



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

MEETING NOTICE AND AGENDA **RECYCLED WATER COMMITTEE**

Lou Calcagno, Chair
Felix Bachofner, Dan Burns, Libby Downey, and Dennis Allion
[Ron Stefani – Alternate]

DATE:	Thursday, June 9, 2011
TIME:	3:00 p.m.
LOCATION:	Admin Conference Room 5 Harris Court, Building D Monterey, CA

PUBLIC COMMENTS

Anyone wishing to address the Committee on matters not appearing on the Agenda may do so now. Comments on any other matter listed on the Agenda are welcome at the time the matter is being considered by the Committee.

- 1. UPDATE ON SALTS IN POTABLE AND RECYCLED WATER AND GROWER ISSUE WITH SOIL SALINITY**
(see attachment)
- 2. UPDATE ON REGIONAL WATER PROJECT AND THE COMMUNITY INVOLVEMENT FORUM**
(see attachment)
- 3. CONSIDER PREPARATION OF REQUEST FOR PROPOSAL (RFP) FOR PUBLIC/PRIVATE DEVELOPMENT SUPPORT FOR GROUNDWATER REPLENISHMENT PROGRAM**
(see attachment)

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Joint Powers Authority Member Entities:

Boronda County Sanitation District, Castroville Community Services Water District, County of Monterey, Del Rey Oaks, Fort Ord, Marina Coast Water District, Monterey, Moss Landing County Sanitation District, Pacific Grove, Salinas, Sand City, and Seaside.

RECYCLED WATER COMMITTEE

June 9, 2011

Page 2 of 2

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This Committee Meeting Notice and Agenda was hereby posted at:

MRWPCA
5 Harris Court, Building D,
Monterey, California 93940

POSTED: Monday, June 6, 2011

By:

/s/ *Betty Nebb*

Executive Assistant



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MEMORANDUM

TO: RECYCLED WATER COMMITTEE

FROM: BOB HOLDEN, PRINCIPAL ENGINEER
(via Keith Israel, General Manager)

DATE: JUNE 7, 2011

SUBJECT: UPDATE ON SALTS IN POTABLE AND RECYCLED WATER
AND GROWER ISSUE WITH SOIL SALINITY

The Soil Salinity Study was initiated by the Water Quality & Operations Committee (WQ&Ops) at their December 8, 1999, meeting. Soil data has been collected at various locations within and close to the CSIP system since 2000. The major concern was the sodium content of recycled water and its effect on the soil. At that time the most salt intolerant crop was lettuce. Lettuce productivity is supposed to start decreasing with about 115 parts per million (ppm) of sodium in the soil. Soil sodium and salinity have been slowly rising but is not alarming. When the study began there were no strawberries in the project. Currently there are probably over 1,000 acres of strawberries (about two percent of the total USA crop). These strawberries are susceptible to sodium and salinity but are particularly susceptible to chlorides. Strawberry productivity is supposed to start decreasing with about 354 ppm chlorides in the soil.

Soil science theory suggests that the soil will eventually become the irrigation water. This means that using recycled water one would expect the soil concentrations to be less than 251 ppm chloride and 173 ppm sodium. It would be less due to the influence of supplemental wells (and now Salinas River water) and rain. Looking at sodium, the soil concentration has increased slightly in dry years and decreased slightly in wet years.

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MEMORANDUM

Recycled Water Committee

June 7, 2011

Page 2 of 3

Only recently, however, was chloride looked at closely because it was not the issue with lettuce and, again by soil science theory, should not accumulate in clay soils. Surprisingly, chloride appears to be increasing in the soils being monitored. And the soil concentration is above the recycled water concentration, and some of the soil is above the threshold for strawberries, and it appears to be getting worse. The WQ&Ops looked at this data for soil chloride data and decided to write a letter (attached) to all the growers and land owners about their concern.

The sodium and chloride concentrations in recycled water have been reduced over the years (attached). MRWPCA was involved in a Salinity Study that looked at where the various salts originated. They found that about one-half of the sodium came from the potable (drinking) water and about one-third came from water softeners. Less review has been made about chlorides. In fact, MRWPCA continues to recommend use of potassium chloride for water softeners. This has resulted in decreased sodium and Sodium Adsorption Ratio which is very desirable. It has also resulted in increased potassium (a valuable plant nutrient) but also an increase in chlorides (potassium chloride is less efficient as a water softener). When sodium was the main concern, staff investigated adding calcium (in the form of gypsum) to the water to counteract sodium. Nothing came of the investigation as it was determined that it was too expensive for the benefit. Many project growers regularly apply gypsum to their fields.

The 2010 and 2011 data are not yet available. In 2010, Salinas River water was introduced to the CSIP project. The river water mostly helps to reduce the salt in the irrigation water but not always. When river flow is reduced, a large portion of the river flow comes from the Blanco Drain. This drainage system collects water from the tile drain systems within the fields. A comparison of the various waters (minimum-maximum, average) is shown below.

	<u>Chloride ppm</u>	<u>Sodium ppm</u>	<u>Nitrogen</u>
Recycled Water	182-350, 251	140-250, 173	24-51, 35
Salinas River Water	48-168, 108	45-155, 100	5-35, 21
Blanco Drain	10-337, 180	13-380, 227	0-93, 49

Nitrogen was added as it is of interest to the growers. A graph showing changes in recycled, river, and drinking water sodium and chloride is attached. Blanco Drain is excluded as the ranges are so great. If the Blanco Drain flow is a significant portion of the river flow rate, it increases the irrigation chloride and sodium concentrations from what they would have been.

MEMORANDUM

Recycled Water Committee

June 7, 2011

Page 3 of 3

The WQ&Ops has asked MRWPCA staff to look into potential methods for reducing sodium, chlorides, and nitrogen in the CSIP irrigation water. Some methods to reduce these salts include:

- Additional work to reduce salt coming from major salt users such as the hospitals, commercial laundries, and hotels into the sewer systems. This option would be expensive and the maximum reduction is about 10%.
- Either the Blanco Drain water or a portion of the recycled water could have the salts removed through reverse osmosis. This would be expensive. It would allow for any desirable finish water depending on the quantities.
- The portion of river water could be increased. This would result in using less recycled water.
- The flow rate of the river water could be increased to dilute the effect of the Blanco Drain. The effect of this is to send more lake water into the ocean.

Staff will continue to monitor this issue and investigate options.

➤ **Information only - no action is requested.**



Water Quality & Operations Committee

The production of clean and safe water for agriculture

April 28, 2011

Dear Grower/Landowner,

As you know the Monterey County Water Recycling Projects (MCWRP) have been supplying recycled water to growers in the Castroville area since 1998. At the request of growers on the Water Quality and Operations committee, MCWRP began a long term soil salinity study in 2000. While the data has been reviewed annually by the committee, a detailed analysis of the 10 years of data from 2000 – 2009 has recently been completed.

The summary shows that soils receiving recycled water have exhibited changes in salinity in the last 10 years. The soils at the majority of the locations tested have acceptable values for salinity and appear to be in equilibrium (i.e. salinity concentrations not showing an annual cumulative effect). At most sites, the soil SAR (Sodium Adsorption Ratio) values have come into equilibrium below expected theoretical values. However, there are some sites that have developed SAR values greater than the optimum level of 5 or less in their respective soils. It is recommended that grower's review their annual fall soil samples and amend those soils exhibiting an SAR > 5.0 with a calcium amendment. This amendment will improve the tilth of the soil, improve drainage, and offset any accumulation of sodium increasing the SAR value.

In addition, a similar trend in chloride content has been observed at some of the soil test sites receiving recycled water. The majority of these locations show acceptable levels of chloride that are significantly less than the critical level of 10 meq/L. A level of 10 meq/L of chloride will affect strawberry yields and cause leaf margin burn on other leafy greens. However, there are some sites that have developed chloride levels above the 10 meq/L. It is recommended that the grower's review the chloride levels from their annual fall soil samples and take note of any that exceed 10 meq/L of chloride. Drainage, water quality, and potassium amendments can significantly affect the accumulation of chloride. Growers should consider improving the drainage or checking the status of their tile drains in fields if high levels of chloride are observed. The use of a seawater intruded well (above 350 ppm Cl) to supplement the recycled water will increase the accumulation of

Dale Huss, Chair

Members:

**Monterey County
Environmental Health**

**Monterey County Water
Resources Agency**

**Monterey Regional Water
Pollution Control Agency**

**Growers of Monterey
County Zone 2C**

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chlorides. Lastly, the use of muriate of potash (KCl) should be discontinued and replaced with potassium sulfate or potassium thiosulfate in fields with high chlorides.

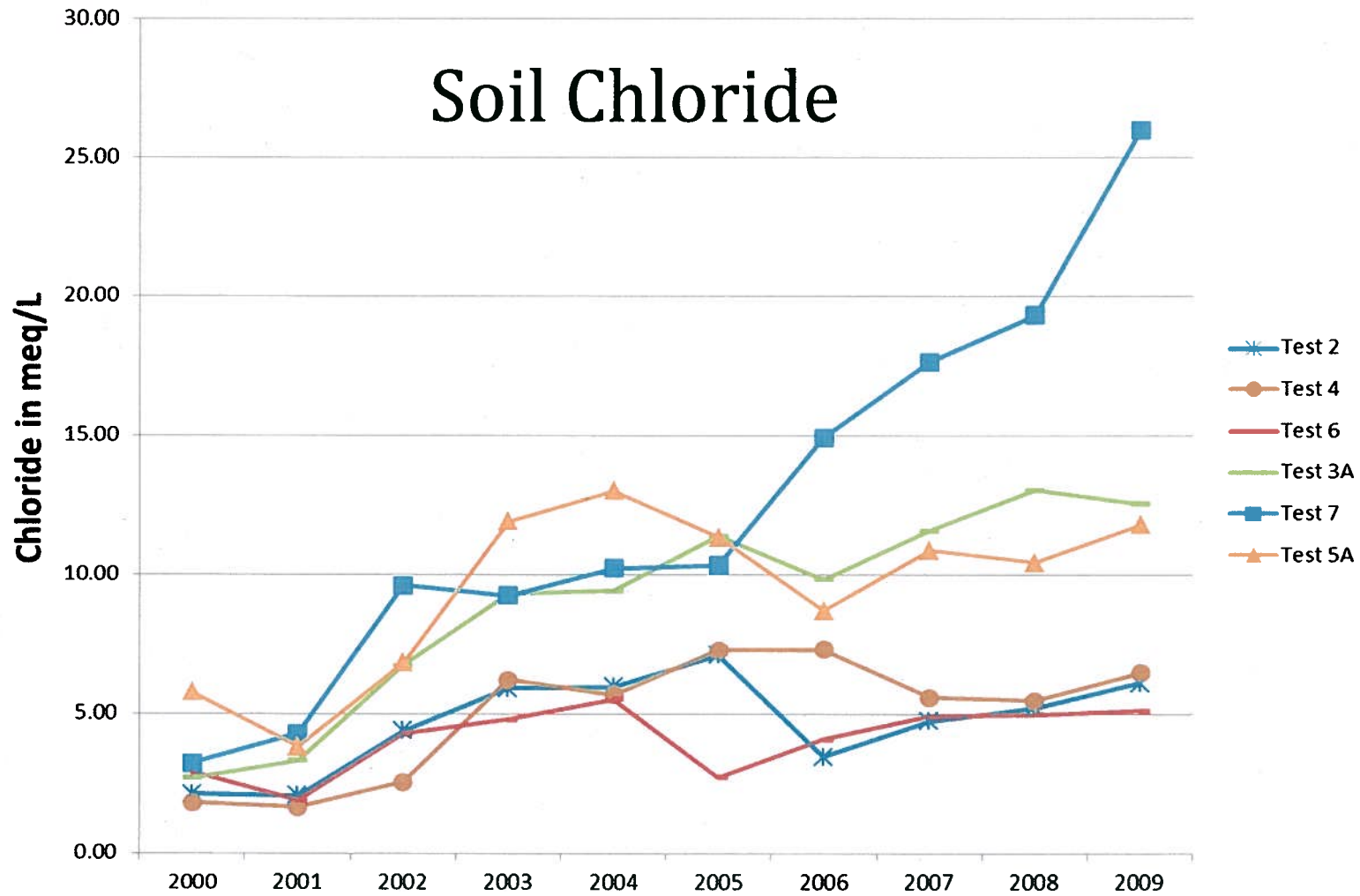
We believe these recommendations are sound and know that all growers in the CSIP area want to maintain the high productivity of the land. The water delivered by the MCWRP is of suitable quality for agricultural use. However, we need to be aware of the salt sensitivity of our crops and amend properly and maintain good drainage. Please feel free to attend the monthly meeting of the Water Quality and Operations committee if you have questions or any further concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Dale Huss", with a long horizontal flourish extending to the right.

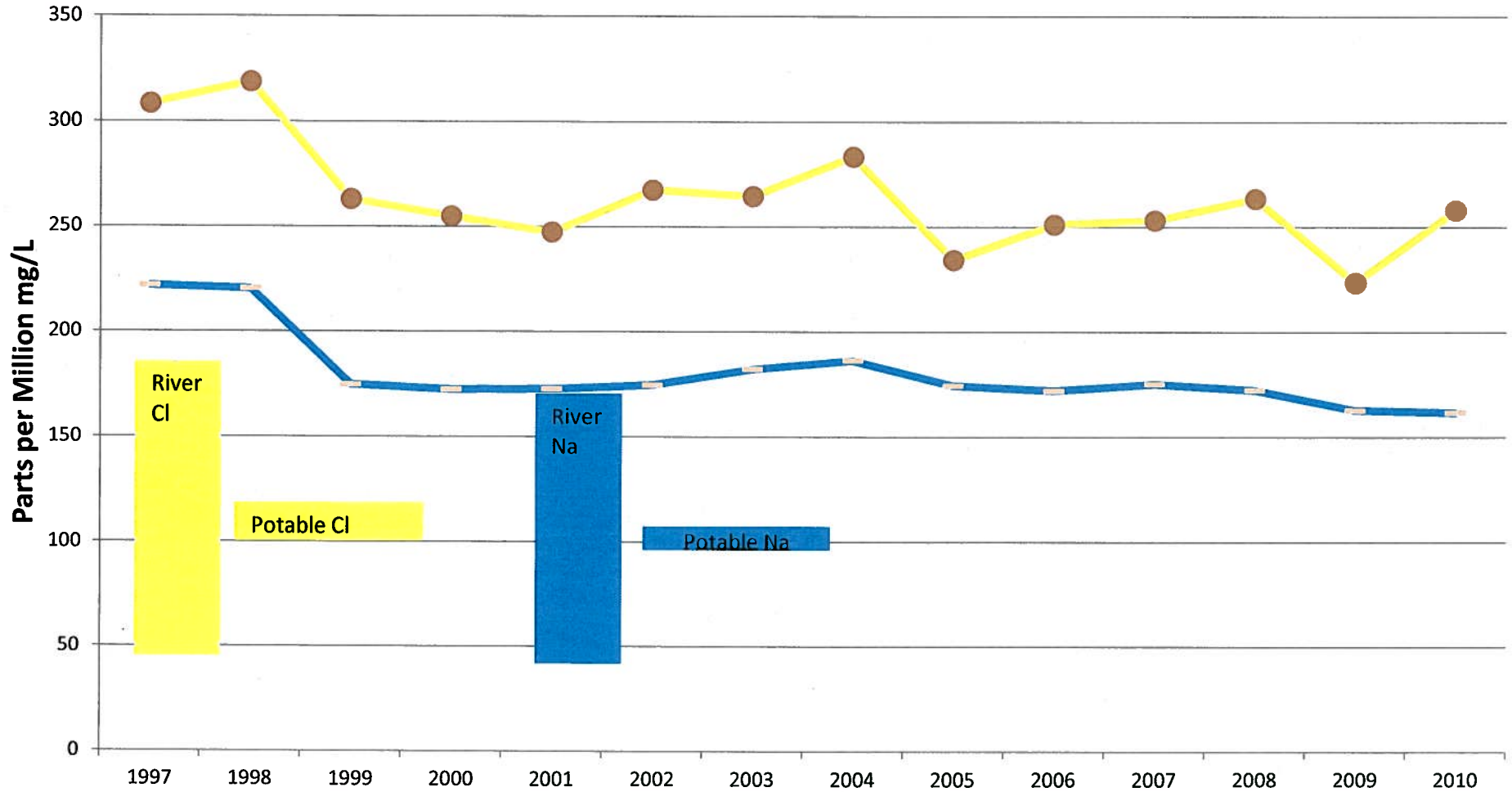
Dale Huss, Chair

Soil Chloride



Recycled Water Salts

● Chloride (ppm) ■ Sodium (ppm)





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MEMORANDUM

TO: RECYCLED WATER COMMITTEE

FROM: KEITH ISRAEL, GENERAL MANAGER

DATE: JUNE 7, 2011

SUBJECT: UPDATE ON REGIONAL WATER PROJECT AND THE
COMMUNITY INVOLVEMENT FORUM

The Regional Desal Project Community Involvement Forum (Forum) is meeting on June 15, 2011 from 6:00 to 8:00 pm at the Seaside Community Center, 220 Coe Avenue, Seaside. The Forum has developed an agenda for the meeting (attached). If you have any questions about this meeting, you can reach Nicholas Dewar, Facilitator, at 415-587-6889 or by email at NDewar@PPCollab.com.

The Forum highlights the Monterey Bay Regional Desalination Project website at www.RegionalWaterProject.org. Attached is an updated Project Implementation Schedule for the project that is available on line at this website: The website also features sections for: Project Description, Project History, Project Library, Cost & Schedule, Public Involvement, and Contact Us. The website and the Forum are good sources of information about the Regional Desalination Project.

➤ **Information only – no action needed.**

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Regional Desalination Project Community Involvement Forum

Agenda

June 15, 2011

6:00 – 8:00 p.m.

Seaside Community Center

220 Coe Avenue, Seaside

1. **Agenda Review** 6:00 p.m.
2. **Agreement on Ground Rules and Other Protocols** 6:05 p.m.
Participants will agree on any necessary ground rules, and discuss the role of the facilitator, and the role of the participants in the Forum.
*Desired outcomes: Agreement on any ground rules necessary for the Forum to be as useful as possible for the participating community members;
Agreement on the role of the Facilitator and of others participating in the Forum so that all participants know what is expected of them.*
3. **Review of Outstanding Items** 6:15 p.m.
The list of outstanding items carried forward from the March meeting will be reviewed (see list below). Team members will select and respond to questions that can be effectively answered quickly. Items that require more time or that are not yet ripe for discussion will be carried forward to a future meeting or addressed in some other way:
 - What opportunities are there to change the Project by, for example, amending the Water Purchase Agreement or the Settlement Agreement?
 - How can the governance of the project be changed to give more control to elected officials?
 - Why are we shifting our waste water to Castroville instead of recycling non-potable water locally?
 - What assumptions have been made in the project design regarding earthquake, tsunami and contamination?
 - What will be done with the Los Padres Dam?
 - What can community members do to move the Project forward?
 - Why have securities experts said that this project is not financeable?
 - How much will financing cost?*Desired outcomes: Clarification of the status of outstanding questions so that participants understand when and how they will be addressed;
Answers to as many as possible of the outstanding questions so that participants are informed about issues that are of interest to them.*
4. **Update on the Regional Desalination Project** 6:30 p.m.
The Project Manager will present a Project update including some of the topics of greatest interest to community groups: the financing agreement, current litigation, and the Project's permitting process. Participants will discuss the topics presented.
*Desired outcomes: Understanding of the general status of the Project;
Understanding of the financing agreement so that participants are informed about the way that financing will affect the progress and costs of the project;
Understanding of the current status of litigation so that participants are informed about the way that the project's schedule is affected by this;
Understanding of the major permits needed by the Project so that participants are informed about the permitting processes and of opportunities for community input.*

5. **General Discussion** 7:05 p.m.
Participants will raise issues of concern regarding water supply and engage in discussion with other participants including the Project's owners and their consultants.
Desired outcomes: Awareness of the issues of concern to participants and Understanding of the differences between the perspectives held by various sections of the community so that participants can constructively discuss these relevant topics.

6. **Planning for the Next Forum Meeting** 7:45 p.m.
Participants will consider the most useful purposes for future meetings of the Forum, suggest topics for focused discussion at the next Forum meeting, and make other suggestions about ways to plan the meeting.
*Desired outcomes: Understanding of participants' suggestions for the role of this Forum so that future meetings may reflect this;
Understanding of topics of interest to participants for consideration in future agendas;
Understanding of any other proposals about ways to plan Forum meetings.*

7. **Meeting Review** 7:55 p.m.
Desired outcomes: Identification and understanding of this meeting's successes and improvement opportunities.

For further information contact Nicholas Dewar 415 587 6889 ndewar@ppcollab.com

Project Implementation Schedule

Regional Desalination Project- Summary Schedule

Task	2011				2012				2013				2014				2015				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Test Wells	Design		Construction																		
Brackish Source Water Wells	Predesign, Permitting, Design								Construction												
Brackish Source Water Pipeline	Predesign, Permitting, Design								Construction												
Desalination Plant	Predesign, Permitting, Design								Construction												
MCWD Product Water Pipeline	Predesign, Permitting, Design								Construction												
CAW Facilities	Predesign, Permitting, Design								Construction												



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MEMORANDUM

TO: RECYCLED WATER COMMITTEE

FROM: KEITH ISRAEL, GENERAL MANAGER

DATE: JUNE 7, 2011

SUBJECT: CONSIDER PREPARATION OF REQUEST FOR PROPOSAL
(RFP) FOR PUBLIC/PRIVATE DEVELOPMENT SUPPORT
FOR GROUNDWATER REPLENISHMENT PROGRAM

With the continuing difficulty to secure Federal or State funding for projects, staff has begun to consider other alternatives to secure the financial support needed to proceed with the groundwater replenishment program.

Last Fall 2010, staff met with representatives from GE Power and Water to discuss the GWR project and at that time they indicated interest in a possible public/private relationship to assist in the developing a plan to proceed.

Before we go much farther with these discussions, it was determined that we determine if there are other organizations that might also be interested in a public/private enterprise that could implement this type of project. Staff will develop and distribute a Request for Proposal (RFP) anticipating that responses could be available for Committee and Board review and consideration by August or September 2011.

RECOMMENDATION: Authorize staff to proceed with an RFP to solicit interest in a public/private partnership to development the Groundwater Replenishment Program.

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