Return to Agenda

Regional Desalination Project

July 2011-
Monthly Progress Report

Prepared By: Regional Desalination Project Manager

Table of Contents

Section 1 Project Background

Introduction

The Regional Desalination Project (RDP), located in the Monterey Bay area of California, will replace existing Monterey Peninsula water supplies that are constrained by recent legal decisions and will provide a new water supply for redevelopment of the former Fort Ord. The RDP is being implemented through a Water Purchase Agreement, a 3-way partnership of the Marina Coast Water District (MCWD), the Monterey County Water Resources Agency (MCWRA), and the California-America Water Company (CAW).

Purpose and Need

The purpose of the Regional Desalination Project is to provide a replacement water supply for the Monterey Peninsula (defined as CAW's Monterey District Service Area) and a sustainable supply for approved redevelopment of the former Fort Ord area within MCWD's Ord Community Service Area that will:

- Reduce existing diversions from the Carmel River natural watercourse and withdrawals from the Seaside Groundwater Basin/aquifers;
- Reclaim seawater-intruded (brackish) water in the 180-Foot Aquifer of the Pressure Zone of the Salinas Valley Groundwater Basin, an impaired aquifer
- Improve and maintain the hydrologic balance of the Salinas Groundwater Basin;
- Protect listed species in the riparian and aquatic habitat below San Clemente Dam;
- Protect the local economy from the effects of an uncertain water supply
- Minimize water rate increases by creating a more sustainable and diversified water supply portfolio
- Implement a conjunctive-use project consistent with regional integrated resource management principles that will improve the Carmel River watershed and multiple groundwater basins; and
- Implement a project that promotes and applies a watershed perspective through a regional planning effort and collaborative partnership amongst the entities.

For a complete description of the project background see Appendix A.

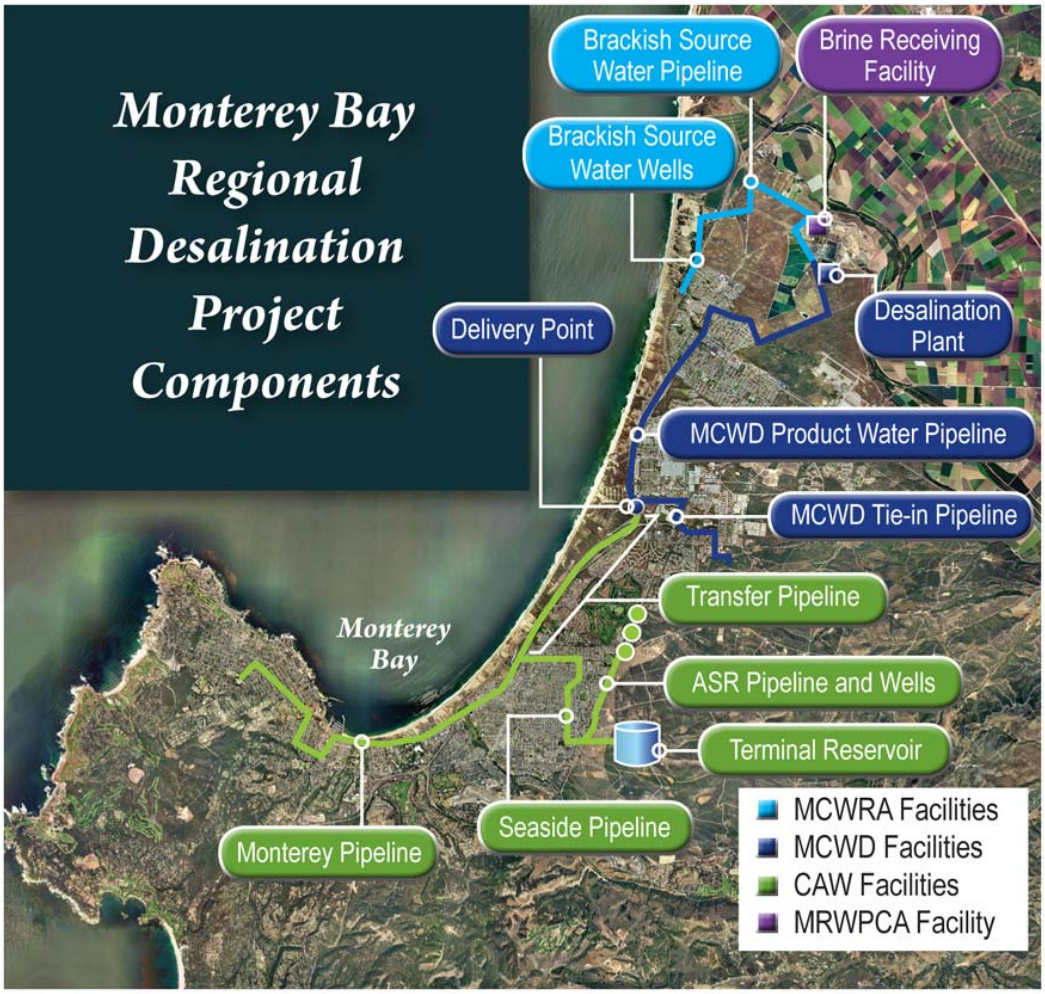
Section 2 Description of Regional Desalination Project

Per the Water Purchase Agreement, the Project includes two general categories of facilities characterized by public versus private ownership:

- The **Project Facilities** will be owned and operated by the public agencies (MCWD, MCWRA, and MRWPCA)
- The **CAW Facilities** will be owned and operated by CAW.

Collectively, these constitute the Regional Desalination Project and include Brackish Source Water Wells, Brackish Source Water Pipeline, Desalination Plant; brine discharge Outfall Facilities; Product Water Pipelines and storage facilities; and an aquifer storage and recovery system (ASR). The overall RDP components are illustrated on Figure 1. For a complete description of the project facilities see Appendix A.

Figure 1: Project Components



Section 3 Project Cost Estimate and Schedule

Cost Estimate

The Water Purchase Agreement establishes a project Cost Cap for the Regional Desalination Project. The summary of the Cost Cap and the CAW facilities can be seen in Table 1 below. Project costs will be monitored for compliance within the established Cost Cap. There have been no changes in the Project Cost Estimate during this reporting period.

Table 1. Project Cost Cap

Facility	Total Cost Cap	% Total
Brackish Source Water Wells and Pipeline	$ 39,800,000	10%
Desalination Plant	$134,800,000	33%
MCWD Product Water Pipeline	$ 28,000,000	7%
Construction Costs Total	***$202,600,000***	
Pre-Effective Date Costs (1)	$ 14,000,000	3%
Post-Effective Date Implementation Costs (2)	$ 59,000,000	15%
Right of Ways, Easements, Outfall	$ 6,900,000	2%
Reserve Fund/Cost of Obtaining Financing	$ 15,000,000	4%
MCWRA/ MCWD Total	***$297,500,000***	
CAW Facilities (CAW Only) (3)	$107,000,000	26%
Project Total	***$404,500,000***	

Notes:

(1): Project costs incurred by MCWD and MCWRA prior to January 11, 2011.

(2): Cost includes: design, permitting, project management, construction management, and legal fees

(3): CAW Facility costs are not included in the forecasted costs in Figure 5 and Figure 6

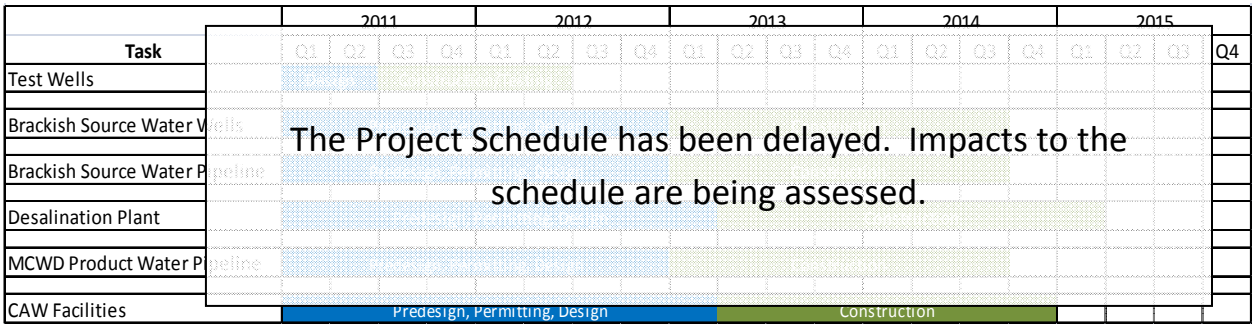
Costs Status

Delays to the project schedule (see Schedule Status below) are expected to have impacts to the project costs due to inflation. The full impacts of the cost are not known at this time. However, construction costs are experiencing increased upward pressure, and any significant delays could have substantial impacts on project implementation costs.

Schedule

The Regional Desalination Project implementation schedule is presented in Figure 2. There have been no updates to this schedule during this reporting period. See following page.

Figure 2. Summary Schedule



Schedule Status

The overall project schedule is being impacted due to the stoppage of work on the Brackish Source Water Wells and Brackish Source Water Pipeline. Information from these facilities is needed for the final submittal of the overall project Coastal Development Permit applications. Delays in obtaining the permit will impact initiation of final design and construction of the project facilities.

At the time this report was produced the CCC had voted at their August 12 meeting to continue the Coastal Development Permit application for the Test Slant well to a later meeting. The impacts of the Test Slant Well CDP continuance and other project delays are currently being evaluated. Once the impacts are better defined the project schedule will be updated and the results will be incorporated into the schedule presented in Figure 2.

Construction Schedule: No construction activities have occurred to date, the construction schedules in Figure 2 are estimated timelines. When construction activities begin the contractors will be required to provide detailed schedules so progress can be tracked and updated in the master project schedule.

Section 4 Project Budget

For the month of July 2011, the Project Management Team spent $484,137. To date, the Project Management Team has spent $3,423,489, which is 13.1% of the total PMA budget. Breakdowns of the monthly and total expenditures by facility owner are in Table 2 and Table 3 below and the details of the monthly invoice allocation are in Appendix B. Monthly and cumulative forecast vs. actual costs for the PMA are in Figure 3 and Figure 4. A summary of the overall project expenses is in Table 4 and monthly cumulative forecast vs. actual costs are in Figure 5 and Figure 6 below.

Table 2. Monthly Expense by Facility Owner

Task	Invoice	MCWD	MCWRA	CAW
Task 1 Program Management	**$ 44,773.12**	$ 35,917.37	$ 6,019.11	$ 2,836.64
Task 2 Funding	**$ 8,655.00**	$ 7,276.25	$ 1,378.75	$ -
Task 3 Environmental Coordination	**$ 15,886.37**	$ 6,734.94	$ 6,620.21	$ 2,531.22
Task 4 Permitting	**$ 63,795.92**	$ 29,316.72	$ 25,281.22	$ 9,197.97
Task 5 System-wide Engineering	**$ -**	$ -	$ -	$ -
Task 6 Brackish Wells	**$ 2,850.00**	$ -	$ 2,850.00	$ -
Task 7 & 8 Brackish Water Pipeline	**$ -**	$ -	$ -	$ -
Task 9 Desalination Plant	**$ 341,775.86**	$ 341,775.86	$ -	$ -
Task 10 Product Water Pipeline	**$ 4,188.75**	$ 4,188.75	$ -	$ -
Task 11 CAW Coordination	**$ 1,680.00**	$ -	$ -	$ 1,680.00
Task 12 MCWD Tie-in Pipeline	**$ 532.50**	$ 532.50	$ -	$ -
Task 13 Construction Management	**$ -**	$ -	$ -	$ -
Total	**$ 484,137.52**	**$ 425,742.39**	**$ 42,149.30**	**$ 16,245.83**
% of Invoice		88%	9%	3%

Table 3. PMA Budget Status Summary

		MCWD	MCWRA	CAW
Budget	$ 26,050,000	$ 20,596,000	$ 4,163,000	$ 1,293,000
Billed to Date	$ 3,423,489	$ 2,526,370	$ 676,459	$ 220,660
Remaining	$ 22,626,511	$ 18,069,630	$ 3,486,541	$ 1,072,340
% Remaining	86.9%	87.7%	83.8%	82.9%

Table 4. Overall Project Costs to Date

Agency	Legal	Agency Labor and Expenses	Other Consultants	PMA	Construction	Total
MCWD	$ 141,000	$ 194,000	$ 239,000	$ 2,526,000	$ -	$ 3,100,000
MCWRA	$ 259,000	$ 102,000	$ 112,000	$ 676,000	$ -	$ 1,149,000
Total	**$ 400,000**	**$ 296,000**	**$ 351,000**	**$ 3,202,000**	**$ -**	**$ 4,249,000**

Note: Costs to date are based on the reports of project expenses received at the time this report was produced. Additional costs may have been incurred but not reported at time of preparation of this monthly status report.

Budget Status

PMA Contract: As seen in Figure 3 below, the PMA expenditures for the month of July are lower than the planned expenditures. The reduction of monthly expenditures is primarily due to MCWRA's direction to not work on the Brackish Source Water Wells and Brackish Source Water Pipeline except as specifically directed by MCWRA. This impacts numerous tasks, including funding, environmental coordination, permitting, and system-wide engineering. This stoppage of work is also impacting the project schedule (see Schedule Status).

As seen in Appendix B the PMA invoicing structure has been updated to provide direct cost accounting of certain tasks as opposed to percentage allocations. This change in invoicing was approved by the Parties.

Regional Desalination Project: The actual project expenditures are running slightly lower than forecasted. However, project delays will impact the overall Project cost. The full impact of these delays on overall costs is will be assessed and reported in future monthly progress reports.

Construction Costs: No construction activities have occurred to date, construction costs in Table 2 are estimated values. When construction activities begin, the bid costs will be compared and tracked against the original estimates, including processing and tracking of approved contract change orders.

Figure 3. Actual vs. Forecast- PMA Costs

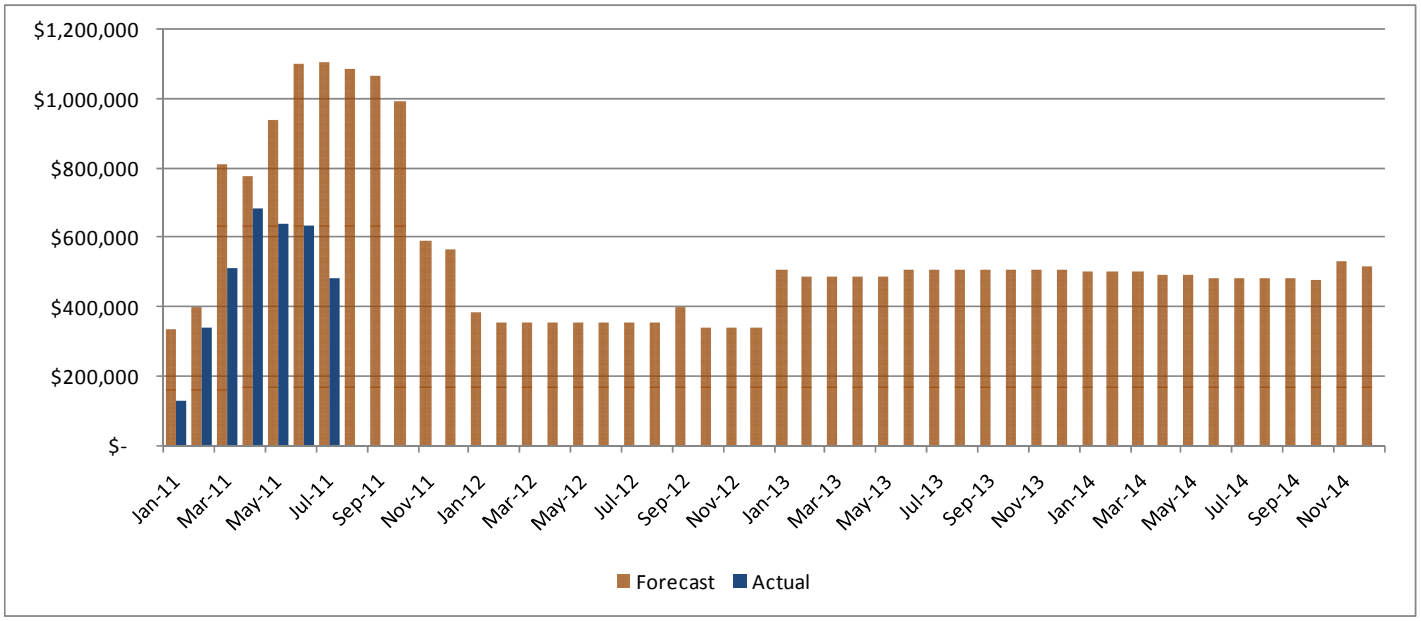


Figure 4. Cumulative Actual vs. Forecast- PMA Costs

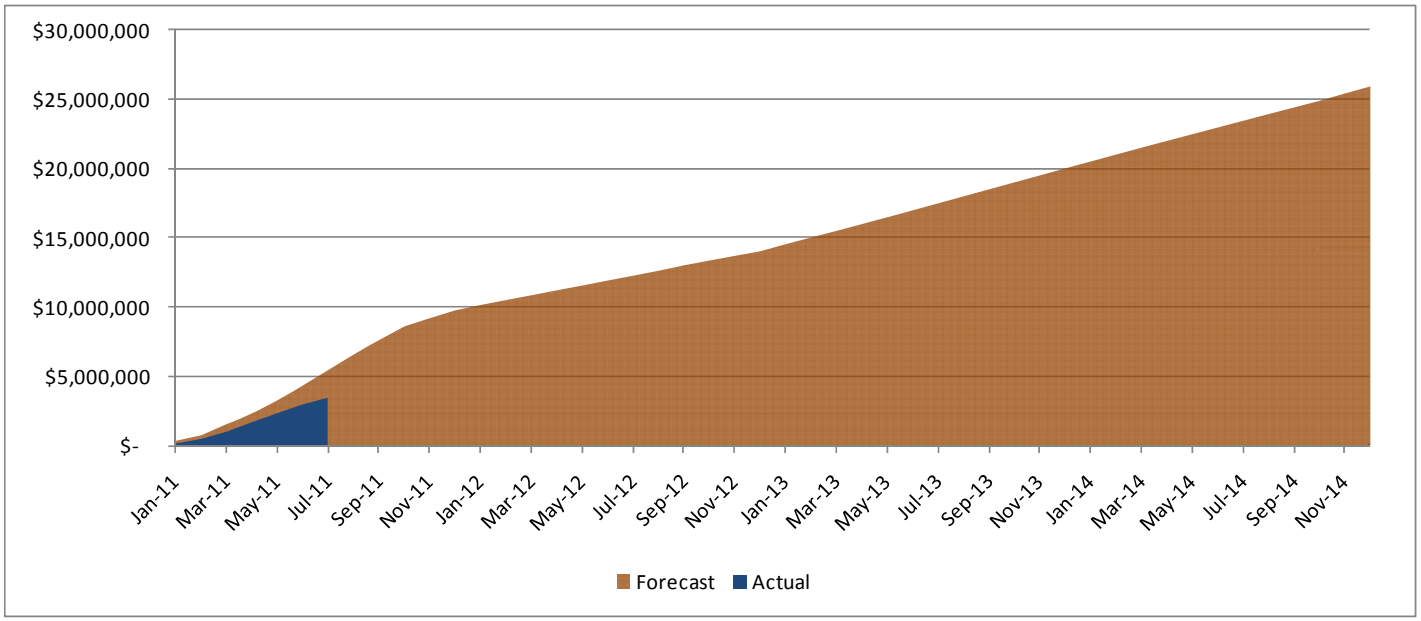
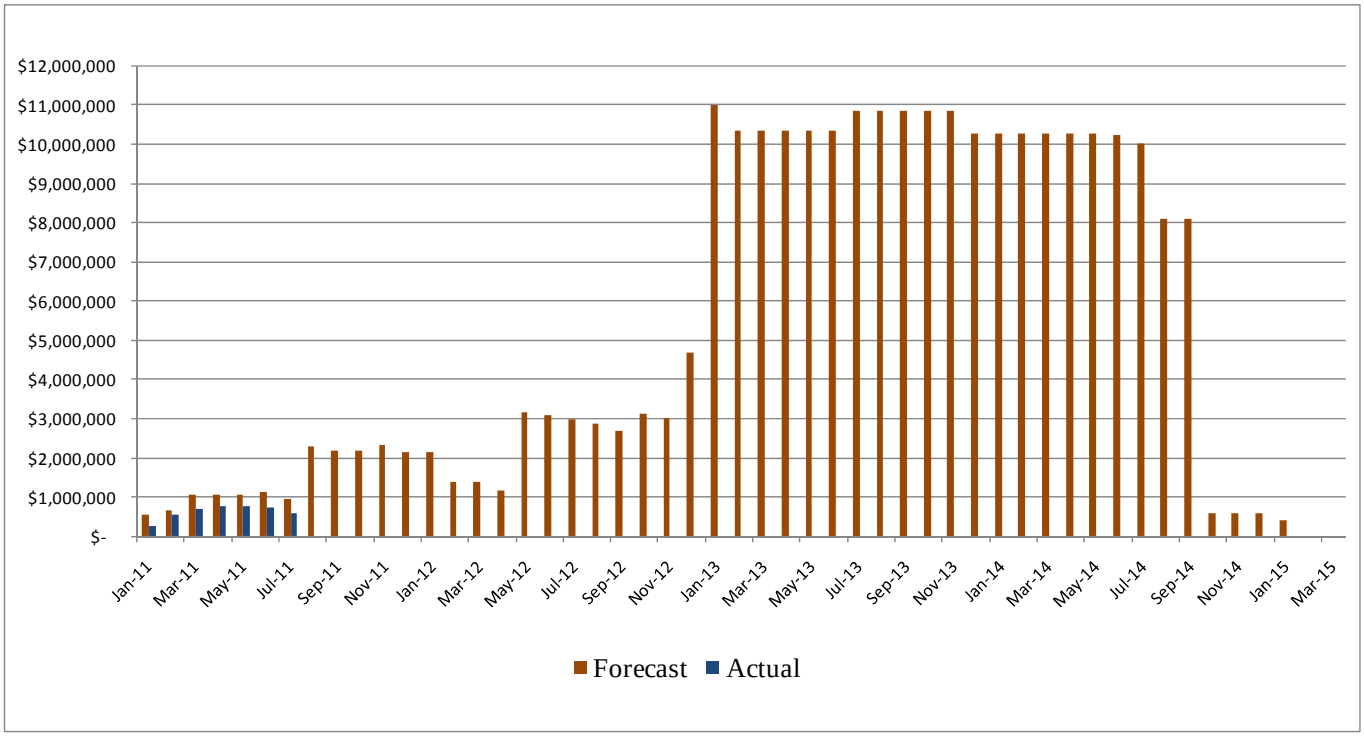
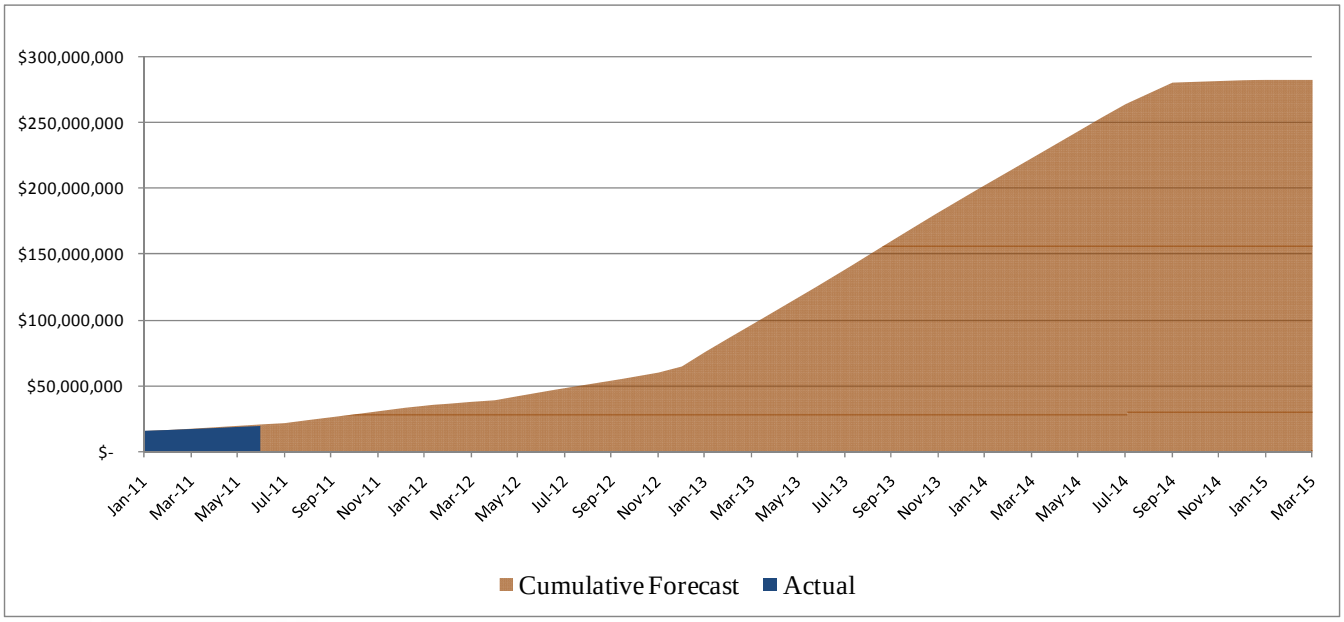


Figure 5. Actual vs. Forecast- Regional Desalination Project Costs



Notes: (1) The projected costs in Figure 5 and 6 do not include any costs associated with bond financing. Such costs will be paid directly from the forecasted bond proceeds. (2) Actual costs to date are based on the project expenses received at the time this report was produced. Any costs received later will be shown in next month's report, but will be reflected in the month the work was conducted in.

Figure 6. Cumulative Actual vs. Forecast- Regional Desalination Project Costs



Section 5 Project Status Updates

Some of the major project highlights for July 2011 are summarized below.

Task 1: Overall Project Management

- Weekly coordination with MCWD, CAW, and MCWRA
- Coordination with the Project Advisory Committee
- Reviewed the qualifications of the Public Information Consultants and made a recommendation to the Project Advisory Committee for approval. The Project Advisory Committee has yet to take action on this item.
- Selected a Coastal Commission Consultant and made a recommendation to the Project Advisory Committee for approval and finalized contract.
- Rescheduled the CIF meeting #2 for August 23. Began preparing for the meeting including finding a location and preparing a presentation.
- Responded to enquiries from community stakeholders regarding the CIF meeting.
- Updated the project schedule and budget tracking documents based on progress made on project tasks and expenditure information provided by MCWD and MCWRA.
- Added additional information to the Regional Desalination Project website for updated public information. www.regionalwaterproject.org. As of July 29, 2011 the project website has had 1,845 visits from 30 different countries.

Task 2: Funding

- Continued efforts on reviewing and preparing the Clean Water SRF package for MCWD and MCWRA. Prepared resolutions for MCWD Board of Directors to approve applying for SRF financing for the MCWD Facilities.
- Revised and updated letter to SWRCB responding to comments from USEPA regarding watershed plan elements and project eligibility.
- Coordinating with Piper Jaffray on the Credit Review package for MCWD SRF application.
- Prepared for meeting with SWRCB and USBR regarding funding items on August 2nd, 2011.

Task 3: Environmental Coordination

- Coordinated with CAW staff for review and comments on the Environmental Assessment (EA).
- Reviewed comments from CAW legal staff and consolidated comments on the EA.

- Revised the test well addendum to address the relocation of slant test well to install all facilities on pavement and relocation of vertical test well discharge location to avoid Armstrong property.
- Revised Biological resources memos to address changes in Test Well description
- Set up meeting with USBR and SWRCB to discuss coordination of NEPA and CEQA review. Meeting scheduled for August 2, 2011 (meeting originally scheduled for late June had been postponed).
- Communication with USBR and SWRCB regarding rescheduled meeting on August 2nd; developed updated agenda and materials for meeting.

Task 4: Permitting

- Prepared responses to slant tell well CDP application comments from the Coastal Commission.
- Reviewed and submitted land lease application to the State Lands Commission for the slant test well.
- Prepared responses to Coastal Commission inquiries in preparation of the Coastal Commission August 2011 meeting.
- Reviewed the updated the CDPH Technical Memorandum.
- Continued preparation with Flow Science for the NPDES permit modification model run for the brine discharge.
- Prepared vertical test well CDP application response for submittal to the Coastal Commission.
- Prepared briefing papers for Coastal Commission in anticipation of August 2011 meeting.
- The latest permitting Matrix can be seen in Appendix C.

Task 5: System-Wide Engineering

- During this time period no activities occurred on this task.

Task 6: Brackish Source Water Wells

- Reviewed the location of the Slant Test well and confirmed it could be moved to a paved location to avoid potential Environmentally Sensitive Habitat Areas identified as a concern by the Coastal Commission.

Task 7/8: Brackish Source Water Pipeline

- During this time period no activities occurred on this task.

Task 9: Desalination Plant

- Continued preparing draft specifications for the Desalination Plant
- Continued preparation of the Draft Desalination Plant Basis of Design Report (BODR) and Draft Cost Estimate.
- Conducted internal QA/QC review of Desalination Plant Draft Cost Estimate based upon preliminary design drawings.
- Continued coordination with Trussell, TJC, Burks Toma, and RMC design teams with regards to project schedule, BODR, specifications and cost estimate.
- Refined preliminary design criteria and 30% drawings, with a focus on architectural materials of construction and features, P&IDs, system hydraulics, brine pipeline to MRWPCA, and landscaping concepts, and post-conditioning design criteria, and structural design criteria.
- Prepared and conducted workshop (July 1) with MCWD to review site plan design criteria, architectural design criteria and materials of construction, stormwater management and landscaping concepts and LEED certification for the Desalination Plant.

Task 10: MCWD Product Water Pipeline

- Reviewed updated draft TAMC appraisal report for consistency with Product Water Pipeline alignment
- Summarized TAMC Phase II Environmental Assessment report for inclusion in the Product Water Pipeline Preliminary Basis of Design Report.
- Reviewed draft surge analysis report.
- Met with MCWD Staff for status update on Product Water Pipeline

Task 11: CAW Coordination

- Coordinated with CAW on the development of the quarterly report for DRA.

Task 12: MCWD Tie-in Pipeline

- Met with MCWD Staff for status update on MCWD Tie-In Pipeline

Task 13: Construction Management

- During this time period no activities occurred on this task.

List of Acronyms and Abbreviations

Term	Meaning
AFY	acre-feet per year
APE	Area of potential effect
Army	U.S. Army
ASR	Aquifer storage and recovery
BA	Biological Assessment
BO	Biological Opinion
CAW	California-American Water Company
CDFG	California Department of Fish & Game
CDP	Coastal Development Permit
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CIF	Community Involvement Forum
CPCN	Certificate of Public Convenience and Necessity
CPUC	California Public Utilities Commission
CSIP	Castroville Seawater Intrusion Project
CWA	Clean Water Act
D/B	Design/Build
DDA	Denise Duffy & Associates, Inc.
DRA	Division of Ratepayer Advocates
DWSAP	Drinking Water Source Assessment and Protection
EA	Environmental Assessment
EIR	Environmental Impact Report (CEQA)
EIS	Environmental Impact Statement (NEPA)
EPA	Environmental Protection Agency
I	Fort Ord Reuse Authority
ft	foot
GHG	greenhouse gas
gpm	gallons per minute
hp	horsepower
Hr	hour(s)
I&C	Instrumentation and Controls
in	inch
kw	kilowatt
kwh	kilowatt-hour(s)
lb	pound(s)
LCP	Local Coastal Program
LF	linear feet
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCWD	Marina Coast Water District
MCWRA	Monterey County Water Resources Agency
MG	million gallons
mg/l	milligrams per liter

Term	Meaning
mgd	million gallons per day
MPRPD	Monterey Peninsula Regional Park District
MPWMD	Monterey Peninsula Water Management District
MRWMD	Monterey Regional Waste Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
NDPES permit	National Pollution Discharge Elimination System permit
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
PAB	Private Activity Bonds
PAC	Project Advisory Committee
PCAs	Potentially Contaminating Activities
PG&E	Pacific Gas and Electric
PMA	Project Management Agreement
ppm	parts per million
psi	pounds per square inch
RDP	Regional Desalination Project
Reclamation	Bureau of Reclamation, U.S. Department of Interior
REF	Renewable Energy Facility
RFP	Requests for Proposals
RFQ	Requests for Statements of Qualifications
RMC	RMC Water and Environment, Project Manager
RO	Reverse Osmosis
ROW	Right-of-Way
RUWAP	Regional Urban Water Augmentation Project
SCADA	Supervisory Control and Data Acquisition
sf	Square Feet
SOQ	Statements of Qualifications
SRF	State Revolving Fund, California
SVRP	Salinas Valley Reclamation Plant
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TAMC	Transportation Agency for Monterey County
TJC	TJC and Associates, Inc.; Electrical/I&C subconsultant to RMC
USBR	United States Bureau of Reclamation
USFWS	United States Fish & Wildlife Service
WPA	Water Purchase Agreement
yr	Year

Appendix A

Introduction

The Regional Desalination Project (RDP), located in the Monterey Bay area of California, will replace existing Monterey Peninsula water supplies that are constrained by recent legal decisions and will provide a new water supply for redevelopment of the former Fort Ord. The RDP is being implemented through a Water Purchase Agreement, a 3-way partnership of the Marina Coast Water District (MCWD), the Monterey County Water Resources Agency (MCWRA), and the California-America Water Company (CAW). The overall purpose of each agency is:

- MCWD provides water service to the City of Marina and the former Fort Ord. MCWD acts on behalf of persons served to furnish water for beneficial use, to protect the groundwater underlying MCWD, and to conserve the water supply for future as well as present use.

- MCWRA's boundaries are coexistent with Monterey County's boundaries and MCWRA is responsible under the Agency Act to control groundwater extractions to prevent the loss of usable groundwater through intrusion of seawater, to replace groundwater through the development and distribution of a substitute surface supply, and to prohibit groundwater exportation from the Salinas Basin.

- CAW provides water service in various areas within California, including a service area in Monterey County, adjacent to MCWD Service Area and within the boundaries of MCWRA.

MCWD, MCWRA and CAW, individually and collectively, have determined that the Regional Desalination Project is the least costly of any proposed alternative projects, is the most feasible of those projects, and is in the best interests of the customers served by each of MCWD and CAW. The Parties have also determined that the Regional Desalination Project best conserves and protects public trust assets and resources.

The Regional Desalination Project will replace existing water supplies that are constrained by recent legal decisions affecting the Carmel River and Seaside Groundwater Basin water resources. Specifically, the State Water Resources Control Board (SWRCB) Order No. WR 95-10 (Order 95-10) and the Monterey County Superior Court adjudication of water rights in the Seaside Groundwater Basin reduce California American Water's (CAW's) use of its two primary sources of supply for the Monterey District and provide an immediate impetus for the Regional Desalination Project. In addition, the Regional Desalination Project will assist Marina Coast Water District (MCWD) in meeting their long-term obligations to supply potable water for approved redevelopment of the former Fort Ord area.

The Regional Desalination Project will extract a combination of seawater and brackish water, produce potable water, convey it to the existing MCWD and CAW distribution systems, and increase the system's use of storage capacity in the Seaside Groundwater Basin. The Regional Desalination Project will consist of several distinct components: Brackish Source Water Wells and Brackish Source Water Pipeline; a Desalination Plant; brine disposal Outfall Facilities; Product Water Pipelines, storage facilities, and an aquifer storage and recovery (ASR) system.

Purpose and Need

The purpose of the Regional Desalination Project is to provide a replacement water supply for the Monterey Peninsula (defined as CAW's Monterey District Service Area) and a sustainable supply for approved redevelopment of the former Fort Ord area within MCWD's Ord Community Service Area that will:

- Reduce existing diversions from the Carmel River natural watercourse and withdrawals from the Seaside Groundwater Basin/aquifers;
- Reclaim seawater-intruded (brackish) water in the 180-Foot Aquifer of the Pressure Zone of the Salinas Valley Groundwater Basin, an impaired aquifer
- Improve and maintain the hydrologic balance of the Salinas Groundwater Basin;
- Protect listed species in the riparian and aquatic habitat below San Clemente Dam;
- Protect the local economy from the effects of an uncertain water supply
- Minimize water rate increases by creating a more sustainable and diversified water supply portfolio
- Implement a conjunctive-use project consistent with regional integrated resource management principles that will improve the Carmel River watershed and multiple groundwater basins; and
- Implement a project that promotes and applies a watershed perspective through a regional planning effort and collaborative partnership amongst the entities.

The primary objectives of the local agencies and CAW in developing the Regional Desalination Project are to:

- Satisfy CAW's obligations to meet the requirements of SWRCB Order 95-10;
- Diversify and create a reliable drought-proof potable water supply of 10,500 AFY;
- Protect the Seaside Basin for long-term reliability;
- Protect listed species in the riparian and aquatic habitat below San Clemente Dam;
- Protect the local economy from the effects of an uncertain water supply;
- Minimize water rate increases by creating a diversified water supply portfolio;
- Satisfy MCWD's obligations to provide a water supply adequate to meet the demand associated with approved redevelopment of the former Fort Ord;
- Satisfy Monterey County Water Resources Agency's (MCWRA's) obligation to maintain hydrologic balance of the Salinas Groundwater Basin;
- Satisfy MCWRA's obligation to protect agricultural water users' utilization of water resources;
- Maximize funding opportunities through regional cooperation; and
- Integrate urban, agricultural and environmental objectives.

Description of Regional Desalination Project

Per the Water Purchase Agreement, the Project includes two general categories of facilities characterized by public versus private ownership:

- The **Project Facilities** will be owned and operated by the public agencies (MCWD, MCWRA, and MRWPCA)
- The **CAW Facilities** will be owned and operated by CAW.

Collectively, these constitute the Regional Desalination Project and include Brackish Source Water Wells, Brackish Source Water Pipeline, Desalination Plant; brine discharge Outfall Facilities; Product Water Pipelines and storage facilities; and an aquifer storage and recovery system (ASR). The overall RDP components are illustrated on Figure 1 and summarized in Table 1. The Project Facilities, which will be funded by the Private Activity Bonds, are described in more detail following **Error! Reference source not found.**.

Figure 7: Project Components

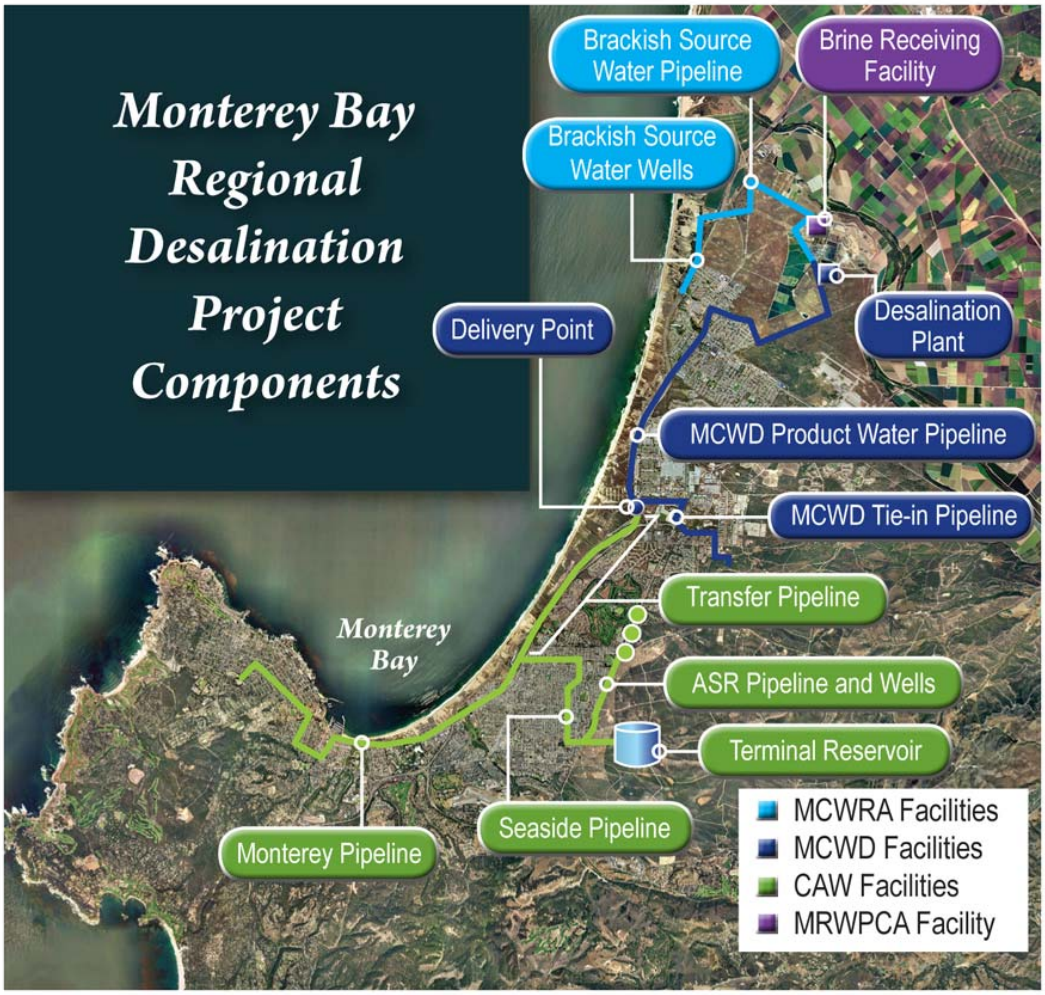


Table 1. Overview of the Regional Desalination Project Components

Project Component	Description	Ownership
Project Facilities		
Brackish Source Water Wells	Between one and five vertical wells drilled in the 180-Foot Aquifer and between one and five slanted seawater intake wells, for a total of six source water wells. Vertical wells will be located west of Highway 1 between the coastal dunes and Highway 1. Source water will be approximately 85% seawater and 15% seawater-intruded groundwater. Final well configuration to be determined based on Test Well Program.	MCWRA
Brackish Source Water Pipeline	25,000 linear feet (LF) of 36 to 42-inch pipe conveying the source water from the wells to the Desalination Plant.	MCWRA
Desalination Plant	Reverse osmosis treatment plant with a peak production rate of 10 million gallons per day (mgd). On-site facilities include treatment processes, clearwells, brine storage tank, distribution pump station, brackish water meter, product water meter, and non-process structures.	MCWD
MCWD Outfall Facilities and MRWPCA Outfall Facilities	A pipeline for brine conveyance from the Desalination Plant to the outfall headworks (2,500 LF of 36-inch diameter pipeline) and modifications to the existing MRWPCA outfall pipeline, including a new Brine Receiving Facility for monitoring, metering, mixing, and sampling the brine and combined effluent.	MCWD (pipeline) MRWPCA (Brine Receiving Facility)
MCWD Product Water Pipeline	A pipeline for conveyance of product water from the Desalination Plant to Delivery Point (31,000 LF; 36-inch)	MCWD
MCWD Tie In Pipeline	A pipeline for conveyance of product water from the Delivery Point to MCWD Reservoir B and/or C (12,500 LF; 24-inch)	MCWD
CAW Facilities		
Transfer Pipeline	A pipeline for conveyance of product water from the Delivery Point to the western terminus of Auto Center Parkway near Del Monte (15,000 LF; 36-inch)	CAW
Seaside Pipeline	A pipeline for conveyance of product water from the Western terminus of Auto Center Parkway to the Terminal Reservoir (13,000 LF; 36-inch)	CAW
Monterey Pipeline	A pipeline for conveyance of product water from the Western terminus of Auto Center Parkway to Eardley Pump Station, including Presidio of Monterey portion (28,700 LF; 36-inch)	CAW
Terminal Reservoirs and Associated Facilities	Two, 3-MG reservoirs, 130 feet in diameter, and overflow - retention/infiltration basin.	CAW
ASR System (Wells and Pumpstation)	Two ASR injection/extraction wells and a monitoring well located at Fitch Park, a pump station at the Terminal Reservoir site, pipelines along General Jim Moore Blvd. between the new ASR wells and the existing ASR wells near Coe Ave., and an ASR Pump-to-Waste System (including pipelines and a settling basin) currently proposed for the ASR well sites.	CAW
Valley Greens Pump Station	3-mgd capacity, four 25-hp pumps on 800 square foot area.	CAW
Note: Pipeline lengths are approximate.		

Appendix B

Invoice Detail Cost Breakdown: July 2011

	Invoice Total	MCWD Costs		MCWRA Costs		CAW Costs	
Task 1 Program Management	**$ 44,773.12**	**$ 35,917.37**		**$ 6,019.11**		**$ 2,836.64**	
1.1 Project Administration	$ 37,136.12	$ 32,950.75	% of task 2-12	$ 3,052.49	% of task 2-12	$ 1,132.89	% of task 2-12
1.2 Public Support	$ 4,167.00	$ 1,389.00	33%	$ 1,389.00	33%	$ 1,389.00	33%
1.3 Budget and Schedule Management	$ 2,825.00	$ 1,271.25	45%	$ 1,271.25	45%	$ 282.50	10%
1.4 Quality, Safety and Risk Management		$ -	45%	$ -	45%	$ -	10%
1.5 Financial Analysis		$ -	45%	$ -	45%	$ -	10%
1.6 Contract Procurement and Admin	$ 645.00	$ 306.38	48%	$ 306.38	48%	$ 32.25	5%
1.7 Litigation Support	$ -	$ -	33%	$ -	33%	$ -	33%
Task 2 Funding	**$ 8,655.00**	**$ 7,276.25**		**$ 1,378.75**		**$ -**	
Clean Water SRF Program	$ 8,655.00	$ 7,276.25	84%	$ 1,378.75	16%	$ -	0%
2.1A Clean Water SRF (Joint Work)		$ -	80%	$ -	20%	$ -	0%
2.1B Clean Water SRF (MCWD)	$ 7,276.25	$ 7,276.25	100%		0%		0%
2.1C Clean Water SRF (MCWRA)	$ 1,378.75		0%	$ 1,378.75	100%		0%
Bond Funding	$ -	$ -	0%	$ -	0%	$ -	0%
2.2A Bond Funding (Joint Work)		$ -	80%	$ -	20%	$ -	0%
2.2B Bond Funding (MCWD)		$ -	100%		0%		0%
2.2C Bond Funding (MCWRA)			0%	$ -	100%		0%
Title XVI Funding	$ -	$ -	0%	$ -	0%	$ -	0%
2.3A Title XVI (Joint Work)		$ -	59%	$ -	15%	$ -	26%
2.3B Title XVI (MCWD)		$ -	100%		0%		0%
2.3C Title XVI (MCWRA)			0%	$ -	100%		0%
2.3D Title XVI (CAW)			0%		0%	$ -	100%
2.4 Federal Appropriations	$ -	$ -	0%	$ -	0%	$ -	0%
2.4A Federal Appropriations (Joint Work)		$ -	59%	$ -	15%	$ -	26%
2.4B Federal Appropriations (MCWD)		$ -	100%		0%		0%
2.4C Federal Appropriations (MCWRA)			0%	$ -	100%		0%
2.4D Federal Appropriations (CAW)			0%		0%	$ -	100%
2.5 Other funding opportunities	$ -	$ -	0%	$ -	0%	$ -	0%
2.5A Other Funding Opportunities (Joint Work)		$ -	59%	$ -	15%	$ -	26%
2.5B Other Funding Opportunities (MCWD)		$ -	100%		0%		0%
2.5C Other Funding Opportunities (MCWRA)			0%	$ -	100%		0%
2.5D Other Funding Opportunities (CAW)			0%		0%	$ -	100%
Task 3 Environmental Coordination	**$ 15,886.37**	**$ 6,734.94**		**$ 6,620.21**		**$ 2,531.22**	
3.1 NEPA coordination	$ 2,618.00	$ 872.67	33%	$ 872.67	33%	$ 872.67	33%
3.1A NEPA Coordination (Joint Work)	$ 2,618.00	$ 872.67	33%	$ 872.67	33%	$ 872.67	33%
3.1B NEPA Coordination (MCWD)		$ -	100%		0%		0%
3.1C NEPA Coordination (MCWRA)			0%	$ -	100%		0%
3.1D NEPA Coordination (CAW)			0%		0%	$ -	100%
3.2 Enviro Mitigation Delineation	$ 2,760.74	$ 1,628.84	59%	$ 414.11	15%	$ 717.79	26%
3.2A Enviro Mitigation Delineation (Joint Work)	$ 2,760.74	$ 1,628.84	59%	$ 414.11	15%	$ 717.79	26%
3.2B Enviro Mitigation Delineation (MCWD)		$ -	100%		0%		0%
3.2C Enviro Mitigation Delineation (MCWRA)			0%	$ -	100%		0%
3.2D Enviro Mitigation Delineation (CAW)			0%		0%	$ -	100%
3.3 Local CEQA Adoption	$ 10,507.63	$ 4,233.43	40%	$ 5,333.43	51%	$ 940.76	9%
3.3A Local CEQA Adoption (Joint Work)	$ 9,407.63	$ 4,233.43	45%	$ 4,233.43	45%	$ 940.76	10%
3.3B Local CEQA Adoption (MCWD)		$ -	100%		0%		0%
3.3C Local CEQA Adoption (MCWRA)	$ 1,100.00		0%	$ 1,100.00	100%		0%
3.3D Local CEQA Adoption (CAW)			0%		0%	$ -	100%
3.4 Environ Compl Mon During Const	$ -	$ -	0%	$ -	0%	$ -	0%
3.4A Environ Compl Mon During Const (Joint Work)		$ -	80%	$ -	20%		0%
3.4B Environ Compl Mon During Const (MCWD)		$ -	100%		0%		0%
3.4C Environ Compl Mon During Const (MCWRA)			0%	$ -	100%		0%
Task 4 Permitting	**$ 63,795.92**	**$ 29,316.72**		**$ 25,281.22**		**$ 9,197.97**	
4.1 Test Well Permitting	$ 16,083.25	$ -	0%	$ 16,083.25	100%	$ -	0%
4.1B Test Well Permitting (MCWD)		$ -	100%		0%		0%
4.1C Test Well Permitting (MCWRA)	$ 16,083.25		0%	$ 16,083.25	100%		0%
Coastal Commission	$ 27,593.92	$ 9,197.97	33%	$ 9,197.97	33%	$ 9,197.97	33%
4.2A CCC (Joint Work)	$ 27,593.92	$ 9,197.97	33%	$ 9,197.97	33%	$ 9,197.97	33%
4.2B CCC (MCWD)		$ -	100%		0%		0%
4.2C CCC (MCWRA)			0%	$ -	100%		0%
4.2D CCC (CAW)			0%		0%	$ -	100%
CDPH	$ 1,215.00	$ 1,215.00	100%	$ -	0%	$ -	0%
4.3A CDPH (Joint Work)		$ -	80%	$ -	20%		0%
4.3B CDPH (MCWD)	$ 1,215.00	$ 1,215.00	100%		0%		0%
4.3C CDPH (MCWRA)			0%	$ -	100%		0%
RWQCB	$ 18,378.75	$ 18,378.75	100%	$ -	0%	$ -	0%

4.4B RWQCB (MCWD)	$ 18,378.75	$ 18,378.75	100%		0%		0%
County	$ -	$ -	0%	$ -	0%	$ -	0%
4.5A County (Joint Work)		$ -	80%	$ -	20%		0%
4.5B County (MCWD)		$ -	100%		0%		0%
4.5C County (MCWRA)			0%	$ -	100%		0%
Local	$ -	$ -	0%	$ -	0%	$ -	0%
4.6A Local (Joint Work)		$ -	80%	$ -	20%		0%
4.6B Local (MCWD)		$ -	100%		0%		0%
4.6C Local (MCWRA)			0%	$ -	100%		0%
Misc.	$ 525.00	$ 525.00	100%	$ -	0%	$ -	0%
4.7A Misc. (Joint Work)		$ -	80%	$ -	20%		0%
4.7B Misc. (MCWD)	$ 525.00	$ 525.00	100%		0%		0%
4.7C Misc (MCWRA)			0%	$ -	100%		0%
Task 5 System-wide Engineering	**$ -**	**$ -**		**$ -**		**$ -**	
System-wide operation and Sizing	$ -	$ -	0%	$ -	0%	$ -	0%
5.1A System Wide Operation and Sizing (Joint Work)		$ -	59%	$ -	15%	$ -	26%
5.1B System Wide Operation and Sizing (MCWD)		$ -	100%		0%		0%
5.1C System Wide Operation and Sizing (MCWRA)			0%	$ -	100%		0%
5.1D System Wide Operation and Sizing (CAW)			0%		0%	$ -	100%
System-Wide Control Systems/SCADA	$ -	$ -	0%	$ -	0%	$ -	0%
5.2A System Wide Controls/SCADA (Joint Work)		$ -	59%	$ -	15%	$ -	26%
5.2B System Wide Controls/SCADA (MCWD)		$ -	100%		0%		0%
5.2C System Wide Controls/SCADA (MCWRA)			0%	$ -	100%		0%
5.2D System Wide Constrols/SCADA (CAW)			0%		0%	$ -	100%
Surveying and Mapping	$ -	$ -	0%	$ -	0%	$ -	0%
5.3A Surveying & Mapping (Joint Work)		$ -	80%	$ -	20%		0%
5.3B Surveying & Mapping (MCWD)		$ -	100%		0%		0%
5.3C Surveying & Mapping (MCWRA)			0%	$ -	100%		0%
ROW and Easement	$ -	$ -	0%	$ -	0%	$ -	0%
5.4A ROW & Easement (Joint Work)		$ -	80%	$ -	20%	$ -	0%
5.4B ROW & Easement (MCWD)		$ -	100%		0%		0%
5.4C ROW & Easement (MCWRA)			0%	$ -	100%		0%
5.4D ROW & Easement (CAW)			0%		0%	$ -	100%
Preliminary Geotechnical Services	$ -	$ -	0%	$ -	0%	$ -	0%
5.5A Preliminary Geotechnical Services (Joint Work)		$ -	80%	$ -	20%	$ -	0%
5.5B Preliminary Geotechnical Services (MCWD)		$ -	100%		0%		0%
5.5C Preliminary Geotechnical Services (MCWRA)			0%	$ -	100%		0%
Value Engineering coordination	$ -	$ -	0%	$ -	0%	$ -	0%
5.6A Value Engineering (Joint Work)		$ -	80%	$ -	20%	$ -	0%
5.6B Value Engineering (MCWD)		$ -	100%		0%		0%
5.6C Value Engineering (MCWRA)			0%	$ -	100%		0%
Constructability Review Coordination	$ -	$ -	0%	$ -	0%	$ -	0%
5.7A Constructability Review Coordination (Joint Work)		$ -	80%	$ -	20%	$ -	0%
5.7B Constructability Review Coordination (MCWD)		$ -	100%		0%		0%
5.7C Constructability Review Coordination (MCWRA)			0%	$ -	100%		0%
Acceptance Test Planning	$ -	$ -	0%	$ -	0%	$ -	0%
5.8A Acceptance Test Planning (Joint Work)		$ -	80%	$ -	20%	$ -	0%
5.8B Acceptance Test Planning (MCWD)		$ -	100%		0%		0%
5.8C Acceptance Test Planning (MCWRA)			0%	$ -	100%		0%
Task 6 Brackish Wells	**$ 2,850.00**	**$ -**	**0%**	**$ 2,850.00**	**100%**	**$ -**	**0%**
Task 7 & 8 Brackish Water Pipeline		**$ -**	**0%**	**$ -**	**100%**	**$ -**	**0%**
Task 9 Desalination Plant	**$ 341,775.86**	**$ 341,775.86**	**100%**	**$ -**	**0%**	**$ -**	**0%**
Task 10 Product Water Pipeline	**$ 4,188.75**	**$ 4,188.75**	**100%**	**$ -**	**0%**	**$ -**	**0%**
Task 11 CAW Coordination	**$ 1,680.00**	**$ -**	**0%**	**$ -**	**0%**	**$ 1,680.00**	**100%**
Task 12 MCWD Tie-in Pipeline	**$ 532.50**	**$ 532.50**	**100%**	**$ -**	**0%**	**$ -**	**0%**
Task 13 Construction Management	**$ -**	**$ -**		**$ -**		**$ -**	
13.1 Joint Work			80%		20%		0%
13.2 Brackish Source Water Wells			0%		100%		0%
13.3 Brackish Source Water Pipeline			0%		100%		0%
13.4 Desalination Plant			100%		0%		0%
13.5 MCWD Product Water Pipeline			100%		0%		0%
13.6 MCWD Tie-In Pipeline			100%		0%		0%
Total	**$ 484,137.52**	**$ 425,742.39**		**$ 42,149.30**		**$ 16,245.83**	

Appendix C

Monterey Bay Regional Desalination Project Permiting Matrix

Agency or Department	Permit or Approval	Contact Information	CAW-only	Test Wells	Regional Desalination Project											Status / Notes (Date Updated: 07-29-11)
					Brackish Source Water Wells	Brackish Source Water Pipeline	Desal Plant	Brine Discharge Pipeline	Product Water Pipeline	MCWD Tie-in Pipeline	Transmission Pipeline	Monterey Pipeline	Seaside Pipeline	Terminal Reservoir	ASR Pipeline and Wells	
FEDERAL AGENCIES																
U.S. Environmental Protection Agency (USEPA)	Class V Underground Injection Control Program (Part C, Safe Drinking Water Act)		✓												X	
~~U.S. Fish and Wildlife Service (USFWS)~~	~~Endangered Species Act compliance (ESA Section 7 consultation)~~															Not required
	~~Fish and Wildlife Coordination Act (16 U.S.C. 661-667e; the Act of March 10, 1934; ch. 55; 48 stat. 401)~~															Not required
National Oceanic & Atmospheric Administration (NOAA) – Fisheries	Endangered Species Act compliance (ESA Section 7 consultation or ESA Section 10 approvals)	Jacqueline Pearson Meyer 777 Sonoma Ave, Room 325, Santa Rosa, CA 93941														
Monterey Bay National Marine Sanctuary	Review and coordination for all RWQCB 404, Section 10 and NPDES permits	Brad Damitz MBNMS Main Office, 299 Foam St. Monterey 93944			X	X	X	X	X	X	X	X	X	X	X	Consultation only; permitting through other state and federal agencies. Started coordination; conducted meeting.
	Authorization Permit				X?											Submitted draft authoriziation permit application to MBNMS on 5/23/11.
Presidio of Monterey	Coordination for Rights of Entry	Darcy Brewer, U.S. Army Presidio of Monterey 1759 Lewis Road, Suite 210, Monterey, CA 93944	✓									X			X	
Fort Ord Reuse Authority / Army (FORA)	Coordination with FORA for Right of Entry (FOST/FOSL)	Stan Cook 100 12th St, Bld 2880, Marina, CA 93933	✓										X	X	X	No FORA right of entry required for MCWD facilities; only required for Seaside Pipeline, Terminal Reservoir and ASR wells and Pipeline
~~U.S. Army Corps of Engineers (ACOE)~~	~~Nationwide Section 404 Permit (CWA, 33 USC 1341)~~															No impacts to Waters of the U.S.
	~~Section 10, Rivers and Harbors Act Permit (33 USC 403)~~															No impacts to Waters of the U.S.
~~Federal Aviation Administration~~	~~Form SF 7460-1, Notice of Proposed Construction and Alteration for Airport Airspace Aeronautical Study~~															Permit only required if structures > 73 feet tall
STATE AGENCIES																
California Public Utilities Commission	Certificate of Public Convenience and Necessity (PUC Article 1)	Andrew Barnsdale 505 Van Ness Ave. San Francisco, CA 94102	✓								X	X	X	X	X	Completed
State Water Resources Control Board, Central Coast Regional Water Quality Control Board	General Construction Activity Storm Water Permit (WQO 99-08-DWQ)	Mike Higgins - mhiggins@waterboards.ca.gov, 805-542-4649		X	X	X	X	X	X	X	X	X	X	X	X	Use State General Permit for construction; started coordination
	~~401 Water Quality Certification (CWA Section 401)~~															Not required; no 404 Permit required
	Waste Discharge Requirements. (Water Code 13000 et seq.)			X	X	X	X	X	X	X	X	X	X		X	Use low-threat General Permit for test well and pipeline testing; started coordination.
	National Pollutant Discharge Elimination System (NPDES) Permit (CWA Section 402)						X	X								Started coordination. Met with RWQCB and MRWPCA to discuss NPDES requirements.
	Facility Operations Stormwater Permit						X?									Use State General Permit for industrial sites
California State Lands Commission	Rights-of-Way (Land Use Lease) (California Public Resource Code Section 1900); Lease amendment	Jane Smith - jane.smith@slc.ca.gov, 916 574-1892 100 Howe Ave, Ste 100-South							X?							Coordinating with SLC for jurisidication determination. Meeting with Jane Smith on 6/6/11
California Coastal Commission	Coastal Development Permit (Public Resources Code 30000 et seq.)			X	X	X	X	X	X	X	X	X	X			Submitted Coastal Development Permit for the Monterey Bay Regional Desalination Project on April 1, 2011. Acquired all letters of concurrence from Local Coastal Programs. Submitted response to CCC Notice of Incomplete for RDP on 5/31. Submitted CDP for the Test Well Program on April 14, 2011.
California Department of Fish and Game (CDFG)	~~Streambed Alteration Agreement (California Fish and Game Code Section 1602)~~											~~X~~				Alignment requiring permit has been deleted
	California Endangered Species Act Section 2081 Incidental Take Permits (CESA Title 14, Section 783.2)	7329 Silverado Trail, Napa, CA 94558	✓											X		
	California Endangered Species Act Section 2081 Incidental Take Permits (CESA Title 14, Section 783.2) - Letter of Concurrence re: no permit required			X	X	X	X	X	X	X	X	X				No take required for any areas EXCEPT the Terminal Reservoir site.
California Department of Public Health (CDPH)	Permit to Operate a Public Water System (California Health and Safety Code Section 116525)	Jan Sweigart 1 Lower Ragsdale, Bdg 1, Ste 120, Monterey, 93940			X	X	X	X	X	X	X	X	X	X	X	
California Department of Transportation (Caltrans)	Encroachment Permit (Streets and Highway Code Section 660)	Steve Senet - 805-549-3206 Steve.senet@dot.ca.gov 50 Higuera St, San Luis Obispo 93401				X			X	X	X	X				Submitted information package to Steve Senet at Caltrans on 3/4/11. He has provided a new contact, Peter Hendrix, to begin coordinating with. A meeting will be se up in Fall 2011.
California Department of Parks and Recreation	Encroachment, easement, or property acquisition for any project component	Ken Gray - 831-649-2862 kgray@parks.ca.gov 2211 Garden Road, Monterey 93940							X	X	X	X	X			Right of Entry permits and encroachment permits will be required. Info package submitted to Ken Gray 5/23/11.
California State Historic Preservation Office (SHPO)	Section 106 Consultation; National Historic Preservation Act (16 USC 470)			X	X	X	X	X	X	X	X	X	X	X	X	

Monterey Bay Regional Desalination Project Permiting Matrix

Agency or Department	Permit or Approval	Contact Information	CAW-only	Test Wells	Regional Desalination Project											Status / Notes (Date Updated: 07-29-11)
					Brackish Source Water Wells	Brackish Source Water Pipeline	Desal Plant	Brine Discharge Pipeline	Product Water Pipeline	MCWD Tie-in Pipeline	Transmission Pipeline	Monterey Pipeline	Seaside Pipeline	Terminal Reservoir	ASR Pipeline and Wells	
LOCAL AGENCIES																
Monterey County Public Works Department	Encroachment Permit (Monterey County Code (MCC) Title 14 Chapter 14.040)	Laura Lawrence - lawrencel@co.monterey.ca.us, 831-755-5148 168 W. Alisal St, 2nd Floor Salinas, CA 93901			X?	X?	X	X?	X?							Submitted information package to John Ford on 3/17/11. Coordinating with Laura Lawrence to confirm permit requirements from all Monterey County departments.
Monterey County Health Department, Environmental Health Division	Well Construction Permit (MCC, Title 15 Chapter 15.08, Water Wells)			X	X										X	Started coordinating with Department for we requirements.
	Hazardous Materials Business Plan (Health and Safety Code Chapter 6.95)						X									Submitted general information package to Monterey County 3/17/11; John Ford provided Laura Lawrence as the new County contact.
	Hazardous Materials Inventory (Health and Safety Code Chapter 6.95)						X									
	Permit to Construct & Operate Desalination Facility (MCC Chapter 10.72)						X									Submited draft application November 2009. Met with the County Health Department.
	Hazardous Material/Waste Permit						X									
	~~Variation on Monterey County Noise Ordinance (MCC Chapter 10.72)~~															Need for this permit is currently uncertain
Monterey County Planning and Building Inspection Department	~~Use Permit (MCC Chapter 21.72 Title 21)~~															MCWRA/MCWD expempt from having to acquire Use and Building Permits from local agencies.
	Grading Permit (M.C.C., Grading and Erosion Control Ordinance, Chapter 16.08 – 16.12)				X	X	X	X	X							
	Erosion Control Permit (MCC, Grading and Erosion Control Ordinance, Chapter 16.08 – 16.12)				X	X	X	X	X							
Monterey Peninsula Regional Park District	Encroachment Permit; Right of Entry	Tim Jensen 60 Garden Court, #325, Monterey 93940							X	X	X	X	X			
Monterey Regional Water Pollution Control Agency	Easement						X	X								
	Participation agreements / Sewer Connection Permit						X	X								On-going coordination
Monterey Regional Waste Management District	Electric Power Purchase Agreement						X									On-going coordination
	Construction Easement					X										Required if pipeline is in Charlie Benson Lane.
Monterey Bay Unified Air Pollution Control District (MBUAPCD)	Authority To Construct. (Local district rules, per Health and Safety Code 42300 et seq.)	Jean Getchell - 831-647-9411 x227 jgetchell@mbuapcd.org 24580 Silver Cloud Ct, Monterey, 93940			X?	X?	X?	X?	X?	X?	X?	X?		X?	X?	Confirm that permit is not required; get letter of concurrence
	~~Permit To Operate. (Local district rules)~~						~~X?~~									Confirm that permit is not required; get letter of concurrence
Transportation Agency of Monterey County	Easement	Debra Hale 55-B Plaza Circle, Salinas 93901							X	X	X	X?	X?			
City of Marina	Grading Permits				X											Started coordination with the City of Marina.
	Encroachment Permit				X	X			X	X?						
	~~Use Permits~~															MCWRA/MCWD expempt from having to acquire Use and Building Permits from local agencies.
City of Sand City	~~Building and Grading Permits~~															MCWRA/MCWD expempt from having to acquire Use and Building Permits from local agencies.
	Encroachment Permit		✓								X					
City of Seaside	Building and Grading Permits		✓									X	X	X	X	ASR wells on federal lands; permit from Seaside not required.
	Encroachment Permit									X?		X	X	X	X	ASR wells on federal lands; permit from Seaside not required.
	Use Permit		✓											X	X	ASR wells on federal lands; permit from Seaside not required.
City of Monterey	~~Building and Grading Permits~~															
	Encroachment Permit		✓									X				
City of Pacific Grove	~~Building and Grading Permits~~															
	Encroachment Permit		✓									X				
Seaside Groundwater Basin Watermaster	Permit for injection/extraction		✓												X	
Monterey Peninsula Water Management District (MPWMD)	Water System Expansion Permit (MPWMD Board of Directors Ordinance 96)		✓								X	X	X	X	X	
Underground Services Alert (USA)	Utility clearance before subsurface work				X	X	X	X	X	X	X	X	X	X	X	Call 2 days before you dig.
CAW and Local Water Agencies	Participation/purchase agreements				X	X	X	X	X	X	X	X	X	X	X	
PRIVATE ENTITIES																
CEMEX	Land use agreement			X	X											
Armstrong Family	Land use agreement			X	X	X	X									
Landowners	Land lease/sale; Easements and encroachment agreements				X	X	X	X	X	X	X	X	X	X	X	

Notes:
1. Permits for brine discharge pipeline are for the construction and operation of a pipeline required to connect the desal plant with the SVWRP outfall. Revised permitting for new outfall discharges are not included.
2. The cogen plant is a separate project. Power will be purchased from them and therefore no permitting is required for this aspect of the project.
3. X? means we believe we need a permit but we don't yet know because design is not complete. During final design the X? will either go away or become X.