M E E T I N G N O T I C E AND A G E N D A

TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, January 14, 2009
TIME: 1:30 p.m.
LOCATION: City of Seaside City Hall – Portable Buildings Conference Room
440 Harcourt Avenue
Seaside, CA 93955

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (877)810-9415. Use the Access Code of 4560043.

OFFICERS
Chairperson: Diana Ingersoll, City of Seaside
Vice-Chairperson: Tom. Bunosky, California American Water Company
MEMBERS

California American Water Company | **City of Del Rey Oaks** | **City of Monterey**
City of Sand City | **City of Seaside** | **Coastal Subarea Landowners**
Laguna Seca Property Owners | **Monterey County Water Resources Agency**
Monterey Peninsula Water Management District | **Public Member (John Fischer)**

In compliance with the Americans with Disabilities Act, the City of Seaside does not discriminate against persons with disabilities. Both Seaside City Hall and the Portable Office Buildings Conference Room are accessible facilities. If you wish to attend this meeting and you will require assistance in order to participate, please contact the Office of the City Clerk (831) 899-6707 at least three days in advance of the event to make necessary arrangements. If you need assistance in speaking on a specific item noted on the agenda, please inform staff as to which item you would like to comment on and arrangements will be made for you to participate. Portable microphones and assisted listening devices are available upon request.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	1.A
AGENDA TITLE:	Approve Minutes from December 10, 2008
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Draft Minutes from this meeting were emailed to all TAC members. Proposed changes have been included in the attached version.

ATTACHMENTS:	Minutes from this meeting
RECOMMENDED ACTION:	Approve the minutes

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
December 10, 2008

Attendees: **TAC Members**
City of Seaside – Rick Riedl
California American Water – Tom Bunosky
City of Monterey – Les Turnbeaugh
Laguna Seca Property Owners – No Representative
MPWMD – Joe Oliver
Public Member – John Fischer
MCWRA – Kathy Thomasberg
City of Del Rey Oaks – No Representative
City of Sand City – No Representative
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
HydroMetrics LLC - Derrik Williams

Others:
Keith Israel – MRWPCA
Lyndel Melton - RMC

The meeting was called to order at 1:39 p.m.

1. **Administrative Matters:**
   A. Approve Minutes from November 21, 2008 Special Meeting
   On a motion by Mr. Turnbeaugh, seconded by Mr. Oliver, the minutes were unanimously approved as presented.

2. **Continue and Complete Discussion of the Completed Draft BMAP**

Mr. Williams resumed discussion on the Draft BMAP beginning at page 25.

There were numerous editorial comments to improve clarity and/or accuracy. The more substantive issues raised were:

- Additional figures will be included showing jurisdictional boundaries of the various water agencies as well as faults and anticlines. There will also be supporting text regarding the jurisdictional boundaries included in the body of the document.
- The protective water levels shown in the figures will be updated by the work HydroMetrics will be doing in Fiscal Year 2009.
- Mr. Oliver reported that some of the overpumping above the Natural Safe Yield depletes storage, but some is replaced by sea water moving into the Basin offshore of the coastal wells. Because this issue is complex, Mr. Williams will elaborate in the document to clarify it.
- Math errors in table 5 will be corrected.
- Language will be added to provide a rationale for staying with the current assumed Natural Safe Yield of 3, 000 acre feet per year, as set forth in the Decision. Neither the range of values listed in the Decision, nor the range of values cited in the BMAP, support the 3, 000 acre foot per year figure. There was consensus that since groundwater modeling has been authorized for HydroMetrics in Fiscal Year 2009, the 3,000 acre foot per year figure should be retained unless and until the modeling results in a revised figure.
- Some of the projects described in Section 3 "Supplemental Water Supplies" have evolved since the earlier drafting of the BMAP. Mr. Melton explained that the projects are continuing to change. He went on to say that the Public Utilities Commission's Environmental Impact Report will be released in the near future and is expected to contain costs and other information differing from that contained in the BMAP.

  There was much discussion on how to addresses this in the BMAP, i.e. remove cost details and other numerical characteristics of the projects, or state clearly that the figures are in the course of being revised and refined thus rendering current cost and other data out-of-date almost as soon as it is presented.

  The Public Utilities Commission Environmental Impact Report (to be released in January 2009) will evaluate the environmental characteristics of the projects. However, implementation issues, e.g. cost, permitability, etc. will also need to be evaluated. According to Mr. Melton this work is not in consultant contracts or scopes of assignment at this time. He said it will be up to the local water agencies on their own to come together and enter into agreements to implement the various projects that collectively comprise the Regional Water Supply Project.

  Following much discussion there was consensus to have Section 3 just provide project descriptions, but <u>not</u> to include cost, permitting, or scheduling data, since this will depend on what the Environmental Impact Report by the Public Utilities Commission concludes and recommends. According to Mr. Melton and Mr. Israel the cost data is expected to be developed by the local water agencies that will be involved in implementing the components of original water supply project. These agencies will probably include the MRWPCA, MCWD, and MPWMD. The cost data is expected to be developed in the spring of 2009. The cost data will then be evaluated by the Public Utilities Commission and used in conjunction with the Environmental Impact Report recommendations to come to a final Public Utilities Commission recommendation and direction of what project(s) are to be implemented.

It was felt it was better not to include data on costs in the BMAP, since the costs will be revised by the project sponsors based on the sizing and configuration of the project components as recommended in the Environmental Impact Report.

- There was consensus that it was very important for the Watermaster to review and comment on the Public Utilities Commission Environmental Impact Report and any cost documents that come out as the Regional Water Supply Project moves through the Public Utilities Commission process. That process is expected to be concluded by the end of 2009. However the comment period on the Environmental Impact Report is only expected to be approximately 60 days, so it will be critical for the Watermaster to provide its comments within the public comment period.

Mr. Williams will e-mail out for the TAC's review a revised Section 3 prior before finalizing the draft BMAP.

3. Proposal by City of Seaside to Purchase Production Allocation from Another Producer

Mr. Riedl summarized the City of Seaside's proposal to purchase carryover water credits from Granite Rock to help offset the City's over-production in recent years. Mr. Riedl explained that the City is not able to borrow money from the State if it is in violation of any court order. Therefore, the City wishes to comply with the Seaside Groundwater Basin Decision by bringing its production levels in line with those authorized in the Decision.

Mr. Fischer commented that a part of the language in the Recitals of the proposed agreement between the City of Seaside and Granite Rock is not exactly the same as the language in the Decision. Mr. Riedl said that since this discrepancy is in the Recitals section of the agreement, not the terms and conditions section of agreement, it will not affect the terms and conditions of the agreement itself.

There was consensus that the TAC could see no technical drawbacks to granting Seaside's request.

Following discussion there was a motion by Mr. Turnbeaugh, seconded by Mr. Bunosky, to recommend to the Board that approval be granted for Seaside's request. The motion passed with Mr. Fischer dissenting

4. Special Presentation

Mr. Bunosky presented an award to Mr. Fischer recognizing him for his dedication and hours of time spent working as a TAC member. Mr. Fisher received unanimous expressions of appreciation from the TAC members for his services.

5. Other business

Mr. Turnbeaugh reported that this will likely be his last TAC meeting, as he is retiring at the end of the month.

6. Set next meeting date for Wednesday January 14, 2009 2008 at 1:30 p.m.
To be held at the Seaside City Hall Portable Office Buildings Conference Room

The next TAC meeting was set for this time, date, and location.

The meeting adjourned at 4:49 p.m.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	2
AGENDA TITLE:	Proposed RFS No. 2009-02 with HydroMetrics to Develop Protective Water Levels and to Perform Ground Water Modeling
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

HydroMetrics provided me with a draft proposal to perform the following work, which was approved by the TAC and the Board in the FY 2009 adopted budget:

1. Develop protective water level elevations for the Basin, and
2. Perform groundwater modeling of the Basin

I had a number of questions and suggested edits to the draft proposal, all of which have been addressed in the attached version of the proposal which has been incorporated into a proposed RFS No. 2009-02 to HydroMetrics.

I recommend that the TAC approve the attached RFS No. 2009-02 to HydroMetrics to perform this work. If the TAC approves RFS No. 2009-02 for HydroMetrics, I will have it placed it on the Board's upcoming meeting agenda for approval, so the work can begin in February, 2009.

ATTACHMENTS:	Proposed RFS No. 2009-02 with HydroMetrics to develop protective water level elevations for the Basin, and to perform groundwater modeling of the Basin
RECOMMENDED ACTION:	Discuss and provide direction on finalizing the scope of work and costs, so RFS No. 2009-02 can be submitted to the Board for approval at its February 4, 2009 meeting

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: 2/4/2009 **RFS NO**. 2009-02
(To be filled in by WATERMASTER)

TO: Derrik Williams
HydroMetrics LLC
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

Services Needed and Purpose: See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2009, and shall be performed in accordance with the Schedule contained in Attachment 1.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 286,240.00 (Cost is authorized only when evidenced by signature below.) (See Table 1 in Attachment 1 for Detailed Breakdown of Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Authorized by: _____ Date: _____.
WATERMASTER Chief Executive Officer

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

SCOPE OF WORK FOR PROTECTIVE ELEVATIONS

Task 1: Develop Protective Groundwater Elevation Goals and Objectives

Protective groundwater elevations depend strongly on the depth and location of the aquifer that will be protected. Protecting a deep aquifer at the shoreline requires a higher groundwater level than protecting a shallow aquifer inland.

In coordination with TAC members, the desired locations and depths for the freshwater/seawater interface will be determined. It is anticipated that the location will either be at the coastline or some point offshore. Additionally, the Professional will work with the TAC to determine if groundwater should be held in offshore storage for drought supply.

With the assistance of the TAC, a determination will be made of how many protective groundwater elevation locations are required. Generally, protective groundwater elevations are only useful at existing or future monitoring well locations. Useful existing and potential new coastal monitoring well locations will be identified for modeling.

For costing purposes, it is assumed that five well locations will be modeled, and that one meeting with the TAC will be required to develop the goals and objectives for the protective groundwater modeling.

Deliverables: Not less than 10 days prior to the meeting with the TAC, a Technical Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the issues the TAC should consider in providing direction on the Goals and Objectives to be developed under this Task, and any recommendations the Professional would like the TAC to also consider in providing that direction.

Task 2: Develop Protective Groundwater Elevations

A series of cross-sectional models will be created that show where the freshwater/seawater interface is located for known groundwater elevations in monitoring wells. These models will then be used to determine target groundwater elevations that maintain the position of the interface sufficiently far offshore to protect the Basin's aquifers.

The position of the freshwater/seawater interface depends on the density difference between freshwater and seawater, and on the groundwater level at the monitoring well. This modeling

will require a density dependent groundwater flow model. The USGS SEAWAT model will be used to for this Task.

A cross-sectional, two-dimensional model will be developed at each of the coastal monitoring well or potential monitoring well locations. The cross-sectional model of each site will be layered to reflect the aquifer and aquitard units according to the current conceptual hydrogeologic model. These cross-sectional models will span the depth of the aquifer units and extend offshore beneath the ocean. Aquifer parameters e.g. hydraulic conductivity, storativity, etc. for each unit will be taken from existing estimates of these parameters for the various aquifer units.

Results from this task will include a range of reasonable groundwater elevations that are protective of seawater intrusion of the Basin's aquifers.

Deliverables: At the conclusion of work on this Task a Draft Technical Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the work that was performed under this Task, including the modeling results, and any recommendations the Professional would like the TAC to consider. Following review by the TAC, the Professional will address any questions or comments from the TAC by preparing a Final Technical Memo.

Scope of Work for Groundwater Flow Model

Figure *1* presents the steps that will be taken in developing the Seaside Groundwater Basin model.

Task 3: Develop Model Goals and Objectives

General objectives of the basin wide groundwater model include:

- Evaluating selected supplemental water projects,
- Evaluating selected management actions,
- Determining storage efficiency of recharged water, and
- Verifying Total Useable Stored Groundwater and Total Useable Storage Space.

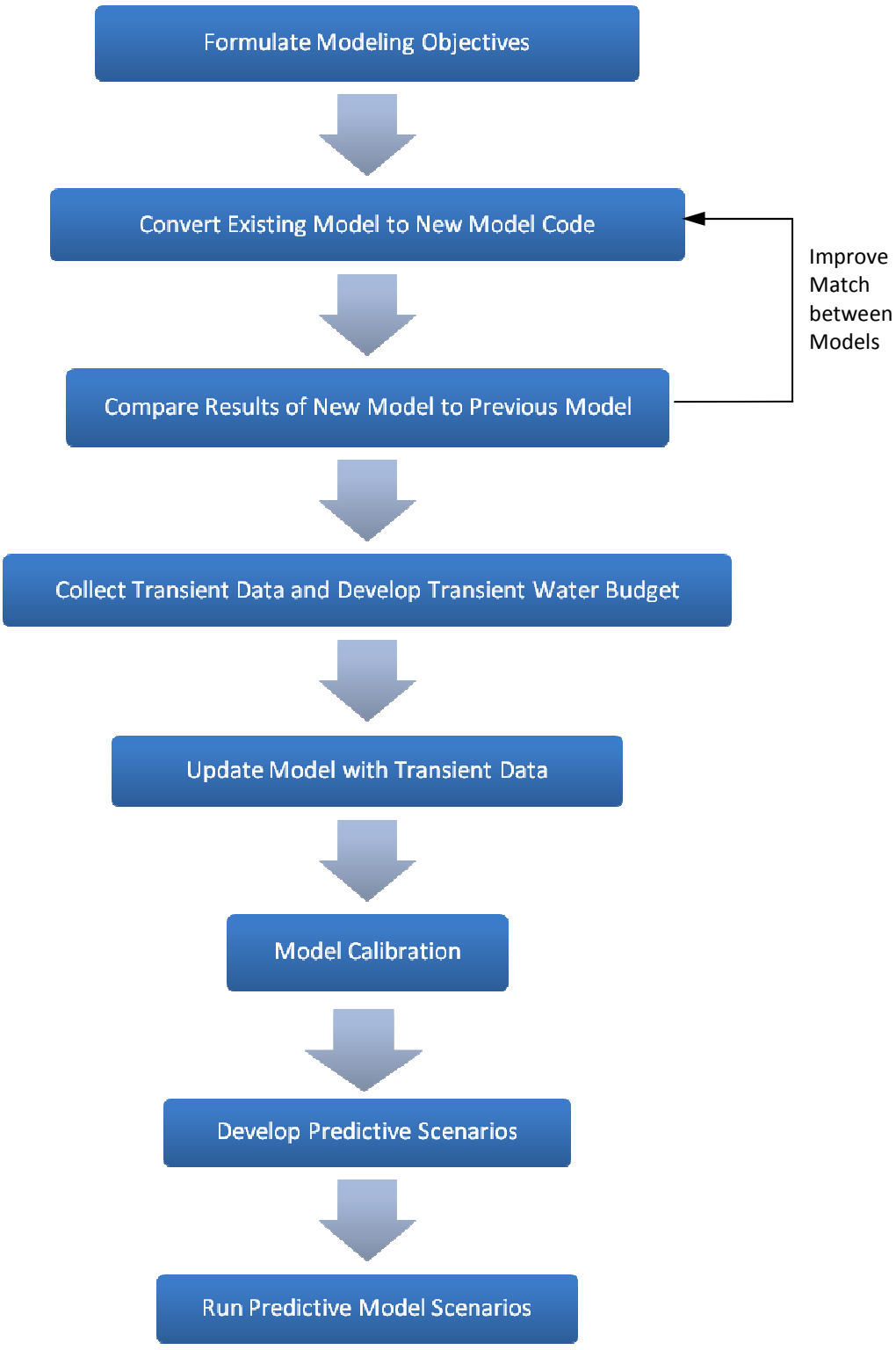

Figure 1: Model Development Process

The first step in developing the groundwater model will be a workshop with the TAC to agree upon specific model objectives. This will include developing a list of probable questions the model may be used to answer. The workshop will be facilitated by HydroMetrics LLC.

The defined model objectives will dictate which features of the Basin should be represented in the model, and to what degree of accuracy. In some cases averaged groundwater levels taken over large areas may be satisfactory, while in others groundwater levels at specified points may be necessary. The time periods simulated by the model (annual, quarterly or monthly) will also need to be decided upon based on the goals and objectives for the model.

Deliverables: Not less than 10 days prior to the workshop with the TAC, a Technical Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the issues the TAC should consider in providing direction on the Goals and Objectives to be developed under this Task, and any recommendations the Professional would like the TAC to also consider in providing that direction.

Following the workshop, a written summary of the issues discussed during the workshop, and the conclusions and decisions reached at the workshop, will be prepared by the Professional and provided to the Technical Program Manager in electronic format to memorialize these actions.

Task 4: Develop Groundwater Flow Model

Subtask 4.1: Convert Existing Groundwater Model to New Model Code

The existing Seaside Basin Groundwater Model was developed using the USGS FEMFLOW model. This model is well documented and adequately checked, however the model code is not commonly used. Because this model is not commonly used, there are limited programs available for analyzing and modifying it. Other, more commonly used models are better suited for model modification, calibration, and display of model results.

The present model will be converted to either the FEFLOW or MODFLOW codes. Coordination with TAC members will be done to identify the pros and cons of each model code. After importing all relevant data to the new model code, it will be demonstrated that the model results from the new code are similar, although not identical, to the FEMFLOW results. This will confirm that all relevant information has been correctly transferred to the new model.

One meeting with the TAC is assumed for this subtask.

Deliverables: Not less than 10 days prior to the meeting with the TAC, a Technical Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the pros and cons of each model, so that the TAC can provide informed direction on the model to be

used. The Professional will also provide any recommendations it would like the TAC to also consider in providing that direction.

Following the meeting, a written summary of the issues discussed during the meeting, and the conclusions and decisions reached at the meeting, will be prepared by the Professional and provided to the Technical Program Manager in electronic format to memorialize these actions.

Subtask 4.2: Collect Transient Data and Develop Transient Water Budget

Two important modifications to the existing Seaside Groundwater Basin model will be converting it to a transient (or time dependent) model, and developing a complete water budget separate from the groundwater model. These recommendations were presented in an earlier memorandum on the existing groundwater model (HydroMetrics LLC, September 27, 2007).

Historical hydrologic data will be required to convert the model to a transient model. Historical groundwater pumping data, historical groundwater elevation data, historical precipitation and evaporation data, as well as any other data necessary for a developing a complete water budget will be collected. It is assumed that the Monterey Peninsula Water Management District (MPWMD) will provide historical pumping data. Where possible, the Seaside Groundwater Basin Database will be accessed for data such as groundwater elevations.

The data will be combined into a complete water budget that includes estimates of flow across the coastline and other potential boundary flows. These boundary flows will be estimates that guide model calibration.

For budgetary purposes, it is assumed that one trip to MPWMD will be made to co-ordinate data collection.

Deliverables: At the conclusion of work on this Subtask a brief Technical Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the work that was performed under this Task.

Subtask 4.3: Update and Calibrate Groundwater Model

Historical pumping, recharge, and groundwater elevation data, will all be incorporated into the groundwater model. The model will be calibrated to within acceptable tolerances, as agreed to by the TAC during the workshop on modeling objectives in Task 3.

Up to two meetings are assumed for this subtask to discuss technical modeling issues with the TAC. These meetings will also be used as progress meetings.

Deliverables: Not less than 10 days prior to each meeting with the TAC, a Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the topics and issues the Professional wishes to discuss at the meeting, so that the TAC will be prepared for those discussions. The Memo will also include any recommendations the Professional would like the TAC to consider during those discussions.

Following the two meetings, a written summary of the issues discussed during the meetings, and the conclusions and decisions reached at the meetings, will be prepared by the Professional and provided to the Technical Program Manager in electronic format to memorialize these actions.

Task 5: Develop and Run Predictive Model Scenarios

Subtask 5.1: Develop Predictive Model Scenarios

In coordination with TAC members predictive model scenarios that represent realistic projects to supplement water supply in the Seaside Groundwater Basin will be developed. It is assumed that analyses of the projects have been completed and that only the input (recharge) and output (groundwater extraction) components will be considered in the model scenarios. For costing purposes, developing up to five scenarios is anticipated. Example scenarios may include developing in-lieu recharge by providing supplemental sources in excess of the annual basin overdraft; injecting water into the existing MPWMD ASR wells in excess of the annual basin overdraft; developing an injection barrier along the coast; or recharge of highly treated wastewater via MRWPCA's proposed Ground Water Recharge Project using either surface spreading, vadose zone injection wells, and/or direct aquifer injection wells.

One TAC meeting [will one meeting suffice?] will be held to discuss and select five model scenarios. The final model calibration from Subtask 4.3 will also be presented at this meeting.

Deliverables: Not less than 10 days prior to the meeting with the TAC, a Memo will be provided to the Watermaster's Technical Program manager in electronic format describing the topics and issues the Professional wishes to discuss at the meeting, so that the TAC will be prepared for those discussions. The Memo will also include any recommendations the Professional would like the TAC to consider during those discussions.

Following the meeting, a written summary of the issues discussed during the meeting, and the conclusions and decisions reached at the meeting, will be prepared by the Professional and provided to the Technical Program Manager in electronic format to memorialize these actions.

Subtask 5.2: Run and Evaluate Predictive Model Scenarios

Using the calibrated groundwater model developed in Subtask 4.3, the five predictive scenarios developed in Task 5.1 will be simulated. The Seaside Groundwater Basin model will be run with each scenario and the results analyzed based on:

- Ability to meet protective elevations,
- Storage efficiency of recharged water (i.e., how much of the recharged water can be extracted), and
- Change in basin wide groundwater flow directions, especially along the northern basin boundary.

Deliverables: No deliverables are required under this Subtask. The work performed under this Subtask will be described and discussed in the Model Report to be prepared under Task 6.

Task 6: Report

A Model Report will detail the methodology and results from all of the activities included in Tasks 1 through 5. The report serves as both a record of the models' development, and as reference documents for future model users. Our documentation will include a discussion of data adequacy, provide suggestions for strengthening the existing data set, and present guidelines for regularly updating and improving the model.

Deliverables: The Watermaster's Technical Program Manager will be provided with both draft and final documents for distribution to TAC members for their review. Fifteen printed and bound copies of the Draft Model Report and 15 printed and bound copies of the Final Model Report will be provided. Additionally, the final document will be provided to the Technical Program Manager in electronic format in MS Word.

COST

The estimated costs to complete the work described in the above scope are included in Table 1. .

SCHEDULE

The work will be performed in accordance with the attached time schedule.

[SCHEDULE TO BE INCLUDED BASED ON PROJECTED BOARD APPROVAL DATE]

TABLE 1. ESTIMATED COSTS

	Hours				Cost					
	Derrik Williams	Cameron Tana	Georgina King	Dave Van Brocklin	Derrik Williams	Cameron Tana	Georgina King	Dave Van Brocklin	Direct Costs	Total Costs
PROTECTIVE ELEVATIONS										
Task 1: Develop Protective Groundwater Elevation Goals	20	0	40	0	$3,600	$0	$6,400	$0	$700	**$10,700**
Task 2: Model Protective Groundwater Elevations	12	80	0	80	$2,160	$12,800	$0	$10,400	$400	**$25,760**
GROUNDWATER FLOW MODEL										
Task 3: Develop Model Goals and Objectives	20	0	20	0	$3,600	$0	$3,200	$0	$150	**$6,950**
Task 4: Develop Groundwater Flow Model										
Subtask 4.1 Convert Groundwater Model to New Code	50	40	0	120	$9,000	$6,400	$0	$15,600	$300	$31,300
Subtask 4.2 Develop Transient Water Budget	40	40	80	160	$7,200	$6,400	$12,800	$20,800	$700	$47,900
Subtask 4.3 Update and Calibrate Groundwater Model	80	180	0	140	$14,400	$28,800	$0	$18,200	$1,000	$62,400
Task 4 Total	170	260	80	420	$30,600	$41,600	$12,800	$54,600	$2,000	**$141,600**
Task 5: Develop and Run Predictive Model Scenarios										
Subtask 5.1: Develop Predictive Model Scenarios	20	0	40	8	$3,600	$0	$6,400	$1,040	$250	$11,290
Subtask 5.2: Run and Evaluate Predictive Model Scenarios	40	60	40	120	$7,200	$9,600	$6,400	$15,600	$100	$38,900
Task 5 Total	60	60	80	128	$10,800	$9,600	$12,800	$16,640	$350	**$50,190**
Task 6: Report	36	16	140	120	$6,480	$2,560	$22,400	$15,600	$4,000	**$51,040**
Total	**318**	**416**	**360**	**748**	**$57,240**	**$66,560**	**$57,600**	**$97,240**	**$7,600**	**$286,240**

Hourly Rates:

Derrik Williams	$180
Cameron Tana	$160
Georgina King	$160
Dave Van Brocklin	$130

SCHEDULE

[SCHEDULE TO BE INCLUDED BASED ON PROJECTED BOARD APPROVAL DATE]

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	3
AGENDA TITLE:	Request from MRWPCA for Payment for Work Done to Prepare GWRP
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

In April of 2008 the Watermaster Board approved a Memorandum of Agreement (MOA) with MRWPCA to provide funding in the amount of $100,000 to MRWPCA to assist MRWPCA with planning work on its Ground Water Replenishment Project (GWRP).

Since then MRWPCA has prepared a document that essentially fulfills its commitments under the MOA, and has now requested payment in accordance with the terms and conditions of the MOA. The document that MRWPCA has prepared does not precisely match the document described in the MOA, but does cover all of the topics and subject matter described in the original MOA. The document that MRWPCA has prepared allowed the GWRP to be included as one component of the Monterey Regional Water Supply Program, which is an alternative to the Coastal Water Project (CWP) being proposed by CAW. The PUC is currently developing an EIR for the CWP, and the EIR will include, as an alternative, the Monterey Regional Water Supply Program. The Draft EIR is expected to be released by the PUC for public review in late January, 2009 (see Agenda Item No. 7).

Attached are excerpts from the document that MRWPCA has prepared. A limited number of complete copies of this document are available to distribute to interested TAC members. Also attached is the invoice from MRWPCA.

Normally, I would recommend that we prepare an amendment to the original MOA to reflect these changes, as suggested by MRWPCA, in order to formalize them. However, in this instance I do not feel that it is necessary to prepare an amendment, since this is a one-time MOA, not an ongoing contractual relationship between the Watermaster and MRWPCA, and also because there is no requirement in the MOA that changes to it must be formalized through a written amendment.

Therefore, in the interest of not creating additional paperwork and spending additional administrative time, in lieu of an amendment I recommend that the Watermaster approve payment to MRWPCA of the $100,000 in funding assistance in accordance with the MOA, and that a letter simply stating that the Watermaster accepts the documents prepared by MRWPCA as fulfillment of MRWPCA's obligations under the MOA, albeit in a somewhat different format and content than originally contemplated when the original MOA was drafted. If the TAC approves of this approach, I will recommend approval by the Board of MRWPCA's request for payment using this approach.

ATTACHMENTS:	1. Excerpts from "Monterey Regional Water Supply Program – Summary of Regional Program" 2. Invoice from MRWPCA
RECOMMENDED ACTION:	Approve the above-described approach to responding to MRWPCA's request for payment

Attachment 1

Table of Contents

List of Tables

List of Figures

This report contains the following information:

- A summary of the Monterey Regional Water Supply Program, as described in greater detail in the EIR Project Description. Additional information for each project related to required facilities, construction methods, and permitting, can be found in the EIR Project Description.
- Cost estimates for each project component, including estimated construction costs, annual operation and maintenance costs, and cost per acre foot of water produced.
- Potential Implementation schedule for each of the project components.
- Summary of changes from the Project Description.

1 Project Overview

Because of its water supply challenges in recent years, including the lack of permanent diversion rights from the Carmel River, and the subsequent pumping reduction requirements of the 2006 Seaside Basin Adjudication court decision, California American Water Company (CAW) proposed the Coastal Water Project (CWP) in order to provide its Monterey Peninsula customers with a reliable water supply. CAW prepared the Proponent's Environmental Assessment (PEA), and in July 2005 submitted it to the California Public Utilities Commission (CPUC). The CPUC, in conjunction with ESA is preparing a project-level draft Environmental Impact Report (EIR) for the CWP and its alternatives, scheduled to be completed by December 2008.

Since January 2007, the Division of Ratepayer Advocates (DRA) of CPUC has been working in conjunction with the University of California, Santa Cruz (UCSC) Center for Integrated Water Research (CIWR) to evaluate whether there is an alternative regional approach that would be less expensive for ratepayers and could be presented as an alternative in the EIR.

In cooperation with the DRA, UCSC/CIWR, the Monterey Regional Plan Work Group (Work Group) and Regional Plenary Oversight Group (REPOG) initiated development of an alternative regional program. The first step was to obtain concurrence regarding the need for additional water supply as represented by the difference between existing supplies and existing and projected demands within the proposed regional area. Additional water supply needs have been identified within the region which incorporates the jurisdictions presented in Table 1-1. The extent of the regional analysis is presented in Figure 1-1 along with the service area boundaries for the water purveyors.

Table 1-1 Water Agencies and Corresponding Service Areas Included in the Regional Approach

Water Agency	Jurisdictions Served
CAW	Carmel-by-the-Sea Del Rey Oaks Monterey Pacific Grove Seaside Sand City Unincorporated sections of Monterey County
CWD	Castroville
MCWD	Marina Lands within the former Fort Ord
MCWRA	Salinas Basin users

As a result of this effort, the Monterey Regional Water Supply Program (the Project) is proposed to provide up to 26,500 acre-feet per year (AFY) to serve the water needs of northern Monterey County, including the Monterey Peninsula, the former Fort Ord, Marina, Castroville, and North Monterey County, including Moss Landing. By providing water to areas both inside and outside the CAW service area, more beneficiaries and project champions may participate and cost reductions can be realized by sharing infrastructure among the projects. This interagency cooperation and shared responsibility maximizes reliability, flexibility and sustainability while reducing environmental impacts.

The components of the Project, as described in this document, include the following:

- Expanded recycled water use
  - Expansion of existing recycled water agricultural irrigation project
  - Groundwater replenishment
  - Urban recycled water use
- Stormwater collection and treatment
- Conservation (while not a supply, it is viewed as potential demand offset)
- Salinas River diversion and surface water treatment plant
- Desalination

Implementation of the regional project also provides the following opportunities:

- Opportunity to deliver increased surface and stored recycled water for agricultural irrigation in exchange for Salinas Basin groundwater
- Opportunity to use intruded Salinas Basin groundwater as source water for desalination treatment facility
- Opportunity to obtain electrical power supply from the Monterey Regional Waste Management District's landfill based cogeneration facilities
- Opportunity to minimize treated wastewater discharges to Monterey Bay

1.1 Project Objectives

The project objectives begin with CAW's CWP objectives as stated in Section 2.1.1.5 of the PEA as follows:

- Satisfy CAW's obligations to meet the requirements of the State Water Resources Control Board (SWRCB) Order 95-10.
- Diversify and create a reliable drought-proof water supply that meets the region's needs
- 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
- Avoid a potential building moratorium
- Minimize water rate increases by creating a diversified water supply portfolio

In addition, the alternative Regional Program incorporates objectives and opportunities created by regional partnerships to:

- Satisfy MCWD's obligations to provide a water supply adequate to meet the approved redevelopment of the former Fort Ord
- Satisfy 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 regional reliability
- Avoid duplicative facilities and infrastructure
- Maximize use of recycled and freshwater sources
- Maximize funding opportunities through regional cooperation
- Minimize energy requirements and greenhouse gas emissions per unit of water delivered
- Integrate urban, agricultural and environmental objectives

1.2 Project Purpose and Need

The Project would provide a total incremental regional water supply of up to 25,600 AFY for urban users which includes the components summarized in Table 1-2 and presented in more detail in this section. The Project also proposes to deliver an additional supply of approximately 14,000 AFY to agricultural water users adjacent to the existing Castroville Seawater Intrusion Project (CSIP) service area within the Salinas Valley. Note that the PEA, which was prepared in 2005, identified an incremental regional water supply of 20,272 which would not satisfy all of the currently identified incremental demands. The Regional Program in this current document includes water supply component alternatives that provide the incremental water supply to meet the larger need.

The needs of the City of Salinas were considered as a part of this planning effort. The City of Salinas is served by California Water Service Company and the Alsop Water Company. All of the City of Salinas water supply is from pumped groundwater, and the proposed means of meeting increased future demands is through increased groundwater pumping. The incremental water supply needs for the City of Salinas are being addressed outside of the regional project described here, but the increased groundwater pumping required to meet the City of Salinas' needs has been included in the hydrologic analyses of the Salinas Groundwater Basin.

Table 1-2 Summary of Identified Regional Water Gap

Demand Component	Required Incremental Water Supply (AFY)
Replacement of Carmel River water and reduced Seaside Basin pumping	12,500
Additional water demands of Monterey Peninsula	4,500
Additional water demands of MCWD	2,700
Additional water demands of North Monterey County	5,900
Total regional water gap	25,600

Delivery of new water supplies would be phased with the first priorities the 12,500 AFY of regulatory replacement water and the 2,700 AFY of Fort Ord demands. The implementation schedule in Section 5 projects potential dates when water from the Regional project components could be available.

2 Description of Project Components

Two key criteria developed by the Technical Work Group and REPOG for the regional project were maximizing reliability by utilizing multiple sources and maximizing sustainability by utilizing other water sources prior to including desalination in the water portfolio. Therefore, recycled water, surface water and groundwater are all identified as additional supplies in this alternative, while desalination continues to be a necessary component to complete the water supply portfolio. The source water for desalination is proposed to be implemented in two phases; first ocean water and second, brackish (seawater intruded) groundwater which would be paired with other project components such as the CSIP expansion to ensure the Basin remains hydrologically balanced. Brackish desalination would reduce energy demands (supporting the Sustainability criterion) and reduce the salinity of the resulting brine (supporting the Environmental criterion).

Four aspects to this project are recognized as key to this integrated regional approach:

1. Maximizing recycled water use
2. Maximizing use of excess winter flows in the Salinas River
3. Eventual use of brackish groundwater as a source water for desalination if paired with other project components to ensure the Basin remains hydrologically balanced
4. Utilizing landfill cogeneration and hydropower as energy sources

All of these aspects, in addition to other valuable project components are further discussed in the following section.

Table 2-1 presents the Project components. Figure 2-1 presents the general locations of the regional program infrastructure. Each component is described in Section 2. The product water distribution component is not presented in Table 2-1, but has been described in Section 2.6. In Table 2-1 product water distribution is included in the Salinas River Diversion – Urban category, but due its importance, has been described in its own section.

Due to the schedule constraints of the Seaside Basin adjudication and the Order 95-10 mandate ordering CAW to diligently pursue a new water supply source to replace the water it currently produces above its permanent diversion rights from the Carmel River, the "regulatory replacement" supply is the first priority for project implementation.

The Project presumes the following CAW long-term water supplies continue to be utilized:

- 3,376 AFY from the Carmel River
- 1,300 AFY from CWP Aquifer Storage and Recovery project
- 1,494 AFY from Seaside Basin groundwater wells

Note that the supply shown for the Seaside Basin groundwater wells is less than the supply shown in the PEA for this source. The supply shown above represents the results of the Seaside Basin adjudication, which had not been finalized when the PEA was written. CAW is presently using a total of 4,300 AFY from the Seaside wells and Seaside Aquifer Storage and Recovery (ASR) in their analysis.

To complete the water supply for the Project, evaluation criteria were applied to a variety of potential supply options, and an integrated approach was developed that diversified the water portfolio beyond the regional alternative presented in the PEA.

Table 2-1 Components of the Monterey Regional Water Supply Program

Component	Supply (AFY)	Notes
2.1: Stormwater	Up to 1,000	This project is currently being evaluated for the City of Pacific Grove. Because project is in feasibility study stage, this supply volume was not incorporated into water supply models for the regional program.
2.2: Conservation	Potential demand offset	Water conservation efforts represent a potential demand reduction on the Monterey Peninsula. While it does not produce additional supply or yield, it is an important component of the analysis and was supported by public stakeholders. CAW and MPWMD have proposed a conservation program that identified up to 1,000 AF of savings.
2.3: Salinas Basin Groundwater	5,900	To supply identified needs of North Monterey County.
2.4: Salinas River Diversions – Urban	5,000 to 10,000	Average available in a single year. This project also includes component 2.6, Product Water Distribution
2.5: Regional Desalination Facility	12,430 to 14,400	Source water anticipated to be ocean water in Phase 1 and brackish water in Phase 2. Implementation of Phase 2 would need to be paired with other project components such as the CSIP expansion to ensure the Basin remains hydrologically balanced.
2.7: Seaside Basin ASR / In-lieu Recharge (ILR)	1,300	Consists of injecting water from the Carmel River into the Seaside Groundwater Basin. The first phase, a 920 AFY project, is anticipated to begin implementation in 2008 and is a project of the MPWMD.
2.8: Sand City Desalination	300	This project is moving forward and construction was initiated in 2008.
TOTAL POTABLE SUPPLY	Up to 25,600	A combination of the water supply components above would be utilized to meet previously quantified regional water demands in wet, dry, and average water years.
Recycled Water Alternatives		
2.9: CSIP Expansion	7,000 to 9,000 AFY of recycled water, and 5,000 AFY of Salinas River for agricultural use (Total up to 14,000 AFY)	Expand CSIP with increased summer-time diversions from the Salinas River, aquifer storage and recovery of winter-time recycled water, additional summer-time recycled water and delivery an expanded CSIP distribution system, consistent with SVWP Phase 2 project description in the SVWP EIR/EIS. The CSIP expansion could proceed as an agricultural supply independently of the Regional Water Supply Program. Its link to the Program is that it is the recommended project to maintain hydrologic balance in the Salinas basin by pairing it with proposed future groundwater pumping including Phase 2 of the desalination project and additional groundwater pumping in the study area
2.10: Seaside Groundwater Replenishment	Up to 6,720	Treat RTP, Salinas industrial wastewater treatment plant effluent, Blanco Drain, and MCWRA Reclamation Ditch waters at a new advanced treatment (reverse osmosis) plant at the MRWPCA Use the water to replenish the Seaside Groundwater Basin Includes up to 683 AFY for sub-potable water to RUWAP (Phase 1A)

2.1 Pacific Grove Stormwater Project

Pacific Grove Stormwater Project
Description: This project entails capturing stormwater runoff during wet weather months and delivering it to the David Avenue Reservoir for storage, followed by treatment and delivery for local irrigation use.
Responsible Agency: City of Pacific Grove
Supply Amount: Up to 1,000 AFY
Capital and O&M Cost: This project is in the feasibility stage and costs have not yet been developed.
Current Status of Project:

Planning	Permitting/Design	Construction	O&M

Malcolm Pirnie, Inc. is developing a feasibility study which is expected to be completed by July 2008.

Linkages/Interdependencies with Other Projects: None

The City of Pacific Grove has already implemented the first two phases of their Urban Runoff Diversion project to collect urban stormwater runoff during dry weather months and divert it into the sanitary sewer system to be delivered to the MRWPCA SVRP. There is potential to capture the urban stormwater runoff during wet weather before it enters the Monterey Bay National Marine Sanctuary and the off-shore Area of Special Biological Significance (ASBS) No. 19 Pacific Grove Marine Gardens Fish Refuge and Hopkins Marine Life Refuge. Due to limited pipeline capacity, rather than send the stormwater to MRWPCA during wet weather months, the stormwater would be captured and delivered to the David Avenue Reservoir for storage. It would then be treated and delivered to users for irrigation.

Up to 1,000 AFY would be made available for irrigation by this project (Malcolm Pirnie, Inc. 2008). Because this project is in the feasibility stage, and does not have readily available design information, this 1,000 AFY of potential supply has not been incorporated into the water supply modeling for the regional project alternative. Once this project is implemented, it could reduce the incremental water supply needed from the Project.

The City of Pacific Grove has retained Malcolm Pirnie to complete a feasibility study for the Stormwater Project by July 2008. This investigation entails developing runoff quality projections, treatment requirements and alternatives, and potential users for irrigation water. The stormwater would be stored at the David Avenue Reservoir, an unused reservoir owned by CAW at the intersection of David Avenue and Carmel Avenue as shown in Figure 2-2. The identified locations to use the treated stormwater include, but are not limited to:

- George Washington Park
- Pacific Grove Golf Links
- Pebble Beach Golf Links
- Pacific Grove Middle School
- Pacific Grove High School

2.2 Conservation

Conservation
Description: MPWMD and CAW proposed a conservation program comprised of various conservation measures to be implemented throughout their service area. These measures could include water audits and residential plumbing retrofits, among others.
Responsible Agency: CAW and MPWMD
Supply Amount: Potential Demand Offset (Up to 1,000 AF over 3 years)
Capital and O&M Cost: The cost of many of these programs would be in the form of rebates, rather than infrastructure and construction. Costs for the individual conservation measures are unknown at this time as they could be implemented in multiple areas for an unknown number of residents and businesses.
Current Status of Project:
Planning | Permitting/Design | Construction | O&M
CAW and MPWMD proposed the water conservation rate program to CPUC in December 2007.
Linkages/Interdependencies with Other Projects:
None

CAW and MPWMD proposed a conservation program to the CPUC which could conserve up to 1,000 AF over the next three years, as described in CAW's Application for a Special Conservation Program and Modifications to Its Rate Design CPUC Application A.07-12-010 filed December 14, 2007. This savings in water could reduce overall demand and the need for potable water, thus contributing to satisfying SWRCB Order 95-10 and the Seaside Basin Adjudication. The overall conservation measures would be administered by CAW and MPWMD within the MPWMD service area and include, but not be limited to:

- Water audits for residential, large landscape and commercial/industrial customers.
- Residential rebates for heavy use appliances including toilets and washers as well as irrigation system equipment to target outdoor water usage.
- Residential plumbing retrofits including low flow showerheads and faucet aerators, leak detection kits, evapotranspiration-based (ETo) irrigation equipment and timers. The ETo controllers would automatically control an outdoor sprinkler system using real-time or historical weather data, such as humidity, temperature, solar radiation, soil moisture, and rain gauge sensors.
- Commercial rebates for devices such as high efficiency or dual flush toilets, water-less urinals, waterbrooms, dishwashers, and others.
- School Education Programs targeting grades K through 12.
- Implementation of the Expanded Water Conservation and Standby Rationing Plan allowing for mandatory water rationing and conservation during either legal or actual supply shortages, including reductions ranging from 15% to 50% reduction goals.

CAW remains committed to this conservation effort. Because conservation is a potential offset to demand, rather than a new supply, the volume of water that may be conserved is not included in the water supply model for the Project.

2.3 Salinas Basin Groundwater

Salinas Basin Groundwater

Description: The Salinas groundwater supply would be expanded to serve projected growth in the North Monterey County area. The existing groundwater pumping and distribution system would be expanded by the responsible agencies as demand increases. The Project has not developed specific information on this component.

Responsible Agency: MCWRA or other responsible agencies.

Supply Amount: 5,900 AFY

Capital and O&M Cost: Costs have not been developed for this project.

Current Status of Project:

Linkages/Interdependencies with Other Projects: None

2.4 Surface Water Delivery to Urban Users

Surface Water Delivery to Urban Users

Description: Surface water would be diverted from the Salinas River, treated at a surface water treatment plant located on Armstrong Ranch, and delivered to urban users. The distribution system is described in Section 2.6.

Responsible Agency: TBD

Supply Amount: 5,000 - 10,000 AFY

Capital Cost (Treatment Only): (5,000 AFY): $78 million (2008 dollars) (10,000 AFY): $118 million (2008 dollars) **Capital Cost (Treatment and Distribution)** (5,000 AFY): $133 million (2008 dollars) (10,000 AFY): $173 million (2008 dollars)	**O&M Cost (Treatment Only):** (5,000 AFY): $1.6 million (2008 dollars) (10,000 AFY): $2.1 million (2008 dollars) **O&M Cost (Treatment and Distribution)** (5,000 AFY): $2.8 million (2008 dollars) (10,000 AFY): $3.3 million (2008 dollars)
	Cost $/AF (Treatment Only): **(5,000 AFY):** $1,405 (2008 dollars) **(10,000 AFY):** $1,026 (2008 dollars) **Cost $/AF (Treatment and Distribution)** (5,000 AFY): $1,691 (2008 dollars) (10,000 AFY): $1,312 (2008 dollars)

Current Status of Project:

The Surface Water Delivery to Urban Users project is in the planning stage. Modeling was conducted using the SVIGSM to assure hydrologic balance of Salinas Basin.

Linkages/Interdependencies with Other Projects:

The Salinas River Diversion Facility and other intake facilities for this project would be shared with the Salinas Valley Water Project. The Surface Water Treatment Plant (SWTP) would be located on the same parcel as the Regional Desalination facility and the two treatment facilities would also share the facilities to delivery product water to urban users. The cost of the product water distribution system described in Section 2.6 has been added to the surface water section because the proposed implementation schedule would require the two components be built together.

This project includes using run-of-the-river surface water diversions from the Salinas River in order to provide urban users with a potable supply. Diversions would occur during the winter and spring months when flows exceed the in stream requirements as set by NMFS in their Biological Opinion for the Salinas Valley Water Project. (July, 2007) and the biological opinion as part of the Salinas Valley Water Project EIR Addendum (ENTRIX, Inc., 2007). Water diverted for urban use would be treated at a surface water treatment plant (SWTP) co-located with the regional desalination facility (Section 2.5) on a 10-acre parcel on Armstrong Ranch south of the existing MRWPCA regional treatment plant (RTP).

The surface water facility in the Project Description was originally sized for 5,000 AFY. Further evaluation of the winter time flows (November – April) in the Salinas River indicate more water may be available. A 10,000 AFY treatment facility size was selected because this capacity would meet the winter time demand without the use of the desalination facility. Based on monthly output data from the IGSM model, there is a 95% probability that 10,000 AFY could be diverted in the winter months, while still meeting the NMFS fish flow requirements. This report, and the cost estimates in Appendix D, are based on a 21 mgd surface water treatment plant, However, further evaluation of the variation in daily river flows will be required to finalize the sizing of the treatment plant and storage facilities and the cost-effective sustainable yield.

On average, up to 10,000 acre-feet per year of potable water would be provided by the Salinas River Surface Water Treatment Plant. Between November and May, a maximum of 1,960 acre-feet per month would be diverted from the Salinas River at the Salinas River Diversion Facility (SRDF). These flows are expected to be available based on SVIGSM hydrologic modeling of the Salinas Basin under regional project conditions that included expansion of the CSIP distribution system and a desalination facility, described in Sections 2.9 and 2.5, respectively.

Major components of this project include:

- A Surface Water Treatment Plant (SWTP) with a capacity of up to 21 mgd including the following facilities:
    - Pretreatment system
    - Microfiltration (MF) membrane system
    - Disinfection
    - Post-treatment system
    - Clearwells
    - On Site Residuals handling
- Distribution pumping and transmission pipelines to the existing distribution system.

Pretreatment. Prior to membrane treatment, pretreatment, consisting of chemical coagulation with ferric chloride and anionic polymer, high rate sedimentation using ballasted flocculation, and automatic self-cleaning strainers would be used to remove turbidity.

MF Membrane Treatment. The MF membrane treatment system would include feed pumps, automatic self-cleaning strainers, CIP system, and air compressors. The MF membrane system is anticipated to have a 90% recovery rate. A backwash system would also be implemented to remove particulate matter collected on the membrane surface which could result in membrane plugging and reduced flow through the membrane. Specific pump details would be determined during design.

Disinfection / Post Treatment. Disinfection requirements for treated water are dependent upon the type of water source (surface water, groundwater, or groundwater under the direct influence of surface water (GWUDI)). More stringent requirements are applied to surface water and GWUDI than groundwater. To meet the disinfection requirements, both primary and secondary disinfection is required. It is expected that ultraviolet (UV) irradiation would be the primary disinfectant for inactivation of *Giardia* and *Cryptosporidium* and sodium hypochlorite would be used as the primary disinfectant to inactivate viruses. Because the treated surface water and the desalinated product water from the adjacent desalination facility would be blended and delivered to urban users, they would also undergo the same post treatment process. It is important that the water introduced into the distribution system is compatible with the existing water supply and non-corrosive to the distribution system. The final conditioning of the product water would consist of running the water through a decarbonator followed by the addition of sodium hydroxide for pH adjustment

Residuals Handling. A maximum of 1.4 mgd of waste stream from the SWTP would be handled by on site residuals management including dewatering by a belt filer press or centrifuge and on-site drying beds. The filtrate would be returned to the pretreatment to the SWTP influent.

2.5 Regional Desalination

Regional Desalination	
Description: This project consists of two phases. Phase 1 would be desalination of ocean water. Phase 2 which would add desalination of brackish ground water from the seawater intruded 180 foot aquifer in the Salinas Groundwater Basin. Phase 2 would need to be paired with other project components such as the CSIP expansion to ensure the Basin remains hydrologically balanced	
Responsible Agency: TBD	
Supply Amount: Up to 14,400 AFY	
Capital Cost: $164 million (2008 dollars)	**O&M Cost:** $8.6 million per year (2008 dollars)
	Cost $/AF: $1,600 (2008 dollars)

Current Status of Project:

The Regional Desalination project is currently in the planning phase. This alternative has been evaluated through hydrologic modeling and described in detail in technical memoranda prepared by the modeling firms of GeoScience and WRIME (WRIME, 2008).

Linkages/Interdependencies with Other Projects:

The CSIP Expansion project or other groundwater offsetting project must be in place in order to allow the use of brackish groundwater as a source of water

A desalination facility is proposed in the North Marina area, at the same location as the Salinas River surface water treatment plant. The facility would be constructed in two phases. The Phase 1 source water would be ocean water from a line of seawater wells located on the inland side of the coastal dunes. The Phase 1 source water would be the ocean water combined with brackish water (seawater intruded groundwater) from a second a line of brackish wells near Highway 1. The use of brackish water as the desalination water supply and the effects of the drawdown profiles from the parallel well fields would provide the following regional benefits:

- Provides a desalination water supply that requires less energy per unit water to treat.
- Creates a brine waste that has salinity much closer to that of ambient ocean water.
- Creates a seawater intrusion barrier on the ocean-side of the dual well field.
- Accelerates the cleanup of the Salinas groundwater basin by extracting brackish water from the basin.

The desalination facility would have a peak daily production capacity of up to 13 mgd with a potential total annual water production of 14,400 acre-feet per year if it was operated at maximum capacity year-round. The anticipated operation of the desalination facility would be to operate at peak production for approximately 8 months per year (April – November) and operate at a reduced rate the remaining four months (December – March) when regional demands are lower and the surface water treatment facility is in operation. Assuming a SWTP supply of 5,000 AFY per the Project Description this mode of operation would produce an annual water supply from of approximately 12,430 AFY from the desalination plant.

Assuming the SWTP supply is increased to 10,000 AFY per the discussion in Section 2.4, the design yield of the desalination plant may be reduced to 7,430 AFY. Excess capacity in the winter months could be used if necessary to supplement surface water diversions during dry years or to recharge the Seaside Basin aquifer.

The use of brackish wells within the Salinas Basin is feasible only if coordinated with other water supply strategies that support the hydrologic balance of the Salinas Basin and provide additional water supply to overlying interests, i.e. the CSIP Expansion project described in Section 2.9. Until the CSIP Expansion is implemented the desalination project would extract ocean water for treatment and would phase in the brackish water component after the CSIP Expansion is constructed.

The brine from a desalination facility would be discharged to the ocean through the existing MRWPCA outfall. Using a brackish source water, the brine would have a salinity level approximately 10% above ambient seawater (minimum of 38,000 mg/l TDS). Using ocean water, the brine would have a salinity level approximately twice that of seawater. Treated water would be stored at clearwells on the desalination facility site and then distributed to urban users through a new transmission pipeline shared with the Surface Water project. The desalination plant would contain the following key facilities:

- Intake facilities (vertical wells and pipelines)
- Desalination Facilities
    - Pretreatment system
    - Reverse Osmosis (RO) system
    - Post-treatment system
    - Clearwell tanks
    - RO concentrate (brine) disposal
- Distribution pumping and transmission pipeline

Pretreatment. The pretreatment for the proposed facility would require the addition of threshold inhibitor followed by cartridge filtration. Threshold inhibitor is added in liquid form to the raw water as it enters the treatment site. It is added to prevent the formation of scales under saturated or super-saturated conditions, allowing stable operations at a higher recovery. A 5 micron cartridge filter is proposed as the final particle barrier upstream of the RO membranes.

Reverse Osmosis System. A one pass RO membrane system using seawater membranes is proposed for treating the water. The assumed RO recovery is 50%, meaning the proposed 13 mgd facility would require a feed stream of 26 mgd and produce a brine stream of 13 mgd.

To reduce energy costs in the RO system, residual energy would be harnessed from the concentrate stream through the use of a pressure exchanger (PX). The PX uses the energy in the brine stream to pressurize a portion of the intake stream, thereby reducing the overall external energy requirements for the system. These PX systems are very efficient, recovering approximately 95% of the energy in the brine stream.

Disinfection/Post Treatment. Disinfection requirements for treated water are dependent upon the type of water sources (surface water, groundwater, or GWUDI). More stringent requirements are applied to surface waters and GWUDI than groundwater. Even though raw water would be collected through vertical wells, based on initial discussion with CDPH it is not certain whether the intake water would be considered groundwater or GWUDI. Due to this uncertainty, more stringent disinfection requirements have been assumed for the project. To meet the more stringent requirements a combination of two disinfectants is most cost effective. Ultraviolet irradiation (UV) is proposed for inactivation of *Giardia* and *Cryptosporidium*; sodium hypochlorite would be used inactivate viruses.

2.6 Product Water Distribution

Product Water Distribution

Description: Product water from the surface water and desalination facilities would be combined in a common clear well located on the Armstrong Ranch parcel. Water would then be distributed to urban users via a new pump station and pipeline.

Responsible Agency: TBD

Supply Amount: 17,430 AFY

Capital Cost: $55 million (2008 dollars)

O&M Cost: $1.2 million per year (2008 dollars)

Cost $/AF: $286 (2008 dollars)

Current Status of Project:

Planning | Permitting/Design | Construction | O&M

The product water distribution is currently in the planning phase. Initial modeling has been done to determine the feasibility of the proposed alignment alternatives.

Linkages/Interdependencies with Other Projects:

Surface Water Treatment Facility and Regional Desalination

A capacity of 5 million gallons (mg) of product water storage is proposed at the desalination facility / SWTP. The capacity consists of two 2.5-mg circular above-ground concrete reservoirs. The tanks were sized based on an approximate 5 hour storage time when the RO and surface water facilities are operating concurrently.

In order to convey water under the proposed operational scenarios, three alternatives were evaluated:

1. Moving water to CAW's terminal reservoirs via the TAMC pipeline alignment (as described in CAW's Coastal Water Project Environmental Assessment). Water would be conveyed to MCWD via interties.
2. Moving water to CAW via a new pipeline following the proposed Regional Urban Water Augmentation Project (RUWAP) alignment. Water would be conveyed to MCWD via interties.
3. Moving water through a combination of the MCWD system and a new pipeline following the proposed Regional Urban Water Augmentation Project pipeline alignment.

The evaluation determined that either option 1 or 2 are feasible alternatives. The detailed evaluation of the alignment alternatives can be seen in Appendix B.

2.7 Seaside Aquifer Storage and Recovery / In-lieu Recharge

Seaside Aquifer Storage and Recovery

Description: Excess water from the Carmel River during winter months would be diverted and treated to potable drinking water standards, and then injected into aquifer storage and recovery wells in the Seaside Groundwater Basin for recovery during dry periods.

Responsible Agency: MPWMD and CAW

Supply Amount: 1,300 AFY (Phase 1 - 920 AFY currently under construction)
(Phase 2- 380 AFY)

Capital Cost: $3 million (2005 dollars) (MPWMD, 2005)	**O&M Cost:** $100,000 per year (2005 dollars) (MPWMD, 2005)

Current Status of Project:

Construction of the first phase of Seaside ASR project began in 2006 and is projected to be completed in 2008.

Linkages/Interdependencies with Other Projects:

The Groundwater Replenishment Project would need to coordinate with this project.

This project entails diverting excess winter flows from the Carmel River Basin during high flow periods using existing CAW wells in the lower stretches of the Carmel River. The diverted water would be treated to potable drinking water standards and pumped approximately 6 miles through the CAW distribution system to the hydrologically separate Seaside Basin, where the water would be injected into specially constructed ASR wells for recovery during dry periods. There is existing infrastructure which would allow for the diversion and transport of the river water to the existing Santa Margarita well site for injection. A second injection/extraction would be constructed adjacent to the Santa Margarita well site allowing for injection and extraction of water approximately 800 feet below the ground surface into the Santa Margarita Sandstone aquifer. Since water is stored in an existing groundwater aquifer, the need to construct large and expensive reservoirs is eliminated (Monterey Peninsula Water Management District, 2005).

2.8 Sand City Water Supply Project

Sand City Water Supply Project	
Description: A desalination plant would be constructed in order to treat brackish ground water and deliver a potable water supply to users in Sand City.	
Responsible Agency: City of Sand City	
Supply Amount: 300 AFY	
Capital Cost: $10 million (2008 dollars)	**O&M Cost:** $0.4 million per year (2008 dollars)
	Cost $/AF: $3,600 (2008 dollars)
Current Status of Project:	
Planning / Permitting/Design / Construction / O&M	
Construction was initiated in 2008 and is expected to be complete in 2009.	
Linkages/Interdependencies with Other Projects:	
None	

In 2005, the City of Sand City certified the Final EIR for the Sand City Water Supply Project. In September 2007, an addendum was prepared to analyze interconnections of the California American Water Company system and other project modifications subsequent to the Final EIR. The Sand City Water Supply Project comprises a desalination facility and a potable water system, which CAW leased to operate for the first 15 years, to enable use of its 300 AFY of new potable water to address its Carmel River regulatory and Seaside Basin adjudication constraints (ultimately, 206 AFY is projected to be needed to serve future CAW customers in Sand City). Brackish source water for the desalination plant would be obtained from the shallow groundwater aquifer near Monterey Bay. Facilities include a reverse osmosis (RO) desalination plant that would treat water from the shallow, brackish Aromas Sands Formation, a 7,000 foot pipeline to deliver water to users in the City, two water storage tanks, and an emergency intertie to the MCWD system.

The Sand City Water Supply Project has obtained the necessary construction permits, including a coastal development permit approval and permit amendment from the California Coastal Commission, and a distribution permit from MPWMD. Construction of the project began in 2008, and completion is expected in early 2009. The water produced by the Sand City desalination project will initially go towards offsetting the regulatory reduction requirement of CAW. After the Carmel River diversions have decreased to no more than 3,376 AFY, the Sand City desalination water will no longer go to CAW.

2.9 CSIP Expansion

CSIP Expansion

Description: The CSIP Expansion includes 1) expanding the Salinas river diversion facility to add an additional 5,000 AFY of surface water 2) aquifer storage and recovery of 7,000 AFY of winter-time recycled water from the Salinas Valley Reclamation Project (SVRP) 3) adding 2,000 AFY of additional summer-time recycled water as the population in the service area increases resulting in more flow to the MRWPCA, and 4) expansion of the CSIP distribution facilities to additional agricultural areas to the south and east of the existing CSIP service area.

Responsible Agency: MCWRA

Supply Amount: 14,000 AFY for agricultural use

Expanding CSIP would allow the proposed future groundwater pumping to occur with no detrimental effects to the Salinas Basin due to the CSIP expansion project. This includes the brackish portion of the desalination facility (up to 7,000 AFY), North County pumping (5,900 AFY), and increased groundwater pumping from the Cities of Salinas and Castroville.

Capital Cost: $101 million (2008 dollars)

O&M Cost: $3 million per year (2008 dollars)

Cost $/AF: $721 (2008 dollars)

Current Status of Project:

Planning	Permitting/Design	Construction	O&M

The CSIP Expansion Project is in the planning stage. Feasibility of subsurface storage has been modeled. The CSIP Expansion was modeled using the Salinas Valley Integrated Groundwater Simulated Model conducted by WRIME.

Linkages/Interdependencies with Other Projects:

The CSIP Expansion project can expand as an agricultural supply independently of the Regional Water Supply Program. Its link to the Program is that it is a recommended project to allow future urban groundwater pumping while still maintaining the hydrological balance of the Salinas groundwater basin. The future urban use groundwater pumping could include Phase 2 of the desalination project and additional groundwater pumping in North County, City of Salinas, and City of Castroville

CSIP Expansion

Existing CSIP Facilities: The existing Castroville Seawater Intrusion Project (CSIP) offsets groundwater pumping in the Salinas Basin by delivering 14,000 acre-feet per year of recycled water for agricultural use throughout the Castroville area. The current CSIP distribution system and surrounding agricultural land is shown in Figure 2-5. Since 1998, CSIP has played a crucial role in curbing seawater intrusion. Under a Title 22 Permit, tertiary-treated water is produced at the MRWPCA's SVRP and then pumped to a nearby 80 AF storage pond located on MRWPCA property. From there it is distributed via gravity through a 51-inch transmission main to the CSIP system. Because recycled water is not available in sufficient quantity to meet peak summer agricultural demands, groundwater is pumped during summer months to fill this gap. One component of MCWRA's Salinas Valley Water Project (SVWP), is the construction of the 36 cfs Salinas River Diversion Facility (SRDF) which would offset groundwater pumping by providing approximately 9,700 AFY of disinfected Salinas River water to be blended with

2.9 CSIP Expansion

CSIP Expansion

Description: The CSIP Expansion includes 1) expanding the Salinas river diversion facility to add an additional 5,000 AFY of surface water 2) aquifer storage and recovery of 7,000 AFY of winter-time recycled water from the Salinas Valley Reclamation Project (SVRP) 3) adding 2,000 AFY of additional summer-time recycled water as the population in the service area increases resulting in more flow to the MRWPCA, and 4) expansion of the CSIP distribution facilities to additional agricultural areas to the south and east of the existing CSIP service area.

Responsible Agency: MCWRA

Supply Amount: 14,000 AFY for agricultural use

Expanding CSIP would allow the proposed future groundwater pumping to occur with no detrimental effects to the Salinas Basin due to the CSIP expansion project. This includes the brackish portion of the desalination facility (up to 7,000 AFY), North County pumping (5,900 AFY), and increased groundwater pumping from the Cities of Salinas and Castroville.

Capital Cost: $101 million (2008 dollars)

O&M Cost: $3 million per year (2008 dollars)

Cost $/AF: $721 (2008 dollars)

Current Status of Project:

Planning	Permitting/Design	Construction	O&M

The CSIP Expansion Project is in the planning stage. Feasibility of subsurface storage has been modeled. The CSIP Expansion was modeled using the Salinas Valley Integrated Groundwater Simulated Model conducted by WRIME.

Linkages/Interdependencies with Other Projects:

The CSIP Expansion project can expand as an agricultural supply independently of the Regional Water Supply Program. Its link to the Program is that it is a recommended project to allow future urban groundwater pumping while still maintaining the hydrological balance of the Salinas groundwater basin. The future urban use groundwater pumping could include Phase 2 of the desalination project and additional groundwater pumping in North County, City of Salinas, and City of Castroville

CSIP Expansion

Existing CSIP Facilities: The existing Castroville Seawater Intrusion Project (CSIP) offsets groundwater pumping in the Salinas Basin by delivering 14,000 acre-feet per year of recycled water for agricultural use throughout the Castroville area. The current CSIP distribution system and surrounding agricultural land is shown in Figure 2-5. Since 1998, CSIP has played a crucial role in curbing seawater intrusion. Under a Title 22 Permit, tertiary-treated water is produced at the MRWPCA's SVRP and then pumped to a nearby 80 AF storage pond located on MRWPCA property. From there it is distributed via gravity through a 51-inch transmission main to the CSIP system. Because recycled water is not available in sufficient quantity to meet peak summer agricultural demands, groundwater is pumped during summer months to fill this gap. One component of MCWRA's Salinas Valley Water Project (SVWP), is the construction of the 36 cfs Salinas River Diversion Facility (SRDF) which would offset groundwater pumping by providing approximately 9,700 AFY of disinfected Salinas River water to be blended with

the available recycled water from the SVRP and be distributed to the existing CSIP customers. Construction of the SRDF began in spring 2008 and is anticipated to be operational by 2010.

CSIP Expansion Facilities: Additional agricultural areas to the south and east of the existing CSIP service area have been identified using the Salinas Valley Integrated Groundwater Surface Model (SVIGSM) as areas that would significantly benefit from reduced groundwater extraction. The CSIP Expansion project would provide additional surface water and recycled water to CSIP, and would offset an additional 14,000 AFY of agricultural groundwater pumping. This offset would balance the desalination facility's brackish water intake (Section 2.5), which also creates a seawater intrusion barrier along the coast. In addition, the CSIP expansion would balance future planned urban groundwater withdrawals from North Monterey County, City of Salinas and City of Castroville with no detrimental affects to the basin, as projected by the modeling conducted by WRIME and described in the *Groundwater Modeling Simulation of Impacts for Monterey Regional Water Supply Project* prepared in June 2008.

Up to 5,000 AFY of surface water would be provided to agricultural customers between April and October by expanding the capacity of the SRDF. The Regional Program would increase the size of the 36 cfs SRDF facility by 24 cfs to a total capacity of 60 cfs. The 36 cfs MCWRA diversion facility and pump station have been designed for a peak flow rate less than what was stated in the SVWP EIR. The original design had a capacity of 85 cfs with accommodations for future expansion up to 135 cfs. The Project would require expansion of a portion of the 36 cfs diversion structure in addition to construction of a new pump station adjacent to the existing pump station.

Any significant increase of recycled water deliveries to CSIP from the SVRP would require seasonal storage during winter months for use during the irrigation season. Approximately 7,000 AFY would be provided by the Recycled Water ASR project through subsurface storage, as described in the following section.

Up to 7,000 AFY of water would be provided by winter storage of recycled water followed by summer time withdrawals in an aquifer storage and recovery (ASR) system. This Project includes storage of recycled water at a 220-acre portion of the Armstrong Ranch property, south of MRWPCA property and southwest of the Monterey Regional Waste Management District (MRWMD) property. The MRWPCA SVRP would provide the recycled water for storage in the shallow unconfined aquifer (A-Aquifer) underlying Armstrong Ranch. In general, the SVRP would supply recycled water to the storage project during winter months (approximately November through March) when demand from CSIP is minimal. The recycled water would be conveyed from the plant and placed into the underlying unconfined aquifer through a series of well clusters located on the 220-acre parcel. .

Modeling of the ASR project (see Appendix C) indicated the feasibility of storing between 3,000 AF and 7,000 AF of recycled water per year, based on varying infrastructure needs. These preliminary modeling efforts have demonstrated that stored water would be contained within the project area by an underlying aquitard, approximately 120 feet below the surface, and by a hydraulic barrier (groundwater dam also referred to as a cutoff wall) on the downgradient edges of the site. Facilities would include injection/extraction wells, monitoring wells, pipelines, booster pump station, and cutoff wall. In summer months (approximately May through September), stored water would be extracted using the same (or adjacent extraction) wells and conveyed back to the SVRP for disinfection and blending with other supplies prior to irrigation distribution via the CSIP system.

The remaining 2,000 AFY necessary to meet the project goal of expanding CSIP by 14,000 AFY, would be provided by additional recycled water produced at the SVRP during the irrigation season. Although the SVRP currently treats virtually all wastewater effluent during summer months, wastewater flows would increase as regional water demands grow allowing for more recycled water to be produced and distributed in the future.

2.10 Seaside Groundwater Replenishment

Seaside Groundwater Basin Replenishment Project	
Description: Seaside Groundwater Basin Replenishment Project would advance treat (MF/RO) water from the Salinas Industrial Water Treatment Plant (SIWTP), MRWPCA Regional Treatment Plant (RTP), MCWRA Reclamation Ditch system, and/or MCWRA Blanco Drain System to replenish the Seaside Groundwater Basin. Includes up to 683 AFY for sub-potable water to RUWAP (Phase 1A).	
Responsible Agency: MRWPCA	
Supply Amount: 6,620 AFY	
Capital Cost: $113 million (2008 dollars)	**O&M Cost:** $4.8 million per year (2008 dollars) **Cost $/AF:** $1,865 (2008 dollars)

Current Status of Project:

Planning	Permitting/Design	Construction	O&M

The Seaside Groundwater Replenishment project is in the planning stage. Feasibility of subsurface storage has been modeled and follow-up work is anticipated to begin at a later date.

Linkages/Interdependencies with Other Projects: None

The Seaside Groundwater Replenishment project was prepared by MRWPCA. Details of the project are included in a separate technical memorandum (TM) located in Appendix E. The Seaside Groundwater Replenishment Project includes replenishment of the Seaside Groundwater Basin with advanced treated recycled water from the MRWPCA Regional Treatment Plant blended with water from one or more of the following sources: the Salinas Industrial Treatment Plant; the Salinas Reclamation Ditch; or the Blanco Drain system. All groundwater replenishment water would be treated through a 6 mgd advanced water treatment plant (AWTP) which includes microfiltration, reverse osmosis and advanced oxidation/disinfection using ultraviolet light with hydrogen peroxide.

Pump stations at the above water sources would convey the water to the Marina regional treatment site. The groundwater replenishment project would contribute up to 2,800 acre-feet per year (AFY) to the regional water supply alternative in the winter, plus up to 3,920 AFY during the summer. Therefore, the total recycled water contribution to the regional water supply program would be up to 6,720 AFY. This project provides approximately one-half of the 12,500 AF Production Shortfall associated with SWRCB Order 95-10 and the Seaside Basin Adjudication by 2013. This project would work well with a slant well desalination facility that was reduced in size so that the combined production would achieve the 12,500 AFY regulatory need.

The primary objectives of the Project are to provide a year around source of supply to the Seaside Groundwater Basin in support of both the Seaside Basin Watermaster and to allow that basin to be the source of meeting peak demands which allows for desalination capacity to be reduced.

The Seaside Groundwater Basin Replenishment Project would have wells located at inland and/or coastal 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). Up to 683 AFY of advanced treated water would be provided to two or three golf courses for irrigation water as part of this project.

4 Project Cost Estimates

This project includes a description of the basis for estimating the capital and operating costs for the proposed projects.

4.1 Basis for Estimate

The estimated capital cost for the Project is presented in detail in Attachment A. The cost estimate was prepared consistent with a Class 4 study or feasibility level estimate as defined by the Association for the Advancement of Cost Engineering (AACE). The Class 4 level accuracy typically ranges from -15% to +50% of expected average bids, depending on project complexity.

The cost estimates summarized below include the following:

- Tax on Materials: 7.25%
- Contractors Overhead and Profit: 18% (of raw construction cost)
- Project Contingency: 30% (of raw construction cost)
- Professional Services: 20% (of construction and contractor subtotal)
- Labor: $75/ hour
- Power: $0.15 / KWh
- Capital costs are annualized over a 30-year return period at a 5.5% interest rate

Unit prices for project components were based on quotations from vendors, previous project cost data, and cost data from 2008 RS Means Publications. All unit prices were escalated as needed to April 2008 (ENR San Francisco Construction Cost Index of 9,174.42). Cost data from RS Means Publications were adjusted to the city cost index for Salinas, California.

4.2 Summary of Estimated Capital Costs

A summary of capital costs is presented in Table 4-1 for each of the project components. Detailed cost estimates are included in Appendix D.

Table 4-1 Summary of Capital and O&M Costs

Component	Water Produced (Acre-Foot)	Total Capital Cost ($)	O&M Cost ($)	$/AF
CSIP Expansion	14,000	$100,000,000	$3,000,000	$721
Seaside Groundwater Replenishment	6,720	$113,000,000	$4,800,000	$1,865
Salinas River Surface Water Treatment Plant [1]	5,000 10,000	$78,000,000 $118,000,000	$1,600,000 $2,100,000	$1,405 $1,026
Product Water Delivery [2]	17,430	$55,000,000	$1,200,000	$286
Desalination Facility	12,430	$164,000,000	$8,500,000	$1,600

[1] Two sizes of SWTP are shown; the 5,000AFY plant described in the Project Description dated June 2008, and the larger 10,000 AFY plant proposed for further evaluation.

[2] The Product Water Delivery component is associated with the Salinas River Surface Water Treatment Plant and the Desalination Facility. The water conveyed by the delivery system (17,430 AFY) is the sum of the 5,000AFY surface water and the 12,430AFY desalination facility.

5 Implementation

Implementation of the regional program would occur in phases over a time span of 7 years. A phased approach is necessary to meet the near term water demands while allowing the institutional and technical challenges time to develop to meet the long term demand. Table 5-1 below summarizes a potential, aggressive implementation schedule for the Project components. The actual implementation of the water supplies would be based on the available water supplies and current demand at that point in time. The final column in Table 5-1 shows the cumulative additional urban supply assuming that all components were built to their maximum potential capacity. This results in a total potential cumulative additional supply that exceeds the identified regional water demands. During implementation of the components, further evaluation of cost-effectiveness, technical, and implementation issues will be needed to determine the final sizing of the facilities to match the regional demand

The Seaside ASR and Sand City desalination projects are currently in construction and the implementation dates shown in Table 5-1 represent the current estimated construction completion date. The schedule can be seen in Figure 5-1. The next project component shown, with an estimated completion date of 2012, is the Surface Water Treatment Plant. There are existing institutional barriers to the transfer of groundwater between basins; these barriers don't exist for the transfer of surface water between basins. For this reason, the SWTP is expected to have fewer barriers to implementation than those components that include a groundwater element.

It is expected that the next Project component to be implemented would be the ocean water portion of the desalination facility with a potential completion date of 2013, depending on demand at that time. The Seaside replenishment project is also shown with an estimated water delivery date of 2013 per the analysis in Appendix E, There are several components that include groundwater elements and therefore cannot become operational until after the expansion of CSIP, including the brackish water portion of the desalination facility and urban groundwater pumping in the North County. . It is expected that the CSIP expansion could be completed by 2014, coincident with increased urban groundwater pumping, followed by the brackish water portion of desalination in 2015.

The first priorities for additional urban supply are the CAW regulatory replacement of 12,500 AFY and the Fort Ord demand of 2,700 AFY for a total of 15,200 AFY. As shown in Table 5-1, these demands could be met in the year 2013 after implementation of the Seaside ASR, the Sand City desalination, the Surface Water Treatment Facility, and either Phase 1 of the desalination facility or the Seaside replenishment program.

Table 5-1 Implementation Schedule

Program Component	Supply (AFY)	Potential Water Delivery Date	Cumulative Additional Urban Supply (AFY)[1]
Seaside ASR	1,300	2009	1,300
Sand City Desalination	300	2009	1,600
Surface Water Treatment Facility	up to 10,000	2012	11,600
Phase 1 Desalination (ocean water)	up to 7,000	2013	18,600
Seaside Replenishment Project	up to 6,720	2013	25,320
CSIP Expansion	up to 14,000 for agricultural use	2014	25,320
North County Groundwater	up to 5,900	2014	31,220
Phase 2 Desalination (brackish water)	up to 5,430 (for total desalination of 12,430	2015	36,650

6 Changes to the Project Description

The section identifies changes made to the project since the completion of the Project Description. These changes are based on the consensus reached at subsequent Water Managers Group meetings, and updated modeling results. The changes are summarized below:

1. The surface water treatment plant capacity has been increased from 5,000 AFY to a capacity of up to 10,000 AFY.
2. The surface water treatment plant would use the Phase 1 SRDF rather than an expanded SRDF for diverting water from the Salinas River to the treatment facility.
3. The regional desalination plant has been separated into two phases; phase 1 – ocean desalination, and phase 2 – brackish desalination which would be implemented after groundwater offsetting projects such as the CSIP expansion were in place.
4. The 180-Foot Aquifer Groundwater Basin Replenishment project has been removed from the project description.
5. The Seaside Groundwater Replenishment project has added the MCWRA Reclamation Ditch system and Blanco Drain as potential diluent waters.
6. Section 4.2.2.4 of the project description states "The expanded SRDF would serve dual purposes; that is, it would divert water for urban consumption in the winter months and for expanded CSIP irrigation between April and October." This statement should be updated to say: "The expanded SRDF would divert water for the expanded CSIP irrigation between April and October."
7. Section 5.1 (Permit Summary): The Seaside Basin Watermaster should be added as an entity involved in review and approval of the Seaside groundwater replenishment project pursuant to the adjudication court decision.

TECHNICAL REPORT

Description of the Refined MRWPCA Project for the Monterey Regional Water Supply Program

June 30, 2008

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Attachment 2

Monterey Regional Water Pollution Control Agency

"Dedicated to meeting the wastewater and reclamation needs of our member agencies, while protecting the environment."

Administration Office:
5 Harris Court, Bldg. D, Monterey, CA 93940-5756
(831) 372-3367 or 422-1001, FAX: (831) 372-6178
Website: www.mrwpca.org

November 18, 2008

Mr. Bob Jaques, Project Manager
Seaside Basin Watermaster
2600 Garden Road, Suite 228
Monterey, CA 93940

Dear Bob,

Attached is an invoice for $100,000 in fulfillment of the MOU created between the Seaside Basin Watermaster and the Monterey Regional Water Pollution Control Agency dated April 3, 2008.

Also attached is a rewritten MOU that reflects the work actually performed. As rewritten,

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	4
AGENDA TITLE:	Progress Report on Database Issues
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Through an intense series of emails, telephone conferences, and other actions between Watermaster staff and its consultants, and RBF, all of the outstanding issues pertaining to RBF's preparation of the Watermaster's Database have now been resolved. All work described in the original scope-of-work of RBF's 2007 contract with the Watermaster has been completed, and final payment, including release of retainages, is being processed.

A proposal was solicited from Zone 24X7, MPWMD's database consultant, to deploy the database to a local hosting site at MPWMD's offices, rather than at the RBF web-hosting site, and to transition the database from a pilot testing mode into a production mode. With the completion of this work, the database will be web-accessible through a link on the WATERMASTER's Home Page. The proposal was accepted, and RFS No. 2009-03 is being issued to MPWMD to have this work performed by Zone 24X7, acting as a subcontractor to MPWMD. There is no markup of costs by MPWMD to have this work performed by their database contractor. The amount authorized by RFS No. 2009-03 is $5,840, and was budgeted for in the Watermaster's 2009 Budget.

There are also improvements that Watermaster staff and MPWMD may wish to have made to the Database in order to improve its user-friendliness and functionality. These improvements would be outside the scope of RBF's original contract. A proposal to make these improvements may be solicited from Zone 24X7. If a proposal is solicited, and once agreement on the cost and scope of this work has been reached, it is contemplated that another RFS would be issued to MPWMD to have this work performed. Again, it is expected that there would be no markup of costs by MPWMD to have this work performed by their database contractor.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	5
AGENDA TITLE:	Progress Report on Selection of Site for New Monitoring Well
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

In late November a preliminary meeting was held between the Technical Program Manager, MPWMD, and Martin Feeney to examine potential sites for the proposed new monitoring well to be located inland from the existing monitoring wells. The new well is needed in order to provide data in an area where little if any data currently exists. Following this initial meeting, a field trip to visit these sites was held on December 2, 2008.

A meeting was held on Wednesday January 7, 2009 U.S. Army, Fort Ord Reuse Authority, Base Realignment and Closure Office, and Corps of Engineer representatives. These are parties involved with the conversion of the former Fort Ord. The purpose of that meeting was to describe the objectives of the new monitoring well to these parties, and to solicit their advice and assistance in identifying the site(s) that will be the easiest to pursue as a well construction site from the standpoints of environmental approvals, permitting, and impacts on proposed future land uses. The information gained at this meeting indicates that the most promising sites are those that will be transferred to Monterey Peninsula College, to the U.S. Bureau of Land Management, and to the organization that is pursuing development of a Veterans Cemetery.

Of these three ultimate landowners, the most promising site appears to be on the land that will be transferred to Monterey Peninsula College. Contacts with representatives of that organization are currently being made to initiate the process of securing their consent to placing the monitoring well on their site. If this proves to be overly complicated or time consuming, either or both of the other organizations will be contacted.

Through monthly progress reports, the TAC will be kept abreast of progress on this work.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	6
AGENDA TITLE:	Proposed Response to Court's Questions Regarding the 2008 Annual Report
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Judge reviewed the Watermaster's 2008 Annual Report and has asked the questions contained in the attachment to this Agenda item. He has directed the Watermaster to provide a response to these questions by January 31, 2009.

A first "Draft Report to the Court" was sent to the TAC via email in December with a request for edits from TAC members. The attached version reflects revisions that were made to respond to the TAC comments that I received as of the date of preparing this Agenda packet.

At today's meeting any further revisions can be proposed, after which I will finalize the proposed response so it can be presented to the Board for its approval at its January 21, 2009 meeting.

ATTACHMENTS:	Draft Report to the Court
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Revisions to be Made to the Draft Report to the Court

Draft Report to the Court

Updated January 7, 2009

The Seaside Basin Watermaster submits the following report in response to the Order of the Court dated December 12, 2008.

The Court's Order in part directs that the Watermaster provide written responses to four questions pertaining to the Watermaster's 2008 Annual Report. Each of the questions is shown in boldface ***italics***. The responses immediately follow each question.

Question 1: Page 6. Explain whether the Watermaster anticipates any material challenges in obtaining: (1) a "Use Agreement" with the U.S. Army in 2009 for conversion of one of the Army's existing wells in the area north of the Northern Coastal Subarea to a monitoring well for Watermaster's use; and (2) construction of a new monitoring well in 2009 in the inland area near the northern basin boundary. To the extent Watermaster identifies any material challenges in this respect, explain Watermaster's plans to overcome such challenges.

Response: The Watermaster and its consultants have already initiated contacts with the parties that will have approval authority over both of these wells, and at this point has not identified any serious challenges to obtaining the Use Agreement with the U. S Army, or in finding an acceptable site for the new monitoring well.

With regard to converting the existing Army well, initial contacts with the Army indicated that the well has been abandoned, and that those representatives did not anticipate any significant difficulties in obtaining approval for the conversion.

With regard to the new monitoring well, a meeting with U.S. Army, Fort Ord Reuse Authority, Base Realignment and Closure Office, and Corps of Engineer representatives was held by Watermaster staff and its consultants on January 7, 2009. These are parties involved with the conversion of the former Fort Ord. The purpose of that meeting was to describe the objectives of the new monitoring well to these parties, and to solicit their advice and assistance in identifying the site(s) that will be the easiest to pursue as a well construction site from the standpoints of environmental approvals, permitting, and impacts on proposed future land uses. The information gained at this meeting indicates that the most promising sites are those that will be transferred to Monterey Peninsula College, to the U.S. Bureau of Land Management, and to the organization that is pursuing development of a Veterans Cemetery.

Of these three ultimate landowners, the most promising site appears to be on the land that will be transferred to Monterey Peninsula College. Contacts with representatives of that organization are currently being made to initiate the process of securing their consent to placing the monitoring well on their site. If this proves to be overly complicated or time consuming, either or both of the other organizations will be contacted.

In summary the Watermaster does not anticipate any material challenges to carrying out either of these actions.

Question 2: Page 8. Identify the specific technical, political, and socio-economic complexities that delayed the completion of the Seawater Intrusion Response Plan (SIRP), and the specific schedule that Watermaster anticipates to finalize and adopt the SIRP as soon as practically feasible.

Response: From a technical perspective, initially considered were a set of actions that consisted of shutting down production wells within an increasing radius of any well where seawater intrusion was detected. In assessing and refining this approach the TAC realized that shutting down production wells would have a direct and immediate series of significant consequences.

The Watermaster's hydrogeologic consultants commented that while it is known that the Basin is down-gradient from the ocean, the exact pathway that sea water will enter into the aquifers is not known. Therefore, the length of time it will take for sea water intrusion to actually occur in the proximity of production or monitoring wells within the Basin is also not known. It was also recognized that the SIRP is a response plan, not a prevention plan for sea water intrusion, and that turning off wells throughout the Basin would not stop sea water intrusion, unless so-doing would raise the water levels up to the Protective Levels needed to prevent sea water intrusion. With these understandings the TAC recognized that the hydrogeologic solution to address sea water intrusion is to raise water levels within the Basin to protective levels, but that the solution also needs to be politically acceptable and viable in order for the solution to be implemented.

In order to develop an SIRP that properly addressed these issues and concerns, the TAC took longer than originally anticipated to process them to the point where they were ready for presentation to the Board. In an effort to accomplish this work in as rapid a manner as possible, the TAC scheduled a series of additional Special TAC Meetings that were held beginning in July, 2008 and continuing through November, 2008.

From a political perspective, it was realized that each of the Board members represents a different constituency. The issues of political importance to each constituency needed to be addressed in the proposed set of actions, so the SIRP would be acceptable, and therefore implementable, within each jurisdiction. There were also concerns that there might be legal constraints associated with implementing the SIRP, depending on exactly what actions were proposed for implementation in the event of seawater intrusion being detected. An example of one such potential issue was how a coastal producer's allocation would be handled in a case where the Watermaster asked for a cutback or curtailment of production in that area due to concerns about sea water intrusion.

From an economic perspective it was realized that shutting down production wells would result in reduced, or even curtailed, water supplies to customers served by those wells. This would have an economic impact on the specific businesses whose livelihood depended on having an adequate and reliable water supply. It would also have a general impact on the local economies of the affected jurisdictions.

From a social perspective there were concerns about such issues as environmental justice, and fairness in having the impacts of the proposed actions not be focused on one area more than another. It was also recognized that there could be California Environmental Quality Act (CEQA) issues associated with the SIRP, depending on what actions were included in it, and that the actions needed to be defined in a manner that would allow them to be in compliance with CEQA requirements in order for the SIRP to be adopted by the Board.

The Final Draft of the SIRP was distributed to the Board for their review in early December. A presentation to the Board on the SIRP is scheduled for the Board's January 21, 2009 meeting. If there are sufficient questions and/or requested changes to the Final Draft SIRP at that meeting, the matter may be carried over to the Board's February 4, 2009 meeting. It was previously concluded that in order to ensure that adoption of the SIRP is done in compliance with California Environmental Quality Act (CEQA) requirements, an Initial Study should be performed on the document before it is formally adopted by the Board. Assuming that preparation of an Initial Study, presumably leading to a recommendation to adopt a Negative Declaration, can be performed within one month following the Board's consideration of the SIRP at its January 21 and (if necessary) its February 4 meetings, the Watermaster anticipates Board adoption of the SIRP at either the Board's March, or at the latest April, 2009 meeting.

In summary the development of the SIRP was a complex process from both a technical standpoint and even more so from the standpoints of the political, economic, and social consequences and impacts of adopting and enforcing the SIRP, in the event seawater intrusion was detected. The Final Draft SIRP has been thoughtfully prepared to address these issues in an acceptable manner. Delays in adoption associated with completing the CEQA process are not expected to occur.

Question 3: ***Page 9. Explain why the Watermaster believes that increased chloride levels detected in the deep Ord Terrace well and SBWM-4 well are not the result of seawater intrusion.***

Response: The Seawater Intrusion Analysis Report (SIAR) provides the following explanations for increased chloride concentrations in the deep Ord Terrace well and the deep zone of SBWM-4.

On page 34 of the SIRP, it is reported that the Deep Ord Terrace well is situated relatively inland, and is a relatively shallow well compared to other monitoring wells. Our hydrogeologic consultants have advised us that they would anticipate observing seawater intrusion in more coastward wells before observing it in the Ord Terrace wells. Since seawater intrusion was not detected in the more coastward wells, they are of the opinion that the increased chloride levels are due to a cause other than seawater intrusion. The complete explanation may be complicated to describe and may have to do with the residence time of groundwater in this area of the aquifer system, and the response time to changing local groundwater pumping conditions in the vicinity of the well.

Also on page 34 of the SIAR it is reported that the sodium/chloride molar ratios are not declining with increasing chloride concentrations, as would be expected with seawater intrusion. Thus, this "trigger" which is described in more detail in the SIAR has not been reached.

On page 34 of the SIAR it is reported that Sentinel well SBWM-4, which was sampled at 900 feet, also showed an increase in chloride levels. Well SBWM-4 intersected the Monterey Formation shale of marine origin at 913 ft below ground level. This formation is known to have higher salinity due to its depositional environment. Hence, our hydrogeologic consultants believe that the marine deposits in the Monterey Formation are the reason for the increased chloride levels in this well. As only three sampling events have taken place at this well, there is insufficient data to establish a definite trend. If sampling in future years continue to show increasing chloride concentrations, along with decreasing sodium/chloride molar ratios, the Watermaster will undertake further examinations to determine whether seawater intrusion is occurring at this well.

Question 4: ***Page 10. Explain whether subsidence is a likely result of the dewatering of the deep aquifer in the Coastal Sub-area.***

Response: Given that groundwater levels have declined in some areas, our hydrogeologic consultants advise us that the Watermaster cannot rule out subsidence completely. Senate Bill No. 1938 (see excerpts below) mentions subsidence monitoring as part of a groundwater management plan, and thus subsidence must be considered, even though there has not been a history of subsidence in the area.

Due to the combination of: (1) the large depth to groundwater in the areas of the Basin most affected by water level declines (i.e., approximately 100 to over 300 ft.), (2) the lack of occurrence of significant expansive clay deposits, and (3) the likely level of past stressing of the aquifer skeletal matrix, it is unlikely that subsidence has been or will in the future be a major concern in the Seaside Basin.

Senate Bill No. 1938 (passed in Sep-2002)
CHAPTER 603

An act to amend Sections 10753.4 and 10795.4 of, to amend and renumber Sections 10753.7, 10753.8, and 10753.9 of, and to add Sections 10753.1 and 10753.7 to, the Water Code, relating to water.

SEC. 5. Section 10753.7 is added to the Water Code, to read:
10753.7. (a) …….
(1) Prepare and implement a groundwater management plan that includes basin management objectives for the groundwater basin that is subject to the plan. The plan shall include components relating to the monitoring and management of groundwater levels within the groundwater basin, groundwater quality degradation, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin.

(4) The local agency shall adopt monitoring protocols that are designed to detect changes in groundwater levels, groundwater quality, inelastic surface subsidence for basins for which subsidence has been identified as a potential problem and flow and quality of surface water
that directly affect groundwater levels or quality or are caused by groundwater pumping in the basin. The monitoring protocols shall be designed to generate information that promotes efficient and effective groundwater management.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	7
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Consultants Work Schedule of the activities being performed by the Watermaster's consultants and the public entities (MPWMD and MCWRA) that are performing certain portions of the work, and of the Critical Program Milestones Schedule.

Attached is the Updated Consultants Work Schedule.

Note that this Schedule reflects revisions to the schedule for adoption of the SIRP and the BMAP to include conducting the CEQA process for these two documents. It was concluded in late 2008 that it would be appropriate to conduct a CEQA Initial Study on each of these documents before asking the Board to adopt them, so that either a Negative Declaration or an Exemption can also be adopted by the Board at the time the documents themselves are adopted. This will add an estimated two months to the adoption process, as noted in the attached Schedule.

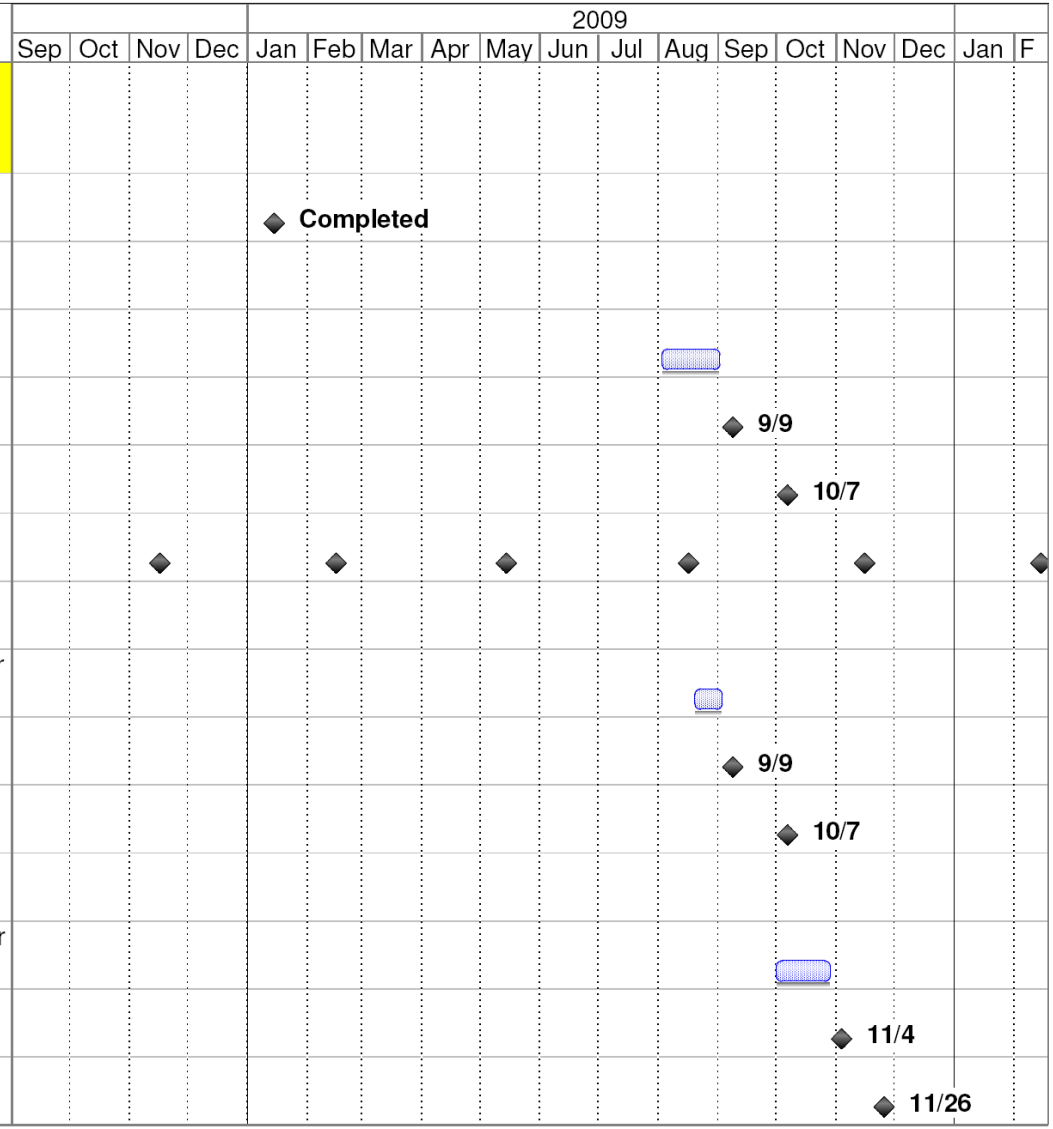
The attached Schedule has also been updated to provide a more realistic length of time to secure the site for the new monitoring well, based on information gained at the recent meeting with U.S. Army and FORA representatives on this matter, while also reflecting a reduced time period for actual construction of the well itself, based on input from Martin Feeney.

Also added to the Schedule is a Task to pursue conversion of an existing abandoned U. S. Army well on the former Fort Ord for use as an additional monitoring well.

ATTACHMENTS:	Updated Schedule of Consultants Work Activities
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to This Schedule

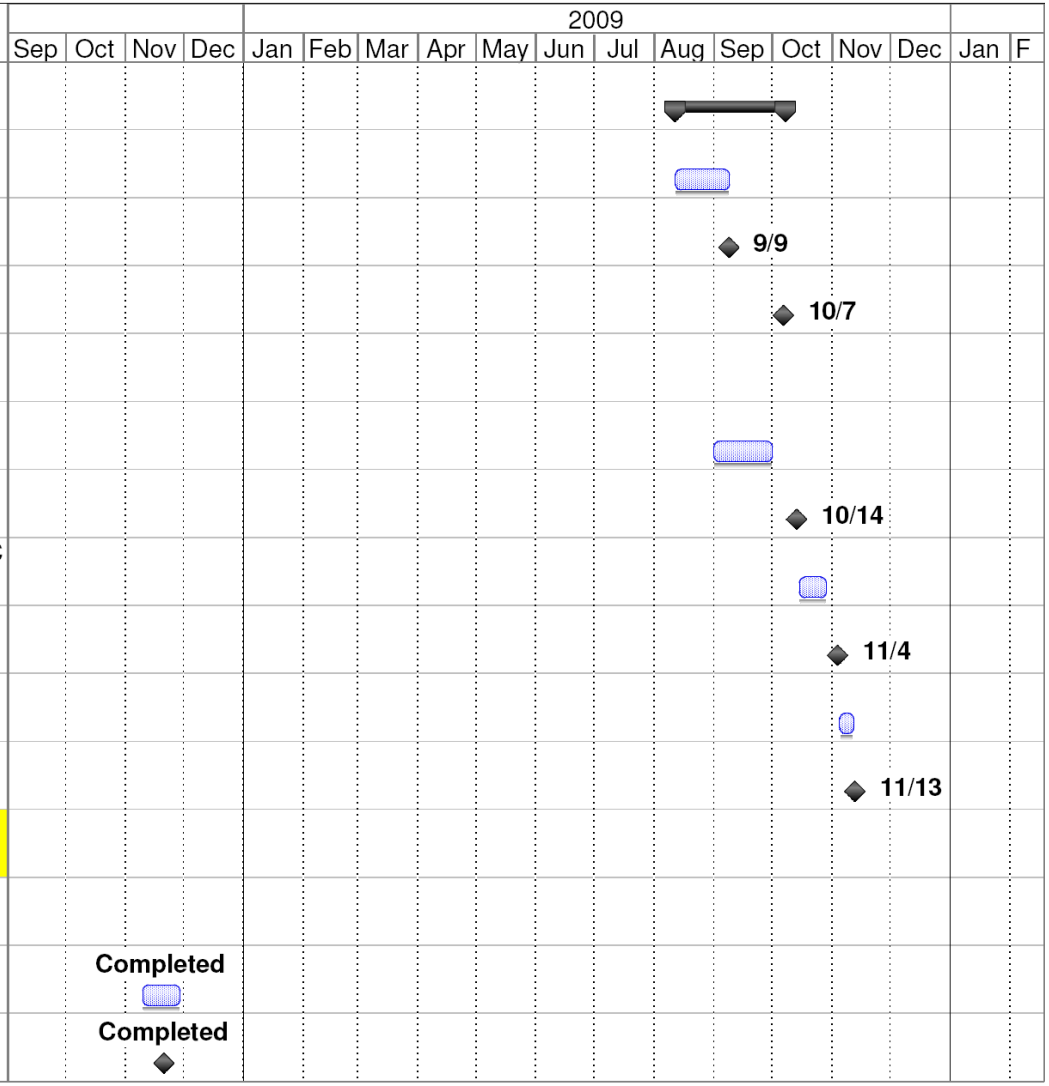
Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
1	***CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK***
2	**2009 Administration, Operations and Replenishment Budgets Due**
3	**2010 Administration, Operations and Replenishment Budgets**
4	Prepare M&MP Draft Budgets
5	TAC Approves M&MP Budgets
6	Board Approves M&MP Budgets
7	**Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports**
32	**Replenishment Assessment Unit Costs for Water Year 2010**
33	Develop Replenishment Assessment Unit Cost for 2010 Water Year
34	TAC Approves 2010 Water Year Replenishment Assessment Unit Cost
35	Board Adopts and Declares 2010 Water Year Replenishment Assessment Unit Cost
36	**Replenishment Assessments for Water Year 2010**
37	Watermaster Prepares Replenishment Assessments for Water Year 2010
38	Watermaster Board Approves Replenishment Assessments for Water Year 2009
39	Watermaster Levies Replenishment Assessment for 2009

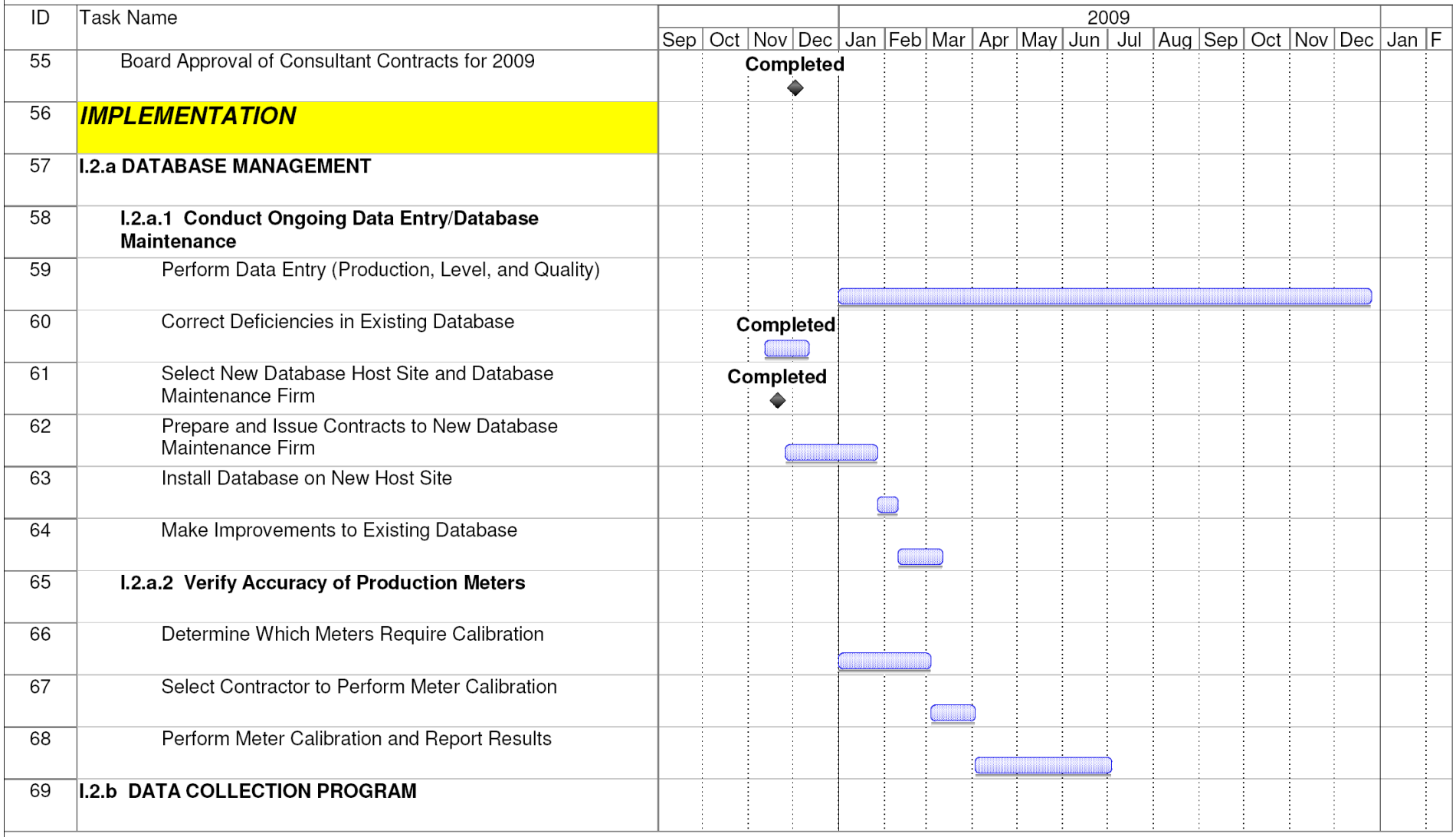


Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
40	**Monitoring & Management Program (M&MP) Budgets for 2010 and 2011**
41	Prepare Draft 2010 and 2011 M&MP O&M and Capital Budgets
42	TAC approves Draft 2010 and 2011 M&MP O&M and Capital Budgets
43	Board approves 2010 and 2011 M&MP O&M and Capital Budgets
44	**2009 Annual Report**
45	Prepare Draft 2009 Annual Report
46	TAC Provides Input on Draft 2009 Annual Report
47	Prepare Revised Draft 2009 Annual Report (Incorporating TAC Input)
48	Board Provides Input on Revised Draft 2009 Annual Report
49	Prepare Final 2009 Annual Report (Incorporating Board Input)
50	Watermaster Submits Final 2009 Annual Report to Judge
51	***MANAGEMENT***
52	**M.1 PROGRAM ADMINISTRATION (All Work Performed by Watermaster Staff)**
53	Prepare Consultant Contracts for 2009
54	TAC Approval of Consultant Contracts for 2009

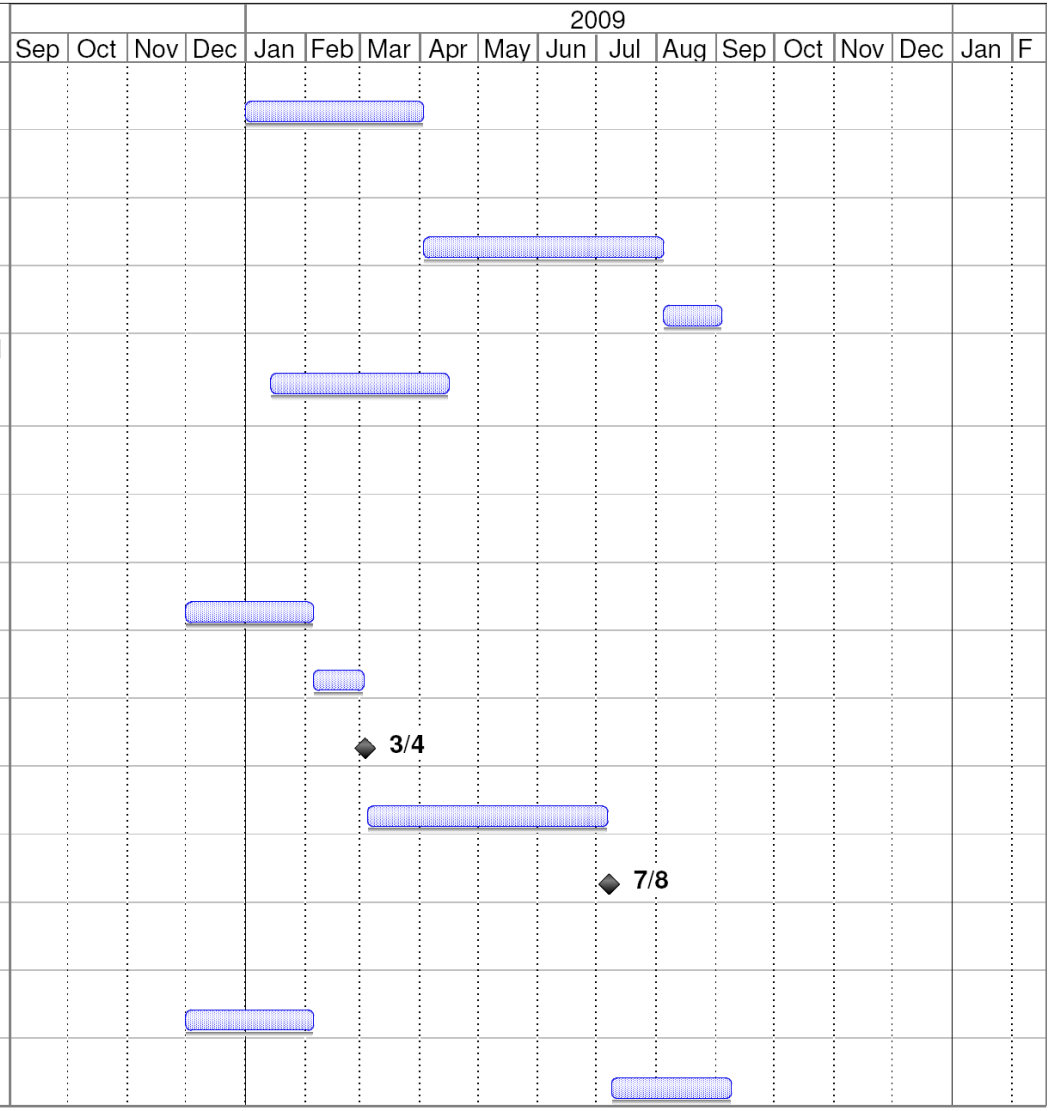


Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule



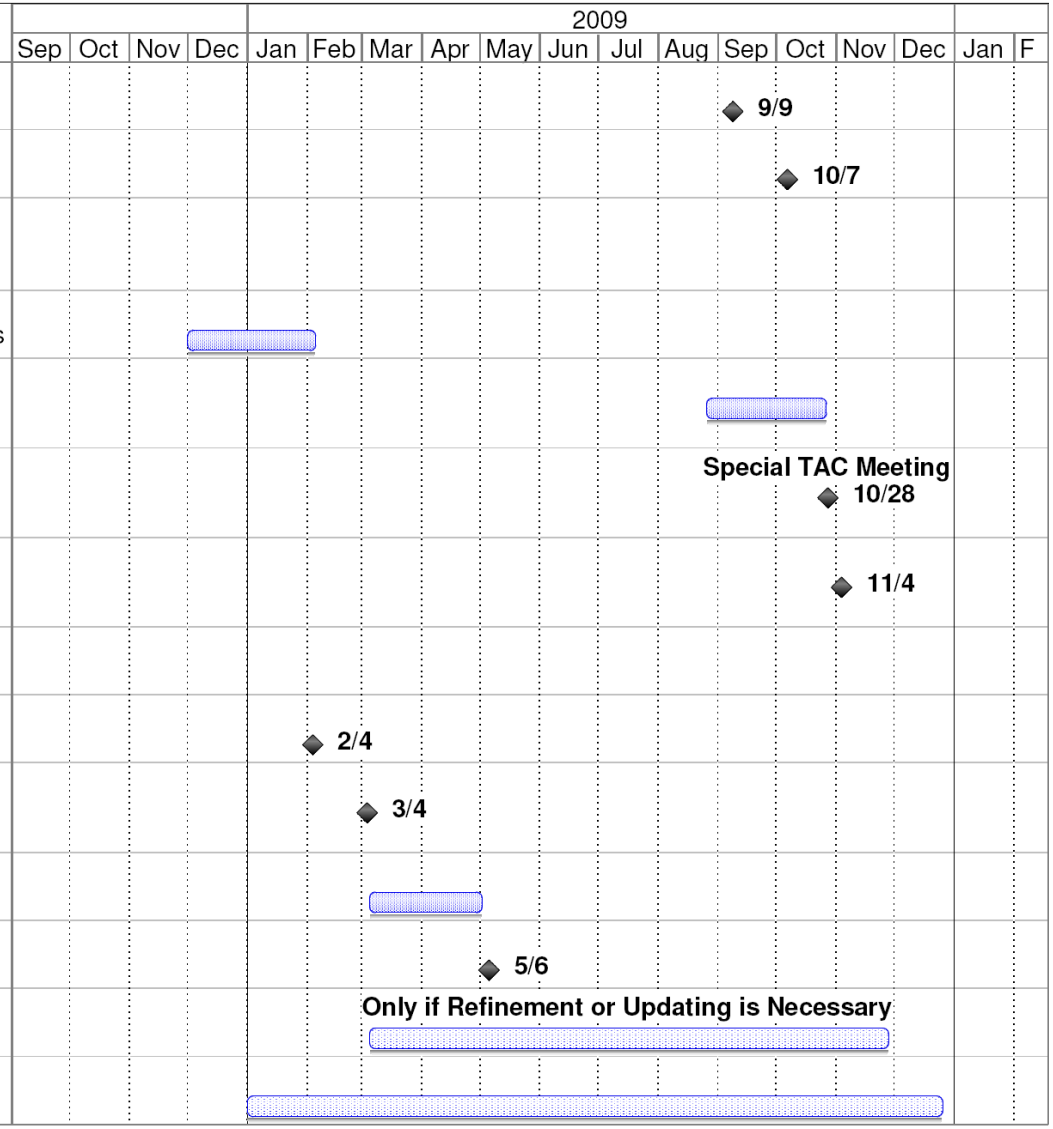
Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
70	**I.2.b.1 Site Selection for New Monitoring Well**
71	**I.2.b.5 Monitor Well Construction**
72	Design, Permits, CEQA. And Approvals
73	Construction
74	**Pursue Conversion of Existing Abandoned U.S. Army Well for Use as an Additional Monitoring Well**
75	**I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL**
76	**I.3.a.1 Update the Existing Model**
77	Prepare and Execute Contract with HydroMetrics to Update the Existing Model
78	TAC Identifies Questions to be Answered by Updated Model
79	Board Concurs with Questions to be Answered by Updated Model, or Adds Additional Questions
80	HydroMetrics Updates the Model
81	HydroMetrics Makes Summary Report to TAC on Updating of the Model
82	**I.3.a.2 Develop Protective Water Levels**
83	Prepare and Execute Contract with HydroMetrics to Develop Protective Water Levels
84	HydroMetrics Develops Protective Water Levels



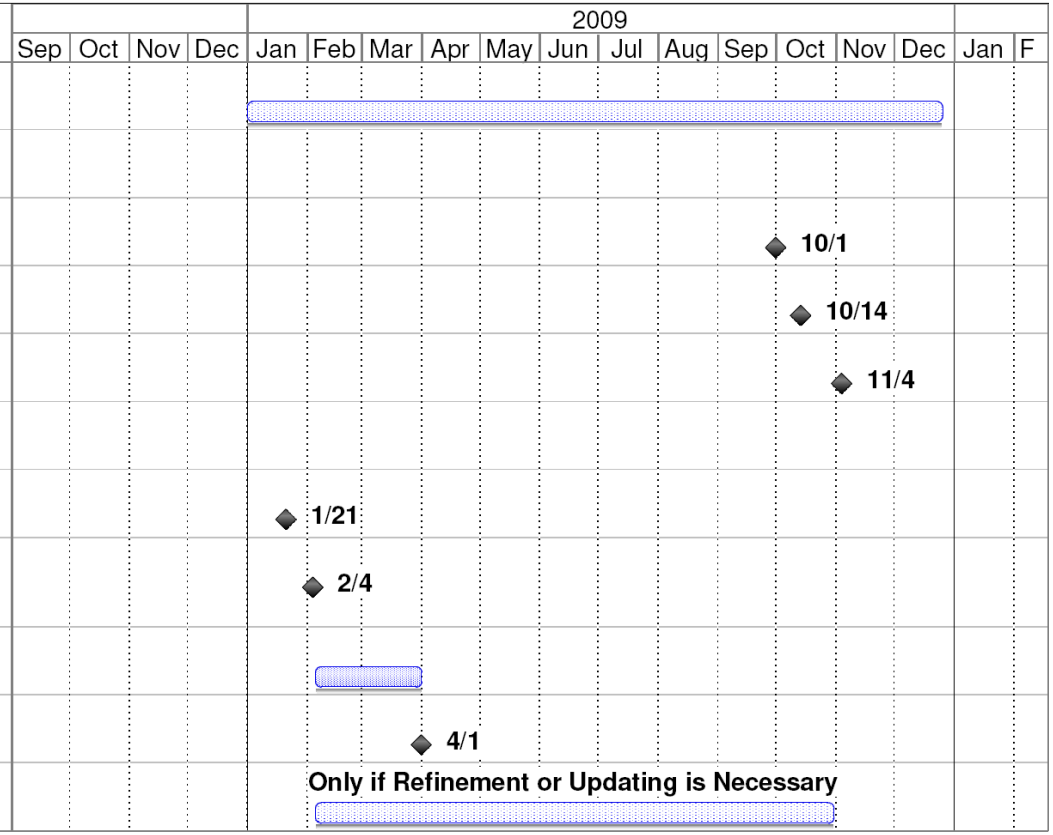
Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
85	HydroMetrics Makes Summary Report to TAC on Protective Water Levels
86	HydroMetrics Makes Summary Report to Board on Protective Water Levels
87	**I.3.a.3 Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions**
88	Prepare and Execute Contract with HydroMetrics to Evaluate Replenishment Scenarios and Develop Answers
89	HydroMetrics Evaluates Replenishment Scenarios and Develops Answers to Basin Management Questions
90	HydroMetrics Makes Summary Report to TAC Regarding Evaluation of Replenishment Scenarios and Answers to Basin Management Questions
91	HydroMetrics Makes Summary Report to Board Regarding Evaluation of Replenishment Scenarios and Answers to Basin Management Questions
92	**I.3.b Complete Preparation of Basin Management and Action Plan (BMAP)**
93	HydroMetrics Makes Initial Presentation of Final Draft BMAP to Board for Action
94	HydroMetrics Makes Second Presentation (If Necessary) of Final Draft BMAP
95	CEQA Process Conducted on Final Version of BMAP
96	Board Adopts Final BMAP
97	**I.3.c Refine and/or Update the BMAP**
98	**I.4.a HydroMetrics Provides Oversight of Seawater Intrusion Detection and Tracking**



Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
99	**I.4.b HydroMetrics Analyzes and Maps Water Quality from Coastal Monitoring Wells**
100	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**
101	HydroMetrics Provides Draft SIAR to Watermaster
102	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)
103	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)
104	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**
105	HydroMetrics Makes Initial Presentation of Final Draft SIRP to Board for Action
106	HydroMetrics Makes Second Presentation (If Necessary) of Final Draft SIRP and Board Approves the SIRP
107	CEQA Process Conducted on Final Version of SIRP
108	Board Adopts Final BMAP
109	**I.4.e Refine and/or Update the SIRP**



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	January 14, 2009
AGENDA ITEM:	8
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
The attached notice of release of the CAW CWP EIR by the PUC recently appeared on the Web.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

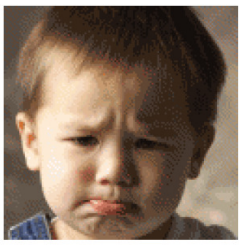
Site Sponsor

Monterey plant report to be published in January 2009

The California Public Utilities Commission is to release a draft environmental impact report on 30 January 2009 on California American Water Company's (CalAm's) proposed Coastal Water Project (CWP) located at Moss Landing in Monterey County, USA.

CalAm is proposing to build, own and operate a 40,000m³/d seawater desalination plant with an ocean water intake and brine outfall, a product water conveyance system and aquifer storage and recovery (ASR) facilities. CalAm states that the project would allow it to comply with state rules requiring the company to secure a water supply to replace diversions from the Carmel River aquifer and reduce its overdraft on the Seaside Basin aquifer.

The new source will be operated in conjunction with existing supplies, with the desalination plant and the Carmel River being used to meet winter demand and the desalination plant, Seaside Basin wells and new ASR wells being used to meet peak summer demands.



CalAm's estimate for the total capital cost for the CWP is US$191 million. The report will present and analyze the proposed project, alternatives to it and a proposal for a project of more regional countywide scope. It will identify various environmental alternatives for the proposed project, as well as a no-project alternative.

The public comment period for the report will be 31 January - 1 April 2009. The report will be available online at www.CWP-EIR.com.

Posted on 17 December 2008

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