

**MEETING NOTICE AND AGENDA**  
**TECHNICAL ADVISORY COMMITTEE**  
**OF THE**  
**SEASIDE BASIN WATER MASTER**

**DATE: Wednesday, March 14, 2012**

**MEETING TIME: 1:30 p.m.**

**Monterey Regional Water Pollution Control Agency Offices  
5 Harris Court, Building D (Ryan Ranch)  
Monterey, CA 93940**

*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. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.*

**OFFICERS**

**Chairperson: Diana Ingersoll, City of Seaside**

**1<sup>st</sup> Vice-Chairperson: Eric Sabolsice, California American Water Company**

**2<sup>nd</sup> Vice-Chairperson: Rob Johnson, MCWRA**

**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 Peninsula Water Management District	Monterey County Water Resources Agency

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The next regular meeting will be held on Wednesday April 11, 2012 at 1:30 p.m. at the MRWPCA Board Room	

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	2.A
<b>AGENDA TITLE:</b>	Approve Minutes from January 11, 2012
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>  Draft Minutes from this meeting were emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.	
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee Meeting  
January 11, 2012**

**Attendees: TAC Members**

City of Seaside – Rick Riedl  
California American Water – No Representative  
City of Monterey – Norm Green  
Laguna Seca Property Owners – Bob Costa  
MPWMD – Joe Oliver  
MCWRA – Kathy Thomasberg  
City of Del Rey Oaks – Ron Langford (by telephone)  
City of Sand City – Richard Simonitch  
Coastal Subarea Landowners – No Representative

**Watermaster**

Technical Program Manager - Robert Jaques  
Chief Executive Officer – Dewey Evans  
Administration – Laura Dadiw

**Consultants**

None

**Others:**

MRWPCA – Bob Holden and Brad Haggeman  
California American Water – Mike Magretto and Brian Bruce

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The meeting was called to order at 1:38 p.m. by Richard Simonitch who filled in as Chairman of this meeting for the 1<sup>st</sup> and 2<sup>nd</sup> Vice Chairmen who were unable to attend.

**1. Public Comments**

There were no public comments.

**2. Administrative Matters:**

**A. Approve Minutes from November 9, 2011 Meeting**

There was some discussion regarding the topic of CAW wells having in the past been located near the Sand City Public Works Well, and the topic of including a listing of possible cross-contamination wells in the next SIAR. However, no changes to the Draft Minutes were requested on either of these topics. It was agreed that the issue of cross-contamination wells would be discussed when MPWMD makes its report on its investigation of wells for possible cross-aquifer contamination in the Spring of 2012.

Mr. Oliver requested that the word “...difference...” be inserted after the words “hydraulic head” in the last sentence in the last paragraph under Agenda item number 6.

On a motion by Mr. Costa, seconded by Mr. Simonitch, the Minutes were unanimously approved with this correction.

### **3. Progress Report on Implementing Changes to the Inputting and Management of Data in the Watermaster Database**

Mr. Jaques summarized the agenda packet materials for this item. An update will be provided at the next TAC meeting. Mr. Jaques confirmed with other members of the MPWMD and Watermaster staff that they could meet on January 24 @ 10:30 a.m. at the MPWMD offices to finalize plans for going live with the Database on the Watermaster website.

### **4. Further Discussion of Issues Pertaining to MRWPCA's Groundwater Replenishment Project**

Mr. Jaques summarized the Staff Report for this item and suggested that each topic be touched on to provide an opportunity for questions and answers to be discussed. There was considerable discussion on many of the topics listed in the agenda materials. Rather than attempting to capture all of the discussion in the Minutes, Mr. Jaques suggested that he prepare a revised version of the "Discussion Paper on Ground Water Replenishment Project" contained in the agenda packet starting on page 18, and this approach was concurred with by the TAC.

The revised version of this document reflecting the TAC's requested additions and clarifications/edits to the original version is attached at the end of these Minutes. Revisions made in response to TAC input are shown in *bold italics* therein.

Ms. Thomasberg asked Mr. Holden to provide her a copy of Amendment No. 3 to the MOA between MCWRA and MRWPCA, referred to under this agenda item. Mr. Holden said he would email her a copy.

### **5. Schedule**

Mr. Jaques summarized the agenda packet materials for this item Mr. Riedl asked when budget preparation was shown on the Schedule. Mr. Jaques responded that they were shown at ID Nos. 3, 4, and 5 in August.

### **6. Other Business**

Mr. Simonitch asked what items were proposed for the TAC's February meeting. Mr. Jaques responded that at this time the only item would probably be an update on implementing the changes to the Watermaster's Database.

Other topics raised for consideration at future TAC meetings included:

- Diversion of Salinas River water to help replenish the Seaside Groundwater Basin or to directly augment the Monterey Peninsula's drinking water supply (suggested by Mr. Riedl)
- Hydraulically connecting the Nacimiento and San Antonio Reservoirs with a tunnel and building another equalizing reservoir to help meet the water demands of the agricultural growers as a means of facilitating such a diversion of Salinas River Water (suggested by Mr. Simonitch)
- Examining the Blanco Drain and the Salinas Industrial Ponds as possible additional replenishment water sources for the Seaside Groundwater Basin (suggested by Mr. Riedl)
- Examining MPWMD projects that might be helpful in replenishing the Seaside Groundwater Basin (suggested by Mr. Riedl)

Mr. Jaques said he would contact these Committee members to gain a more complete understanding of these potential TAC agenda topics, and to see if they could be developed as agenda items by the February TAC meeting date.

If there will be insufficient agenda items to warrant holding a February TAC meeting, Mr. Jaques will notify the TAC members via email and will suggest cancelling the February meeting.

**7. Set Next Meeting Date**

The next meeting date was set for Wednesday February 8, 2012 at 1:30 p.m. at the MRWPCA Board Room

On a motion by Mr. Oliver, seconded by Mr. Riedl, the meeting adjourned at 2:55 p.m.

## DISCUSSION PAPER ON GROUND WATER PREPLENISHMENT PROJECT

(Revised to reflect TAC input from January 11, 2012 meeting- revisions shown in boldface italics)

**Question:** Does the CSIP project, or anyone else, have any rights to the recycled water being proposed to be delivered to the Seaside Basin? If so, what are their rights and are they superior?

**Response:** MRWPCA has rights, set forth in Amendment No. 3 of its Memorandum of Understanding with MCWRA, to 3,900 AFY (including 766 AFY during the summer) plus water not used by MCWRA. *These are superior rights that cannot be usurped by another party.*

By the Regional Urban Water Augmentation Project (RUWAP) Memorandum of Understanding with MCWD, MRWPCA dedicates its 766 AFY of summer water to the RUWAP project including the Peninsula.

The Three-Party Memorandum of Understanding between MCWRA, MCWD, and MRWPCA identifies that there is about 6,000 AFY of water available for reuse *during winter months*. *Storage would need to be provided in order to provide more than 766 AF during summer months*. Both the RUWAP and Three-Party MOUs highlight and prioritize the groundwater replenishment project. MRWPCA thus has rights to more than enough advance treated wastewater to provide 2,700 AFY for the GWRP.

*The total amount of recycled water that can be produced is the sum of the 3,900 and 6,000 AF amounts mentioned above, for a total potential production of 9,900 AFY.*

**Question:** Can water from the Salinas River project be diverted through the proposed system and delivered to the Seaside Basin?

**Response:** No, not without obtaining water rights from the County, performing an environmental review, obtaining necessary permits and approvals, and designing/constructing completely new facilities. *MCWRA's enabling legislation prohibits exporting water from the Salinas Valley Groundwater Basin.*

*Per CDPH requirements, the Advanced Water Treatment (AWT) facilities proposed for the GWRP can only be used to treat water of wastewater origin, and cannot also be used to provide treatment to produce drinking water. Thus, while Salinas River water could potentially be used as a source of drinking water, that treatment would have to be done by a separate treatment facility from the AWT facility for the GWRP.*

The California Department of Public Health's (CDPH's) groundwater injection standards are much more stringent than drinking water standards. Therefore, it would be more economical to treat the river water so that it would become drinking water directly and pump it through potable water pipelines to the south where it could be used.

Excess drinking water from the Salinas river, when and if available, could be injected into MPWMD's/CAW's ASR wells within the Seaside Groundwater Basin. *This is because the ASR wells can inject and recover drinking quality water, but for a project that intends to inject water for replenishment only, CDPH imposes more stringent standards.*

**Question:** Is there potential for a water wheeling agreement where the proposed dilution water for this project is instead delivered to the CSIP project, and wastewater (or alternatively Salinas Basin water?) is delivered to the Seaside Basin in the summer months?

**Response:** No. CDPH's previous draft groundwater replenishment regulations required dilution water, but the most current draft of these regulations encourage but do not require dilution water.

MRWPCA will try to get injection approved without dilution water. If unsuccessful, MRWPCA will try to get credit for most or all of any required dilution water by seeking credit for the natural seaward flow

of water within the Seaside Groundwater Basin. Additional dilution water, if required, will have to be applied in the vicinity of the replenishment water.

MRWPCA is looking at Blanco Drain and Salinas Industrial Pond waters both as sources of dilution water and sources of additional replenishment water. ***However, the Blanco Drain and Industrial Pond waters are both high in salt content, and both are unsuitable for recycling for agricultural irrigation.***

***CDPH regulations require that the dilution water be applied near the injection sites within a 5-year running average period. Dilution water is rarely directly mixed with the AWT water before being injected.***

***Water discharged from food processing industries where vegetables are being rinsed is not directly suitable for reuse because such water also contains other wastes which render the water too salty for reuse.***

**Question:** Has a feasibility study of alternatives been performed. For example, what is the cost of delivering the proposed dilution water, without the treated wastewater, to the Seaside Basin?

**Response:** As part of the Coastal Water Project EIR, MRWPCA provided information about other sources of water and other locations for injection. However, it does not appear that any costs were developed for those sources.

The other sources of water are mostly available during the growing season. They would therefore require a separate pumping and piping system from the Salinas Valley to Seaside (not the RUWAP system), since the RUWAP system would be delivering recycled water for landscape and golf course irrigation during the summer months.

These options would add capital costs to the GWRP, but would provide more water to the Seaside Groundwater Basin and may reduce the cost per acre-foot for that water.

**Question:** What quantity of dilution water could be delivered to the Seaside Basin?

**Response:** The dilution waters investigated by MRWPCA, if needed or desired, are only available during the growing season. As noted in the response to the question immediately above, this means that a separate pumping and piping system would be required (not the RUWAP system).

The volume available could be up to about 3,000 acre-feet per year (AFY) of additional water or 5,700 AFY total (dilution water plus advance treated wastewater).

**Question:** If the proposed injection wells have insufficient capacity, is it feasible to accumulate the treated water for future injection? Could the Seaside golf course reservoir be used for this purpose?

**Response:** The limiting factors for the GWRP are the size of the RUWAP facilities and the size of the Advanced Water Treatment facilities. The GWRP injection wells will be designed to provide all of the injection capacity that will be needed, so there will be no reason to store the advance treated wastewater.

Injection wells are very expensive but they are less expensive than the treatment and conveyance facilities. MRWPCA plans on building excess injection capacity.

Any storage of water, especially in an open reservoir such as the Seaside Golf Course reservoir, introduces the potential for contamination which could render the water unusable for injection.

**Question:** Could the proposed treatment system be installed near the proposed injection wells in Seaside? If so, and if necessary, could this treatment system be used to treat potentially brackish water in the future from the Seaside aquifer?

**Response:** Yes. Treatment facilities for the GWRP could be located near the injection wells, and could be fed with recycled water pumped through RUWAP or fed with raw wastewater from MRWPCA's Seaside Pump Station. In either case, four dedicated pipelines would be required:

1. One pipeline would provide the input water from the RUWAP or the Seaside Pump Station.
2. The second pipeline would provide the product water from the treatment facilities to the injection wells.
3. A third pipeline would be a brine pipeline (Reverse Osmosis concentrate) from the advanced water treatment facilities back to the Regional Treatment Plant Brine Receiving Structure.
4. The fourth pipeline would carry the microfiltration backwash to the sanitary sewer system.

*Note that pipelines 3 and 4 cannot be combined into a single pipeline because the high salinity of the brine flow makes it unacceptable for discharge into the sanitary sewer. The high salinity waste needs to go to the brine discharge facility at the Regional Treatment Plant which flows directly to the outfall and does not go through the treatment process or to the recycling facility there.*

The raw sewage option (from the Seaside Pump Station) would result in less replenishment due to the lack of sufficient sewage flowrates and its uneven distribution during the day. The recycled water option might be able to provide 2,700 AFY, but it would take more than the five months to provide this volume.

Neither option would allow for dilution water or for additional injection water. Also, the advanced water treatment facilities would be more expensive to construct and operate if they were located in Seaside because it would not be possible to comingle infrastructure with the Regional Treatment Plant, and full buildings (not with just roofs) would be necessary to reduce noise so it does not impact nearby residential and/or commercial land uses.

A brine pipeline would be less expensive than a dedicated replenishment pipeline, but it would not be available to convey dilution water or summer replenishment water. However, if a brine pipeline was built, the advanced water treatment facilities could potentially treat brackish water from the Seaside aquifer during the summer months for groundwater injection, but not directly for drinking water.

Constructing the advanced water treatment facilities in Seaside would be a new project on an undisrupted (prime development) site, and would require a full EIR and a new power source. This facility would require frequent chemical deliveries and other activities that might be viewed as nuisances to the nearby residential and/or commercial land uses.

**Question:** Is there anything that would limit the Watermaster's ability to accept the water? If so, are there additional steps that the TAC should undertake now to remove the impediments?

**Response:** MRWPCA is not aware of any impediments at this time that would limit the Watermaster's ability to accept the water.

In order for the GWRP to be approved and implemented, it would have to obtain permits and approvals from CDPW, Monterey County Environmental Health, and the Regional Water Quality Control Board (RWQCB), among others. The Watermaster's "Agreement for Storage and Recovery of Non-Native Water from the Seaside Groundwater Basin," which was approved by the Watermaster's Board in June 2010, contains the following language regarding the quality of water that is proposed for storage and recovery in the Basin:

*"The PRODUCER hereby certifies that prior to the Non-Native water being introduced into the Basin for Storage in accordance with this Agreement, all such water will meet all of the*

*requirements imposed on the PRODUCER by permits and/or approvals issued to the PRODUCER by the California Regional Water Quality Control Board and any other water quality standards imposed by any other government entity, including without limitation the California Department of Public Health and the Monterey County Department of Environmental Health.”*

These permits and approvals would be necessary in order for the GWRP to be implemented, so the water quality would meet the Watermaster’s storage and recovery quality requirements and should be fully acceptable to the Watermaster for injection into the Basin.

**Question:** If, as suggested by the MPWMD, the MPWMD purchases the water, would it benefit the Seaside Basin? Or will the water be used to offset the Carmel diversions?

**Response:** MRWPCA commented that MPWMD has proposed to MRWPCA that if they purchased the water it would be much easier for them to inject the water into the basin than it would be for MRWPCA. MRWPCA has not discussed with MPWMD how they would administer the water after injection.

MPWMD commented that this issue should be thought of in five contexts:

1. Until the unlawful diversions from the Carmel River have been replaced, then it is likely that this resource would be delivered to Cal Am for retail delivery and applied to offset those diversions;
2. Once the unlawful diversions have been replaced, then the water could be delivered to Cal Am, but the Watermaster might direct that some portion of it be retained to replenish the deficit in the Basin. The economics of "who pays?" would have to be worked out.
3. MPWMD could proceed with the project for an extended period of time without offsetting Carmel River diversions or delivering the water to Cal Am by instead using 100% of the output for the benefit of the Basin. However, the cost of the water would have to be covered by Replenishment Assessments from Watermaster producers. Or conceivably, a producer could choose to pay for this water and use in lieu recharge by not pumping its Basin allotment. This concept needs more analysis to see if it could actually be implemented. In addition, if no Replenishment Assessments can be collected because of the offsetting credits for costs incurred on the Regional Water Supply Project, then this option may be unworkable.
4. A scenario could be envisioned where any producer in the Basin could buy the water, over and above its adjudicated allotment, and the Watermaster might direct that some portion of it be retained to replenish the deficit in the Basin. The economics of this would have to be worked out, and the Watermaster would have to be involved, in order to ensure the adjudicated withdrawal limits are being met first and the new water is additive.
5. Finally, there exists the possibility that MPWMD could sell the water for a period of time to a non-Cal Am user for a non-Cal Am purpose, but this would likely require wheeling by Cal Am and would be complex in nature. However, a good example of this might be where the Regional Water Supply Project is not yet online and in order to meet its obligations to the Pebble Beach reclamation project MPWMD would seek to wheel water for a period of time to the project area without being subject to rationing by Cal Am.

**Question:** What, if anything, can the Watermaster TAC do to help expedite the project?

**Response:** MRWPCA commented that the Watermaster has already helped the GWRP by providing \$100,000 in funding to MRWPCA during the Coastal Water Project EIR. MRWPCA went on to comment that ways the Watermaster could help in the future include:

- Additional Planning Money

- Use of the Watermaster's Groundwater Model and water quality/elevation data
- Help with the bureaucratic hurdles
- Letters of support for grant and loan applications

The Watermaster is currently not receiving Replenishment Assessment monies, because it has agreements with both Cal Am and the City of Seaside to grant them credits against their assessments. For Cal Am the credits are for the monies Cal Am invests in the Coastal Water Project. For Seaside the credits are for their in-lieu replenishment of the Basin by using water from MCWD to irrigate their golf courses. Thus, at this time there is no money available from the Watermaster to help fund additional planning for the GWRP.

The Watermaster would likely be able and willing to assist in these other ways, subject to approval and direction by the Watermaster Board.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	3
<b>AGENDA TITLE:</b>	Progress Report on Implementing Changes to the Inputting and Management of Data in the Watermaster Database
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>The revamped Watermaster Database is now up and running on the Watermaster’s website. Under the “Data” tab, all water quality and water level data is accessible in Excel format, and all Production data is accessible in pdf format.</p> <p>The Well Information data is in the final stages of being purged by MPWMD of data that pertains to wells that are not listed Producer wells in the Decision, and should be posted to the website shortly.</p> <p>In the tab titled “Postings and Records” a new column has been created “Water Quality/Level” in which the periodic MPWMD reports on water level and water quality data, along with a discussion and evaluation of that data, are posted in pdf format. These compliment the raw data that is provided under the “Data” tab</p> <p>TAC members are encouraged to examine the website and to provide any comments or suggestions they feel would be helpful in improving it.</p>
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	4
<b>AGENDA TITLE:</b>	Update on Coastal Water Project
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	Eric Sabolsice will provide an oral update on the Coastal Water Project.
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	5
<b>AGENDA TITLE:</b>	Further Discussion of Issues Pertaining to Obtaining Water to Help Replenish the Seaside Basin
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b>            At the January 11, 2012 TAC meeting the following topics pertaining to obtaining water to help replenish the Seaside Basin were raised for discussion:</p> <ul style="list-style-type: none"> <li>• Diversion of Salinas River water to help replenish the Seaside Groundwater Basin or to directly augment the Monterey Peninsula's drinking water supply (suggested by Mr. Riedl)</li> <li>• Hydraulically connecting the Nacimiento and San Antonio Reservoirs with a tunnel and building another equalizing reservoir to help meet the water demands of the agricultural growers as a means of facilitating such a diversion of Salinas River Water (suggested by Mr. Simonitch)</li> <li>• Examining the Blanco Drain and the Salinas Industrial Ponds as possible additional replenishment water sources for the Seaside Groundwater Basin (suggested by Mr. Riedl)</li> <li>• Examining MPWMD projects that might be helpful in replenishing the Seaside Groundwater Basin (suggested by Mr. Riedl)</li> </ul> <p>I have contacted various members of the TAC to gain a more complete understanding of these topics, and have prepared the attached Discussion Paper to serve as a basis of discussion at today's meeting.</p>	
<b>ATTACHMENTS:</b>	Discussion Paper on Obtaining Water to Help Replenish the Seaside Basin
<b>RECOMMENDED ACTION:</b>	None required – information only

## **Discussion Paper on Obtaining Water to Help Replenish the Seaside Basin**

### **1. Diversion of Salinas River water to help replenish the Seaside Groundwater Basin or to directly augment the Monterey Peninsula's drinking water supply (suggested by Mr. Riedl)**

Background Information: Per MRWPCA, a few years ago MCWRA had talked about having rights to 10,000 AFY extra water (beyond that committed to the Salinas River Diversion Facility (SRDF) and the Castroville Seawater Intrusion Project), and that they were getting those rights moved from their reservoirs to the SRDF rubber dam site. MRWPCA did not have any further information to provide on this topic, except to state that MRWPCA intends to have the Ground Water Replenishment Project's (GWRP) advanced water treatment plant (AWTP) and pipeline operate at full capacity every winter, so those facilities would not be able to help with a separate Salinas River Diversion Project. There was some material in the Coastal Water Project DEIR for winter surface water treatment, but it may have been removed in the FEIR.

Per MCWRA, this project was proposed as a water portfolio option when the Salinas Valley Water Project (SVWP) was being constructed. The SRDF was proposed to be augmented (at a later date) to possibly provide water in the non-diversion months of November to March (April – October is the diversion period). Since that time, the SVWP Biological Opinion came out and it was determined that the SRDF rubber dam would not be raised during non-diversion months; therefore no additional diversions could occur during non-diversion months. As currently configured, this Project is a non-starter.

From this information it appears that this project is no longer viable and is not being pursued by any agency.

### **2. Hydraulically connecting the Nacimiento and San Antonio Reservoirs with a tunnel and building another equalizing reservoir to help meet the water demands of the agricultural growers as a means of facilitating such a diversion of Salinas River Water**

Background Information: Per MCWRA, this project was proposed in the early 1990's, and was deemed too expensive. A feasibility evaluation for this project is proposed in the upcoming Greater Monterey County Integrated Regional Water Management Plan. An option to the tunnel is a pipeline to move the water from Nacimiento Reservoir to San Antonio Reservoir. This project in its current configuration is meant to manage existing water resources more efficiently – no water is being proposed to go to the Peninsula or to the Seaside Basin.

From this information it appears that this project is would not provide any water to directly benefit the Seaside Basin.

### **3. Examining the Blanco Drain and the Salinas Industrial Ponds as possible additional replenishment water sources for the Seaside Groundwater Basin**

Background Information: Per MRWPCA, they have talked with David Chardavoyne (interim General Manager of MCWRA) about the possible use of Blanco Drain and even possibly Reclamation Ditch waters during the summer for ground water recharge use. The City of Salinas approached MRWPCA asking if MRWPCA would take Salinas Industrial Pond water, and MRWPCA hired Brezack & Associates Planning to prepare a WaterSMART grant application to study the feasibility of Blanco Drain, Reclamation Ditch, and Salinas Industrial Pond waters as part of MRWPCA's GWRP. These

three waters could be made into drinking water with appropriate treatment (but not with the GWRP's AWTP). However, they would need pipelines and pump stations to connect to potable water systems. These three waters could be used as dilution water, if needed, or additional replenishment water if not, within the GWRP system after treatment through the GWRP's AWTP. Use of all three waters for GWRP dilution water is described in the Coastal Water Project FEIR. MRWPCA has no reports produced about these waters since the FEIR.

Per MCWRA, in this project, agricultural discharge from the Blanco Drain would be re-routed (possibly via pipelines) to the MRWPCA treatment plant, where it would be treated and then piped to the Seaside Groundwater Basin for injection. Currently, the GWRP is being pursued by the MRWPCA to provide an approximately 2,700 ac-ft of water for injection into that Basin. It was determined at a meeting regarding that project that additional similar water projects (Blanco Drain water) would not be implemented simultaneously to minimize confusion about each project's merits and challenges.

From this information it appears that this project is being considered by MRWPCA as a potential means of increasing the amount of water that the GWRP could supply to benefit the Seaside Basin.

#### 4. Examining MPWMD projects that might be helpful in replenishing the Seaside Groundwater Basin

Background Information: Per MPWMD, there are several ways to address this topic. The simplest is probably to review the material contained in a series of staff reports from MPWMD's November 11, 2011 Water Supply Planning Committee meeting. These staff reports are attached at the end of this Discussion Paper. The topics covered by those staff reports include:

1. Increasing Capacity at the Los Padres Dam
2. Coordination with MRWPCA on the Ground Water Replenishment Project
3. The Phase 2 ASR Project
4. Development of a Desalination Project on the Navy Property Along Del Monte Avenue at the Site of the Former Monterey Regional Water Pollution Control Agency Wastewater Treatment Plant

MPWMD representatives will be able to briefly discuss these projects and clarify whether the water that will be provided from them could either directly or indirectly benefit the Seaside Basin.

Based on the information contained in these reports, a brief summary of the quantities of water expected to be provided, the estimated unit cost of that water, and the projected schedule to complete construction of the necessary facilities is shown in the table below:

Project	Quantity, AF/YR	Est. Unit Cost, \$/AF	Estimated Best-Case On-Line Date
Capacity Increase of Los Padres Dam	680	\$3,128	2018
Coordination with MRWPCA on the GWRP	2,700 <sup>(1)</sup>	??	2017
Phase 2 ASR Project	Not listed	Not listed, but estimated total construction cost is \$4.6 million	2013
Desalination Project at Naval Postgraduate School Site	2,240 <sup>(2)</sup>	Not Listed, but estimated total construction cost is \$67 million	2019

Notes: (1) Figure provided by MRWPCA who is the project sponsor.

(2) If plant operated 365 days/year.

# MPWMD Project No. 1: Increasing Capacity at the Los Padres Dam

## EXHIBIT 7-A

### **Implementation Plan Water Project 5 Increasing Capacity at Los Padres Dam**

In this project, two scenarios would be examined:

Dredging in order to restore an original water right.

Original Water Right (1948)	3,030 AF
Current Right (reduced by Order 95-10)	<u>2,179 AF</u>
Restored Right	851 AF
Estimated Storage	1,775 AF
Sediment Removal Required to Restore 1948 Right	<u>1,255 AF</u>
	3,030 AF

Additional water provided for stream flow: 404 AF (1,255 minus 851)

A seasonal rubber dam and transfer a portion of District's 20808 Water Right.

The existing spillway is 18 feet below the dam height. It is contemplated that 5 to 10 feet of height can be added during certain times of the year to increase storage without inundating the Ventana Wilderness. This would provide 340 AF to 680 AF of new capacity. It is recognized that spillway modifications and widening may be required, as will enhanced fish passage.

#### **Work Plan Tasks**

Assumes starting once Board approves a course of action. Timeline will need to factor in approval dates, preparation of bids, and bidder response time.

#### **Task 1: Dredging Feasibility Study**

Budget: \$200,000  
Timeline: 6 months

#### **Task 2: Preliminary Design**

A consulting engineer will be hired to develop conceptual layout, sizing, and costs for a prospective rubber dam, including any required alterations to the spillway, as well as fish passageway redesign.

Budget: \$50,000 - \$100,000  
Timeline: 2 months

### **Task 3: Dam Feasibility Study**

Geotechnical investigation of the dam, spillway, and adjacent area to determine ability to accommodate rubber dam; Seismic stability review of dam, spillway, and adjacent embankment; and hydrology for maximum flood and routing through reservoir.

Budget: \$150,000 - \$200,000

Timeline: 4 months

### **Task 4: Develop Detailed Project Description**

Consultant will identify and carry out additional field studies that are needed to further refine the project. Finalize the project description for the EIR, including site layout, dewatering and disposal plan, and new facilities to be constructed. Cost estimates will be prepared.

Budget: \$40,000 - \$80,000

Timeline: 4 months

### **Task 5: Prepare Environmental Impact Report**

An Environmental Impact Statement will be prepared to satisfy the CEQA process.

Budget: \$250,000 - \$500,000

Timeline: 12 months

### **Task 6: Detailed Design and Construction Bid Documents**

Assumed at 10% of construction.

Budget: \$7,823,000

Timeline: 18 months

### **Task 7: Permitting and Environmental**

Budget: \$250,000 - \$300,000

Timeline: 20 months, overlaps with Detailed Design

### **Task 8: Construction and Start-Up**

Dredging:

1,255 acre-feet = 2,024,315 cubic yards.

Using 1996 Moffat study updated to current dollars: \$41,062,000 to \$78,839,000

Using USBR report for dredging and transport: \$24,292,000 to \$60,730,000

Average of all 4 figures: \$51,230,000

Fish Passage Improvements: \$15,000,000

Rubber Dam and Spillway Improvements: \$12,000,000

Budget: \$78,230,000

Timeline: 22 months

**Summary of Estimated Costs (DRAFT)**

Task 1: Dredging Feasibility Study	\$200,000
Task 2: Preliminary Design	\$50,000 - \$100,000
Task 3: Dam Feasibility Study	\$150,000 - \$200,000
Task 4: Develop Detailed Project Description	\$40,000 - \$80,000
Task 5: Prepare Environmental Impact Report	<u>\$250,000 - \$500,000</u>
Total Preconstruction Costs	\$690,000 - \$1,080,000
<hr/>	
Task 6: Detailed Design and Construction Bid Documents	\$7,823,000
Task 7: Permitting and Environmental	\$250,000 - \$300,000
Task 8: Construction and Start-Up	<u>\$78,230,000</u>
Total Construction Costs	\$86,303,000 - \$86,353,000

**Unit Cost**

Annual cost of operation, maintenance, and desiltation program:	\$900,000
Annualized capital cost (30 years; 5%)	<u>\$5,673,500</u>
Total Annual Cost	\$6,573,500
Cost per AF (assuming 851AF from dredging and 680 AF from dam)	\$4,294

Dam and Fish Passage Only:	
Annual cost of operation, maintenance:	\$150,000
Annualized capital cost (30 years; 5%)	<u>\$1,977,000</u>

Total Annual Cost	\$2,127,000
Cost per AF (assuming 680 AF from dam)	\$3,128
Dredging Only:	
Annual cost of operation, maintenance, and desiltation program:	\$750,000
Annualized capital cost (30 years; 5%)	<u>\$3,712,000</u>
Total Annual Cost	\$4,462,000
Cost per AF (assuming 851AF from dredging)	\$5,243

Note: Capital costs for projects separated will add up to slightly more than the combined project due to efficiencies when combined.

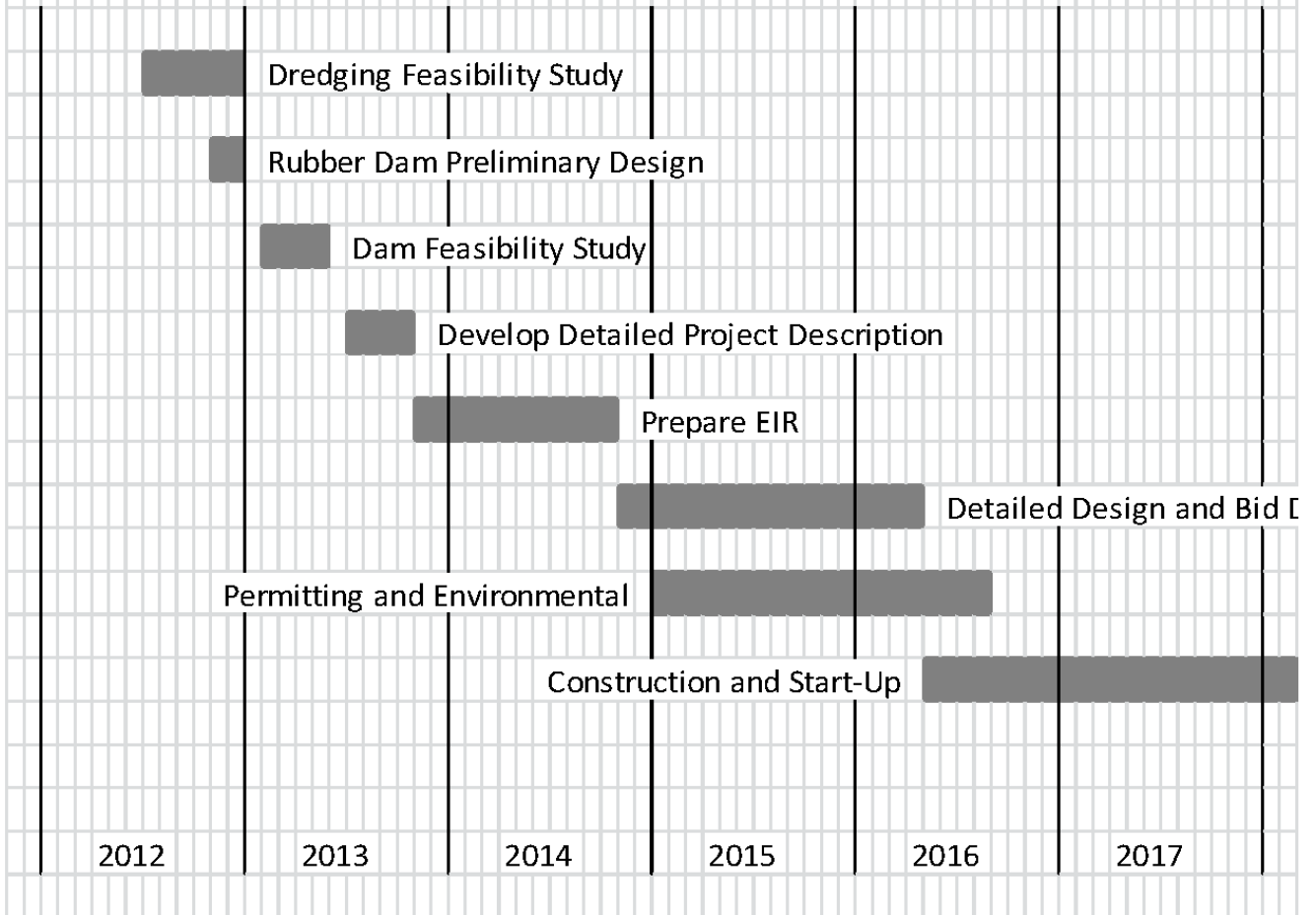
### **Estimated Timeline**

Timeline assumes start is delayed to next fiscal year. See next page.

5.

# Expand Los Padres Dam Capacity

## Preliminary Timeline



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**MPWMD Project No. 2: Coordination with MRWPCA on the Ground Water  
Replenishment Project**

**WATER SUPPLY PLANNING COMMITTEE**

**ITEM:     PROGRESS REPORTS**

**6.        UPDATE ON WATER PROJECT 4, GROUNDWATER REPLENISHMENT**

**Meeting Date:   November 22, 2011**

**From:            David J. Stoldt,  
                    General Manager**

**Prepared By:    David J. Stoldt**

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**SUMMARY:** The General Manager has been meeting frequently with MRWPCA's General Manager to discuss the groundwater replenishment project. The District has offered support in 6 key areas: (i) funding, (ii) water sales, (iii) working with the Watermaster, (iv) delivery of dilution water through ASR, (v) hydrogeologic modeling, and (vi) public outreach. Discussions will continue in each of these areas.

On Wednesday November 9<sup>th</sup> District staff heard a presentation to the Watermaster on the groundwater replenishment project and then met with Bob Holden, MRWPCA Principal Engineer, and Phyllis Stanin of Todd Engineers, a consultant to MRWPCA to see if there presently any areas of District data or activities that might overlap with the needs of the early phases of their project.

The MRWPCA also recently presented its work plan and timeline, which is attached as **Exhibit 6-A**.

**EXHIBITS**

**6-A     Groundwater Replenishment Implementation Plan and Timeline**

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## **EXHIBIT 6-A**

### **Implementation Plan Water Project 4 Groundwater Replenishment (from MRWPCA)**

#### **Work Plan Tasks**

**Task 1: Bench Scale Testing of Wastewater** - Evaluate the water quality of the wastewater, identifying constituents of concern for testing, conduct FEEM testing to determine fouling potential, develop water quality objectives, develop two alternative treatment process, develop capital and O&M cost estimates, develop pilot test protocol, layout, and cots estimate.

#### **Task 2: Design, Procure, Install and Operate Pilot Treatment Plant**

- a) Help MRWPCA determine if best or rent or purchase MF/UF/RO facilities. Bid and start procurement
- b) Delivery of pilot facilities, installation, start-up, and operate pilot MF/UF and RO facilities for at least 6 months.

**Task 3: Pilot Treatment Evaluation, IAP and Regulatory Acceptance** - Analyze the data from the pilot testing and review it with the Independent Advisory Panel ("IAP") and regulators

**Task 4: Detailed Design of Advanced Water Treatment (AWT) Plant** - Create detailed design that can be bid by a contractor.

**Task 5: Permits and Environmental Review** - Obtain all the permits plus CEQA and NEPA (if required) review.

**Task 6: Value Engineering** - During early and possibly late design, have an independent review performed to look at less costly approaches.

**Task 7: Construction of AWT** - Bid, award, and construct the AWT facilities.

**Task 8: Start-Up of AWT** - Perform capacity and performance testing, train operators, and begin operation.

**Task 9: Develop Groundwater Workplan** - Conduct site visit and identify field constraints. Identify the permits and other requirements. Identify how to characterize the vadose zone, the monitor well requirements, and the sampling plan. Meet with City of Seaside and the Watermaster.

**Task 10: Design Well and Sampling Plan** - Design the well so it can be bid. Design the water sampling plan for the well after drilling.

**Task 11: Procure and Drill Test Monitoring Well** - Bid and award a contract to a well driller. Well driller to obtain continuous core sample for analysis while drilling the well. Install casing so that water can be sampled from the Paso Robles Aquifer.

**Task 12: Water Sampling, Modeling, IAP and Approval of Injection and Sampling Plans** – Sample the Paso Robles water. Develop injection and sampling plans and have validated by IAP. Create a simple model from core sample information about travel times from the injection wells to the monitoring wells.

**Task 13: Design and Operate Pilot Injection Wells** – Design the number, size, and depth of the injection wells. Determine the water source, tracer to be used, flow rates and durations for test. Construct the facilities. Operate the facilities.

**Task 14: Permits and Environmental Reviews** – Obtain all permits needed. Complete CEQA and NEPA, if needed, reviews prior to construction.

**Task 15: Pilot Injection Evaluation, review and Acceptance** – Review the data collected. Present finding and conclusions to IAP, CDPH, and RWQCB for acceptance.

**Task 16: Detailed Design and Value Engineering** – Develop documents for bid. At least once during design have an independent party review the concepts and preliminary documents to see if there is a better or less expensive approach.

**Task 17: Construction of Injection Facilities** – Bid and construct the vadose and injection wells, pipelines, monitoring equipment, electrical supplies, etc. necessary for the facilities to operate.

**Task 18: Start-Up of Injection Facilities** – Perform capacity and function tests of the completed facilities and train operational staff. Begin operation.

**Task 19: Public Outreach and OCWD Tours** – Prepare information packets, press conference, and editorials. Develop stakeholder list. Conduct opinion leader meetings. Address environmental justice issue. Meet with elected officials. Develop social media outreach. Update materials.

**Task 20: Obtain CDPH Approval for Sharing Pipe** – Develop the criteria acceptable to MRWPCA and CDPH for dual usage of the transmission pipeline for recycled water and for purified (advance treated) water during different times of year.

**Task 21: Funding Plan**

- a) Preliminary Funding Plan: Take the best estimate of capital and O&M costs plus the schedule to develop a funding plan

- b) Intermediate Funding Plan: Update the plan based on updated capital and O&M costs plus the revised schedule.
- c) Final Funding Plan: Complete an update based on the completed designs and cost estimates and schedules. Use plan to obtain financing for construction

**Task 22: Continued Public Outreach** – Continuing the process of Task 19

**Task 23: Look for Year-Around MF/RO Operation** – (a) Determine use for facilities during summer months, 9b) continue the process

**Task 24: Updates of Schedule, Budget, IAP, etc** – After each segment of significant work it is important to re-estimate the costs and schedule and to share that information with the Board and those involved with the project. The IAP requires regular updates and involvement in the major decisions.

**Task 25: Negotiate Watermaster Agreement** – This agreement would allow for water to be injected into the Seaside Aquifer to be withdrawn from it later.

**Task 26: Negotiate a Water Purchase Agreement** – It is imperative to sell the water.

**Task 27: Negotiate Sharing Pipeline with MCWD** – It is desired to use the Regional Urban Water Augmentation Project (“RUWAP”) pipeline and pump stations for this project. Currently MCWD would be the owner of most of these facilities.

**Task 28: Design and Construct Alternative Pipeline** – Should Task 20 or Task 27 be unsuccessful, then it will be necessary to design and build an alternate pipeline to transport water to the Seaside Groundwater Basin.

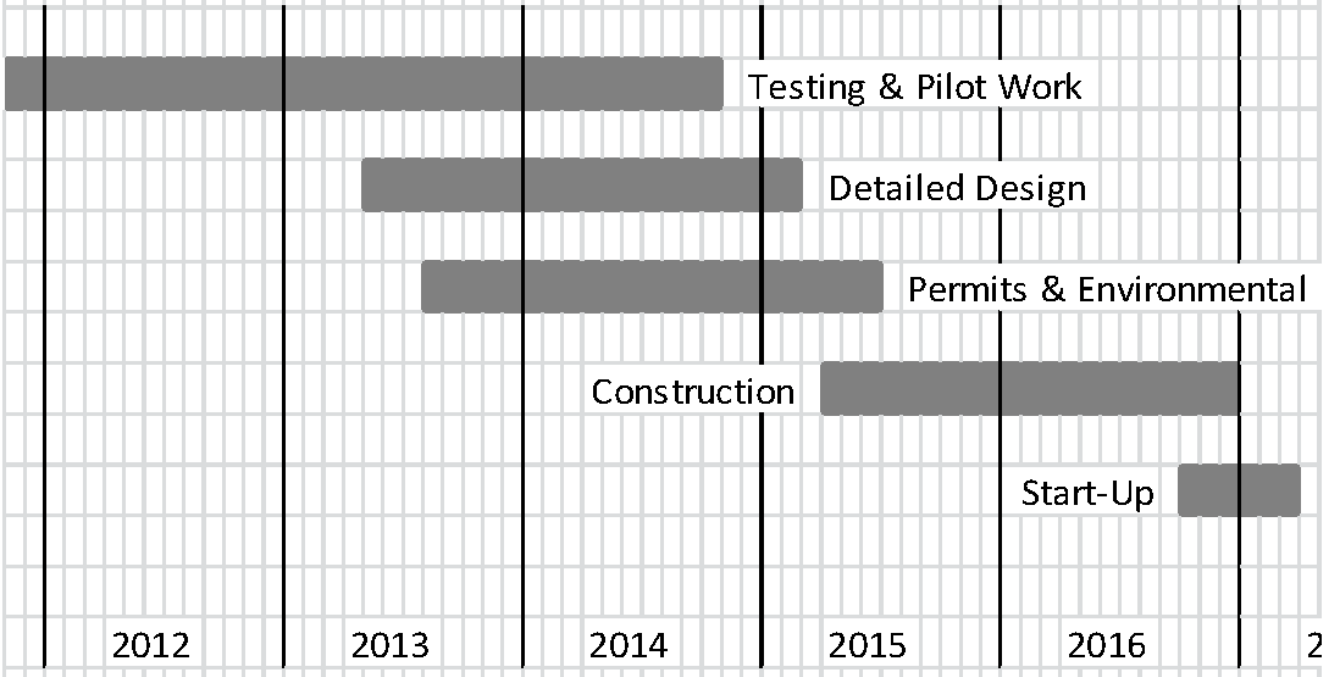
**Summary of Estimated Costs**

Pilot Studies	\$2.5 million
Design, Permitting, Legal, and Construction Management	\$9.0+ million
Construction	<u>\$40 to \$60 million</u>
Total Costs	\$50 to \$70 million

**Timeline**

See next page

## Groundwater Replenishment *Preliminary Timeline*



*(Source: MRWPA)*

# **MPWMD Project No. 3: The Phase 2 ASR Project**

## **EXHIBIT 5-A**

### **Implementation Plan Water Project 2 Phase 2 Aquifer Storage and Recovery**

#### **Work Plan Tasks**

##### **Task 1: Prepare Permanent Project Specifications**

Project specifications to be developed internally, with outside engineering support (Board 11/21 meeting), for use by CEQA consultant to prepare scope of services proposal and fee estimate. Receive proposals from CEQA consultant and bring to Board for January 2012 approval.

Budget: internal, plus budgeted outside engineering support \$396,000

Timeline: 1 month (Dec 2011)

##### **Task 2: Develop Detailed Project Description**

Internal staff will finalize the formal detailed project description, including site layout, maps, pipelines and alignments, and connections to Cal-Am and PG&E. Staff will coordinate with CEQA consultant for incorporation into CEQA document. Updated project cost estimates will be prepared.

Budget: internal

Timeline: 3 months (Dec 2011 – Feb 2012)

##### **Task 3: Prepare/Approve Relevant CEQA Document**

Staff coordinates with environmental consultant regarding document determination -- likely that either an Addendum to previous EIR or Mitigated Negative Declaration will be prepared. Anticipate April Board approval (simultaneously authorize funds for release of bid package to retain ASR-4 drilling contractor). Utilize environmental document to secure remaining regulatory authorizations.

Budget: \$92,000

Timeline: 4 months (Jan – Apr 2012)

##### **Task 4: Conduct Geotechnical Investigation; Prepare Backflush Pit Plans, Bid Specifications, Award Construction Contract, Secure Permits**

A geotechnical investigation is required prior to design of the onsite backflush percolation pit. The results of this investigation will be used to design the backflush pit and the required diversion wall between the toe of the pit and the school. Specifications will be

prepared for bid solicitation to qualified contractors. Approvals from MPUSD and City of Seaside will be secured prior to construction.

Budget: internal, plus outside engineering support per Task 1  
Timeline: 6 months (Feb – Jun 2012)

**Task 5: Prepare ASR-4 Well Detailed Design and Construction Bid Documents;  
Award Construction Contract**

Final designs assembled with outside engineering technical support. Final ASR-4 well (Seaside Middle #2 well) design selection and technical specifications to be incorporated into bid package for solicitation to drilling contractors in early May 2012. Anticipate contractor selection early June 2012.

Budget: internal, plus outside engineering support per Task 1  
Timeline: 4 months (Mar – Jun 2012)

**Task 6: Develop Full Site Civil, Electrical, Building Plans**

Plans, specifications and bidding support to be secured for site underground water and electrical piping, and electrical control equipment building.

Budget: internal, plus outside engineering support per Task 1  
Timeline: 4 months (Mar – Jun 2012)

**Task 7: Secure Permits, Drill/Construct ASR-4 Well**

Secure drilling permits by early June 2012. Select successful contractor, erect sound wall, drill well, construct temporary discharge disposal pipeline, develop well, and conduct well production performance testing. Most work will be conducted during school summer break to minimize construction noise impacts. Drill well June/July 2012. Construct well July/August 2012.

Budget: \$1,900,000  
Timeline: 3 months (Jun – Aug 2012)

**Task 8: Construct Backflush Pit and Diversion Wall**

Backflush pit and diversion wall construction will be a major earthwork project which will require the bulk of the work to be conducted during the school break to minimize impact on school operations. June – September 2012.

Budget: \$235,000  
Timeline: 4 months (Jun-Sep 2012)

### **Task 9: Secure Building Permits for Electrical Building**

The approximate 20'x30' onsite electrical control equipment building design is subject to review and approval by the MPUSD, and will be submitted to the City of Seaside Board of Architectural Review prior to approving final plans. In addition, a building permit for the structure must be secured prior to construction.

Budget: internal, plus outside engineering support per Task 1

Timeline: 4 months (Jul – Oct 2012)

### **Task 10: Design, Bid, Award Contracts to Equip ASR-4 Well**

Upon completion of construction of ASR-4 well per Task 7, the well's ancillary equipment (i.e., pump, motor, ASR flow control valve, surface piping and valving) will be designed, solicited for bids, and contracted for construction.

Budget: \$502,000

Timeline: 4 months (Sep – Dec 2012)

### **Task 11: Bid, Award Contracts, Secure Permit for Electrical Control Equipment**

The electrical control equipment inside the Electrical Building will be purchased separately from qualified vendors. In addition, a separate electrical permit is required prior to installation of the equipment inside the building.

Budget: \$537,000

Timeline: 5 months (Jan – May 2013)

### **Task 12: Construct, Equip Electrical Building**

Separate contracts must be secured for: (a) building construction, and (b) installation of electrical control equipment.

Budget: \$218,000

Timeline: 5 months (Jun – Oct 2013)

### **Task 13: Complete Site Paving, Fencing, Landscaping**

Paving, fencing and landscaping designs will be prepared and submitted for approval by MPUSD prior to securing applicable permits for this final site completion work.

Budget: \$121,000

Timeline: 3 months (Oct – Dec 2013)

### Summary of Estimated Costs

Task 1: Prepare Permanent Project Specifications	\$396,000
Task 2: Develop Detailed Project Description	n/a
Task 3: Prepare/Approve Relevant CEQA Document	\$92,000
Task 4: Conduct geotechnical investigation; prepare backflush pit plans, bid specifications, award construction contract, secure permits	n/a
Task 5: Prepare ASR-4 Well Detailed Design and Construction Bid Documents; Award Construction Contract	n/a
Task 6: Develop Full Site Civil, Electrical, Building Plans	n/a
Task 7: Secure Permits, Drill/Construct ASR-4 Well	\$1,900,000
Task 8: Construct Backflush Pit and Diversion Wall	\$235,000
Task 9: Secure Building Permits for Electrical Building	n/a
Task 10: Design, bid, Award Contracts to Equip ASR-4 Well	\$502,000
Task 11: Bid, Award Contracts, Secure Permit for Electrical Control Equipment	\$537,000
Task 12: Construct, Equip Electrical Building	\$218,000
Task 13: Complete Site Paving, Fencing, Landscaping	\$121,000
Contingency (15%)	\$601,000
Total Cost Estimate for Remaining Water Project 2 Facilities	\$4,602,000

### Supporting Figures

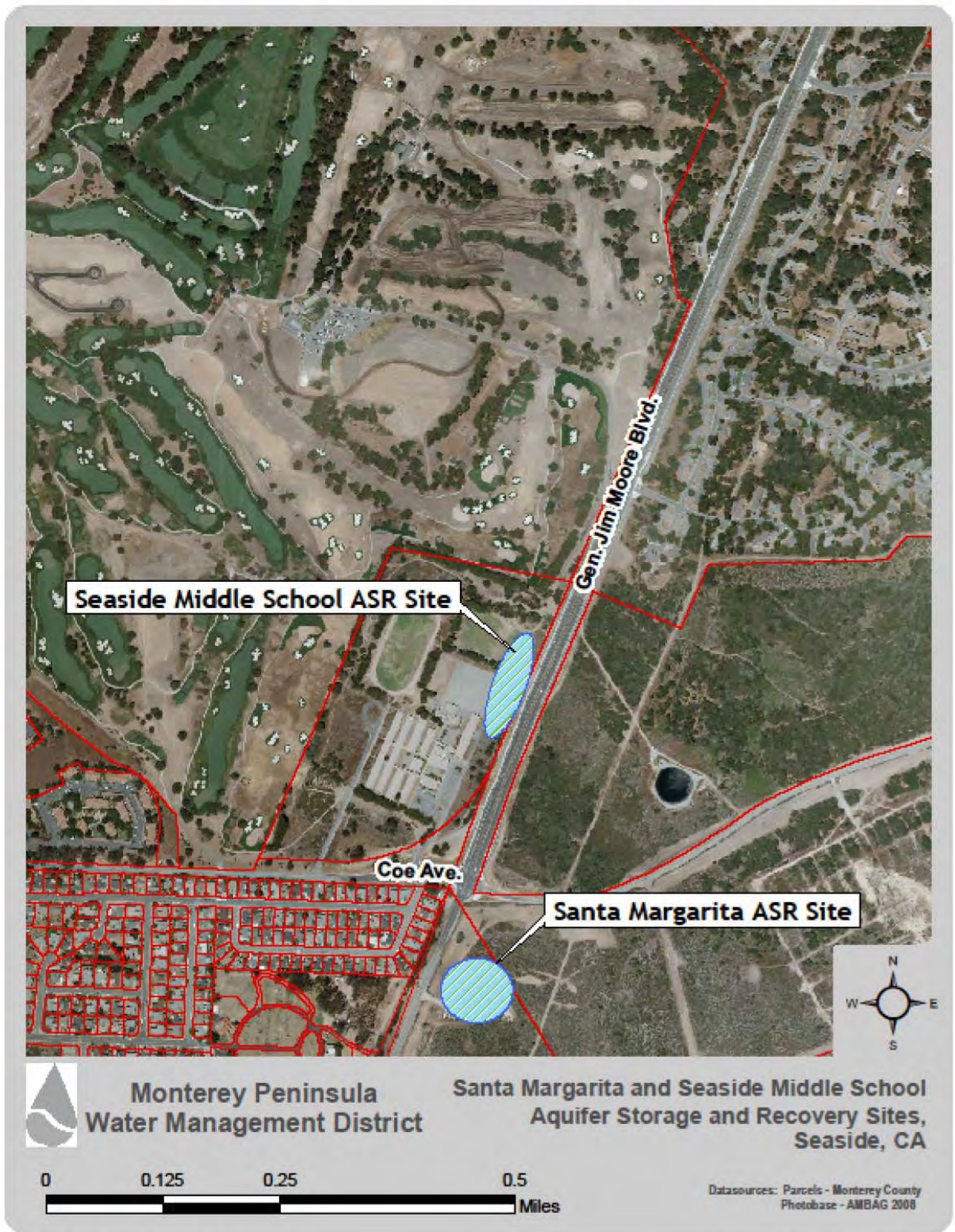
A map showing the location of the Water Project 2 site in relation to the Water Project 1 site is shown on **Figure 1**. A preliminary construction schedule for the remaining Water Project 2 facilities, showing task and subtask breakdown, is shown on **Figure 2**. The preliminary site development plan for Water Project 2 is shown on **Figure 3**.

## **A Note about Additional Phases of ASR**

The Water Project 2 description only carries the District through the expansion to Phase 2 of ASR. However, there has been discussion surrounding additional aquifer storage and recovery in the Santa Margarita sandstone aquifer. Our own supply discussion includes up to 3,000 AFY of additional supply from ASR. While the resource and technology has now been proven, the aquifer has not yet been sufficiently studied for preferred expansion sites, nor has the environmental process been initiated.

Expansion beyond the components included in the original Regional Project EIR may require a separate EIR of their own, as well as an investigation into the aquifer hydrogeologic conditions at potential future expansion sites. Although Cal-Am has already taken steps to explore a third phase of ASR (without direct District support as with Water Project 2), much work will need to be done on environmental assessment and technical assessment. Those costs are not included or discussed in this work plan.

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U:\jear\ASR Site 2\ASR Sites Map.mxd Locations are approximate based on MPWMD files.

**Figure 1. Vicinity map showing Santa Margarita (Water Project 1) and Seaside Middle School (Water Project 2) Aquifer Storage and Recovery sites.**

**PHASE 2 AQUIFER STORAGE AND RECOVERY  
SEASIDE MIDDLE SCHOOL - WATER PROJECT 2 SITE  
PROPOSED SCHEDULE FOR SITE DEVELOPMENT**

Task No	Description	2010		2011				2012				2013			
		3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
done	<b>Complete ASR-3 well construction</b>														
done	Complete ASR-3 production testing														
done	Develop ASR-3 piping & electrical plans														
done	Design / bid ASR-3 pump, motor, FCV														
done	Design / bid ASR-3 well piping, temp elect														
done	Install ASR-3 well piping, temp elect														
done	Install ASR-3 pump, motor, FCV														
1	Prepare permanent project specifications														
2	Develop/detailed project description														
3	Prepare, adopt O&M document														
4a	Conduct BF pit geotech investigation														
5	Request ASR-4 design, bid/award contract														
6a	Develop full life civil, electrical plans														
6b	Prepare BF pit plans, bid specifications, permits														
7a	<b>Secure permits, drill/construct ASR-4 well</b>														
7b	Prepare elect building plans														
7c	Install temporary production discharge piping														
8	<b>Construct BF pit, diversion wall below site</b>														
9	Secure building permits for elect building														
7c	Complete ASR-4 production testing														
10a	Design, bid ASR-4 pump, motor, FCV														
10b	Install ASR-4 pump, motor, FCV														
10c	Install ASR-4 well piping, temp elect														
11a	Bid/award contract for elect control equip														
11b	Bid/award contract for elect building														
11c	Secure elect permit for building														
12	<b>Construct / equip elect building</b>														
13	Complete site paving, fencing, landscaping														

NOTES:  
 1. Tasks shown above are proposed and will be refined as necessary.  
 2. 1st Quarter = Jan/Feb/Mar; 2nd Quarter = Apr/May/June; 3rd Quarter = Jul/Aug/Sep; 4th Quarter = Oct/Nov/Dec  
 3. Construction activities with greater potential for noise generation are shown in **bold type**  
 4. The potential noise-generating activities are timed to coincide with periods when Seaside Middle School (SMS) is not in session. These periods are the months of June, July, and early Aug, and are shown as **gray shading**  
 5. Schedule is updated as of **November 14, 2011**.  
 6. The schedule shown above assumes that project access, easement and funding considerations do not constrain project timeline.

**Figure 2. Water Project 2 (Seaside Middle School) ASR Facility, Preliminary Construction Schedule**

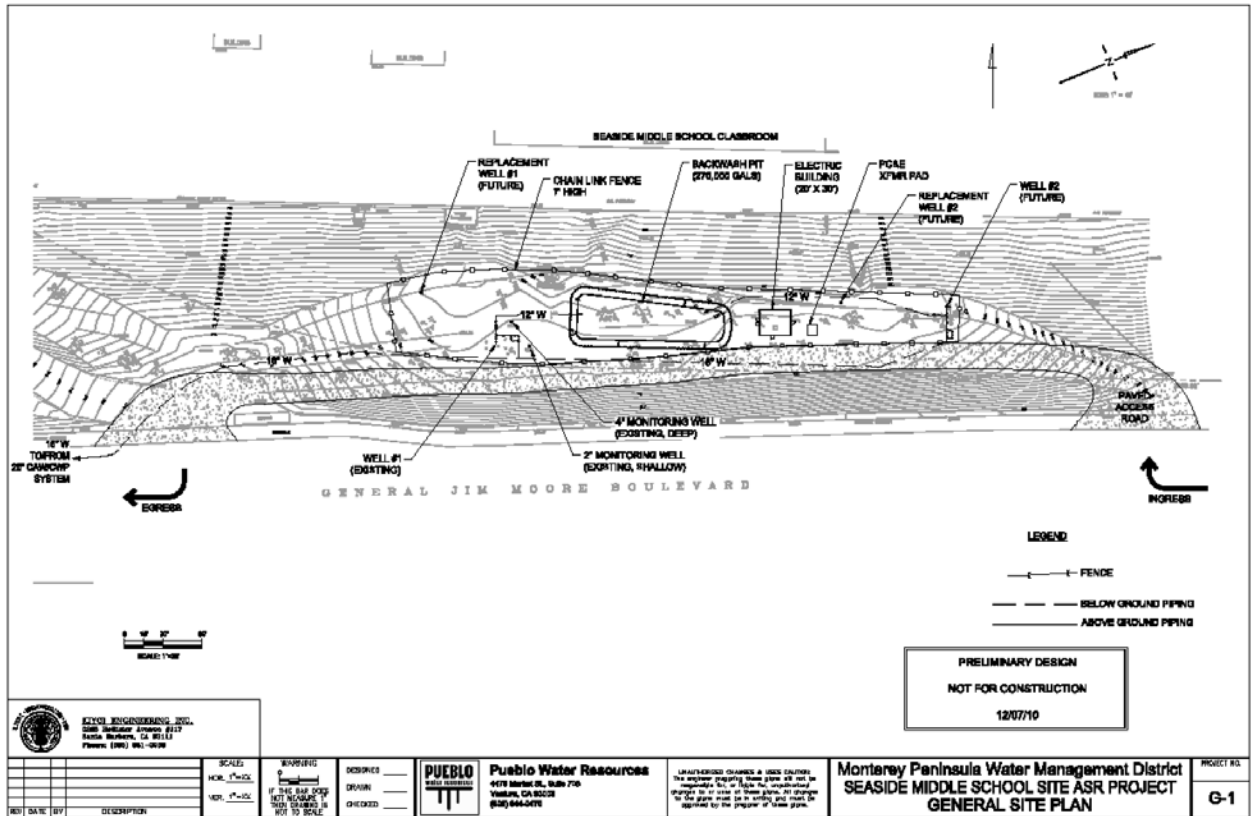


Figure 3. Preliminary site development plan for Water Project 2 (Seaside Middle School) ASR facilities.

**MPWMD Project No. 4: Development of a Desalination Project on the Navy  
Property Along Del Monte Avenue at the Site of the Former Monterey  
Regional Water Pollution Control Agency Wastewater Treatment Plant**

**WATER SUPPLY PLANNING COMMITTEE**

**ITEM: ACTION ITEM**

**4. IDENTIFY KEY ISSUES AND NEEDS RELATED TO COOPERATIVE DEVELOPMENT OF A SEAWATER DESALINATION PROJECT AT THE ABANDONED CITY OF MONTEREY WASTEWATER TREATMENT PLANT (WATER PROJECT 3, LOCAL DESAL WITHIN DISTRICT BOUNDARIES)**

**Meeting Date:** November 22, 2011

**From:** Dave Stoldt,  
General Manager

**Prepared By:** Larry Hampson

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**SUMMARY:** MPWMD staff have met twice with representatives of the Public Works Department at the Naval Support Activity Monterey (NSAM) to discuss building a desalination plant capable of producing two millions gallons per day of fresh water at the abandoned City of Monterey wastewater treatment plant, which is located just west of Del Monte Boulevard across from the Naval Postgraduate School (see Figure 1 in **Exhibit 4-A – Implementation Plan**). The site is currently owned by the U.S. Department of the Navy.

Local Navy officials have expressed support for this project and are willing to assist in negotiating with the Navy for a long term lease of the site and with an agreement to supply power to the site. In exchange, the Navy would like MPWMD to consider a commitment to supply water to the Navy. In order to begin negotiations with the Navy, the Public Works Department asked that MPWMD send a letter of introduction to the Commanding Officer, Captain Gerral David, at NSAM requesting the Navy's support in moving this project forward. Attached as **Exhibit 4-B** is a draft letter of introduction for conveyance to Captain David.

**STAFF RECOMMENDATION:**

The Committee should review the draft letter of introduction and attached Implementation Plan for the project. The Committee should consider taking the following actions: 1) making a recommendation to the full Board of Directors concerning sending a letter of introduction to Navy; and 2) recommending appointing one or more representatives of the District to meet with local Navy officials to discuss entering into a long-term lease agreement.

**BACKGROUND:** The City of Monterey abandoned their wastewater treatment plant site and conveyed to the Navy in the after completion of the Monterey Regional Water Pollution Control Agency Regional Treatment Plant. Most of the infrastructure built for the Monterey treatment plant remain on the site.

In early 1982, the installation of a regional sewer interceptor from the wastewater treatment plant through the Del Monte Beach Local Coastal Program area to the east required excavation of sand

dunes in a 220-foot-wide construction easement. A dune restoration program within the sewer excavation area was required through a condition of the coastal development permit granted by the State (April 1982). The U.S. Navy has restored the dune habitat on the Navy property between the Recreational Trail and the beach through replanting with dune habitat plant species, and has limited pedestrian foot traffic through the dunes by constructing a boardwalk on the western end of the area, between the Trail and the beach. The Navy has an ongoing program to restore native dune plants.

As shown in Figure 1 in **Exhibit 4-A – Implementation Plan**, the Navy has indicated that dune restoration areas at the site must be preserved as well as some of the abandoned wastewater treatment plant facilities. Currently, the Navy has laboratory facilities in use and stores stormwater runoff for use with outdoor irrigation on Navy property. However, there are two areas that appear to be suitable for locating desalination facilities (open-air storage tank areas 1 and 2) and local Navy officials have indicated that the Navy could consider granting a long-term lease of the areas.

In addition to leasing out a portion of the site for desalination facilities, the Public Works Department has indicated that the Navy may have the capacity to supply electrical power to the site. District staff estimates that the amount of power required may be in the range of 28,000 kilowatt hours per day. Annual costs for this power are estimated to be about \$1 million (2014 dollars), but may increase significantly as a result of the Cap and Trade Program for Greenhouse Gas emissions set up under AB 32.

The Navy has requested that MPMWD consider entering into a long-term agreement that would allow the Navy to provide in-kind services (a lease of the property and electrical power) in exchange for a supply of water at a fixed or reduced rate. District staff have informed Navy officials that if such an agreement is developed, the Navy would still be subject to the same limitations as the general community during a water shortage (e.g., as a result of legal restrictions or a physical shortage).

The Navy site has several advantages that could result in reduced construction, operation, and maintenance costs when compared with other potential sites within the District boundary. These include: 1) proximity to Cal-Am facilities, which would likely result in minimal pipeline and other appurtenances for connecting to the Cal-Am system; 2) potential for minimal cost, local reliable power; 3) a potentially lower property acquisition cost; and 4) some of the existing facilities could be used (with modifications) in the treatment process.

**Exhibit 4-A – Implementation Plan** describes proposed activities, a timeline, and preliminary cost estimate for completing this project.

## **EXHIBITS**

**4-A** Implementation Plan for Water Project 3: Local Desalination

**4-B** Letter of Introduction

**EXHIBIT 4-A**

**Implementation Plan for Water Project 3: Local Desalination at  
Navy Property Located Near the Naval Support Activity, Monterey**

**Work Plan Tasks**

**Task 1: In-House Specifications and Preliminary Constraints Analysis**

Staff is to determine a proxy footprint for a 2 million gallon per day (mgd) Sea Water Reverse Osmosis (SWRO) desalting treatment plant and identify the ability to fit on site. A minimum of 4 mgd of feed water may be required (note: additional feedwater capacity would be required if 50% filter efficiency cannot be achieved). Identify expansion space, if any. Identify additional infrastructure required (see attached Figure 1 and Tables 1 and 2). Determine approximate power needs. Identify options for source water and brine discharge. Develop into summary document.

Meet with following to discuss initial project scope:

- U.S. Navy to discuss facilities layout and discuss a letter of intent
- California Coastal Commission to discuss set-backs and infrastructure
- Monterey Bay National Marine Sanctuary to discuss intake and discharge
- NOAA Fisheries to discuss intake and discharge
- Regional Water Quality Control Board to discuss intake and discharge

- California American Water to discuss infrastructure requirements
- California Department of Parks and Recreation to discuss land use limitations
- State Lands Commission to discuss intake and discharge

**Additional agencies if a new pipeline is required for brine discharge to the Regional Treatment Plant owned by Monterey Regional Water Pollution Control Agency (MRWPCA):**

- City of Sand City
- City of Seaside
- City of Marina
- MRWPCA

Develop a preliminary list of constraints based on meetings.

Budget: Internal

Timeline: 4-6 months

## **Task 2: Hydrostratigraphic Field Investigation**

Two alternatives may be studied for intake source water and brine discharge: 1. an open ocean intake and discharge; 2. a Ranney collector and separate diffuser installed under the ocean seafloor. For the latter alternative, offshore hydrogeologic conditions need to be analyzed to determine the suitability for development of feedwater from under the seafloor in proximity to the Navy-owned site.

A 1990 hydrologic investigation performed by Staal, Gardner, and Dunne (SGD) for MPWMD concerning the coastal basin near the site showed that development of the inland coastal area as a brackish water source would be impractical. The potential for locating beach wells was also investigated. The thickness of sand overlying Monterey formation (shale beds) adjacent to the site was determined to be about 20 feet, with a yield per well of about 100 gallons per minute (gpm). A 4 mgd intake system would require approximately 30 wells spaced 200 feet apart to avoid interference. This would require just over one mile of beach front area for a well field. The beach front area from the Monterey Harbor to the City of Seaside includes the Monterey Municipal Beach, Del Monte Beach and Monterey State Beach. These are all popular recreation areas and some of the beach area is considered sensitive habitat that is host to plant and animal species protected under the Endangered Species Act. In addition to the long-term potential for coastal erosion, access to the beach to drill and maintain such a large number of wells could be problematic.

The 1990 SGD study did suggest that the District could consider a subsea intake system using a horizontal well placed just below the ocean floor. Analysis of the offshore undersea area must address the needs of the collection mechanisms and discharges identified in the specifications and constraints analysis. Results should identify favorable locations (e.g. ancient channels and/or areas with an adequate overlying thickness of sand), confirm intake yield sufficiency, and investigate the potential for discharging brine through a diffuser pipe located under the seafloor.

Budget: \$100,000 - \$125,000

Timeline: 4 months

### **Task 3: Develop Project Facilities Alternatives**

A consulting engineer will be hired to develop conceptual layouts, sizing, and costs for prospective facilities, including seawater collection and disposal alternatives, transmission facilities required, treated water storage, and other appurtenant infrastructure.

Budget: \$50,000 - \$100,000

Timeline: 2 months

### **Task 4: Execute Constraints Analysis**

Based on the identified concept designs, the consultant will evaluate each concept plan against 8 criteria:

- i) Technical Feasibility: Viability of source water production; hydrogeologic issues; brine disposal methodology; shoreline erosion.
- ii) Reliability: Is water supply sustainable?
- iii) Permitting: List permits and timeline. Foreseeable permit hurdles?
- iv) Public Acceptance: Is there organized opposition?
- v) Environmental: Energy usage; Impacts to Monterey Bay National Marine Sanctuary; etc.
- vi) Regulatory: Compliance with Seaside Basin Adjudication and CDO
- vii) Cost: Capital, operations, and cost per acre-foot.
- viii) Schedule: Project timeline and completion date

Land use issues will be detailed – primarily with the California Coastal Commission (CCC), State Lands Commission, the California Department of Parks and Recreation (DPR), the Department of the Navy, the City of Monterey and other agencies as required.

Feedwater collection, water treatment, and brine discharge constraints will likely include interaction with the NOAA Monterey Bay National Maritime Sanctuary (MBNMS), which adopted desalination facility siting guidelines in May 2010, the US Fish & Wildlife Service (FWS), National Marine Fisheries Service (NMFS), the CCC, State Lands Commission, California Department of Fish and Game (DFG), State Water Resources Control Board (SWRCB) for water quality under its Ocean Plan, and the Central Coast Regional Water Quality Control Board (RWQCB) through administration of discharge permits.

Other agencies include the County Department of Public Health (DPH) for well drilling, the Monterey Bay Unified Air Pollution Control District (MBUAPCD), and possibly the Monterey Regional Water Pollution Control Agency (MRWPCA) who will require brine characterization studies for its NPDES permit if their outfall is utilized.

Once constraints are identified, project alternatives will be screened and ranked, and a preferred alternative identified.

Budget: \$100,000 - \$125,000

Timeline: 4 months

**Task 5: Develop Detailed Project Description**

For the top 2-3 alternative concept designs, a consultant will identify and carry out additional field studies that are needed to further refine the project. A final project description will be prepared for the EIR, including site layout, source and discharge water facilities, pipelines and alignments, and connections to Cal-Am and Navy property (if appropriate). Cost estimates will be prepared.

If pilot testing is recommended, a detailed work plan will be developed and schedule revised.

Budget: \$40,000 - \$80,000

Timeline: 4 months

**Task 6: Prepare Combined Environmental Impact Report/Environmental Impact Statement**

Because the site is a federal facility, a NEPA Environmental Impact Statement (EIS) will be required and a combined EIS-EIR used to satisfy the CEQA process. Requirements for an EIS and EIR and their preparation may be considered to be similar, but additional time may be required.

It should be noted that development of a lease agreement with the Department of the Navy is anticipated to take approximately 18 months and would be carried out concurrently with the environmental analysis for the project.

Budget: \$250,000 - \$500,000

Timeline: 24 months

**Task 7: Detailed Design and Construction Bid Documents**

Assumed at 20% of construction.

Budget: \$11,200,000

Timeline: 24 months

**Task 8: Permitting and Environmental**

Budget: \$250,000 - \$500,000

Timeline: 24 months, overlaps with Detailed Design

**Task 9: Construction and Start-Up**

Use estimates from example projects until engineers are hired. Marina Coast water District estimated capital costs for 1,500 AF updated from 2007 report are \$42.2 million (*from "Desalination Facility Basis of Design Report", March 2007, RMC Water and Environment*)

Budget: \$56,000,000

Timeline: 30 months

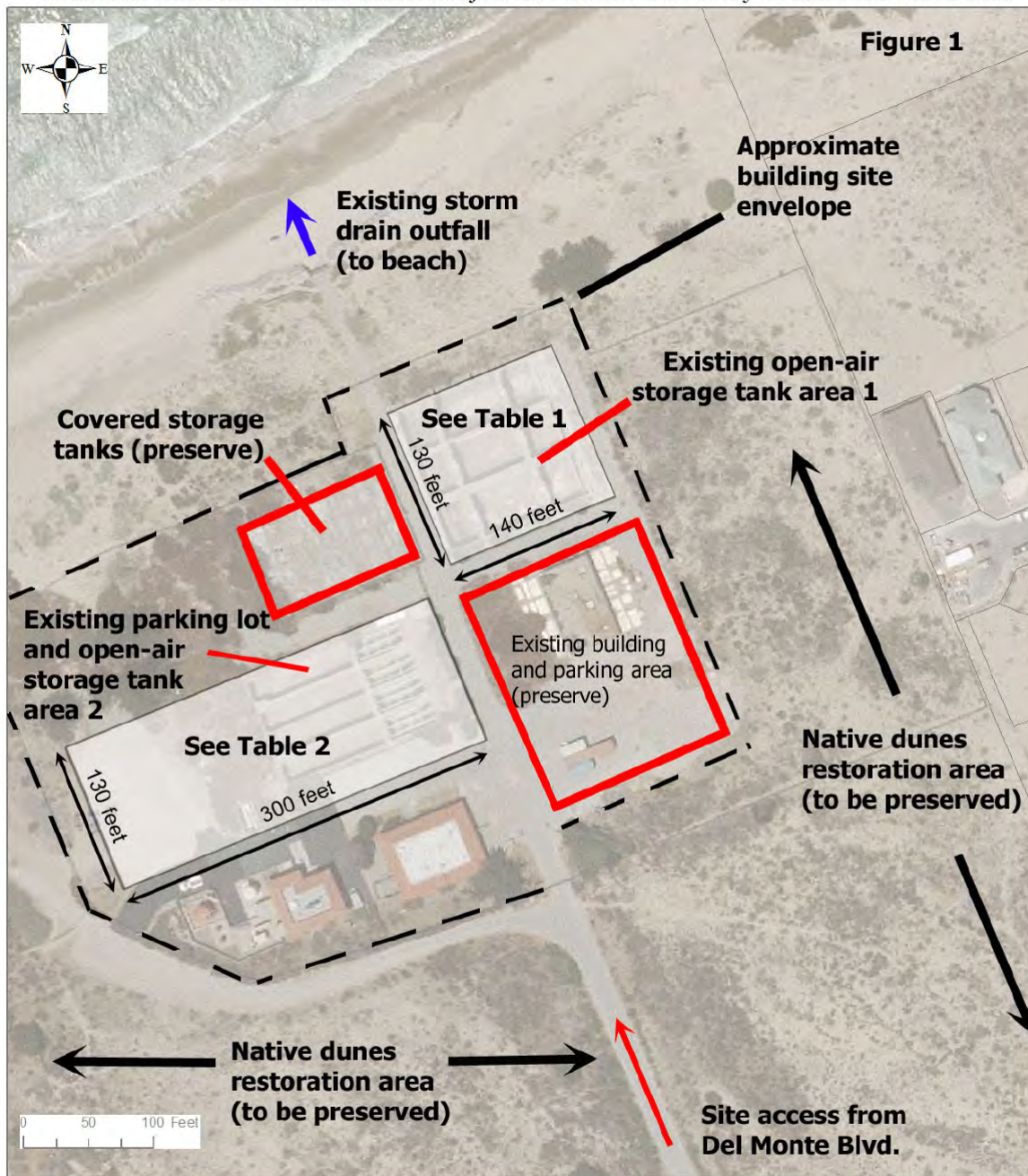
**Summary of Estimated Costs**

Task 1: In-House Specifications and Preliminary Constraints Analysis	n/a
Task 2: Hydrostratigraphic Field Investigation	\$100,000 - \$125,000
Task 3: Develop Project Facilities Alternatives	\$50,000 - \$100,000
Task 4: Execute Constraints Analysis	\$100,000 - \$125,000
Task 5: Develop Detailed Project Description	\$40,000 - \$80,000
Task 6: Prepare Environmental Impact Report	<u>\$250,000 - \$500,000</u>
Total Preconstruction Costs	\$540,000 - \$930,000
<hr/>	
Task 7: Detailed Design and Construction Bid Documents	\$11,200,000
Task 8: Permitting and Environmental	\$250,000 - \$500,000
Task 9: Construction and Start-Up	<u>\$56,000,000</u>
Total Construction Costs	\$67,450,000 - \$67,700,000



### Site Layout

MPWMD Water Project 3  
Potential Seawater Desalination Project at Former Monterey Treatment Plant Site



November 2011  
U:\Larry\WaterSupplyPlanning\Desalination\NSA-Monterey\Concept Layout\

5 Harris Court, Building G, Monterey, CA 93940 • P.O. Box 85, Monterey, CA 93942-0085  
831-658-5600 • Fax 831-644-9560 • <http://www.mpwmd.dst.ca.us>



Table 1 – Intake/Discharge and Solids Handling Facilities

- Intake and discharge pumps
- Solids clarifiers/tanks
- Sludge storage
- Pre-treatment/microfiltration
- Retention tank (for brine discharge)

Approximate area: 18,200 sq. ft. (130 ft. x140 ft.)

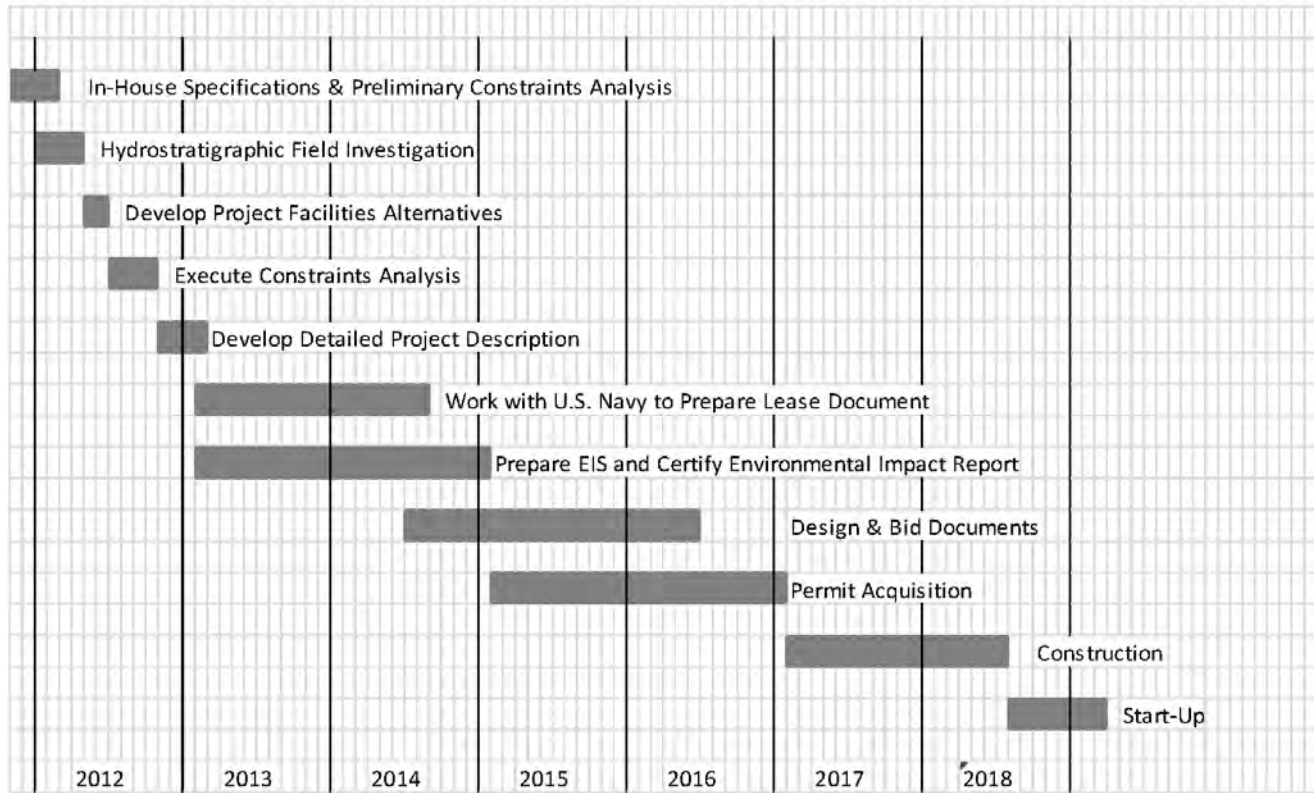
Table 2 – Reverse Osmosis Train and Clear Water Facilities

- RO feedwater and train
- Post treatment tank (clearwell)
- Chemical storage
- Office
- Laboratory
- Shop
- Electrical room
- Restroom

Approximate area: 39,000 sq. ft. (130 ft. x300 ft.)

Total Area = 57,200 sq. ft.

**Estimated Timeline**



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**EXHIBIT 4-B**

*DRAFT*

[Date]

CAPT Gerral David, Commanding Officer  
Naval Support Activity, Monterey

[Need address at NSAM]

Monterey, CA 93943-5035

**SUBJECT:** Letter of Introduction Concerning the Potential to Locate a  
Seawater Desalination Facility on U.S. Navy Property

Dear LCDR Haun:

I am writing to request a meeting with you concerning the potential to enter into a long term lease with the Department of the Navy to locate a relatively small seawater reverse osmosis (SWRO) desalting facility on U.S. Navy property located near the Naval Support Activity, Monterey. Monterey Peninsula Water Management District (MPWMD or District) staff recently met with the Public Works Department at Naval Support Activity, Monterey and the Public Works Officer, LCDR Eric C. Haun, who asked for additional information concerning the District's space and power requirements and requested that MPWMD consider providing the Navy with water from the project.

The MPWMD Water Supply Planning Committee and the MPWMD Board of Directors (Board) considered a preliminary layout and proposal for building a local desalination facility on Navy property. The Board appointed General Manager Dave Stoldt and I [Chairman Brower? other Director? Needs to be a person directed by the Board to meet with Navy] to represent MPWMD in this matter. We would like to meet with you at your earliest convenience to discuss the following:

Proposed layout and area requirements for the facility

MPWMD estimates that for a two million gallon per day (MGD) facility, approximately \_\_\_\_\_ square feet would be required (see enclosed Figure 1). The facilities would consist of:

- Ocean intake and supply system capable of up to 5 mgd or about 3,500 gallons/minute. A 24-inch diameter intake pipe would be connected either to a Ranney collector under the seabed or an open ocean intake extending offshore. The pipeline would likely cross under the Monterey Regional Water Pollution Control Agency (MRWPCA) transmission line along Del Monte Beach adjacent to Navy property (to be determined with preliminary design). The length and

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	6
<b>AGENDA TITLE:</b>	Schedule
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>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 entity, MPWMD, which is performing certain portions of the work, and of the Critical Program Milestones Schedule.</p> <p>Attached is the Consultants Work Schedule for FY 2012. This Schedule reflects the TAC's decisions to defer any further discussion of moving ahead with more Groundwater Modeling, refining Protective Water Levels, and updating the BMAP, until such time as there has been sufficient progress toward implementing the Regional Water Supply Project alternative of the Coastal Water Project to warrant such discussions.</p> <p>There were no changes made to this schedule from the one included in the January 11, 2012 TAC meeting agenda packet.</p>	
<b>ATTACHMENTS:</b>	Schedule of Work Activities for FY 2012
<b>RECOMMENDED ACTION:</b>	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to this Schedule

## Seaside Basin Watermaster Monitoring and Management Program 2012 Work Schedule

ID	Task Name	2012												2013										
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
1	<b>CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK</b>																							
2	<b>2011 Administration, Operations and Replenishment Budgets</b>																							
3	Prepare M&MP Draft Budgets (Same as Task 19)																							
4	TAC Approves M&MP Budgets (Same as Task 20)																							
5	Board Approves M&MP Budgets (Same as Task 21)																							
6	<b>Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports</b>																							
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 41)																							
8	Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports for 3rd and 4th Quarters (Same as Task 42)																							
9	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2012 (Same as Task 43)																							
10	<b>Replenishment Assessment Unit Costs for Water Year 2012</b>																							
11	B&F Committee Develops Replenishment Assessment Unit Cost for 2013 Water Year																							
12	If Requested, TAC Provides Assistance to B&F Committee in Development of 2013 Water Year Replenishment Assessment Unit Cost																							
13	Board Adopts and Declares 2013 Water Year Replenishment Assessment Unit Cost																							
14	<b>Replenishment Assessments for Water Year 2012</b>																							
15	Watermaster Prepares Replenishment Assessments for Water Year 2012																							
16	Watermaster Board Approves Replenishment Assessments for Water Year 2012 (At November Meeting)																							
17	Watermaster Levies Replenishment Assessment for 2012																							

# Seaside Basin Watermaster Monitoring and Management Program 2012 Work Schedule

ID	Task Name	2012												2013											
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
18	<b>Monitoring &amp; Management Program (M&amp;MP) Budgets for 2012</b>																								
19	Prepare Draft 2013 and 2014 M&MP O&M and Capital Budgets																								
20	TAC approves Draft 2013 and 2014 M&MP O&M and Capital Budgets																								
21	Board approves 2013 and 2014 M&MP O&M and Capital Budgets																								
22	<b>2012 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)</b>																								
23	Prepare Preliminary Draft 2012 Annual Report																								
24	TAC Provides Input on Draft 2012 Annual Report																								
25	Prepare Revised Draft 2012 Annual Report (Incorporating TAC Input)																								
26	Board Provides Input on Revised Draft 2012 Annual Report (At November Board Meeting)																								
27	Prepare Final 2012 Annual Report (Incorporating Board Input)																								
28	Watermaster Submits Final 2012 Annual Report to Judge																								
29	<b>MANAGEMENT</b>																								
30	<b>M.1 PROGRAM ADMINISTRATION (All Work Performed by Watermaster Staff)</b>																								
31	Prepare Initial Consultant Contracts for 2012																								
32	TAC Approval of Initial Consultant Contracts for 2012																								
33	Board Approval of Initial Consultant Contracts for 2012 (At November Board Meeting)																								
34	<b>IMPLEMENTATION</b>																								
35	<b>I.2.a DATABASE MANAGEMENT</b>																								
36	<b>I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance</b>																								

## Seaside Basin Watermaster Monitoring and Management Program 2012 Work Schedule

ID	Task Name	2012												2013																
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug					
37	<b>I.2.b DATA COLLECTION PROGRAM</b>																													
38	I.2.b.2 Collect Monthly Water Levels (MPWMD)																													
39	I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)																													
40	I.2.b.6 Reports (from MPWMD)																													
41	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters							◆ 4/4																						
42	Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports for 3rd and 4th Quarters																◆ 10/17													
43	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2012																◆ 10/17													
44	<b>I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL</b>																													
45	I.3.a.2 Develop Protective Water Levels					NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																								
46	I.3.a.3 Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions					NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																								
47	I.3.c Refine and/or Update the BMAP					NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																								
48	<b>I.3.d Evaluate Coastal Wells for Cross-Aquifer Contamination Potential</b>																													
49	TAC Approves Scope of Work for MPWMD to Perform Further Evaluations of these Wells in 2012					ONLY IF FURTHER WORK IS NECESSARY																								
50	Board Approves Well Evaluation Work to be Done in 2012					ONLY IF FURTHER WORK IS NECESSARY																								
51	MPWMD Performs Further Evaluations of these Wells					ONLY IF FURTHER WORK IS NECESSARY																								
52	MPWMD Makes Report on Well Evaluations to TAC					ONLY IF FURTHER WORK IS NECESSARY																								
53	Presentation of Well Evaluations to Board							◆ 7/11																						
54	I.4.a HydroMetrics & MPWMD Provide Oversight of Seawater Intrusion Detection and Tracking							◆ 8/1																						

## Seaside Basin Watermaster Monitoring and Management Program 2012 Work Schedule

ID	Task Name	2012												2013																			
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug								
55	<b>I.4.b HydroMetrics Analyzes and Maps Water Quality from Coastal Monitoring Wells</b>																																
56	<b>I.4.c Annual Seawater Intrusion Analysis Report (SIAR)</b>																																
57	HydroMetrics Provides Draft SIAR to Watermaster																																
58	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)																																
59	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																																
60	<b>I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)</b>																																
61	<b>I.4.e Refine and/or Update the SIRP</b>																																

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

**\*\*\* AGENDA TRANSMITTAL FORM \*\*\***

<b>MEETING DATE:</b>	March 14, 2012
<b>AGENDA ITEM:</b>	7
<b>AGENDA TITLE:</b>	Other Business
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>The "Other Business" agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.</p>
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only