reached certain milestones by the time California American Water begins construction of the desalination plant (currently estimated to be near the end of 2014) and the cost of the water from it is reasonable, California American Water will be able to reduce the size of its proposed desalination plant. California American Water proposes to do this by filing a Tier 2 advice letter.

The ASR prong consists of the established joint ASR program between California American Water and MPWMD. The ASR system is currently comprised of three injection and extraction wells and one injection and extraction well that will be constructed in 2012 and 2013. Depending on the availability of excess Carmel River water based on in-stream flow requirements, permit requirements, and water rights, California American Water may divert excess Carmel River water as available during the wet winter months, and treat and deliver the water for storage in the Seaside Groundwater Basin ASR for use during the summer.

When combined with California American Water's remaining water supply, these three items will enable California American Water to meet the SWRCB's requirements, as demonstrated below:

With Groundwater Replenishment		**Without Groundwater Replenishment**	
Seaside Wells	1,474 afy	Seaside Wells	1,474 afy
Sand City Desalination	94 afy	Sand City Desalination	94 afy
Carmel River Legal Right	3,376 afy	Carmel River Legal Right	3,376 afy
ASR Recovery	1,300 afy	ASR Recovery	1,300 afy
Desalination Plant	5,506 afy	Desalination Plant	9,006 afy
Groundwater Recharge	3,500 afy		
Total	*15,250 afy*	*Total*	*15,250 afy*

IV. CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

California American Water seeks a CPCN for the Monterey Peninsula Water Supply Project. Rule 3.1 of the Commission's Rules of Practice and Procedure sets forth the requirements for a CPCN. Not all are applicable to California American Water's current situation; some of the requirements apply to utilities initially establishing service or expanding into new service territories, others apply to non-water utilities. California American Water addresses the applicable requirements below.

A. Description of the Project

The Monterey Peninsula Water Supply Project will consist of slant intake wells, brackish water pipelines, the desalination plant, product water pipelines, brine disposal facilities, and related appurtenant facilities. Depending on the availability of water from the Groundwater Replenishment Project, the desalination plant will be sized at either 9.0 mgd or 5.4 mgd. California American Water is in the process of securing an approximately 46-acre parcel of land located just to the northwest of the MRWPCA's wastewater treatment plant as the site for the proposed desalination plant. California American Water is also working to secure permanent easements on an approximately 376-acre parcel of land located due west of its proposed desalination plant site for the slant intake wells. California American Water will be using a series of slant wells located west of the sand dunes to draw ocean water and potentially a small amount of groundwater from the ground. The slant wells will be approximately 700 to 800 feet in length and will feature several hundred feet of screen below the ocean floor and seaward of the mean high tide mark. The final layout and configuration will be based on the results of additional groundwater modeling that will be completed as part of the Commission's environmental review and as may be required by the California Coastal Commission or for final design.

The Monterey Peninsula Water Supply Project also incorporates the California American Water-only facilities that the Commission previously approved in D.10-12-016.[15] The California American Water-only facilities consist of the Transfer Pipeline, the Seaside Pipeline, the Monterey Pipeline, the Terminal Reservoir, the ASR Pipeline, the ASR Recirculation and Backflush Pipelines, the ASR Pump Station and the Valley Greens Pump Station. In a significant departure from historic operation, supply from the desalination plant portion of the Monterey Peninsula Water Supply Project will enter the California American Water distribution system at the metering station from the north through the Transfer Pipeline. The current configuration of the distribution system does not allow water to be conveyed from the north, to customers on the southern portion of the Peninsula. The California American Water-only facilities will convey water between the northern and southern portions of the Monterey County District. The source of the flow from the north to the south will be either the desalination plant portion of the Monterey Peninsula Water Supply Project, and/or the extraction of flows from the ASR system located in Seaside Basin.

The Monterey Peninsula Water Supply Project will be owned and operated by California American Water. (The Groundwater Replenishment Project will be publicly owned.) California American Water expects to utilize a design/build process for the desalination plant, and a design/bid/build process for the brackish water pipelines, the product water pipeline and the related pipelines. For the slant intake wells, the California American Water will determine whether a design/build or design/bid/build process is appropriate once the environmental review of the affected area has been completed. A proposed schedule for the Monterey Peninsula Water Supply Project is attached as Appendix B.

B. Service Area

The Monterey Peninsula Water Supply Project will provide service in the following cities, all of which are located in Monterey County: Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside, as well as certain unincorporated portions of

[15] D.10-12-016, 2010 Cal. PUC LEXIS 548, **303-304, Ordering ¶ 7.

Monterey County. California American Water has served a notice of the application on each city and on the County. California American Water has included as Appendix C a map showing the location of the Monterey Peninsula Water Supply Project.

The Monterey Peninsula Water Supply Project will be used to serve the Monterey County District main system, and, depending on developments with the Seaside Basin Adjudication, may be used to serve the Bishop, Hidden Hills, and Ryan Ranch service areas. The Monterey Peninsula Water Supply Project will not be used to serve the Ambler, Chualar, Ralph Lane, and Toro service areas.

C. Permits and Approvals

In addition to authorization from the Commission, California American Water will also have to obtain other permits and approvals for the Monterey Peninsula Water Supply Project. A list of if the permits and approvals is included in Appendix D.

D. Public Convenience and Necessity

1. Need for the Project

As noted above, the Commission has previously recognized the impact of the Cease and Desist Order[16] and the "urgent need to find an alternative water supply."[17] The Cease and Desist Order provides steadily declining yearly water allowances, but essentially by the end of calendar year 2016, California American Water must find a replacement water supply for approximately 70 percent of its water supply. In addition to reductions on the Carmel River, California American Water's second source of supply, the Seaside Basin, was adjudicated and California American Water faces triennial reductions in that water source until the year 2021, at which point California American Water's right in the Seaside Basin will be less than half of its 2006 right. The Regional Desalination Project, which the Commission approved in D.10-12-016, is no longer in the public interest because it will not allow California American Water to meet the SWRCB deadline.

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[16] *See* SWRCB Order 2009-0060.
[17] D.10-12-016, 2010 Cal. PUC LEXIS 548, *35.

California American Water has already taken very significant steps to promote conservation in its Monterey County District through tiered rates and other methods. Prior to 1995, when SWRCB issued Order 95-10, demand in the Monterey County District exceeded 18,100 acre-feet annually. In contrast, the current five-year average is 13,740 acre-feet annually, with 2010 and 2011 demands around 12,400 acre-feet annually. This represents a reduction of more than 25 percent. Given the already low water usage rate in the Monterey County District, it would not be possible to replace the 7,602 acre-feet annually from the Carmel River through demand reduction.

Similarly, California American Water has undertaken an aggressive program to address leaks and non-revenue water, which is being evaluated in its current general rate case.[18] In that proceeding, California American Water submitted a comprehensive study on non-revenue water in the Monterey County District, which investigated and analyzed main break and service leak data, reduced pressure and submetered zones, reviewed water meter sizing and also computed the unavoidable leakage rate and the Infrastructure Leakage Index ("ILI"). While reducing non-revenue water is and will remain important, given the already very low ILI of 1.08 (world class is 1.0), a more aggressive leak repair or non-revenue water program would not enable California American Water to make up the 7,602 acre-feet annually shortfall.

This is also the case with grey water or recycled water programs. While California American Water is actively pursuing recycled water opportunities in its Monterey County District,[19] the water produced will not be enough to meet the SWRCB mandated reductions. Moreover, although California American Water has pursued several recycled water projects in its service area, it has found that the cost per acre-foot to develop and operate these projects is significantly higher than the cost of a desalination project. Finally, there are multiple

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[18] A.10-07-007, *Joint Motion for the Adoption of Partial Settlement Agreement Between the Division of Ratepayer Advocates, the Natural Resources Defense Council, and California-American Water Company on Non-Revenue Issues in the General Rate Case*, filed July 28, 2011, Exhibit A, *Partial Settlement Agreement Between the Division of Ratepayer Advocates, the Natural Resources Defense Council and California-American Water Company on Non-Revenue Water Issues*, pp. 3-12.

[19] A.10-04-019, *Direct Testimony of Eric J. Sabolsice*, dated April 12, 2010, Corrected September 28, 2011, pp. 10-12.

regulatory initiatives affecting the use of recycled water for potable supplies, including the current Commission proceeding addressing recycled water (R.10-11-014).

It is important to keep in mind that California American Water is under orders from the SWRCB to replace a substantial portion of its current water supply. Even combined, these programs will not provide the consistent, reliable water supply necessary to cease diversion of 7,602 acre-feet annually from the Carmel River, as required by the SWRCB. A large-scale infrastructure project is necessary and a desalination plant is the only feasible solution.

California American Water developed the Monterey Peninsula Water Supply Project as a flexible, cost-effective, and timely way to meet the SWRCB's requirements. In particular, California American Water developed the Project in order to take advantage of the innovative Groundwater Replenishment Project. To the extent that water from the Groundwater Replenishment Project is available in time to meet the SWRCB December 2016 deadline and at a reasonable price, it will allow California American Water to build a smaller desalination plant (5.4 mgd vs. 9.0 mgd), to the benefit of its customers and the community.

2. Community Values

Under the Public Utilities Code, a utility seeking a CPCN must address community values, recreational and park areas, historical and aesthetic values, and the influence on the environment.[20] As a practical matter, "the review process established by CEQA is the primary vehicle for review of all §1002(a) issues except community values."[21]

The concept of "community values" can be somewhat fluid and the "issues that need to be considered can vary greatly depending upon the nature of a project and where its proponents wish to build it."[22] In assessing community values, the Commission has considered

[20] Pub. Util. Code §1002(a)
[21] D.10-12-025, *Application of Wild Goose Storage, LLC to Amend its Certificate of Public Convenience and Necessity to Expand and Construct Facilities for Gas Storage Operations (U911G)*, 2010 Cal. PUC LEXIS 463 ("D.10-12-025, 2010 Cal. PUC LEXIS 463"), **7-8.
[22] D.10-12-025, 2010 Cal. PUC LEXIS 463, *11

the efforts made to inform the community about the project, such as newspaper interviews, presentations to elected officials, and customer informational meetings.[23]

California American Water has been actively discussing water supply needs on the Monterey Peninsula for many years. As the Commission recognized in D.10-12-016, there is widespread agreement that actions must be taken to address Monterey's water supply issues. More recently, California American Water hosted a successful project strategy and planning meeting attended by Peninsula mayors, various local and state elected officials, MCWD, MCWRA, the Division of Ratepayer Advocates ("DRA"), MPWMD, MRWPCA, the County of Monterey, business representatives, and non-governmental organizations on January 27, 2012. A public water forum, co-hosted by the County of Monterey, Monterey Peninsula Regional Water Authority, MPWMD, MRWPCA, and California American Water was held on March 14, 2012 in Seaside to provide information and get input from customers as to the best way to move forward. California American Water has also met with SWRCB to make it aware of its efforts to meet the deadline. More information on these efforts is provided in the direct testimony of Richard Svindland. Based on all these discussions, California American Water believes that it has developed a project that meets most, if not all, stakeholder needs.

Additionally, as discussed above, California American Water has entered into a Memorandum of Understanding with the MRWPCA and MPWMD to collaborate on developing the Groundwater Replenishment Project. The governing board of the MRWPCA consists of mayors from five of the six cities within California American Water's service area. The boundary of the MPWMD is coextensive with California American Water's service area and the MPWMD Board includes officials elected by California American Water's customers. The support of these local elected officials for the Groundwater Replenishment Project is indicative of the community's support for a diverse water supply at reasonable cost.

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[23] D.10-10-001, *Application of Central Valley Gas Storage, LLC for a Certificate of Public Convenience and Necessity for Construction and Operation of Natural Gas Storage Facilities*, 2010 Cal. PUC LEXIS 401, *31.

E. Cost Estimates

The estimated total project cost for the 9.0 mgd desalination plant is approximately $260 million. This includes all the costs to permit, design and construct the slant intake wells, the source water pipelines, the desalination plant, the brine disposal pipeline and facilities, the facilities needed to return flow back to the Salinas Valley basin (if required) and the finished water pipeline. The finished water pipeline, which is also known as the Transfer Pipeline, will extend from the proposed plant location to the end of the California American Water-only facilities that were previously approved in D.10-12-016. The current estimated cost of the California American Water-only facilities remains unchanged from the $107 million the Commission approved in D.10-12-016, bringing the total estimated cost of the Monterey Peninsula Water Supply Project to approximately $367 million. Reducing the size of the desalination plant to 5.4 mgd would reduce the cost of the plant to $213 million, making the cost of the Monterey Peninsula Water Supply Project with the smaller plant approximately $320 million. The estimated operations and maintenance ("O&M") cost for the 9.0 mgd plant in $12.74 million per year (in 2012 dollars). The estimated O&M costs for the 5.4 mgd is $9.85 million per year (in 2012 dollars), plus the cost of purchased water from the Groundwater Replenishment Project.

California American Water developed its cost estimates using the same methodology the Commission approved in D.10-12-016, which involved computing the total "all-in" project costs based on a preliminary design and with appropriate contingencies. California American Water has attached as Appendix E a memorandum detailing the estimated cost of the proposed construction and the estimated annual costs.

F. Financing

Based on discussions with SWRCB, it is California American Water's understanding that it is eligible for a SWRCB State Revolving Fund Loan for the entire project, including the California-American Water only facilities that the Commission previously approved in D.10-12-016. The State Revolving Fund is authorized by the federal Clean Water

Act and provisions of the California Water Code, and provides low interest loans for projects that will improve water quality. The program is implemented in California by the Division of Financial Assistance within the SWRCB, with oversight by the United States Environmental Protection Agency ("U.S. EPA").

The U.S. EPA has issued correspondence to the SWRCB opining that a desalination facility in the area north of Marina can qualify as a non-point source water pollution control. Such non-point source pollution controls are eligible for State Revolving Fund loans pursuant to Sections 318 and Section 603 of the federal Clean Water Act. The Monterey Peninsula Water Supply Project preliminarily meets the criteria as a non-point source control. California American Water is continuing to work with Division of Financial Assistance staff to obtain this financing.

V. MODIFICATIONS OF EXISTING RATEMAKING MECHANISMS

California American Water is requesting that the Commission: (1) subcategorize the types of costs tracked in the existing memorandum account, (2) reinstitute Surcharge 2 with modifications, (3) adopt a cost cap similar to the one approved in D.10-12-016, and (4) continue the previously authorized ratemaking treatment for the California American Water-only facilities.

A. Memorandum Account

For several years, California American Water has been tracking costs related to a long-term water supply solution for Monterey in a Commission-authorized memorandum account[24] and filing an annual application for review and recovery of the tracked costs.[25] California American Water recovers the reviewed and approved costs through Surcharge 1,

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[24] D.06-12-040, 2006 Cal. PUC LEXIS 442, *57, Ordering ¶ 1.

[25] D.06-12-040, 2006 Cal. PUC LEXIS 422, *39. Also affirmed in D.10-08-008, *In the Matter of the Application of California-American Water Company (U210W) for an Order Authorizing the Transfer of Costs Incurred in 2008 for its Long-Term Water Supply Solution for the Monterey District to its Special Request 1 Surcharge Balancing Account*, 2010 Cal. PUC LEXIS 264, **15-16, and in D.11-03-008, *In the Matter of the Application of California-American Water Company (U210W) for an Order Authorizing the Transfer of Costs Incurred in 2009 for Its Long-Term Water Supply Solution for the Monterey District to Its Special Request 1 Surcharge Balancing Account*, 2011 Cal. PUC LEXIS 141, **1-2, 5, 7.

which the Commission approved in D.06-12-040. California American Water proposes to continue this process, but to subdivide the various categories of costs. In order to avoid delay, California American Water requests that the Commission issue an interim decision addressing this particular proposal.

Subcategory 1A will consist of costs related to the Regional Desalination Project that California American Water incurred before the project's demise, as well as the costs to "unwind" the Regional Desalination Project and related agreements. California American Water proposes to recover these costs through the existing annual application process established in D.08-12-034.[26] California American Water will recover these costs through Surcharge 1A.

Subcategory 1B will consist of costs related to the Monterey Peninsula Water Supply Project, including costs related to a test well and other pre-construction costs. California American Water seeks to use the existing annual review process for review and recovery of the test well and other pre-construction costs related to the Monterey Peninsula Water Supply Project. California American Water will recover these costs through Surcharge 1B.

It is particularly important that the Commission issue an interim decision addressing the ability to track costs related to the test well and recover them in rates. Data from this well will assist with the design of the Monterey Peninsula Water Supply Project, will assess the individual well capacities to determine the final number of intake wells needed, and will help assess the levels of salinity. California American Water seeks to proceed with the test well as soon as possible.

The current estimated cost of the test well is $5 million. Although California American Water believes that the Commission's earlier decisions authorize it to track and recover costs related to *any* long-term water supply solution, it is concerned parties may attempt to prevent recovery of the test well and related pre-construction costs as a way to derail the

[26] D.08-12-034, *In the Matter of the Application of Californian-American Water Company (U201W) for an Order Authorizing (1) the Transfer of Already-Incurred Costs for its Long-Term Water Supply Solution for the Monterey District to Its Special Request 1 Surcharge Balancing Account; and (2) An Annual Review Process for the Transfer of Pre-Construction Costs to the Special Request 1 Surcharge Balancing Account*, 2008 Cal. PUC LEXIS 543, **2-3, 8-9.

Monterey Peninsula Water Supply Project. Therefore, California American Water requests that the Commission issue an interim decision authorizing California American Water to track the costs for the test well for the Monterey Peninsula Water Supply Project, as well as all other preconstruction costs for the Project, in Subcategory B of the memorandum account.

An interim decision will allow California American Water to proceed with these crucial activities and avoid delay. Although California American Water believes this application, along with appendices and supporting testimony, provides sufficient information to rule on its request for interim relief, if after protests and responses to the application are filed the assigned Administrative Law Judge requires more information, California American Water recommends that the parties to this proceeding file concurrent pleadings on the issue, in accordance with the schedule provided below.

B. Surcharge 2

Surcharge 1 provides recovery of *preconstruction* costs. The Commission approved Surcharge 2 in D.06-12-040 to fund *construction* costs on a pay-as-you-go basis.[27] In D.06-12-040, the Commission authorized California American Water to implement Surcharge 2 immediately after the Commission issued a CPCN for the Coastal Water Project or an alternative long-term supply solution. Initially, the surcharge was to be 15% on customer bills, increasing to 30%, 45% and 60%, respectively, on July 1 and January 1 each year, and was to remain at the 60% level through completion of the approved long-term water supply project.[28]

In D.10-12-016, the Commission found that Surcharge 2 was no longer applicable because the Regional Desalination Project would be financed by the public agencies.[29] However, Surcharge 2 is necessary to avoid rate shock and reduces the overall cost of the project to customers. Now that California American Water will be financing and owning the facilities, reinstatement of Surcharge 2, with a few modifications, is appropriate.

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[27] D.06-12-040, 2006 Cal. PUC LEXIS 422, *57, Ordering ¶ 2.
[28] D.06-12-040, 2006 Cal. PUC LEXIS 442, *1.
[29] D.10-12-016, 2010 Cal. PUC LEXIS 548, *304, Ordering ¶ 11.

For example, while Surcharge 2 should still commence immediately after issuance of a CPCN, the surcharge should be 30% initially, increase to 45% and 60% on the subsequent July 1 and January 1, and the remain at the 60% level through completion of the Monterey Peninsula Water Supply Project. Based on the $260 million capital cost for the 9.0 mgd plant, Surcharge 2 will collect 38% of the capital costs. Based on the $213 million capital cost for the 5.4 mgd plant, the surcharge will collect 47% of the capital costs. On May 15 of each year after approval, California American Water will file an advice letter to adjust the rate downward if it estimates that the surcharge collection will cover more than those percentages of project costs, effective July 1 of that year. Surcharge 2 should remain in place until the Monterey Peninsula Water Supply Project is in service. California American Water will track the surcharge collections in a memorandum account. Since the surcharge collections will offset costs, those costs should therefore not be included in the capitalized costs and the surcharge collections should not be included as contributions.

C. Desalination Facility Cost Cap

In D.10-12-016, the Commission approved an overall cost cap for the Regional Desalination Project, but provided for review and recovery of reasonable cost above the cap, upon a showing that these costs were the result of extraordinary circumstances and subject to a heightened level of scrutiny.[30] California American Water requests that the Commission take the same approach to a cost cap for the Monterey Peninsula Water Supply Project. This would create an incentive for California American Water to manage the Project responsibly, since the Commission could easily disallow unreasonable costs, but would avoid unfairly penalizing California American Water for increased costs beyond its control. Although California American Water is confident that its cost estimates are accurate based on the information currently available, a number of factors beyond California American Water's control could still affect the cost estimate, including escalating costs of labor and materials, actions mandated by other regulatory agencies, and other project unknowns. California American Water requests that

[30] D.10-12-016, 2010 Cal. PUC LEXIS 548, **94-95.

the Commission adopt a $281.2 cost cap for the 9.0 mgd facility and a $227.1 cost cap for the 5.4 mgd facility. The cost caps include the estimated capital expenditures, capitalized operating expenses, and allowance for funds used during construction ("AFUDC").

D. California American Water-Only Facilities

In D.10-12-016, the Commission approved with minor modification to the requested interest rate, the exact request made by the settling parties with respect to the California American Water-only facilities. The Commission established a $106.875 cost cap for the California American Water facilities, with recovery of costs above the cap upon a showing of extraordinary circumstances and subject to heightened scrutiny. The Commission approved treatment of the California American Water-only facilities as used and useful as soon as they are constructed, even if the Regional Desalination Project was delayed. With the exception of the Transfer Pipeline, California American Water was to record the total cost of the California American Water-only facilities, subject to the capital cost cap and AFUDC calculation, that are completed and used to provide service to customers in its Utility Plant In Service ("UPIS") Account and the total costs of the projects that are not providing service to customers in the Construction Work in Progress ("CWIP") Account. Under D.10-12-016, the ratebase for the California American Water-only facilities was to be calculated by determining the sum of UPIS and CWIP, less any grant funds and less any accumulated depreciation.[31]

The Commission authorized California American Water to file a Tier 2 advice letter on May 15 and November 15 each year to include all prudently expended costs related to construction of the California American Water-only facilities into rate base as either CWIP or UPIS, with the increase in January 1, or July 1 regardless of the status of the review. The Commission authorized California American Water to earn AFUDC on all project costs until they were in ratebase and found that it was appropriate to adopt an initial AFUDC rate that is representative of current rates, and allow this rate to be trued-up to reflect actual carrying costs.[32]

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[31] D.10-12-016, 2010 Cal. PUC LEXIS 548, *
[32] D.10-12-016, 2010 Cal. PUC LEXIS 548, **201-202.

California American Water requests that the Commission adopt the same treatment for the California American Water-only facilities in this proceeding that it approved in D.10-12-016, with clarifications to the process set forth in the Direct Testimony of David P. Stephenson. Generally, however, since the California American Water-only facilities will be the same as the Commission approved in D.10-12-016, there is no reason to change the ratemaking treatment.

E. Low Income Credit

California American Water requests authorization to modify the low income assistance program in its Monterey County District to address the rate impact of the Monterey Peninsula Water Supply Project. California American Water seeks to reduce the service charge, tier 1 and tier 2 charges for low-income customers.

Currently the low income discount program in the Monterey County District allows for an increasing discount based on the number of occupants. The current discount is a flat amount that reduces the monthly bill. The current credit would be less significant once the proposals in this application are approved and in place. To remedy this situation and still allow conservation pricing to send the proper signal, California American Water recommends that the current flat rate discount be eliminated and replaced with a combined flat rate and percentage discount program.

VI. RATEMAKING AND ACCOUNTING

A. Property Taxes

Property taxes on real property in California have to be assessed in compliance with Proposition 13. The assessment is rendered based on a flat 1% of the assessed value of the subject property. The assessment can only increase by a maximum 2% annually.[33] For utility property, the assessed value is normally approximated by rate base for ratemaking purposes. There are various methods used to determine the assessed value such as cost approaches and income approaches. In addition to the normal assessed value and the applicable 1% tax rate,

[33] Cal. Const., art. XIII A, § 2, par. (b) (Prop. 13).

other assessments and bond repayment costs may also be added to the tax bill as approved by taxpayers.

Based on communications with the California State Board of Equalization, California American Water has excluded the portion of the investment funded through Surcharge 2 collections from the property tax assessment. Under the assumption that $99.1 million of the total cost of the plant is funded through Surcharge 2 and assuming a property tax rate of 1.05%, the first year annual savings in property tax as a result of funding a portion of the plant with contributions is $1.0 million. California American Water similarly excluded property funded from State Revolving Fund loans from the assessed value for property tax purposes. Under the assumption that $93.3 million of the total cost of the 9.0 mgd plant, and that $74.1 million of the total cost of the 5.4 mgd plant is funded by State Revolving Fund loans, and assuming a property tax rate of 1.05%, the first year annual savings in property tax as a result of funding a portion of the plant with State Revolving Fund loans is $1.0 million and $0.7 million respectively. The first year annual savings for using State Revolving Fund loans for the California American Water-only facilities is $0.5 million, bringing the total savings to approximately $2.5 million.

B. AFUDC

California American Water has assumed that the net average monthly investment carried in the memo account should be subject to a carry cost determination that is added to the overall net cost in the memo account. California American Water has assumed that carry cost will be AFUDC and that funds used to so construct the facilities will be of the lowest cost available. California American Water recommends that the AFUDC rate base based on the cost of the funds used to support the financing of the project during construction. California American Water's requested AFUDC rate is consistent with precedent in which the Commission has authorized energy utilities to accrue AFUDC for major long-term capital projects at rates that reflect the overall cost of capital.[34] It is also in keeping with the Commission's determination in

[34] D.84-08-125, *In the Matter of the Application of SAN DIEGO GAS & ELECTRIC COMPANY for authority to include the Southwest Powerlink as a specified major addition under its Major Additions Adjustment Clause (MAAC) and to increase its Major Additions Adjustment Billing Factor (MAABF) and decrease its Annual Major*

D.10-12-016 that the AFUDC rate should compensate California American Water for its carrying costs.[35]

C. Treatment of State Revolving Fund Loans

In the past, when dealing with State Revolving Fund loans, the Commission has required that a customer surcharge be established and that the customers would be responsible to fully fund the principal and interest related to the loan, that the surcharge rates to be established to repay the loan should last as long as necessary to repay the loan, that surcharge revenues would not be commingled with other utility charges, that the utility plant financed by the loan should be permanently excluded from rate base for ratemaking purposes, and that special accounting requirements are necessary to ensure that there are no unintended windfalls to the utility shareholders.[36] In essence, the Commission has established rules, practices and procedures to ensure that property financed through government loans should never result in increased profits or income to the borrowing utility and that the responsibility for the entire loan should be borne by the customers receiving the benefit from the property. California American Water has treated the State Revolving Fund loan proceeds in this application in the same manner where it has assumed the ability to secure and use such funds.

VII. RATE IMPACT AND REVENUE REQUIREMENT

California American Water has included as Appendix F a statement of the current revenue requirement in the Monterey County District and the proposed increase to be charged for the Monterey Peninsula Water Supply Project, the amount of proposed gross revenues, together with the percentage of increase, estimated to result from the proposed rates. Additional

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Additions Rate (AMAR) upon operation of the Southwest Powerlink, 1984 Cal. PUC LEXIS 1309, **12-13.

[35] D.10-12-016, 2010 Cal. PUC LEXIS 548, **213-215.

[36] D.06-04-031, *California Water Service Company (U-60-W), a California corporation, to Borrow Funds Under the State Revolving Fund, to Encumber its Property in Connection with this Borrowing, and to add a Surcharge to Water rates for Coast Springs District Dillon Beach Ratepayers to Repay the Principal and Interest on the Borrowed Funds*, 2006 Cal. PUC LEXIS 119, **5-7; *see also* D.05-01-048, *In the Matter of the Application of San Jose Water Company U-168-W for Authority to Borrow $ 1,660,250 Under the Safe Drinking Water State Revolving Fund and to Add a Surcharge to Water Rates to Repay the Principal and Interest on Such Loan*, 2005 Cal. PUC LEXIS 47, **12-17; D.03-07-013, *Application of San Jose Water Company (U-168-W) to Borrow Funds Under the Safe Drinking Water State Revolving Fund and to Add a Surcharge to Water Rates to Repay the Principal and Interest on Such Loan*, 2003 Cal. PUC LEXIS 398, **7-9.

information regarding costs and revenue requirement is included with the testimonies of Jeffrey T. Linam and David P. Stephenson. All of the revenue requirement scenarios assume that the Commission approves Surcharge 2 as requested. Without the ability to fund a portion of the Monterey Peninsula Water Supply Project through Surcharge 2, the overall revenue requirement increases. California American Water has shown the estimated customer bill impact in Appendix G.

VIII. ENVIRONMENTAL REVIEW

The Commission is the lead agency for this project.[37] As part of A.04-09-019, the Commission conducted environmental review under the CEQA and certified the EIR in 2009.[38] The EIR analyzed at a project level of detail three projects to assist California American Water in solving its water supply problem. The three projects were the Moss Landing Project, also known as the Coastal Water Project, the North Marina Project, and the Regional Project. The Monterey Peninsula Water Supply Project is modified version of the North Marina Project. The main modifications are the locations of the intake slant wells and the desalination treatment plant. Due to these revised locations, a portion of the product water pipeline or finished water main will need to be routed on a previously un-surveyed corridor.

Based on discussions with the Commission's CEQA staff, California American Water believes that the Commission may rely on the existing EIR and accommodate the proposed location changes by preparing a Supplemental EIR ("SEIR"). It is too early to speculate on the environmental impacts as those need to be fully investigated as a part of the SEIR; however, the amount of large diameter pipelines may be shorter in length than the Regional Desalination Project depending on results of the surveys due to the proximity of the proposed intake wells to the proposed desalination plant. Pursuant to Rule 2.4, California American Water has attached as Appendix H an updated CEQA Project Description and will

[37] D.03-09-022, *In the Matter of the Application of California-American Water Company (U 210 W) for a Certificate that the Present and Future Public Convenience and Necessity Requires Applicant to Construct and Operate the 24,000 acre foot Carmel River Dam and Reservoir in its Monterey Division and to Recover All Present and Future Costs in Connection Therewith in Rates*, 1997 Cal. PUC LEXIS 1279, *42, Ordering ¶ 1.
[38] D.09-12-017, 2009 Cal. PUC LEXIS 764, *34, Ordering ¶ 1.

work with the Commission's CEQA staff to provide any additional documentation necessary for the SEIR.

Although a groundwater replenishment project was considered in the EIR, the Groundwater Replenishment Project itself does not trigger CEQA review by the Commission. The Groundwater Replenishment Project is a joint project between MRWPCA and MPWMD, and will be carried out by MRWPCA. Therefore, MRWPCA will act as the CEQA lead agency for the Groundwater Replenishment Project. The Commission only needs to authorize California American Water to purchase water from the Groundwater Replenishment Project. Approval of a purchased water (or energy) contract is an act of ratemaking and the act of ratemaking by the Commission is exempt from CEQA review.[39] The Commission has approved cost recovery for utility contracts with electric generators prior to the generators obtaining the necessary CEQA permits where another agency is the lead agency for purposes of CEQA review.[40] In such instances, the Commission has found that CEQA is not triggered for the Commission because approval of a contract does not involve the granting of a lease, permit, license, certificate, or other entitlement.[41] Moreover, the Commission would not be a responsible agency with respect

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[39] D.10-08-002, *Application of Southern California Edison Company (U 3338 E) to Issue, Sell, and Deliver One or More Series of Debt Securities and Guarantee the Obligations of Others in Respect of the Issuance of Debt Securities, The Total Aggregate Principal Amount of Such Indebtedness and Guarantees not to Exceed $ 3.5 Billion; to Execute and Deliver one or More Indentures; To Sell, Lease, Assign, Mortgage, or Otherwise Dispose of or Encumber Utility Property; To Issue, Sell and Deliver in One or More Series, an Aggregate Amount not to Exceed $ 1.0 Billion Par or Stated Value of Cumulative Preferred Stock -- $ 25 Par Value, Cumulative Preferred Stock -- $ 100 Par Value, Preference Stock or any Combination Thereof, and Guarantee the Obligations of Others in Respect of the Issuance of that Stock; and for an Exemption from the Commission's Competitive Bidding Rule*, 2010 Cal. PUC LEXIS 274, *32.

[40] *See* D.07-12-052, *Opinion Adopting Pacific Gas and Electric Company's, Southern California Edison Company's, and San Diego Gas & Electric Company's Long-Term Procurement Plans*, 2007 Cal. PUC LEXIS 606, * 235 (Noting that the Commission approved contracts for approximately 2,250 MWs of new generation from 7 different projects in Pacific Gas & Electric's service area while only one of the projects had obtained a permit to construct from the CEC); D.06-11-048, *Application of Pacific Gas and Electric Company for Approval of Long-term Request for Offer Results and for Adoption of Cost Recovery and Ratemaking Mechanisms*, 2006 Cal. PUC LEXIS 464, **45-46 ("We find that the projects at issue in this proceeding are exempt from CEQA review by this Commission...the California Energy Commission will undertake any necessary environmental review of the projects").

[41] D.86-10-044, *Application of Pacific Gas and Electric Co. for an Order approving an agreement with Kings River Conservation District for the purchase of firm capacity and energy from the Dinkey Creek Hydroelectric Project*, 1986 Cal. PUC LEXIS 642 ("D.86-10-044, 1986 Cal. PUC LEXIS 642"), **16-17.

to the Groundwater Replenishment Project because it does not have discretionary approval power over the project.[42]

IX. REQUIRED INFORMATION

A. Applicant Information

Applicant's legal name is California-American Water Company. California American Water's corporate office and post office address is 1033 B Avenue, Suite 200 Coronado, California 92118. California American Water is a California corporation organized under the laws of the State of California on December 7, 1965. California American Water is a Class A regulated water utility organized and operating under the laws of the State of California. California American Water provides water and wastewater service in various areas in the following California counties: Los Angeles, Monterey, Placer, Sacramento, San Diego, Sonoma, and Ventura.

A certified copy of California American Water's articles of incorporation was filed with the Commission on January 6, 1966 in connection with Application 48170. A certified copy of an amendment to California American Water's articles of incorporation was filed with the Commission on November 30, 1989 in connection with Application 89-11-036. A certified copy of an Amendment to California American Water's Articles of Incorporation dated October 3, 2001 and filed with the office of the California Secretary of State on October 4, 2001, was filed with the Commission on February 28, 2002 in connection with Application 02-02-030. The Articles of Incorporation have not been subsequently amended.

None of the persons described in Section 2 of General Order No. 104-A has a material financial interest in any transaction involving the purchase of materials or equipment or the contracting, arranging, or paying for construction, maintenance work, or service of any kind to which Applicant has been a party during the period subsequent to the filing of California American Water's last Annual Report with this Commission or to which California American Water proposed to become a party at the conclusion of the year covered by said Annual Report.

[42] *Id.*, D.86-10-044, 1986 Cal. PUC LEXIS 642, **17-18; *see* Pub. Resources Code § 21069.

A copy of California American Water's balance sheet and income statement is included as Appendix I.

B. Application Correspondence

Correspondence related to this application should be sent to:

Sarah E. Leeper
California-American Water Company
333 Hayes Street, Suite 202
San Francisco, CA 94102
sarah.leeper@amwater.com

with copies to:

Robert MacLean, President
California-American Water Company
1033 B Avenue, Suite 200
Coronado, CA 92118
robert.maclean@amwater.com

Lori Anne Dolqueist
Manatt, Phelps & Phillips, LLP
One Embarcadero Center, 30th Floor
San Francisco, CA 94111
LDolqueist@manatt.com

C. Category

Rule 1.3(e) of the Commission's Rules of Practice and Procedure defines ratesetting proceedings as those in which "the Commission sets or investigates rates for a specifically named utility (or utilities), or establishes a mechanism that in turn sets the rates for a specifically named utility (or utilities)." The Commission should categorize this proceeding as ratesetting.

D. Evidentiary Hearings

Evidentiary hearings will likely be necessary to address factual disputes on material issues.

E. Issues

The main issue in this proceeding is whether the Commission should authorize California American Water to implement the Monterey Peninsula Water Supply Project, and the associated ratemaking and revenue requirement.

F. Schedule

California American Water has proposed a schedule for this proceeding, including the request for interim relief, below. In developing its schedule, California American Water has kept in the mind the need to meet the SWRCB 2016 deadline, as well as the requirements in the Commission's Rules of Practice and Procedure.

G. Proposed Schedule for Overall Proceeding

Protests and Responses to Application	30 days from Calendar Notice
Reply to Protests	10 days from Protest/Response deadline
Prehearing Conference	June 2012
Public Participation Hearings	July 2012
DRA/Intervenor Testimony	July 23, 2012
Rebuttal Testimony	August 23, 2012
Settlement	August 27-September 7, 2012
Evidentiary Hearings	September 17-September 21, 2012
Briefing	October 12-26, 2012
Proposed Decision	January 28, 2013
Final Decision	February 2013

H. Proposed Schedule for Interim Relief

Protests and Responses to Application	30 days from Calendar Notice
Reply to Protests	10 days from Protest/Response deadline
Prehearing Conference	June 2012
Pleadings on Interim Relief Issues	June 22, 2012
Reply Pleadings	July 2, 2012
Proposed Decision	September 10, 2012
Final Decision	October 11, 2012

X. NOTICE AND SERVICE

In accordance with Rule 3.2(b), California American Water will serve notice of this application upon the attached service list. Within ten days of the filing, California American Water will cause to be published once, in a newspaper of general circulation in the area served, a notice of the general terms of the proposed increases. California American Water will submit proof of such publication to the Commission. California American Water has provided a draft of the customer notice to the Public Advisors Office. A sample draft notice is attached as Appendix J. California American Water will send notice of the application to its customers in accordance with Rule 3.2(d).

XI. SUPPORT FOR APPLICATION

A. Appendices

Appendix A – Memorandum of Understanding

Appendix B – Monterey Peninsula Water Supply Project Schedule

Appendix C – Map

Appendix D – Permits and Approvals

Appendix E – Cost Estimate

Appendix F – Revenue Requirement

Appendix G – Bill Impact

Appendix H – Updated CEQA Project Description

Appendix I – Balance Sheet and Income Statement

Appendix J – Draft Customer Notice

B. Testimony

Direct Testimony of Keith Israel – Groundwater Replenishment Project

Direct Testimony of Jeffrey Linam – Finance Issues

Direct Testimony of Eric Sabolsice – Conservation and Operations

Direct Testimony of David P. Stephenson – Ratemaking and Accounting

Direct Testimony of F. Mark Schubert – California American Water-Only Facilities

Direct Testimony of Richard Svindland – Project Description and Information

Direct Testimony of Kevin Thomas – CEQA

XII. CONCLUSION

California American Water must find a replacement for approximately 70 percent of its water supply by December 2016. Failure to meet this deadline could have harmful consequences for California American Water, its customers, and the community. The Monterey Peninsula Water Supply Project can be approved, financed, and constructed in time to meet the SWRCB's deadline, will satisfy the SWRCB's requirements, and provides a cost-effective solution based on low-cost financing, government-subsidized loans, tax benefits and use of regulatory opportunities. In light of the urgent need to find a replacement water supply for the Monterey County District, California American Water requests that the Commission timely authorize it to implement the Monterey Peninsula Water Supply Project and recover the associated costs in rates.

April 23, 2012

Respectfully submitted,

MANATT, PHELPS & PHILLIPS, LLP

By: */s/ Lori Anne Dolqueist*
Lori Anne Dolqueist

Attorneys for Applicant
California-American Water Company

VERIFICATION

I, the undersigned, say:

I am an officer of CALIFORNIA-AMERICAN WATER COMPANY, a corporation, and am authorized to make this verification for and on behalf of CALIFORNIA-AMERICAN WATER COMPANY, and I make this verification for that reason. I have read the foregoing Application, am informed, and believe the matters therein are true, and, on that ground, allege that the matters stated therein are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed at Sacramento, California, April 23, 2012.

CALIFORNIA-AMERICAN WATER COMPANY

By _____

Richard C. Svindland

<u>Appendix A</u>

Memorandum of Understanding

MRWPCA-MPWMD-CAL AM GROUNDWATER REPLENISHMENT PROJECT PLANNING TERM SHEET AND MEMORANDUM OF UNDERSTANDING TO NEGOTIATE IN GOOD FAITH

This Groundwater Replenishment Project Planning Term Sheet And Memorandum of Understanding To Negotiate In Good Faith ("GWR MOU") is entered into as of April 20, 2012, by and between the Monterey Regional Water Pollution Control Agency, a joint powers authority ("MRWPCA"), the Monterey Peninsula Water Management District, a California special act district ("MPWMD"), and the California-American Water Company ("Cal Am"), an investor-owned water utility, collectively the "Parties", based upon the following facts, intentions and understandings of the Parties.

I. BACKGROUND

A. MRWPCA owns and operates a wastewater collection and treatment system in northern Monterey County, including the Regional Treatment Plant ("RTP") and the associated ocean outfall ("Outfall"). From the RTP, MRWPCA produces treated wastewater that has the potential for reuse;

B. MPWMD was created by the California Legislature in 1977 for the purposes of "conserving and augmenting the supplies by integrated management of ground and surface water supplies, for control and conservation of storm and wastewater, and for the promotion of the reuse and reclamation of water." The MPWMD's specific functions are "management and regulation of the use, reuse, reclamation, conservation of water and bond financing of public works projects." It is authorized to issue bonds, assess charges for groundwater enhancement facilities, levy assessments on real property and improvements, and "fix, revise, and collect rates and charges for the services, facilities, or water furnished by it";

C. Cal Am is an investor-owned water utility regulated by the California Public Utilities Commission ("CPUC") that serves retail customers in the Monterey Peninsula. Cal Am has been ordered by the State Water Resources Control Board to significantly reduce its diversions from the Carmel River, its largest source of water supply, on a schedule that will result in Cal Am being able to divert only 30 percent of its historical draw from the Carmel River by December 31, 2016. Cal-Am requires additional sources of water to serve Cal Am's Monterey Peninsula customers. CPUC approval for certain aspects of such additional water supplies is required.

D. The CPUC previously approved Cal Am's participation in the "Regional Project," in conjunction with the Monterey County Water Resources Agency and the Marina Coast Water District (Decision 10-12-016, December 2, 2010.) The Regional Project was intended, among other things, to fulfill Cal Am's need for additional water supplies. However, Cal Am has withdrawn from participation in that project, and is seeking alternative approaches to meet its needs.

E. The Seaside groundwater basin ("Seaside Basin") is in a state of overdraft, and rights to water and pumping thereof have been adjudicated by the Monterey Superior Court. The Seaside Basin is governed by a Watermaster appointed by the Court.

F. MPWMD and Cal Am have an existing aquifer storage and recovery project ("ASR") which involves the injection of water into the Seaside Basin, and its recovery for the benefit of Cal Am. This initial phase ("ASR Phase 1") uses water diverted from the Carmel River, which is injected and extracted using two existing wells.

G. MRWPCA treats wastewater at the RTP, creating a potential source of water supply.

H. The parties believe that an additional increment of water supply should be generated for the benefit of Cal Am and its customers, many of whom are within the service areas of MPWMD and MRWPCA, by conveying advanced treated wastewater from the MRWPCA to the Seaside Basin, where it could be injected for storage and subsequent recovery by Cal Am ("GWR Project").

I. There would be substantial benefits of such a Groundwater Replenishment Project, including but not limited to:

- Drought resistant element of water supply portfolio;
- Cost-effective water supply; and
- Diversification of Cal Am's water supply portfolio

- There are also other benefits to this project, including but not limited to:
  i. Improved water quality in Monterey Bay
  ii. Advance the State of California's recycled water policies;
  iii. Reuse of water otherwise discharged to the ocean;
  iv. Lower carbon footprint relative to desalination;

J. The Parties intend by this GWR MOU to enable planning and environmental evaluation of a groundwater replenishment project by the following:

- to commit themselves to evaluate the ways in which a groundwater replenishment project could be effectively accomplished;
- to commit themselves to negotiate in good faith to reach agreement on such a project, should it be deemed viable;
- for MRWPCA to commit to act as lead agency to achieve California Environmental Quality Act ("CEQA") compliance for such a project, should it be deemed viable;
- for MPWMD to assist MRWPCA in providing the necessary financial support for the foregoing planning and CEQA compliance activities, subject to Recital M, below; and
- to identify non-binding preliminary terms of a GWR project agreement, which will assist in focusing the development of a GWR project responsive to the Parties' capabilities and needs.

K. Except as set forth in Recital J above, the terms set forth in this GWR MOU are the Parties' preliminary concept of terms that may be included in future agreements by and among some or all of the Parties ("GWR Agreements".) They are not intended to be, nor should they be considered as, binding on the Parties.

L. None of the Parties intends by this GWR MOU to commit itself, or the other Parties, to a particular course of action, other than as set forth in Recital J above. The Parties reserve their discretion to evaluate and determine the feasibility or viability of any GWR Project, as well as project impacts, alternatives and mitigation measures, including but not limited to not proceeding with the GWR Project.

M. MPWMD financial support for GWR described in Recital J above is contingent upon successful implementation of a new revenue collection mechanism during the 2012-13 fiscal year.

II.
BINDING TERMS REGARDING PROCESS TO EVALUATE AND IF FEASIBLE DEVELOP A GROUNDWATER REPLENISHMENT PROJECT

1. MRWPCA

A. MRWPCA is anticipated to be the source of the recycled water supply. MRWPCA would apply additional treatment to wastewater from the RTP, convey that water to the Seaside Basin, and inject it into the aquifer, thus making an additional source of water available for use by Cal Am and its customers.

B. MRWPCA will in good faith commit to evaluate its resources and capabilities with respect to the feasibility of performing the foregoing functions.

C. In the event that a feasible project is identified, MRWPCA will act as lead agency pursuant to CEQA, and will prepare or have prepared an environmental document pursuant to CEQA to evaluate the environmental impacts of such a GWR Project. If MRWPCA chooses to implement a GWR Project, MRWPCA will adopt or certify an environmental document – including any necessary supplements or addenda thereto (collectively "CEQA Documents") – that in its judgment complies with CEQA. MRWPCA will use funding provided by MPWMD, in addition to its own funds, for this effort.

D. MRWPCA will negotiate in good faith with the other Parties to develop GWR Agreements acceptable to all Parties, which agreements will be consistent with the CEQA Documents. The Parties' goal is that such agreement will be complete and fully executed in a timeframe which will enable the GWR Project to be operational

such that water can be made available to Cal Am on the schedule set forth by the SWRCB.

E. MRWPCA expressly retains its discretion with respect to whether it will implement a GWR Project or enter into a GWR Agreement, and on what terms. Nothing in this agreement shall be construed as limiting MRWPCA's obligation to consider any and all alternatives, including the "no project" alternative, and any and all mitigation measures, and to make the requisite findings, in the above-referenced CEQA process.

2. MPWMD

A. MPWMD will provide matching funding for MRWPCA and MPWMD GWR evaluation, planning, pre-design, and environmental review costs for the GWR derived from its new revenue collection mechanism implemented for the 2012-13 fiscal year. The Parties anticipate that MPWMD will contribute 50% of MRWPCA's actual GWR related costs, which 50% is currently estimated to be $1,036,550 in FY 2012-13 and $1,469,200 in FY 2013-14. Initially within 90 days after MPWMD's implementation of its new revenue collection mechanism for FY 2012-13, and by April 1 of each following year, the MRWPCA and MPWMD will meet and confer to review and must agree upon the Project budget for the following fiscal year. During a fiscal year, upon presentation to MPWMD by MRWPCA of invoices representing Project expenditures, MPWMD will remit to MRWPCA within 60 days an amount representing 50% of the expenditure. However, if required by MPWMD's new revenue collection mechanism, invoices presented before November 1 shall be paid no later than December 31, and invoices presented before May 1 shall be paid no later than June 1.

B. If MPWMD determines that a GWR Project is viable, MPWMD will negotiate in good faith with the other Parties to develop a GWR Agreement acceptable to all Parties, which agreement will be consistent with the above-described CEQA Documents. The Parties' goal is that such agreement will be complete and fully executed in a timeframe which will enable the GWR Project to be operational such that water can be made available to Cal Am on the schedule set forth by the SWRCB.

C. In the event that GWR Agreements are executed, MPWMD will undertake the permanent financing of GWR with long-term debt, secured by either revenues of MPWMD or payments to be received under a water purchase agreement with Cal Am, or both. Proceeds of the financing, or revenues received from water sales, will be used to reimburse MRWPCA for its past out-of-pocket contributions of MRWPCA for a GWR Project (any unreimbursed costs including the MRWPCA investment before execution of this MOU). Such permanent financing will be undertaken when and if the Parties agree that the Project shall proceed to design and construction and requires funding in excess of that reasonably available from pay-as-

you-go monies, notwithstanding that MRWPCA and MPWMD may decide to undertake more than one permanent financing in order to facilitate a pilot project or construction in phasing.

D. MPWMD expressly retains its discretion with respect to whether it will enter into any GWR Agreement, and on what terms; as well as its discretion to consider the CEQA Documents in a manner fully consistent with its role as a responsible agency under CEQA.

3. CAL AM

A. If each Party independently agrees that a GWR Project is viable, Cal Am will negotiate in good faith with the other Parties to develop a GWR Agreement acceptable to all Parties, which agreement will be consistent with the above-described CEQA Documents. The Parties' goal is that such agreement will be complete and fully executed in a timeframe which will enable the GWR to be operational such that water can be made available to Cal Am on the schedule set forth by the SWRCB.

B. Subject to ratemaking treatment approved by the CPUC and terms acceptable to Cal Am, Cal Am will enter into a GWR Agreement with MPWMD, with minimum annual purchase obligations of water at a price sufficient to pay the annual costs of debt and the costs of the GWR Project, including without limitation, operations, maintenance, repair, replacement, regulatory compliance, and administration costs, associated with the portion of the GWR Project's output purchased by Cal Am.

C. As the CPUC regulated entity, Cal Am will have the primary role with respect to the CPUC, including but not limited to, obtaining the approvals required by that agency.

D. Cal Am will bear its own costs with respect to all of its efforts in furtherance of realizing a GWR Project.

4. Good Faith Commitment

A. In order to explore the potential public and private benefits of this project, and to ensure that each Party's efforts in furtherance of realizing such a project are well spent, the Parties hereby make a good faith commitment to pursue development of such a GWR, in compliance with all applicable laws. The Parties shall meet with the goal of reaching agreement by June 30, 2012, on the criteria for determining the viability of a GWR Project, which criteria shall include but not be limited to (1) providing for a schedule and for adjustments of same for the timeframe within which the GWR Project will be operational, and (2) a process and timeframe for verifying that the range of estimated costs for GWR Project water are consistent with the MRWPCA current cost estimates of $2500-$3000 per acre foot.

5. Term and Termination

A. This GWR MOU shall expire upon the earlier of (1) full execution of a GWR Agreement, or (2) upon written agreement of the Parties to terminate.

B. Upon thirty days advance written notice to all Parties, and upon the withdrawing Party's good faith determination that further participation is not feasible for any reason, any Party may withdraw from this MOU. If two Parties withdraw, this MOU is terminated.

C. Any obligation to pay survives termination until such payment is made in full.

III.
NON-BINDING PRELIMINARY TERMS

The provisions in this Section III set forth the Parties' preliminary understanding that may be included in a final project agreement or agreements ("GWR Agreement"). These provisions are not intended to be, nor should they be considered as, binding on the Parties. Each Party expressly retains discretion with respect to whether it will enter into a GWR Agreement, or on what terms.

1. The GWR Project is intended by the Parties to provide approximately 3500 AF of advanced treated wastewater ("Replenishment Water") that can be made available, conveyed to the Seaside Basin and injected therein using new wells, by MRWPCA. MRWPCA will design, construct, own and operate the facilities to convey the water from the RTP and inject it into the Basin.

2. Upon payment by MPMWD to MRWPCA as set forth below, MPWMD shall take title to the Replenishment Water that has been injected into the aquifer. MPWMD will make the Replenishment Water available for purchase by Cal Am for the purpose of serving Cal Am's retail water customers in the Monterey Peninsula area.

3. Upon permanent financing, MPWMD will pay to MRWPCA the full amount of MRWPCA's costs to design, construct, obtain regulatory approvals, treat, deliver and inject the Replenishment Water. The commodity cost for the Replenishment Water shall recover at minimum all costs associated with GWR operation, maintenance, repair, replacement and administration, including regulatory compliance.

4. MRWPCA, MPMWD, and Cal Am shall coordinate the scheduling of injection of recycled water, Carmel River water, and any other water.

5. Subject to CPUC ratemaking approval, Cal Am shall enter into a contract to purchase the Replenishment Water from MPWMD. This contract will inter alia promptly

reimburse MPWMD for the following prudently incurred costs: MPWMD's annual cost of debt service, Replenishment Water payments to MRWPCA for operations and maintenance, reimburse MRWPCA for any of its project development costs not previously reimbursed by MPWMD, as well as for MPWMD's costs.

6. The parties anticipate that terms addressing the following non-exhaustive list of topics will also be needed:

- Additional Financial Provisions;
- No Partnership, Joint Venture or JPA.
- Coordination with others
- CPUC approvals
- Regulatory Compliance
- Storage and Recovery Agreement with Seaside Basin Watermaster
- Brine Disposal
- Additional Acts
- Representations and Warranties.
- Litigation; Cooperation in Litigation
- Force Majeure
- No Third Party Beneficiaries.
- Dispute Resolution
- No Assignment
- Default, Cure and Remedies
- Attorneys Fees
- Notices
- Miscellaneous Provisions

The Parties re-confirm that neither a GWR Agreement, nor any replenishment project, can proceed unless and until the Parties have negotiated, executed and delivered mutually acceptable GWR Agreements, with any public agency action performed in compliance with CEQA and on other public review and hearing processes, and subject to all applicable governmental approvals. The Parties intend by this GWR MOU to inform and focus the work necessary to develop and review a water transfer program, not to pre-determine what that program may be.

WHEREFORE, this GWR MOU was executed by the parties on the date first above written.

MRWPCA

MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY,

By: _____
Ron Stefani, Board Chair
MRWPCA Board of Directors

MPWMD

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,

By: _____
David Stoldt
General Manager

CAL AM

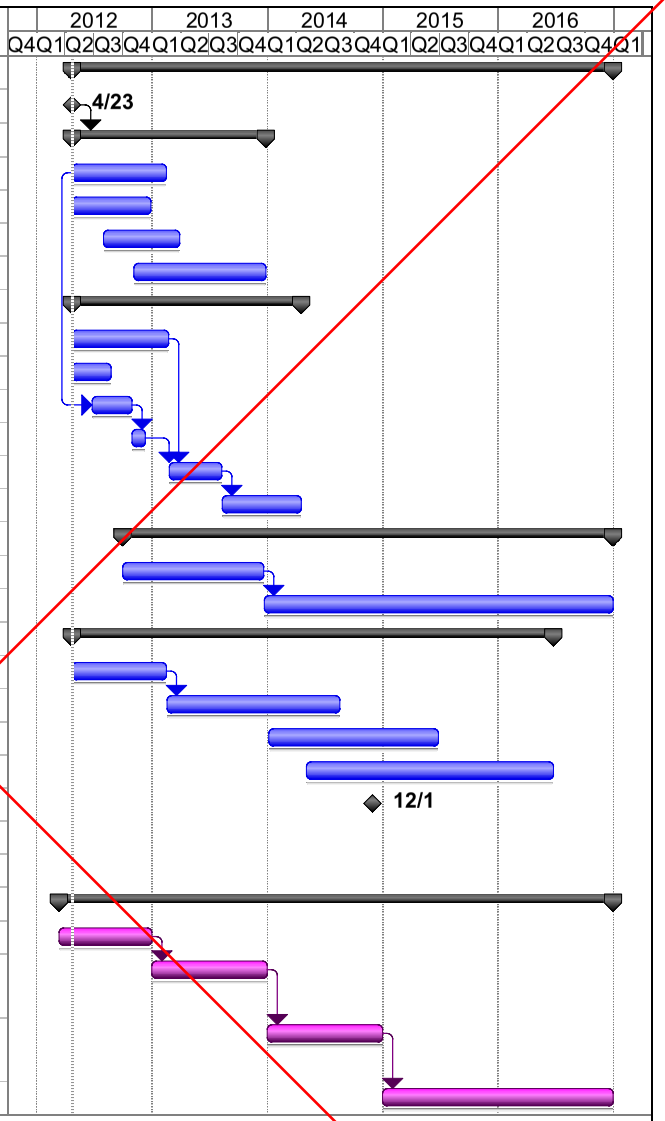
CALIFORNIA AMERICAN WATER COMPANY,

By: _____
Robert MacLean
President

~~Appendix B~~

~~Monterey Peninsula Water Supply Project Schedule~~

ID	Task Name	Duration	Start	Finish	Predecessors
1	**CAW Project**	**1225 days?**	**Mon 4/23/12**	**Fri 12/30/16**	
2	**File with CPUC**	0 days	Mon 4/23/12	Mon 4/23/12	
3	**Permitting**	**440 days?**	**Mon 4/23/12**	**Fri 12/27/13**	**2**
4	CPUC Approval	214 days	Tue 4/24/12	Fri 2/15/13	
5	Pre-Application Activities	180 days?	Mon 4/23/12	Fri 12/28/12	
6	Application Preparation and Submittal	173 days?	Wed 8/1/12	Fri 3/29/13	
7	Permit Processing	300 days?	Mon 11/5/12	Fri 12/27/13	
8	**Feedwater Test Well**	**520 days**	**Mon 4/23/12**	**Fri 4/18/14**	
9	Permitting	220 days	Mon 4/23/12	Fri 2/22/13	
10	Site Acquisition	90 days	Mon 4/23/12	Fri 8/24/12	
11	Design	90 days	Tue 6/26/12	Mon 10/29/12	4SS+45 days
12	Driller Procurement	30 days	Tue 10/30/12	Mon 12/10/12	11
13	Construction	120 days	Mon 2/25/13	Fri 8/9/13	12,9
14	Operation	180 days	Mon 8/12/13	Fri 4/18/14	13
15	**DB Delivered Items**	**1110 days?**	**Mon 10/1/12**	**Fri 12/30/16**	
16	DB Contract Procurement	320 days?	Mon 10/1/12	Fri 12/20/13	
17	Design / Construction / Startup	790 days?	Mon 12/23/13	Fri 12/30/16	16
18	**DBB Delivered Items**	**1090 days?**	**Mon 4/23/12**	**Fri 6/24/16**	
19	Design Contract Procurement	215 days?	Mon 4/23/12	Fri 2/15/13	
20	Design	391 days?	Mon 2/18/13	Mon 8/18/14	19
21	Bid	385 days?	Mon 1/6/14	Fri 6/26/15	
22	Construction / Startup	560 days?	Mon 5/5/14	Fri 6/24/16	
23	Decision on GWR	0 days	Mon 12/1/14	Mon 12/1/14	
24					
25					
26	**GWR Project**	**1254 days**	**Tue 3/13/12**	**Fri 12/30/16**	
27	Planning & Pilot Plant Facilities	210 days	Tue 3/13/12	Mon 12/31/12	
28	Pilot Plant Testing & Develop Final Design	261 days	Tue 1/1/13	Tue 12/31/13	27
29	Prepare final design and obtain regulatory approval / permits	261 days	Wed 1/1/14	Wed 12/31/14	28
30	Construction	522 days	Thu 1/1/15	Fri 12/30/16	29

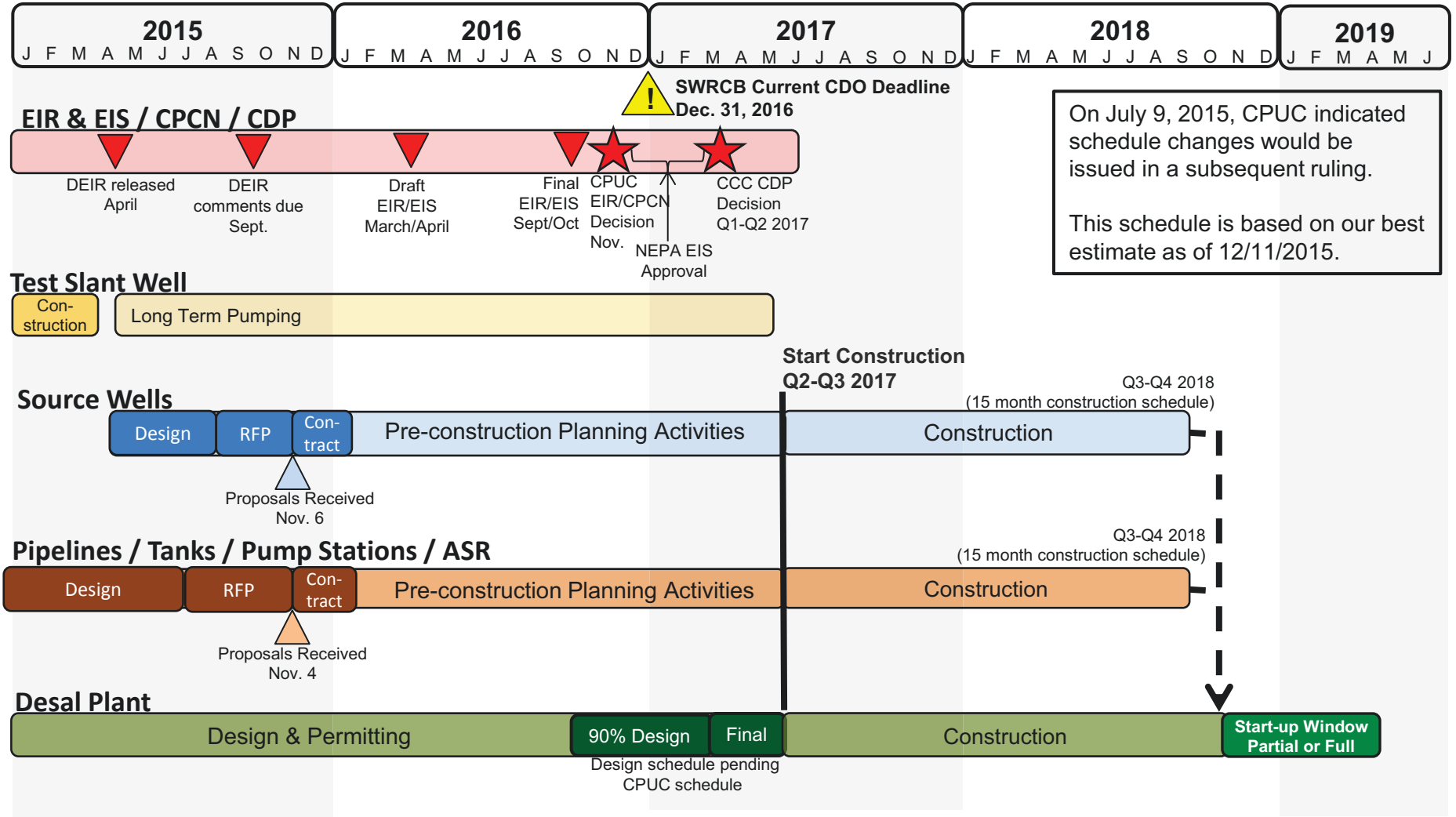


Project: Attachment 8 - MPWSP Proje
Date: Sat 4/21/12

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

APPENDIX B
(Updated)

MPWSP Anticipated Schedule

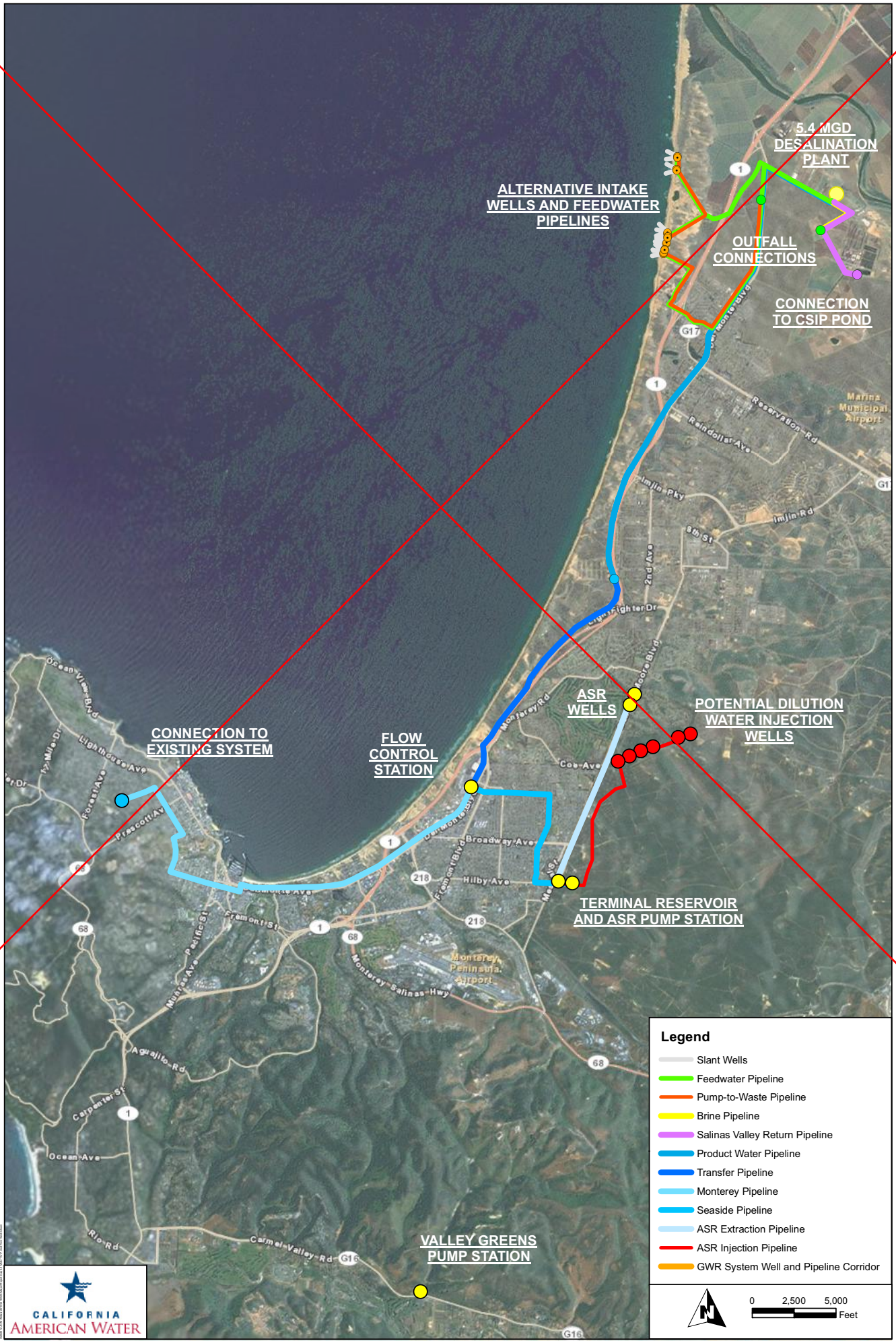


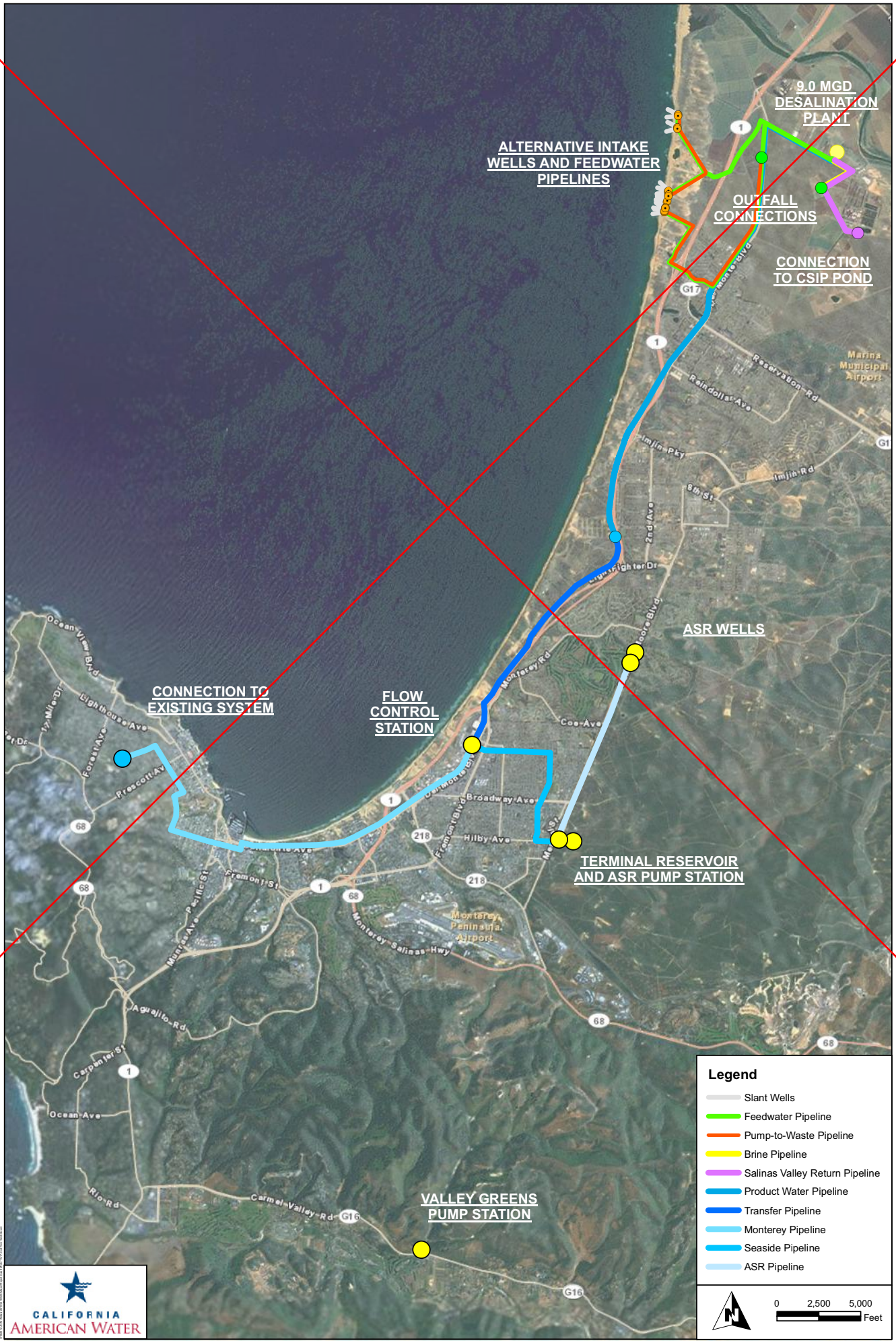
Note: The schedule is based on the information and assumptions available at time of update and is accurate to +/-6 months.

Updated December 11, 2015

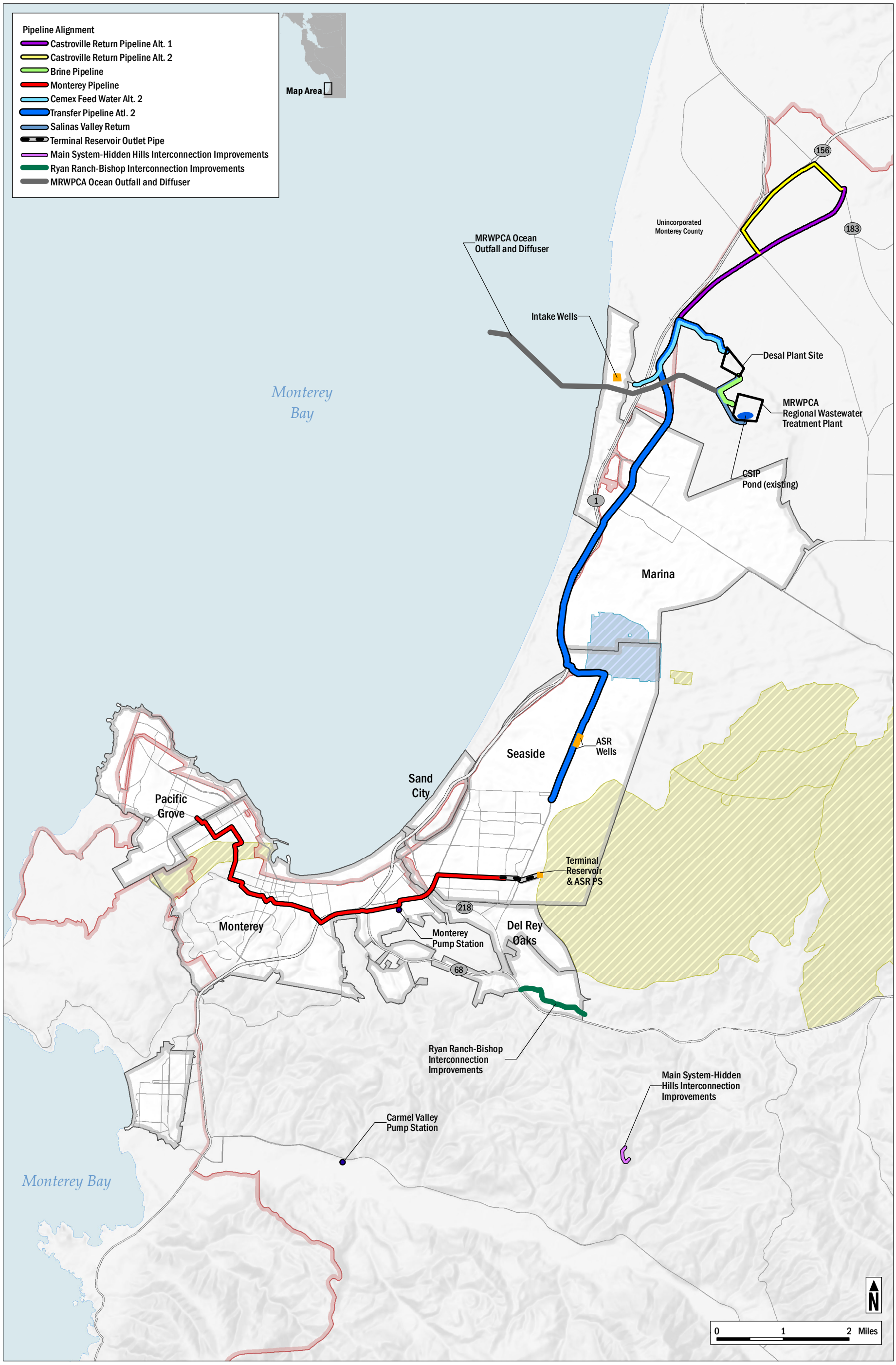
~~Appendix C~~

~~Map~~


5.4 MGD DESALINATION PLANT
ALTERNATIVE INTAKE WELLS AND FEEDWATER PIPELINES
OUTFALL CONNECTIONS
CONNECTION TO CSIP POND
ASR WELLS
POTENTIAL DILUTION WATER INJECTION WELLS
CONNECTION TO EXISTING SYSTEM
FLOW CONTROL STATION
TERMINAL RESERVOIR AND ASR PUMP STATION
VALLEY GREENS PUMP STATION
Legend
Slant Wells
Feedwater Pipeline
Pump-to-Waste Pipeline
Brine Pipeline
Salinas Valley Return Pipeline
Product Water Pipeline
Transfer Pipeline
Monterey Pipeline
Seaside Pipeline
ASR Extraction Pipeline
ASR Injection Pipeline
GWR System Well and Pipeline Corridor
0 2,500 5,000 Feet
CALIFORNIA AMERICAN WATER


9.0 MGD DESALINATION PLANT
ALTERNATIVE INTAKE WELLS AND FEEDWATER PIPELINES
OUTFALL CONNECTIONS
CONNECTION TO CSIP POND
ASR WELLS
CONNECTION TO EXISTING SYSTEM
FLOW CONTROL STATION
TERMINAL RESERVOIR AND ASR PUMP STATION
VALLEY GREENS PUMP STATION
Legend
Slant Wells
Feedwater Pipeline
Pump-to-Waste Pipeline
Brine Pipeline
Salinas Valley Return Pipeline
Product Water Pipeline
Transfer Pipeline
Monterey Pipeline
Seaside Pipeline
ASR Pipeline
0 2,500 5,000
Feet
CALIFORNIA AMERICAN WATER

APPENDIX C
(Updated)



URS

California American Water

Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities

MONTEREY PENINSULA WATER SUPPLY PROJECT, MPWSP

PROJECT OVERVIEW

Project Pipeline Alignments

Appendix D

Permits and Approvals

TABLE 5-6 (revised 4/20/12)
POTENTIAL PERMITS AND APPROVALS FOR THE PROJECT

Agency or Department	*NOTE: The following permits/approvals are preliminary, subject to refinement and verification through the CEQA process and regulatory permitting pre-application and permitting process.* *"?" indicates that the permit may be required, depending on site-specific design and the results of pre-construction surveys.* *"t" indicates permit/approval required for the test slant well.* **Permit or Approval**	Required for				
		Intake Wells	**Discharge**	**Desal Plant**	**Pipelines**	**Appurtenant**
Federal Agencies						
Army Corps of Engineers (Corps)	Nationwide Section 404 Permit (CWA, 33 U.S.C. 1341) Consultation with other federal agencies as required			?	X	?
	Rivers and Harbors Act, Section 10 (structures in navigable waters)		?			
Monterey Bay National Marine Sanctuary (MBNMS)	Review and coordination of all RWQCB 404, Section 10, and NPDES permits	X	X			
National Oceanic & Atmospheric Administration (NOAA) – Fisheries	Endangered Species Act compliance (ESA Section 7 consultation or ESA Section 10 approvals); Sustainable Fisheries Act compliance; Marine Mammal Protection Act compliance; consultation with other federal permits/approvals		X			X
U.S. Coast Guard	Consultation with the Corps on Rivers and Harbors Act		?			
U.S. Department of Defense	Fort Ord, Presidio Finding of Suitability for Lease/Transfer (easements)				X	X
U.S. EPA	State Revolving Fund CEQA-Plus (administered by SWRCB)	X	X	X	X	X
U.S. Fish and Wildlife Service (USFWS)	Endangered Species Act compliance (ESA Section 7 consultation or ESA Section 10 approvals); Migratory Bird Treaty Act compliance	X	X	?	X	X
	Fish and Wildlife Coordination Act (16 U.S.C. 661-667e; the Act of March 10, 1934; ch. 55; 48 stat. 401)	X	X	?	X	X
State Agencies						
California Public Utilities Commission	Certificate of Public Convenience and Necessity (PUC Article 1)	X/t	X	X	X	X
California Coastal Commission (CCC)	Coastal Development Permit. (Public Resources Code 30000 et seq.)	X/t	X		X	X
	Local Coastal Program Amendment (County of Monterey)			?		
California Department of Fish and Game (CDFG)	Incidental Take Permits (CESA Title 14, Section 783.2)	?		?	?	?

	Streambed Alteration Agreement (California Fish and Game Code Section 1602)	?			X	?
California Department of Public Health Services (CDPH)	Permit to Operate a Public Water System (California Health and Safety Code Section 116525)			X		X
California Department of Transportation (Caltrans)	Encroachment Permit (Streets and Highway Code Section 660)				X	
California State Historic Preservation Officer (SHPO)	Section 106 Consultation, National Historic Preservation Act (16 USC 470)	X		X	X	X
California State Lands Commission	Right-of-Way Permit (Land Use Lease) (California Public Resource Code Section 1900); Lease amendment	?/t	?			
Fort Ord Reuse Authority / Army (FORA)	Coordination with FORA for Right of Entry (FOST/FOSL)				X	X
State Water Resources Control Board, Regional Water Quality Control Board	General Construction Activity Storm Water Permit (WQO 99-08-DWQ)	X	X	X	X	X
	Waste Discharge Requirements. (Water Code 13000 et seq.)	X/t			?	X
	401 Water Quality Certification (CWA Section 401)			?	X	?
	National Pollutant Discharge Elimination System (NPDES) Permit (CWA Section 402)	X	X	X	X	X
State Water Resources Control Board, Division of Water Rights	Change in Point of Diversion and Place of Storage to allow Carmel River water to be used for GWR dilution.	X	X	X	X	X
Local Agencies						
CalAm and Local Water Agencies	Participation/purchase agreements	X	X	X	X	X
Cities of Monterey, Seaside, Marina, Sand City	Use Permits (and Coastal Development Permits, as appropriate), encroachment/easement permits, grading permits and erosion control permits are issued pursuant to local city/County codes.	X	X	X	X	X
Monterey Bay Unified Air Pollution Control District (MBUAPCD)	Authority To Construct. (Rule 31) Permit to Operate (Rule 32).			X		X
Monterey County Health Department, Environmental Health Division	Well Construction Permit (MCC, Title 15 Chapter 15.08, Water Wells)	X/t				X
	Hazardous Materials Business Plan (Health and Safety Code Chapter 6.95)			X		X
	Hazardous Materials Inventory (Health and Safety Code Chapter 6.95)			X		X

	Permit to Construct Desalination Facility (MCC Chapter 10.72)			X		
	Variation on Monterey County Noise Ordinance (MCC 10.60.030)			?	?	X
Monterey County Planning and Building Inspection Department	Use Permit (MCC Chapter 21.72 Title 21)			X	X	X
	Coastal Development Permit. (Public Resources Code 30000 et seq.) Local Coastal Plan Amendment			X ?	X	X
	Grading Permit (M.C.C., Grading and Erosion Control Ordinance, Chapter 16.08 – 16.12)			X	X	X
	Erosion Control Permit (MCC, Grading and Erosion Control Ordinance, Chapter 16.08 – 16.12)			X	X	X
Monterey County Public Works Department	Encroachment Permit (Monterey County Code (MCC) Title 14 Chapter 14.040)			X	X	X
Monterey Peninsula Water Management District (MPWMD)	Water System Expansion Permit (MPWMD Board of Directors Ordinance 96)			X	X	X
	ASR System Operating Agreement					?
Monterey Regional Waste Management District	Electric Power Purchase Agreement			?		
Monterey Regional Water Pollution Control Agency	Participation agreements / Sewer Connection Permit		X			
Seaside Groundwater Basin Watermaster	Permit To Operate. (Local district rules)					X
Transportation Agency of Monterey County	Easement				X	
Private Entities						
Landowners	Land lease/sale; Easements and use/encroachment agreements	X	X	X	X	X

~~Appendix E~~

~~Cost Estimate~~

~~M E M O R A N D U M~~

REGISTERED PROFESSIONAL ENGINEER
No. 26189
Exp. 3-31-14
PAUL L. FINDLEY
STATE OF CALIFORNIA
April 20, 2012

~~**To:**~~ ~~Richard Svindland, California American Water~~

~~**From:**~~ ~~Paul Findley, RBF Consulting~~

~~**Date:**~~ ~~April 20, 2012~~

~~**Subject:**~~ ~~**Monterey Peninsula Water Supply Project (MPWSP) Capital and O&M Cost Estimate Update**~~

~~OBJECTIVE~~

~~The objective of this technical memorandum (TM) is to update the capital cost estimates for California American Water's (CAW) Monterey Peninsula Water Supply Project's (MPWSP, or Project) northern facilities and the operation and maintenance (O&M) cost estimates for the entire Project. The northern facilities of the MPWSP are the facilities formerly described as the Regional Facilities of the Monterey Bay Regional Desalination Project. Two possible sizes of desalination plant are discussed in this memorandum; a 5.4 MGD desalination plant that takes in to account a 3,500 AFY Groundwater Recharge (GWR) element provided by Monterey Regional Water Pollution Control Authority (MRWPCA); and a 9.0 MGD desalination plant, which would be implemented if the GWR element is not implemented. Project facilities are summarized here and described in more detail in the Project Description TM dated April 20, 2012, prepared by RBF Consulting.~~

~~These updated cost estimates are referenced in testimony provided by Richard Svindland of California American Water in the matter of the amended application of California American Water Company for a Certificate of Public Convenience and Necessity from California Public Utilities Commission.~~

~~BACKGROUND~~

~~Previous capital cost estimating work by CAW on the Coastal Water Project includes a technical memorandum prepared by RBF Consulting (RBF) entitled *Updated Capital Cost Estimate for the Coastal Water Project, May 20, 2009*; which was appended to Mark Schubert's May 22, 2009 testimony. That report provided estimates for a 10 MGD desalination project located at Moss Landing, and an 11 MGD desalination plant located in North Marina.~~

~~A cost estimate was prepared by RMC Water for the Monterey Bay Regional Desalination Project (Regional Project), which included a 10 MGD desalination plant located in North Marina. This cost estimate was set forth in a table titled *Monterey Bay Regional Water Supply Project, Project Cost Comparison (With Escalation to October 2012)*. From that reference, it is clear that the estimate is based on an assumption that all of the supply wells for the regional desalination plant are slant wells, and that the~~

~~costs are in October 2012 dollars. The capital costs for MCWD and MCWRA are also shown in Exhibit C of the Regional Project's Water Purchase Agreement, as follows:~~

~~Project Facilities Estimated Base Construction Costs~~	~~$140,100,000~~
~~Implementation, Start-up and Acceptance Costs~~	~~$ 29,600,000~~
~~Initial Capital Outfall Expenses~~	~~$ 3,000,000~~
~~MCWD and MCWRA Real Property Acquisition Costs~~	~~$ 2,000,000~~
~~Mitigation Costs~~	~~$ 2,000,000~~
~~Pre-Effective Date Costs and Expenses~~	~~$ 14,000,000~~
~~Project Administration and Oversight Expenses~~	~~$ 3,000,000~~
~~**Subtotal – Estimated Project Facilities Cost**~~	~~**$193,700,000**~~
~~Project Contingency~~	~~$ 46,700,000~~
~~**Subtotal - Estimated Project Facilities Cost**~~	~~**$240,400,000**~~
~~High-end Allowance (for Accuracy)~~	~~$ 42,070,000~~
~~**Total Overall Estimated Project Facilities Cost**~~	~~**$282,470,000**~~
~~Reserve Fund Payments Account~~	~~$ 6,000,000~~
~~Costs of Obtaining Indebtedness~~	~~$ 9,000,000~~
~~**Total**~~	~~**$297,470,000**~~

~~RMC's cost comparison table also includes an estimate for CAW's regional project facilities (aka CAW-Only facilities), in October 2012 dollars, as follows:~~

~~Base Construction Cost~~	~~$ 53,300,000~~
~~Post-Effective Implementation Costs~~	~~$ 14,500,000~~
~~ROW Easements and Land Acquisition~~	~~$ 3,400,000~~
~~Mitigation~~	~~$ 1,000,000~~
~~**Capital Costs (Excluding Contingency)**~~	~~**$ 72,200,000**~~
~~Project Contingency~~	~~$ 22,700,000~~
~~**Most Probable Capital Cost with Contingency**~~	~~**$ 94,900,000**~~
~~High End of Accuracy Range (+25%)~~	~~$118,600,000~~
~~Low End of Accuracy Range (-15%)~~	~~$ 80,700,000~~
~~Pre-Effective Date Costs and Expenses~~	~~$ 36,900,000~~

~~From the Settlement Agreement and the CPCN, it is clear that the cost cap of $106.875 million (i.e., approximately $107 million) for CAW facilities (but without CAW's pre-effective costs) was set at the mid-point between a most probable cost estimate of $94.9 million and the high end of the accuracy range at $118.6 million.~~

~~An estimate of $404 million for the capital cost of all facilities in the Regional Project can be obtained by adding the estimate of $297 million for MCWD/MCWRA facilities to the estimate of $107 million for CAW facilities. Many of the individual line items in the above cost estimates can be consolidated into facilities or facility categories. The consolidated capital cost estimate for the Regional Project is shown in Table 1.~~

~~Table 1~~

~~Regional Project Capital Cost~~

~~Capital Cost Categories~~	~~Estimated Cost (Oct 2012 $)~~
~~MCWD/MCWRA~~	
~~Raw Water & Brine Facilities~~	~~$56,600,000~~
~~Treatment Facility~~	~~$174,200,000~~
~~Conveyance Facilities~~	~~$37,200,000~~
~~**Total MCWD/MCWRA Facilities**~~	~~**$268,000,000**~~
~~Pre-Effective Date Costs~~	~~$14,000,000~~
~~Reserve Requirements and Financing~~	~~$15,000,000~~
~~**Total MCWD/MCWRA Capital Cost**~~	~~**$297,000,000**~~
~~CAW~~	
~~Raw Water and Brine Facilities~~	~~$0~~
~~Treatment Plants~~	~~$0~~
~~Conveyance Facilities~~	~~$57,300,000~~
~~Terminal Reservoir~~	~~$24,200,000~~
~~ASR System~~	~~$25,500,000~~
~~**Total CAW Capital Cost**~~	~~**$107,000,000**~~
~~TOTAL REGIONAL PROJECT CAPITAL COST~~	~~**$404,000,000**~~

~~The objective of this Technical Memorandum is to estimate the capital cost for CAW to implement this portion of the project, and to incorporate changes in the size and location of the desalination plant and intake (feedwater) wells, and changes in the alignment of feedwater and brine pipelines. An additional objective of this Technical Memorandum is to update O&M cost estimates for the entire MPWSP, including the newly defined northern facilities, as well as the southern facilities formerly described as "CAW-Only Facilities".~~

~~Previous relevant O&M cost estimating work by CAW on the Coastal Water Project includes a technical memorandum titled *Basis of Operations and Maintenance Costs for CWP Replacement Projects, (Makrom Shatila, RBF Consulting)*, and *Appendix B North Marina Alternative Replacement Project Operation and Maintenance Cost Summary Years 2017-2021, (RBF Consulting)*, both of which were appended to Mark Schubert's May 22, 2009 testimony.~~

~~The O&M costs reported at that time were $9,670,000 (2009 dollars) per year in the year 2021 for an 11 MGD desalination plant that would deliver 8,800 AFY to CAW and 800 AFY to users in Salinas Valley (via the CSIP system). Avoided costs attributable to the project were also reported as being $2,010,000 per year.~~

~~PROJECT FACILITIES~~

~~The capital cost estimates in this memorandum are based on the facilities shown on Figure 1 and described in Table 2. These facilities are described in more detail in the Project Description TM dated April 20, 2012, prepared by RBF Consulting.~~

~~Table 2~~
~~Summary Description of Facilities~~

~~Facility~~	~~5.4 MGD Desalination Option~~	~~9.0 MGD Desalination Option~~
~~INTAKE WELLS & SUPPLY/RETURN FACILITIES (Option 2 Configuration)~~		
~~Slanted Intake Wells~~	~~Six 12-in. wells, 700 LF, 1840 gpm, 200 hp~~	~~Eight 12-in. wells, 700 LF, 2200 gpm, 200 hp~~
~~Pump-to-Waste Pipeline~~	~~17000 LF of 16-in. diam. HDPE or FPVC~~	
~~Feedwater Pipeline~~	~~24000 LF of 30/36-in. diam. HDPE or FPVC~~	
~~Brine Pipeline~~	~~3300 LF of 24-inch diam. HDPE, FPVC, or PVC~~	
~~SV Return PS & Pipeline~~	~~2 @ 7.5 hp, 700 gpm Located at desalination plant 7000 LF 12-in. diam. PVC~~	~~2 @ 10 hp, 1,000 gpm Located at desalination plant 7000 LF 12-in. diam. PVC~~
~~DESALINATION PLANT~~		
~~Feedwater Receiving Tanks~~	~~2 x 0.5 MG, covered, glass-lined steel~~	
~~Granular Media Filters~~	~~Pressure or Gravity, 2100 SF @ 4.5 gpm/sf~~	~~Pressure or Gravity, 3500 SF @ 4.5 gpm/sf~~
~~Filter Backwash System~~	~~2 x 750 gpm 25 hp pumps, 200,000 gallon storage tank~~	
~~Reverse Osmosis System~~	~~1st Pass + 40-50% to 2nd Pass 4 x 1.8 MGD modules~~	~~1st Pass + 40-50% to 2nd Pass 6 x 1.8 MGD modules~~
~~Post Treatment System~~	~~CO_2 + Calcite + NaOCl, 2 x 4800 cu ft. contactors~~	~~CO_2 + Calcite + NaOCl, 3 x 4800 cu ft. contactors~~
~~Chemical Storage and Feed~~	~~NaOCl, $NaHSO_3$, CO_2, Calcite, NaOH, CIP Chemicals~~	
~~Residuals Handling & Treatment~~	~~1 MG open, lined WWW settling basin with decant PS, 2 x 10,000 gal waste CIP storage tanks, 3 MG open, lined brine storage basin~~	
~~Clearwell PS~~	~~3 x 2100 gpm, 30 hp vfd~~	~~4 x 2100 gpm, 30 hp vfd~~
~~Clearwells~~	~~2 x 1.0 MG circular, lined steel/concrete, above-ground~~	
~~Desalinated Water Pump Sta.~~	~~3 x 2100 gpm, 175 hp vfd~~	~~4 x 2100 gpm, 175 hp vfd~~
~~Emergency Power (for DWPS)~~	~~600 kw diesel eng-gen~~	~~750 kw diesel eng-gen.~~
~~Admin/O&M/Lab Building~~	~~10,000 SF, Single Story~~	
~~Filter Structure~~	~~11,800 SF open pit, with concrete walls.~~	~~16,800 SF open pit, with concrete walls.~~
~~RO/Post Treatment/Chem.Bldg.~~	~~15,600 SF, 30 Ft High~~	~~21,600 SF, 30 Ft High~~
~~DWPS & Eng-Gen Bldg~~	~~2100 SF, Slab on Grade, CMU, Truss Roof System~~	
~~DESALINATED WATER CONVEYANCE PIPELINE (TO CAW)~~		
~~Product Water Pipeline~~	~~32,000 LF of 36-inch diam. ML/CSP 250 psi~~	

~~For the 9.0 MGD desalination option, Project facilities south of the Product Water Pipeline are identical to those previously described as the "CAW-Only Facilities" and the capital cost estimate for these facilities has not been changed. For the 5.4 MGD desalination option, the cost of the ASR Pump Station will need to be increased to allow for higher horsepower pumps to deliver Carmel River water to the GWR injection wells, and an additional pipeline will be required to convey the Carmel River water to the GWR~~

~~injection wells. The capital cost for this pipeline, which could be as high as $7,000,000, is not included in this analysis. However, the costs to increase the horsepower of the ASR Pump Station would be covered by the contingency allowance for that pump station.~~

~~CAPITAL COST ESTIMATING METHODOLOGY AND GENERAL NOTES~~

~~These cost estimates are built on the previous work done in RBF's 2009 technical memoranda, using similar methods. Implementation costs were estimated at 20 percent of base construction cost. Contingencies and mitigation costs were estimated at 25 percent and one percent, respectively, of the sum of base construction costs, implementation costs, and ROW/Land/Outfall costs. Unit quantities and unit costs have been checked and/or developed and have been revised and updated to current conditions.~~

~~Capital costs include construction costs, Land and ROW acquisition, and allowances for implementation, mitigation and contingencies. It should be noted that the design will first be prepared for the 9.0 MGD desalination option, followed by a decision to construct the smaller project, based on the progress of the GWR. Most, if not all, of the design effort for a 9.0 MGD desalination project will be expended even if the smaller project is constructed. For this reason, the implementation costs were estimated to be the same for both the 9.0 MGD and 5.4 MGD desalination options, at 20 percent of the base construction costs of the 9.0 MGD option. Similarly, the mitigation costs for both options are expected to be the same, and were estimated according to the 9.0 MGD desalination project. For the 5.4 MGD desalination option, the incremental increases in implementation costs and mitigation costs that resulted from these adjustments were taken from the contingency allowance, resulting in a lower contingency allowance percentage for the 5.4 MGD desalination option than for the 9.0 MGD desalination option.~~

~~SUMMARY OF UPDATED CAPITAL COST ESTIMATES~~

~~The updated capital cost estimates for the two project options are summarized and compared to the Regional Project in Table 3. Detailed worksheets are also attached. The most probable capital cost for the 9.0 MGD desalination option is estimated to be approximately $208,000,000, with an accuracy range of $177,000,000 to $260,000,000, in current (2012) dollars. The most probable capital cost for the 5.4 MGD desalination option is estimated to be approximately $171,000,000, with an accuracy range of $145,000,000 to $213,000,000, in current (2012) dollars. Consistent with previous estimates, for this stage of project development, the estimate is considered to have an accuracy of -15% to +25%. This accuracy range is shown in Table 3.~~

~~Table 3~~
~~Summary Capital Cost Estimate (2012 Dollars)~~

~~Item~~	~~Regional (10 MGD)~~	~~New CWP~~	
		~~5.4 MGD~~	~~9.0 MGD~~
~~Base Construction Costs~~			
~~Intake Wells/Supply/Return Facilities~~	~~$ 26.3 M~~	~~$ 31.7 M~~	~~$ 37.0 M~~
~~Desalination Plant~~	~~$ 95.1 M~~	~~$ 65.5 M~~	~~$ 84.2 M~~
~~Product Water Pipeline~~	~~$ 18.7 M~~	~~$ 10.9 M~~	~~$ 10.9 M~~
~~Base Construction Subtotal~~	~~$ 140.1 M~~	~~$ 108.1 M~~	~~$ 132.1 M~~
~~Implementation Costs~~	~~$ 32.2 M~~	~~$ 26.4 M~~	~~$ 26.4 M~~
~~ROW/Land/Outfall~~	~~$ 5.0 M~~	~~$ 5.2 M~~	~~$ 6.2 M~~
~~Contingency Allowance~~	~~$ 46.7 M~~	~~$ 28.8 M~~	~~$ 41.3 M~~
~~Mitigation Cost Allowance~~	~~$ 2.0 M~~	~~$ 2.1 M~~	~~$ 2.1 M~~
~~Accuracy Adjustment Low End of Range~~	~~$ 32.0 M~~	~~$ 25.6 M~~	~~$ 31.1 M~~
~~Accuracy Adjustment High End of Range~~	~~$ + 42.0 M~~	~~$ +42.6 M~~	~~$ 51.9 M~~
~~Total Capital Cost at High End of Range~~	~~$ 268 M~~	~~$ 213 M~~	~~$ 260 M~~

~~Intake Wells and Supply/Return Facilities~~

~~This category of facilities includes the facilities required to obtain and deliver raw water (feedwater) to the desalination plant, to convey intermittent pump-to-waste raw water from the intake wells to the MRWPCA outfall, to convey reverse osmosis RO concentrate (brine) from the desalination plant to the MRWPCA outfall, and to convey desalinated water from the desalination plant to the CSIP irrigation water storage basin. Brine storage and re-aeration facilities, and the expected one-time fee for two connections to the MRWPCA outfall are not included in this item (they are included in desalination plant capital costs). At the high end of the accuracy range, the estimated capital costs for these facilities for the 5.4 MGD and 9.0 MGD desalination options are $62 M and $72 M, respectively, in 2012 dollars, with the following breakdown:~~

	~~5.4 MGD~~	~~9.0 MGD~~
~~Base Construction Costs~~		
~~Slanted Intake Wells~~	~~$ 17.6 M~~	~~$ 22.9 M~~
~~Pump-to-Waste Pipeline~~	~~$ 3.5 M~~	~~$ 3.5 M~~
~~Feedwater Pipeline~~	~~$ 8.9 M~~	~~$ 8.9 M~~
~~Brine Pipeline~~	~~$ 0.9 M~~	~~$ 0.9 M~~
~~SV Return PS & Pipeline~~	~~$ 0.8 M~~	~~$ 0.8 M~~
~~Base Construction Cost Subtotal~~	~~$ 31.7 M~~	~~$ 37.0 M~~
~~Implementation Costs~~	~~$ 7.4 M~~	~~$ 7.4 M~~
~~ROW/Land/Outfall~~	~~$ 1.0 M~~	~~$ 1.0 M~~
~~Contingency Allowance~~	~~$ 8.5 M~~	~~$ 11.5 M~~
~~Mitigation Cost Allowance~~	~~$ 0.9 M~~	~~$ 0.9 M~~
~~Accuracy Allowance~~	~~$ 12.4 M~~	~~$ 14.2 M~~
~~Total Capital Cost (High End of Accuracy Range)~~	~~$ 62 M~~	~~$ 72 M~~

~~These intake facility costs are higher than the intake facility costs for the Regional Project for the following reasons:~~

- ~~Despite the reduced desalination plant size, the MRWSP will use more intake wells than the Regional Project (8 wells versus 6 wells) because of different assumptions regarding the capacity of each well, the recovery percentage of the desalination plant, and the addition of standby well capacity;~~
- ~~The addition of a pump-to-waste piping system;~~
- ~~The assumed use of HDD construction methods for connection pipelines between intake wells and for pipelines crossing under coastal dunes; and~~
- ~~Increased electrical service costs for slant well installations.~~

~~Desalination Plant~~

~~This category of facilities includes the facilities required to receive, filter, and desalinate the feedwater pumped from the intake wells; condition and disinfect the desalinated water; process and/or recycle residual streams from the process; store and pump desalinated water; and house equipment and personnel.~~

~~At the high end of the accuracy range, the estimated capital costs for these facilities for the 5.4 MGD and 9.0 MGD desalination options are $128 M and $165 M, respectively, in 2012 dollars, with the following breakdown:~~

	~~5.4 MGD~~	~~9.0 MGD~~
~~Base Construction Cost~~		
~~Plant Inlet and Pretreatment~~	~~$ 6.8 M~~	~~$ 7.6 M~~
~~Reverse Osmosis System~~	~~$ 19.9 M~~	~~$ 29.0 M~~
~~Post Treatment System~~	~~$ 1.1 M~~	~~$ 1.3 M~~
~~Residuals Handling and Treatment~~	~~$ 1.1 M~~	~~$ 1.1 M~~
~~Clearwell PS, Clearwells and DWPS~~	~~$ 5.1 M~~	~~$ 6.1 M~~
~~Plant Infrastructure~~	~~$ 22.0 M~~	~~$ 26.9 M~~
~~Engineering, Mobilization/Demobilization~~	~~$ 9.5 M~~	~~$ 12.2 M~~
~~Base Construction Cost Subtotal~~	~~$ 65.5 M~~	~~$ 84.2 M~~
~~Implementation Costs~~	~~$ 16.8 M~~	~~$ 16.8 M~~
~~ROW/Land/Outfall~~	~~$ 2.7 M~~	~~$ 3.7 M~~
~~Contingency Allowance~~	~~$ 16.6 M~~	~~$ 26.1 M~~
~~Mitigation Cost Allowance~~	~~$ 1.0 M~~	~~$ 1.0 M~~
~~Accuracy Allowance~~	~~$ 25.7 M~~	~~$ 33.2 M~~
~~Total Capital Cost (High End of Accuracy Range)~~	~~$ 128 M~~	~~$ 165 M~~

~~The heart of the desalination plant is the RO process, which has estimated base construction costs of $19.9 M and $29.0 M for the 5.4 MGD and 9.0 MGD options, respectively. The ratio of these costs is approximately 68 percent, which is~~

approximately equal to the ratio of installed capacity for the two plants (7.2 MGD/10.8 ~~MGD=0.66; installed capacity = rated capacity plus standby capacity.)~~

~~Product Water Pipeline~~

~~The budgeted capital cost for this pipeline is $23 M, in 2012 dollars, for both the 9.0 MGD and 5.4 MGD Desalination Options, and is broken down as follows:~~

	~~5.4 MGD~~	~~9.0 MGD~~
~~Base Construction Cost~~	~~$ 10.9 M~~	~~$ 10.9 M~~
~~Implementation Costs~~	~~$ 2.2 M~~	~~$ 2.2 M~~
~~ROW/Land/Outfall~~	~~$ 1.5 M~~	~~$ 1.5 M~~
~~Contingency Allowance~~	~~$ 3.7 M~~	~~$ 3.7 M~~
~~Mitigation Cost Allowance~~	~~$ 0.2 M~~	~~$ 0.2 M~~
~~Accuracy Allowance~~	~~$ 4.5 M~~	~~$ 4.5 M~~
~~Total Capital Cost (High End of Accuracy Range)~~	~~$ 23 M~~	~~$ 23 M~~

~~O&M COST ESTIMATING METHODOLOGY AND GENERAL NOTES~~

~~The annual O&M costs for the MPWSP consist primarily of the following components:~~

- ~~Energy;~~
- ~~Chemicals;~~
- ~~Labor;~~
- ~~Membrane and Media Replacement; and~~
- ~~General Repair and Replacement (R&R)~~

~~O&M cost estimates for Membrane and Media Replacement and General Repair and Replacement are presented here as annual expenses; however, a portion or all of these costs may be treated as capital expenditures in financial analysis.~~

~~Generally, the methodology to estimate O&M Costs follows the methodology described for estimating the North Marina Alternative costs in *Basis of Operations and Maintenance Costs for CWP Replacement Projects, (Makrom Shatila, RBF Consulting, May 20, 2009),* using updated unit cost information. The following sections within explain any differences in the cost estimating method from that used in the previous work.~~

~~For the 9.0 MGD desalination option, the O&M cost estimate is based on operating at the system at full capacity; i.e., use of the above facilities to deliver 9,006 AFY of desalinated water to the CAW system, plus 784 AFY of desalinated water to the CSIP system, plus the O&M costs for BIRP, Segunda Pump Station and the ASR Pump Station to capture and deliver 1,300 AFY of Carmel River water to the ASR wells, plus the O&M costs for the ASR Pump Station to pump 1,406 AFY of desalinated water to the ASR wells, and the O&M costs to recover 2,406 AFY of water from the ASR wells.~~

~~For the 5.4 MGD desalination option, the O&M cost estimate is similarly based on operation of the system at full capacity in which the Project's facilities would be used to deliver 5,506 AFY of desalinated water to the CAW system, plus 484 AFY of desalinated water to the CSIP system. This option also includes:~~

- ~~BIRP costs to treat 1,300 AFY of Carmel River Water;~~
- ~~Segunda Pump Station power costs to pump 3,500 AFY of Carmel River water;~~
- ~~ASR Pump Station power costs to pump 3,500 AFY of Carmel River water to the GWR injection wells; and~~
- ~~ASR well power costs to pump 7,000 AFY (3,500 AFY Carmel River injection water + 3,500 AFY injected GWR water) from the ASR wells to the CAW system.~~

~~SUMMARY OF UPDATED O&M COST ESTIMATES~~

~~A summary of the O&M cost estimates for the 5.4 MGD and 9.0 MGD options is shown in Table 4 and discussed in the paragraphs that follow. Detailed worksheets are also attached.~~

~~Table 4~~
~~Summary of MPWSP Annual O&M Costs (2012 dollars)~~

~~Cost Category~~	~~5.4 MGD Desalination Option~~	~~9.0 MGD Desalination Option~~
~~Energy~~	~~$ 4,650,000~~	~~$ 6,500,000~~
~~Chemicals~~	~~$ 560,000~~	~~$ 720,000~~
~~Labor & Miscellaneous~~	~~$ 2,680,000~~	~~$ 3,070,000~~
~~Membrane and Media Replacement~~	~~$ 360,000~~	~~$ 520,000~~
~~General Repair and Replacement~~	~~$ 1,600,000~~	~~$ 1,950,000~~
~~Purchased GWR Water (at $3000/AF)[1]~~	~~$ 10,500,000~~	~~--~~
~~Total O&M Annual Cost~~	**~~$ 20,350,000~~**	**~~$12,760,000~~**

~~Notes: 1. Purchase price is an assumption and includes all capitalized and annual expenses for treatment, conveyance and injection of advanced treated water from PCA.~~

~~Energy Costs~~

~~Energy costs were developed for the following components:~~

- ~~Pumping (intake wells, desalinated water pump station (to CAW and to SV), ASR pump station, Valley Greens Pump Station, ASR wells and Seaside wells extraction);~~
- ~~Treatment process (filtrate forwarding, high pressure RO feed, energy recovery boost, second pass feed, clearwell lift, backwash supply, decant recovery);~~
- ~~Misc. facility power usage.~~

~~The total energy usages for the two desalination options are 35,300,000 kwhrs/yr and 50,800,000 kwhrs/yr, for the 5.4 MGD and 9.0 MGD desalination options, respectively.~~

~~Table 5 shows the pumping lifts used in the calculation of power costs for the major pumps in the system.~~

~~The RO process is assumed to be single pass, followed by a partial second pass. The RO process product water produced is a blend of first and second pass permeates and is assumed to be 40 percent second pass permeate. An operating pressure of 1000 psi has been assumed for the first pass (50 psi provided by the filtrate forwarding pump and 950 psi provided by the high pressure pump), and 125 psi for the second pass. An overall recovery rate of 43 percent has been assumed for the RO process, which includes the additional losses that occur in the partial second pass.~~

~~Discussions were held with Pacific Gas and Electric (PG&E) in 2008 and 2009 to determine which electric rate schedule is applicable to each proposed facility. No discussions with PG&E have occurred since 2009, and the current rate schedules have not been reviewed, however, the power rates that were used in the 2009 analysis have been escalated at four percent per year for three years for the purposes of this current O&M cost estimate.~~

~~Table 5~~
~~Pumping Lifts Used for Power Cost Calculations~~

~~Pump~~	~~Total Dynamic Head (TDH) in Feet~~	
	~~5.4 MGD Desalination Option~~	~~9.0 MGD Desalination Option~~
~~Intake Wells~~	~~240~~	~~240~~
~~Filtrate Forwarding Pumps to RO~~	~~120~~	~~120~~
~~High Pressure RO Feed Pumps~~	~~2200~~	~~2200~~
~~Energy Recovery Booster Pumps~~	~~280~~	~~280~~
~~Second Pass Feed Pumps~~	~~290~~	~~290~~
~~Clearwell Pump Station~~	~~45~~	~~45~~
~~Desalinated Water Pump Station (to CAW)~~	~~220~~	~~220~~
~~Salinas Valley Return Pump Station~~	~~25~~	~~30~~
~~ASR Pump Station~~	~~200~~	~~60~~
~~ASR Wells~~	~~560~~	~~450~~
~~Carmel Valley Wells (to and through BIRP)~~	~~400~~	~~400~~
~~Valley Greens Pump Station~~	~~90~~	~~90~~
~~Segunda Pump Station~~	~~270~~	~~270~~

~~Chemical Costs~~

~~Several chemicals are required during the pretreatment, desalination, and post-treatment processes. The chemicals that are assumed to be required during the treatment process consist of:~~

- ~~Sodium Hypochlorite (Iron oxidant, Disinfection)~~
- ~~Sodium bisulfite (Dechlorination)~~

- ~~Carbon Dioxide (Alkalinity addition)~~
- ~~Lime (calcite) (Remineralization)~~
- ~~Sodium Hydroxide (pH adjustment)~~
- ~~Various chemicals used in the Clean-in-Place (CIP) process for the RO membranes~~

~~Annual chemical consumption values are calculated based on flow rate and the dosages listed below:~~

- ~~Sodium Hypochlorite – applied to plant raw feedwater at 1.3 mg/L, final plant product water at 2 mg/L, and ASR well extraction at 2 mg/L;~~
- ~~Sodium bisulfite – applied to desalination plant filtered feedwater at 1.3 mg/L and Carmel River water injected into ASR or GWR wells at 2 mg/L;~~
- ~~Carbon Dioxide – applied to desalination plant product water at 15 mg/L;~~
- ~~Lime (calcite) – applied to desalination plant product water at 35 mg/L as $CaCO_3$;~~
- ~~Sodium Hydroxide – applied to desalination plant product water at 2 mg/L;~~
- ~~BIRP chemicals – Estimated at $23/AF; and~~
- ~~CIP chemicals – not estimated, costs are negligible~~

~~For the 2009 O&M cost analysis, chemical costs were obtained from Univar USA, which is a leading chemical distributor in the United States. These chemical unit costs were escalated to 2012 prices at 4 percent per year. Some adjustments were also made based on consumption, with lower unit prices being assumed for chemicals that can be purchased in larger bulk quantities.~~

~~Labor Costs~~

~~The labor rates that were used in the 2009 analysis were escalated to 2012 at 4 percent per year. Some adjustments in staffing levels were made to account for the smaller desalination plant sizes and the anticipated sharing of staff between the BIRP facility and the desalination plant.~~

~~Membrane Replacement Costs~~

~~Membrane replacement costs associated with reverse osmosis membranes are included in the annual O&M cost, with approximately 17 percent of the membranes being replaced on a yearly basis. As mentioned previously, some or all of these costs may be treated as capital expenses. Membrane replacement cost associated with RO membranes is calculated below:~~

~~For 5.4 MGD desalination plant~~

- ~~(2350 1st pass elements x 0.167 = 395 elements)x $600/element = $240,000/yr~~
- ~~(480 - 2nd pass elements x 0.167 = 80 elements) x $600/element = $ 50,000/yr~~

~~For 9.0 MGD desalination plant~~

- ~~(3520 - 1st pass elements x 0.167 = 590 elements)x $600/element = $ 350,000/yr~~
- ~~(720 - 2nd pass elements x 0.167 = 120 elements) x $600/element = $ 70,000/yr~~

~~This item also includes $70,000/yr for the 5.4 MGD desalination plant, and $100,000/yr for the 9.0 MGD desalination plant to cover replacement of multi-media sand in the pretreatment filters and replacement of cartridge filter media.~~

~~General Repair and Replacement~~

~~A general Repair and Replacement (R&R) cost is included in the annual O&M costs for both projects. The R&R cost is a budgeted amount based on a long-term average of expenditures for the repair and/or replacement of mechanical equipment (pumps, etc.), electrical equipment, instrumentation and controls, and basic facility maintenance. As mentioned previously, some portion of these costs may be treated as capital expenses. Industry standard assumptions for this type of cost range from one percent to three percent per year as a percentage of construction cost, with the higher percentages occurring as the facilities approach the end of their useful life. For newly constructed facilities, the annual average R&R cost was estimated at being 1.5 percent of the basic construction cost of the non-pipeline elements of the project, as follows:~~

- ~~For the 5.4 MGD option: 0.015 x $107,000,000 = $1,600,000/yr.~~
- ~~For the 9.0 MGD option: 0.015 x $130,000,000 = $1,950,000/yr.~~

APPENDIX E
(Updated)

M E M O R A N D U M

To: Richard Svindland, CAW

From: Ian Crooks and Chris Cook, P.E., CAW

Date: December 14, 2015

Subject: Monterey Peninsula Water Supply Project (MPWSP)

Capital and O&M Cost Estimate Update

OBJECTIVE

The objective of this technical memorandum (TM) is to update the Monterey Peninsula Water Supply Project's (MPWSP, or Project) capital and operation and maintenance (O&M) estimated costs with additional information received since the previous TM prepared by RBF Consulting (RBF) dated January 9, 2013.

BACKGROUND

For background on capital and O&M cost estimating work completed prior to 2013, refer to the background section of the TM by RBF from January 9, 2013. Since the RBF report, a design build (DB) contract has been signed for the desalination plant that is currently at 60% construction documents (CD). California American Water (CAW) has also received proposals from contractors for construction of the source water slant wells and conveyance facilities which include the "CAW-Only Facilities".

PROJECT FACILITIES

The northern facilities capital cost estimates in this memorandum are based on Table 1 below. For the previous facilities description, refer to Table 2 of RBF's TM dated January 9, 2013.

Table 1
Summary Description of Northern Facilities

Facility	6.4 MGD Desalination Option	9.6 MGD Desalination Option
INTAKE WELLS & SUPPLY/RETURN FACILITIES		
Slant Test Well	790 LF, 19-Deg, 10-Inch, Diam., 2,000 gpm	
Slant Intake Wells and Pipelines	Seven 10-in. wells, 1000 LF, 14-deg,2000 gpm	Nine 10-in. wells, 1000 LF, 14-deg, 2000 gpm
Submersible Pump and Motor	Eight 2,000 gpm, 300 hp	Ten 2,000 gpm, 300 hp
Intake Electrical and I&C	RTUs, VFDs, Cable, MCCs	
Feedwater Pipeline	15,500 LF of 42-inch. diamond 30-inch HDPE	
Brine Return & SVR Pipelines	5,000 LF of 24-inch diam. & 6,200 LF of 12-inch	
Connection to Outfall	Metering Structure & outfall connection	
DESALINATION PLANT		
Granular Media Filters	7 pressure filters, 12 ft dia. x 48 ft long	10 pressure filters, 12 ft dia. X 48 ft long
Filtered Water Tanks	2 tanks x 0.3 MG circular, lined steel, above-ground	
Filtered Water Pumps	2 pumps x 7.9 MGD w/VFDs; 2 pumps x 4.0 MGD w/VFDs	2 pumps x 11.9 MGD w/VFDs; 2 pumps x 5.9 MGD w/VFDs
Cartridge Filters	5 filters	7 filters
Filter Backwash System	2 pumps x 15.6 MGD, constant speed	
Reverse Osmosis System	1st Pass + 40% to 2nd Pass 5 modules x 1.6 MGD w/VFDs; energy recovery on 1st Pass	1st Pass + 40% to 2nd Pass 7 modules x 1.6 MGD w/VFDs; energy recovery on 1st Pass
Post Treatment System	UV Disinfection, CO2, Ca(OH)2, NaOCl, NaOH, ZnPO4	UV Disinfection, CO2, Ca(OH)2, NaOCl, NaOH, ZnPO4
Chemical Storage and Feed	NaOCl (onsite generation), NaHSO3, CO2, Ca(OH)2, NaOH, ZnPO4, H2SO4, Membrane Antiscalant, Membrane Cleaning Solutions	
Filter Backwash Reclamation System	2 reclamation basins x 0.34 MG open, lined with decant; 3 reclamation pumps x 0. 5 MGD w/ VFDs	
Brine Storage and Disposal	1 equalization basin x 3 MG open, lined; 2 pumps x 6 MGD w/VFDs; dechlorination system; aeration system	
Treated Water Tanks	2 tanks x 0.75 MG circular, concrete, baffled, above-ground	
Treated Water Pump Station	2 pumps x 3.2 MG w/ VFDs; 2 pumps x 1.6 MGD w/ VFDs	2 pumps x 4.8 MGD w/ VFDs; 2 pumps x 2.4 MGD w/VFDs
Salinas Valley Pump Station	2 pumps x 1.2 MG w/ VFDs;	2 pumps x 1.2 MG w/ VFDs;
Emergency Power (for DWPS)	500 kW diesel generator	750 kW diesel generator
Admin/O&M/Lab Building	6,000 SF, single story, 18 ft high	
Filter Building	3,500 SF, single story, 24 ft high	4,000 SF, single story, 24 ft high
RO and Chemical Building	30,000 SF, single story, 30 ft high 19,200 SF, 26 Ft High	
DESALINATED WATER CONVEYANCE PIPELINE (TO CAW)		
Transfer Pipeline (desal to Seaside border)	34,000 LF of 36-inch diam.	

The project facilities south of where the Transfer Pipeline meets the Seaside border, described as the "CAW-Only Facilities", are summarized in table 2 below.

Table 2
Summary Description of Southern "CAW-Only Facilities"

Facility	6.4 MGD Desalination Option	9.6 MGD Desalination Option
CAW Conveyance System		
Transfer Pipeline (Seaside Border to Terminal Reservoir)	14,000 LF of 36-inch diam.	
Monterey Pipeline	35,000 LF of 36-inch diam.	
Monterey Pump Station	2 x 50 HP & 1 x 100 HP	
Valley Greens Pump Station	3 x 50 HP	
Terminal Reservoir		
Reservoir Structure	2 x 3 MG	
ASR System		
Wells 5 & 6	2 wells	
ASR Pipeline	13,000 LF of 16-inch diam.	

CAPITAL COST ESTIMATING METHODOLOGY AND GENERAL NOTES

Capital costs include construction costs, Land and ROW acquisition, and allowances for implementation, escalation, mitigation and contingencies. These cost estimates are built on the previous work done in RBF's January 9, 2013 technical memoranda, using similar costing spreadsheets. Base construction costs were updated with costs indicated in the desalination plant DB contract and proposals received for both the construction of source water slant wells and conveyance facilities. Additional development of the overall project design resulted in updating of configurations, process design, quantities and materials.

The following are additional cost conditions used for estimating allowances:

- **Implementation** costs were totaled to date and then a forecast estimate was added for the additional years to complete the project. The desalination plant engineering and mobilization costs were subtracted from the implementation costs to date, since they are included in the base construction DB contract. Most, if not all, of the design effort for a 9.6 MGD desalination project will be expended even if the smaller project is constructed. For this reason, the implementation costs were estimated to be the same for both the 9.6 MGD and 6.4 MGD desalination options.
- **Escalation Allowance** was added with 12.25% for the desalination plant and 4% for all other project components, except the ASR System.
- **Contingencies** were broken down between known and estimated costs with ten percent contingency for the sum of known base construction cost and twenty-five percent contingency for the sum of estimated base construction cost.
- **Mitigation** costs were reduced to zero percent since the mitigation risk has been transferred to the contractor via the plans and specification in which the contractors bid. For new mitigation items that may appear in the next version of the Draft EIR, the remaining Contingency budget will be used to cover those costs.

SUMMARY OF UPDATED CAPITAL COST ESTIMATES

The updated capital cost estimates for the 6.4 MGD and 9.6 MGD project options are summarized below and are compared with the estimated costs at the time of the Settlement. The 2012 Dollar total capital cost did not take into account the escalation allowance, which is simply indicated as "NA".

Table 3
Summary Capital Cost Estimate (2015 vs 2012 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Base Construction Costs				
Intake Wells/Supply/Return Facilities	$51 M	$ 58 M	$ 39 M	$ 47 M
Desalination Plant	$ 80 M	$ 87 M	$ 65 M	$ 84 M
Northern Transfer Pipeline	$14 M	$ 14 M	$ 11 M	$ 11 M
CAW Convey., Term. Reser., & ASR Systems	$ 71 M	$ 71 M	$ 53 M	$ 53 M
Base Construction Subtotal	$ 216 M	$ 229 M[1]	$ 168 M	$ 195 M
Implementation Costs	$ 52 M	$ 52 M	$ 43 M	$ 43 M
ROW/Land/Outfall	$ 15 M	$ 15 M	$ 8 M	$ 9 M
Escalation Allowance	$ 13 M	$ 15 M	NA	NA
Contingency Allowance	$ 26 M	$ 28 M	$ 42 M	$ 57 M
Mitigation Cost Allowance	NA	NA	$ 3 M	$ 3 M
Brine & Potrero Rd	see Note[2]	see Note[2]	$ 32 M	$ 32 M
Total Capital Cost	$ 322 M	$ 338 M[1]	$ 296 M	$ 338 M[1]

A further comparison breakdown of the individual base construction components are described in the following capital cost sections.

Intake Wells and Supply/Return Facilities

This category of facilities includes the facilities required to obtain and deliver raw water (feedwater) to the desalination plant, to convey intermittent pump-to-waste raw water from the intake wells to the MRWPCA outfall, to convey reverse osmosis RO concentrate (brine) from the desalination plant to the MRWPCA outfall, and to convey desalinated water from the desalination plant to the CSIP irrigation water storage basin. The expected one-time fee for connection to the MRWPCA outfall along with potential outfall improvements, have been added since the Settlement. The cost breakdown summary is indicated below in Table 4:

[1] The total does not equal the sum of the above line items due to rounding.
[2] A brine outfall modification cost has been included in the intake/discharge portion of the estimate. No further cost has been allocated for the Potrero Road pipeline due to the promising test well results. However, the budget amount is still needed to cover the increases in pipeline costs on the project.

Table 4
Intake Wells and Supply/Return Facilities Cost Estimate (2015 vs 2012 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Base Construction Costs				
Slant Test Well	$ 5.7 M	$ 5.7 M	$ 5.0 M	$ 5.0 M
Slant Intake Wells	$ 19.8 M	$ 25.1 M	$ 16.2 M	$21.6 M
Intake Pump Station	NA	NA	$ 2.9 M	$ 4.2 M
Well Mech. Vault & Assembly	$ 0.4 M	$ 0.5 M	NA	NA
Submersible Pump and Motor	$ 2.0 M	$ 2.5 M	NA	NA
Intake Electrical and I&C	$ 1.6 M	$ 2.0 M	NA	NA
Beach Facilities	NA	NA	$ 5.4 M	$ 6.1 M
Tunnel Under Dunes	NA	NA	$ 5.0 M	$ 5.0 M
Comparison Subtotal	$ 29.5 M	$ 35.8 M	$ 34.5 M	$ 41.9 M
Feedwater Pipeline	$ 10.6 M	$ 10.6 M	$ 2.7 M	$ 3.1 M
Brine, SVR Pipeline, & Outfall Connection	$ 4.2 M	$ 4.2 M	$ 1.9 M	$ 1.9 M
Outfall Improvements	$ 7.0 M	$ 7.0 M	NA	NA
Base Construction Subtotal	$ 51.3 M	$ 57.6 M	$ 39.1 M	$ 46.9 M
Implementation Costs	$ 13.7 M	$ 13.7 M	$ 9.4 M	$ 9.4 M
ROW/Land/Outfall	$ 5.1 M	$ 5.1 M	$ 2.9 M	$ 3.7 M
Escalation Allowance	$ 2.0 M	$ 2.2 M	NA	NA
Contingency Allowance	$ 7.1 M	$ 7.9 M	$ 10.0 M	$ 15.0 M
Mitigation Cost Allowance	NA	NA	$ 0.7 M	$ 0.7 M
Total Capital Cost	$ 79.2 M	$ 86.5 M	$ 62.1 M	$ 75.7 M

The items indicated as 'NA' are based on design updates or changes in governmental agency requirements.

Desalination Plant

This category of facilities includes the facilities required to receive, filter, and desalinate the feedwater pumped from the intake wells; condition and disinfect the desalinated water; process and/or recycle residual streams from the process; store and pump desalinated water; and house equipment and personnel.

Table 5
Desalination Plant Cost Estimate (2015 vs 2012 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Base Construction Costs				
Plant Inlet and Pretreatment	Included in DB	Included in DB	$ 5.4 M	$ 7.2 M
Reverse Osmosis System	Included in DB	Included in DB	$ 21.0 M	$ 29.3 M
Post Treatment System	Included in DB	Included in DB	$ 1.1 M	$ 1.3 M
Residuals Handling and Treatment	Included in DB	Included in DB	$ 1.1 M	$ 1.1 M
Clearwell PS, Clearwells and DWPS	Included in DB	Included in DB	$ 4.9 M	$ 6.2 M
Plant Infrastructure	Included in DB	Included in DB	$ 21.6 M	$ 26.4 M
Engineering, Mobilization/Demob.	$ 11.0 M	$ 11.2 M	$ 9.4 M	$ 12.1 M
Base Construction Subtotal	$ 79.8 M	$ 87.0 M	$ 64.5 M	$ 83.6 M
Implementation Costs	$ 18.0 M	$ 18.0 M	$ 16.7 M	$ 16.7 M
ROW/Land	$ 0.6 M	$ 0.6 M	$ 0.6 M	$ 0.6 M
Escalation Allowance	$ 8.4 M	$ 9.3 M	NA	NA
Contingency Allowance	$ 8.0 M	$ 8.7 M	$ 16.0 M	$ 25.2 M
Mitigation Cost Allowance	NA	NA	$ 1.0 M	$ 1.0 M
Total Capital Cost	$ 114.8 M	$ 123.6 M	$ 98.8 M	$ 127.1 M

The Updated Project Cost estimate has several cells indicating 'included in DB'. This is because CAW has a DB contract for the desalination plant, so the Base Construction Subtotal is fixed and not dependent on the breakdown of subcomponents.

The 2015 Dollar escalation allowance is based off of 3.5% over 3.5 years (12.25% total). This escalation allowance is multiplied by the difference of the Base Construction Subtotal and the Engineering, Mobilization/Demobilization cost.

Northern Transfer Pipeline

Table 6 shows the transfer pipeline from the Desalination Plant to the border of Seaside.

Table 6
Northern Transfer Pipeline Cost Estimate (2015 vs 2012 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Base Construction Costs	$ 13.9 M	$ 13.9 M	$ 10.9 M	$ 10.9 M
Implementation Costs	$ 3.3 M	$ 3.3 M	$ 2.2 M	$ 2.2 M
ROW/Land	$ 6.1 M	$ 6.1M	$ 1.5 M	$ 1.5 M
Escalation Allowance	$ 0.5 M	$ 0.5 M	NA	NA
Contingency Allowance	$ 1.4 M	$ 1.4 M	$ 3.7 M	$ 3.7 M
Mitigation Cost Allowance	NA	NA	$ 0.2 M	$ 0.2 M
Total Capital Cost	$ 25.2 M	$ 25.2 M	$ 18.5 M	$ 18.5 M

Facilities in CAW Service Area

Table 7 shows the Facilities in the CAW Service Area (aka "CAW-Only Facilities"). This includes pipelines, pump stations, and terminal reservoir.

Table 7
Southern Transfer Pipeline Cost Estimate (2015 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Base Construction Costs				
Transfer Pipeline (Seaside to Term. Res.)	$ 9.7 M	$ 9.7 M	$ 7.1 M	$ 7.1 M
So. Trans. Pipeline (1st to Seaside Turnout)			$ 6.2 M	$ 6.2 M
Monterey Pipeline	$ 32.9 M	$ 32.9 M	$ 13.2 M	$ 13.2 M
Monterey Transfer Pump Station	$ 2.5 M	$ 2.5 M	$ 1.5 M	$ 1.5 M
Valley Greens Pump Station	$ 1.9 M	$ 1.9 M	$ 0.3 M	$ 0.3 M
Terminal Reservoir	$ 11.8 M	$ 11.8 M	$ 9.2 M	$ 9.2 M
ASR Wells 5 & 6	$ 8.0 M	$ 8.0 M	$ 6.6 M	$ 6.6 M
ASR Pipeline	$ 4.0 M	$ 4.0 M	$ 3.4 M	$ 3.4 M
Base Construction Subtotal	$ 70.8 M	$ 70.8 M	$ 53.4 M	$ 53.4 M
Implementation Costs	$ 16.8 M	$ 16.8 M	$ 14.5 M	$ 14.5 M
ROW/Land	$ 2.8 M	$ 2.8 M	$ 3.4 M	$ 3.4 M
Escalation Allowance	$ 2.5 M	$ 2.5 M	NA	NA
Contingency Allowance	$ 9.7 M	$ 9.7 M	$ 12.7 M	$ 12.7 M
Mitigation Cost Allowance	NA	NA	$ 1 M	$ 1 M
Total Capital Cost	$ 102.6 M	$ 102.6 M	$ 85.0 M	$ 85.0 M

Refer to summary table 3 for a comparison of overall 2012 Dollars to 2015 Dollars.

O&M COST ESTIMATING METHODOLOGY AND GENERAL NOTES

The annual O&M costs for the MPWSP consist primarily of the following components:

- Energy;
- Chemicals;
- Labor;
- Membrane and Media Replacement; and
- General Repair and Replacement (R&R)

O&M cost estimates for Membrane and Media Replacement and General Repair and Replacement are presented here as annual expenses; however, a portion or all of these costs may be treated as capital expenditures in financial analysis.

Generally, the methodology to estimate O&M Costs follows the methodology described in RBF's cost report dated January 9, 2013, using updated unit cost information. The following sections within explain any differences in the cost estimating method from that used in the previous work.

SUMMARY OF UPDATED O&M COST ESTIMATES

A summary of the O&M cost estimates for the 6.4 MGD and 9.6 MGD options is shown in Table 8 and discussed in the paragraphs that follow. Detailed worksheets are also attached.

Table 8
Summary of MPWSP Annual O&M Costs (2015 vs 2012 Dollars)

Item	Dec. 2015 Update (2015 Dollars)		Nov. 2013 Update (2012 Dollars)	
	6.4 MGD	9.6 MGD	6.4 MGD	9.6 MGD
Energy	$4,580,000	$6,090,000	$4,950,000	$6,600,000
Chemicals	$920,000	$1,200,000	$630,000	$770,000
Labor & Miscellaneous*	$3,360,000	$3,680,000	$2,730,000	$3,090,000
Membrane and Media Replacement	$90,000	$120,000	$410,000	$550,000
General Repair and Replacement	$1,570,000	$1,950,000	$1,580,000	$1,960,000
Purchased GWR Water ($2500/AF)	$8,750,000	NA	$8,750,000	NA
Total O&M Annual Cost	**$19,270,000**	**$13,040,000**	**$19,050,000**	**$12,970,000**

* Added cost for Ocean and Basin Monitoring

Energy Costs

Energy costs were developed for the following components:

- Pumping (intake well pump and motors, Monterey pump station, Valley Greens Pump Station, ASR wells and Seaside wells extraction);
- Treatment process (Desal Plant and Begonia Iron Removal Plant);
- Miscellaneous facility power usage

Pump headloss and flow rates were updated based on new design parameters which resulted in changes in energy consumption.

The electrical rates from 2012 were increased based on a PG&E average tarrif rate increase from December 2012 to December 2015 by 13% for summer and 9% for winter.

Chemical Costs

Several chemicals are required during the pretreatment, desalination, and post- treatment processes. The chemicals that are assumed to be required during the treatment process consist of:

- Sodium Hypochlorite (Iron oxidant, Disinfection)
- Sodium Bisulfite (Dechlorination)
- Carbon Dioxide (Alkalinity addition)
- Lime (calcite) (Remineralization)
- Sodium Hydroxide (pH adjustment)
- Various chemicals used in the Clean-in-Place (CIP) process for the RO membranes

Chemical costs were updated based on the CAW and CDM Smith actual $/lb chemical costs. Additionally updates in chemical costs related to the desalination plant were provided in CDM Smith's 2013 report

on estimated O&M costs.

Labor Costs & Miscellaneous

The labor rates that were used in the 2012 analysis were determined to still be accurate for 2015 Dollars. Additional costs were added for Ocean and Basin Monitoring.

Media/Membrane Replacement Costs

Media and membrane replacement costs associated with reverse osmosis membranes are included in the annual O&M cost. It assumes the following:

- Media replacement of 0.5 inches loss per vessel per year
- CIP cartridge filter replacement for each train and stage, 2 per year

General Repair and Replacement

An general Repair and Replacement (R&R) cost is included in the annual O&M costs for both projects. The R&R cost is a budgeted amount based on a long term average of expenditures for the repair and/or replacement of mechanical equipment (pumps, etc.), electrical equipment, instrumentation and controls, and basic facility maintenance. As mentioned previously, some portion of these costs may be treated as capital expenses. Industry standard assumptions for this type of cost range from one percent to three percent per year as a percentage of construction cost, with the higher percentages occurring as the facilities approach the end of their useful life.

Purchased GWR Water

For now an initial value of $2500 / AF is being used. This value may change based on new information to be filed in January 2016.

Appendix F

Revenue Requirement

Monterey Peninsula Water Supply Solution
Application 12-04-xxx

Plant Size	Financing	1st Year Rev Req of Desal Facilities ($ millions)	CAW Only Facilities	Total Facilities	Current Monterey 2011 Rev Req	Total Revenue Requirement Desal Project	Estimated Rev Req Increase
9.0 MGD	No SRF	**$32.2**	**$13.8**	**$46.0**	**$45.4**	**$91.4**	**101.4%**
9.0 MGD	SRF	**$28.9**	**$11.5**	**$40.4**	**$45.4**	**$85.8**	**88.9%**
5.4 MGD w/ GWR	No SRF	**$33.3**	**$13.8**	**$47.1**	**$45.4**	**$92.5**	**103.8%**
5.4 MGD w/ GWR	SRF	**$29.3**	**$11.5**	**$40.8**	**$45.4**	**$86.2**	**89.9%**

Note: Assumes 42% Equity / 58% Debt

Appendix G

Bill Impact

9MGD Plant, no GRW, no SRF

Year	Revenue Increase	Percent Increase	Monthly Bill: urrent Rates Propose w/o MPWSP Except Surch #1	Monthly Bill: Proposed w/ MPWSP with Surch #1 & 2	Percent Increase
2013	$15,294,585	33.89%	$44.54	$57.90	30.00%
2014	$34,987,977	77.52%	$44.54	$71.26	60.00%
2015	$40,095,496	88.84%	$44.54	$71.26	60.00%
2016	$41,090,058	91.04%	$44.54	$71.26	60.00%
2017	$49,300,000	109.23%	$44.54	$82.24	84.65%

9MGD Plant, no GRW, SRF

Year	Revenue Increase	Percent Increase	Monthly Bill: Proposed w/o MPWSP Except Surch #1	Monthly Bill: Proposed w/ MPWSP with Surch #1 & 2	Percent Increase
2013	$15,294,585	33.89%	$44.54	$57.90	30.00%
2014	$34,987,977	77.52%	$44.54	$71.26	60.00%
2015	$40,095,496	88.84%	$44.54	$71.26	60.00%
2016	$41,090,058	91.04%	$44.54	$71.26	60.00%
2017	$44,600,000	98.82%	$44.54	$79.06	77.50%

5.4MGD Plant, GRW, no SRF

Year	Revenue Increase	Percent Increase	Monthly Bill: Proposed w/o MPWSP Except Surch #1	Monthly Bill: Proposed w/ MPWSP with Surch #1 & 2	Percent Increase
2013	$15,294,585	33.89%	$44.54	$57.90	30.00%
2014	$34,987,977	77.52%	$44.54	$71.26	60.00%
2015	$40,095,496	88.84%	$44.54	$71.26	60.00%
2016	$41,090,058	91.04%	$44.54	$71.26	60.00%
2017	$49,800,000	110.34%	$44.54	$82.52	85.27%

5.4MGD Plant, GRW, SRF

Year	Revenue Increase	Percent Increase	Monthly Bill: Proposed w/o MPWSP Except Surch #1	Monthly Bill: Proposed w/ MPWSP with Surch #1 & 2	Percent Increase
2013	$15,294,585	33.89%	$44.54	$57.90	30.00%
2014	$34,987,977	77.52%	$44.54	$71.26	60.00%
2015	$40,095,496	88.84%	$44.54	$71.26	60.00%
2016	$41,090,058	91.04%	$44.54	$71.26	60.00%
2017	$44,300,000	98.15%	$44.54	$76.51	71.77%

~~Appendix H~~

~~Updated CEQA Project Description~~

~~M E M O R A N D U M~~

~~**To:**~~ ~~Richard Svindland, California American Water~~

~~**From:**~~ ~~Paul Findley/Kevin Thomas/Sarp Sekeroglu, RBF Consulting~~

~~**Date:**~~ ~~April 20, 2012~~

~~**Subject: Monterey Peninsula Water Supply Project (MPWSP) Project Description**~~

~~INTRODUCTION~~

~~The Monterey Peninsula Water Supply Project (MPWSP) includes the following facilities: a subsurface beach well intake system; a seawater desalination plant north of the City of Marina at a site west of the Monterey Regional Water Pollution Control Agency (PCA) wastewater treatment facility; open water discharge of brine through the PCA outfall; desalinated water conveyance and storage infrastructure, including approximately 25 miles of pipeline; and Aquifer Storage and Recovery (ASR) facilities.~~ ~~**Tables 1 and 2**~~ ~~provide a summary description for each component of the MPWSP with and without implementation of the Seaside Groundwater Basin Replenishment (GWR) Project by PCA. The following MPWSP description is intended for use by CPUC and its environmental consultant in preparation of necessary documentation for compliance with the California Environmental Quality Act (CEQA). This summary is based on various technical memoranda and MPWSP information reflected in the CPCN application and related testimony.~~

~~MPWSP SUPPLY CAPACITY~~

~~The MPWSP will provide up to 10,306 AFY of replacement water supply, under two different possible scenarios. In both scenarios, available Carmel River would be injected in the Seaside Groundwater Basin (SGWB) during the wet season, and this stored water would then be extracted and used as supply during the dry season. In one scenario, the MPWSP would provide a long term average of up to 3,500 AFY of Carmel River water to the GWR Project, and this water would be combined with up to 3,500 AFY of highly treated GWR Project water and injected in the Seaside Groundwater Basin using wells provided by the GWR Project. This supply would then be extracted using the existing Seaside wells and existing and proposed ASR wells. The remaining supply increment of 5,300 AFY would be met with desalinated water from the MPWSP desalination plant. In this scenario, the MPWSP desalination plant would have a rated capacity of 5.4 million gallons per day (MGD); therefore, this scenario is referred to as the "5.4 MGD desalination option."~~

~~In the other scenario, which provides for a possible delay of GWR project implementation, the entire supply increment of 10,306 AFY would be met with supply from the ASR system and the desalination plant. The MPWSP would provide a long term average of up to 1,300 AFY of Carmel River water for injection in the SGWB during the wet season, and this stored water would then be extracted and used as supply during the dry season. The remaining supply increment of 9,006 AFY would be met with desalinated water from the MPWSP desalination plant. The MPWSP desalination plant would have rated capacity of 9.0 MGD; therefore, this scenario is referred to as the "9.0 MGD desalination option."~~

~~The Sand City Desalination Plant was analyzed in the Sand City Water Supply Project EIR (Sand City, 2004). It is not included in this current project description, because it has been constructed (by Sand City) and is now in operation.~~

Table 1
MPWSP FACILITIES SUMMARY WITH GWR

Facility	Quantity	Size and Characteristics	M/N/P[1]	FEIR Reference
Northern Facilities				
Subsurface Intake:				
Intake Wells	6	Angle from horizontal TBD by test well; -170 MSL depth; 750 ft total length, average pumping capacity 1840 gpm	M	Chapter 3.3.1
Feedwater Pipeline	2.6 to 4.6 mi (13,700 to 24,100 LF)	30 and 36-inch diameter, length depends on alternative route	M	Chapter 3.3.1
Pump-to-Waste Pipeline	0.7 mi to 3.3 mi (3,700 to 17,400 LF)	16-inch diameter, length depends on alternative route	N	Not described in FEIR
Desalination Plant:			M	Chapter 3.3.2
Feedwater Receiving Tanks	2	0.5 MG each		
Pretreatment System	1	Up to 16 MGD, multimedia sand filters		
Backwash Supply System	1	0.2 MG elev. tank, 1,300 gpm fill pump		
Backwash Waste Handling	1	0.5 acre, 6 ft deep, lined open basin with decant system		
Desalination Process	1	5.4 MGD SWRO system, 40-50% second pass		
Post-Treatment System	1	Calcite and carbon dioxide for remineralization; sodium hypochlorite for disinfection; NaOH for pH adjustment		
Brine Storage Basin	1	3.0 MG lined open basin		
Clearwell Pump Station	1	5.4 MGD, 90 hp installed		
Desalinated Water Storage	2	1.0 MG each, steel or concrete above ground tanks		
Desalinated Water Pumping (to CAW)	1	5.4 MGD, 1,200 hp installed		
Desalinated Water Pumping (to SV)	1	1 MGD, 15 hp installed		
Brine Conveyance/Disposal:			M	Chapter 3.3.3
Brine Pipeline	0.6 mi (3,300 LF)	24-inch diameter		
PCA Outfall Pipeline (existing)	2.13 mi (11,260 LF) existing	80 MGD capacity (existing); 60inch diameter pipe		
PCA Outfall Diffuser (existing)	0.26 mi (1,368 LF) existing	60-inch and 48-inch diameter pipes; 120 to 170 diffuser ports; 2-inch diameter ports; -95 to 109 ft MSL; 3.5 ft above seafloor		
Desalinated Water Conveyance:			M	Chapter 3.3.4.3
Product Water Pipeline	6.1 mi (32,000 LF)	36-inch diameter		
Desalinated Water Pipeline to SV	1.3 mi (7,000 LF)	12-inch diameter		
Previous "CAW Only" Facilities (addressed in certified Final EIR)				
Conveyance and Storage:			P	Chapter 3.2.5 & 3.2.6
Transfer Pipeline	3.0 mi. (15,700LF)	36-inch diameter		
Monterey Pipeline	5.37 mi (28,400 LF)	36-inch diameter		
Terminal Reservoir	2 tanks	3 MG each		
Valley Greens Pump Station	1	2,100 gpm (3.0 MGD); 110 ft TDH		
ASR:			M	Chapter 3.2.6
ASR Injection/Extraction Wells	2	800-foot depth, 2.2 MGD injection/4.3 MGD extraction		
ASR Pump Station	1	6,000 gpm (8.4 MGD), 500 HP installed		
ASR Pipeline	2.46 mi (13,000 LF) proposed	30-inch diameter north of Coe Avenue to ASR Wells;		
ASR Pump-to-Waste Conveyance	1.1 mi (5,800 LF) pipeline	16-inch diameter pipeline		
ASR Pump-to-Waste Treatment	1 settling basin	2,500 square-foot by 12-foot deep basin		

Notes **1. N: New, M: Previously described in the FEIR but modified in this Project Description, P: Previously described in the FEIR**

~~Table 2~~ ~~MPWSP FACILITIES SUMMARY WITHOUT GWR~~				
~~Facility~~	~~Quantity~~	~~Size and Characteristics~~	~~M/N/P~~	~~FEIR Reference~~
~~Northern Facilities~~				
~~Subsurface Intake:~~				
~~Intake Wells~~	~~8~~	~~Angle from horizontal TBD by test well; -170 MSL depth; 750 ft total length, average pumping capacity 2,200 gpm~~	~~M~~	~~Chapter 3.3.1~~
~~Feedwater Pipeline~~	~~2.6 to 4.6 mi (13,700 to 24,100 LF)~~	~~30 and 36 inch diameter, length depends on route option~~	~~M~~	~~Chapter 3.3.1~~
~~Pump-to-Waste Pipeline~~	~~0.7 mi to 3.3 mi (3,700 to 17,400 LF)~~	~~16 inch diameter, length depends on route option~~	~~N~~	~~Not described in FEIR~~
~~Desalination Plant:~~			~~M~~	~~Chapter 3.3.2~~
~~Feedwater Receiving Tanks~~	~~2~~	~~0.5 MG each~~		
~~Pretreatment System~~	~~1~~	~~Up to 25 MGD, multimedia sand filters~~		
~~Backwash Supply System~~	~~1~~	~~0.2 MG elev. tank, 1,300 gpm fill pump~~		
~~Backwash Waste Handling~~	~~1~~	~~0.5 acre, 6 ft deep, lined open basin with decant system~~		
~~Desalination Process~~	~~1~~	~~9 MGD SWRO system, 40-50% second pass~~		
~~Post-Treatment System~~	~~1~~	~~Calcite and carbon dioxide for remineralization; sodium hypochlorite for disinfection; NaOH for pH adjustment~~		
~~Brine Storage Basin~~	~~1~~	~~3 MG lined open basin~~		
~~Clearwell Pump Station~~	~~1~~	~~9.0 MGD, 120 hp installed~~		
~~Desalinated Water Storage~~	~~2~~	~~1.0 MG each, steel or concrete above ground tanks~~		
~~Desalinated Water Pumping (to CAW)~~	~~1~~	~~9 MGD, 1,200 hp installed~~		
~~Desalinated Water Pumping (to SV)~~	~~1~~	~~1.5 MGD, 20 hp installed~~		
~~Brine Conveyance/Disposal:~~			~~M~~	~~Chapter 3.3.3~~
~~Brine Pipeline~~	~~0.6 mi (3,300 LF)~~	~~24 inch diameter~~		
~~PCA Outfall Pipeline (existing)~~	~~2.13 mi (11,260 LF) existing~~	~~80 MGD capacity (existing); 60inch diameter pipe~~		
~~PCA Outfall Diffuser (existing)~~	~~0.26 mi (1,368 LF) existing~~	~~60 inch and 48 inch diameter pipes; 120 to 170 diffuser ports; 2 inch diameter ports; -95 to 109 ft MSL; 3.5 ft above seafloor~~		
~~Desalinated Water Conveyance:~~			~~M~~	~~Chapter 3.3.4.3~~
~~Product Water Pipeline~~	~~6.1 mi (32,000 LF)~~	~~36 inch diameter~~		
~~Desalinated Water Pipeline to SV~~	~~1.3 mi (7,000 LF)~~	~~12 inch diameter~~		
~~Previous "CAW Only" Facilities (addressed in certified Final EIR)~~				
~~Conveyance and Storage:~~			~~P~~	~~Chapter 3.2.5 & 3.2.6~~
~~Transfer Pipeline~~	~~3.0 mi. (15,700LF)~~	~~36 inch diameter~~		
~~Monterey Pipeline~~	~~5.37 mi (28,400 LF)~~	~~36 inch diameter~~		
~~Terminal Reservoir~~	~~2 tanks~~	~~3 MG each~~		
~~Valley Greens Pump Station~~	~~1~~	~~2,100 gpm (3.0 MGD); 110 ft TDH~~		
~~ASR:~~			~~M~~	~~Chapter 3.2.6~~
~~ASR Injection/Extraction Wells~~	~~2~~	~~800-foot depth, 2.2 MGD injection/4.3 MGD extraction~~		
~~ASR Pump Station~~	~~1~~	~~6,000 gpm (8.4 MGD), 200 HP~~		
~~ASR Pipeline~~	~~2.46 mi (13,000 LF) proposed~~	~~30 inch diameter north of Coe Avenue to ASR Wells~~		
~~ASR Pump-to-Waste Conveyance~~	~~1.1 mi (5,800 LF) pipeline~~	~~16 inch diameter pipeline~~		
~~ASR Pump-to-Waste Treatment~~	~~1 settling basin~~	~~2,500 square-foot by 12-foot deep basin~~		

~~Notes~~ ~~1. N: New, M: Previously described in the FEIR but modified in this Project Description, P: Previously described in the FEIR~~

~~PROJECT OBJECTIVES~~

~~The primary objectives of the Monterey Peninsula Water Supply Project are to:~~

- ~~Satisfy CAW's obligations to meet the requirements of SWRCB Order 95-10;~~
- ~~Diversify and create a reliable drought-proof water supply;~~
- ~~Protect the Seaside Groundwater Basin for long-term reliability;~~
- ~~Protect the local economy from the effects of an uncertain water supply;~~
- ~~Minimize water rate increases by creating a diversified water supply portfolio;~~
- ~~Minimize energy requirements and greenhouse gas (GHG) emissions per unit of water delivered to the extent possible;~~
- ~~Explore opportunities for regional partnerships; and~~
- ~~Provide flexibility to incorporate alternative water supply sources, such as GWR~~

~~SEASIDE GROUNDWATER BASIN REPLENISHMENT PROJECT (GWR)~~

~~The GWR is a separate project, which CAW does not control. Given the urgency of the SWRCB's Cease and Desist Order, CAW is proceeding with a full-scale project that includes a 9.0 mgd desalination plant. However, CAW remains committed to exploring incorporation of alternative water supplies into the overall Monterey Peninsula water supply solution, provided that the SWRCB CDO compliance deadline of December 2016 is not jeopardized. CAW has been in discussion with PCA, CPUC and other stakeholders regarding incorporating PCA's GWR project into the overall water supply solution. As such, CAW has developed the proposed Project to be flexible, allowing for incorporating GWR water into the water supply portfolio. Therefore, this Project Description includes a scenario whereby approximately 3,500 AFY of recycled water would be contributed by the GWR Project under the "with GWR" scenario, based on information provided to CAW by PCA.~~

~~The GWR project would provide a year-round source of supply to the Seaside Groundwater Basin. As described in Section 5.3.6 of the FEIR, the GWR Project would include replenishment of the Seaside Groundwater Basin with advanced treated recycled water from PCA's Regional Treatment Plant (RTP). All groundwater replenishment water would be treated through a proposed advanced water treatment plant (AWTP). The GWR Project would contribute up to 3,500 AFY of recycled water to the MPWSP over an 8-month period (September through April). The GWR Project would have injection wells located at inland locations in the Seaside Basin. Treated water from the AWTP would be conveyed to the Seaside Basin through a pipeline to be constructed as part of the Regional Urban Water Augmentation Project (RUWAP). If the RUWAP pipeline is not constructed or feasible for their use, PCA would explore other approaches to transmit the recycled water to the Seaside Basin.~~

~~MPWSP FACILITIES~~

~~As outlined in Tables 1 and 2, the MPWSP's facilities include a feedwater intake and conveyance system, a 5.4 or 9.0 MGD desalination plant, a brine discharge system, and a variety of conveyance and storage facilities, including an ASR system. Some of these facilities have not changed from what is described in the FEIR; these facilities are marked with a "P" in Tables 1 and 2. Other facilities were described in the FEIR but have been modified for this Project Description; these facilities are marked with an "M" in Tables 1 and 2. Finally, some facilities in this Project Description have not been previously described and these facilities are marked with an "N" in Tables 1 and 2.~~

~~The ASR system and the major portion of the conveyance and storage facilities are as described for the North Marina Alternative in Chapter 3 of the Coastal Water Project FEIR (with the exception of a required increase in the installed horsepower of the ASR Pump Station for the 5.4 MGD desalination option). However, the intake wells and supply/return pipelines, the desalination plant, and the desalinated water conveyance pipelines of the MPWSP are different than those described for the North Marina Alternative, and are described here. It is important to note that the following facility descriptions are preliminary, and are subject to modification through the CEQA process and subsequent final design and construction. Facility sizing, location and quantities are best estimates at this time. It is CAW's intent to seek CPUC approval for a "project" addressed in the Supplemental EIR that will allow CAW adequate flexibility in project implementation. Therefore, wherever possible, facility siting, alignment and sizing should be understood and addressed as conceptual in nature, with "study areas" and "pipeline alignment corridors" addressed in the EIR. More detailed facility information will be developed as the project moves through the regulatory permitting and design process.~~

~~NORTHERN PROJECT FACILITIES~~

~~The MPWSP northern project facilities involve a 9.0 mgd desalination plant, a brine conveyance and disposal system, a desalinated water conveyance system, and a feedwater intake and conveyance system. The northern facilities of the MPWSP are shown on **Figure 1-Northern Facilities Vicinity Map.**~~

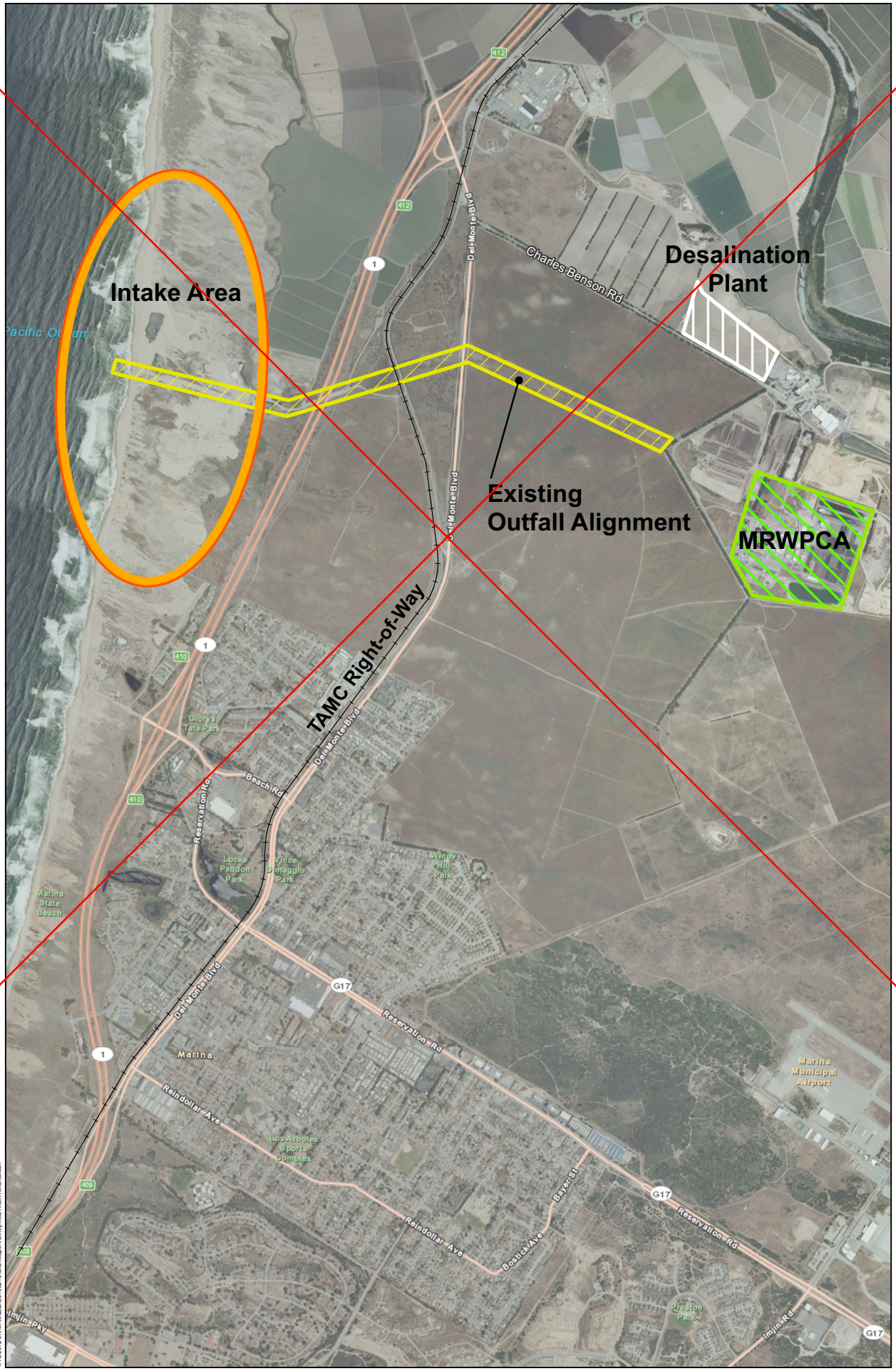
~~Intake Wells and Supply/Return Pipelines~~

~~This section describes the location, size, and configuration of feedwater intake wells and feedwater pipelines, pump-to-waste pipelines, brine return pipelines, and Salinas Valley return pipelines in the MPWSP.~~

~~Intake Wells~~

~~Feedwater for the MPWSP desalination plant would be extracted from subsurface slant wells that would draw seawater from beneath the shoreline. A slant well is a well that is drilled at an angle using modified vertical well construction methods. This allows construction of wells that extract water from as close to the coastline as possible, in order to extract water with higher salinity than can be obtained with conventional vertical wells. Angled drilling is beneficial because it results in a substantially increased screen length in the targeted water-bearing formations.~~

~~The preferred site (APN Number: 203-011-019-000) for construction of the subsurface extraction slant wells is, shown on **Figure 1,** an approximately 376 acre parcel of land located due west of its proposed desal plant site. This property borders the Pacific Ocean and includes vast portions that have been disturbed. The land features approximately 7,000 feet of ocean shoreline, has an existing railroad spur and three phase power source. Each slant well would be drilled at an angle from the horizontal which will be determined by the test well program, with a maximum well length of approximately 750 lineal feet. The wells would be equipped with submersible well pumps and would present little or no visual profile when complete. The wells would initially be placed on the beach, as far as possible from the existing shoreline, but avoiding undisturbed dune habitat. This may cause some or all of the wells to be within the predicted 50-year erosion boundary; however, the expected useful life of the wells is less than 50 years. A contingency plan would be needed for relocating the wells inland in the event that coastal erosion renders the wells inoperable.~~



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Sources: Aerial (ESRI)

Figure 1
Monterey Peninsula Water Supply Project (MPWSP) - Vicinity Map

~~For the 9.0 MGD desalination option, the total well capacity required is 22 MGD (15,400 gpm) to meet the feedwater requirement for a 9.0 MGD desalination plant operating at an overall recovery of 41 percent. Seven wells operating at 2,200 gpm can meet this requirement, and one additional well is provided as a backup in case one of the wells is out of service. For the 5.4 MGD desalination option, the total well capacity required is 13.2 MGD (9,200 gpm) which can be met by five wells at 1,840 gpm per well, plus an additional backup well, for a total of six wells.~~

~~Three different configurations are being considered for the slant wells. In the first configuration, shown in **Figures 2, 3 and 4**, the wells would be located on the coastline south of the active mining area, and would be interconnected with a pipeline that parallels the shoreline. Three clusters would be constructed. For the 9.0 MGD desalination option, the clusters at the north and south ends or the interconnecting pipeline would have three wells, and the middle cluster would have two wells. For the 5.4 MGD desalination option, all three clusters would have two wells.~~

~~The second configuration, as shown in **Figures 5, 6 and 7**, would have a similar three cluster setup on the coastline north of the active mining area. The number and capacity of wells per cluster would be similar to the first configuration.~~

~~The third configuration would have well clusters on the coastline north of the active mining zone and on the coastline south of the active mining zone. For the 9.0 MGD desalination option, a total of four two-well clusters would be used, with two clusters on the north and two clusters on the south. For the 5.4 MGD desalination option, two three-well clusters would be used (one on the north and one on the south).~~

~~Test Well~~

~~CAW intends to construct a test slant well to collect data to facilitate overall intake and desalination plant design, operational and maintenance methods. The slant well will be permitted separately from the full-scale project, and would be generally located in the same area as described above, avoiding sensitive dune habitat, with appropriate site access and discharge of well production water. It is anticipated that the test well that the test well will be operated for three to six months, but this operational period may be longer as determined appropriate by CAW and applicable regulatory agencies.~~

~~Feedwater and Pump-to-Waste Pipelines~~

~~Alternative alignments are being considered for pipelines that would convey seawater (feedwater) from the slant well clusters to the desalination plant and for pipelines to convey pump-to-waste water from the wells to the PCA outfall. Pump-to-waste is required during initial start-up and testing of each well and during operation. It is anticipated that the constant speed wells will be operated with each being operated one or two on/off cycles per day. Each time that a well starts up, the pumped water from that well will be pumped to waste for several minutes to avoid introducing suspended solids into the feedwater line that goes to the desalination plant. The pump-to-waste pipelines would follow the feedwater pipeline alignment for most of the feedwater alignment options.~~

~~The feedwater and pump-to-waste pipeline alignments will vary according to the configuration and location of the slant wells, and pipeline construction methods. The pipeline alignment options are described below and the pipeline lengths for the various options are summarized in **Table 3**.~~

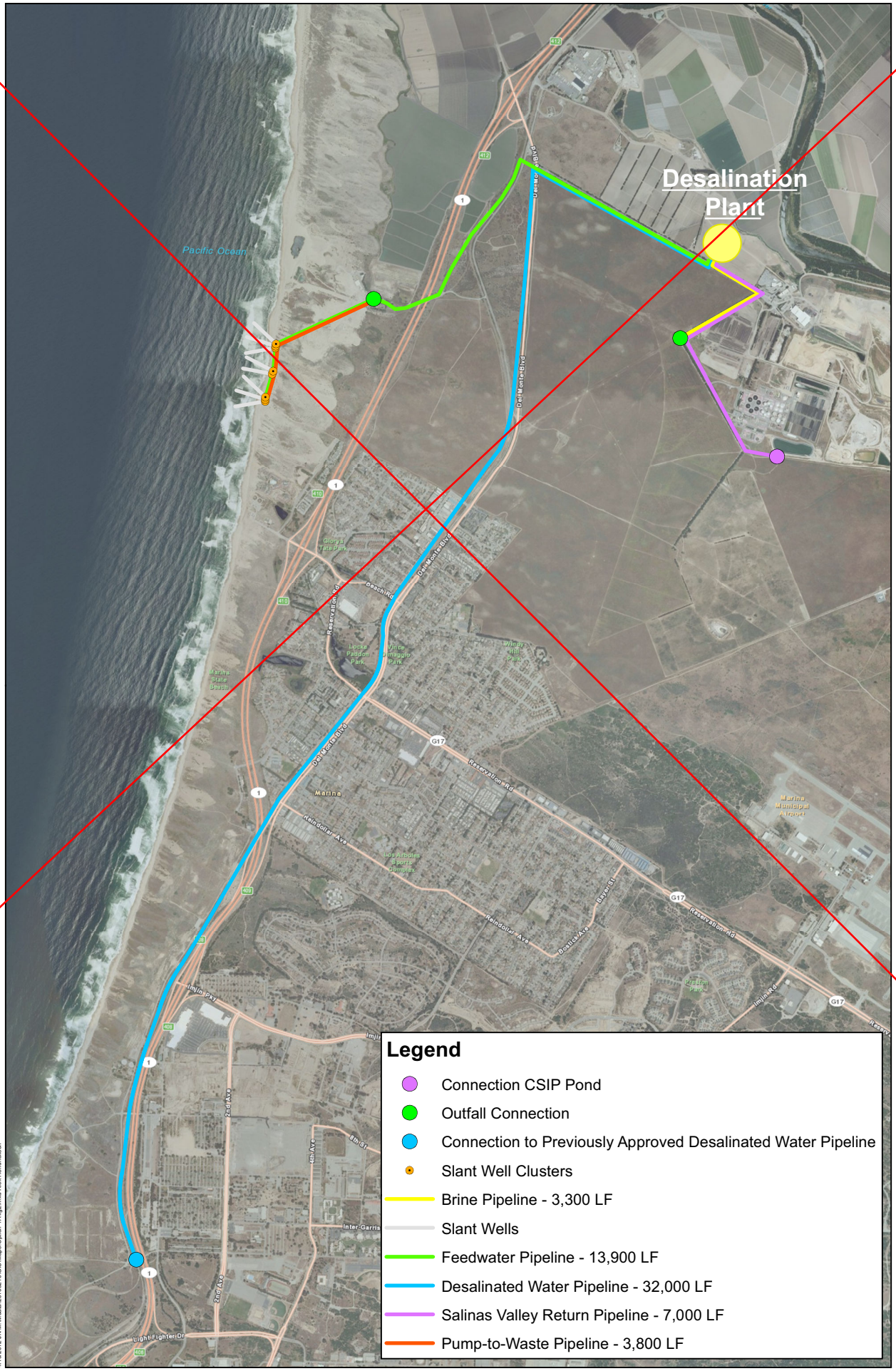
~~Table 3~~ ~~FEEDWATER AND PUMP-TO-WASTE PIPELINES SUMMARY~~				
~~Alternative~~	~~Construction Method~~	~~Feedwater Pipelines (HDPE or FPVC)~~		~~Pump-to-Waste Pipelines (HDPE or FPVC)~~
		~~30-inch~~	~~36-inch~~	~~16-inch~~
~~Alt. 1A (LF)~~	~~Open-Trench~~		~~10,000~~	
	~~HDD~~	~~1,400~~	~~2,400~~	~~3,800~~
~~Alt. 1B (LF)~~	~~Open-Trench~~		~~13,600~~	~~3,600~~
	~~HDD~~	~~1,400~~	~~-~~	~~1,400~~
~~Alt. 2 (LF)~~	~~Open-Trench~~		~~21,000~~	~~14,000~~
	~~HDD~~	~~1,200~~	~~1,900~~	~~3,300~~
~~Alt. 3A (LF)~~	~~Open-Trench~~	~~-~~	~~10,000~~	~~-~~
	~~HDD~~	~~1,400~~	~~3,000~~	~~4,400~~
~~Alt. 3B (LF)~~	~~Open-Trench~~	~~-~~	~~14,000~~	~~4,000~~
	~~HDD~~	~~1,400~~	~~-~~	~~1,400~~
~~Alt. 4 (LF)~~	~~Open-Trench~~	~~-~~	~~4,500~~	~~1,700~~
	~~HDD~~	~~1,400~~	~~5,400~~	~~6,800~~
~~Alt. 5A (LF)~~	~~Open-Trench~~	~~-~~	~~10,200~~	~~-~~
	~~HDD~~	~~7,200~~	~~-~~	~~7,200(1)/4400(2)~~
~~Alt. 5B (LF)~~	~~Open-Trench~~	~~-~~	~~18,200~~	~~8,000~~
	~~HDD~~	~~1,400~~	~~-~~	~~2,800(1)/0(2)~~

~~Notes: (1) for 8 wells, 9.0 MGD desalination option~~
~~(2) for 6 wells, 5.4 MGD desalination option~~

~~**Option 1A.** This alignment, shown in **Figure 2**, would be used for a pipeline to convey feedwater from three well clusters on the shoreline south of the active mining area to the desalination plant site. The three well clusters would be inter-connected with a 30-inch HDPE or FPVC pipe, installed using horizontal directional drilling (HDD). Combined feedwater from all three well clusters would be conveyed to a point on the east side of the property, near the access road, by a 36-inch HDPE or FPVC pipe. As this alignment is routed through the active mining zone, this pipeline would also be installed using HDD. The 36-inch feedwater pipeline would be routed in the access road and cross under Highway 1 using the existing underpass. The alignment would then turn north to an existing service road. The pipeline would continue north on to the TAMC right-of-way from the north end of the service road and continue north until Charles Benson Road. The pipeline would divert east from the TAMC right-of-way and cross a private easement for approximately 50 ft to the intersection of Del Monte Boulevard and Charles Benson Road. From the intersection the pipeline would continue southeast in Charles Benson Road to the desalination plant site.~~

~~The 16-inch HDPE or FPVC pump-to-waste pipeline, constructed by HDD, would parallel the feedwater pipeline from the well clusters under the active mining area. The pump-to-waste pipeline would then be connected to the PCA outfall with a new connection to the outfall pipe on the east side of the property.~~

~~**Option 1B.** This alignment is similar to Option 1A, with the exception of the alignment of the 36-inch pipeline from the well clusters across the property. As shown in **Figure 3**, the feedwater pipeline would be kept outside the active mining area and be installed using open trench~~



4/10/2012 JN M:\Matlab\2510\2016\GIS\Maps\Option 1A fig2.mxd Rick Hendrickson

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Sources: Aerial (ESRI)

Figure 2
MPWSP Intake Option 1A

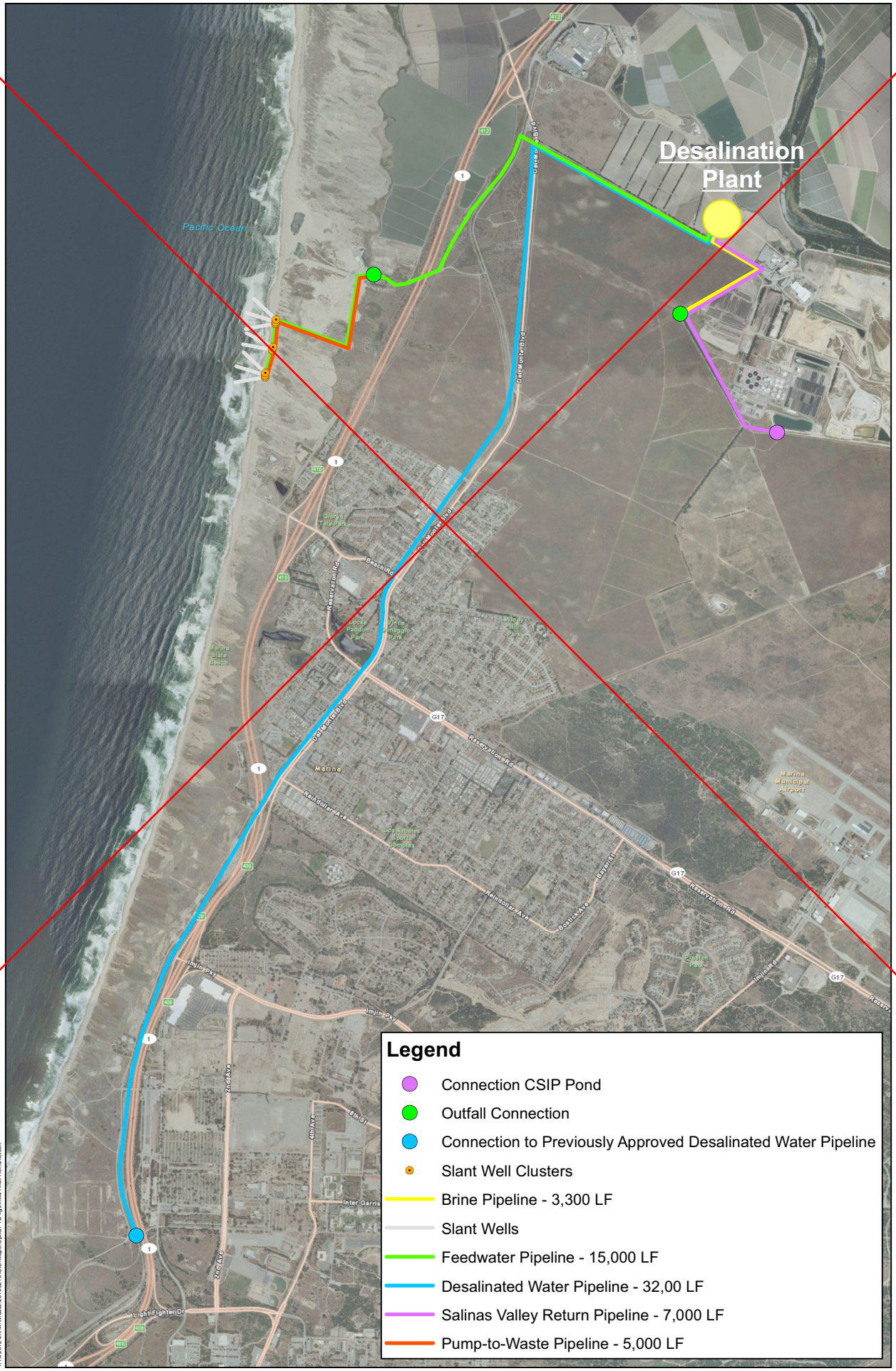

Figure 3
MPWSP Intake Option 1B

~~construction to the maximum extent possible. If biological surveys indicate any areas of concern along the open trench alignment, sections of the pipeline would be constructed with HDD. If HDD is used for construction of the pipeline, a pit would be required to launch the directional drill. The remainder of the pipeline alignment would be identical to Option 1A.~~

~~As shown in Figure 3, the 16-inch pump-to-waste pipeline, constructed by open trench or HDD if needed, would parallel the feedwater pipeline from the well clusters under the active mining area. The pump-to-waste pipeline would parallel the feedwater pipeline to a point east of the property to a new outfall connection, similar to Option 1A.~~

~~**Option 2.** This alignment, shown in Figure 4, would be used for a pipeline to convey feedwater from three well clusters on the south shoreline of the site to the desalination plant site. The three well clusters would be inter-connected with a 30-inch pipe, installed using horizontal directional drilling (HDD). The combined flow from three clusters would be conveyed southeast along the edge of the property in a 36-inch pipe that would be installed with open trench construction. If biological surveys indicate any areas of concern along the open trench alignment, the pipeline would be constructed with HDD. The pipeline alignment would divert from the property at the north end of the Dunes Road and turn south towards Reservation Road. The pipeline would turn east at Reservation Road and continue on Beach Road to the TAMC right-of-way. Once in the TAMC right-of-way, the alignment would head north to the intersection of Lapis Road and Del Monte Boulevard. The pipeline would divert from the TAMC right-of-way and continue along Del Monte Boulevard to the intersection of Del Monte Boulevard and Charles Benson Road. The pipeline would then continue southeast on Charles Benson Road to the desalination plant.~~

~~As shown in **Figure 4**, the 16-inch pump-to-waste pipeline would parallel the feedwater pipeline from the well clusters to southeast corner of the property, then south on Dunes Road and east on Reservation Road, continuing on Beach Road to Del Monte Boulevard. The pipeline would turn north on Del Monte and continue until the alignment intersects the PCA outfall. A new connection to the outfall would be constructed at that point to receive the discharge from the pump-to-waste pipeline.~~

~~**Option 3A.** This alignment, shown in **Figure 5**, would be used for a pipeline to convey feedwater from three well clusters on the north shoreline of the site to the desalination plant site. The three well clusters would be inter-connected with a 30-inch pipe, installed using trenchless construction techniques (HDD). Combined feedwater from all three well clusters would be conveyed to a point on the east side of the property, near the access road, by a 36-inch pipe. As this alignment is routed through the active mining zone, this pipeline would also be installed using HDD. The feedwater pipeline would be routed to the desalination plant along the same alignment as Option 1A.~~

~~As shown in **Figure 5**, the 16-inch pump-to-waste pipeline would parallel the feedwater pipeline from the well clusters to a new outfall connection using trenchless construction techniques (HDD), similar to Option 1A.~~

~~**Option 3B.** This alignment is similar to Option 3A. As can be seen from **Figure 6,** instead of using HDD, the pipeline alignment would be kept outside the active mining area and be installed using open trench construction. If biological surveys indicate any areas of concern along the open trench alignment, sections of the pipeline would be constructed with HDD. If HDD is used for construction of the pipeline, HDD pits would be required to launch the directional drill. The rest of the pipeline alignment would be identical to Option 3A.~~

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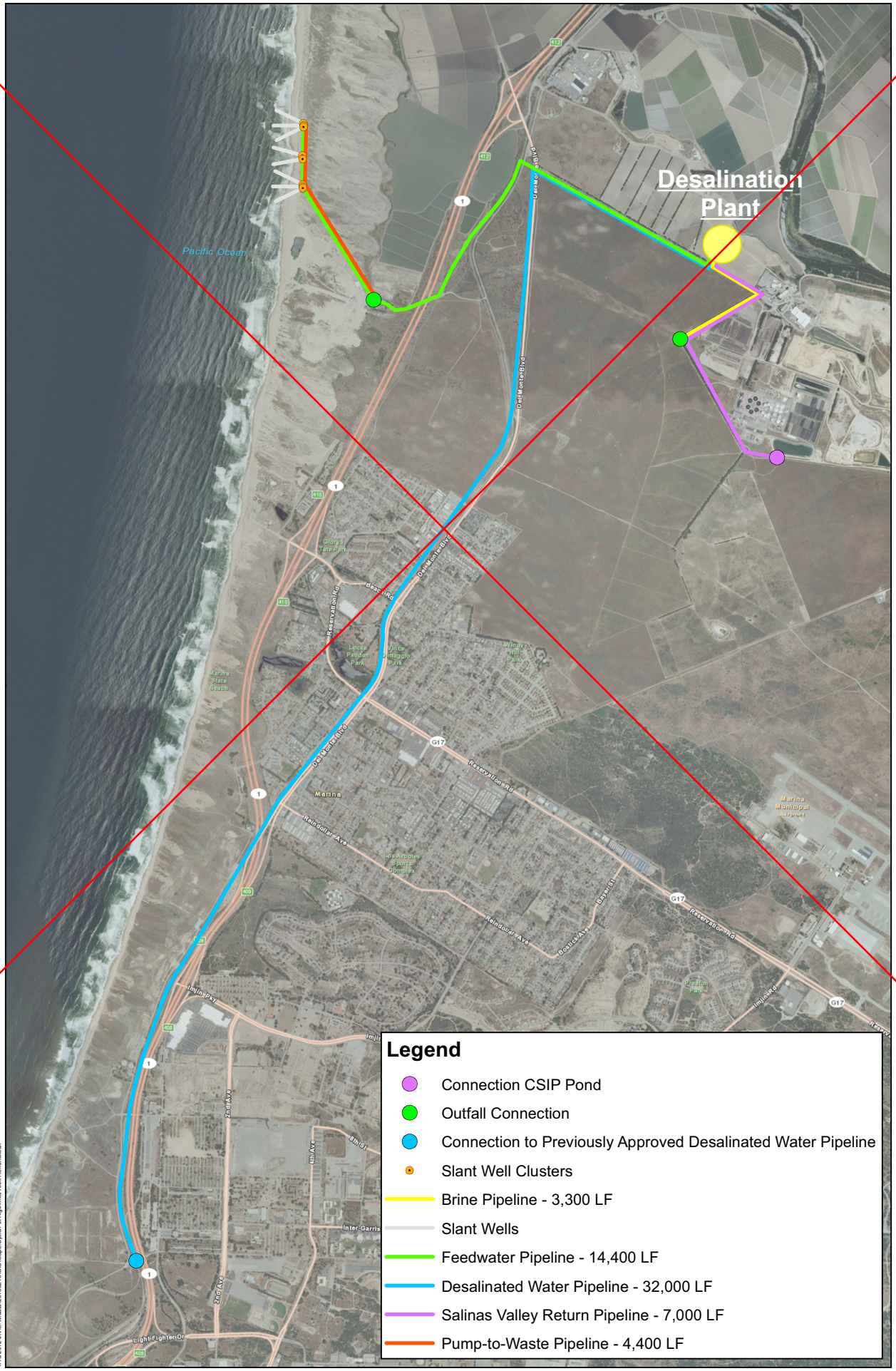
Sources: Aerial (ESRI)

Figure 4
MPWSP Intake Option 2



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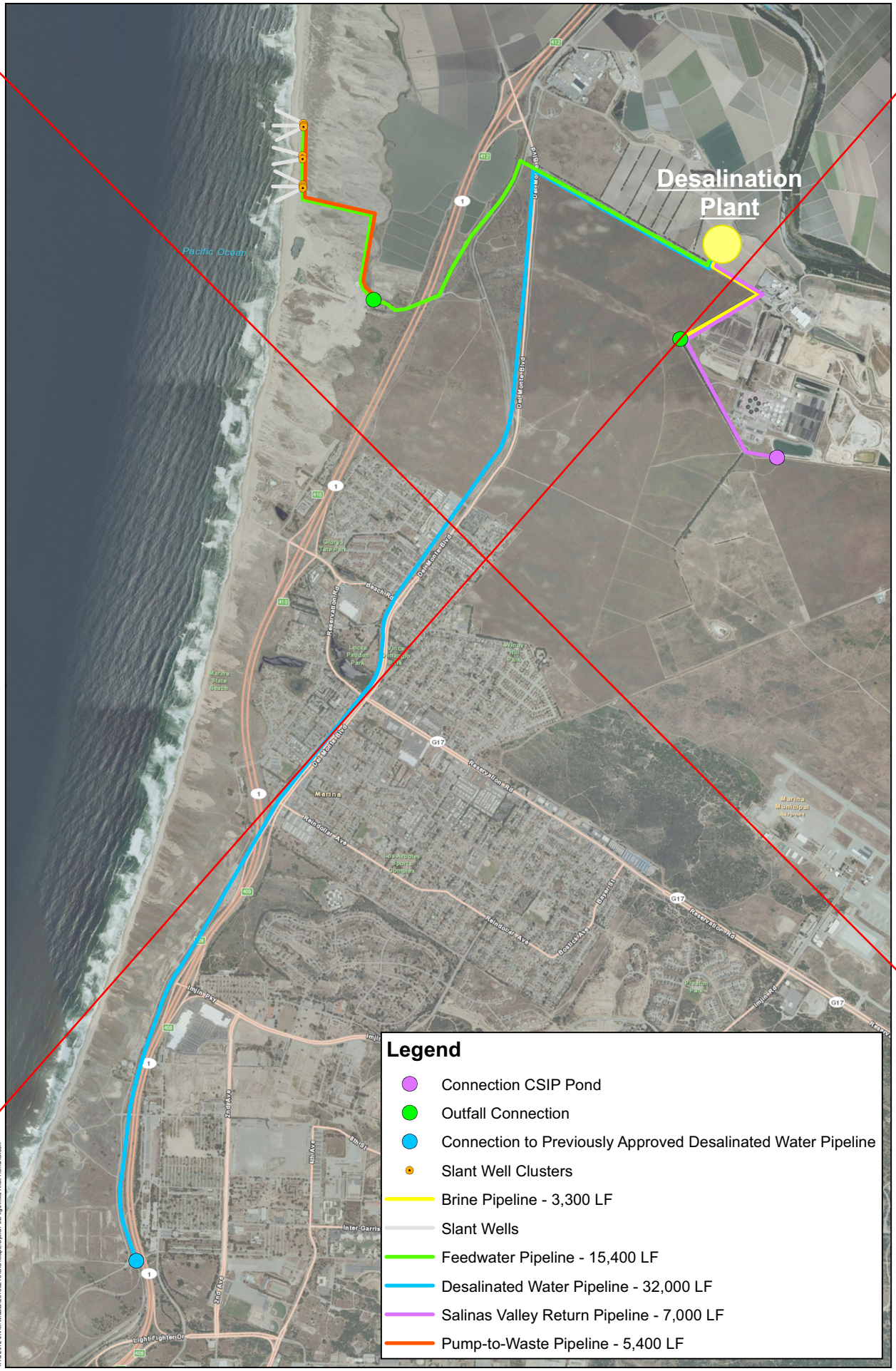
Sources: Aerial (ESRI)

Figure 5
MPWSP Intake Option 3A



4/10/2012 JN M:\Matlab\2510321\6\GIS\Maps\Option 3B fig6.mxd Rick Hendrickson

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Sources: Aerial (ESRI)

Figure 6
MPWSP Intake Option 3B

~~The 16-inch pump-to-waste pipeline would parallel the feedwater, constructed by open trench and HDD if needed, to a new outfall connection, similar to Option 3A.~~

~~**Option 4.** As shown in **Figure 7**, this alignment would connect the three well clusters on the north shoreline with a pipeline in an alignment that heads straight east, under agricultural fields and Highway 1, to the intersection of Charles Benson Road and Del Monte Boulevard intersection via a 36-inch pipe, constructed using trenchless construction technology (HDD). The feedwater pipeline would then continue southeast on Charles Benson Road to the desalination plant.~~

~~The 16-inch HDPE pump-to-waste pipeline would be constructed with HDD parallel to the feedwater pipeline from the well clusters to the intersection of Charles Benson Road and Del Monte Boulevard. The pump-to-waste pipeline would divert from the feedwater pipeline at this intersection and turn south along Del Monte Boulevard to the intersection of Del Monte Boulevard and the PCA outfall alignment. Similar to Option 2, a new connection to the outfall would be constructed at that point to receive the discharge from the pump-to-waste pipeline.~~

~~**Option 5A.** For this option, shown in **Figure 8**, the feedwater pipelines would convey water from well clusters located north and south of the mining area, to the desalination plant. Two 30-inch diameter pipelines, installed using HDD, would be angled across active mining area to connect the southern and northern well fields to a single portal on the east side of the property, near the access road. The southern crossing would be on the same alignment as for Option 1A, and the northern crossing would be the same as described for Option 1B. The two pipelines from the north and south shorelines would connect to a 36-inch pipeline that would follow an alignment to the desalination plant identical to Option 1A.~~

~~As shown in **Figure 8**, each of the northern and southern well fields would be served by 16-inch pump-to-waste pipelines that would be constructed by HDD across the active mining area. The pump-to-waste pipelines would parallel the feedwater pipelines to a single point on the east side of the property on the PCA outfall, at which point they would discharge into the outfall through a new connection.~~

~~**Option 5B.** The only difference between Options 5A and 5B is the alignment of the pipelines from the northern and southern well fields across the property, as shown in **Figure 9**. For Option 5B, the southern crossing would follow the same alignment as described for Option 3A, and the northern crossing would follow the same alignment as described for Option 3B. Pipelines would be kept outside the active mining area and be installed using open trench construction to the maximum extent possible. If biological surveys indicate any areas of concern along the open trench alignment, sections of the pipeline would be constructed with HDD. If HDD is used for construction of the pipeline, HDD pits would be required to launch the directional drill. The pipelines would connect to a single 36-inch pipeline that follows the same alignment to the desalination plant as with Options 1A, 1B, 3A, 3B, and 5A.~~

~~The 16-inch pump-to-waste pipelines would parallel the feedwater pipelines from the southern and northern wellfields across the property, and would be constructed by open trench and HDD, if needed. The pump-to-waste pipelines would parallel the feedwater pipelines to a single point on the east side of the property on the PCA outfall, at which point they would discharge into the outfall through a new connection.~~

~~**Brine Conveyance Pipeline**~~

~~The desalination plant will generate a brine stream (with a salinity of approximately 55,000 to 60,000 mg/L or approximately 70 to 80 percent higher than seawater) at a flow rate equal to 120~~

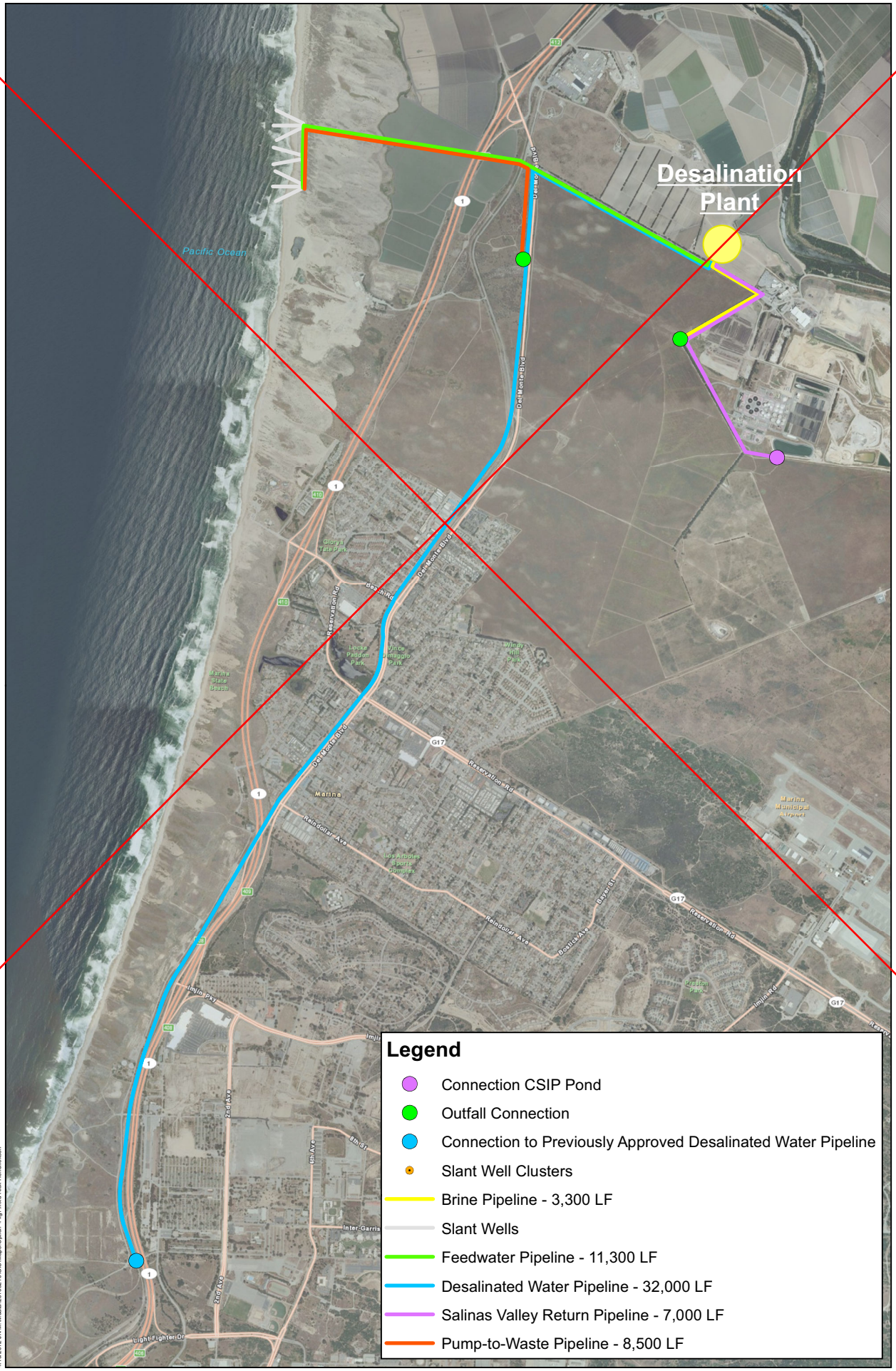

Figure 7
MPWSP Intake Option 4

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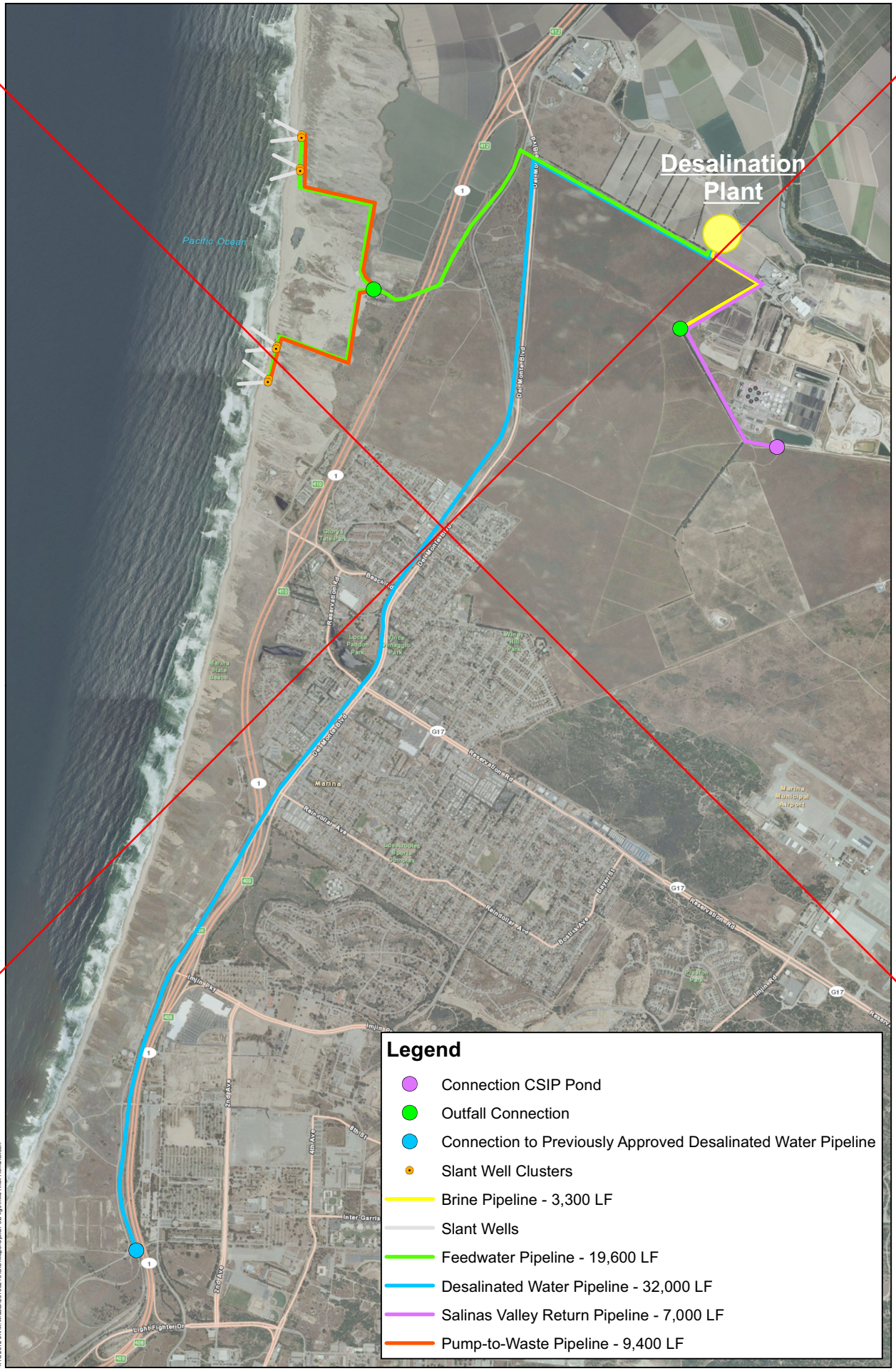
Sources: Aerial (ESRI)

Figure 8
MPWSP Intake Option 5A



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Sources: Aerial (ESRI)

Figure 9
MPWSP Intake Option 5B

~~to 140 percent of the plant's production rate, and possibly another 0.4 MGD of decanted waste backwash (at seawater salinity). These combined streams will flow by gravity from the RO process through approximately 3,300 LF of 24-inch diameter pipeline to the headworks of the Monterey Regional Pollution Control Authority's (PCA) outfall, where it will mix with effluent from PCA's Regional Treatment Plant (RTP) and be discharged to the ocean through the existing outfall diffusers. The amount of RTP effluent available for blending with the brine is expected to be highly variable throughout the year and may be zero for extended periods during the summer months when all of the RTP's effluent is reclaimed for agricultural irrigation.~~

~~Salinas Valley Desalinated Water Return Pipeline~~

~~Groundwater modeling results indicate that, over the long term, feedwater pumped from the slant wells would include a small amount of intruded groundwater from the Salinas Valley Groundwater Basin (SVGB). The MPWSP desalination plant would be operated such that, on an annual average basis, the plant would return desalinated water to the SVGB in an amount equal to the freshwater amount in the water extracted from the slant wells. Geosciences Support Services, Inc. (GSSI) prepared a study for CAW titled *North Marina Groundwater Model Evaluation of Potential Projects*, dated September 26, 2008. This study looked at a CAW slant well only scenario to be located at MCWD Reservation Road property. The study predicted:~~

~~*'The predicted TDS concentration of 33,000 mg/L for the feedwater extracted by the six slant wells is approximately 94 to 97 percent of the TDS concentration of seawater (34,000 to 35,000 mg/l). As the modeled layout represents a worse-case scenario (due to the steeper well angles), the most recent layout (six 700 ft wells with a 20 degree angle proposed by RBF, 2008) would most likely result in an even higher percentage of seawater in the extracted water."*~~

~~For the purposes of this project description, the assumed percentage of seawater in the feedwater is approximately 97 percent. Therefore, freshwater in the feedwater, which would be returned to Salinas Valley, is approximately three percent. Considering plant recovery, the amount of water to be returned to Salinas Valley is assumed to be eight percent of the desalinated water production and is calculated as follows:~~

~~Return Amount = ((Delivery to CAW)/0.92) - (Delivery to CAW)~~

~~Using the above formula, the calculated return amounts for the 9.0 MGD desalination option and the 5.4 MGD desalination option are 780 AFY and 460 AFY, respectively.~~

~~The proposed method to return the excess desalinated water to the SVGB is to deliver the water to the Castroville Seawater Intrusion Project (CSIP) 80-acre foot (AF) storage pond located on the PCA's RTP property. During the irrigation season, the desalinated water would be blended with tertiary treated recycled water and delivered to farms connected to the CSIP. Desalinated water would be pumped from the clear well of the desalination plant into a 12-inch diameter PVC pipe which would convey the water approximately 7,000 LF to the CSIP irrigation storage pond.~~

~~Desalination Plant~~

~~The MPWSP desalination plant would be constructed on approximately 40 acres of currently vacant and disturbed land west of the RTP, adjacent to Charles Benson Road (see **Figure 1**). For most of the site, ground elevations range from elevations 90 feet to 114 feet. Structures and facilities at the site, as shown in **Figure 10**, would consist of the following: feedwater receiving tanks; pre-treatment process; filter backwash supply system; waste washwater storage and settling basin; desalination process; post-treatment process and chemical systems;~~

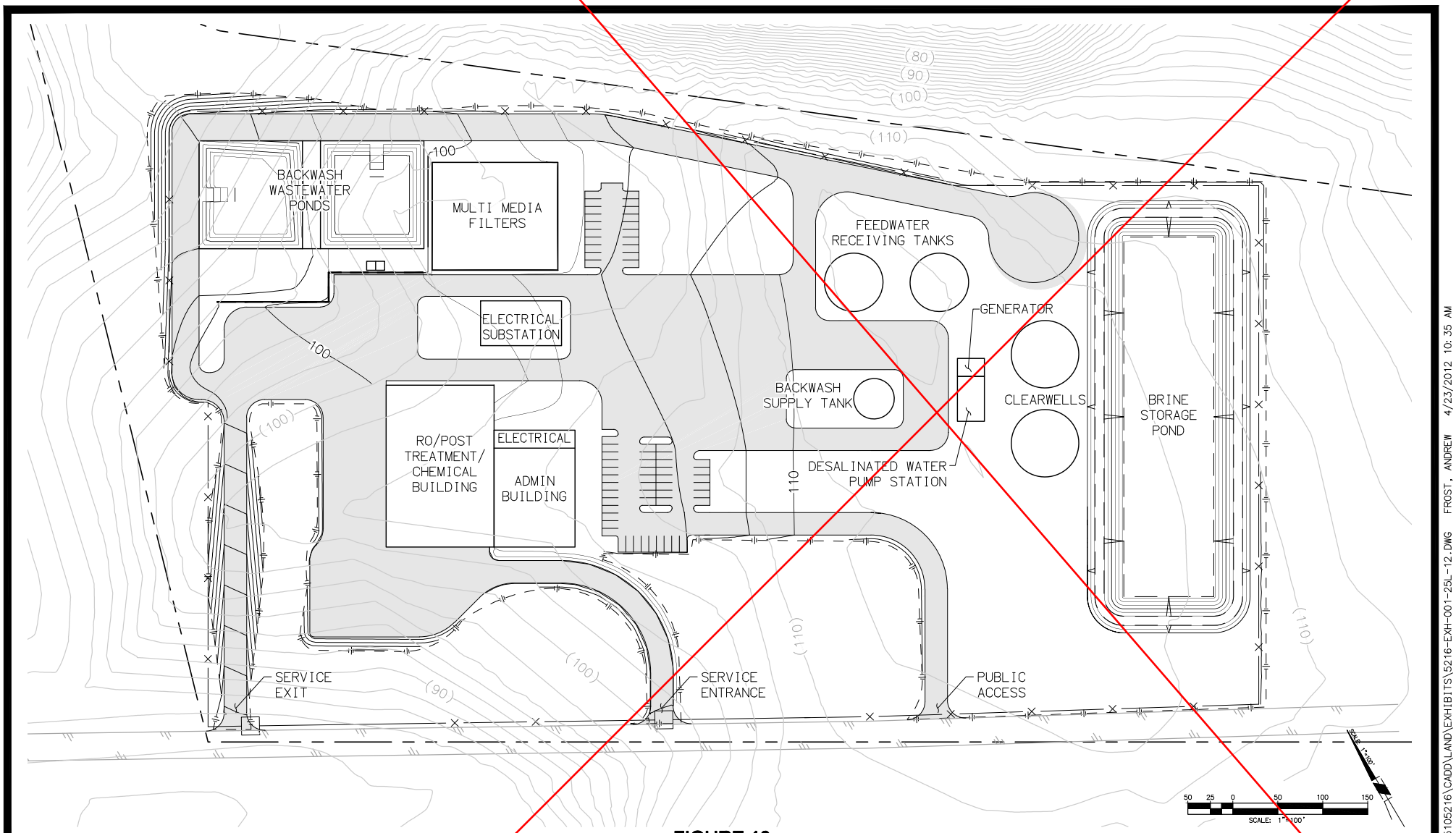

FIGURE 10

MPWSP - DESALINATION PLANT
CONCEPTUAL SITE LAYOUT

CALIFORNIA AMERICAN WATER

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
9755 CLAIREMONT MESA BOULEVARD, SUITE 100
SAN DIEGO, CALIFORNIA 92124-1324
858.614.5000 ▪FAX 858.614.5001 ▪www.RBF.com

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~~brine storage tanks; desalinated water storage tanks and pumping station; and non-process facilities.~~

~~The following sections describe each of these facilities.~~

~~Feedwater Receiving Tanks~~

~~Feedwater will be pumped from the feedwater intake wells directly to two above-ground feedwater receiving tanks at the desalination plant site. The two tanks will be each have a volume of approximately 0.5 million gallons, and will be either glass-lined steel or cast-in-place concrete construction. The tanks will be sized to receive the variable flow from the various combinations of constant speed well pumps, and produce an equalized flow rate to the pretreatment process. The tanks will be located on the plant site at approximately elevation 110 feet in order to provide a water surface in the tanks ranging from elevation 115 feet to 130 feet in order to deliver flow by gravity through the pretreatment filters.~~

~~Pretreatment~~

~~Feedwater from the feedwater receiving tanks will be piped directly to pressure or gravity multimedia sand filters for removal of small particles that could otherwise foul the downstream cartridge filters and/or RO membranes. These filters may also play an important role in providing pathogen removal credit during initial plant operations during which time the feedwater supply may be considered to be groundwater under the influence of surface water, and therefore subject to the Surface Water Treatment Rule. Also, a low dosage of chlorine may be added to the feedwater as an oxidant in order to precipitate any dissolved iron and manganese, and the resulting precipitate will be removed by the filters. If pressure filters are used, they would be multiple parallel fiberglass or lined-steel tank units installed in a large walled open pit area that has a floor elevation of 90 feet, which is 5 to 15 feet below grade. If gravity filters are used, they would be installed in below-grade multi-cell concrete structures.~~

~~Filter Backwash Supply System~~

~~The filters will be backwashed periodically (approximately once per day) using process filtrate as backwash supply. The backwash supply may be chlorinated in order to control biological growth on the filters. The backwash supply, which must be provided at a relatively high flow rate for a short duration (10 minutes per backwash), will be from a 200,000 gallon backwash supply tank that will be located on the plant site to provide a water surface in the tank ranging between elevation 115 feet and 130 feet, which is high enough to provide gravity flow to the filters. The backwash supply tank will be filled by a process filtrate pump which will operate a relatively low rate between backwash cycles.~~

~~Waste Backwash Storage/Settling Basin~~

~~Waste from the backwashing process will flow from the filters by gravity to a 0.5-acre 6-foot deep basin. The basin will be open, but will be equipped with an impermeable liner to prevent leakage of the water (seawater salinity) into the ground. Suspended solids in the waste wash water will settle to the bottom of the basin and the clarified water will be decanted. The decanted water will then be pumped to the brine discharge pipeline for blending with RO brine and ultimate disposal in the PCA outfall. Alternatively, it may be possible to pump the decanted water at a low rate to the feedwater receiving tank for blending with feedwater and subsequent retreatment through the pretreatment and RO process.~~

~~The basin will be equipped with ramps and divider walls to allow periodic draining and manual removal of accumulated solids of one half of the facility while the other half remains in service. Sodium hypochlorite may be added to the basin periodically or continuously for algae control.~~

~~Desalination Process~~

~~Reverse osmosis (RO) is a molecular separation process that uses semi-permeable membranes to remove salts in saltwater and produce desalinated water (which is also called product water or permeate). Pretreated seawater is forced at very high pressures through the membranes, and the water molecules, smaller than almost all impurities, including salts, are selectively able to pass through the membranes. The remaining impurities and residual water are discharged as concentrate, which is commonly called "brine".~~

~~A schematic drawing of the proposed RO process is shown in **Figure 3-12** of the Coastal Water Project FEIR. The assumed and proposed RO process would consist of a first pass with a partial (40 to 50 percent) second-pass. The partial second pass is required to provide additional removal of three constituents of concern, specifically boron, chloride and sodium. Variable-speed low-pressure pumps would "forward" filtered flow from the pretreatment process to constant-speed high-pressure first-pass RO feed pumps. The high pressure RO feed pumps would deliver flow to the first pass membrane arrays. Low pressure variable speed pumps would be used to pump 40 to 50 percent of the first-pass permeate to the second-pass membrane arrays. The second-pass permeate would then be blended with the by-passed portion of first-pass permeate. The overall recovery of the RO process is expected to be in the range of 40 to 45 percent; thus, approximately 20 to 22 MGD of filtered feedwater is required to produce 9 MGD of desalinated water, and 12 to 13.5 MGD of filtered feedwater is required to produce 5.4 MGD of desalinated water. The RO process will include energy recovery from the high-pressure brine stream using pressure exchanger technology.~~

~~The RO process will be modularized, with each module producing 1.8 MGD of permeate. Each module would include arrays that have 90 to 120 24-foot long by 10-inch O.D. pressure vessels (including both first-pass and second-pass vessels) mounted horizontally on a single rack, with each rack being approximately 16 feet wide by 24-feet long by 16 to 20-feet high.~~

~~For the 9.0 MGD desalination plant, the RO process will be housed in a 22,000 sq ft building with an interior ceiling height of approximately 28 feet. (For the 5.4 MGD desalination plant, the building may be reduced to approximately 16,000 sq ft.) This building will also house a clean-in-place (CIP) system for periodic cleaning of the RO membranes; the post-treatment facilities (see discussion below); and chemical storage/handling systems.~~

~~The RO process will produce a concentrate, or brine, which will flow continuously by gravity to the PCA outfall, at 120 to 140 percent of the plant's water production rate. As previously discussed, this brine stream will be conveyed by a gravity pipeline that will discharge into the PCA outfall. Spent cleaning solutions from the CIP process, which will occur two or three times per year, will be collected and neutralized and then either pumped or trucked to an appropriate disposal site.~~

~~Post-Treatment and Chemical Systems~~

~~Hardness, alkalinity, and pH of the product water would be adjusted after the RO process to protect piping and plumbing materials and to make the water more compatible with the other sources of supply in the CAW system. Facilities will be included at the desalination plant to add carbon dioxide (to adjust alkalinity), followed by filtration through calcite beds (to adjust hardness), and addition of sodium hydroxide (to adjust pH).~~

~~Sodium hypochlorite will also be added for disinfection. Even though the feedwater to the desalination plant will be coming from wells, disinfection requirements for initial operation of the desalination plant may be established according to pathogen removal/inactivation standards of the Surface Water Treatment Rule. Following the installation and startup of the feedwater wells, a testing program may be required to demonstrate that the bacteriological water quality of the extracted from the wells is not being influenced by surface water. If the desalination plant must be placed in operation before this determination is made (by the California Department of Public Health), and if it is determined that the pretreatment filters, reverse osmosis process, and chlorination process do not provide sufficient pathogen removal credits, a temporary UV disinfection system may be required for disinfection.~~

~~Various chemicals to be used during treatment would be stored and processed onsite. The estimated use, dosage (in units of milligrams per liter [mg/l]), and annual consumption (in units of pounds per year [lbs/yr]) of each chemical are summarized in **Table 4**. Bulk storage will be located in the Desalination/Post-Treatment/Chemical building. The design of this building will incorporate the regulatory requirements for hazardous materials storage, such as spill containment features that exceed the capacity of the tanks; segregation of individual chemicals to prevent mixing in the case of accidental spillage; and appropriate alarm and fire sprinklers. Chemicals that have specific reactivity risks with one another will be stored at opposite ends of the storage area to reduce the risk of mixing.~~

~~Brine Storage Basin~~

~~In the event of an interruption of this discharge, brine would be diverted to a 3 million-gallon lined open basin, on the desalination plant site. This storage will provide time for the plant to remain in operation for a short period to allow plant personnel to adjust or cease production and for system personnel to increase production from other sources (ASR wells, Seaside wells, BIRP).~~

~~Table 4~~ **~~Desalination Plant Chemicals~~**				
~~Chemical~~	**~~Application~~**	**~~Dosage (mg/l)~~**	**~~Annual Usage (lbs)~~**	
			~~5.4 MGD~~	**~~9.0 MGD~~**
~~Sodium Hypochlorite~~	~~Raw Feedwater~~	~~1.3~~	~~50,000~~	~~82,000~~
~~Sodium Bisulfite~~	~~Filtered Feedwater~~	~~1.3~~	~~50,000~~	~~82,000~~
~~Carbon Dioxide~~	~~RO permeate~~	~~15~~	~~240,000~~	~~400,000~~
~~Calcite~~	~~RO Permeate~~	~~35~~	~~560,000~~	~~930,000~~
~~Sodium Hydroxide~~	~~RO Permeate~~	~~2~~	~~32,000~~	~~53,000~~
~~Sodium Hypochlorite~~	~~Post-Treated Water~~	~~2~~	~~32,000~~	~~53,000~~
~~CIP Chemicals (Various)~~	~~Membrane Cleaning~~	~~Varies~~	~~Negligible~~	~~Negligible~~

~~Desalinated Water Storage Tanks and Pumping Stations~~

~~Following post-treatment, desalinated water would flow by gravity to on-site storage tanks, called clearwells. Two 85-foot diameter clearwells will provide a total storage volume of 2 million gallons. The clearwells would be covered, steel or concrete, and constructed above-grade with a floor elevation of approximately 110 feet. A clearwell pump station, located in the desalination building, will deliver flow from the post-treatment process to the clearwells. Desalinated water pumps would pump desalinated water from the clearwells into the Desalinated Water Pipeline for conveyance to CAW's service area. A second set of pumps~~

~~would pump desalinated water from the clearwells into the Salinas Valley Return Pipeline (SVRP). Both sets of pumps would be housed in a 3000 sq ft building, the Desalinated Water Pump Station (DWPS), located near the clearwells. Surge control tanks (hydrodynamic) would be required and would be installed outside and next to the DWPS.~~

~~Non-Process Facilities~~

~~A 10,000 to 12,000 sq ft single story building would be constructed on site. The building would house visitor reception, offices, restrooms, locker rooms, break rooms, conference rooms, control room, laboratory, equipment storage and maintenance area, and electrical service equipment for the adjacent Desalination/Post Treatment/Chemical Building.~~

~~Power Supply~~

~~Power to the MPWSP intake wells and desalination plant would be supplied by the existing power grid and no new power plant or other industrial emissions sources would be constructed. The total energy usage for the proposed intake wells, desalination plant, and desalinated water pump station would be approximately 48 million kwhrs/yr with the desalination plant producing 9,790 AFY(8.7 MGD average), and approximately 29 million kwhrs/yr with the desalination plant producing 5,980 AFY(5.3 MGD average). Energy use for each project component can be found in the MPWSP Capital and O&M Cost Estimate Memorandum dated April, 18, 2012. CAW is also investigating obtaining power from other sources, such as combinations of on-site solar, and/or use of power generated from landfill gas from the Monterey County Regional Solid Waste Management Agency.~~

~~Desalinated Water Conveyance~~

~~CAW Supply~~

~~Desalinated water will be pumped by the Desalinated Water Pump Station at the desalination plant into the 32,000 LF 36-inch diameter Product Water Pipeline, which will connect to the 15,700 LF Transfer Pipeline. The alignment of the Product Water Pipeline heads west from the desalination plant on Charles Benson Road, and then south on Del Monte Boulevard, and then south in the TAMC right-of way to the intersection of Beach Range Road and 1st Street, at which point it will connect to the Transfer Pipeline.~~

~~Salinas Valley Return~~

~~Desalinated water will be pumped by the Salinas Valley Return Pump Station at the desalination plant into a 7,000 LF 12-inch diameter pipeline which will discharge into the Castroville Seawater Intrusion Program's irrigation water storage pond on PCA's property.~~

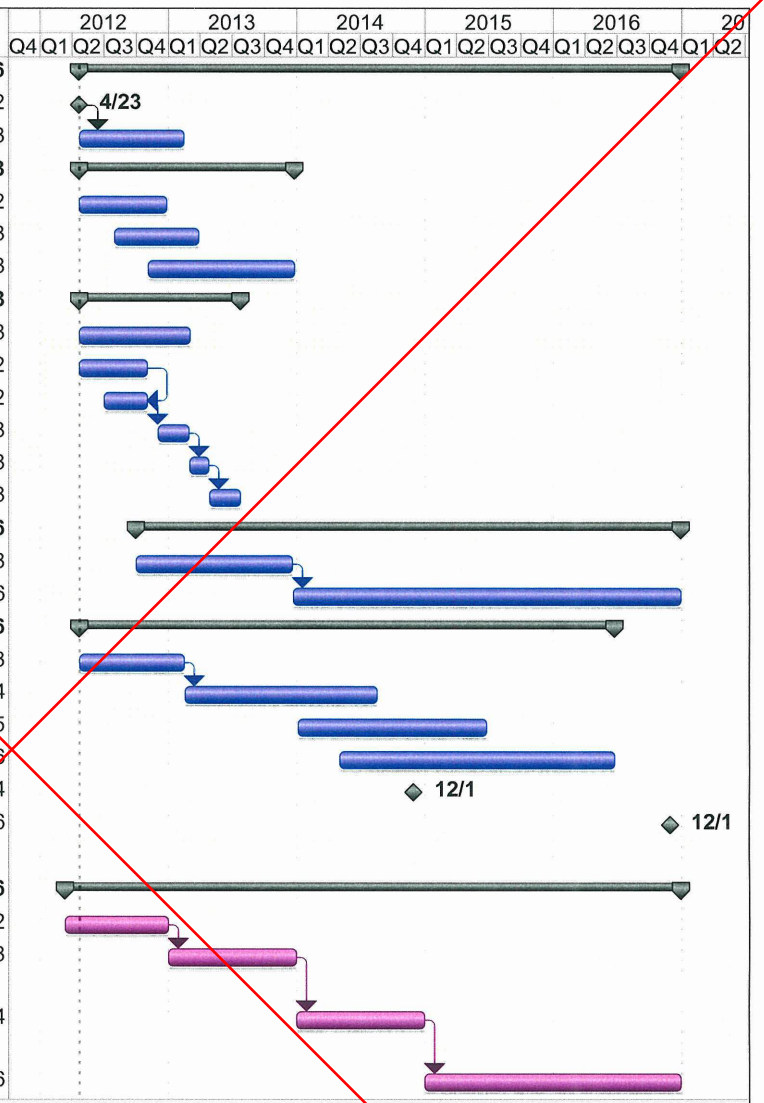
~~CONSTRUCTION METHODS AND SCHEDULE~~

~~The construction methods used for the desalination plant, pipeline, sub-surface intake facilities, and ASR wells are as described in the FEIR. Figure 11, Tentative Permitting and Construction Schedule, illustrates a preliminary construction timeline.~~

~~PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS~~

~~Potential agreements, permits and approvals for the Project are shown in Attachment A (exclusive of GWR permitting, which is outside CAW's control, and not part of the Project).~~

ID	Task Name	Duration	Start	Finish
1	**CAW Project**	**1225 days?**	**Mon 4/23/12**	**Fri 12/30/16**
2	**File with CPUC**	0 days	Mon 4/23/12	Mon 4/23/12
3	CPUC Approval	214 days	Tue 4/24/12	Fri 2/15/13
4	**Permitting**	**440 days?**	**Mon 4/23/12**	**Fri 12/27/13**
5	Pre-Application Activities	180 days?	Mon 4/23/12	Fri 12/28/12
6	Application Preparation and Submittal	173 days?	Wed 8/1/12	Fri 3/29/13
7	Permit Processing	300 days?	Mon 11/5/12	Fri 12/27/13
8	**Feedwater Test Well**	**330 days?**	**Mon 4/23/12**	**Fri 7/26/13**
9	Permitting	226 days?	Mon 4/23/12	Mon 3/4/13
10	Site Acquisition	140 days?	Mon 4/23/12	Fri 11/2/12
11	Design	90 days	Mon 7/2/12	Fri 11/2/12
12	Driller Procurement	65 days?	Mon 12/3/12	Fri 3/1/13
13	Construction	40 days?	Mon 3/4/13	Fri 4/26/13
14	Operation	65 days?	Mon 4/29/13	Fri 7/26/13
15	**DB Delivered Items**	**1110 days?**	**Mon 10/1/12**	**Fri 12/30/16**
16	DB Contract Procurement	320 days?	Mon 10/1/12	Fri 12/20/13
17	Design / Construction / Startup	790 days?	Mon 12/23/13	Fri 12/30/16
18	**DBB Delivered Items**	**1090 days?**	**Mon 4/23/12**	**Fri 6/24/16**
19	Design Contract Procurement	215 days?	Mon 4/23/12	Fri 2/15/13
20	Design	391 days?	Mon 2/18/13	Mon 8/18/14
21	Bid	385 days?	Mon 1/6/14	Fri 6/26/15
22	Construction / Startup	560 days?	Mon 5/5/14	Fri 6/24/16
23	Decision on GWR	0 days	Mon 12/1/14	Mon 12/1/14
24	CDO	0 days	Thu 12/1/16	Thu 12/1/16
25				
26	**GWR Project**	**1254 days**	**Tue 3/13/12**	**Fri 12/30/16**
27	Planning & Pilot Plant Facilities	210 days	Tue 3/13/12	Mon 12/31/12
28	Pilot Plant Testing & Develop Final Design	261 days	Tue 1/1/13	Tue 12/31/13
29	Prepare final design and obtain regulatory approval / permits	261 days	Wed 1/1/14	Wed 12/31/14
30	Construction	522 days	Thu 1/1/15	Fri 12/30/16



Project: MWS Project High Level Sche
Date: Fri 4/20/12

Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

Figure 11 - MPWSP Tentative Permitting and Construction Schedule

APPENDIX H
(Updated)

Attachment H
Monterey Peninsula Water Supply Project
Project Description
March 2016

PROJECT DESCRIPTION OVERVIEW

The Monterey Peninsula Water Supply Project (MPWSP) will produce desalinated water and convey it to the existing California American Water Company (CalAm) distribution system. The MPWSP supplements portions of CalAm's existing water sources on the Carmel River and Seaside Basin so their use may be reduced to stay within legal limits. The MPWSP consists of the construction of up to ten subsurface slant wells and a desalination plant to produce on average approximately 10,627 acre feet per year (afy) of desalinated water to meet service area demand and return water requirements to the Salinas Valley Groundwater Basin. The production capacity of the proposed MPWSP desalination plant is 9.6 million gallons per day (mgd). The proposed MPWSP consists of several components: a seawater intake system; a desalination plant; a brine discharge system; product water conveyance pipelines; water storage facilities; and an Aquifer Storage and Recovery (ASR) system. Refer to **Figure 1**, *Project Overview and Index Map*.

The MPWSP also includes a variation of the proposed action that combines a reduced-capacity desalination plant with a water purchase agreement for 3,500 afy product water from the Monterey Regional Water Pollution Control Agency's (MRWPCA) proposed Pure Water Monterey Groundwater Replenishment (GWR) Project. The MPWSP variant consists of the construction of up to eight subsurface slant wells and a desalination plant to produce on average approximately 6,752 acre feet per year (afy) of desalinated water to meet service area demand and return water requirements to the Salinas Valley Groundwater Basin. The MPWSP variant would change the desalination facility to a 6.4 mgd.

Construction of the MPWSP is anticipated to commence in second half of 2017 and be completed by mid-2019 (approximately twenty-four months). Additional Project Description information and technical studies are available on the MPWSP's website (*www.watersupplyproject.org*).

PROJECT OBJECTIVES

The primary objectives of the Monterey Peninsula Water Supply Project are to:

- Satisfy CalAm's obligations to meet the requirements of SWRCB Order 95-10;
- Diversify and create a reliable drought-proof water supply;
- Protect the Seaside Groundwater Basin for long-term reliability;
- Protect the local economy from the effects of an uncertain water supply;
- Minimize water rate increases by creating a diversified water supply portfolio;
- Minimize energy requirements and greenhouse gas (GHG) emissions per unit of water delivered to the extent possible;
- Explore opportunities for regional partnerships;
- Provide flexibility to incorporate alternative water supply sources, such as GWR; and

- To eliminate the hydraulic trough that exists between Seaside and Monterey in an energy efficient manner.

SEAWATER INTAKE SYSTEM

The proposed MPWSP would employ subsurface slant wells to produce the seawater source water for the desalination plant. The slant wells are located primarily within the City of Marina, in the active mining area of the CEMEX sand mining facility, with intake well tips located below the Mean Higher High Water line of Monterey Bay and beneath the Monterey Bay National Marine Sanctuary (MBNMS). The slant well intake system will consist of 10 subsurface slant wells (eight active and two on stand-by), which includes conversion of existing test slant well to a production well. The slant wells are approximately 700 to 1,000 feet long and slant downwards and towards the Monterey Bay, with the end of each well approximately 200 to 220 feet below mean sea level. Each well screen is approximately 400 to 800 linear feet long at depths corresponding to both the Dune Sand Aquifer and the underlying 180 foot equivalent aquifer of the Salinas Valley Groundwater Basin (SVGB).

The eight operating slant wells and two redundant wells (10 total) will typically pump approximately 24.1 mgd of source water to a proposed desalination plant 24 hours a day, 365 days per year. The slant wells will be constructed using a telescoping drill casing of various sizes of diameter, from 36-inch to 22-inches, depending on the final design length. All ground disturbing activities from construction occur above the mean higher high water line and within a previously disturbed area. Refer to **Figure 2**, *Subsurface Slant Wells at CEMEX Active Mining Area.*

The 10 slant wells will be arranged into six wellhead sites as shown in **Figure 2**. Wellhead Site 1 is the existing test slant wellhead. Site 2 and Site 6 have three slant wells each and Sites 3, 4, and 5 have one slant well each. Site 1, the northernmost well site, is located approximately 50 feet southeast of the CEMEX settling basins. Site 2, consisting of three new permanent wells, will be located roughly 650 feet south of Site 1. Site 6, consisting of three new slant wells will be located roughly 1,500 feet south of Site 1. The three separate new wells (Sites 3, 4, and 5) will be spaced approximately 250 feet apart between Sites 2 and 3. Each of the wellheads will be located above the mean higher high tide elevation, outside of predicted coastal hazard zones and in an existing disturbed area of the CEMEX sand mining site.

Each well site will consist of: wellhead(s), submersible well pump, protective enclosure, mechanical piping (i.e., mag meter, gate valve, check valve), electrical equipment (i.e., VFD and MCC), and ingress and egress access. Each slant well is designed to convey approximately 2,500 gpm using a 300 hp rated submersible motor. Protective fiberglass enclosures will house the electrical equipment, protecting it from trespassers and the corrosive ocean environment (i.e., sand, wind, salt air, etc.). The enclosures at the single well sites are approximately 16 feet x 12 feet x 8 ft high. The two enclosures at Sites 2 and 6 (3 wells each) are approximately 18 feet x 24 feet x 8 ft high. The fiberglass enclosures will have flat sloped roofs and be colored to blend into the surrounding environment. The enclosures will be located approximately 10 to 15 feet from the wellheads to provide adequate access for future well maintenance (i.e., pulling the pump). The mechanical piping will be located in a below grade concrete vault approximately 8 feet x 8 feet x 6 feet deep.

A pump-to-waste concrete below-grade basin is required at each well Site. When a slant well is operated after not pumping for some time, the well must be pumped-to-waste to flush undesirable initial water quality (silt/sand) rather than convey that to the desalination plant. The well could pump for up to 3 minutes to the waste basin at start-up. The proposed pump-to-waste basins would be approximately 1500-square-foot, 6 to 8 -foot-deep basin on located at each well site cluster or each single well location. Each basin will discharge with an air gap through a fiberglass/aluminum open grate into the vaults for natural percolation. The basin is assumed to not require periodic maintenance since seawater and sand would be discharged to a sand basin.

MPWSP DESALINATION PLANT

The MPWSP Desalination Plant would be constructed on approximately 25 acres of a 46-acre vacant parcel owned by CalAm on Charles Benson Road, northwest of the MRWPCA Regional Treatment Plant and the Monterey Regional Environmental Park. The proposed MPWSP Desalination Plant at this location would include a pretreatment system, a Reverse Osmosis (RO) system, a post-treatment system, backwash supply and filtered water equalization tanks, desalinated product water storage and conveyance facilities, brine storage and disposal facilities, and an administration building and laboratory facility. Existing roads would provide access to the site. The proposed construction and operation of the Desalination Plant would occur at a nearly level marine terrace and create approximately 15 acres of impervious surfaces associated with the desalination facilities, buildings, driveways, parking, and maintenance areas. No U.S. Army Corps of Engineers' jurisdictional wetlands would be affected.

The MPWSP Desalination Plant would have a rated production capacity of 9.6 mgd and a maximum production capacity of 11.2 mgd. The MPWSP Desalination Plant would operate at an approximate overall recovery rate of 42 percent. Approximately 24.1 mgd of raw seawater would be needed to produce 9.6 mgd of desalinated product water. Components of the proposed Desalination Plant are discussed below.

Pretreatment System: Seawater (source water) from the subsurface intake wells would be conveyed directly through an on-site pre-treatment system (pressure filters) to prevent the RO membranes from becoming fouled or scaled due to microbial contamination, turbidity, and other contaminants. The pretreatment system would have the capacity to process 24.1 mgd of seawater. The majority of the pretreated source water would then be pumped directly to the RO system.

The pressure filters would be located within the MPWSP Desalination Plant site. Pretreatment filters would require routine backwashing (approximately once per day). The pretreated source water would be conveyed to two 300,000-gallon backwash supply and filtered water equalization tanks.

Waste effluent produced during routine backwashing would flow via gravity from the pretreatment filters to two 0.25-acre, 6-foot-deep open backwash settling basins lined with an impermeable liner to prevent the waste effluent from infiltrating into the ground. Suspended solids in the waste effluent would settle to the bottom of the basins, and the clarified water would be decanted. Approximately 0.4 mgd of decanted and dechlorinated backwash water might be pumped to the Brine Discharge Pipeline, blended with brine produced by the RO system, and discharged to the existing MRWPCA ocean outfall. Alternatively, the decanted backwash water could be blended with source water before undergoing

pretreatment and the RO process. Sludge formed by the solids in the waste effluent would be periodically removed from the backwash settling basins and disposed of at a sanitary landfill.

A multi-purpose pump station located near the center of the proposed plant would be integral to the operation of facility. The pump station would be constructed on an outdoor concrete pad with an approximate area of 8,000 square feet. Equipment would include: seven cartridge filters; four Filtered Water Pumps (two 12 MGD and 350 HP each; and two 6 MGD and 200 HP each); two Backwash Supply Pumps (16 MGD and 150 HP each); four Treated Water Pumps (two 4.8 MGD and 600 HP each; and two 2.4 MGD and 300 HP each); two Salinas Valley Pumps (1.4 MGD and 10 HP each); and associated piping, valves, instruments and appurtenances.

Approximately 9.5 mgd of desalinated product water would be produced during the RO process. Waste effluent produced during the RO process would be diverted to the brine waste stream and discharged via the existing MRWPCA outfall and diffuser.

Reverse Osmosis System: Reverse osmosis is an ion separation process that uses semipermeable membranes to remove salts and other minerals from saline water. Pretreated source water is forced at very high pressures through RO membranes. Water molecules, which are smaller than salt and many other impurities, are able to pass through the membranes. A portion of the source water passes through the RO membranes to produce "permeate," or product water; source water that does not pass through the membranes increases in salt concentration and is discharged as brine. The RO system would be housed in an approximately 30-foot-tall, 30,000-square-foot process and electrical building located in the central portion of the MPWSP Desalination Plant site. This building would also house the UV disinfection system (if required) and the cleaning system for the RO membranes.

The RO process would incorporate an energy recovery system that utilizes pressure-exchange technologies. The use of high-pressure pumps to force saline water through the RO membranes would produce a concentrated brine solution (referred to as RO concentrate) in a continuous stream that contains a large amount of high-pressure energy. Pressure exchangers would be employed to transfer the energy from the high-pressure brine stream to the source water stream to reduce energy demand and operating costs. The accumulation of salts or scaling on the RO membranes causes fouling, which reduces membrane performance. The RO system is expected to require cleaning two to three times per year. The RO cleaning system would be housed in the same building as the RO system and would include chemical storage, chemical feedlines, and a collection tank.

For back-up power to power a portion of the facility, CalAm would install a 750-kilowatt (kW) (1,000 horsepower (hp)) emergency diesel fuel-powered generator and a 2,000-gallon double-walled, aboveground diesel storage tank adjacent to the process and electrical building.

Post-treatment System: After leaving the RO system, the desalinated water would pass through a post-treatment system to make the water more compatible with the other water supply sources in the CalAm system and provide adequate disinfection prior to distribution to customers. It is expected that post-treatment facilities would include chemical feedlines and injection systems for lime and carbon dioxide. The final design of post-treatment facilities would be based on the water quality data collected during operation of the test slant well and pilot program and the results of a geochemical mixing study.

Chemical Use and Storage: Facility operators would use various chemicals to treat the water as it passes through the pretreatment, RO, and post-treatment processes to ensure the water meets drinking water quality requirements and is compatible with native groundwater in the Seaside Groundwater Basin. The various chemicals used during the desalination process would be stored onsite in accordance with applicable regulatory requirements, and storage facilities would include secondary concrete containment, alarm notification systems, and fire sprinklers.

Brine Storage and Disposal: The RO process would generate approximately 14 mgd of brine (including 0.4 mgd of decanted backwash water). The brine storage and disposal system would consist of: 1) one Brine Storage Basin with a storage capacity of 3-million gallons that is uncovered and lined with two impermeable liners; 2) two Brine Discharge pumps, 6-mgd capacity each, 40-hp each; and 3) an aeration system to maintain 5 mg/L dissolved oxygen levels in the brine. Under continuous brine disposal scenarios, the brine from the RO system would be conveyed directly through the 1-mile-long, 30-inch diameter Brine Discharge Pipeline to a proposed connection with the existing MRWPCA outfall. Under intermittent brine discharge operating scenarios, the brine would be directed to the brine storage basin. The brine would be stored for approximately 5 hours, and then pumped to the Brine Discharge Pipeline at a rate of 6-mgd where it would combine with approximately 14 mgd of brine from the RO process and be discharged at a total flow of approximately 20 mgd. Further evaluation of the proposed brine dilution through the MRWPCA outfall could require modifications to the proposed brine storage and disposal system. Such modifications could include, but may not be limited to a larger brine storage basin or basins (open and lined, steel or concrete), greater brine pumping capacity and larger pumps, a larger aeration system and/or a larger diameter pipeline.

Administrative Building: A 6,000-square-foot single-story administrative building at the MPWSP Desalination Plant site would house visitor reception, offices, restrooms, locker rooms, break rooms, conference rooms, a control room, a laboratory, an equipment storage and maintenance area, and monitoring and control systems for the RO system, post-treatment system, chemical feed systems, and related facilities.

BRINE DISCHARGE SYSTEM

The reverse osmosis system at the MPWSP desalination plant generates approximately 14 million gallons per day (MGD) of brine, including 0.4 MGD of decanted backwash water. The brine is initially conveyed to a three million gallon lined open brine storage basin, then pumped through a 36-inch diameter brine discharge pipeline to a new connection with the existing MRWPCA outfall and diffuser located at the wastewater facility.

During the dry/irrigation season that typically extends from April through October, treated wastewater from MRWPCA's Regional Wastewater Treatment Plant is diverted to the Salinas Valley Reclamation Project's tertiary treatment facility for advanced treatment and is used for crop irrigation. During the wet/non-irrigation season that typically extends from November through March, the brine stream blends with treated wastewater from MRWPCA's Regional Wastewater Treatment Plant before being discharged into the Monterey Bay. During other times, the brine stream will discharge into Monterey Bay without blending.

The MRWPCA's existing outfall pipeline extends into the Monterey Bay about two miles offshore along the ocean floor. The diffuser is about 1,100 feet long with 172 2-inch diameter active ports (fifty two

ports are closed) that are spaced 8 feet apart, which disperse the brine stream at the discharge point. This minimizes differences in salinity and other water quality parameters between the discharge brine and the surrounding seawater.

CONVEYANCE AND STORAGE FACILITIES

Water Conveyance: The proposed MPWSP consists of water conveyance and storage facilities, such as pipelines, pump stations, and treated water storage at a proposed Terminal Reservoir and at existing and proposed Aquifer Storage and Recovery (ASR) well sites. Various transmission pipeline segments would convey feed water from the intake wells to the Desalination Plant, while product water from the Desalination Plant site would be conveyed to storage and distribution systems as shown on **Figure 2** and further described below. No U.S. Army Corps of Engineers' jurisdictional wetlands would be affected.

Feedwater Pipeline: The CEMEX Feed Water Alternative would convey seawater pumped from the seawater intake system to the Desalination Plant for a distance of approximately 11,469 LF. The conveyance of seawater from the proposed CEMEX Feed Water intake well site would traverse eastward beneath the private CEMEX access road and cross under the Highway 1 overpass and right-of-way. It would continue northeast into an abandoned railroad spur to Lapis Road, north into the Transportation Agency for Monterey County (TAMC) Right-of-Way (ROW) and onto Charles Benson Road to the desalination plant site.

An alternative alignment is identical to the previously described alignment, but turns east off of Del Monte Boulevardonto Nepsonet Road, which is the direct access road for the farms along it, to the desalination plant site .

Transfer Pipeline: For product water conveyance from the CalAm Desalination Plant to the CalAm water system, the desalinated water pump station would pump desalinated product water through the proposed Desalinated Water Pipeline and Transmission Main. From the Plant site pump station, the 9.5-mile-long, 36-inch-diameter desalinated product water pipeline would extend west for approximately 0.8 mile along Charles Benson Road (and/or Neponset Road), parallel to the proposed Feedwater Pipeline. At Del Monte Boulevard, the product water pipeline would cross Del Monte Boulevard and turn south and continue along the TAMC ROW for approximately 5.7 miles to just north of the interchange between Highway 1/Lightfighter Drive. The pipeline would traverse beneath Highway 1 via jack and bore and then continue south-easterly into land owned by the City of Seaside until it meets Lightfighter Drive. The pipeline would then continue east along Lightfighter Drive to General Jim Moore Boulevard, where it would turn south, continue beneath General Jim Moore Boulevard to just south of Coe Avenue, where it would connect to an existing pipeline.

Monterey Pipeline: The Monterey Pipeline, approximately 6.5 miles of 36-inch pipe, would continue from General Jim Moore Boulevard westward beneath Hilby Avenue, and turn south on Fremont Boulevard where it would cross Canyon del Rey Boulevard (Route 218) at the City of Monterey to Airport Road (or Casa Verde Way), where it would turn south and then turn west again along Fairgrounds Road. The pipeline would then be attached to the Fairgrounds Road/Mark Thomas Drive bridge over Highway 68 or a new pipe carrier bridge will be installed and continue onto Mark Thomas Drive turning northwest on to Fremont Street. The alignment travels west beneath Fremont Street, continuing

beneath Webster Street, then turning north onto Hartnell Street and then west onto Madison Street. From Madison Street, the alignment turns north along Monroe Street and then west along Jefferson Street. The Monterey Pipeline then turns north onto Clay Street, then north onto W. Franklin St, and then north on High St. where it crosses the Presidio of Monterey (POM) along Stillwell Avenue. From POM, the pipeline alignment would exit on to Spencer Street, and then southwest to Hoffman Ave, northwest onto Cypress Ave, southwest onto Withers Avenue and finally north on Sinex Avenue connecting to an existing 30-inch pipeline in Sinex Avenue, near the Eardley Pump Station in the City of Pacific Grove. This pipeline route also improves the hydraulics of the existing system by eliminating the existing hydraulic though in the system that is located in the vicinity of Canyon Del Ray & 218 area and allows for maximum use of ASR and Carmel River excess diversion rights.

Terminal Reservoir: The Terminal Reservoir and related facilities will be located east of General Jim Moore Boulevard, north side of Watkins Gate Road, within former Fort Ord property in the City of Seaside. The Terminal Reservoir would consist of two 33-foot-tall, 130-foot-diameter aboveground concrete tanks. Each tank would have a storage capacity of 3 million gallons, for a total storage capacity of 6 million gallons. The Terminal Reservoir tanks would be constructed on an approximately 0.5-acre concrete pad. Security fencing would enclose a 4.5-acre area around the Terminal Reservoir. In order to reduce visual impacts, it may be required through the City of Seaside land development approval to partially bury (bermed) or fully bury the reservoirs.

ASR Facilities: The ASR Facilities include two injection/extraction wells (Wells ASR-5 and ASR-6), and supporting pipelines. The two additional ASR wells would be located immediately east of General Jim Moore Boulevard in the area of Fitch Park. These ASR wells will provide storage capacity in the winter, by injecting water into the Seaside Groundwater Basin, and support peak water supply in the summer by drawing on the stored water, thus reducing the need for surface water diversions from Carmel River.

Salinas Return Pipeline: From 1.0 to 1.6 mgd of product water may be used to replenish aquifers from which seawater is extracted at the intakes. The pipeline would be operated between May and October of each year and deliver product water to the existing Castroville Seawater Intrusion Project (CSIP) infiltration pond located at the MRWPCAWastewater Treatment Plant. The Salinas Return Line would be approximately 1.1 miles in length.

Castroville Salinas Valley Return Pipeline: In addition to the Salinas Return Line, return flow requirements of product water may be conveyed to the Castroville Water District. The Salinas Valley Return Pipeline to Castroville will be a 8 to 12-inch diameter pipe approximately 4 miles long. . The route alternatives are depicted on **Figure 1**.

Pump Stations: In addition to pump stations at the intake wellheads and at the desalination plant site, conveyance pump stations are also proposed on the Monterey County Fairgrounds property, and at the CalAm owned Rancho San Carlos Well Site in Carmel Valley, locations are depicted in **Figure 1**. The proposed Monterey Pump Station, located at the County Fairgrounds, would be equipped with one, 400 horsepower (hp) and two, 200 hp pumps, with a combined pumping capacity of 6,400 gallons per minute (gpm) and 3,200 gpm, respectively. The proposed Valley Greens Pump Station would be equipped with three, 60 hp, 1,400 gpm pumps. The mechanical appurtenances would be enclosed in an approximately 1300-square-foot pump house for both sites.

Highway 68 Satellite Water System Interconnect Pipelines: CalAm Monterey District includes five small satellite water located along the Highway 68 corridor. Three of these systems depend on groundwater from the adjudicated Seaside basin whose allocation will be reduced to zero by 2018. This project proposes two small water main extensions that allow MPWSP to provide adequate water supply to these systems, the extensions are shown in **Figure 1**.

PIPELINE CONSTRUCTION METHODS

Pipeline installation would generally progress at a rate of 150 to 250 feet per day. The majority of the pipeline installation would be through an open-cut trench construction method. However, where it is not feasible or desirable to perform open-cut trenching, trenchless methods would be used. Pipeline depth would vary depending on pipe size and topography but will be typically have 4 feet of cover. Installation would use conventional equipment such as flatbed trucks, backhoes, excavators, pipe cutting and welding equipment, haul trucks for spoils transport, trucks for materials delivery, compaction equipment, Baker tanks, pickup trucks, arch welding machines, generators, air compressors, cranes, drill rigs, and skip loaders.

Pipeline segments would typically be delivered and installed in 16 to 40-foot-long sections. Soil removed from trenches and pits would be stockpiled and reused, to the extent feasible, or hauled away for offsite disposal. Under typical circumstances, the width of the disturbance corridor for pipeline construction would vary from 50 to 100 feet, depending on the size of the pipe being installed. Trenchless technologies could require wider corridors at entry and exit pits. Pipeline installation would be ongoing throughout the entire 24-month construction period, with multiple pipelines being installed simultaneously. Pipeline installation would be sequenced to minimize land use disturbance and disruption to the extent possible.

Construction equipment and materials associated with pipeline installation would be stored along the pipeline easements and at nearby designated staging areas. Staging areas would not be sited in sensitive areas such as riparian or critical habitat for protected species. To the extent feasible, parking for construction equipment and worker vehicles would be accommodated within the construction work areas and on adjacent roadways.

Roadways and rail tracks disturbed during pipeline installation would be restored to existing or improved condition. A pre-construction and post-construction evaluation would be conducted to assess on-site conditions. Generally, trench spoils in the TAMC ROW would be temporarily stockpiled within the construction easement, then backfilled into the trench after pipeline installation. Any excess spoils would be disposed of at an appropriate facility. Locations for permanent removal of uncontaminated spoils would be coordinated with the selected contractor in coordination with the local jurisdiction.

The final location of pipelines within public ROWs, based on existing utilities, will determine whether certain traffic lanes or streets require closure during construction activities. Traffic Control Plans will be prepared in coordination with affected municipalities or Caltrans for temporary lane closures.

Open-Trench Construction: For pipeline segments to be installed using open-trench methods, the construction sequence would typically include clearing and grading the ground surface along the pipeline alignments; excavating the trench; preparing and installing pipeline sections; installing vaults, manhole risers, manifolds, and other pipeline components; backfilling the trench with non-expansive

fills; restoring preconstruction contours; and revegetating or paving the pipeline alignments, as appropriate. A conventional backhoe, excavator, or other mechanized equipment would be used to excavate trenches. The typical trench width would be 6 feet; however, vaults, manhole risers, and other pipeline components could require wider excavations. Work crews would install trench boxes or shoring or would lay back and bench the slopes to stabilize the pipeline trenches and prevent the walls from collapsing during construction. After excavating the trenches, the contractor would line the trench with pipe bedding (sand or other appropriate material shaped to support the pipeline). Construction workers would then place pipe sections (and pipeline components, where applicable) into the trench, join the sections together as trenching proceeded, and then backfill the trench. Steel plates would be placed over trenches to maintain access to private driveways.

Trenchless Technologies: Where it is not feasible or desirable to perform open-cut trenching, trenchless methods such as jack-and-bore, drill-and-burst, horizontal directional drilling, and/or microtunneling would be employed. Pipeline segments located within heavily congested underground utility areas or in sensitive habitat areas may be installed using horizontal directional drilling or microtunneling. Jack-and-bore methods would also be used for pipeline segments that cross beneath Highway 1 or drainages.

Jack-and-Bore and Microtunneling Methods: The jack-and-bore and microtunneling methods entail excavating an entry pit and a receiving pit at either end of the pipe segment. A horizontal boring machine or auger is used to drill a hole, and a hydraulic jack is used to push a casing through the hole to the opposite pit. As the boring proceeds, a steel casing is jacked into the hole and pipe is installed in the casing.

Drill-and-Burst Method: The drill-and-burst method involves drilling a small pilot hole at the desired depth through a substrate, and then pulling increasingly larger reamers multiple times through the pilot hole until the hole reaches the desired diameter.

Horizontal Directional Drilling: Horizontal directional drilling requires the excavation of a pit on either end of the pipe alignment. A surface-launched drilling rig is used to drill a small horizontal boring at the desired depth between the two pits. The boring is filled with drilling fluids and enlarged by a back reamer or hole opener to the required diameter. The pipeline is then pulled into position through the boring. Entry and receiving pits range in size depending on the length of the crossing, but typically have dimensions of approximately 50 by 50 feet.

MPWSP VARIANT

The project includes a variation (Variant) that potentially combines a reduced-capacity desalination plant with a water purchase agreement for product water from the MRWPCA's proposed Pure Water Monterey Groundwater Replenishment Project. The Pure Water Monterey Groundwater Replenishment Project has its own separate environmental compliance documentation and otherwise has independent utility from the MPWSP (refer to the Draft Environmental Impact Report for the Pure Water Monterey Groundwater Replenishment Project, prepared by Denise Duffy & Associates, Inc. (dated April 2015), available on the Monterey Regional Water Pollution Control Agency website (http://www.mrwpca.org/).

The Variant, if approved, reduces the size of desalination plant capacity from 9.6 MGD to 6.4 MGD and the number of source wells is reduced to eight (six active and 2 standby), which includes conversion of existing test slant well to a production well, to produce up to 15.5 MGD of source water. Additionally,

the volume of brine waste discharge is reduced. The remaining MPWSP proposed facilities are the same under the MPWSP and the Variant scenarios.

The primary objectives of the MPWSP Variant are the same as those for the proposed project. In order to provide 9,752 afy of additional water supplies to meet the estimated total annual demand in the Monterey District of 15,296 afy, the MPWSP Variant would provide 6,252 afy with a reduced sized desalination plant (6.4 mgd). The remaining 3,500 afy would be provided through a water purchase agreement between CalAm and the GWR project sponsors (in addition to existing Carmel River diversions, Aquifer Storage and Recovery [ASR], the Seaside Groundwater Basin and the Sand City Coastal Desalination Plant). **The table below** summarizes the future supplies for the Monterey District with and without the implementation of the MPWSP Variant.

Future Water Supplies for the Monterey District with Implementation of the MPWSP

Source	MPWSP with GWR Average Annual Yield (afy)a	MPWSP without GWR Average Annual Yield (afy)a
MPWSP Desalination Plant (Proposed)	6,252	9,752
GWR Project Water	3,500b	--
Carmel River Diversions (Existing)	3,376	3,376
ASR Project (Existing)	1,300	1,300
Seaside Groundwater Basin (Existing)	774c	774c
Sand City Coastal Desalination Plant (Existing)	94	94
Total	**15,296**	**15,296**

a. Average annual yields are rounded to the closest whole number.
b. CalAm would enter into a water purchase agreement with MPWMD for 3,500 afy of GWR project supply.
c. After CalAm has fulfilled its replenishment obligations to the Seaside Groundwater Basin (assumed to take 25 years at a replenishment rate of 700 afy), CalAm would increase pumping to its adjudicated right of 1,474 afy.
SOURCE: ESA Associates, 2015.

FIGURE 1

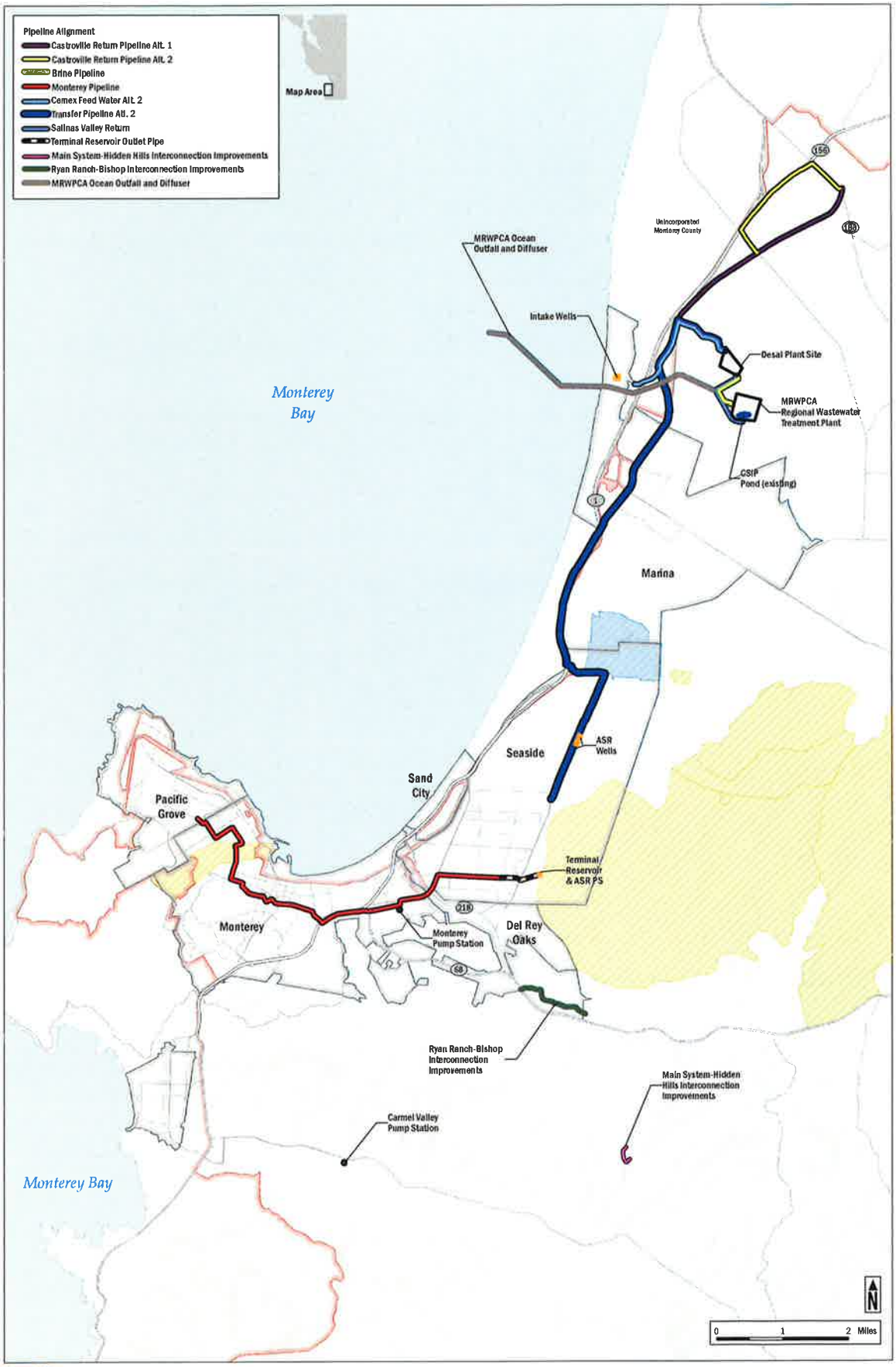
MPWSP FACILITIES OVERVIEW

FIGURE 2

SUBSURFACE SLANT WELL LAYOUT

FIGURE 1

MPWSP FACILITIES OVERVIEW



URS

California American Water

Transmission Mains and Aquifer Storage & Recovery (ASR) Facilities

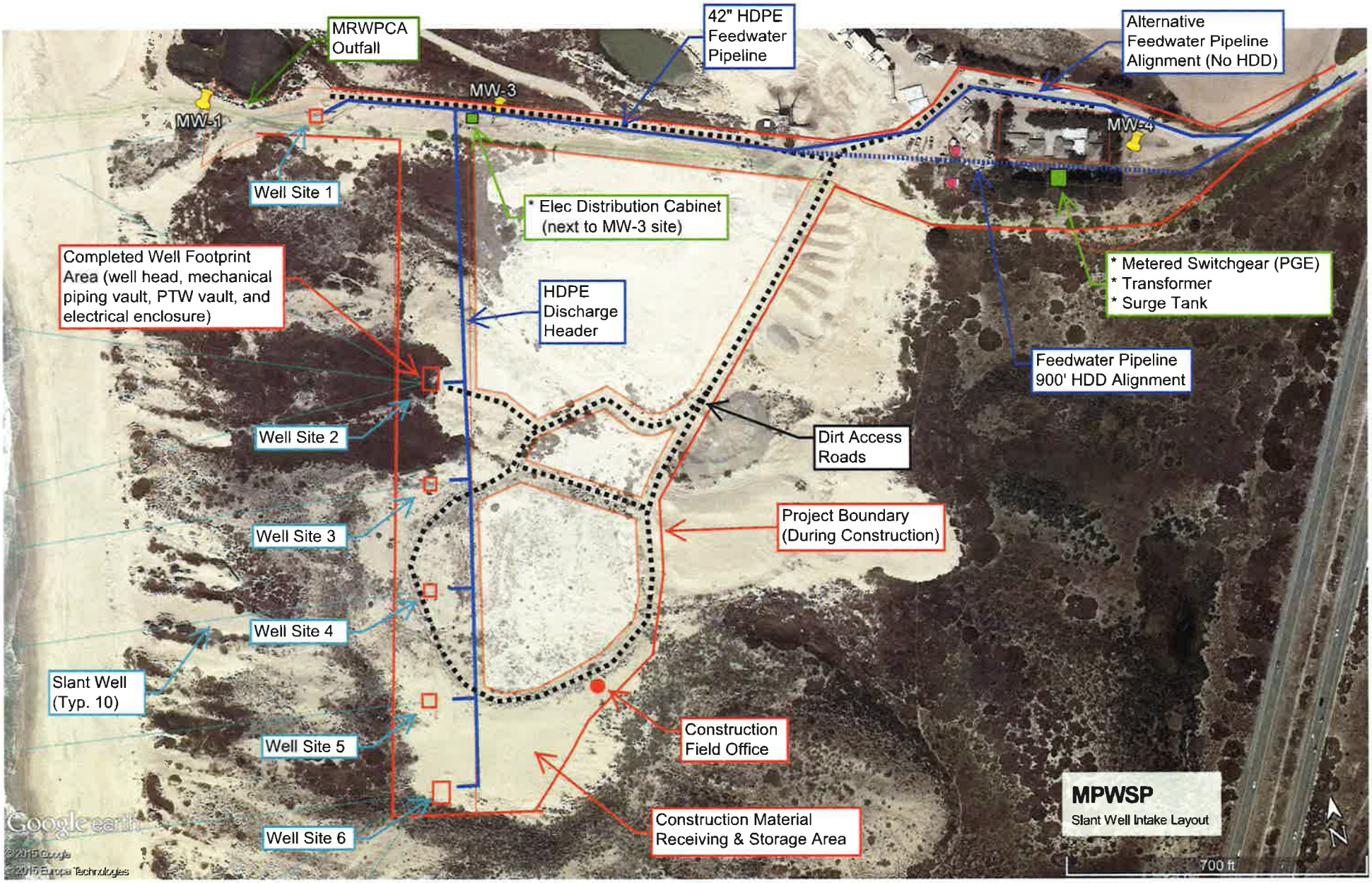
MONTEREY PENINSULA WATER SUPPLY PROJECT, MPWSP

PROJECT OVERVIEW

Project Pipeline Alignments

FIGURE 2

SUBSURFACE SLANT WELL LAYOUT


MRWPCA Outfall
42" HDPE Feedwater Pipeline
Alternative Feedwater Pipeline Alignment (No HDD)
MW-1
MW-3
MW-4
Well Site 1
* Elec Distribution Cabinet (next to MW-3 site)
Completed Well Footprint Area (well head, mechanical piping vault, PTW vault, and electrical enclosure)
HDPE Discharge Header
* Metered Switchgear (PGE)
* Transformer
* Surge Tank
Feedwater Pipeline 900' HDD Alignment
Well Site 2
Dirt Access Roads
Project Boundary (During Construction)
Well Site 3
Well Site 4
Slant Well (Typ. 10)
Construction Field Office
Well Site 5
Construction Material Receiving & Storage Area
Well Site 6
MPWSP
Slant Well Intake Layout
700 ft
N
Google earth

Appendix I

Balance Sheet and Income Statement

California-American Water Company

(a wholly-owned subsidiary of American Water Works Company, Inc.)

Unaudited

Financial Statements

As of and for the years ended December 31, 2011 and 2010

CALIFORNIA-AMERICAN WATER COMPANY
Balance Sheets (Unaudited)
December 31, 2011 and 2010
(Dollars in thousands)

Assets

	2011	2010
Property, plant and equipment		
Utility plant - at original cost, net of accumulated depreciation	$ 523,934	$ 485,809
Utility plant acquisition adjustments, net	2,338	2,448
Nonutility property, net of accumulated depreciation of $400 at December 31, 2011 and $332 at December 31, 2010	3,615	2,660
Total property, plant and equipment	529,887	490,917
Current assets		
Cash and cash equivalents	168	415
Customer accounts receivable	9,184	8,708
Allowance for uncollectible accounts	(672)	(678)
Unbilled revenues	7,785	8,117
Notes receivable - affiliated company	15,901	25,641
Federal income tax refund due from affiliated company	-	174
State income taxes receivable	835	348
Prepaid other	740	2,737
Other	2,212	2,616
Total current assets	36,153	48,078
Regulatory and other long-term assets		
Regulatory assets	189,120	181,158
Preliminary survey & investigation	-	61
Prepaid pension expense	3,490	-
Goodwill	260	260
Other	6,294	48
Total regulatory and other long-term assets	199,164	181,527
Total assets	$ 765,204	$ 720,522

CALIFORNIA-AMERICAN WATER COMPANY
Balance Sheets (Unaudited)
December 31, 2011 and 2010
(Dollars in thousands)

Capitalization and Liabilities

	2011	2010
Capitalization		
Common stockholder's equity	$ 276,696	$ 228,940
Long-term debt	278,000	278,000
Total capitalization	554,696	506,940
Current liabilities		
Note payable - affiliated company	15,641	24,193
Accounts payable	12,197	16,601
Accrued purchased water	3,237	4,063
Accrued interest	1,594	1,535
Federal income tax payable due to affiliated company	1,666	-
Accrued taxes	260	765
Other	9,545	9,390
Total current liabilities	44,140	56,547
Regulatory and other long-term liabilities		
Regulatory liabilities	32,668	32,869
Deferred income taxes	41,015	31,641
Advances for construction	16,053	18,331
Deferred investment tax credits	850	932
Deferred revenue	1,618	1,890
Accrued pension expense	-	1,411
Accrued postretirement benefit expense	714	657
Environmental mitigation costs	4,400	5,500
Other	3,477	1,412
Total regulatory and other long-term liabilities	100,795	94,643
Contributions in aid of construction	65,573	62,392
Commitments and contingencies (See Note 16)	-	-
Total capitalization and liabilities	$ 765,204	$ 720,522

CALIFORNIA-AMERICAN WATER COMPANY
Balance Sheets (Unaudited)
December 31, 2011 and 2010
(Dollars in thousands)

	2011	2010
Operating revenues	$ 160,682	$ 158,197
Operating expenses		
Operation and maintenance	104,264	102,071
Depreciation	16,926	15,934
Amortization	4,409	4,306
General taxes	5,068	5,192
Gain on disposition of property	-	(31)
Total operating expenses	130,667	127,472
Operating income	30,015	30,725
Other income (expenses)		
Interest on long-term debt	(16,864)	(16,230)
Interest on short-term debt to affiliated company	(24)	(64)
Other interest, net	628	369
Allowance for borrowed funds used during construction	1,914	1,774
Amortization of debt expense	(147)	(137)
Other income, net	331	324
Total other expenses	(14,162)	(13,964)
Income before income taxes	15,853	16,761
Income tax provision	6,433	6,770
Net income	$ 9,420	$ 9,991

Appendix J

Draft Customer Notice

IMPORTANT: INFORMATION REGARDING PROPOSED RATE INCREASE

For a Spanish version of this notice, you may visit our website at www.californiaamwater.com.
Para una version en Espanol de este aviso usted puede visitar nuestro sitio web en www.californiaamwater.com.

NOTICE OF APPLICATION FILING BY CALIFORNIA AMERICAN WATER TO CONSTRUCT AND OPERATE THE MONTEREY PENINSULA WATER SUPPLY PROJECT AND TO RECOVER THE PRUDENT AND REASONABLE COSTS

Application No. 12-04-XXX

On April 23, 2012, California American Water filed Application 12-04-xxx (A.12-04-xxx) with the California Public Utilities Commission (CPUC) seeking authorization to construct and operate the Monterey Peninsula Water Supply Project, which includes a desalination plant, transmission mains, reservoirs, boosters, wells, aquifer storage and recovery facilities, land and other assets, and to recover in rates all costs associated with the Monterey Peninsula Water Supply Project. In addition, the company seeks approval to procure water from the Monterey Regional Water Pollution Control Agency's (MRWPCA) and the Monterey Peninsula Water Management District's (MPWMD) Groundwater Replenishment Project (GWR) if that project is developed in time to meet required cutbacks on the community's current major water source, the Carmel River.

In 2010, the CPUC (D. 10-12-016) granted California American Water a CPCN (Certificate of Public Convenience and Necessity) for the Regional Desalination Project (RDP). In January of 2012, California American Water withdrew its support for that project due to the legal and financial challenges associated with it. The Monterey Peninsula Water Supply Project is California American Water's proposal to provide Monterey District customers with a reliable and legal water supply and comply with the State Water Resources Control Board's (SWRCB) Cease and Desist Order (CDO,) which directs California American Water to find an alternative source for approximately 70% of water historically taken from the Carmel River Basin.

California American Water's application includes the following requests:

- Approval of a desalination facility, the major features of which the CPUC already studied in D.10-12-016 as an alternative to the RDP, called the North Marina Project (NMP).
  - Approval for a 5.4 mgd desalination facility if GWR is able to deliver water in time to meet the requirements of the CDO.
  - Approval for a 9.0 mgd desalination facility if GWR is not able to deliver water in time to meet the requirements of the CDO or if GWR does not prove to be cost effective.
  - Approve the change from 9.0 mgd facility to a 5.4 mgd facility through an Advice Letter Compliance Filing.
- Allow California American Water to procure water from the GWR project for its customers. Environmental review of the GWR project will be led by MRWPCA and MPWMD and will occur outside the CPUC process.
- Approve supply components that were contained within the RDP, such as Aquifer, Storage, Recovery (ASR) expansion and the development of pipeline and storage facilities and re-approve the prior rate-making authorizations for these facilities.
- Review and approve any necessary additional environmental review required for the issuance of the CPCN.
- Approve cost caps for the total capital cost for the Monterey Peninsula Water Supply Project at $XXX million for the 9 mgd facility and $XXX million for the 5.4 mgd facility.
- Approve continuation of California American Water's current memorandum account for long-term water supply projects.
- Continue the existing annual application process to review amounts in the memorandum account to be transferred to the Surcharge #1 balancing account and collected by Surcharge #1, a 15% fee currently on California American Water's Monterey Peninsula customers' bills.

- Approve Surcharge #2 to fund construction costs for the Monterey Peninsula Water Supply project on a pay-as-you-go basis. This surcharge was previously authorized for water supply projects for the Monterey Peninsula, but never implemented.
- Approve Surcharge #2 to begin on July 1, 2013 at 30% and increase to 45% on January 1, 2014 and 60% on July 1, 2014 and remain in place through 2016. Allow Surcharge #2 to be adjusted on a semi-annual basis to ensure collection of $99.1 million.
- Approve changes to California American Water's low income program to ensure equitable treatment of low-income customers.
- Approve a Phase II of this proceeding to consider rate design implications of the project.
- Approve an interim order for development of a production well that will be used as a test facility in the environmental review for the Monterey Peninsula Water Supply Project. Approve tracking of costs for this facility in the Surcharge #1 memorandum account.

Summary

The first table below shows the current and proposed rate impacts on the average Monterey District residential customer (which includes residents in the communities of Sand City, Seaside, Del Rey Oaks, Monterey, Pacific Grove, Pebble Beach, Carmel, Carmel Highlands, Carmel Valley, Bishop and Ryan Ranch) with a standard (5/8 inch x 3/4 inch) meter, including all current and proposed surcharges, except those related to the proposed project. The second table shows the proposed increase in revenues per customer classification. The figures in the tables do not include applicable taxes and fees. The figures in the tables are assuming the CPUC approves the ratemaking requests proposed by California American Water. The final CPUC decision may differ from California American Water's request.

	Average Residential Monthly Bill				
Average Usage: XX ccf	**Current Bill**	**Bill with Estimated Inc's**	**Proposed Bill**	**Increase ($) from Est. to Proposed**	**Increase (%)**
Present Bill					
2012					
2013					
2014					
2015					
2016					
2017					

Revenue Increase (Thousands of Dollars)					
	Customer Class	**Current Revenue**	**Proposed Revenue**	**Increase ($)**	**Increase (%)**
	Residential				
	Commercial				
	Industrial				
	Public Authority				
	Irrigation				
	Private Fire Service				
	Fire Hydrants				
	Other				
	Total				

Further Information

To obtain a copy of the Application or for further information regarding the application you may contact the local field office. The Application and related exhibits may also be inspected. Your local California American office is located at 511 Forest Lodge Road #100, Pacific Grove CA 93950. The application may also be

inspected at the CPUC's Central Files Office in San Francisco at 505 Van Ness Avenue, San Francisco, CA 94102 between the hours of 8:00 a.m. and noon daily. If you need additional information, you may call California American Water at (888) 237-1333.

Evidentiary Hearings
The CPUC may schedule formal Evidentiary Hearings (EH's) whereby formal parties of record provide testimony and are subject to cross examination before the CPUC's Administrative Law Judge (ALJ). These hearings are open to the public to listen, but only those who are formal parties of record are allowed to participate. The CPUC has their own court reporters who will take the comment of those formal parties of record participating in the EH's. California American Water will provide testimony at the hearings. The Division of Ratepayer Advocates (DRA) consists of engineers, accountants, economists and attorneys who independently evaluate the proposals of utilities for and present their analyses and recommendations for the CPUC at EH's. Once hearings are completed, the ALJ will consider all of the evidence presented and release the proposed draft decision. When the CPUC issues a final decision, it may adopt, amend, or modify all or part of the ALJ's draft decision. The final decision may differ from the requests in the application filed by California American Water.

Public Comments
If you wish to comment on this proposed application filing or informally protest this filing as a customer of California American Water, you may do so by contacting the CPUC's Public Advisor's Office (PAO). Written public comment by California American Water customers is very much desired by the CPUC and may be sent to the Public Advisor's Office at 505 Van Ness Avenue, San Francisco, CA 94102, or via e-mail to public.advisor@cpuc.ca.gov. Please state that you are writing about California American Water's Application 11-05-003 when sending your written correspondence or e-mail. All public comments become part of the formal public comment file. These public comments will be circulated to the assigned Administrative Law Judge (ALJ), the assigned Commissioner and appropriate line Division CPUC staff for review.

Public Advisor's Phone number: 415-703-2074 or 866-849-8390.