



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Monterey Bay National Marine Sanctuary
99 Pacific Street, Bldg 455a
Monterey, CA 93940

California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108
ATTN: Andrew Barnsdale

November 9, 2012

SUBJ: Comments regarding the Notice of Preparation (NOP) of an Environmental Impact Report for the Monterey Peninsula Water Supply Project (MPWSP)

Dear Mr. Barnsdale:

On behalf of the Monterey Bay National Marine Sanctuary (MBNMS), I am pleased to provide the following comments regarding the NOP of an Environmental Impact Report (EIR) for the Monterey Peninsula Water Supply Project. We understand that California American Water Company seeks a certificate of Public Convenience and Necessity for the project. The MPWSP is comprised of a sea water intake system, a 9 million gallon/day desalination plant, desalinated water storage and conveyance system, and an expanded Aquifer Storage and Recovery facility.

The MBNMS is a federally protected marine area offshore of California's central coast. It stretches from Marin to Cambria and encompasses a shoreline length of 276 miles and 6,094 square miles of ocean. Beginning in 2001, the sanctuary realized that careful planning was important to address the emerging regional issue of desalination. The sanctuary and NOAA's National Marine Fisheries Service released guidelines¹ to ensure that future desalination plants adjacent to the sanctuary are properly sited, designed, and operated to avoid damaging impacts to the marine environment.

F_MBNMS-01

Three sanctuary regulatory prohibitions relate directly to desalination. The first prohibits discharging or depositing any material within sanctuary boundaries. The second prohibits discharging materials outside of sanctuary boundaries that subsequently enter the sanctuary and negatively impact MBNMS resources. The third prohibits activities that cause alteration of the submerged lands of the sanctuary.

Based on the information provided in the NOP, we are concerned about the lack of a federal National Environmental Policy Act (NEPA) process related to this project. We recommend that the CPUC convene a meeting of all potential regulatory agencies to identify roles and responsibilities as they relate to oversight and permitting of this project. We also want to ensure that all project alternatives are sufficiently examined to ensure the least environmental impact is achieved.

F_MBNMS-02

F_MBNMS-03

¹ <http://montereybay.noaa.gov/resourcepro/resmanissues/desalination.html>

Regarding specific issues to be addressed in the EIR, we have the following comments;

- *Surface water Hydrology and Water Quality* – The NOP states that project operations will generate brine, maintenance and cleaning solutions, and other effluents that will be discharged to the Monterey Bay, stormwater system and sanitary sewer. We request that toxicity analysis be conducted to determine the synergistic effects of mixing desalination brine with effluent from wastewater treatment facilities. We also recommend that you ensure the effluent concentrations are consistent with the newly proposed State Water Resources Control Board Ocean Plan requirements for the discharge of brine. F_MBNMS-04
- *Mineral and Energy Resources* - The NOP states that the EIR will evaluate potential impacts to mineral resources associated with facility siting. We'd also like this evaluation to consider impacts to the MBNMS as a result of the installation of the slant wells. The portion of the well bores seaward of the horizontal plane at the mean high tide line will fall within the jurisdiction of the sanctuary and will be subject to sanctuary regulations. F_MBNMS-05
- *Noise* - The NOP states that the EIR will evaluate construction-related noise increases and associated effects on ambient noise levels and the potential for indirect impacts to nearby land uses. We'd like this expanded to include potential impacts on marine organisms due to installation of the slant wells.

We realize that desalination is a leading option to the water supply shortfalls on the Central Coast. It is our hope that proposed desalination projects follow the guidelines developed by the MBNMS and partner agencies to ensure the least impact possible to marine and coastal environments. We are committed to participating in this process and helping to facilitate an efficient and thorough regulatory review. Please contact me at (831) 647-4258 if you would like a more detailed discussion.

Sincerely,



for Paul Michel
Superintendent
Monterey Bay National Marine Sanctuary





United States Department of the Interior

FISH AND WILDLIFE SERVICE
 Ventura Fish and Wildlife Office
 2493 Portola Road, Suite B
 Ventura, California 93003



IN REPLY REFER TO:
 08EVEN00-2013-CPA-0015

November 9, 2012

Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, California 94108

Subject: Comments on the Notice of Preparation of an Environmental Impact Report for the Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale:

This letter provides the U.S. Fish and Wildlife Service's (Service) comments on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Monterey Peninsula Water Supply Project in Monterey County, California. A copy of the NOP was received in our office on October 11, 2012.

The California Public Utilities Commission is preparing the EIR to evaluate effects of the Monterey Peninsula Water Supply Project (MPWSP). The MPWSP is proposed by the California American Water Company (Cal-AM) and would consist of a seawater intake system, desalination plant, water conveyance facilities (e.g., pipelines), and other associated facilities.

The Service's responsibilities include administering the Endangered Species Act of 1973, as amended (Act), including sections 7, 9, and 10. Section 9 of the Act prohibits the taking of any federally listed endangered or threatened species. Section 3(18) of the Act defines "take" to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species.

Exemptions to the prohibitions against take may be obtained through coordination with the Service in two ways. If a project is to be funded, authorized, or carried out by a Federal agency, and may affect a listed species, the Federal agency must consult with the Service pursuant to section 7(a)(2) of the Act. If a proposed project does not involve a Federal agency but may result in the take of a listed animal species, the project proponent should apply to the Service for an incidental take permit pursuant to section 10(a)(1)(B) of the Act.

Andrew Barnsdale

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As it is not our primary responsibility to comment on documents prepared pursuant to the California Environmental Quality Act (CEQA), our comments for the NOP of the EIR will not constitute a full review of project impacts. Rather, they address concerns of potential impacts of the proposed project on species listed under the Act, including the federally endangered Smith's blue butterfly (*Euphilotes enoptes smithi*), Menzies' wallflower (*Erysimum menziesii*), and Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*) and the federally threatened Western snowy plover (*Charadrius nivosus*), California red-legged frog (*Rana draytonii*), and Monterey spineflower (*Chorizanthe pungens* var. *pungens*). We offer the following information and recommendations to aid in the conservation of sensitive wildlife habitats and federally listed species that occur in the proposed project area, and as a means to assist you in complying with pertinent Federal statutes.

We are primarily concerned by the effects of construction and maintenance of the proposed seawater intake system. This system would include eight subsurface slant wells extending offshore into Monterey Bay and pipelines to convey seawater inland for desalination. The NOP identifies the preferred location for this system as "a 376-acre coastal property located north of the city of Marina and immediately west of the CEMEX active mining area." This location is an important nesting and wintering area for the western snowy plover and is occupied by all of the species listed in the previous paragraph (California Natural Diversity Database 2012), except the California red-legged frog. Jacob Martin of my staff has met with Cal-Am, and we understand that they are interested in constructing the system outside of the western snowy plover breeding season and using directional drilling to minimize the impacts of pipeline installation on the Smith's blue butterfly and listed plants. However, we remain concerned about the following points:

- 1) Wintering western snowy plovers would likely be disturbed by construction of the seawater intake system. Although capable of flight and therefore less vulnerable than the eggs and chicks that would be present during breeding season, adult western snowy plovers could be forced to flee construction equipment and thereby expend energy reserves needed for overwintering survival. Disturbance may also force adults to abandon preferred feeding and roosting areas.
- 2) Construction of wells and pipelines may have adverse effects on western snowy plover habitat that last into the following breeding season(s). These effects may include removal of vegetation, kelp, and driftwood, which are important in providing cover for chicks. Removal of kelp and compaction of sand during construction would likely reduce the invertebrate prey base available to western snowy plovers. Construction areas may therefore be abandoned as nesting areas or individuals nesting there may suffer higher levels of predation.
- 3) Given the harsh and dynamic nature of beach environments (shifting sands, wave action, corrosive salt water, etc.) we expect that the seawater intake system would require frequent maintenance at unpredictable times. Such maintenance could produce all of the effects on wintering birds mentioned in items 1 and 2. Eggs or chicks could also be crushed by equipment or abandoned by their parents due to disturbance, if maintenance activities occur during the breeding season.
- 4) We do not currently have sufficient detail on the proposed project to determine if removal of listed plants or Smith's blue butterfly habitat could be avoided through directional drilling.

Andrew Barnsdale

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- 5) Sand mining activities are ongoing within the parcel where the seawater intake system is proposed. These mining operations have been ongoing since before the listing of the western snowy plover under the Act and we have issued no permit for any take they may cause. We recommend that the EIR address the cumulative effects of ongoing mining in conjunction with the proposed project.

F_USFWS-02

The NOP identifies the proposed desalination plant location as “a 46-acre vacant parcel near Charles Benson Road, northwest of the...Regional Wastewater Treatment Plant...” This location is near the Salinas River and within dispersal distance of a locality known to be occupied by the California red-legged frog (California Natural Diversity Database 2012). We recommend that the EIR fully address the potential effects of construction, operation, and maintenance of the desalination plant on this species.

F_USFWS-03

The NOP indicates that the proposed project would include up to 28 miles of conveyance pipelines and water mains and that these facilities would stretch from the proposed desalination plant just south of the Salinas River to the Monterey Peninsula. We do not have sufficient information on the proposed pipelines and water mains to make specific recommendations at this time, but recommend that the EIR fully address their potential effects on species listed under the Act. A list of all species listed under the Act that occur in Monterey County is available at:
<http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action>

F_USFWS-04

The NOP (pages 11 through 13) indicates that several specific alternatives to the proposed project have been identified. We do not have sufficient information on these alternatives to recommend one over another, but request that the EIR include a full comparative analysis of the effects of each alternative on species listed under the Act.

F_USFWS-05

The NOP also indicates that “Locational Alternatives” would be considered in the EIR for the MPWSP, including alternate locations for the seawater intake system. We recommend that the EIR address potential locational alternatives that would place all facilities outside of western snowy plover habitat. We believe that this would be the best way to avoid take of this species.

F_USFWS-06

We appreciate the opportunity to provide comments on the NOP. If you have any questions, please contact Jacob Martin of my staff at (805) 612-2768.

Sincerely,



Diane K. Noda
acting Field Supervisor

REFERENCES CITED

California Natural Diversity Database. 2012. Query of threatened and endangered species occurring on Monterey County.



DRA

*Division of Ratepayer Advocates
California Public Utilities Commission*

505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-2544
Fax: (415) 703-2057

<http://dra.ca.gov>

November 9, 2012

Comments of The Division of Ratepayer Advocates on the Notice of Preparation of the Subsequent Environmental Impact Report for California American Water's Monterey Peninsula Water Supply Project

The Division of Ratepayer Advocates (DRA) respectfully submits the following comments on the scope of the Monterey Peninsula Water Supply Project (MPWSP) environmental review as outlined in the Notice of Preparation issued October 10, 2012. DRA's concerns focus on the following groundwater resource issues: 1) whether or not the proposed slant wells and/or configuration further exacerbate the salt water intrusion and what steps will be implemented to mitigate the salt water intrusion; 2) how the dynamic effects of the density difference between freshwater and seawater will be evaluated in order to make reliable predictions of changes of seawater intrusion; 3) how the proposed project will affect the interfaces and mixing zones for saltwater, brackish water, and freshwater; and 4) what impact the proposed slant well configuration will have on the flow of freshwater and seawater in the aquifer due to the spacing between the wells.

S_CPUC_DRA-01

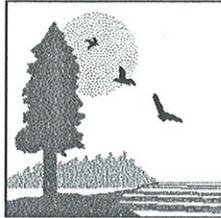
S_CPUC_DRA-02

S_CPUC_DRA-03

S_SPUC_DRA-04

CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202



November 8, 2012

CURTIS L. FOSSUM, Executive Officer

(916) 574-1800 FAX (916) 574-1810

California Relay Service From TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: (916) 574-1890

Contact FAX: (916) 574-1885

File Ref: SCH# 2006101004

California Public Utilities Commission

Attn: Andrew Barnsdale

550 Kearny Street, Suite 800

San Francisco, CA 94108

Subject: Notice of Preparation (NOP) for a Draft Environmental Impact Report (Draft EIR) for the Monterey Peninsula Water Supply Project, Monterey County.

Dear Mr. Barnsdale:

The California State Lands Commission (CSLC) staff has reviewed the subject NOP for a Draft EIR for the Monterey Peninsula Water Supply Project (Project or MPWSP), which is being prepared by California Public Utilities Commission (CPUC). The CPUC is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) because it is considering issuance of a Certificate of Public Convenience and Necessity (CPCN) to California American Water (CalAm) pursuant to Public Utilities Code section 100. The CSLC provides these comments as a trustee agency with responsibility for natural resources held in trust for the people of the State of California which may be affected by a project, as provided in CEQA and the State CEQA Guidelines.¹ The CSLC will act as a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, because the Project will involve work on sovereign lands, the CSLC will act as a responsible agency.

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

¹ The State CEQA Guidelines are found in California Code of Regulations, Title 14, section 15000 et seq. Trustee agencies are designated in section 15386.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

S_CSLC-01
(Con't)

Based on CSLC staff's review of in-house records and mapping, it appears that the proposed Project will extend onto sovereign ungranted lands in the Pacific Ocean. CalAm will be required to submit an application for all portions of the Project extending within the CSLC's leasing jurisdiction. CSLC staff notes that CalAm has already submitted an application for a proposed Slant Test Well Project (Test Well) that the Applicant states is needed to obtain information necessary for Project design.

Project Location and Description

The Project as proposed by CalAm would be located near the Salinas River along the coast in the southern portion of Monterey Bay, in Monterey County. Proposed Project facilities and improvements would include:

- Construction and operation of a seawater intake system consisting of eight 750-foot-long subsurface slant wells extending offshore into the Monterey Bay, and source water conveyance pipelines.
- Construction and operation of a 9-million-gallons-per-day desalination plant including source water receiving tanks, pre-treatment, reverse osmosis, and post-treatment systems, chemical feed and storage facilities, brine storage and discharge facilities, pipelines, pump stations, clearwells, and a terminal reservoir.
- Construction and operation of desalinated water storage and conveyance facilities including pipelines, pump stations, clearwells, and a terminal reservoir.
- Construction and operation of expanded Aquifer Storage and Recovery (ASR) facilities including improvements to the existing Seaside Groundwater Basin ASR, including two additional injection/extraction wells, a pump station, a product water pipeline, a pump-to-waste pipeline, and pump-to-waste treatment.

Environmental Review

Because the CSLC will need to rely on the EIR for issuance of a lease, CSLC staff requests the CPUC consider the following comments and suggestions when preparing the Draft EIR.

1. Project Description. A thorough and complete Project description of all proposed facilities and improvements should be included in the Draft EIR in order to facilitate meaningful environmental review of potential impacts, mitigation measures, and alternatives. The Project description should be as precise as possible in describing

S_CSLC-02

the details of all allowable activities (e.g., types of equipment or methods that may be used, maximum area of impact or volume of sediment removed or disturbed, seasonal work windows, locations for material disposal, etc.), as well as the details of the timing and length of activities. Thorough descriptions will facilitate CSLC staff's determination of the extent and locations of its leasing jurisdiction, make for a more robust analysis of the work that may be performed, and minimize the potential for subsequent environmental analysis to be required.

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(Con't)

2. Relationship of Coastal Water Project (CWP) EIR to MPWSP Draft EIR. The NOP on page 2 states that “[s]ubsequent to approval of the Regional Project CalAm withdrew its support for the Regional Project in January 2012. As a result, in April 2012, CalAm submitted Application A.12-04-019 to the CPUC for the Monterey Peninsula Water Supply Project (MPWSP).” The Draft EIR should clearly explain the relationship between the CPW EIR and MPWSP Draft EIR. CSLC staff recommends using tables and diagrams to illustrate relationships among past, present, and future components of the proposed Project and other similar Projects in the area. The Draft EIR should also clearly explain the relationship between the “DeepWater Desal Alternative” and the “People’s Moss Landing Water Desalination Project (People’s Project) Alternative” on page 12 of the NOP and should explain how these proposed or other alternatives meet CalAm’s project objectives while reducing or avoiding one or more impacts.

S_CSLC-03

Biological Resources

3. Mitigation Measures. In order to avoid the improper deferral of mitigation, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing “performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way” (State CEQA Guidelines, §15126.4, subd. (b)).

S_CSLC-04

4. Sensitive Species Database Inquiries. The CPUC should conduct queries of the California Department of Fish and Game’s (CDFG) California Natural Diversity Database (CNDDDB) and U.S. Fish and Wildlife Service’s (USFWS) Special Status Species Database to identify any special-status plant or wildlife species that may occur in the Project area. The Draft EIR should analyze the potential for such species to occur in the Project area and, if impacts to special-status species are found to be significant, identify adequate mitigation measures. CSLC staff recommends early consultation with these agencies to minimize Project impacts on protected species.

S_CSLC-05

5. Underwater Noise. The NOP does not address whether Project-related activities may generate underwater/below seafloor noise. The Draft EIR should evaluate, based on the activities required to construct and operate the Project, potential noise and vibration impacts on fish, marine mammals, and birds from Project-related activities in water or below the seafloor, on the beach, and for land-side supporting structures. Mitigation measures could include species-specific work windows as defined by CDFG, USFWS, and the National Oceanic and Atmospheric

S_CSLC-06

Administration's Fisheries Service (NOAA Fisheries). Staff recommends early consultation with these agencies to minimize the impacts of the Project on sensitive species.

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(Con't)

6. Pre-treatment and Post-treatment Procedures. The Draft EIR should include detailed discussions of possible environmental impacts from procedures and chemical treatments of pre-treatment of seawater and post-treatment of desalinated water. These discussions should also include possible environmental impacts from such treatments and how they may possibly impact the groundwater aquifers.

S_CSLC-07

7. Injection of Desalinated Water into the Existing Seaside Groundwater Basin (Basin). Page 5 of the NOP explains that the primary function of the two additional proposed expanded ASR wells would allow "...desalinated water to be injected into the Seaside Groundwater Basin for subsequent distribution to customers..." The Draft EIR should include detailed discussion and possible environmental impacts of the following:

- Current conditions of the Basin;
- Procedures of injecting into the Basin;
- Possible geological impacts of injections;
- Possible impacts to hydrology in the Basin;
- Duration of leaving injected water in the Basin; and
- Procedures of drawing water out of the Basin.

S_CSLC-08

The above stated Project components may be most effectively presented by using diagrams and images related to different stages and conditions of the Basin. CSLC staff also recommends discussions of the most recent scientific data supporting the above proposed activities for better evaluation of possible environmental impacts.

Public Trust

8. Public Trust and Recreation. If the Project lies within the State-owned sovereign land, then it is subject to the Public Trust. Members of the public have the benefit of use consistent with the Public Trust which includes, but is not limited to, navigation and recreation such as rafting, sailing, rowing, fishing, fowling, bathing, and other water-related recreational uses. The Draft EIR should discuss the Project's potential to restrict or impede the public's use and enjoyment of the Pacific Ocean or to otherwise affected Public trust resources and values; for example, the Draft EIR should evaluate impacts associated with the brine discharge plume on Public Trust resources and values. If any impacts are determined to be significant, the CPUC should identify measures to avoid or reduce them as feasible.

S_CSLC-09

The Draft EIR should also discuss how the members of the public will be notified of Project-related activities in the Project area. CSLC staff recommends posting signage, in advance, at and around the Proposed Project; any additional discussions of notification and operational or construction practices should be addressed in the Draft EIR in order to minimize the impact to members of the public.

Land Use

9. Conflicts with Specially Designated Lands. The proposed Project is located within the boundaries of the Monterey Bay National Marine Sanctuary and in the vicinity of Marine Protected Areas. The Draft EIR should evaluate potential land use conflicts and other direct or indirect impacts resulting from Project construction and operation, and should list the appropriate agency jurisdictions that were consulted to ensure any such potential impacts are avoided or reduced to the extent feasible.

S_CSLC-10

Cultural Resources

10. Submerged Cultural Resources. The NOP on page 9 states that “the EIR will evaluate potential impacts on historic, archaeological, and paleontological resources, and human remains.” However, it does not state how the Draft EIR will approach this analysis. The CSLC maintains a shipwrecks database that can assist with this analysis. CSLC staff requests that the CPUC contact Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter to obtain shipwrecks data from the database and CSLC records for the Project site. The database includes known and potential vessels located on the State’s tide and submerged lands; however, the locations of many shipwrecks remain unknown. Please note that any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant.
11. Title to Resources. The Draft EIR should also mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the CSLC. CSLC staff requests that the CPUC consult with Senior Staff Counsel Pam Griggs at the contact information noted at the end of this letter, should any cultural resources on state lands be discovered during construction of the proposed Project.

S_CSLC-11

Climate Change

12. Greenhouse Gases. A greenhouse gas (GHG) emissions analysis consistent with the California Global Warming Solutions Act (AB 32) and required by the State CEQA Guidelines should be included in the Draft EIR. This analysis should identify a threshold for significance for GHG emissions, calculate the level of GHGs that will be emitted as a result of construction and ultimate build-out of the Project, determine the significance of the impacts of those emissions, and, if impacts are significant, identify mitigation measures that would reduce them to the extent feasible.
13. Sea Level Rise. The Draft EIR should also consider the effects of sea level rise on all resource categories potentially affected by the proposed Project. At its meeting on December 17, 2009, the CSLC approved the recommendations made in a previously requested staff report, “A Report on Sea Level Rise Preparedness” (Report), which assessed the degree to which the CSLC’s grantees and lessees

S_CSLC-12

S_CSLC-13

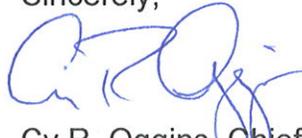
have considered the eventual effects of sea level rise on facilities located within the CSLC's jurisdiction. (The Report can be found on the CSLC's website, <http://www.slc.ca.gov>.) One of the Report's recommendations directs CSLC staff to consider the effects of sea level rise on hydrology, soils, geology, transportation, recreation, and other resource categories in all environmental determinations associated with CSLC leases.

Please note that, when considering lease applications, CSLC staff is directed to (1) request information from applicants concerning the potential effects of sea level rise on their proposed projects, (2) if applicable, require applicants to indicate how they plan to address sea level rise and what adaptation strategies are planned during the projected life of their projects, and (3) where appropriate, recommend project modifications that would eliminate or reduce potentially adverse impacts from sea level rise, including adverse impacts on public access.

Thank you for the opportunity to comment on the NOP for the Project. As a responsible agency, the CSLC will need to rely on the EIR for its review and consideration of a lease amendment as specified above and, therefore, we request that you consider our comments when preparing the Draft EIR. Please send additional information on the Project to the CSLC staff identified below as plans become finalized.

Please send copies of future Project-related documents, including electronic copies of the Draft EIR, Final EIR, CEQA Findings, and Notice of Determination when they become available, and refer questions concerning environmental review to Afifa Awan, Environmental Scientist, at (916) 574-1891 or via e-mail at afifa.awan@slc.ca.gov. For questions concerning archaeological or historic resources under CSLC jurisdiction, please contact Senior Staff Counsel Pam Griggs at (916) 574-1854 or via email at pamela.griggs@slc.ca.gov. For questions concerning CSLC leasing jurisdiction, please contact Drew Simpkin, Public Land Management Specialist, at (916) 574-2275, or via email at drew.simpkin@slc.ca.gov.

Sincerely,



Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
A. Awan, DEPM, CSLC
P. Griggs, Legal, CSLC
S. Haaf, Legal, CSLC
D. Simpkin, LMD, CSLC

S_CSLC-13
(Con't)

From: Onciano, Jacqueline x5193 [oncianoj@co.monterey.ca.us]
Sent: Tuesday, November 13, 2012 3:22 PM
To: MPWSP-EIR
Subject: FW: NOP EIR for Monterey Peninsula Water Supply Project.

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon, Mr. Barnsdale:

I inadvertently missed forwarding the email below.

Kind regards,

Jacqueline R. Onciano

From: Martinez, Raul R. x4628
Sent: Tuesday, November 13, 2012 10:29 AM
To: Onciano, Jacqueline x5193
Subject: FW: NOP EIR for Monterey Peninsula Water Supply Project.

From: Martinez, Raul R. x4628
Sent: Monday, November 05, 2012 3:46 PM
To: Onciano, Jacqueline x5193
Cc: Engineer, Saba 755-4940; Adlawan, Arturo A. x4823
Subject: NOP EIR for Monterey Peninsula Water Supply Project.

Hi Jacqueline,
The Public Works Department has received the Notice of Preparation of a Draft Environmental Impact Report for the Monterey Peninsula Water Supply Project and has the comments below:

SUBJECT: RESPONSE TO NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE MONTEREY PENINSULA WATER SUPPLY PROJECT.

Dear Andrew Barnsdale,

We have received your Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Monterey Peninsula Water Supply Project. As the Public Works Department for Monterey County, we are very interested to know about the project's potential impacts to the surrounding traffic circulation network, especially given the severe congestion currently experienced in the vicinity of the project.

We offer the following information and recommendations to aid you with the environmental review process:

- Any mitigation measure(s) proposed by the project shall conform to regional planning documents, such as the Monterey County General Plan and TAMC's Regional Transportation Plan.

- The methodologies used to calculate the Levels of Service (LOS) shall be consistent with the methods in the latest edition of the Highway Capacity Manual (2010 HCM). L_CoMontereyPW-02
- The Traffic Study shall identify mitigation measures for all traffic circulation impacts on County roads. The significance criteria for County roads is described as follows:
 - Signalized Intersection: A significant impact would occur if an intersection operating at LOS A, B, C, or D degrades to E, F. For intersections already operating at unacceptable levels E, a significant impact would occur if a project adds 0.01 during peak hour or more to the critical movement’s volume-to-capacity ratio. If the intersection is already operating at LOS F any increase (one vehicle) in the critical movement’s volume-to-capacity ratio is considered significant. L_CoMontereyPW-03
 - Unsignalized Intersections: A significant impact would occur if any traffic movement has LOS F or any traffic signal warrant is met.
 - Road segment: A significant impact would occur if a roadway segment operating at A through E degrades to a lower level of service of E, or F. If a segment is already operating at LOS F any increase during peak hour (one vehicle) is considered significant.
- The EIR/ Traffic Study should address the project’s impacts on all county, regional, and city roadways. The geographic area covered in the scope of the traffic study shall be of sufficient size to adequately identify all of the project’s impacts. L_CoMontereyPW-04
- In developing the cumulative scenarios for the traffic forecasts, trip distributions and traffic analysis, should be consistent with regional traffic model projections, i.e. AMBAG model. L_CoMontereyPW-05
- At a minimum the following project scenarios should be analyzed: Existing Conditions, Existing plus Project, Background, Background plus project, Cumulative No Project, and Cumulative plus Project. L_CoMontereyPW-06
- A thorough pavement condition analysis and corresponding mitigation measures need to be included in the EIR, should the project generate a significant amount of heavy truck traffic on County roads, i.e. increases in the Traffic Index (TI). L_CoMontereyPW-07
- The report should address the needs and benefits of providing pedestrian/ bicycle facilities. L_CoMontereyPW-08
- The traffic report shall disclose all project’s access points and analyze the effects on county, cities, and regional roadway systems. L_CoMontereyPW-09

Thank you for considering our comments. We also look forward to reviewing and commenting on the Draft Environmental Impact Report. Should you have any further questions please call Saba Engineer at (831) 755-4940 or Raul Martinez at (831) 755-4628.

Raul Martinez
 Assistant Engineer
 Community Development/ Transportation Section
 Department of Public Works
 County of Monterey
 168 W. Alisal Street, 2nd Floor
 Salinas, CA 93901
 Direct: (831) 755-4628
 Fax: (831) 755-4958
www.co.monterey/publicworks/

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MBUAPCD

Monterey Bay Unified Air Pollution Control District
Serving Monterey, San Benito, and Santa Cruz Counties

L_MBUAPCD

24580 Silver Cloud Court
Monterey, CA 93940
PHONE: (831) 647-9411 • FAX: (831) 647-8501

November 6, 2012

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108
Email: MPWSP-EIR@esassoc.com

SUBJECT: Cal-Am Monterey Peninsula Water Supply Project NOP of an EIR

Dear Mr. Barnsdale:

Thank you for providing the Monterey Bay Unified Air Pollution Control District (Air District) the opportunity to comment on the above-referenced document. The Air District has reviewed the document and recommends using the Air District's 2008 CEQA Guidelines to evaluate air quality impacts. The guidelines can be found here: <http://www.mbuapcd.org/programs/planning>.

L_MBUAPCD-01

Best regards,

Amy Clymo
Supervising Air Quality Planner
(831) 647-9418 ext. 227 or aclymo@mbuapcd.org

cc: David Craft, MBUPCD Air Quality Engineer/Planner

MONTEREY COUNTY RESOURCE MANAGEMENT AGENCY



Planning Department

Mike Novo, AICP, Director of Planning

168 West Alisal Street, 2nd Floor
Salinas, CA 93901
(831) 755-5025
Fax: (831) 757-9516
www.co.monterey.ca.us/rma

November 9, 2012

Email & U.S. Mail

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

RE: Notice of Preparation – CalAm Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale:

Thank you for the opportunity to comment on the Notice of Preparation of an Environmental Impact Report (EIR) for the Monterey Peninsula Water Supply Project (MPWSP). In reviewing the NOP we suggest that the EIR address and analyzed the proposed MPWSP project for consistency with the 2010 Monterey County General Plan and the Monterey County Local Coastal Program.

L_MCRMA-01

We look forward to reviewing the EIR.

Sincerely,

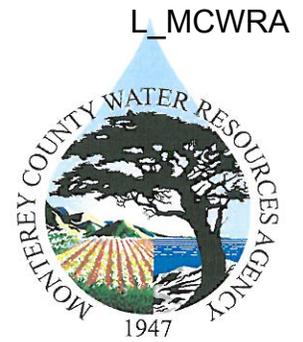
Jacqueline R. Onciano
Planning Services Manager
Long Range Planning

MONTEREY COUNTY

WATER RESOURCES AGENCY

PO BOX 930
SALINAS, CA 93902
(831)755-4860
FAX (831) 424-7935

DAVID E. CHARDAVOYNE
INTERIM GENERAL MANAGER



STREET ADDRESS
893 BLANCO CIRCLE
SALINAS, CA 93901-4455

November 9, 2012

TRANSMITTED VIA ELECTRONIC AND U.S. MAIL

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Dear Mr. Barnsdale:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Environmental Impact Report (EIR) on the Cal-Am Monterey Peninsula Water Supply Project (MPWSP). The Monterey County Water Resources Agency (Agency) is submitting these comments to the NOP process to be sure that the Agency's rights and privileges are not diminished when the MPWSP is implemented and that the EIR accordingly addresses Agency concerns.

With any type of water supply project, the Agency wants to be sure that solutions implemented by the Agency, as well as any rights the Agency has, are not harmed in any way. The Agency has been working on the solution to seawater intrusion (SWI) for over 50 years. Therefore, concerns have arisen about using wells as source water for the MPWSP.

The Agency respectfully requests that, to effectively evaluate the effects of the MPWSP on SWI, the final document produced address the following:

- The development and implementation of a monitoring well network for water levels and water quality

A monitoring well network will provide the data necessary to evaluate the MPWSP's effect on the Salinas Valley Ground water Basin (Basin). This monitoring well network would be robust enough to assess water level and water quality impacts from the MPWSP on the Basin. The Agency is requesting a ground water monitoring well network be developed and implemented as part of the MPWSP. Agency staff can be provided to help design an acceptable monitoring well network.

- Water Rights in the Basin
The final document should address water rights concerns related to the Basin.

Mr. Andrew Barnsdale

Page 2

November 9, 2012

- Address concerns related to the Agency Act

The Agency is in place as a result of legislative action at the State level. The Agency Act defines the Agency's rights and privileges, and said rights and privileges cannot be harmed as a part of the MPWSP implementation. Actions taken as part of the MPWSP must not be in conflict with the Agency or the Agency Act.

L_MPWRA-03

- Agency requests contingency plans in case slant wells are not a viable choice for MPWSP source water.

When planning a project, contingency development is extremely prudent, and in case the slant wells prove not to be a viable source of water for the MPWSP, then contingencies should be developed and evaluated to allow comparison by stakeholders.

L_MCWRA-04

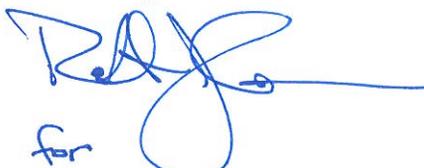
- Agency requests access to modeling data and supporting information

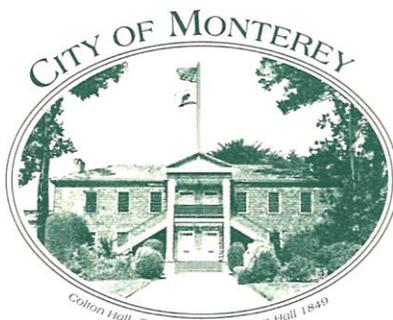
The Agency requests that any model or modeling data be provided to the Agency as part of the MPWSP. The Agency manages the water resources of Monterey County, and any tool that is developed that could help us with our charge would be beneficial and greatly appreciated.

L_MCWRA-05

Thank you again for the opportunity to comment on the MPWSP NOP. If there are any questions regarding this submittal or you would like to consult with the Agency further as you prepare the EIR, please call Robert Johnson at 831.755.4860.

Sincerely,


for
DAVID CHARAVOIGNE



October 22, 2012



Mayor:
CHUCK DELLA SALA

Councilmembers:
LIBBY DOWNEY
JEFF HAFERMAN
NANCY SELFRIDGE
FRANK SOLLECITO

City Manager:
FRED MEURER

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

RE: California American Water Company Monterey Peninsula Water Supply Project-EIR

Dear Mr. Barnsdale,

The City of Monterey has reviewed the proposed California Environmental Quality Act (CEQA) Notice of Preparation (NOP) for the California American Water Company Monterey Peninsula Water Supply Project Environmental Impact Report (MPWSP-EIR).

The City supports studying a full-range of alternatives including: the 5.4 mgd Desalination Plant with Groundwater Replenishment, DeepWater Desal Alternative, People's Moss Landing Water Desalination Project, Conservation Alternative and Locational Alternatives. It is important that any viable alternative is included in the analysis to facilitate an open dialogue and decision-making process.

L_Monterey-01

The City encourages that the California Public Utilities Commission (CPUC) carefully consider the type of CEQA document that will be prepared. It is unclear from the NOP whether it will be a Program EIR or Project EIR. It is abundantly clear that the community needs full environmental analysis of all the alternatives at the project-specific level to adequately decide how to proceed.

L_Monterey-02

L_Monterey-03

The NOP (page 10) states, "To comply with the CEQA-Plus requirements under the CWSRF Guidelines, the EIR will include information to support federal consultations under Section 106 of the National Historic Preservation Act, Section 7 of the Federal Endangered Species Act, the Federal Clean Air Act General Conformity Rule, and any other applicable federal consultations.

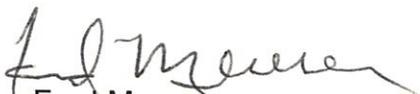
L_Monterey-04

If it is determined through the scoping process that additional federal review is required, CPUC will coordinate with the appropriate federal agency to comply with NEPA." At the local government level, it is unclear if the CEQA-Plus requirement will fulfill the project's responsibilities pursuant to the National Environmental

Protection Act. The City encourages the CPUC to prepare a comprehensive document that will address the required CEQA and NEPA issues. If this should be a joint EIR/EIS, we recommend that it be considered at the beginning.

↑
L_Monterey-04
(Con't)

Sincerely,


Fred Meurer
City Manager



OFFICE OF MAYOR & CITY MANAGER
590 PACIFIC STREET, ROOM 1
MONTEREY, CA 93940

YOM

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

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November 8, 2012

Mr. Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, CA 94108

Subject: Monterey Peninsula Water Supply Project (Application A.12-04-019)

Dear Mr. Barnsdale:

The Monterey Peninsula Water Management District (MPWMD or District) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a subsequent Environmental Impact Report (EIR) for the Monterey Peninsula Water Supply Project (MPWSP) proposed by California American Water Company (Cal-Am). The District is responsible for the integrated management of water resources within its boundaries, which includes most of the service area of Cal-Am's main water distribution system in the Monterey Peninsula area. The District's comments are presented below.

In addition, the District is a Responsible Agency under CEQA. Should the California Public Utilities Commission (CPUC or Commission) certify an EIR and issue a Certificate of Public Convenience and Necessity (CPCN), the District will consider an amendment to Cal-Am's existing permit from MPWMD for its water distribution system. In this capacity, the District will rely on the EIR certified by the CPUC in order to issue an amendment.

L_MPWMD-01

Alternatives Should be Evaluated at the "Project Level" – While CEQA guidelines (Sec. 15126.6(d)) do not require project alternatives to be evaluated at the same level of detail as the proposed project, we believe that in this case it is warranted. The proposed DeepWater Desal project and the People's Moss Landing desalination project continue to advance their progress and have the potential to be economically competitive or superior to the Cal-Am proposal. The Groundwater Replenishment Project in conjunction with a smaller desal project continues to be the community's preferred alternative. These project alternatives should be evaluated with the same level of detail that the EIR examines the proposed project at (i.e., the "project level"). Given the timelines established by the State Water Resources Control Board's (SWRCB) cease and desist order (WRO 2009-0060 as revised by WRO 2010-0001), it is imperative that the EIR evaluate all potential projects so that the Commission's CPCN addresses the most appropriate project for the Peninsula.

L_MPWMD-02

Identify and Incorporate New Data for Alternatives – The descriptions of the project alternatives in the NOP appear out of date or do not accurately reflect the current configuration of some of the alternatives. The District urges you to directly contact the project proponents to gather new information. Proponent information is as follows:

L_MPWMD-03

DeepWater Desal, LLC
 Brent Constantz

www.deepwaterdesal.com
 brent@dwdesal.com

831-632-0616

Peoples' Moss Landing Desal
George Schroeder

www.thepeoplesmosslandingdesal.com
ddgeo@sbcglobal.net

831-601-4878

Additional information is posted at the following website: <http://www.mprwa.org/mprwa/>

↑ L_MPWMD-03
(Con't)

Early Determination of NEPA Requirements – It has been reported that the Monterey Bay National Marine Sanctuary believes it has regulatory authority over the proposed slant wells for desalination feed water. Whether that ultimately proves to be true, the District urges that you make an early determination if the project requires federal approvals and if so immediately structure the scope to encompass a joint EIR/EIS document.

L_MPWMD-04

Groundwater Replenishment Impacts Considered – Although the Groundwater Replenishment (GWR) project is on a path to perform a separate CEQA process, its impacts should be considered as they relate to the proposed desalination facility. That is, GWR allows for a smaller desalination facility. In so doing, several environmental benefits result: (a) reduced wastewater discharge to Monterey Bay, (b) reduced brine discharge to the Bay, (c) reduced energy consumption and carbon footprint (GWR uses 1/8th to 1/10th the energy of desalination), (d) fewer wells in the coastal dune habitat initially, and (e) fewer replacement wells going forward.

L_MPWMD-05

Sizing of Project Capacity – The District believes that project sizing should be limited to replacement of the unlawful diversions from the Carmel River and the reductions in pumping imposed by the Seaside Basin adjudication. However, consideration must also be given to replenishment of the Seaside Groundwater Basin, economic recovery, and Cal-Am delivery system reliability. Total production capacity must provide enough flexibility to satisfy all of these requirements.

L_MPWMD-06

The desired rate of replenishment of the Seaside Basin has not yet been determined by the Watermaster, hence the EIR should address alternative scenarios. Recently, Cal-Am proposed replenishment of 350 acre-feet per year (AFY) for 50 years, a rate which would require no additional capital investment in infrastructure. However, it is unknown where the freshwater/seawater interface actually lies, thus it is difficult to predict if pumping at the natural safe yield determined by the adjudication is, or is not, exacerbating seawater intrusion, or if the adjudication-imposed ramp-down to natural safe yield will be reached before seawater intrusion occurs. Given that water levels in the primary aquifer in the coastal areas of the basin are below sea level, it is quite possible that pumping even at reduced rates may induce seawater intrusion. If all pumping were to cease, then Cal-Am's 2021 production limit of 1,474 AFY would allow in lieu recharge (natural inflows) to replenish Cal-Am's deficit in just under twelve years. That would require an increase in water from other sources, such as the desalination plant. In lieu recharge can be augmented by injection at Aquifer Storage and Recovery (ASR) or GWR sites, but that would reduce the production from those lower-cost resources, and the current permit regime for ASR would not allow it. Therefore, the replenishment solution might be somewhere in between the 12-year and 50-year scenarios, but would likely require additional desal plant capacity and/or other capital investment.

L_MPWMD-07

Economic recovery concerns the resurgence of the hospitality and tourism industry as it relates to existing capacity in hotels, restaurants, and other visitor-serving facilities. The hospitality industry is a \$2 billion per year business, providing 22,000 jobs in Monterey County, most on the Peninsula. Occupancy levels for the 1998-2001 period, based on four full service properties in Monterey and one full service property in downtown Carmel, indicated a weighted average occupancy rate of 74.83%. The key months of June through October consistently achieved occupancies from 78% to a high of over 90% during those "best years" for the Peninsula. For the year 2011, occupancy was below 68%. If the economy should once again fuel an increase in occupancy rates, then non-residential water use would increase. The

L_MPWMD-08

“commercial” sector accounts for 27% of Cal-Am consumption. Hence, project sizing must be able to accommodate an increase in water use based on the in situ number of rooms and seats, but under an improving economic climate. This must be distinguished from water for legal lots of record or general plan build-out.

L_MPWMD-08
(Con't)

Reliability must be accommodated in the project sizing. The Cal-Am proposal already has the plant operating at a very high capacity factor in general. The plant size must have sufficient redundancy to meet outages and required maintenance, as well as satisfy peak day and peak month demand.

L_MPWMD-09

Sizing of “In-Ground” Components – A significant amount of new and upgraded conveyance facilities will be required in order to serve water to the Monterey Peninsula from proposed desalination facilities located in either Marina or Moss Landing. Installation of conveyance facilities associated with a desalination project will be a large percentage of the overall cost. The CPUC should consider sizing and construction of conveyance facilities that would not only supply a replacement level of water, but allow additional desalinated water to be delivered for future growth or unforeseen changes in the availability of Cal-Am’s existing water supplies. It should be noted that MPWMD is not advocating that the CPUC consider sizing production facilities at this time for future growth. Any decision to increase the production capability of a desalination project above what is necessary for replacement supplies should be considered as a separate decision; however, the CPUC should recognize that once replacement supply projects are complete, it is likely that additional water supply projects will be proposed that will require more conveyance capacity than what would be associated with a replacement supply level.

Retrofitting or expanding conveyance infrastructure once it is in place is one of the more expensive components in a water supply project. It is likely that the marginal cost of increasing the size of conveyance facilities for the desalination project is far less than the net present value of new facilities in the future to expand conveyance. In addition to a future growth component, it is clear that future supplies from sources within the existing Cal-Am system (i.e., Carmel River Basin and Seaside Groundwater Basin) are limited and that those sources may be subject to further restriction below the level of current legal authorized use. It is likely that future water supplies above and beyond existing replacement needs will come from sources outside of the existing Cal-Am system, such as from the proposed desalination project. Therefore, the CPUC should consider increasing the size of conveyance facilities to meet some or all of the following contingency needs:

L_MPWMD-10

Future Build-Out Demand. Based on input from Monterey Peninsula jurisdictions, MPWMD estimated in 2006 that 4,545 AFY in additional new water supplies in excess of replacement supplies will be necessary to meet legal lots of record and General Plan build-out estimates for the period 2006 to 2026. Once replacement supplies are constructed, it is likely that there will be demand for a new water supply to satisfy at least a portion of the estimated 20-year build-out demand.

Potential loss of Carmel River diversion rights. Cal-Am depends on Carmel River diversion rights at Los Padres Dam and Reservoir for 2,179 AFY. In 1995, Cal-Am’s diversion right at this location was reduced (due to siltation) to its current level from 3,030 AFY by SWRCB, which retains continuing jurisdiction over this diversion right. This reservoir is located in a watershed subject to unpredictable and episodically high rates of erosion. The long-term average siltation rate is 21 AFY. Recently, the National Marine Fisheries Service (NMFS) published *Public Review Draft South-Central California Coast Steelhead Recovery Plan September 2012*. That plan identifies removal of Los Padres Dam as a critical recovery action for Carmel River steelhead (see Table 10-3). Although the NMFS plan does not describe a timetable or method for removal of Los Padres Dam, if Cal-Am were required to remove this dam or substantially modify

it to pass steelhead, the license to divert the flow of the Carmel River could be reviewed by SWRCB and changed. A reduction in diversion right or change in diversion season could require Cal-Am to seek additional supplies from outside of the existing resource system in order to meet customer demand.

↑
L_MPWMD-10
(Cont)

In March 2012, Cal-Am indicated that increasing pipeline conveyance from 8,800 AFY to 12,500 AFY would require an increase in pipeline pressure at the plant of less than 10 psi and less than 100 horsepower. However, this change translates to almost 75kW or 600,000 kWh/year at a 90% capacity factor. At energy costs of \$0.15/kWh, that is an additional \$90,000 per year in energy costs alone. More importantly, the effects from use of carbon fuels to increase conveyance should be considered.

L_MPWMD-11

Groundwater Impacts – Attachment 3 to the April 23, 2012 Direct Testimony of Richard C. Svindland is a memorandum from RBF Consulting which details proposed operations of the Cal-Am desalination facility. Tables 2 and 3 of the memorandum show monthly average flows into and out of the Seaside Groundwater Basin from the desalination facility, GWR, and ASR. To date, there has not been sufficient data presented to address the following issues:

L_MPWMD-12

1) Sourcewater mixing – Carmel River water diverted to ASR generally has 300 mg/L TDS (total dissolved solids) and 26 mg/L Chloride and native Seaside Basin groundwater (Santa Margarita aquifer) is generally 600 mg/L TDS and 120 mg/L Chloride. What will desalinated water and GWR water TDS and Chloride levels be and will the mixing of these sources yield adequate water quality within the basin?

2) Potential for seawater intrusion – does the hydrogeology of the basin permit operating as proposed with no impacts to seawater intrusion or changes in the production capacity of existing well owners? e.g., Will production only occur from injection sites, or will production occur from wells at different locations from injection? What are the impacts to water quality and quantity in the basin from these operational alternatives?

L_MPWMD-13

MPWMD believes there is a need for mixing studies, hydrogeology flow and operations modeling, and hydraulic analyses to demonstrate impacts. The EIR should address these issues.

Thank you for the opportunity to comment on the NOP. We trust that our comments and concerns will be addressed in the Draft EIR for the project.

Sincerely yours,

David J. Stoldt
General Manager

cc: MPWMD Board of Directors
D. Laredo



CITY OF PACIFIC GROVE

300 Forest Avenue
Pacific Grove, CA 93950

November 8, 2012

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

RE: CPUC Application 12-04-019
Subj: Notice of Preparation for Environmental Impact Report

Dear Mr. Barnsdale:

This City of Pacific Grove ("City") is a party to the CPUC's consideration of proposed Monterey Peninsula Water Supply Project. The City is also a partner with Moss Landing Commercial Park, LLC for the People's Project as well as the sponsor and proponent of three small water projects designed to replace potable water now used for landscaping and other water uses in Pacific Grove and surrounding areas with reclaimed water.

The City has reviewed the California Public Utilities Commission ("CPUC") Notice of Preparation of an Environmental Impact Report ("EIR") for the California American Water Company's ("Cal-Am") proposed Monterey Peninsula Water Supply Project, and respectfully requests the EIR address the following comments:

1. Last paragraph Page 3 and continuing to top of page 4: *"In addition to the environmental impacts addressed during the CEQA process, the CPCN process will consider any other issues that have been established in the formal record, including but not limited to economic issues, social impacts, and the need for the project. During this process, the CPUC will also take into account testimony and briefs from parties who have formally intervened in Proceeding A.12-04-019,6 as well as formal records of all project-related hearings held by the administrative law judge."*

It would be helpful if the CPUC and its consultants provided a concise list of the issues that this statement references. The scope of the analysis is not fully disclosed in this NOP without such a listing.

2. Proposed Project Page 5: The footnote #7 appears to describe the similarities of the proposed project with the previously analyzed Coastal Water Project. However, the disclosure of the proposed project facilities appears inadequate to disclose to the reader the precise location and composition of the facilities that will comprise the Proposed Project.

L_PacGrove-01

L_PacGrove-02

3. Page 3, End of third paragraph: "*If it is determined through the scoping process that additional federal review is required, CPUC will coordinate with the appropriate agency to comply with the National Environmental Protection Act (NEPA).*" The NOPs mention for federal coordination is unclear. It is the purpose of the NOP to notify responsible, trustee agencies, federal and lead agencies on the preparation of the EIR to solicit their guidance on the scope and content of the information to be included in the EIR.

Additionally, PRC Section 21080.4 provides that the lead agency must convene a scoping meeting to discuss these issues upon the request of any responsible agency, trustee agency or the project applicant. If CalAm waits until after scoping is completed before it engages with the appropriate federal agencies, it may not be possible to include federal agency concerns and to conduct an appropriate scoping meeting without potentially significant loss of time. The CPUC should confer with federal agencies that may have permitting responsibility over the project to determine whether compliance with the National Environmental Policy Act ("NEPA") will be required. The EIR should be developed as a joint EIR/EIS to satisfy NEPA's requirements, if necessary, and avoid potential project delays subsequent to CPUC approval of a Certificate for Public Convenience and Necessity.

L_PacGrove-03

4. Page 8 Issues to Be Addressed in the EIR. CEQA requires that the NOP provide at a minimum the probable environmental effects of the proposed project. While the NOP identifies issues that will be addressed in the EIR and states that "*The MPWSP EIR will address potential impacts associated with project construction, operation, and maintenance activities*" the NOP does not explicitly disclose the probable environmental effects of the proposed project. Rather, the NOP focuses more on the environmental checklist presenting a listing of what will be addressed in the EIR. Given that the Lead Agency has completed significant previous investigations for a very similar project in the same region, (referenced throughout the NOP) it is surprising that additional information, as required by CEQA, regarding the probable environmental effects of the proposed project are absent.

L_PacGrove-04

The importance of this issue is related directly to the quality and value of the comments that will likely be submitted to the lead agency as a result of the NOP. A generic listing of issues to be addressed will likely result in the receipt of generic comments. However, the intent of the NOP is to result in the receipt and consideration of meaningful comments by the lead agency so that the environmental analysis can address the issues of the responsible and trustee agencies in a meaningful way. The current NOP therefore falls short of that objective.

5. Cumulative Impacts & Preliminary List of Alternatives to the Project: The NOP makes no mention of the Public Participation Proposals submitted to the CUPC by the City of Pacific Grove. Therefore, it makes no attempt to address the potential impact on the proposed project if any of the small water projects were implemented. The development of the Public Participation Proposals was in response to a ruling by the CPUC administrative law as a directive to the lead agency for its inclusion of cost effective projects that could be completed in a timely manner. The City has demonstrated that its three small water projects meet that criterion. Additionally, the application has met with Pacific Grove and discussed the development of these projects on two occasions, as evidenced by Cal-Am's October 26, 2012 Compliance Filing. We therefore suggest that the NOP acknowledge these projects and include them in the presentation of probable environmental effects, both under the cumulative effects section and as alternatives to the proposed project.

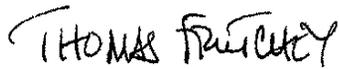
L_PacGrove-05

6. The project alternatives should be evaluated with the same level of detail that the EIR evaluates the proposed project (i.e., a "project level" analysis). As a member agency, the City supports the comments being made by the Monterey Peninsula Regional Water Authority. In particular, the City notes that it is possible that one of the project alternatives will become the preferred project for approval by the CPUC within the Certificate of Public Convenience and Necessity. To avoid the delay that could result should the draft EIR need to be revised and recirculated to address one or more of the project alternatives; the City respectfully requests that the proposed alternatives be evaluated with the same level of detail that the EIR evaluates the Proposed Project.

L_PacGrove-06

Thank you for your consideration of the City's comments as set forth above.

Sincerely,



Thomas Frutchey, City Manager
City of Pacific Grove

LAW OFFICES OF
MICHAEL W. STAMP

Michael W. Stamp
Molly Erickson
Olga Mikheeva

479 Pacific Street, Suite One
Monterey, California 93940

Telephone (831) 373-1214
Facsimile (831) 373-0242

November 9, 2012

Via U.S. Mail and Facsimile: (415) 896-0332

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Re: Comments on the Notice of Preparation for the CalAm Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale:

This Office represents Ag Land Trust, which submits the following comments on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the CalAm Monterey Peninsula Water Supply Project. The word "project" when used in this comment letter means the project and all aspects and components thereof, including alternatives and contingency plans and all aspects and components thereof. The term "project site" means the location of each and every facility proposed as part of the project.

Comments

Ag Land Trust owns property in the immediate vicinity of the project site. Ag Land Trust's 192-acre ranch is generally referred to as the West Armstrong Ranch. It is adjacent to the Cemex site.

These comments are intended to help the Commission determine the scope of the EIR and ensure an appropriate level of environmental review. Ag Land Trust asks the Commission to review carefully the following potential environmental issues and impacts in the EIR.

- The EIR should investigate, analyze, and disclose the water rights for the project and water rights anticipated to be used for future projects involving this project and the project site. Water rights must be researched at this EIR stage. (*Save Our Peninsula Committee v. County of Monterey* (2001) 87 Cal.App.4th 99, 131-134.) The project site is in the overdrafted Salinas Valley groundwater basin.

Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 November 9, 2012
 Page 2

- The EIR should acknowledge that, under California law, no new groundwater may be appropriated legally from the overdrafted Salinas basin, except by prescription.
- The EIR should investigate, analyze, and disclose the status of water rights in the basin, and the specific water rights that could or would be involved in future water supply projects.
- CEQA requires a detailed analysis of water rights issues, including ownership of those rights, when such rights reasonably affect the project's supply. Assumptions about supply are not enough. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 431; *Santa Clarita Organization for Planning v. County of Los Angeles* (2003) 106 Cal.App.4th 715106 Cal.App.4th 715, 721; *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 131-134, 143 [EIR inadequate when it fails to discuss pertinent water rights claims and overdraft impacts].) The reasoning in those cases also applies to the proper analysis of the rights associated with the project's water supply here.
- As the Supreme Court has held, the "ultimate question under CEQA, moreover, is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable *impacts* of supplying water to the project." (*Vineyard Area Citizens, supra*, 40 Cal.4th at 434, italics in original.) The EIR must "clearly and coherently explain" this issue, "using material properly stated or incorporated in the EIR." (*Id.*, at p. 421.) In *Vineyard Area Citizens*, the proposed project did not have legal rights to the projected water supply (*id.*, at p. 424), which required analysis under CEQA. (*Id.*, at p. 428.)
- In an overdrafted, percolated groundwater basin, California groundwater law holds that the doctrine of correlative overlying water rights applies (*Katz v. Walkinshaw* (1903) 141 Cal. 116), whereby no surplus water is available for new groundwater appropriators, except by prescription. The Salinas Valley Groundwater Basin is an overdrafted groundwater basin and no new surplus water can be appropriated from the Basin.
- The EIR should investigate, analyze, and disclose water rights for the project, and the impacts that the transfer of any rights might

G_AgLandTrust-02

G_AgLandTrust-03

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have on the overlying fertile agricultural land. To secure the amount of water demanded to serve the project service area and the existing and future demands area receiving water from the project, the entire Salinas Valley Groundwater Basin would have to be adjudicated, affecting many owners and users.

- As to each entity and each claim of water rights, the EIR should categorize the water rights as to type, identified as used or unused, the applicable seniority of the rights, and the supporting documentation for each claim should be provided.
- The EIR should investigate, analyze, and disclose the legal justification for any groundwater rights claimed, because in an overdrafted basin new appropriative rights cannot be acquired except through prescription, which has not occurred here.
- The EIR should investigate, analyze, and disclose any water rights claimed by any entity, including MCWRA, in light of existing MOUs and other agreements in place. The EIR should disregard any claimed groundwater rights held by MCWRA, because MCWRA does not have such rights. If the EIR asserts otherwise, it should investigate and provide supporting documentation for its assertion.
- CalAm, a water appropriator under California law, has no groundwater rights to appropriate water from the overdrafted Salinas Valley Groundwater Basin. If CalAm extracts water from the overdrafted Salinas Valley Groundwater Basin and the extracted water is composed of both saltwater and freshwater, then CalAm's actions would be an illegal appropriation of water.
- CalAm claimed as part of the Regional Project that CalAm can appropriate water from under privately owned land in the overdrafted basin, so long as CalAm's promises to return some fresh water to the basin. To the extent that CalAm repeats that claim for CalAm's MPWSP, CalAm's promise is not enforceable, not subject to oversight and does not change the fact that CalAm's extraction of groundwater would be an illegal appropriation. The project may not rely on illegal extraction and appropriation. The EIR should investigate, analyze, and disclose the significant impact of CalAm's proposed taking of percolated groundwater from overlying landowners. The EIR must investigate, analyze, and

disclose mitigations for water rights and proposed illegal actions and takings.

G_AgLandTrust-03
(Con't)

- The EIR should investigate, analyze, and disclose the impacts on neighboring properties of the project and the future projects that would be enabled by the project and each of its alternatives and contingency plans. For example, Ag Land Trust has large land holdings in the areas of Moss Landing, Castroville, and Marina which would be affected directly by the various proposed water projects and alternatives of the proposed projects. Many of Ag Land Trust's acres of land and easements, and their attendant overlying groundwater rights, have been acquired with grant funds from the State of California as part of the State's long-term program to permanently preserve our State's productive agricultural lands. Ag Land Trust believes that the agricultural operations, the agricultural potential, the water rights, the water systems, and the viability of its property in general would be negatively impacted by the project(s) being evaluated in the EIR. The EIR should address these issues.
- The EIR should investigate, analyze, and disclose the impacts of potential future uses on the project site, and future uses that would be affected by the project, including facilities relating to new water supply systems and use of recycled water, and water treatment facilities. The facilities and the status of their environmental review, if any, should be investigated and described.
- The EIR should investigate, analyze, and disclose all proposed desalination plants, both on the project site and other locations. The EIR should clearly describe the environmental review that has been performed and that is anticipated to be performed for each project. This EIR should identify and account for the impacts identified, and the status of the mitigations adopted, in each environmental review of the other projects.
- The EIR should investigate, analyze, and disclose the impacts on water quality of all future uses of the project. For example, the water quality impacts of the proposed water infrastructure and systems.
- The EIR should investigate, analyze, and disclose the consistency of the project with all applicable plans, including the Coastal Act, the North County Land Use Plan, the Coastal Implementation Plan, and 1982 and 2010 Monterey County General Plans. As one example, the consistency analysis should include a thorough analysis of the policies related to loss and contamination of water resources, groundwater quality protection, and

G_AgLandTrust-04

G_AgLandTrust-05

G_AgLandTrust-06

G_AgLandTrust-07

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farmland preservation. As another example, the EIR should address issues related to conflicts between adopted State water quality plans and mandatory water quality policies and regulations, and illegal contamination of potable water supplies.

G_AgLandTrust-07
(Con't)

- The EIR should investigate, analyze, and disclose the impacts of the development enabled by the project, the proposed annexation of parts of the project site by MCWD, the possible development of the property by MCWD, the possible annexation of parts of the project site by the City of Marina, or by other future uses of the property. These impacts include the impacts of water that would be produced or supplied as a result of the development of the project site.
- The EIR should investigate, analyze, and disclose the impacts of seawater intrusion exacerbated by or resulting from future uses of the property, including from water projects and from extraction by other water pumpers or any other uses. This analysis should include the impacts of seawater intrusion on site and off site, and the cumulative impacts of seawater intrusion.
- The EIR should investigate, analyze, and disclose seawater intrusion into the Salinas Valley Groundwater Basin. Accurate information about seawater intrusion is essential to this analysis. The analysis should be accurate and based on raw data from monitoring wells, and should not be based on the selected information presented in MCWRA graphics. The EIR should disclose the location of monitoring wells used in the analysis, including monitoring wells for the 180-foot aquifer, the 400-foot aquifer, and the so-called Sand Dunes aquifer.
- The EIR should investigate, analyze, and disclose the impacts of using the so-called Sand Dunes Aquifer as a water supply, as proposed in the project's contingency plan.
- The EIR should identify on a map all areas that potentially would be affected by water infrastructure and the uses of the water involved in the infrastructure. For example, this discussion should include all areas that would or could receive water, such as the Peninsula and North County, and all areas that would or could provide water, such as the Salinas River and sources of reclaimed or recycled water.
- The EIR should investigate, analyze, and disclose the consistency of the project and the impacts thereof with the State Water Resources Control

G_AgLandTrust-08

G_AgLandTrust-09

G_AgLandTrust-10

G_AgLandTrust-11

G_AgLandTrust-12

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- Board Non-Degradation Policy, the adopted Central Coast Regional Water Quality Control Board Basin Plan, the Oceans Plan, and all other state, federal, and local plans, policies, rules and regulations. ↑
G_AgLandTrust-12
(Con't)
- The EIR should investigate, analyze, and disclose the impacts of the City of Marina's proposed and anticipated zoning and development of property associated with the project. G_AgLandTrust-13
 - The EIR should investigate, analyze, and disclose the cumulative impacts of this project, the foreseeable future projects on the site and other known and foreseeable projects. G_AgLandTrust-14
 - The EIR should investigate, analyze, and disclose the impacts on State mandated farmland preservation programs and preserved lands. G_AgLandTrust-15
 - Given the potential impacts of the project on agriculture, which is the leading industry in Monterey County, the EIR should investigate, analyze, and disclose of the economic impacts of the proposed project. G_AgLandTrust-16
 - The EIR should fully investigate, analyze, and evaluate in detail the alternative "People's Project" site/project location for a desalination plant at the former National Refractories site in Moss Landing, California. This is the site which was originally identified as the "preferred site" by the CPUC for a desalination plant in 2002, at the direction of the State Legislature. G_AgLandTrust-17
 - The EIR (and a full EIS prepared pursuant to NEPA) should investigate, analyze, and evaluate the potential impacts of the CalAm project on the Monterey Bay National Marine Sanctuary, its public trust resources, its habitats, and its sub-surface fresh water resources. G_AgLandTrust-18
 - The EIR should make very clear the amount of water (in acre feet) that the project would pump under different scenarios. The scenarios should include time of year, different percentages of anticipated salinity, and other foreseeable factors. The EIR should clearly state the amount of total pumped water, and clearly identify the breakdown of that total into the amount of ocean water and the amount of groundwater. The EIR should investigate, discuss, and disclose the impacts of the maximum amount of pumping by the project. G_AgLandTrust-19
 - CEQA requires compliance with Water Code sections 10910 to 10912. (Pub. Resources Code, § 21151.9; *Vineyard Area Citizens, supra*, 40 ↓
G_AgLandTrust-20

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Cal.4th at p. 433, fn. 8.) The sections apply to sizeable projects, including a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (Water Code, § 10912(a)(7)), which this project would do. These sections require a city or county considering a project to obtain, at the outset of the CEQA process, a water supply assessment from the applicable public water system. The water supply assessment is then to be included in any CEQA document the city or county prepares for the project. With regard to existing supply entitlements and rights, a water supply assessment must include assurances such as written contracts, capital outlay programs and regulatory approvals for facilities construction. (*Vineyard Area Citizens, supra*, 40 Cal.4th at p. 433.) While these sections on their face apply to cities and counties, the clear legislative intent is to protect the water supply through timely analysis through CEQA review. The legislature may not have considered including the CPUC as an agency subject to these Water Code sections because up until the Regional Project EIR, the CPUC had not prepared an EIR for a water supply project before. The CPUC should act in the public interest and exercise its discretion and require a water supply assessment or the equivalent information in the EIR.

- All impacts identified by the EIR should be adequately mitigated. The mitigations should be clearly described, measurable, and achievable.
- The EIR should state all measurements of water in acre feet.
- EIR tables should be formatted so the numbers are vertically aligned.

Under CEQA, the environmental impacts of a project must be evaluated at the earliest possible stage. Therefore, all the impacts of any proposed and projected development of the project site, including water facilities of any sort and the projected rules, regulations and policies related to the use of water obtained, generated from or related to the project site, must be investigated, analyzed, and disclosed in this EIR.

The EIR should address all environmental issues identified by the Ag Land Trust in its briefing on the merits to the Monterey Superior Court in case number M105019 with regard to the Regional Project EIR. Because we believe the Commission already has those briefs, which are public records, we do not repeat their contents here.

G_AgLandTrust-20
(Con't)

G_AgLandTrust-21

G_AgLandTrust-22

G_AgLandTrust-23

G_AgLandTrust-24

G_AgLandTrust-25

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Request for Notice

We ask for notice under Public Resources Code section 21092.2. Please send all future correspondence on this matter to us as follows:

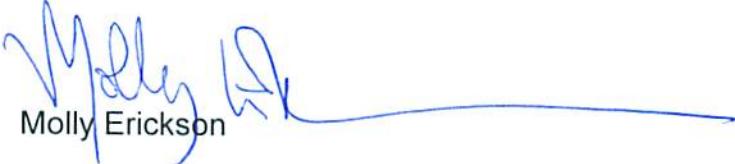
Michael W. Stamp
Molly Erickson
Law Offices of Michael W. Stamp
479 Pacific Street, Suite One
Monterey, CA 93940

Telephone: (831) 373-1214
Facsimile: (831) 373-0242

Thank you for the opportunity to comment.

Very truly yours,

LAW OFFICES OF MICHAEL W. STAMP


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November 9, 2012

VIA E-MAIL: MPWPS-EIR@esassoc.com
 Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny St., Suite 800
 San Francisco, CA 94108

Re: A.12-04-019; Scope of Environmental Impact Report for the Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale:

California American Water offers the following comments regarding the scope of environmental issues as well as reasonable alternatives and mitigation measures that should be explored in the California Public Utilities Commission's ("Commission") Environmental Impact Report ("EIR") on the above-referenced project.

We note at the outset that, due to the pendency of the State Water Resources Control Board's Cease and Desist Order, it is imperative that the EIR be prepared on the schedule set forth in ALJ Weatherford's scoping ruling dated August 29, 2012, which in turn sets July 1, 2013 as the date the Draft EIR will be issued by the Commission.

G_CalAm-01

In general, California American Water agrees that the analyses presented in the EIR certified by the Commission in D.09-12-017, when updated to reflect any changes in conditions and legal requirements that have occurred since that EIR was prepared, will serve as an appropriate and adequate basis for the MPWSP. In updating the EIR, California American Water recommends the Commission consider the following issues and alternatives.

G_CalAm-02

1. Evaluate Alternatives As Project Components Not Commercial Ventures

The Notice of Preparation lists the "DeepWater Desal" project and "People's Moss Landing" project as alternatives to the MPWSP. California American Water agrees that an alternative to the MPWSP is a desalination facility located in Moss Landing using one of a variety of property locations, seawater intake structures, brine disposal structures, and transmission routes. California American Water contends, however, that the commercial ventures that have proposed these alternatives are not relevant to their environmental impacts. Accordingly, California American Water recommends that the EIR analyze the components of these projects

G_CalAm-03

without reference to those commercial ventures. Further, California American Water recommends that the Commission employ an approach similar to that employed in the prior EIR where the analysis considers the components in a “plug and play” fashion, so that the Commission can approve a project that combines the best components of the available facility locations, water sources, brine disposal facilities and transmission routes when viewed in light of the environmental impacts, costs, and expediency of permitting and construction.

G_CalAm-03
 (Con't)

2. Contingency Items

On November 1, 2012, California American Water filed and served its Contingency Plan compliance filing, as directed by ALJ Weatherford on August 30, 2012. This contingency plan addresses alternative sources of brackish water, alternative brine disposal methods, alternative desalination plant locations, and alternative potable water supplies to address interruptions in desalination plant operations. Commission staff may wish to consider whether these contingency plans are feasible alternative locations or methods to those proposed in California American Water’s application, and analyze those alternatives in the EIR’s alternatives analysis.

G_CalAm-04

3. Pipeline Routes to Serve the Ryan Ranch, Bishop and Hidden Hills Distribution Systems

California American Water noted in the Application that, depending on developments in the Seaside Basin, California American Water may need to deliver product water from the MPWSP to the Ryan Ranch, Bishop and Hidden Hills distribution systems. This possibility exists due to the effect of having both standard and alternative production allocations in the court’s judgment as well as the anti-portability provisions. California American Water is investigating whether there is a basis for these provisions of the judgment to be altered; however, California American Water cannot assure the Commission that such a basis exists, or that the Monterey County Superior Court will agree that the available evidence warrants an amendment to the judgment. Accordingly, California American Water needs the flexibility to deliver MPWSP product water to the Ryan Ranch, Bishop and Hidden Hills distribution systems.

G_CalAm-05

California American Water offers the following details to better place this request in context. Under California groundwater law, overlying groundwater rights are superior to appropriative groundwater rights. The parties to the adjudication having “alternative production allocations” all have overlying groundwater rights. The parties to the adjudication having “standard production allocations” (including California American Water) all have appropriative groundwater rights. The total of all alternative production allocations in the Laguna Seca subarea (which are not subject to the “rampdown” provisions of the judgment) exceed the Natural Safe Yield of the Laguna Seca subarea. Accordingly, when the Operating Yield is equal to the Natural Safe Yield in the year 2021, the entire Natural Safe Yield will be allocated to alternative producers and there will be no water to allocate to standard producers such as California American Water because the alternative producers, by law, have priority over the standard producers.

G_CalAm-06

The anti-portability provisions are found in Section III.M.3.c. of the Judgment. The last sentence of that section states: “No Party may Produce Groundwater from the Coastal Subareas pursuant to any right recognized by this Decision in the Laguna Seca Subarea, and *vice versa*.” When read in conjunction with Sections III.M.3.a and III.M.3.b., this section makes clear that a Producer may physically pump water from the Coastal Subbasin and then export it for use in the

Laguna Seca subarea, but water may not be physically pumped from the Laguna Seca subarea and accounted for against a right to produce water in the Coastal subarea. Thus, barring an amendment to the judgment, when the Operating Yield becomes equal to the Natural Safe Yield, California American Water will no longer have the right to produce groundwater in the Laguna Seca subarea. Accordingly, California American Water will need to supply its customers that overly the Laguna Seca subarea, specifically customers served by the Ryan Ranch, Bishop and Hidden Hills distribution systems, with desalinated water.

G_CalAm-06
(Con't)

As currently configured, there is only an emergency interconnection between the Ryan Ranch distribution system and the main Monterey distribution system. There is currently no connection between either the Ryan Ranch or main systems, and either the Bishop or Hidden Hills systems. California American Water recommends the Commission evaluate various pipeline routes for transmission pipelines between the main system and these three systems to facilitate the distribution of desalinated water.

G_CalAm-07

4. Alternative Routes for Monterey and Seaside Pipelines Outside of Coastal Zone

The California American Water-only facilities include facilities colloquially known as the Monterey pipeline and the Seaside pipeline. The proposed routes for both of these pipelines are partially located within the Coastal Zone, requiring additional permits before construction. If these pipelines could be routed outside the Coastal Zone, these facilities could be constructed on a faster schedule and with reduced permitting efforts (and possibly costs) because those portions of the project would no longer require a Coastal Development permit. California American Water recommends that the Commission evaluate feasible alternative pipeline routes outside the Coastal Zone.

G_CalAm-08

Conclusion

California American Water appreciates the opportunity to provide comments regarding the appropriate scope of environmental review as well as feasible alternatives and mitigation measures. We invite Commission staff to contact us if they have any questions regarding our comments and look forward to completing the CEQA process as expeditiously as possible.

Best Regards,



Tim Miller
Corporate Counsel

Coalition of Peninsula Businesses

*A coalition of the Monterey County Hospitality Association, Monterey Commercial Property Owners' Association, Monterey Peninsula Chamber of Commerce, Carmel Chamber of Commerce, Pacific Grove Chamber of Commerce, Monterey County Association of Realtors, Community Hospital of the Monterey Peninsula, Associated General Contractors – Santa Clara-Monterey District
to resolve the Peninsula water challenge to comply with the CDO at a reasonable cost*

November 9, 2012

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearney Street, Suite 800
San Francisco, California 94108

Transmitted by e-mail to MPWSP-EIR@esassoc.com

Dear Mr. Barnsdale:

The Coalition of Peninsula Businesses (CPB) submits these comments on the Notice of Preparation (NOP) of the Environmental Impact Report (EIR) for the California American Water Co. (CAW) proposed Monterey Peninsula Water Supply Project (MPWSP).

In order for CAW to adequately serve its customers as required by Public Utilities Code Section 451, CPB strongly recommends that a significantly larger desalination plant be added to the project alternatives to be studied in the EIR.

The Peninsula area has suffered from a shortage of water for four decades. CAW customers have been living with constraints on water use for over two decades. The Monterey Peninsula has been deprived of normal social and economic activity (e.g., home remodels, business innovations and changes driven by customer preferences) for at least that long due to these constraints and water restrictions.

The construction of a true regional water supply project, one that will finally satisfy our decades-long chronic water shortage, is an opportunity that will not, in all probability, present itself again. The Public Utilities Commission and all of the parties involved in this application would be remiss in their responsibility if the EIR does not analyze a 'build out' alternative.

Components of water need

Legal lots of record should be served; 1,181 acre-feet per year (afy) are needed to meet this need. In many cases, owners have waited decades for sufficient water to use these lots. Cal Am has a legal obligation to provide water services to these lots of record.

Meeting the general plan needs of Monterey County and the six incorporated Peninsula cities within the CAW service area requires another 4,545 afy. It is well recognized that an adequate water supply may remove a barrier to growth; therefore its growth inducing impact must be analyzed. However, it is also well recognized that the location, type and

timing of growth is governed by the general plan and zoning and ultimately by the decisions of local elected and appointed officials. Each city and the unincorporated portion of the County that would be served have certified EIRs. The impacts of growth have been analyzed in those plans and EIRs and mitigations adopted to offset the effects of that growth.

The hospitality and tourism industry has just begun to recover from the economic downturn. Occupancies are still over six percentage points below historical averages. The peak period of 1998-2001 saw average occupancies of major hotels at 75%. During the peak periods June through October, occupancies consistently achieved 80% to 90%. It is an industry that accounts for \$2 billion in economic activity, provides 22,000 jobs and provides a significant tax base for its communities. The sizing of the projects must be sufficient to allow the industry, employment and tax base to return to historical levels.

G_CPB-01
(Con't)

Existing demand for water is 14,100 afy and should be adjusted to approximately 15,000 afy to provide for a return to more historically traditional levels of economic activity. The total need for water is therefore 20,726 afy.

Available water after the effects of the Seaside Basin Adjudication and the State Water Resources Control Board Cease and Desist Order (CDO) are accounted for

CAW's legal right to water from the Carmel River is 3,376 afy; that is the limit on water to be taken from that source after the CDO takes effect in 2017.

CAW is entitled to take 1,474 afy from the Seaside Basin without penalty.

Aquifer Storage and Recovery (ASR), a joint project with the Monterey Peninsula Water Management District (MPWMD), accounts for between zero and 1,100 afy. This is an inherently unreliable source of water since it relies exclusively on 'excess winter flows' on the Carmel River. No reliance on this as a source of supply should be made.

G_CPB-02

Groundwater Recharge (GWR) is proposed as a component of water supply from a joint project of CAW, Monterey Regional Water Pollution Control Agency (MRWPCA) and MPWMD. The MRWPCA Board of Directors recently voted against future funding of the GWR project based in large part to concerns relating to water rights (or lack there-of). This decision, along with the legal hurdles currently facing GWR makes the project an unreliable source of new water.

G_CPB-03

The size of an adequate desalination plant

A desalination plant of adequate size is a function of demand minus existing supply and optimization of desalination operation as specified by CAW's Director of Engineering Rich Svindland. According to Svindland, desalination plants should be operated at 80% of capacity to optimize operations.

G_CPB-04

The size of an adequate desalination plant to meet the needs of Peninsula area customers is therefore easy to calculate, as shown in the following table:

Water Needs (in afy)	
Legal lots	1,181
General plan needs	4,545
Existing need adjusted for return to normal	15,000
Total water need	20,276
Water available (in afy)	
Carmel River	3,376
Seaside Basin	1,474
ASR	0-1100
GWR	-0- N/A
Total water available before desal plant	4,850
Water supply augmentation needed	15,426 afy
Desal plant size in afy	15,426 afy
Desal plant size for optimal operation in afy	19,283 afy

G_CPB-04
(Con't)

Additional environmental study needed to resize desalination to adequate size

Since the Public Utilities Commission has determined that the level of environmental study necessary for the proposed project is to be a 'subsequent' EIR as opposed to a 'supplemental' EIR, the additional study needed for a resizing of the desalination plant should not be extensive and should not delay unduly the needed study. All aspects of the potential growth inducement capacity have already been studied as a part of the general plans adopted and the environmental studies certified.

G_CPB-05

The CPB believes it is now time for the Peninsula to solve its water supply dilemma rather than undersize a "solution" and spend another 40 years arguing over the increment of water supply augmentation. It would be far more economical to add the additional capacity now while the project is being built, than to wait to add additional capacity later.

Sincerely,

Coalition of Peninsula Businesses



John Nangi, Co-chair



Bob McKenzie, Consultant

To: Andrew Barnsdale, CPUC
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7 Nov 2012

cc: Suzie Rose, PUR Analyst, CPUC
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From: George Riley, Intervener & Ed Mitchell, Project/EIR Analyst
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 georgetriley@hotmail.com 831-645-9914
 edmitchell70@hughes.net 831-663-3021

Subject: **Comments By Citizens for Public Water to the MPWSP NOP-EIR**

Mr. Barnsdale,

Citizens for Public Water (CPW) is an intervener to the A.12-04-019 proceeding. CPW is submitting the enclosed scoping considerations that reflects a ratepayer perspective for assessment within the CalAm Monterey Peninsula Water Supply Project's (MPWSP) EIR.

These considerations incorporate analysis inputs from its members who live and have experience with water projects from the Salinas Valley to Carmel Valley. The environmental and technical merit of our considerations and mitigations are based upon our members' project/EIR knowledge gained during 15 years of involvement in the activities listed below:

- ✓ **1997 -2012:** Participated in water project meetings, EIR commenting, and public agency reviews beginning with the first desalination project meeting in Moss Landing in 1997, the Salinas Valley Water Project, CalAm Coastal Water Project, the Regional Plenary Oversight Group (REPOG) regional project assessments, the Regional Desalination Project (RDP), Monterey Peninsula projects, and the Mayors JPA Technical Assessment Committee (TAC).
- ✓ **1997 -2012:** Monitored environmental impacts to up-gradient residential wells within the north Salinas Valley water basin and monitored saltwater intrusion under North Monterey County Zone-2C coastal farms.
- ✓ **2009:** Monitored the post-REPOG actions of the Monterey Regional Water Pollution Control Agency (MRWPCA) and its Ad Hoc committee.
- ✓ **2009:** Contributed to the development of the Environmentally Superior Hybrid Desalination Project, submitted by community and ratepayer activists as an alternative to the large-desal RDP.
- ✓ **2010:** Performed contract analysis of the RDP EIR and the Water Purchase Agreement, then publically reported unaddressed extraction impacts to North County up-gradient wells and saltwater impacts on coastal farms and that the agreement had zero cost controls.
- ✓ **2011:** Documented conflict of interest violations within the RDP and supplied evidence packages to the Fair Political Practices Commission and the Monterey County District Attorney.
- ✓ **2012:** Conducted an independent side-by-side comparison analysis of four competing desal production projects where each project was rated against 7 factors and 20 subfactors that included

environmental, technical, schedule, risk, and cost considerations. The four projects were the RDP, the MPWSP, DeepWater Desal, and the Pacific Grove / People's Desal Project. We supplied the comparison to the MPWMD, to the Mayors JPA TAC and to the Pacific Grove / People's Desal Project (PG-Peoples project).

- ✓ **2012:** As a member of the Mayors JPA Technical Assessment Committee, helped generate the TAC's 3-project comparative risk assessment.
- ✓ **2012:** Verified our side-by-side comparison analysis versus the Superior Court judgment that the RDP's EIR failed to consider a number of environmental issues, thus substantiating we had addressed those issues as subfactors in our comparison analysis.
- ✓ **2012:** Scanned the October 2012 focused EIR of the PG-People's desal project.

Requests:

CPW requests that the MPWSP EIR include and assess the 10 considerations described in Attachment-A. We have supplied an accompanying justification with each of the proposed EIR considerations explaining how they provide "new information of substantial importance" and/or address "one or more significant effects not discussed in the previous EIR", thus qualifying for inclusion in the MPWSP EIR.

Because project components of CalAm's MPWSP are identical or very similar to the RDP's components we request that the EIR analysts and decision makers of the MPWSP apply lessons learned from the RDP, which the Superior Court determined did **not** adequately address water rights and several environmental impacts. To be helpful we have provided in our EIR considerations major project impacts that we or other organizations offered to the RDP that were ignored but subsequently substantiated by DRA analysis, court judgments, and the eventual failure of the Regional Desalination Project.

G_CPW-01

Another lesson learned is to assure transparent presentation of the strengths and weaknesses of each project to gain public acceptance of the EIR results. Therefore we further request that you summarize and report comparative EIR results in a highly transparent manner by showing each alternative side-by-side versus how each alternative is scored for environmental, feasibility, and cost impacts. To assist you, we have provided example comparison tables in the justification section of Consideration #10 Transparent Reporting.

G_CPW-02

After review of Attachment-A, we hope you decide that including the CPW considerations in the MPWSP EIR will increase public appreciation and support of whatever alternative the Administrative Law Judge selects and simultaneously eliminate avoidable legal challenges that would unnecessarily delay complying with the Regional Water Quality Control Board's 95-10 cease and desist order.

Ed Mitchell
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Attachment-1: EIR Considerations

ALTERNATIVE / MITIGATION CONSIDERATIONS

Consideration #1: Use up to date Desal Project Comparisons

Description: The NOP project descriptions of the alternative desalination projects should reflect the supplier's current approaches and components as of October 2012. These descriptions should describe major component and project strengths or weaknesses known to the public to influence environmental impacts or the feasibility of the alternative project to be successful. In order to ensure a fair apples-to-apples environmental evaluation of the competing projects, the set of project descriptions must describe any approaches or components common to two or more projects that are used to extract, produce, and/or deliver desalinated water.

Justification: CPW recognizes the EIR team used available information to quickly get the NOP moving and is seeking more accurate data from scoping responses before beginning EIR analysis. However, the NOP's project descriptions are not up to date and include some inaccuracies.

To proceed with inaccurate NOP descriptions exposes the MPWSP EIR into generating faulty project assessments about environmental impacts, project feasibility, and costs implications while simultaneously increasing the likelihood of being sued by a disgruntled supplier or by private stakeholders or owners of water rights in Monterey County.

Mitigation #1: The above difficulty can be easily mitigated if the CPUC's EIR analyst team offers alternative projects the opportunity to provide their latest approach/component description by a date certain before the EIR evaluation begins. The EIR team should require each alternative desal supplier, if they choose to respond, to identify from a supplied list of project approaches/components which ones are or are not part of their desalination project and describe the ones that are used. However, the suppliers should be allowed to add and describe approaches/components not on the standardized list that are unique to their approach and that they plan to employ. Use of the standardized list will not only increase apples-to-apples accuracy for the EIR team but will be a benefit to cost workshop participants when they begin their work.

Twelve Moss Landing Description Discrepancies

CPW members spotted the following 12 discrepancies in the NOP's description of the Moss Landing desal alternatives, which should be corrected prior to starting EIR analysis:

1. Desalinated water must be transferred by both projects from Moss Landing to a connection near Marina. The NOP identifies that the People's desal project supplies a 13-mile pipe but does not identify that the DeepWater project must supply a 14-mile pipe and additionally crosses the National Elkhorn Slough Wildlife Estuary, which the People's project does not have to cross.
2. The DeepWater description identifies that it is located in Santa Cruz County instead of in Monterey County.

3. The DeepWater description identifies that its facility site is leased by that alternative supplier, while the People's description did not state that its facility site is owned by that alternative supplier.
4. Any desalination project must have the right to extract water either from the ocean, seabed, or on-land well. However, neither description addresses this issue. Meanwhile, the People's project has water rights and existing shore wells permitted to withdraw ground water. DeepWater has neither on-shore water rights nor offshore extraction permits. It's this simple: no water no desal.
5. The DeepWater description claims an existing intake or disposal pipeline. That is not true. There is only an existing pipeline easement.
6. The DeepWater description identifies that in-taking will be from a depth of 100 feet in the ocean, while not describing at what depth the People's project intakes water. CPW is aware that the People's project currently plans to also intake from a similar depth via a "pipe through an existing pipe" system plus they have water rights and existing shore wells permitted to withdraw ground water.
7. The description of the People's project fails to identify its 2,000+ gallons per minute existing emergency backup water source and that the DeepWater project does not have a backup water source.
8. The description of the brine disposal for the People's project fails to include that significant quantity of brine will not be returned to the ocean but instead used in a commercial manufacturing process. Thus there is less ocean impact from the People's brine disposal approach than by DeepWater.
9. Neither description addresses the number of permits in hand versus the number needed, nor the history of permitting that each alternative has to substantiate additional needed permits. So the descriptions fail to reveal how few permits DeepWater has or the existing coastal development permits that the People's desal project has.
10. The DeepWater description claims the project could qualify for tax-free municipal bond financing but fails to explain that statement is only true if a future joint powers authority would be formed to assume ownership of DeepWater's production facility. Meanwhile the People's description fails to state that it can qualify for tax-free municipal bond financing because it **has secured** a JPA agreement with the city of Pacific Grove. Plus, the up to date name of that project should be the PG-People's project.
11. The DeepWater description implies a regional benefit to supply three counties with desalination water from its 25-mgd production facility versus the People's 10-mgd facility. However, the regional benefit is not because of a larger plant it is because of the location of Moss Landing to the other two counties as recognized by the CPUC two years ago. Plus neither description addresses the degree of modular expansion designed into each production facility. Thus the claimed larger size of the DeepWater project versus the People's project only has differentiating merit if there is no modular plug-and-play expansion capability for the PG-People's project.

Fair apples-to-apples evaluation and costing of each project will only occur if, each project’s description specifies the capacity size of the plant dedicated to the MPWSP (which can include drought contingency sizing) plus identifying the size of any modular expansion capability, and identifying any size dedicated to regional benefits beyond the MPWSP ratepayer area. For example if regional benefits are not segregated from MPWSP benefits, than will the EIR team report that DeepWater has 2.5 times more environmental impact on the ocean than the PG-People’s project?

12. Bottom line: The NOP’s Moss Landing project descriptions currently do not accurately identify major differences and commonalities between the two alternatives to allow a fair and accurate EIR evaluation regarding:

- ✓ Progress to gain a JPA & low cost financing
- ✓ Quantity and history of in-hand permits
- ✓ Intake – Disposal approaches
- ✓ Quantity/quality of existing infrastructure
- ✓ Quantity/quality of planned or existing emergency backup infrastructure
- ✓ Minimum capacity sized dedicated to the MPWSP and contingency expansion size

The DeepWater project is a paper plan; while the People’s project is physically and legally far more mature. These differences provide the PG-Peoples project with significantly less project and cost risks along with an associated meaningful schedule advantage; not only with the DeepWater project but also versus the CalAm project. And the supply-to-three-counties regional benefit is because of the location of a Moss Landing desal production facility, which was recognized by the CPUC years ago.

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(Cont)

Eight CalAm Project Description Discrepancies

CPW members spotted the following seven discrepancies in the NOP’s description of the CalAm’s “proposed project”, which should be corrected prior to starting EIR analysis:

1. CPW recognizes that the NOP was issued prior to the ALJ’s ruling that the CPUC’s rate setting authority overrides the Monterey County desal ownership ordinance. However, the CalAm description does not describe that it plans to ignore the Monterey County ordinance that any desalinated water production facility paid for by the public must be publicly owned nor does the description explain that CalAm is currently being sued by Monterey County for violating the county ownership ordinance. The public ownership component should be described in the upcoming EIR. See Consideration #7 Legal Feasibility / Public Ownership.
2. The CalAm description proposes groundwater extraction but doesn’t say anything about whether CalAm has ground water rights even though the RDP’s EIR was overturned in Superior Court for not addressing water rights. Water rights are an approach / component of the “proposed project” and as a minimum some description of the basis for claiming water rights should be provided. See also Consideration #7 Legal Feasibility / Water rights.
3. The CalAm description proposes to transfer water out of the over drafted Salinas Water Groundwater Basin to another basin, which is against state law. Neither does the law allow borrow-and-return transfers. However, CalAm’s description states “if it is determined that the MPWSP needs to return water to the Salinas Valley Groundwater Basin, water could be conveyed...” back to the SVGB. As a minimum the description must calculate the amount of AFY to be returned along with some description of where/how CalAm will get the “return”

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G_CPW-06

G_CPW-07

water. For example, if CalAm plans to buy non-potable water from a Salinas water owner, transport it to the MRWPCA, and pay for it to be reclaimed — then that component must be identified and evaluated for environmental impacts/benefits and eventual costing. See Consideration #8 Legal Feasibility / Water rights.

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4. During a multi-year drought the Salinas Valley farmers may temporarily rescind the MRWPCA from shipping 5.4-mgd of reclaimed water to the MPWSP, immediately dropping 5.4-mgd out of the CalAm system. However, the CalAm description does not describe how it will respond to replace 5.4-mgd and what is the environmental impact of that hidden approach. Neither does CalAm’s MPWSP describe a contingency to connect into existing CSIP pipes to send emergency potable water across the Salinas River to the Castroville area. But adding a connection into the existing delivery pipe out of the CalAm’s proposed Marina desal production facility would be a low-cost high-mitigation contingency that North County residents ask for during the RDP.

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5. The CalAm description does not describe its brine disposal approach or the fact CalAm does not have access to a brine disposal pipe. This difficulty is because the Marina Coast Water District (MCWD) has a signed MOU with the MRWPCA giving Marina first right to use the available capacity of the MRWPCA brine outfall pipe for disposing up to 25-mgd of brine until April 15, 2016. ^{P1 - P2} So the CalAm project must secure (possibly buy) from MCWD the right to use the brine outfall pipe or CalAm may have to delay any outfall testing until after April 15, 2016.

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6. The CalAm description does not describe the beneficial or negative environmental of its energy source use of reclaimed methane gas sold by the MRWPCA.

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7. Furthermore, CalAm’s proposal makes no reference to regional needs or benefits. This is surprising since it was such a high priority to the CPUC and to CalAm in the Regional Desalination Project proceedings.

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8. Similar to the DeepWater alternative the CalAm alternative is a paper project without existing water rights/extraction rights, existing infrastructure, or permits. The descriptions should not mislead the EIR Team into assessing all projects as having the same immaturity as the “proposed project”, since the PG-People’s project’s has significant maturity e.g., permits, infrastructure, wells, etc.

G_CPW-12

Four Discrepancies Common to All Projects

CPW members spotted the following three discrepancies in the NOP’s description of the all three desalination alternatives, which should be corrected prior to starting EIR analysis:

1. None of the descriptions provide any insight into the specific desalination technology to be used, as if this is a low-cost, zero-risk decision when it is not, and has significant operational and maintenance, energy consumption and cost impacts.
2. None of the descriptions provide any insight into whether the supplier has a successful working prototype of their desalination technology / commercial reverse osmosis system.

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3. All three alternatives extract tens of thousands of acre-feet-per-year (AFY) of water from the Monterey Bay Marine Sanctuary yet none of the descriptions disclose the maximum AFY they extract from the ocean or from the submerged SVGB, nor do they describe the need to successfully perform a NEPA EIS. See Table-1 in Consideration #4: Intake Impacts. G_CPW-14
4. The likelihood of a multi-year drought along the coast is increasing because of climate change. However, none of the alternatives describe their contingency for drought conditions during the life of the desalination facility for peninsula ratepayers and/or to North Monterey County coastal communities. G_CPW-15

ENVIRONMENTAL CONSIDERATIONS

Consideration #2: Basin to basin environmental impacts

Description: Assess and determine whether the approach and design of CalAm “proposed project” trades away one environmental impact in Carmel Valley for a larger environmental impact in the Salinas Valley Ground Basin, including whether the project has any water rights to extract water from the portion of the SVGB that stretches into the Monterey Marine Sanctuary, whether CalAm can legally transfer that water out of basin, whether CalAm can legally borrow-and-return water to the SVGB, and whether there is a negative environmental impact from returning less water than borrowed. G_CPW-16

Justification:

a. CalAm’s slant well extraction must not violate existing water law and coastal plans. For example, the cone of depression generated by CalAm’s proposed slant wells is located in the North County Coastal Zone and subject to the regulations embodied in the North County Local Coastal Plan (LCP), which is certified by the California Coastal Commission. The 180-foot aquifer is an over-drafted coastal percolated groundwater aquifer (see: U.S. ARCORPS 1980; Anderson-Nichols, 1981; North County LCP 1982; Fugro 1994-96; Montgomery-Watson 1998). These policies have been in effect since 1982 and correspond with the requirements the California Coastal Act. Therefore the transfer of water from these formations for use outside of the North County coastal zone by CalAm (or any other party) is prohibited by the policies of the certified LCP, which include “to protect groundwater supplies for coastal priority agricultural uses”.

b. California law prohibits groundwater exportation from the Salinas Valley Groundwater Basin due to concern about the "**balance between extraction and recharge**" within the basin. ^{Ag²} (Water Code App., § 52-21 [MCWRA Act].) The environmental documents relied upon by the applicant do not dispute that the Salinas Valley Groundwater Basin is in overdraft and has been increasingly in overdraft for six decades, as shown by the steady inland progression of seawater intrusion. (RDP FEIR, p. 14.5-24.) G_CPW-17

c. In addition, the Monterey County Board of Supervisors adopted, in the late 1990s, a “no groundwater credit or transfer” ordinance for North County. This ordinance is to protect the water rights of overlying landowners. CalAm’s proposal directly violates the County’s existing ordinance against the transfer of water supply credits.

d. The project proposed by CalAm will permanently **increase the consumptive use** of groundwater from an already over-drafted, coastal percolated groundwater basin. CalAm has not explained how their proposed project does not violate the mandate to prevent **adverse cumulative impacts** upon coastal zone groundwater resources and water rights (North County LCP Sec. 2.5.3 (A) (3)). This is

an express violation of a state certified coastal policy which CalAm proposes and that the CPUC is prohibited from ignoring, and which necessitates the preparation of a fully new and complete EIR/EIS with mitigations, if such mitigations for the violations of these policies to protect water rights are even possible.

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e. CalAm also seeks to avoid other regulatory requirements. Specifically, CalAm’s proposal would constitute an illegal taking of "public trust" resources that must be allocated through an adopted regulatory process by the State Lands Commission prior to any consideration by the CPUC of the desal project (no State Lands regulatory process currently exists to grant subsurface water rights from submerged state lands in a federal sanctuary to a private, for profit company without any public bidding process or CEQA and NEPA compliance.). Since the requirements of the State Lands Commission, and the attendant costs, expenses, and fees that CalAm would be charged, will directly bear on the costs to be borne by the ratepayers, it is premature for the CPUC to take any action until a new EIR/EIS has been fully prepared and certified and only after CalAm has secured water rights from the State Lands Commission in a competitive bidding process that insures the maximum return to the taxpayers of California for the use of their water resources by a private, for profit company. Moreover, unlike CalAm’s previous efforts to take groundwater from private landowners, CalAm may not rely on the doctrine of prescription to take public trust resources from the State of California. This is a violation of over 100 years of California law. Each and all of these issues must be fully evaluated and mitigated by a new EIR/EIS before any action by the CPUC may take place.

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f. CalAm cannot pump groundwater to supply the MPWSP – as proposed – without rights to groundwater. No valid water rights have been identified that could be used by the project. Therefore, CPW believes CalAm does not have water rights in the SVGB. Nor can they gain rights in an over drafted adjudicated basin. Plus, any illegal taking of ground water from a known over drafted and adjudicated water basin creates an **immediate environmental impact** whether that water is transferred or not. CPW further believes that CalAm’s proposed slant well extraction out of the Salinas Valley Groundwater Basin directly violates state mandated requirements about prioritize water rights use.

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g. Additionally, even if the extraction were legal, MPWSP’s EIR must assess the negative environmental impact of **increasing saltwater intrusion** with annual extractions adjacent to and inside the CSIP area. According to the modeling report in the CalAm Coastal Water Project EIR, 2.2 gallons of brackish water (85% saltwater & 15% fresh) must be processed to generate one gallon of potable water, leaving 1.2 gallons of salty brine water for discharge into the ocean. Thus, to generate 9.0 AFY of desalinated water requires mining 22,179 AFY out of the SVGB. See Table-1 below. This is a huge amount of water removal adjacent to the CSIP injection area. That removal is thousands of AFY more than what is annually injected so CalAm’s extraction is counterproductive to the injection efforts in the Castroville area, and it simultaneously **encourages up-gradient wells to go dry**.

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h. CalAm’s project description states it may need to “return” any SVGB water it transfers out of the basin thus implying it is legal and environmentally neutral to borrow-and-return transferred water out of and back to the SVGB. CPW believes that borrow-and-return violates the laws and regulations cited earlier in this consideration.

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i. If less SVGB water is returned than was borrowed and transferred out of the SVGB then an immediate negative environmental impact occurs. Yet CalAm’s project description does not quantify the return amount thus preventing determination of whether or not the approach negatively impacts

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the environment. Therefore the CPUC's EIR is obligated to quantify and evaluate the environmental impact of the CalAm's borrow-and-return approach, while not depending upon previous RDP claims that transfer of one gallon of portable water only requires returning to the SVGB 15% of a gallon of water. The correct amount of how much groundwater from the SVGB must be returned is 33% of a gallon. The return amount in AFY can be calculated, as shown below, by assuming the ration of saltwater to fresh water at the extraction point within the 180-foot aquifer.

- 1) Assumption: the brackish water at the extraction point is 85% ocean --15% fresh
- 2) 2.2 gallons of brackish water must be processed to generate 1.0 gallon of potable water
- 3) Thus one-third of each desalinated gallon is groundwater (15% x 2.2 gallons of brackish water = 0.33 gallons of groundwater in every desalinated gallon of water).
- 4) Thus one-third of all extracted AF is SVGB water (0.33% x 1 AF = 0.33 AF)
- 5) If 22,179 AFY of desalinated water is extracted and processed into potable desalinated water then one-third of it is SVGB groundwater or 7,319 AFY (0.33 x 22,179 AFY = 7,319)
- 6) Thus the accurate amount of **transferred** potable desalinated AFY that must be returned is 7,319 AFY.
- 7) Conclusion: The borrow-and-return approach is only environmentally neutral if an equal amount of water is returned to the SVGB.

j. CPW believes that CalAm's proposed project uses brackish water extractions from the SVGB to solve the Regional Water Quality Control Board's 95-10 order to stop over-drafting the Carmel River of 6,624 AFY by illegally and significantly over-drafting the SVGB basin by 22,179 AFY. See Table-1 below. Such potential environmental impact is relevant and necessitates that the MPWSP's EIR evaluate whether the approach and design of the CalAm "proposed project" trades away one environmental impact in the Carmel Valley for a larger environmental impact in the Salinas Valley.

Consideration #3: Intake impacts on ocean food chain/sea life

Description: Assess and determine the environmental impact to the near-shore chain of life caused by annual water extractions from the ocean or SVGB by the alternative desalination projects, as well as whether CalAm's slant well extractions of fresh water from under the seabed will environmentally impact the sea floor ecology / ecosystem.

Justification:

a. The acre-feet-per-year of extracted ocean or groundwater by each of the suppliers is one of the major drivers of environmental impact but is not disclosed in the NOP. The public will be hindered from recognizing the individual and comparative magnitude of impact if the MPWSP EIR does not reveal these extraction sizes. For example, the environmental impacts to sea life harmed, seabed stability, saltwater intrusion, and brine discharge/disposal increases as the annual maximum amount of extracted water increases.

Therefore, the MPWSP's EIR needs to calculate, assess, and disclose the environmental impacts likely from the maximum extraction amounts shown in Table-1.

Table 1: **Maximum Extraction:** Environmental impacts are driven by the annual quantity of extracted water from the ocean or from the Salinas Valley Groundwater Basin

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	# gallons of Extracted H2O to produce 1 desal gal	Maximum Daily Planned production of desal H2O (mgd)	Daily extracted- mgd	days per year	extracted gal per year	Extracted AFY*
DeepWater	2.2	25.0	55,000,000	365	20,075,000,000	61,608
PG-People's	2.2	10.0	22,000,000	365	8,030,000,000	24,643
CalAm	2.2	9.0	19,800,000	365	7,227,000,000	22,179

* 1 AFY = 325,851.4 gal

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(Cont)

b. For years, local environmentalists have voiced concern that surface or subsurface extraction of seawater by coastal desalination projects will negatively harm various organisms, fish, or animals composing the chain of life within near-shore coastal waters. Operational experience with Sand City's existing 300-AFY desalination plant may not refute this environmental concern because Sand City's extraction is 82 times smaller than the smallest MPWSP desal alternative.

Only extraction from 100-feet below the surface of the ocean and extraction from the 180-foot-aquifer under the seabed nearby the mouth of the Salinas River is proposed.

No previous Monterey County EIR has assessed extraction from under the seabed off shore from the mouth of the Salinas River. So no environmental studies exist on the potential stability of the seafloor where CalAm's slant wells would annually remove approximately 22,179 AFY

The possibility of environmental harm caused by annually extracting tens of thousands of AFY of ocean or groundwater is relevant and necessitates that the MPWSP EIR investigate extraction impacts upon the Monterey Marine Sanctuary.

Consideration #4: Cone of depression / saltwater intrusion impacts

Description: Assess and determine whether the environmental impact of the cone of depression caused by CalAm's slant well extraction stretches inland into the CSIP area and if proposed extractions negatively impact existing saltwater intrusion. Provide a top-down view of the contour lines of the zone of depression showing how far inland that the depression stretches and how they intersect with the recently published Monterey County Water Resources Agency 2011 saltwater intrusion contour maps.

Justification: CalAm's MPWSP desal plan again (as it did during the RDP) extracts equivalent or more basin water **adjacent to** where the county injects water into the basin to stop saltwater intrusion. CPW believes that extracting large amounts of water where you are injecting water to prevent saltwater intrusion will directly harm the Castroville Saltwater Intrusion Project (CSIP) efforts to protect coastal farming and the nearby communities of Moss Landing, Prunedale, Castroville, Salinas and Marina.

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Unfortunately this environmental impact was not assessed in the RDP EIR. Subsequently that EIR was challenged in the California Superior Court (Monterey County) and was overturned because it was inadequate, flawed, and incomplete:

- ✓ Because the RDP's EIR was faulty for not addressing water rights
- ✓ Because coastal environmental impacts to an over drafted water basin were not addressed
- ✓ Because the CPUC was the lead agency and not Marina Coast Water District (MCWD)

During the Superior Court hearings the defense lawyer for MCWD revealed that the modeled “cone of depression was 5-miles wide” surrounding the extraction wells. Hence, impacts from the proposed extraction would stretch 2.5 miles from the center of the zone almost to Castroville and well within the Castroville Saltwater Intrusion Project (CSIP) injection area. Therefore, the RDP would have simultaneously extracted more basin water than was being injected into the basin to stop saltwater intrusion.

In comparison, CalAm's latest plan only moves its extraction point 750 feet farther from Castroville, its cone of depression will likely still have a significant negative impact upon saltwater intrusion. Thus the CalAm proposed project cannot rely on the RDP's EIR to claim no environmental impact to the CSIP project. In fact, to prevent Salinas Valley farmers and water coalitions from suing to protect themselves from harm by CalAm's slant wells the hydrology of how extracting basin water adjacent to where the county injects water to stop saltwater intrusion needs to be satisfactorily demonstrated as having little impact. Additionally, it is likely that the California Coastal Commission will not approve CalAm's extraction methodology if it harms CSIP. **The mistake of ignoring the environmental impact of desal extractions upon saltwater intrusion should not occur again.**

The possibility of environmental harm by increasing saltwater intrusion is relevant and necessitates that the MPWSP EIR investigate extraction impacts on saltwater intrusion.

Consideration #5: Up-gradient Well impacts

Description: Assess and determine whether the environmental impact of the cone of depression caused by CalAm's slant well extraction expands saltwater intrusion closer to up-gradient wells and if lower hydrologic pressure from the extractions draws down existing up-gradient water wells in Zone-2C.

Justification: As part of gaining approval for the Castroville Saltwater Intrusion Project (CSIP) and for the Salinas Valley Water (SVWP) Project, The Monterey County Water Resources Agency (MCWRA) claimed that North County up-gradient aquifers were physically connected to the northern portion of the Salinas Valley water basin. Subsequently, up-gradient property owners in the Prunedale area were designated within the “benefit zone” and have for years paid taxes to the county for operation of the CSIP and Zone-2C SVWP. Therefore, Zone-2C up-gradient well owners have water rights that CalAm does not have and water wells that may be impacted by CalAm's proposed extraction from the SVGB

However, the RDP EIR ignored assessing environmental impacts to up-gradient wells caused by desal extractions adjacent to the CSIP area and ignored extraction impacts to up-gradient Zone-2C wells. For example, the RDP EIR did not assess what impact, if any, would a miles-wide cone of depression with lower hydraulic pressure and down gradient from Zone-2C wells have? Nor did the RDP EIR address the detriment to the water rights of up-gradient well owners of exporting extracted water out of Zone-2C.

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The possibility of environmental harm from increasing saltwater intrusion along the Monterey coast and pushing saltwater into up-gradient Zone-2C, or drawing down the water levels of up-gradient wells is relevant and necessitates that the MPWSP EIR investigate up-gradient impacts.

Consideration #6: Brine Discharge / Disposal impacts

Description: Assess and determine the environmental impact caused by the maximum quantity of brine discharged back into the ocean by each alternative and any cumulative effects or disposed on land.

Justification: The environmental impact caused by returning desal brine to the ocean depends upon several variables including: the quantity of brine returned, if the brine is diluted with less salty water, and the effectiveness of the diffusion technique used at the end of the return pipe, and the location and depth of diffusion. The MPWSP EIR needs to recognize and assess the following disposal/discharge differences in the three competing desal projects in order to fairly determine if there are any significant environmental impact differences between the projects.

The current NOP project descriptions for the three alternative desal projects differ in maximum size and the potential amount of brine discharge and its subsequent environmental impact upon the ocean and upon sea life:

- DeepWater = 25-mgd
- PG-People's = 10-mgd
- CalAm = 09-mgd (if the MRWPCA doesn't provide recycled water to the MPWSP.)

However, the PG-People's project is the only project that plans to reduce its brine discharge load by diverting produced brine into a commercial product. This technique may significantly reduce that projects environmental impact to the ocean. Plus, brine from this project will be diluted in the large quantity of cooling water discharged from the Moss Landing power plant. DeepWater plans to use this same diluting technique.

Meanwhile, CalAm plans to use the MRWPCA outfall pipe allowing its brine to be diluted before being returned to the ocean. However, as stated Consideration #1, the Marina Coast Water District (MCWD) has first right to use the MRWPCA brine outfall pipe until April 15, 2016. So the CalAm project must secure (possibly buy) from MCWD the right to use the brine outfall pipe or CalAm may have to delay any outfall testing until after April 15, 2016.

There are three ocean discharge locations. One is at the end of the MRWPCA discharge pipe, using its existing diffuser. The second, used by the PG-People's project is at the end of the existing pipe that serves the Moss Landing Industrial Park, that employs an existing diffuser. The third location, used by DeepWater is at the end of the Moss Landing Power Plant's discharge pipe. However, DeepWater plans to use a brand new diffuser. So the environmental impact of new or current dispersion techniques must be evaluated in the EIR.

Therefore, the possibility of environmental harm caused by brine discharge into the ocean is relevant and necessitates that the MPWSP EIR investigate the environmental impact triggered by the desal suppliers' discharge approaches.

FEASIBILITY CONSIDERATIONS

Consideration #7: Technical and Schedule Feasibility / Risk

Description: Assess and determine each alternative’s technical feasibility to build and deliver on-schedule its defined desalination approach in an environmentally safe manner to include:

- ✓ Providing and operating its intake subsystem
- ✓ Building, operating, and maintaining its desalination plant
- ✓ Providing and operating its brine discharge disposal subsystem
- ✓ Building any piping network needed to deliver desalinated water

Justification: CEQA regulations clearly and repeatedly require that feasible alternatives be considered as part of an EIR.^{C1-C5} Assessing for feasible ways to avoid environmental harm or for feasible mitigations, is conducted to prevent an applicant from proposing a project approach or mitigation that sounds excellent but cannot be delivered either technically or on schedule or within budget. For example, a competing desal supplier claims that his/her reverse osmosis technical approach provides 99% availability but research shows that during past operational processing of surface water that the RO filters rapidly clog up, reducing monthly production time to 60%.

For this project, the top-level environment—feasibility hurdle is that the selected alternative must be environmentally adequate **AND** the produced desal water must be transferrable out of the SVGB to the Carmel Valley basin. Thus, CPW recommends that the MPWSP EIR investigate the additional feasibility considerations listed below.

- ✓ Technical Risk such as proposing never before used slant well extraction techniques
- ✓ Schedule Risk caused by legal delays, funding delays, slow approval of federal, state or local permits; and technical delays
- ✓ Overall project risk, which quantifies the combination of all risk ratings into one number.

Therefore, the feasibility of each desal supplier’s project approach is relevant to complying with the 95-10 cease and desist order while avoiding or mitigating environmental impacts and thus necessitates that the MPWSP EIR investigate the technical and schedule risk of each desal alternative.

Consideration #8: Legal Feasibility / Risks

Description: Assess and determine likely legal challenges within each of the desal alternatives of being sued because of negative environmental impacts to 3rd parties or other legal reason; in order to allow the ALJ to approve early avoidance or mitigation measures.

Justification: The ability to deliver an environmentally acceptable project requires avoiding legal challenges or minimizing and overcoming unavoidable ones. Both the ALJ and the public need to know if any approach or component within each desal alternative is likely to trigger third parties to legally challenge the MPWSP to avoid negative environmental impacts to their interests. It is in the CPUC’s and the public’s best interest to identify such legal risks during the EIR process, allowing timely mitigation to prevent slowing delivery of the selected desal production alternative.

Each of the alternative desal projects have approaches that may be challenged in court. Challengeable project approaches or components differ from project to project. For example CalAm could be sued for illegally transferring water out of the SVGB. However, the Moss Landing desal alternatives avoid those possible challenges but may face court challenges that they negatively harm the Monterey Marine Sanctuary and there are not sufficient overriding considerations to allow the damage. The span of likely legal challenges include:

- ✓ Public Ownership of the publically funded desal production facility
- ✓ No water rights to extract water from the SVGB
- ✓ Cumulative damage to the Salinas Valley water basin
- ✓ Transferring water out of an over drafted water basin violates the California Coastal Act.
- ✓ Environmental damage to the Monterey Marine Sanctuary
- ✓ Increasing coastal saltwater intrusion and/or damage to up-gradient Zone-2C wells
- ✓ Usage of the MRWPCA brine disposal outfall pipe usage.

The RDP provides a roadmap of legal mistakes regarding water law that the MPWSP should avoid, as previously addressed in Consideration #3. The Monterey County Board of Supervisors (BOS) of the MCWRA approved the RDP despite knowing that their project was absolutely going to be challenged in court on the issue of water rights and cumulative environmental damage to the SVGB, which were not addressed in the EIR. The BOS also approved the RDP knowing that the MCWRA had never agenized and presented public notice that the brackish water to be desalinated was discarded “salvage” water and had been relinquished by water right owners in the Salinas Valley.

The RDP proceeded into project work when it had no water rights. No water rights — no water. No water — no desalination project.

Subsequently, the water rights legal challenge scared financial investors from committing to fund the project thus causing schedule delays, while simultaneously driving up the cost of money because the project’s risks were demonstrably high.

The RDP’s legal failure alerted Salinas Valley farmers and the Salinas Valley Water Coalition that withdrawal of tens of thousands AFY from the SVGB for desal purposes environmentally threatens their farming interests. Therefore, it is relevant and necessitates that the MPWSP EIR investigate

The possibility of likely legal challenge over environmental harm to 3rd parties is relevant and necessitates that the MPWSP EIR investigate likely legal challenges within each of the desal alternatives.

TRANSPARENT REPORTING CONSIDERATIONS

Consideration #9: Cost Implication Reporting

Description: Identify and report cost insights or implications for each alternative desal production project, to help the ALJ and cost workshop estimation team. CPW recommends implications receive a rough order of magnitude cost rating of high, medium, or low for the following cost categories: legal defense costs, infrastructure costs, operations & maintenance costs, energy costs, cost of money, total 35-year cost, AFY cost; as well as assessing the degree of regional economic benefits afforded by each alternative.

Justification:

a. **Insights:** CPW recognizes that CEQA/NEPA rules require a project's EIR/EIS to provide environmental and feasibility impacts while allowing costing to occur separately or in parallel. However each project's environmental mitigation design establishes the project's risk and cost drivers, which directly impact the cost of individual components, the total 35-year cost, and the cost ratepayers must pay for a unit of water. Additionally there needs to be consistency between the EIR and the costing groups. It also isn't difficult for the current EIR team to identify cost insights since many are known from the RDP experience and since CalAm's MPWSP approach and components are identical or highly similar to the RDP. For example, the DRA, as reported in its April 30, 2010 cost analysis of the RDP, identified significant costs that were **not** reported to the public in the CPUC sanctioned RDP project.^{D1} Neither the EIR or the RDP costing team reported some significant costs.

G_CPW-30

Other major insights are also known. For example:

- ✓ RDP's proposed cost of water was **the highest** desal cost per AFY in America and so might CalAm's MPWSP if it doesn't establish cost controls and contractual cost/performance incentives and disincentives advantageous to the ratepayer.
- ✓ By following a risky legal approach the RDP drove up its legal costs, drove up the cost of money from wary investors, thus delay meeting the project milestones. The MPWSP should avoid or minimize costly legal challenges.

G_CPW-31

The CPUC should not make the same mistake that MCWD and the Monterey County Board of Supervisor did in the RDP EIR by only going through the motions of assessing the Moss Landing desal production alternatives. **Those alternatives, as do the current Moss Landing alternatives, offer significant environmental impact differences, avoidance of significant legal challenges, as well as huge cost savings for the ratepayers when compared to CalAm's proposed MPWSP.** For example locating a regional desalination plant in Moss Landing reduces the number of desalination plants along the Monterey Bay and thus is more appealing for approval by the California Coastal Commission.

G_CPW-32

b. **Regional Benefit:** In late-2008 the DRA initiated the Regional Plenary Oversight Group and worked for over a year with Monterey County water stakeholders to define a workable regional water solution. "The intent of the collaborative effort was to find advantages over California American Water Company's ("CalAm") Coastal Water Project **by looking for regional solutions that included a diverse group of beneficiaries, not just CalAm ratepayers.** DRA hoped that the dialogue process would result in a regional water supply and management implementation strategy that balanced and met the needs of regional stakeholders. However, the Regional Desalination Project, as presented in the Settlement Agreement among CalAm, Marina Coast Water District and Monterey County Water Resources Agency does not fulfill the original vision of a regional solution."^{D2} Unfortunately, neither does CalAm's latest approach.

G_CPW-33

When assessing regional economic benefit the MPWSP EIR should proceed in the following three ways:

- #1 Do not define the regional effects as only including Marina, Monterey Peninsula, and Carmel Valley. The region should include "North Monterey County coastal communities east of the Salinas River. These communities are Moss Landing, Castroville, the up-gradient Prunedale area, and Pajaro and Aromas in the Pajaro Valley.

G_CPW-34

#2 Assess and report the potential near- and long-term regional benefit of each proposed alternative, including that the CalAm MPWSP alternative is not taking a regional approach that includes North Monterey County in accordance with previous CPUC “Plan B” decision in 2001.

G_CPW-35

Consideration #10: Transparent Reporting with comparison tables

Description: As a minimum, the MPWSP EIR should report out EIR results using the following comparison tables:

1. Infrastructure Feasibility
2. Intake/Discharge Environmental Impacts
3. Feasibility / Risk Comparison
4. Rough Order of Magnitude Cost Comparison
5. Overall Project Comparison

Justification: All complex, large, and/or high technology projects have strengths and weaknesses. And a single significant weakness can often cause a project to fail. Unfortunately, the history of Monterey County water projects is that the weaknesses have often been hidden from the public by the agencies pushing the projects. For example, the risk of not having any water rights was addressed in the RDP’s EIR. Subsequently, that weakness blocked the MCWRA from gaining financing for that water project.

G_CPW-36

Therefore it is critical that feasibility and cost weaknesses not be hidden or excluded from scrutiny in the MPWSP EIR. Weaknesses need transparent airing so associated risks are understood allowing the public to appreciate the benefits and weaknesses of each alternative and thus know what the public is buying and why.

Also, all too often Monterey County EIR’s are documented and presented to the public like an unassembled 1000-piece jigsaw puzzle. This approach forces the public to sift and integrate the pages of data into an understandable picture in order to verify if the selected alternative that the agency is recommending is in fact the best choice. This local process often blinds both decision makers and the public from grasping the comparative differences between environmental impacts or seeing the feasibility strengths and weaknesses of competing alternatives or seeing the true costs.

Such awkward reporting is not as efficient as comparative analysis, which is a best practice followed by commercial businesses and federal agencies acquiring large projects. That best practice is to build comparison tables using Excel software tables. For example competing project alternatives can be displayed side-by-side horizontally with evaluation factors or subfactors displayed vertically. Such tables allow reviewers to see color-coded scoring of each evaluation cell. In effect, these tables are mini jigsaw puzzle box tops allowing rapid understanding of the comparative merits of the alternative projects.

Large project competitors dislike these tables because they expose major weaknesses. Buyers love these tables because they protect them and help them buy the best product for their budget.

Because of the bad experience that the public, peninsula city agencies, and even some members of state agencies had with the Regional Desalination Project’s lack of transparency, it is in the CPUC’s best interest to use the side-by-side comparison table technique to ensure rapid understanding of the findings in the MPWSP EIR.

CPW recommends the MPWSP EIR use comparison tables similar to the example tables shown below to provide visibility into evaluation factors and visibility of the comparative strength of one alternative versus another. Example 5, is the most comprehensive table. It is a color-coded overall project comparison table that groups 7 factors and 20 subfactors into a compact, highly transparent format, allowing the ALJ and ratepayers to quickly understand ratings and recognize the strengths, weaknesses, and commonalities between the alternative desal approaches.

Therefore this technique is relevant for gaining public support for the selected alternative, as well as relevant for the ALJ to make a justifiable and legally defensible selection of which desal alternative to proceed with.

Example 1: Infrastructure Feasibility Comparison Table

Existing infrastructure, backup water source & commercial permit makes the PG-People's Desal the least-risky lowest-cost desal project

Required Components	PG- People's Desal	DeepWater Desal	CalAm Desal
In-place Intake	YES	No	No
In-place Outfall	YES	No	* maybe
In-place pilot RO plant	YES	No	Yes
In-place Storage	YES	No	No
In-place 2nd Water Source	YES	No	No
in-place plant site	YES Owned	Yes Leased	No
Coastal commercial permit	YES	No	No
Seawater extraction permit	No	No	No
Pipe to Peninsula	No	No	No
EIR for impact to sea/coast	No	No	** No
In-place JPA	YES	No	*** No
In-place Power Source	M.L. Power & future solar	M.L. Power & future solar	M.L. Power & Methane
Estimated Cost per AF	\$1,350	\$2,940	\$3,970

* MCWD claiming 1st right to use

** CalAm EIR failed in court

*** CalAm violating ordinance; County to sue

Example 2: Intake/Discharge Environmental Impact Comparison Table

	PG-People's Desal	Deep Water	CalAm Desal
Intake Method			
Intake impact to ocean or seabed			
Intake impact to coastal SW intrusion			
Intake impact to Up-gradient wells			
Brine discharge method			
Discharge / Disposal impact to ocean or seabed			

Example 3: Feasibility Risk Comparison Table

	PG-People's Desal	Deep Water	CalAm Desal
Risk of being Sued			
Permitting Feasibility / Risk			
Technical Feasibility / Risk			
Schedule Feasibility / Risk			
Financing Feasibility / Risk			
Cumulative Project Feasibility / Risk			

Example 4: Rough Order of Magnitude Cost Companionable Table

	PG-People's Desal	Deep Water	CalAm Desal
Legal Defense Costs			
Infrastructure Costs	low		
O&M Costs			
Energy Costs		medium	
Cost of Money			
Total 35-year Cost			high
Acre Foot per Year Cost			
Regional Economic Benefit			

Example 5: Overall Project Comparison Table

Factors >>> subfactors >>>	Technical Approach				Cost-Benefit Insights	Schedule	Overall Risk
	Governance	Program Mgmt	Technical Components	Environmental Impact			
	2	1	7	1	4	4	1 score
CalAm Desal							
Deep Water							
PG-People's Desal							
MRWPCA GWR							

See also the separately supplied full-sized, color-coded example table.

Footnotes

Ag Land Trust Document

Ag 1 Letter from the Law Offices of Michael Stamp to the Monterey County Board of Supervisors, Subject January 11, 2011 Board Agenda Item No. S-6 Regional Desalination Project

Ag 2 February 14, 2011 Petition for Writ of Mandate, Complaint for Declaratory Relief, Case # M110691

CEQA Document:

Title 14 Chapter-3 CEQA Guidelines for Implementation substantiate that an EIR is to analyze “feasible alternatives”:

C1 Section 15091 (f) Discussion **Findings**: Public Resources Code section 21081, subdivision (c), now provides that a finding under paragraph (3) of subsection (a) may cite legal, technological, and employment related reasons for determining that a mitigation measure or project alternative identified in the EIR is infeasible

C2 Section 15096 (g)(2) **Process for a Responsible Agency**: When an EIR has been prepared for a project, the Responsible Agency shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment.

C3 Section 21000 (g) **Legislative Intent**: Require governmental agencies at all levels to consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs and to consider alternatives to proposed actions affecting the environment.

C4 Section 21002 **Approval of projects**; feasible alternatives or mitigation measures: The Legislature finds and declares that it is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required by this division are intended to assist public agencies in systematically identifying both the



significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.

G_CPW-37
(Con't)

C5 Section 21080.5 (2)A “Require that an activity will not be approved or adopted as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen a significant adverse effect that the activity may have on the environment.”

DRA Document:

Comments of the Division of Ratepayer Advocates on the proposed Settlement Agreement, dated April 30, 2010

G_CPW-38

D1 Executive Summary page 4 para I B: **DRA’s Position**
“DRA opposes the current proposed Settlement Agreement because it lacks meaningful cost controls, inequitably allocates costs and risks to Cal Am ratepayers, denies Cal Am ratepayers meaningful representation, and fails to adequately address the operations and maintenance of the desalination plant and the associated costs.”

D2 Executive Summary page 3 para I A: **Introduction**

MRWPCA Document:

MOU: Use of MRWPCA Outfall for Brine Disposal, paragraph 5, dated April 15, 2011

G_CPW-39

P1 Paragraph 5. “Priority Right for Use of Unused Outfall Capacity. During the term of this MOU, MCWD shall have the right prior to any other person, including any agency or entity, to use a portion of the capacity of the outfall, not used for discharge and disposal of treated sewage, for brine generated by up to a 25 MGD desalination plant.”

P2 Term. This MOU shall be effective upon execution and shall continue effect thereafter for five years, unless sooner terminated or superseded by further agreement of MRWPCA and MCWD.

Full-Sized Overall Project Comparison Table (separate pdf file)

Citizens for Public Water Comparison table ... version November 2012

Subfactors>	Governance Factor		Program Management Factor	Cost-Benefit Factor			Environmental Factor	Technical Factor					Schedule Factor			Performance Risk Factor	Weighted Score to derive Risk	<< Big is better				
	Type Agreement	Who Owns the Plant	PM & Engineering Expertise	Cost of Money	Capital Cost	Estimated Cost per AF	Economic Growth Benefit	Environmental Impact	Plant site Ownership	Water & Rights to take	Intake wells & Brine outfall	Proven Production Technology	Storage Capacity	Emergency water source	Power	Time to get investment financing			Time to Delivery	EIR Status	Permits Status	Cumulative Risk
CalAm Desal Plant @ Marina	Public-Private Agreement not in place; May sue Monterey County to overturn public ownership ordinance.	CalAm owns plant not the ratepayers who pay for it.	Excellent CalAm PM & company desal experience including Sand City cold-water processing experience, no storage or emergency water source	Market rate cost for a utility build; Experienced mgmt team will get financing quickly; possibly from parent company	2nd highest capital cost \$362M	\$3,970 per AF (Inconsistent with DRA's Regional desal cost estimate; True cost is higher, possibly ~\$4,500)	Later phase production allows significant housing business growth on Ft. Ord & Peninsula. Zero benefit to North County.	EIR must be updated for any impacts to sea. Probably low impact to sea floor. Possible impact to CSIP and upgradient North County wells. CCC dev approval if no impact to CSIP.	Not declared. Probably Lease from MRWPCA to avoid requesting CCC dev approval	Use of slant wells doesn't avoid water rights challenge. Updated EIR must address impact to Salinas Valley water basin and legality of transferring water out of basin.	Need CCC approval for coastal slant wells; unknown NTU @ 180 aguifer point; Will use MRWPCA outfall pipe for brine disposal	Likely use of CalAm Pilot processor @ Moss Landing along with CalAm's Sand City installation experience.	Zero none identified by CalAm	None, except illegal taking from Carmel River	Not using MRWPCA methane, probably buy from unbuilt Fresno solar field. High seawater salinity intake increases energy costs	Traditional utility financing likely if PUC as lead agency approves the project. Updating the EIR and gaining first permit from the CCC will cause minor delay in getting full financing.	early-2017 if PUC approval & coastal permitting occurs by mid-2012 given CalAm's declared 57-month project schedule	Original CalAm EIR must be updated to address for slant wells & sea floor extraction. Likely 9-month delay to gain CCC approval for test well drilling.	If PUC approves the project, then gaining Cal Coastal Comm Development Permits is likely.	2nd highest risk: CalAm has no water rights, No reserve water source for plant stoppage; price estimate is low	43	<< Has best, actual desal delivery experience. Currently a paper project with no water rights, permits, or physical infrastructure in place and the most costly desal project by far. Nearly twice as risky as the other two desal projects. Supports housing/business growth on Ft. Ord & Peninsula but no benefit to North Monterey County or any other counties.
DeepWater Desal	Joint Powers Agreement but unstated with what agency; & not in place	JPA owns plant but JPA may NOT be w/MPWMD or ratepayers who paid for it.	Excellent combination of on-hand desal builders, scientists, & operators but no cold-water region experience, storage, or emergency water source	Probably market rate cost	3rd Highest capital costs \$344.5M	\$2,940 per AF	Provides water to both Peninsula & Pajaro Valley economic areas & other counties. 2nd Largest economic impact. 2nd because of higher AF/yr cost.	30-meter depth extraction has low impact to sea life but EIR must be submitted & approved. Environmental groups may fight impacts to sealife.	Leased site north of Moss Landing	Need CCC permit to build new pier & intake pipe to lip of deep Cyn & at 30-meter depth	Need CCC to permit for deep water intake infrastructure & withdrawals. Unclear if new brine outfall pipe needed?	CalAm pilot processor @ Moss Landing	Zero	Zero	Planning to buy from unbuilt Fresno solar field. High seawater salinity intake increases energy costs	Investments occur if political support emerges with approved EIR & intake permits & missing 2nd water source solved; PUC approval of higher CalAm rates re-pays investors. No MPWMD bond issue.	Probably early-2017 since offeror has not declared if ira construction schedule is doable in 48-months after permits approved.	Can use / modify CalAm EIR & MBRI pier EIR	Needs CCC permits for deep water extraction & transport pipe to peninsula	3rd Riskiest, No reserve source, longest transfer piping & EIR/permits needed. Second largest economic benefit but at a high AF/yr cost	48	<< Currently a paper project with no water rights or physical infrastructure in place and no permits except one easement permit. Sea construction and lack of 2nd water source are major risks. Second largest economic benefit but at twice the AF/yr cost as the PG-People's desal option.
PG-People's Desal	Joint Powers Agreement w/Pacific Grove	JPA with MPWMD so ratepayers own the plant	Good desal builders / operators with good financing experts & only project with intake, storage, outfall, & emergency water source infrastructure in place but no cold water region experience	Low risk approach will help get financing at low market and tax-free bond rate cost	2nd LOWEST cost \$128.7M & provides drought protecting & water for growth	CHEAPEST: \$1,200 - \$1,500 per AF, including transport piping. Optimistic cost estimate... probably higher but not above \$1,800	LARGEST economic impact at LOWEST AF/yr cost. Provides water to both Peninsula & North County economic areas & other counties.	Pipe-thru-a-pipe 30-meter open ocean extraction has low impact on sea life. Environmental groups may fight impacts to sealife 60+ years of shallow water intake at the commercial park and PGE plant without major environmental harm.	Moss Landing Green Commercial Park already acquired	Permitted water taking in place for Commercial Park's intake pipe. But need CCC permit to build new pipe-thru-a-pipe pipe & at 30-meter depth	Intake & brine outfall pipes owned & in place	People's Pilot processor @ Moss Landing with New Mexico commercial desal technology supplier	44M gal storage tanks in place	Storage tanks and backup well able to pump 2,100 gal/minute	Use solar from unbuilt Moss Landing field. Has utility permit. However, needs CCC dev permit. Plus use some Moss Landing Pwr. Increases jobs in M.C.	Investments occur if political support emerges & shallow water filtering is acceptable to investors; PUC approval of higher CalAm rates re-pays investors. No MPWMD bond issue.	2016 with or without solar field. SHORTEST construction schedule given in-place infrastructure. Delivery occurs 12 months after EIR/permits approved & JPA established. Late-2013 approvals allow meeting schedule.	Can use/modify CalAm EIR & has existing intake, outfall, construction & utility permits; may have to prove to CCC few shallow water extraction impacts.	Needs CCC permit for transport pipe to the peninsula & solar field build	Largest economic benefit for least cost. LOWEST desal option cost & risk given significant cost savings w/majority of infrastructure & pilot plant in hand; transfer pipe to the peninsula needed; but EIR must prove sea life won't be harmed.	75	<< Cheapest desal option. Only desal supplier with built infrastructure, with several coastal development permits and an existing JPA with PG. Has water extraction right but not for largest economic benefit for least cost.
MRWPCA recycled water	Peninsula Mayors JPA seeking JPA with MRWPCA. Legality of the Mayors+MPW MD+county JPA	MRWPCA owns plant & MPWMD (ratepayers) have right to 8,000 AFY of processed water	PM & dual treatment experts on hand; tertiary expertise needed	LOWEST cost of money given proven technology application	LOWEST project COST \$60-\$70M (for 8,000 AFY). Only solves 2016 problem.	\$2,000 to \$3,000 per AF	Meets current needs only in wet years. Reduced supply in drought conditions; does not support expanded housing or business growth	No EIR needed	at MRWPCA	Only 8,000 AFY of winter runoff & subject to reductions if farmers need water during drought	No wells needed; outfall pipe in place	Tertiary treatment perfected in Orange County	Pumped to GWR storage site but no 2nd source during droughts	Lower production in drought years. No emergency 2nd source.	Use self-generated MRWPCA methane	MPWMD must pass mid-2013 bond; ratepayers may support this lower cost option even if also paying for the CPUC's Cal-Am desal	early-2017. SLOWEST construction but not slowed by EIR/permitting. So this option may be as fast as any other option	EIR approved. No EIR issues	N/A	LOWEST cost & risk but won't meet schedule. LOWEST Engineering Risk but 2,000 AFY short of needed quantity & MOST exposed to lower production in drought years.	72	<< Low-risk, feasible, low-cost solution with the unique benefit that the RWQCB may delay 2016 river use reduction if viable project presented to the CPUC by early 2013. But no regional economic benefit to North Monterey County or other counties.
	3	4	5	5	5	3	2	5	5	3	5	5	3	1	5	1	2	5	5	72		

Rating weight (Big is better)

worst	1	Red = Lowest rating or discriminating weakness
	2	Yellow = worrisome weakness
	3	Green = acceptable rating
	4	Purple = beneficial subfactor
best	5	Blue = Highest rating or discriminating benefit

October 1, 2012

Via E-mail

Andrew Barnsdale
California Public Utilities Commission
Energy Division
Transmission and Environmental Permitting
505 Van Ness Avenue
San Francisco, CA 94102-3298
bca@cpuc.ca.gov

**Re: A.12-04-019: CALIFORNIA AMERICAN WATER (U210W)
MONTEREY PENINSULA WATER SUPPLY PROJECT**

Dear Mr. Barnsdale:

On behalf of LandWatch Monterey County, we write to request that the environmental review under the California Environmental Quality Act (“CEQA”) evaluate an alternative location for the source water intake for the desalination facility proposed as part of the Monterey Peninsula Water Supply Project (“MPWSP”).

We believe that an alternative location outside the Salinas Valley groundwater basin (“SVGB”) may mitigate or avoid a number of impacts. First, it may avoid legal conflicts with groundwater rights in that overdrafted basin. Second, it may avoid or minimize impacts to groundwater resources, as well as the consequent impacts to agricultural resources and to land use plans calling for dedication of groundwater to agriculture. Third, it may avoid conflicts with the ban on exporting water from the SVGB, which would in turn permit a smaller, less costly, and less energy intensive facility relieved of the proposed obligation to process and return pumped groundwater to the basin.

Accordingly, we ask that the CEQA review prepared for the MPWSP consider alternative locations for the source wells that are outside the SVGB.

To assist you in that effort, we draw your attention to the enclosed document entitled “Monterey Peninsula Water Management District, 95-10 Project Constraints Analysis” prepared in August 2008 by ICF Jones & Stokes and Camp, Dresser & McKee, ↓

G_LandWatch-01

October 1, 2012

Page 2

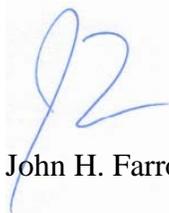
Inc.¹ This analysis was prepared in support of a plan by the MPWMD to develop a desalination project in the Sand City/Fort Ord area to supply up to 8,400 acre-feet annually to be provided to California American Water.

The analysis identifies and evaluates 25 potential feed water collection well site locations along the coastline, most of which are not located in the SVGB. The analysis discusses various constraints to these locations. We ask that the alternatives analysis for the MPWSP re-evaluate these constraints in light of all changed circumstances.

G_LandWatch-01
(Con't)

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.



John H. Farrow

JHF:am

Enclosure

cc: Nancy Isaakson, SVWC, nisakson@mbay.net
Russell McGlothlin, MPRWA, rmcglothlin@bhfs.com
Jonathan Knapp, DRA, jp8@cpuc.ca.gov

¹ Available at <http://www.mpwmd.dst.ca.us/desalination-projects/MPWMD-95-10-Project-Constraints-Analysis-Aug08.pdf>.

Monterey Peninsula Water Management District

95-10 Project Constraints Analysis

Prepared for:

Monterey Peninsula Water Management District
5 Harris Court, Building G
Monterey, CA 93942-0085
Contact: Andy Bell



Prepared by:

ICF Jones & Stokes
630 K Street, Suite 400
Sacramento, CA 95814
Contact: Mike Rushton
916/737-3000



and

Camp, Dresser & McKee, Inc.
100 Pringle Avenue, Suite 300
Walnut Creek, CA 94596-3580
Contact: Polly Boissevain



August 2008

**Constraints Analysis
Monterey Peninsula
Water Management District
95-10 Project**

Prepared for:

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5 Harris Court, Building G
Monterey, CA 93942-0085
Contact: Andy Bell

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Walnut Creek, CA 94596-3580
Contact: Polly Boissevain
925/296-8077

August 2008

ICF Jones & Stokes. 2008. Constraints Analysis Monterey Peninsula Water Management District 95-10 Project. August. (ICF J&S 00494.08.) Sacramento, CA. Prepared for: Monterey Peninsula Water Management District.

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Acronyms and Abbreviations

AFA	acre-feet annually
CAW	California American Water
CCA	California Coastal Act
CCC	California Coastal Commission
CDM	Camp Dresser & McKee
DFG	California Department of Fish and Game
DPR	California Department of Parks and Recreation
FORA	Fort Ord Reuse Authority
gpm	gallons per minute
HCP	Habitat Conservation Plan
HDD	horizontal directionally drilled
LCP	local coastal plan
MBNMS	NOAA Monterey Bay National Marine Sanctuary
MCWD	Marina Coast Water District
MCWRA	Monterey County Water Resources Agency
mgd	million gallons per day
MPWMD	Monterey Peninsula Water Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
NMFS	National Marine Fisheries Service
Park	Fort Ord Dunes State Park
RWQCB	Regional Water Quality Control Board
Sand City	City of Sand City
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
WWTP	wastewater treatment plant

Constraints Analysis Monterey Peninsula Water Management District 95-10 Project

1 Introduction

Project Overview

The Monterey Peninsula Water Management District (MPWMD) manages and regulates the use, reuse, reclamation and conservation of water within its boundaries on the Monterey Peninsula. About 80% of the water collected, stored, and distributed within the MPWMD boundaries is done so by California American Water (CAW), which serves approximately 95% of Monterey Peninsula residents and businesses. Approximately 70% of the water delivered by CAW is diverted from the Carmel River Basin. In 1995, the State Water Resources Control Board (SWRCB) determined that the Carmel River was over-appropriated in the drier seasons of the year and issued Order WR 95-10 to reduce CAW's unlawful diversions from the Carmel River. Since issuance of WR 95-10, MPWMD has sought to develop and/or support projects that would meet the order's direction to seek alternative sources of water for the Monterey Peninsula.

In 2002, MPWMD initiated engineering and environmental evaluations of a local desalination project in the City of Sand City (Sand City)/former Fort Ord region of the Monterey County coast, seeking to develop a project that could supply up to 8,400 acre-feet annually (AFA) of potable water to the CAW system for delivery to the community. This is equivalent to 7.5 million gallons per day (mgd), average daily production. The project considered the use of horizontal directionally drilled (HDD) or radial wells to provide feed water from the shallow coastal Dune Sands aquifer, the construction of a local desalination water treatment plant, and the disposal of brine either back to the shallow aquifer along the coast or to the Monterey Regional Water Pollution Control Agency (MRWPCA) regional wastewater outfall near the mouth of the Salinas River.

Feed water collection alternatives for the earlier project focused on locating wells in the Sand City area and southern part of former Fort Ord, west of Highway 1, and drilling offshore from the coast to target the Dune Sands aquifer offshore. Field geotechnical and geophysical studies concluded that the Dune Sands aquifer did not extend significantly offshore, and that only radial wells, or HDD wells parallel to the shore were likely feasible. These options would require

siting collector wells in Sand City and former Fort Ord, and using the regional wastewater treatment plant outfall for brine disposal. Development of this local project was halted in 2004 to consider participation in larger, regional water supply projects that were being planned by other entities.

In January of 2008, the MPWMD Board of Directors authorized staff and its consultants to develop a scope and cost to re-initiate the evaluation of the Sand City/former Fort Ord area desalination project. Following receipt of proposals from ICF Jones & Stokes and Camp Dresser & McKee (CDM), the Board of Directors acted on April 21, 2008 to authorize staff and consultants to embark on the first phase of a phased approach to update the work completed in 2002-2004.

The first phase is a constraints analysis to determine whether there are feasible feed water intake and brine discharge conceptual designs with no irreconcilable policy or regulatory constraints that would discourage further evaluation of the desalination project. It also considers discharging brine from the water treatment process through the MRWPCA wastewater outfall to Monterey Bay. The proposed project considered in this report is now being described as the MPWMD 95-10 Project. This phase identifies the largest project that is feasible, as well as the largest feed water alternative that could be implemented more quickly, due to fewer implementation or regulatory issues or technical data gaps that would require additional field investigation. This first phase did not evaluate treatment plant sites because the original sites located in Sand City were found to be unavailable and the alternative sites identified in the past two months have not been discussed in sufficient detail with the owners to determine their availability. The Phase 1 study does not provide preliminary design or project construction and operation cost information. This information will be developed in Phase 2 of the study, should it be authorized by the MPWMD Board of Directors.

Phase 1 Study Overview

The objective of this first phase of work is to re-evaluate the earlier MPWMD seawater desalination project and identify whether a project can be developed that would provide a new potable water supply yielding up to 8,400 AFA (7.5 mgd average production). For a seawater source production capacity of 7.5 mgd, 15 mgd of firm feed water collection capacity is required. Firm well capacity is defined as the well capacity that could be in-service at any given time, with some wells out of service due to planned maintenance or unplanned equipment problems. Depending on the collector well technology, 16.5 to 19 mgd of total well capacity would be required to insure a firm capacity of 15 mgd. The first phase also re-evaluated the use of the MRWPCA wastewater outfall to Monterey Bay as the brine disposal mechanism. This element of the project was considered to be the only feasible method of brine disposal, regardless of the location or nature of the feed water collection system selected. Further work to refine outfall disposal requirements and review alternate desalination water treatment plant site locations, initially planned in Phase 1, was deferred based on discussions with MPWMD staff, pending selection of well collector alternatives that could move forward into a subsequent phase. This phase identifies feasible

collector well project sizes, implementation issues and next steps, so that the MPWMD Board of Directors can determine whether to proceed with a full engineering and environmental analysis of the 95-10 Project. To achieve this objective, the study team performed the following tasks for the Phase 1 analysis. The results of each of these tasks are presented in a subsequent section of the report.

- **Develop Conceptual Geologic Model (Section 2).** Hydrogeologic information related to the Seaside Basin was compiled and reviewed, and used to develop a conceptual geologic model of the Aromas Sand and the dunes sands, collectively referred to as the Dune Sands aquifer, the target aquifer for feed water collection wells. Information was compiled for the Sand City and former Fort Ord areas, from a variety of sources, including field information from the Sand City desalination project, the Seaside Basin sentinel well program, and Fort Ord groundwater monitoring and cleanup activities.
- **Identify Constraints and Opportunities (Section 2).** The team compiled information on various technical, policy and regulatory issues that could affect siting of feed water collection wells. GIS tools were used to overlay technical information about constraints on maps of the Sand City and former Fort Ord coastal areas, and identify preliminary feed water collection alternatives. MPWMD staff and consultants also participated in a series of meetings with key planning, regulatory and resource agency staff. Initial meetings were held with Sand City and California Department of Parks and Recreation (DPR) to discuss potential land use restrictions and other policies that would affect siting of wells. Subsequent meetings with these and other agencies presented project location and design information to agency staff and obtained input about potential policy and regulatory issues that would affect implementation of alternatives.
- **Develop Alternatives (Section 2).** Using information from the constraints analysis and initial meetings with Sand City and DPR representatives, the team identified preliminary feed water collection well alternatives, and refined these in a design charrette (a collaborative technical workshop) with technical experts from MPWMD and the consulting team. Alternatives were further refined based on information gathered in agency meetings.
- **Develop Project Screening Criteria (Section 3).** The screening criteria presented in Section 3 address key technical, policy, and regulatory issues to be considered for project viability. They were used to evaluate how different feed water collection alternatives perform. Initial criteria were identified at the project outset. These were consolidated and refined by the team during Phase 1 work into four criteria addressing technical, regulatory, policy and cost considerations.
- **Screen Alternatives (Section 3).** Feed water alternatives were scored for each of the project screening criteria to determine a prioritized list of projects that could be developed. Sensitivity analysis was conducted as part of the screening to assess how changes in stakeholder perception of the relative importance of the objectives could influence the selected feed water options.

- **Present Findings and Next Steps (Section 4).** Highest ranked projects from the screening analysis are identified, along with data gaps, and next steps that would be required for project implementation.

Tasks were structured to develop and present information in collaborative workshops with MPWMD staff and consultants, leveraging the collective hydrogeologic expertise of MPWMD staff and technical experts who have worked for many years on local groundwater issues. Subsequent sections of this summary report document the evaluations and findings for each of these activities.

2 Alternatives Development

This section describes the process used to develop potential feed water collection alternatives and presents the results of the alternatives development, including development of the geologic model, identification of constraints and opportunities and formulation of alternatives, as described in Section 1. Each topic is described in detail below.

Geologic Model

A conceptual geologic model of Sand City and former Fort Ord coastal area was developed to aid in the placement of potential seawater collector wells for the 95-10 Project. The geologic model relies on the most recent geologic interpretation developed by Derrick Williams and Martin Feeney (Williams and Feeney pers. comm.) which compiled many sources of data and information from previous studies as part of the Seaside Basin Watermaster's Draft Basin Management Action Plan. The conceptual model only pertains to the coastal geologic formations thought to be in direct hydrogeologic connection with the Monterey Bay. Two water bearing units were identified with the potential to provide feed water to the 95-10 Project. These units include the Dune Sands aquifer and the saline-intruded 180-foot aquifer in the southern Salinas Basin. Both of these units are described in more detail below in addition to a discussion on the boundary between the Seaside and Salinas Groundwater Basins.

Aromas Sand and Dune Sands

The Aromas Sand and the dune sands (collectively referred to as Dune Sands) are extensive from Seaside to Ford Ord in both the Seaside Basin and the southern extent of the Salinas Basin on former Fort Ord. The Dune Sands are in direct communication with the ocean and are only saturated at the coastal margin. Consequently, they provide little value as a freshwater aquifer in the Seaside or southern Salinas Groundwater Basins.

The Dune Sands has a high potential to produce seawater using HDD wells, radial wells (Ranney collectors), or conventional vertical wells. The extent of the Dune Sands along the coastal margin is depicted in Figure 1 with the cross section location shown in Figure 2. The saturated thickness of the Dune Sands throughout the Seaside Basin and southern Salinas Basin varies from 20 to 50 feet as determined by groundwater monitoring wells installed for Sand City in 2004 as part of its desalination project investigation (CDM 2004). Groundwater extraction wells installed in the Dune Sands by Sand City for brackish groundwater extraction have shown extraction rates on the order of 600 gallons per minute (gpm) with only minimal well drawdown (Feeney 2008 pers. comm.). For the constraints analysis, we have assumed that the Dune Sands will have similar aquifer production properties along the coastal margin with the ability to produce 2-3 gpm per linear foot of casing for horizontally completed wells and 500 gpm for conventional wells.

In the Seaside Basin, the two principal aquifers beneath the 95-10 Project area are the Paso Robles Formation and the Santa Margarita Sandstone. The Paso Robles Formation underlies the Dune Sands and is fresh water-bearing. A lower permeable silt/clay unit has been identified separating the Dune Sands from the Paso Robles Formation at a depth of approximately 50-75 feet below sea level. In close proximity to the beach (less than 400 feet from the ocean), this unit appears continuous from Sand City to Fort Ord. There is less geologic data on this unit to the east and consequently, its inland (greater than 400 feet from the ocean) continuity is not known, but is thought to be discontinuous (Feeney et al. pers. comm.).

The Santa Margarita Sandstone is not present north of Watermaster Well MW-4 or grades into the lower Purisima Formation (see Figure 1). Because of this formation's depth and separation from the Dune Sands by the lower permeable Purisima Formation, extraction of sea water from the Dune Sands is likely to have no effect on the Santa Margarita Sandstone aquifer.

The extent of Dune Sands offshore into the marine environment is little understood but is not expected to be significant. In 2004 CDM, together with CapRock (CDM 2004), attempted to map the offshore environment using geophysical techniques. The purpose of the work was to identify offshore sediment thickness for the purpose of supporting offshore HDD or radial collector wells. This study identified one area in the Fort Ord area (see Figures 3 and 4) that may have suitable sediment thickness (~40 feet) to support offshore wells.

180-Foot Aquifer

The 180-foot aquifer is one of the primary water bearing units of the Salinas Basin. The aquifer naming process in the Salinas Basin historically used the depth of the principal water bearing formation to name the aquifer. The 180-foot aquifer is most often correlated with the younger alluvial deposits associated with the Salinas River. The 180-foot aquifer corresponds most closely with the depths of the Aromas Sand and /or upper Paso Robles Formation in the coastal portion

of the Seaside Basin (see Figure 1), but the Paso Robles produces substantially less water. In the Salinas Basin, the 180-foot aquifer is intruded by saline groundwater and the regional groundwater gradient is driving groundwater flow inland (Williams pers. comm.).

Work by HydroMetrics using the groundwater model developed for the Fort Ord Sites 2 and 12 groundwater remediation program, have demonstrated that extracting groundwater from the 180-foot aquifer in the vicinity of the abandoned wastewater treatment plant at former Fort Ord has a net positive effect on reducing saline intrusion into the Salinas Basin (see Figure 4 for the location of the former wastewater treatment plant). This is principally the case if the future regional groundwater gradient and flow continue inland from the ocean, damaging a larger area of the aquifer system. If flow gradients are reversed at a future date, extracting from the 180-foot aquifer would induce a small area of saline intrusion that would otherwise not occur. However, modeling results demonstrate that all the well-induced saline intrusion would be captured by the extraction wells (Williams pers. comm.).

A well in the 180-foot aquifer is capable of producing several thousand gallons per minute and would be capable of producing desalination feed water from the saltwater-intruded zone (Feeney 2008).

Seaside Basin and Salinas Basin Boundary

The Seaside and Salinas Basins' shared boundary is an important descriptive element for the purposes of defining a feed water extraction project as part of this constraints analysis. The MPWMD's boundary extends into the Salinas Basin and the Monterey County Water Resources Agency (MCWRA) currently prohibits the transfer of water out of the Salinas Basin (see constraints analysis discussion below). The northern boundary of the Seaside Basin is a flow divide where groundwater to the north of this divide flows to the Salinas Basin and groundwater to the south flows to the Seaside Basin. The approximate flow divide between the Salinas and the Seaside Basins is depicted in Figure 5 for the Paso Robles Formation (Note: because of pumping and aquifer characteristics differences, the flow divide for the Santa Margarita Sandstone is different). This flow divide is influenced by pumping in both basins and can change over time as a function of pumping rates and locations. As shown in Figure 5, the basin boundary is not a defined line but a zone subject to fluctuation over time. The basin boundary in the Dune Sands is not defined. Because the Dune Sands are in direct hydraulic communication with the ocean and only saturated along the coastal margin, there is unlikely to be any defined Salinas Basin/Seaside Basin flow boundary for this unit.

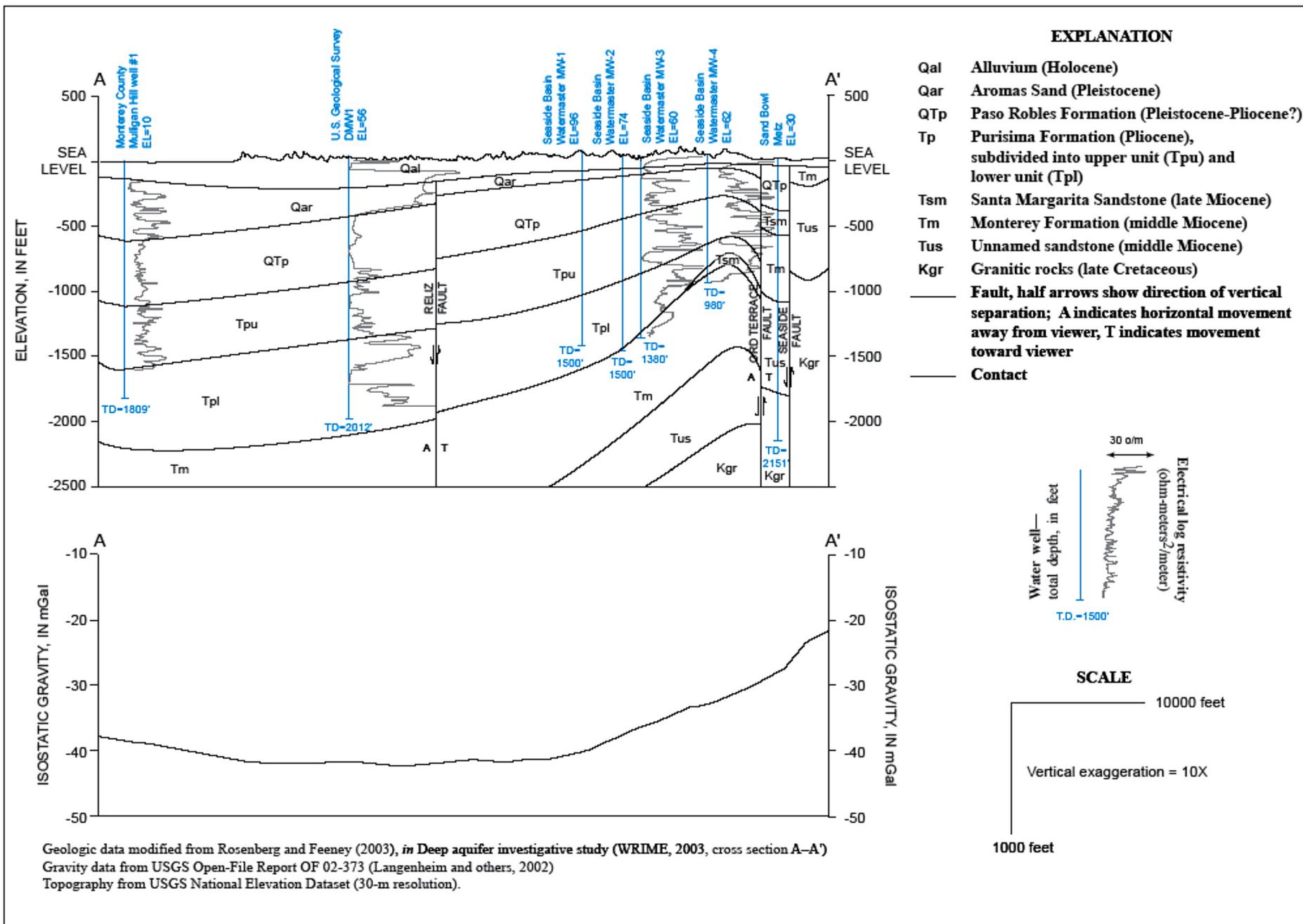


Figure 1
 Cross-Section A-A'

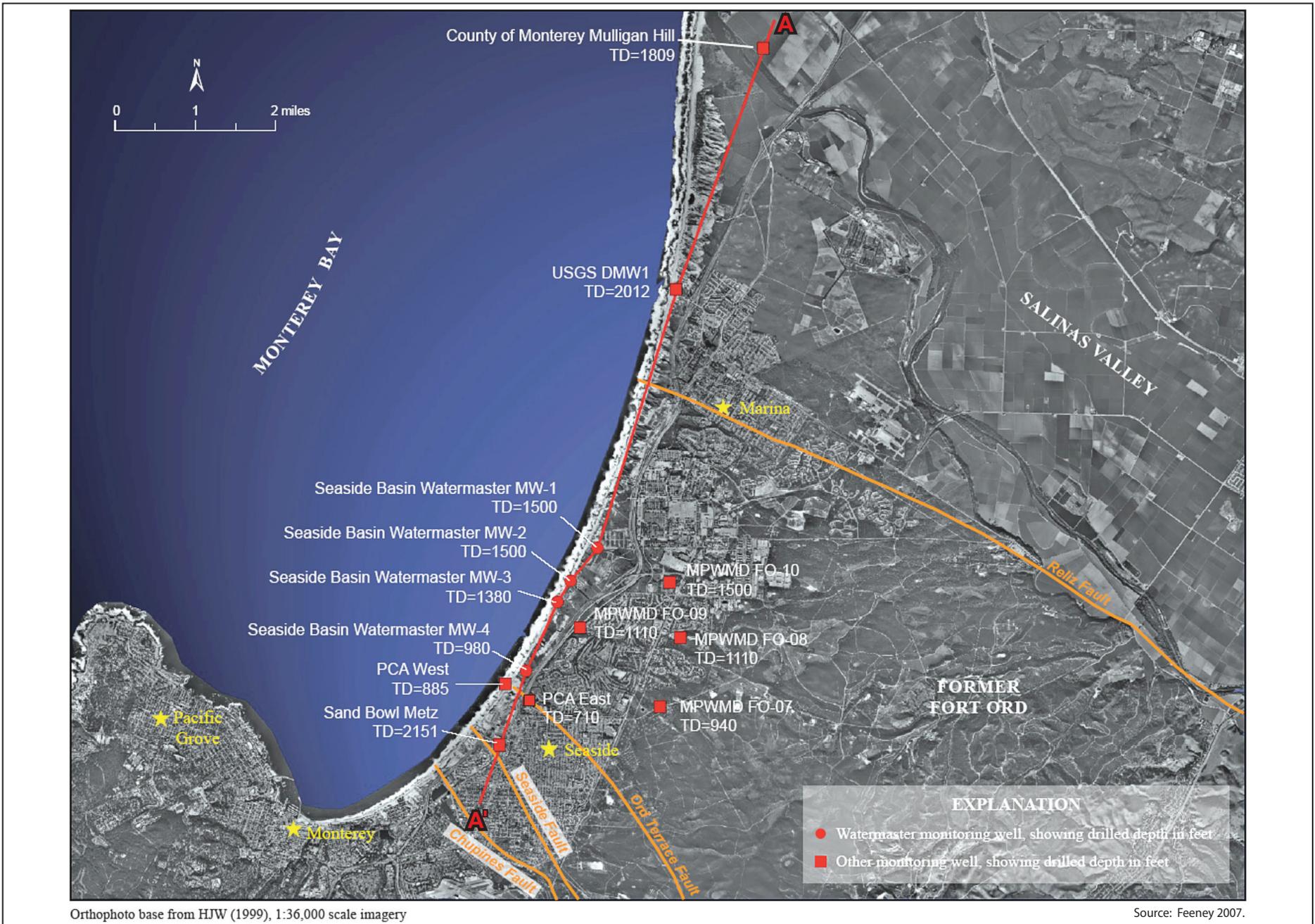


Figure 2
Location of Cross-Section A-A'



Figure 3
Constraints Analysis—South



Legend

- ⊗ Sentinel Wells
- ⊗ CDM Exploration Wells
- TCE Concentrations
- District Boundary
- Faults
- Ft Ord Road
- Regional Sewer line
- Approximate Zone of Paso Robles Flow Divide
- State Parks Planned Developed Area
- 80 ft Ground Elevation
- Potential Offshore Extension of Dune Sands

Figure 4
Constraints Analysis—North

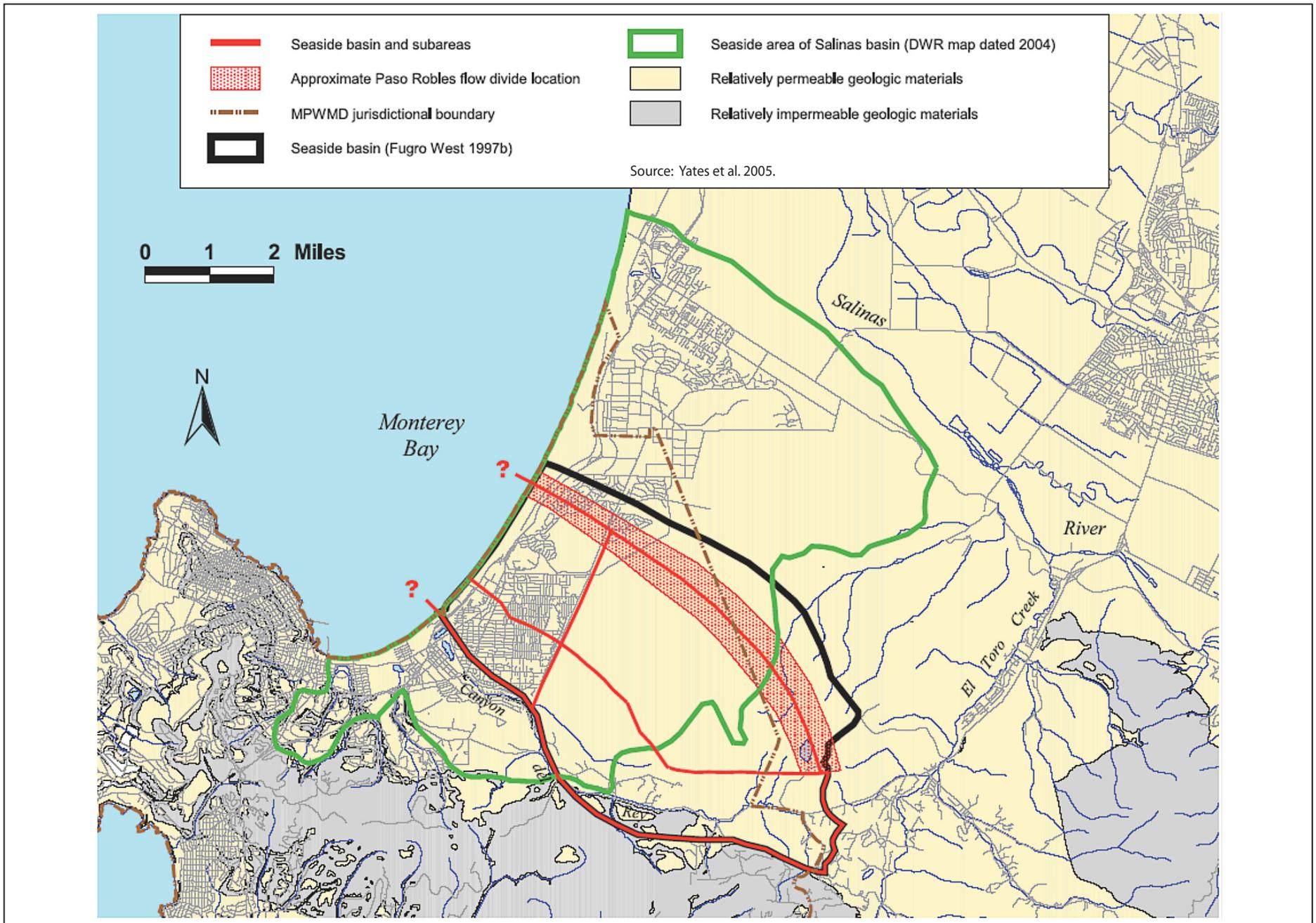


Figure 5
Seaside Basin Boundaries

Constraints and Opportunities

Engineering/Geology Issues

The following sections present the engineering and geologic opportunities and constraints that the project team identified to help guide well placement and gauge potential well performance.

Dune Sands Production. The Dune Sands as described above have the potential to deliver the required quantity of feed water for the 95-10 Project. This formation is in direct hydraulic communication with the ocean and the unit is only saturated in the coastal environment, separating it from other adjudicated water in the Seaside Basin. A clay layer separates this unit from the underlying Paso Robles Formation along the coastal margin.

180-Foot Aquifer. The 180-foot aquifer is intruded with salt water in the Salinas Basin both locally at Fort Ord and more regionally. Producing water from the 180-foot aquifer could slow saline migration into the Salinas Basin by developing a cutoff groundwater depression. The 180-foot aquifer is highly productive and has the capacity to supply substantial quantities of groundwater from the ocean for the 95-10 Project.

Offshore Well Production. Consideration was given to completing HDD or radial wells off the coast. Geophysical work conducted by CDM in 2004 identified only a small area at Fort Ord where the Dune Sands Formation appeared to extend off shore (see area bounded in pink on Figure 3). Attempting to place well infrastructure in other locations would require costly boat-based geotechnical investigations to verify the competence of marine formations to support collector well production rates. Drilling wells offshore without additional geotechnical data presents potentially unacceptable “frac out” (loss of drilling fluids) risk to the Monterey Bay marine environment. Additionally, the costs for the HDD well infrastructure would be very high and without marine formation geologic data, the well production rates would be unknown. Other associated constraints are presented in the drilling technologies discussion below.

Fort Ord Groundwater Contamination. The Fort Ord area contains a chlorinated solvent groundwater contamination plume currently in remediation (See Figure 4). Attempts were made to avoid the contaminated groundwater when siting well infrastructure.

Drilling Technologies. Three well completion technologies were reviewed to provide feed water to the project. These methodologies included: HDD wells, radial (Ranney collector) wells, and conventional wells. HDD wells are drilled horizontally with a boring machine. For the purpose of developing high-flow production wells, there must be an entrance and exit location for the boring machine, essentially eliminating any “dead end” locations including drilling offshore. HDD technology is expensive and potentially impractical at Fort Ord given the high elevation of the land surface near the coastline, with respect to the

target aquifer depths. The maximum practical distance for HDD application of this type (groundwater collection) is approximately 1,000 feet at former Fort Ord.

Radial wells operate by first installing a caisson to the target groundwater production depth (approximately 50 feet below sea level for the 95-10 Project area) and horizontally drilling or jacking wells in a radial fashion into the target formation. Radial well technology is well understood but generally expensive. At Fort Ord, radial well completion cost would be more expensive given the depth of caisson required to reach the target groundwater zone. Ground surface elevations at potential well sites range from about 60 feet to 80 feet. Within a limited construction footprint, radial wells can produce large quantities of groundwater. The maximum practical distance wells can be horizontally advanced from the caisson is approximately 200 feet.

Conventional wells drilled into the Dune Sands or 180-foot aquifer present a significant cost opportunity when compared to other drilling technologies. Conventional wells can be used to produce water from the Dune Sands or the 180-foot aquifer. To supply the fully contemplated 95-10 Project capacity from the Dune Sands using conventional wells would require a large number of potential sites.

Policy and Regulatory Issues

The development of potential policy and regulatory constraints has been a two step process. The first step was to reconsider the location and nature of the structural features of the project. MPWMD staff and consultants met to review the project features developed in 2002-2004 and to discuss changed circumstances and new information developed since that time that would influence the project's location and design. This effort included participation in a design charrette. With the information from this first step, staff and consultants participated in a series of meetings with key planning, regulatory and resource agency staff. At these meetings, the consultants presented project locations and design information to the agency staff and asked questions about potential policy and regulatory issues that would affect the success of the 95-10 Project. A series of project designs and locations were discussed. The information gathered in those meetings and information collected through additional research is the basis for this constraints discussion.

Land Use

Concerns with land use planning consistency and compatibility are primarily the responsibility of the land use planning bodies in the project area. The principal entities are Sand City, DPR and the California Coastal Commission (CCC). On private property, the land owner is also a major factor in determining the feasibility of constructing water supply facilities.

Sand City. Sand City was the principal site investigated for feed water collection and water treatment in the 2002-2004 study conducted for MPWMD (Jones & Stokes 2004). The collection facilities were located west of Highway 1 in the vicinity of Seaside State Beach. In meetings with Sand City staff in June 2008, it was determined that Sand City had its own desalination project in the early stages of construction near this Seaside State Beach location (Figure 3); staff were opposed to any new project being constructed in the area that would adversely affect the groundwater extraction facilities. Sand City staff also indicated that other properties within the city limits along the coast were in various stages of development and would be unlikely locations for MPWMD desalination facilities. Proposals to place such facilities in the coastal area would likely require a coastal development permit, zoning amendment, design and encroachment permits, and possibly a general plan amendment. The Sand City staff also indicated that there were no remaining one-acre parcels in the city limits that would be available for a desalination water treatment facility (Matarazzo, Simonich, Heisinger pers. comm.).

California Department of Parks and Recreation. DPR currently manages all of the former Fort Ord land west of Highway 1. It is planned as the Fort Ord Dunes State Park (Park). These lands are still in Army ownership, but are set to be transferred to DPR in the near future. Currently, any proposed third party actions within the Park require Army review and approval. Any use of the former Fort Ord wastewater treatment plant (WWTP) site would also require approval from Marina Coast Water District (MCWD), as it holds an easement on this property (Gray, McMenamy, Palkovic pers. comm.).

The principal land use policy issues that exist with placement of desalination facilities on DPR property are consistency with planned park uses and habitat restoration plans. Any facilities constructed in the Park would need to be placed in areas planned for development in the Park general plan. The general plan identifies four significant development zones within the park, allowing adequate space to accommodate radial or conventional groundwater extraction wells (see Figures 3 and 4 for development zones). These sites are designated for a variety of visitor-serving uses, including utilities (Environmental Science Associates 2004). Conversations with DPR staff in Monterey did not indicate that extraction wells would be prohibited if they were located in these zones (Gray pers. comm.). Facilities proposed for areas outside of the development zones would interfere with planned habitat restoration or would impact existing sensitive habitats and would be discouraged.

A third policy concern raised by DPR staff relates to placement of permanent infrastructure within state parks as a general practice. Problems with abandoned third-party infrastructure in state parks have resulted in a general opposition to the introduction of new third-party structures. It would be necessary to seek approval from regional- or state-level managers to determine whether specific projects would be allowed (Gray pers. comm.).

From a regulatory perspective, well construction on DPR property would require a lease. DPR cannot issue a lease for more than 5-10 years; any lease longer than that would have to be issued by the State Department of General Services. This

was not described as a “fatal flaw” for the MPWMD project being considered (Gray, McMenamy, Palkovic pers. comm.).

California Coastal Commission. The CCC regulates coastal development through authorities contained in the California Coastal Act (CCA). The 95-10 Project, whether located within Sand City or Fort Ord Dunes State Park, would require issuance of a CCC coastal development permit. The CCC would review the project’s consistency with policies in the Sand City Local Coastal Plan (LCP) and the CCA through this permit process. The CCA has specific policies that address protection of marine and terrestrial biological resources, public access and recreation, water quality, visual impacts, agricultural lands, commercial fisheries, industrial uses, power plants, ports, and public works. Conversations with CCC staff (Ewing and Luster pers. comms.) made it clear that desalination projects in the coastal zone are reviewed on a case-by-case basis. There are no policies that encourage or reject the location of desalination plants in the coastal zone; each must be reviewed in light of its consistency with the policies mentioned above (Luster pers. comm.). There is no evidence that a well-planned 95-10 Project would be unlikely to receive a coastal development permit from the CCC. The CCC’s guidance for considering desalination facilities along the California coast are contained in a March 2004 document entitled *Seawater Desalination and the California Coastal Act* (California Coastal Commission 2004). In this document, the CCC indicates support for considering subsurface intake of source water where feasible and evaluating use of existing wastewater outfalls for brine disposal. The CCC also suggests it would be concerned about any desalination project that would induce growth in or near the coastal zone.

Private Landowners. Several coastal parcels within the project study area are in private ownership. The largest of these, referred to as the SNG site, is located immediately south of former Fort Ord and north of the Monterey Peninsula Regional Park District park site (see Figure 3). A plan for a coastal development at this site has already been approved by Sand City and is in the final stages of approval through the CCC. A conversation with a representative of SNG determined that the site is not available for major desalination facilities. The current plan does not include such facilities and there is a concern that any changes in site use could lead to added regulatory review of the development that is already proposed. (Ghandour pers. comm.)

Biological Resources

The only element of the proposed project that would directly affect marine biological resources is the discharge of brine through the MRWPCA ocean outfall. The potential for changes in ocean salinity at the outfall site is of concern for larger mobile species such as marine mammals and fish, and smaller micro flora and fauna that are moved through the water column primarily by ocean currents. Salinity changes below the outfall structure, either on the ballast rocks or on the ocean bottom, are also of concern for non-mobile species that attach to the rocks or live on or within the ocean’s sandy or muddy substrate.

The proposed project's feed water collection, water treatment and water transmission facilities all have the potential to adversely affect sensitive coastal wildlife habitats. Of special concern are the areas beaches which are home to protected bird species, and the coastal sand dunes that are home to protected plant, reptile and invertebrate species.

Management and protection of marine and coastal biological resources are shared by a number of agencies (NOAA Monterey Bay National Marine Sanctuary [MBNMS], U.S. Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], CCC, California Department of Fish and Game [DFG], DPR, State Water Resources Control Board [SWRCB], Central Coast Regional Water Quality Control Board [RWQCB]). None of these agencies have policies or regulations that ban discharge of brine to the ocean or construction of well facilities along the coast of southern Monterey Bay.

Monterey Bay National Marine Sanctuary. The MBNMS was established to protect the marine resources of a large section of the central California coast, including Monterey Bay biological resources. The draft sanctuary management plan includes a desalination action plan that encourages a regional approach to desalination around the bay. It suggests development of a regional desalination program that evaluates the benefits of joint facilities serving multiple jurisdictions versus construction of multiple smaller plants (U.S. Department of Commerce, National Oceanic and Atmospheric Administration 2006). As a part of its management plan implementation process, the MBNMS is also developing desalination facility siting guidelines that will minimize impacts to MBNMS resources. The siting guidelines will encourage use of appropriately sited existing pipelines into the ocean to minimize seabed alteration (Damitz pers. comm.).

U.S. Fish and Wildlife Service. The FWS is involved in a federal Endangered Species Act compliance planning process with the Fort Ord Reuse Authority (FORA) regarding all former Fort Ord lands. This area includes the coastal lands currently managed by DPR as the Fort Ord Dunes State Park. The FWS would be concerned about any change in land use in the State Park that would diminish the habitat values being protected and enhanced by the Habitat Conservation Plan (HCP) currently being developed by FORA. An initial conversation with FWS staff working on the HCP indicated that construction of well facilities within areas already planned for development in the park general plan would not be a major concern if approved by DPR and if construction and operation activities would not adversely affect adjacent sensitive biological resources (Martin pers. comm.).

National Marine Fisheries Service. The NMFS is responsible for management and protection of anadromous fish in state waters and marine mammals along the California coast. This agency would be concerned if the desalination facilities had adverse effects or might result in take of these biological resources. To date, there is no evidence that the proposed project would adversely affect or take anadromous fish or marine mammals. NMFS would participate in project review through the CEQA process.

California Coastal Commission. The CCC participates in the review and approval of coastal desalination facilities through its authority under the CCA, and particularly through its coastal development permit process (see above under Land Use). The CCC has a major responsibility for the stewardship of biological resources along the coast as directed in the CCA. One of the principal policies in this legislation relates to the protection, enhancement and restoration of important habitats and biological communities (California Coastal Commission 2004). Any project requiring review through the coastal development permit process will have to present detailed information on the potential effects on coastal biological resources. In the 95-10 Project area, sensitive coastal dune habitats and related endangered species will need to be addressed. Most of the projects being considered in this constraints analysis are located to avoid effects on coastal habitats and sensitive species. The planned use of the MRWPCA wastewater outfall for brine disposal is consistent with the CCC's recommendation regarding brine discharges to coastal waters. The use of groundwater extraction wells for feed water collection is also consistent with the CCC's concern regarding construction of any new ocean floor seawater intakes (California Coastal Commission 2004, pg. 68).

California Department of Fish and Game. DFG is responsible for the management and protection of the fish and wildlife resources of the state. Its chief concerns for the desalination project are related to sensitive plant and animal species present along the southern Monterey Bay coast line and at the MRWPCA ocean discharge location. This agency is participating in the HCP development process mentioned above in the FWS section and would be concerned about any changes in land use on Fort Ord Dunes State Park that were not consistent with the intent of the HCP habitat protection and restoration goals. DFG would also be concerned about any effects of project construction along the parts of the coast within Sand City. Sensitive dune vegetation and beach habitats are of greatest concern in this area. DFG would participate in review of the desalination project through the CEQA process, and possibly through a compliance review of the California Endangered Species Act.

California Department of Parks and Recreation. The DPR is a steward of all biological resources located on its park properties. At Fort Ord Dunes State Park, wildlife habitat protection and restoration are principal goals of the facility. Through conversations with DPR staff, it is clear that any desalination facilities located within the state park would have to be consistent with these protection and restoration goals (Gray pers. comm.). The alternatives development process for this desalination project has guided the location of facilities on lands that are already developed or planned for development so that habitat loss would not be a concern.

State Water Resources Control Board. The SWRCB establishes water quality standards for the near-shore waters of California through its Ocean Plan. These standards are designed to protect the beneficial uses of the ocean, including commercial and sport fishing, mariculture, rare and endangered species, marine habitat, fish migration, fish spawning and shellfish harvesting among others. The Ocean Plan was first adopted in 1972 and is updated every three years. There is currently an Ocean Plan update going through a review process. This update

includes a proposed amendment that directly addresses desalination facilities and brine disposal. The SWRCB is considering an Ocean Plan objective that would protect the biological beneficial uses of the ocean from adverse salinity increases. A scoping document for this amendment recommends establishment of a narrative water quality objective where salinity should not exceed a certain percentage of natural background (California State Water Resources Control Board 2007). The percentage has not been established. While establishment of a salinity objective is unlikely to eliminate ocean disposal of desalination brine, it may dictate stringent mixing requirements at open ocean discharge locations.

Central Coast Regional Water Quality Control Board. The Central Coast RWQCB regulates the MRWPCA ocean discharge of wastewater through an NPDES permit and waste discharge requirements. These requirements must insure protection of ocean beneficial uses as described in the SWRCB Ocean Plan. The current MRWPCA NPDES permit includes a provision for discharge of brine through the wastewater outfall. If the volume of brine is increased beyond what is already allowed (375,000 gallons average daily flow), MRWPCA must first conduct a brine disposal study that would identify the characteristics of the brine and assess the effect of this new waste on the plant's ability to meet waste discharge requirements. Any new facilities needed to accommodate the added brine would also have to be described (California Regional Water Quality Control Board, Central Coast Region n.d.). In a meeting with Central Coast RWQCB staff, the potential for adding brine to the MRWPCA outfall was discussed and there was no indication that this discharge mode would be un-approvable (von Langen pers. comm.). A significant study effort, however, would be needed to analyze the effects of the brine on the beneficial uses of the ocean.

Water Resources

Seaside Groundwater Basin. The Seaside Basin is an adjudicated groundwater basin whereby the courts have imposed a physical solution to eliminate the overdraft of groundwater created by basin users. The adjudication decision specifically assigned water rights to Sand City to extract an unspecified quantity of brackish water from the Aromas Sands Formation for the purposes of supplying a desalination facility. As part of the adjudication order, Sand City can produce brackish water so long as it does not cause substantial adverse physical impact to the Seaside Basin or any of its users. The Seaside Basin Adjudication does not specifically limit the production of seawater that does not cause adverse impacts to other basin users including Sand City's right to produce brackish groundwater (Laredo 2006).

Sand City has begun construction of its desalination facility including the plant and installation of brackish water extraction wells (two each at Tioga Avenue and Vista del Mar, see Figure 3). Sand City has stated concern over the 95-10 Project and has sought assurance that any facilities proposed for the 95-10 Project would not impact their project by increasing salinity or pump lifts.

In addition to not impacting the Sand City project, any proposed 95-10 Project along the coastal margin producing ocean water from the Dune Sands, must not create a material injury to the Seaside Basin or any of its users. Consequently, any proposed project would need to clearly demonstrate that its source water is separated from both the Paso Robles and Santa Margarita aquifers. The project would require concurrence from the Seaside Basin Watermaster.

Salinas Groundwater Basin. As presented in the geology section above, the boundary between the Seaside and Salinas Basins is represented by a flow divide. This flow divide is influenced by pumping in both basins and can change over time as a function of pumping rates and locations. The MCWRA Act, Chapter 52-21 specifically prohibits the extraction and export of groundwater outside of the Salinas Basin except for water used at Fort Ord. The act is incorporated into the California Water Code and would require the approval of the State legislature to amend it.

Export could technically include both the 180-foot aquifer and groundwater produced in the Dune Sands within the Salinas Basin. The Dune Sands are in direct hydraulic communication with the ocean and only saturated along the coastal margin, consequently, there is unlikely to be a defined flow boundary represented by the Salinas and Seaside Basins. However, because this extraction could occur within the legally recognized Salinas Basin, approval for export of the Dune Sands water could be required from the MCWRA. Further work is required to define the Salinas and Seaside Basins' boundary for the Dune Sands.

The 180-foot aquifer is a recognized water bearing unit in the Salinas Basin. Extraction of brackish water from this unit could assist in mitigating saline intrusion by developing a groundwater depression; however, there are technical, legal, and political challenges to using this water source necessitating early collaboration with the MCWRA. In discussions with MCWRA representatives (Weeks, et. al, pers. comm.), groundwater extraction from the 180-foot aquifer in the Salinas Basin for export for municipal use outside the Salinas Basin would be precedent setting, and therefore would have significant institutional and policy ramifications for Salinas Basin users. Although extraction from the 180-foot aquifer would be more politically sensitive, a project in the Dune Sands aquifer could be controversial and would need to demonstrate that it is extracting seawater and not impacting brackish groundwater.

SWRCB Anti-Degradation Policy. The RWQCB is responsible for implementing the SWRCB's anti-degradation policy (Policy 68-16) which requires that the quality of surface water and groundwater be maintained to the maximum extent possible. Relative to the 95-10 Project, the project cannot result in a degradation of groundwater quality from saline intrusion below that which currently exists. Exceptions include reducing water quality if it will not reasonably affect beneficial uses and can be demonstrated to benefit the people of California. The policy specifies that groundwater quality is defined as the best quality since enactment of the policy in 1968.

It is likely that producing groundwater from the Dune Sands will be exempt from the anti-degradation policy due to its close proximity to the ocean and high salt

content. Extracting groundwater from the 180-foot aquifer presents different challenges as this unit was once fresh water bearing and long-term Salinas Basin plans propose to raise groundwater heads, reversing the saltwater intrusion and restoring the groundwater to potable quality.

MRWPCA Outfall. The current concept for the 95-10 Project includes use of the MRWPCA regional wastewater outfall to Monterey Bay for brine disposal. Other brine disposal methods are not being investigated. To address this element of the project, two meetings were held with MRWPCA staff. One of the meetings was attended by a RWQCB representative. MRWPCA identified several potential constraints to this use of the outfall. First, the MRWPCA NPDES permit allows discharge of a small amount of brine with the wastewater; however, it requires a significant study of effects on wastewater quality and diffusion at the outfall site if a larger brine disposal volume is contemplated. The MRWPCA is concerned about how the brine might affect its ability to meet the chemical constituent limits and dilution requirements of its permit. Modeling would have to be undertaken to answer questions around this issue (Haertel pers. comm.). Second, some structure would need to be constructed to allow connection of a brine disposal line into its wastewater outfall. While these are potential constraints, the MRWPCA staff was supportive of the MPWMD efforts to further its investigation of a Sand City/former Fort Ord area desalination facility using the wastewater outfall for brine disposal (Crook, Hagemann, Holden, Israel pers. comm.). RWQCB staff at the second meeting indicated that MPWMD was going in the right direction by considering use of an existing outfall for brine disposal (von Langen pers. comm.). A significant effluent discharge modeling effort would be needed to allow both the MRWPCA and the RWQCB to seriously consider brine disposal through the outfall.

Geological Processes

Shoreline erosion. The threat of shoreline erosion is the major geological process constraint to establishment of new desalination facilities along southern Monterey Bay. Numerous studies in the past ten years have revealed the extent of ocean bluff migration inland; some of these studies have also made attempts at establishing future erosion rates (Philip Williams & Associates, Ltd. 2008). Because of the significant erosion that has occurred, any leases, easements or permits issued by land management agencies along the coast would be subject to careful review of erosion hazards. Setback requirements would need to be predicted and then placed as conditions on any project. The principal agencies that would be interested in this issue are Sand City, DPR and CCC. Wells or pipelines placed along the coast would have to be located sufficiently back from the coast to avoid being exposed to ocean wave action during the life of the facilities, or be able to be moved farther inland cost effectively when erosion became a threat (Ewing pers. comm.). There are planned development areas on Fort Ord Dunes State Park that are sufficiently back from the ocean that they should not be threatened by erosion during the life of a typical conventional or radial well system.

Alternatives

Table 1 and Figures 6 and 7 summarize feed water collection alternatives identified in the analysis. Using maps and information on potential project constraints, 25 feed water collection alternatives were identified at nine different sites. Five sites are in Sand City; four are in former Fort Ord. At each location, the following three drilling technologies, capacities and spacing requirements were used to identify total collection capacity:

- **HDD Wells:** Wells would be horizontal directionally drilled and installed parallel to the shoreline in the Dune Sands. Well casing length of up to 1,000 feet in length, with collector well capacities of up to 2,000 gpm, based on a collector rate of 2 gpm per lineal foot of screen.
- **Radial Wells:** Wells would include a caisson with five collector spokes radiating out from the caisson a length of 200 feet into the Dune Sands. Collection capacity of 3,000 gpm per well, based on a collector rate of 3 gpm per foot of screen. Wells spaced a minimum of 500 feet apart.
- **Conventional Wells:** Conventional wells would produce from the Dune Sands or the 180-foot aquifer. Most well locations were assumed to be screened in the Dune Sands with a collection capacity estimated at 500 gpm per well. Two locations farther north in former Fort Ord evaluated conventional wells screened in the 180-foot aquifer, which is in the coastal area of the Salinas Basin, where this aquifer is saline intruded. Wells screened in the 180-foot aquifer were assumed to have collection capacities of 2,000 gpm per well, but could be much greater. All conventional wells were spaced a minimum of 100 feet apart.

Offshore HDD wells were initially considered in the analysis, targeting an area off the coast of former Fort Ord, where geophysical surveys conducted in 2004 showed Dune Sands potentially extending offshore. However, this area, outlined in pink on Figures 3 and 6, has no onshore road access from former Fort Ord. Therefore, offshore HDD wells were not used to formulate collector well alternatives. Given the unknowns associated with permeable marine deposits and potential risk of frac-out during drilling, no other sites were considered viable for offshore well placement.

Collector rates for the Dune Sands Formation were developed based on field data from the Sand City desalination project, where a test well was capable of producing 600 gpm (30 feet of saturated well), with insignificant drawdown 100 feet away from the well. Well capacities would depend on formation thickness and formation transmissivity. Since there are few data to estimate transmissivity in northern Sand City or on former Fort Ord, a range of collector well capacities was used, with Sand City test data used to define the upper bound of anticipated production capacity.

Collector rates for the 180-foot aquifer formation were developed based on personal experience of planning team member Martin Feeney, who has performed extensive production work in the 180-foot aquifer.

Legend

- Conventional Wells
- ⊗ Sentinel Wells
- Radial Well
- ⊗ CDM Exploration Wells
- ⊗ Sand City Production Wells
- District Boundary
- Sand City Brine Disposal Wells
- - Faults
- Ft Ord Road
- Regional Sewer line
- Approximate Paso Robles Flow Divide
- ⊠ Former Landfill
- State Parks Planned Developed Area
- Property Boundary
- 80 ft Ground Elevation
- Potential Offshore Extension of Dune Sands

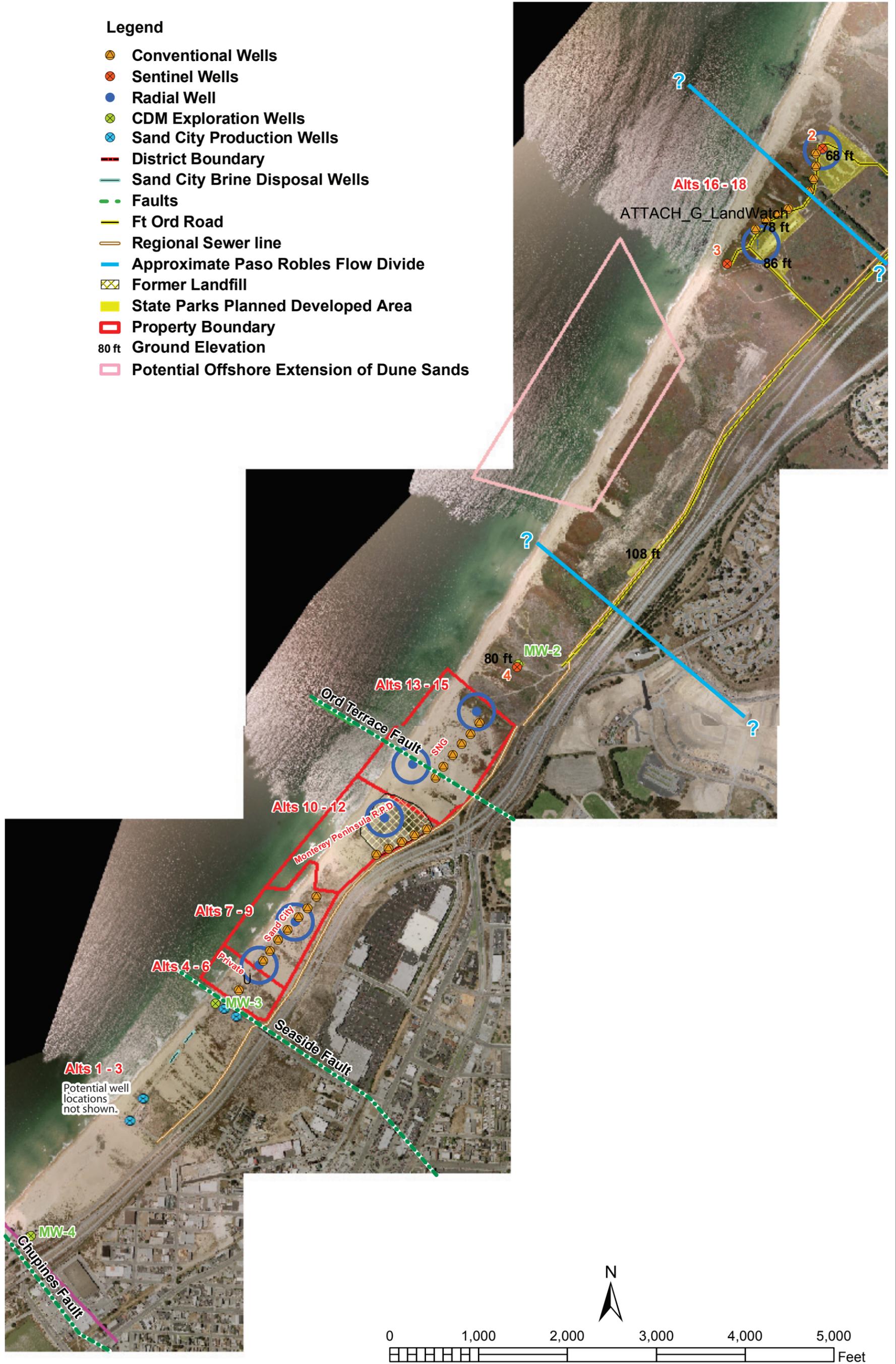


Figure 6
Alternatives—South

Legend

- 180 ft AQ Wells
- Conventional Wells
- Radial Well
- ⊗ CDM Exploration Wells
- TCE Concentrations
- District Boundary
- Faults
- Ft Ord Road
- Regional Sewer line
- Approximate Zone of Paso Robles Flow Divide
- State Parks Planned Developed Area
- Property Boundary
- 80 ft Ground Elevation

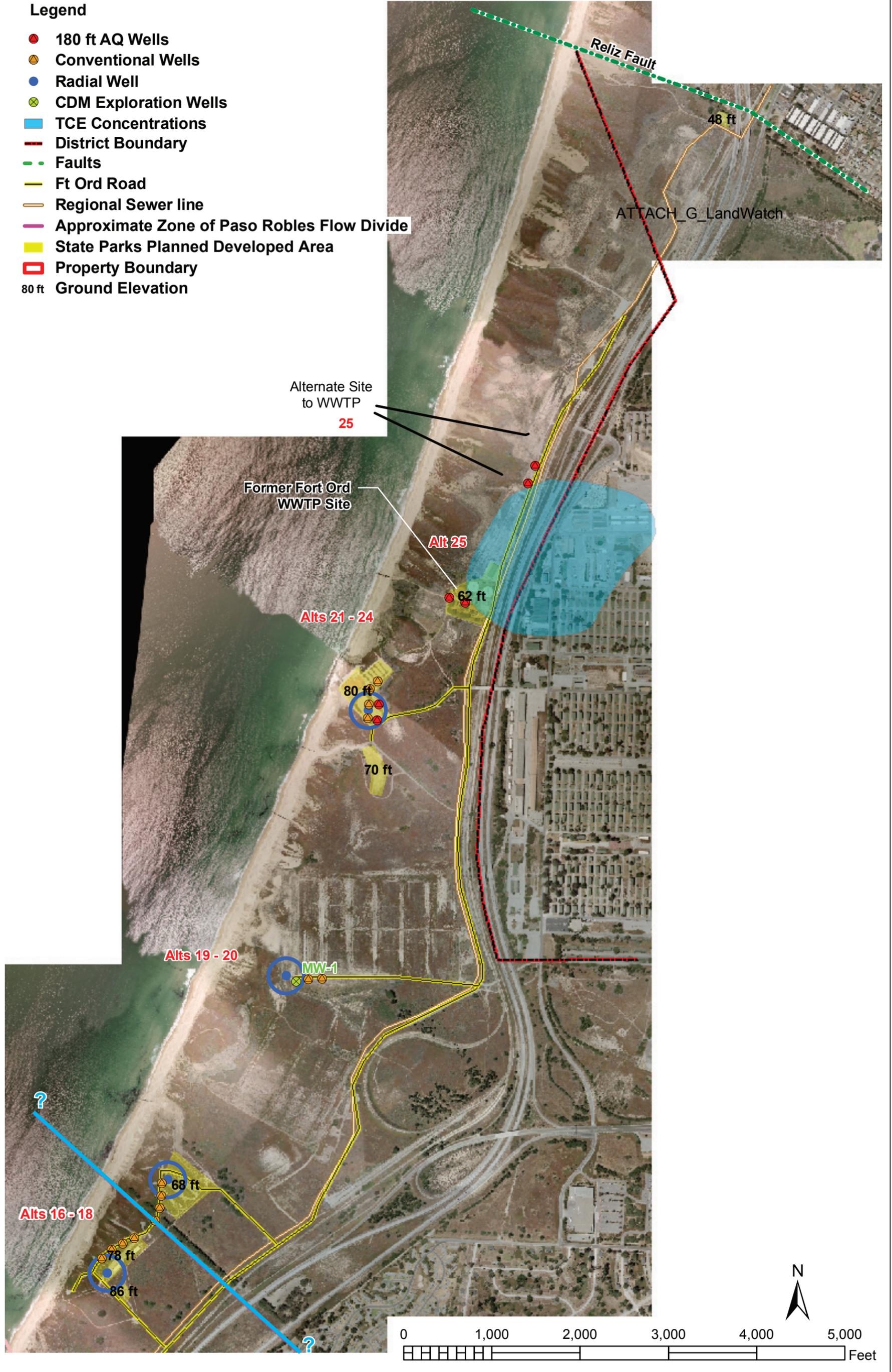


Figure 7
Alternatives—North

Collector well locations were identified based on land use and technical constraints. Projects that could have significant policy issues that would affect project implementation, such as a project that would impact Sand City's desalination project and require replacement of Sand City's supply, were not categorically excluded from consideration. Rather, significant issues affecting project implementation were addressed as part of the alternatives screening process, discussed in Section 3. The following considerations were taken into account in identifying well locations:

- **Sand City:** Most properties evaluated have planned redevelopment, and well locations would need to be compatible with planned site uses. Southernmost properties have the potential to impact the Sand City's desalination project, which is currently under construction. Groundwater modeling would be required for these sites to demonstrate that they do not impact the City's project, or identify mitigation that would be required to compensate Sand City for any loss in water production. Portions of the Monterey Peninsula Regional Parks District site have been developed for park uses and would be visually sensitive. A former landfill was located on the northern part of the property, but has been excavated and recontoured.
- **Former Fort Ord:** Siting of facilities was based on review of the Fort Ord Dunes State Park General Plan (Environmental Science Associates 2004) and discussions with a local DPR representative (Gray pers. comm.). DPR either has begun or has future plans to restore much of the park area to native coastal habitat, and would allow construction only in disturbed areas, along road rights-of-way, or areas where facilities are planned. Based on these constraints, well sites were selected that are closer to the bluffs, to target higher transmissivity, more saline areas within the shallow aquifer formation, along roads that will be maintained for park access to trails or other recreation facilities, or in areas where active recreational facilities, such as campgrounds or trailheads, and supporting road and parking infrastructure is planned.

Table 1 summarizes alternatives, starting at the southernmost extent of the area evaluated, working north. Figures 6 and 7 identify the general project locations, with conceptual locations for wells indicated on the map.

Table 1. Summary of Feed Water Collection Well Alternatives

Alt	Location <u>Owner</u>	Description	Well Type	Details	Flow Rate	Public property?
1	Sand City Desal Site- <u>Sand City</u>	South of Tioga Avenue.	HDD	1,500 ft	3,000 gpm	Y
2		Project facilities located in vicinity of Sand City collection and disposal wells.	Radial	2 wells	6,000 gpm	Y
3			Conv. (Shallow)	15 wells	7,500 gpm	Y
4	Sand City - <u>Malibu</u> <u>Development</u> <u>LLC</u>	North of Tioga Avenue.	HDD	500 ft	1,000 gpm	N
5		Property slated for re-development, though no identified active plans.	Radial	1 well	3,000 gpm	N
6			Conv. (Shallow)	2 wells	1,000 gpm	N
7	Sand City - <u>Sand City Re-</u> <u>Development</u> <u>Agency</u>	Property owned by Sand City Re-development Agency. An EIR is underway for a resort planned at this site.	HDD	500 ft	1,000 gpm	N
8			Radial	2 wells	6,000 gpm	N
9			Conv. (Shallow)	7 wells	3,500 gpm	N
10	Sand City - <u>Monterey</u> <u>Peninsula</u> <u>Regional Parks</u> <u>District</u>	Property owned by Monterey Peninsula Regional Parks District.	HDD	1,000 ft	2,000 gpm	Y
11			Radial	1 well	3,000 gpm	Y
12			Conv. (Shallow)	5 wells	2,500 gpm	Y
13	Sand City – <u>SNG</u> <u>Development</u> <u>Corporation</u>	Property owned by SNG.	HDD	600 ft	1,200 gpm	N
14		Property slated for re-development.	Radial	2 wells	6,000 gpm	N
15			Conv. (Shallow)	6 wells	3,000 gpm	N
16	Former Fort Ord: Bunker Site- <u>DPR</u>	Approximate northern extent of Seaside Basin.	HDD	1,000 ft	2,000 gpm	Y
17		Former ammunition supply bunkers. Slated for development as a camping area.	Radial	2 wells	6,000 gpm	Y
18			Conv. (Shallow)	8 wells	4,000 gpm	Y
19	Former Fort Ord: MW-1- <u>DPR</u>	Location of Seaside Basin Sentinel Well # 1, and test boring location in 2004 CDM study.	Radial	1 well	3,000 gpm	Y
20			Conv. (Shallow)	2 wells	1,000 gpm	Y
21			HDD	1,000 ft	2,000 gpm	Y
22	Former Fort Ord: Stilwell- <u>DPR</u>	Former site of Stillwell Hall. Planned parking area and trail access point.	Radial	1 well	3,000 gpm	Y
23			Conv. (Shallow)	4 wells	2,000 gpm	Y
24			Conv. (180')	2 wells	4,000 gpm	Y
25	Former Fort Ord: WWTP <u>DPR</u>	Site of former Fort Ord Wastewater Treatment Plant.	Conv. (180')	2 wells	4,000 gpm	Y

3 Alternatives Screening

Project Screening Criteria

The team identified project screening criteria to evaluate different feed water collection alternatives. The criteria address key technical, policy, and regulatory issues to be considered for project viability and were used to evaluate how different feed water collection alternatives perform compared with other alternatives.

The consulting team and MPWMD staff developed initial screening criteria, summarized in Table 2, at the project outset, based on the team's understanding of the issues at that time. The table summarizes the initial criteria, including a description of specific evaluation considerations, and how each criterion was used or modified during Phase 1 based on information gathered during the analysis.

Table 2. Initial Criteria Identified for Screening Alternatives

Initial Screening Criteria and Descriptions	How Used in Phase 1 Analysis
Potential Quantity of Supply	
This criterion identifies the projected supply yield that could be developed by an alternative. Quantity of supply was ultimately not used as a screening criterion, but rather used as part of the project scoring, with alternatives that produce higher yields rated higher than projects that produce smaller yields.	Used as part of project scoring, to provide a relative ranking of projects based on their project yield.
Certainty of drilling technology	
This criterion considers whether an alternative relies on proven technology (e.g. radial, conventional, onshore HDD wells), or relies on new technology that may not be proven in the proposed application (offshore HDD wells).	Retained as part of a more general criterion Drilling and Siting Complexity

Initial Screening Criteria and Descriptions	How Used in Phase 1 Analysis
Frac-out risk	
<p>This criterion assesses what risk of frac out is presented by the well drilling needed to implement the option. Frac out is a concern for offshore wells, and could occur if overlying materials above the drilled well are uplifted during drilling, due to localized pressure exerted by the advancement of the bore hole. Frac out is a concern because drilling fluids would be released into Monterey Bay.</p>	<p>Eliminated as a criterion once offshore drilling alternatives screened from further consideration</p>
Influence on adjudicated groundwater	
<p>This criterion assesses what degree of impact an alternative would have on adjudicated groundwater in the Seaside Basin.</p>	<p>Retained as part of a more general policy criterion to assess an alternative's potential impacts to the Sand City desalination project. Alternatives target the Dune Sands aquifer to avoid impacts to Seaside Basin water supply wells that draw from the Paso Robles and Santa Margarita Formations.</p>
Regulatory considerations	
<p>This criterion assesses various policy, regulatory, and environmental factors, including land use constraints, endangered species effects, permitting and how they affect implementation.</p>	<p>Retained.</p>
Development water cost	
<p>This criterion provides a relative measure of cost to develop the feed water collector alternative, since cost estimates were not prepared as part of this phase of work.</p>	<p>Retained</p>

As part of a design charrette, consultants and MPWMD staff refined and consolidated the initial set of criteria, based on information gathered during Phase 1 evaluations. Table 3 summarizes the four criteria that were selected. The table also indicates relative weights assigned to each of the criterion by the team. The relative weights, which sum to 100 percent, reflect the team's collective opinions about the relative importance of each criterion. As discussed in the Alternatives Analysis section, sensitivity analysis was also conducted to assess the sensitivity of criteria weights on alternative rankings. Table 3 summarizes the final criteria used to evaluate alternatives, and the relative weights assigned by the consulting and MPWMD staff.

Table 3. Final Criteria Used in Alternative Screening

Criterion	Relative Weight Used in Analysis
Drilling and Siting Complexity	
This criterion considers whether an alternative relies on proven technology (e.g. radial, conventional, onshore HDD wells), or new technology that may not be proven in the proposed application (offshore HDD wells). The criterion also considered site factors that would affect the complexity of well installation (e.g. construction in bluffs vs. beach).	20%
Policy Considerations	
This criterion includes legal, public or policy issues that would affect project implementation. This criterion assesses whether policy issues are likely to preclude, complicate or lengthen project implementation.	40%
Regulatory Considerations	
This criterion assesses various environmental and permitting factors, including land use constraints, biological and water resources effects, geological processes and others that would be instrumental in regulatory approvals of a project.	30%
Development water cost	
This criterion provides a relative measure of cost to develop the feed water collector alternative, since cost estimates were not prepared as part of this phase of work.	10%

Alternatives Screening

Table 4 and Figure 8 present the results of the alternatives screening process. Each of the 25 alternatives described above was ranked with high, medium, or low constraints under each of the four final screening criteria. The high, medium, and low rankings were established by the consultant team based primarily on professional judgment of relative risk to the success of a desalination project at the alternative location. Final rankings are presented with and without regard to the amount of water likely to be available from the site.

For the drilling and siting complexity criterion, construction of conventional wells was given a low ranking. The simplicity of the technology and the minimal space needed for construction and operation make this type of well most likely to be successful. Radial wells were given a medium ranking because of the size of the equipment needed and the relative difficulty of extending a large caisson to significant depths, especially at former Fort Ord locations. The HDD technology was given a high constraint likelihood because of the difficulty of slant drilling, especially to significant depths at former Fort Ord.

As stated earlier, the policy criterion includes a variety of potential constraints, including restrictions contained in law, in policy and planning documents, or in judgments stated by public agency representatives. The most significant constraints were contained in legislation relating to inter-basin transfer of groundwater, which would affect the success of the Stilwell and Fort Ord Former WWTP alternatives, and in statements made by Sand City officials regarding the availability of undeveloped land within the city, which would affect the Sand City and Sand City Redevelopment collection well alternatives, as well as location of a treatment plant. The remaining collection well alternatives have potentially restrictive issues from a land use plan consistency standpoint, or from the perspective of agency concerns. None of the alternatives were judged to have a low potential for constraints from a policy perspective.

Regulatory constraints were judged from the likelihood of carrying a project through the permitting process, given the various environmental issues and regulations that must be considered. The Monterey Peninsula Regional Park District alternatives were given a high constraint because of its status as a park with no development planned, its high visibility and its status as a habitat preserve area. The Bunker, Stilwell and Fort Ord WWTP alternative sites were given a low constraint ranking because there are areas with existing or planned development at these sites, and this preliminary review indicates there is space to locate facilities a sufficient distance from the coast to avoid coastal erosion issues. There is also potential at these sites for participation in habitat restoration efforts as part of project implementation.

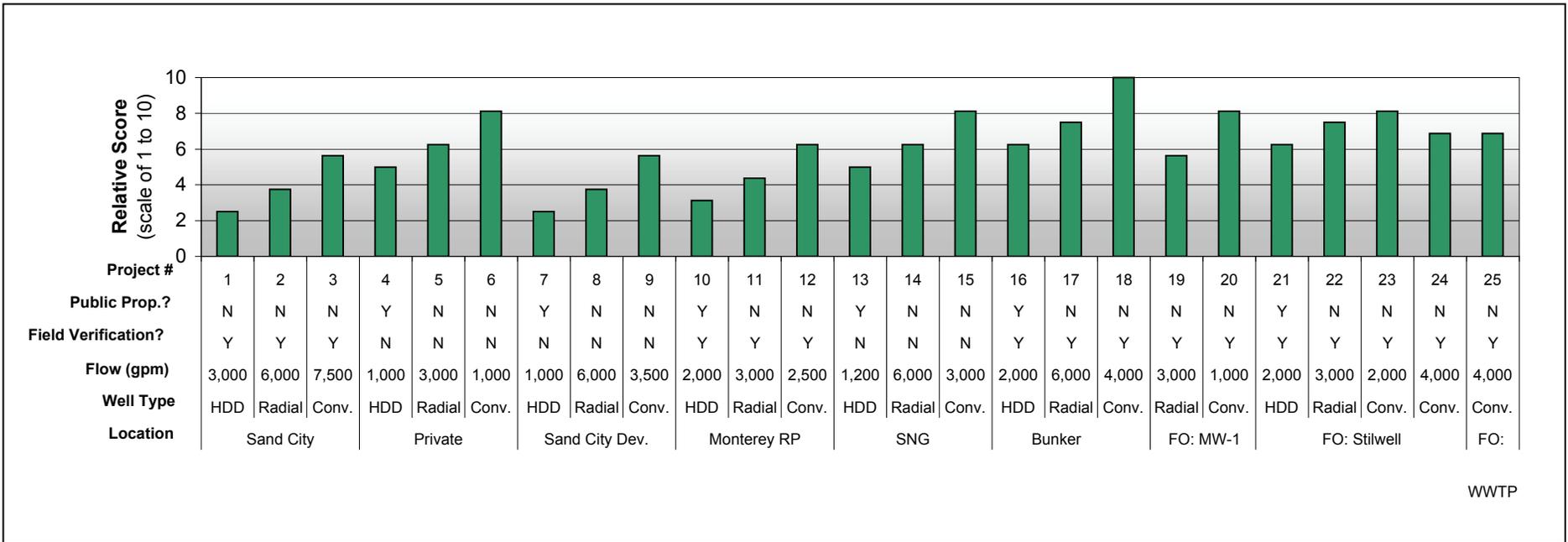
Development water costs were judged qualitatively, relative to the different collector well technologies considered and the production estimated for each type of collector well technology. In general, the HDD and radial well technologies were rated medium to high cost because they require more specialty construction and equipment relative to the yield they produce. Construction costs for conventional wells were rated low to medium because well construction can be performed using conventional construction methods. Construction costs for all technologies would generally be higher at former Fort Ord due to the additional depth to reach the target formation.

Table 4 lists the projects, running from south to north, and provides information on the location, type of collector well technology, and estimated yield. As noted above, each alternative was assigned a high, medium or low rating (low being “best” or least constrained, high being “worst” or most constrained). These ratings were then converted to ten-point scale scores and projects were ranked in order of their scores, with a score of 1 indicating the “best” or least constrained alternative. Rankings are shown on the right-hand side of the figure, both without regard to flow and with regard to flow. The rankings with regard to flow factor the alternative’s flow rate into the score. For example, Alternative 1, with a flow rate of 3,000 gpm and Alternative 7, with a flow rate of 1,000 gpm, have the same ratings. Both have the same ranking without regard to flow, but Alternative 1 has a better (lower) rank when considering project flow rate.

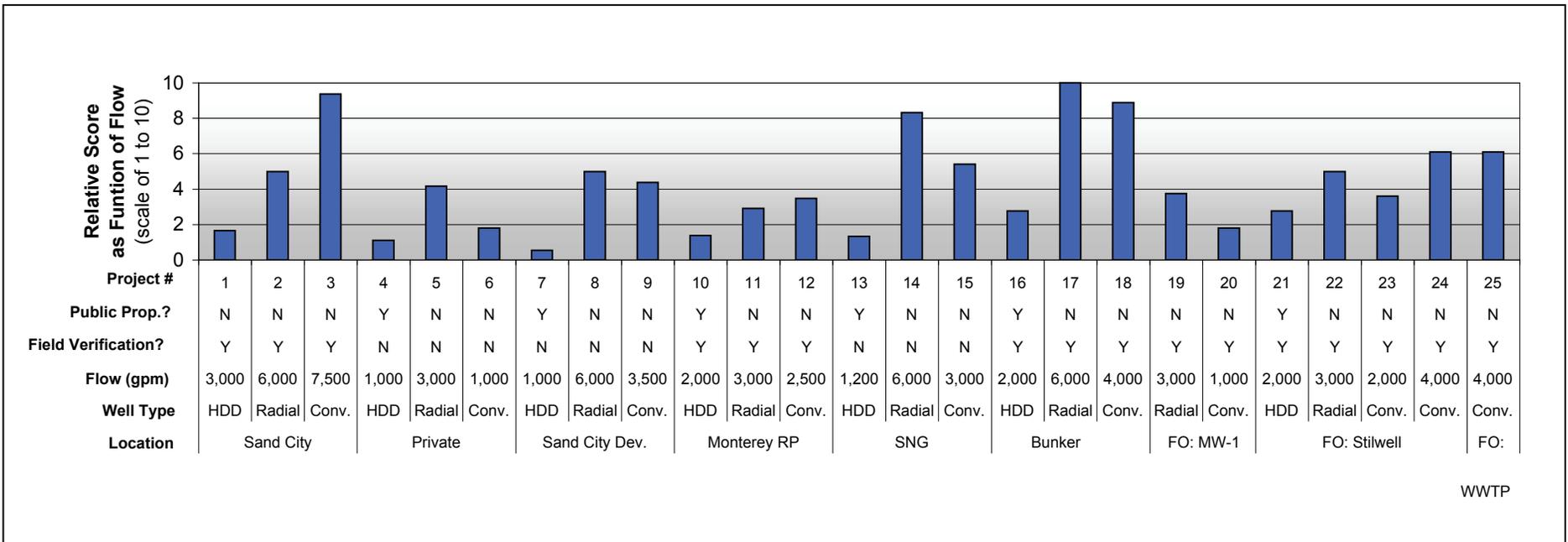
Figure 8 graphically shows all of the alternatives, with their relative scores based on the 10-point scale. In developing recommendations for alternatives that could

Monterey Peninsula Water Management District				Screening Criteria				Final Ranking			
Preliminary Screening - Well Siting				Public property?	Drilling and Siting Complexity	Policy Restriction	Regulatory Restriction	Feed Water System Cost	Without Regard to Flow	With Regard to Flow	
				Y / N	H / M / L	H / M / L	H / M / L	H / M / L			
View Chart Flow Parameters Point Values				Criteria Weighting							
				20%	40%	30%	10%				
Project #	Location	Well Type	Details	Flow Rate							
1	Sand City	HDD	1,500 ft	3,000 gpm	Y	H	H	M	M	24	21
2	Sand City	Radial	2 wells	6,000 gpm	Y	M	H	M	M	21	9
3	Sand City	Conv. (Shallow)	15 wells	7,500 gpm	Y	L	H	M	L	16	2
4	Private	HDD	500 ft	1,000 gpm	N	H	M	M	M	18	24
5	Private	Radial	1 well	3,000 gpm	N	M	M	M	M	10	12
6	Private	Conv. (Shallow)	2 wells	1,000 gpm	N	L	M	M	L	3	19
7	Sand City Dev.	HDD	500 ft	1,000 gpm	N	H	H	M	M	24	25
8	Sand City Dev.	Radial	2 wells	6,000 gpm	N	M	H	M	M	21	9
9	Sand City Dev.	Conv. (Shallow)	7 wells	3,500 gpm	N	L	H	M	L	16	11
10	Monterey RP	HDD	1,000 ft	2,000 gpm	Y	H	M	H	M	23	22
11	Monterey RP	Radial	1 well	3,000 gpm	Y	M	M	H	M	20	16
12	Monterey RP	Conv. (Shallow)	5 wells	2,500 gpm	Y	L	M	H	L	12	15
13	SNG	HDD	600 ft	1,200 gpm	N	H	M	M	M	18	23
14	SNG	Radial	2 wells	6,000 gpm	N	M	M	M	M	10	4
15	SNG	Conv. (Shallow)	6 wells	3,000 gpm	N	L	M	M	L	3	7
16	Bunker	HDD	1,000 ft	2,000 gpm	Y	H	M	L	H	12	17
17	Bunker	Radial	2 wells	6,000 gpm	Y	M	M	L	H	6	1
18	Bunker	Conv. (Shallow)	8 wells	4,000 gpm	Y	L	M	L	L	1	3
19	FO: MW-1	Radial	1 well	3,000 gpm	Y	M	M	M	H	15	13
20	FO: MW-1	Conv. (Shallow)	2 wells	1,000 gpm	Y	L	M	M	L	3	19
21	FO: Stilwell	HDD	1,000 ft	2,000 gpm	Y	H	M	L	H	12	17
22	FO: Stilwell	Radial	1 well	3,000 gpm	Y	M	M	L	H	6	8
23	FO: Stilwell	Conv. (Shallow)	4 wells	2,000 gpm	Y	M	M	L	M	2	14
24	FO: Stilwell	Conv. (180')	2 wells	4,000 gpm	Y	L	H	L	M	8	5
25	FO: Former WWTP	Conv. (180')	2 wells	4,000 gpm	Y	L	H	L	M	8	5

Table 4. Results of Collector Well Screening



WWTP



WWTP

Figure 8
Alternatives and Relative Scores

move forward, the team identified alternatives that were generally ranked higher, and had consistent scores.

In general, HDD options performed poorly when compared with radial and conventional well alternatives because of their higher drilling and siting complexity, their higher cost and lower yield. Also, sites at former Fort Ord generally performed better than sites in the Sand City area, due to potential land use constraints and potential impacts to the Sand City project currently under construction.

The four criteria used for the screening analysis were weighted by the consulting team and MPWMD staff based on their perceived relative importance. The relative weights, which sum to 100 percent, reflect the team's collective opinions about the relative importance of each criterion. The two technical criteria, siting and drilling complexity and cost, total 30 percent, with policy and regulatory issues totaling 70 percent.

A sensitivity analysis was performed to determine the effect of changing the relative weights of the criteria to the alternatives ranking. The sensitivity analysis was performed assigning 70 percent to technical criteria and 30 percent to policy and regulatory criteria. The sensitivity analysis found that these changes had relatively little impact on alternatives, with the following exceptions:

- Alternative 3, conventional wells at Sand City, has a high score for ranking, with regard to flow, or without regard to flow. This reflects the fact that the most significant issues on this project are policy-related, due to potential impacts to the Sand City desalination project.
- Alternatives 17 and 22, radial wells at former Fort Ord, significantly fall in the rankings, due to the more difficult construction issues and higher relative cost for construction of these wells at former Fort Ord, where the water table is much deeper due to the presence of the coastal bluffs.

Formulation of Potential Projects

Based on the results of the screening, alternatives at three different sites were evaluated for project pairing. These alternatives are summarized below:

- **Alt 17 or 18: Fort Ord, Bunker Site.** Developed with either radial wells (6,000 gpm) or conventional wells (4,000 gpm).
- **Alt 25: Fort Ord, Former Wastewater Treatment Plant Site.** Developed with conventional wells in the 180-foot aquifer (4,000 gpm).
- **Alt 22, 23 or 24: Fort Ord, former Stilwell Hall Site.** Developed with radial wells (3,000 gpm), conventional wells in the Dune Sands aquifer (2,000 gpm), or conventional wells in the 180-foot aquifer (4,000 gpm).

As discussed in the beginning of this report, MPWMD is seeking a project with a production capacity of 8,400 AF/year, or 7.5 mgd. For a production capacity of

7.5 mgd, 15 mgd (10,400 gpm) of feed water collector capacity is required. Additional capacity must also be included, assuming that at least one well is out of service at any given time for maintenance. Table 5 summarizes four possible combinations of the alternatives that could be developed into a project.

Table 5. Potential Projects and Capacities

Project	Alternatives in Project	Total Capacity	Firm Capacity (1)	WTP Capacity	Notes
<i>Projects in the Dune Sands Aquifer</i>					
Example Project 1					
	Alt 18: Conventional Wells at Bunker Site	<u>4,000</u>			Least implementation issues of all projects evaluated.
	Totals (gpm)	4,000	3500		
	Totals (mgd)	5.8	5.0	2.5	
<hr/>					
Example Project 2					
	Alt 18: Conventional Wells at Bunker Site	4,000			Potential inter-basin transfer issues for wells at Stilwell.
	Alt 23: Conventional Wells at Stilwell Site	<u>2,000</u>			
	Totals (gpm)	6,000	5,500		
	Totals (mgd)	8.6	7.9	4.0	
<hr/>					
<i>Projects in the Dune Sands Aquifer and 180-foot Aquifer</i>					
Example Project 3					
	Alt 18: Conventional Wells at Bunker/Dune Sands	4,000			Potential inter-basin transfer issues for wells at Stilwell and WWTP
	Alt 24: Conventional Wells at Stilwell/180-foot Aquifer	4,000			
	Alt 25: Conventional Wells at WWTP/180-foot Aquifer	<u>4,000</u>			
	Totals (gpm)	12,000	10,000		
	Totals (mgd)	17.3	14.4	7.2	
<hr/>					
Example Project 4					
	Alt 18: Conventional Wells at Bunker/Dune Sands	4,000			Potential inter-basin transfer issues for wells at Stilwell and WWTP
	Alt 22: Radial Well at Stilwell/Dune Sands	3,000			
	Alt 24: Conventional Wells at Stilwell/180-foot Aquifer	4,000			
	Alt 25: Conventional Wells at WWTP/180-foot Aquifer	<u>4,000</u>			
	Totals (gpm)	15,000	12,000		
	Totals (mgd)	21.6	17.3	8.7	
<hr/>					
(1) Computed assuming the largest well out of service as a standby					

As the table shows, the only way to assemble projects to meet the 7.5 mgd production goal for the project is with wells drilled in the 180-foot aquifer, paired with shallow wells at the Bunker Site. No pairing of conventional or radial wells at the sites using the Dune Sands aquifer would provide sufficient collector well capacity to meet the project production goal of 7.5 mgd.

4 Findings and Next Steps

Findings

The ICF Jones & Stokes/CDM team has identified the following feed water development findings for the 95-10 Project:

- A project with an estimated WTP production capability of up to 8,400 AFY (7.5 mgd) is technically feasible, with wells installed on former Fort Ord, making use of the Dune Sands aquifer and the 180-foot aquifer of the Salinas Groundwater Basin. Initial conversations with MCWRA indicate that inter-basin transfer of water from the 180-foot aquifer would be extremely politically sensitive and would ultimately require State legislature approval to amend the MCWRA Act, which could significantly lengthen the project implementation timeline.
- If the 180-foot aquifer is not used as a source for feed water, the anticipated project yield is less than 8,400 AFY. Depending on project configuration, a project with an estimated WTP production capability of 2,800 AFY (2.5 mgd) to 4,400 AFY (4.0 mgd) is technically feasible.
- All of the options evaluated presented institutional and land use obstacles of far greater significance than technical concerns. While none of the agencies interviewed identified issues that would preclude a project at this stage, successful implementation of any project option will require aggressive and collaborative discussion and negotiations with land use, resource, and regulatory agencies.
- The analysis found that projects at or in the vicinity of the Sand City desalination project currently under construction are technically viable and could have a production capability of 6,000 AFY (5.0 mgd) or more with the least cost. However, in a meeting and subsequent conversations with Sand City staff, they expressed strong objections to siting any desalination facilities within the city limits. Their objections included potential for impacts to the Sand City desalination project and incompatibility with planned development at potential project sites. Therefore, none of the projects in Sand City were recommended for further consideration.

Data Gaps and Next Steps

Key data gaps identified in the Phase 1 analysis and next steps to implement a project are presented below. Table 6 summarizes the next steps, including a schedule and budget range.

1. Address Policy Issues Related to Implementation Feasibility

Three significant policy issues were identified that could affect project implementation. Although agency discussions were held as part of this Phase 1 analysis, further work is advisable to more definitively address these issues and determine whether they preclude project implementation. It is assumed that ICF Jones & Stokes staff would initiate these discussions, with support from CDM as needed.

- Inter-basin Transfer. As noted in this document, Chapter 52-21 of the MCWRA enabling legislation specifically prohibits the extraction and export of groundwater outside of the Salinas Basin except for use at Fort Ord. Initial discussions with the MCWRA indicate that while not a fatal flaw, this issue is significant and could considerably lengthen the implementation timeline for a project. Further discussion with MCWRA and agricultural stakeholders regarding use of the 180-foot and Dune Sands aquifers in the northern portion of former Fort Ord is advised. Additionally, a hydrogeologic determination- consisting of review and interpretation of existing information- should be conducted for the Dune Sands basin boundary.
- SWRCB Anti-Degradation Policy. Per this policy, a project cannot result in degradation of groundwater quality from saline intrusion below that which currently exists. Confirmation is advised as to how the policy would be applied to use of the 180-foot and Dune Sands aquifers along the southern Monterey Bay coastline.
- Site Review with DPR. General plan information was used to identify Fort Ord Dunes State Park “development areas” (areas not set aside as habitat) with potential for well sites, and two meetings were held to review well placement concepts with local DPR representatives. Additional work is needed to define specific DPR plans/locations for facilities, to refine site constraints and identify potential well site locations, both for field programs and permanent facilities. A meeting should also be held with regional representatives at DPR to review potential projects.

2. Perform Phase 2 Technical Evaluations

If completion of the policy issues review indicates that a project is still feasible, MPWMD should authorize Phase 2 of the CDM engineering scope for collection and analysis of additional hydrogeology and engineering information to describe a project and alternatives. Key activities are identified below:

- Field Hydrogeologic Investigations. Conduct field investigations to refine well siting locations and yields. Field activities would include:
 - Place exploratory borings to verify the extent and continuity of the clay layer overlying the Paso Robles Formation at the project sites.
 - Install test production and observation wells in the Dune Sands aquifer at Bunker and Stilwell sites to assess potential project yields. The Stilwell site testing could also be used to further assess whether the Dune Sands aquifer in this location is within the Salinas Basin.
 - Perform flow testing and monitoring on installed test production wells.
- Groundwater Modeling. Conduct groundwater modeling to assess potential impacts to the Salinas and Seaside Basins.
- Outfall Brine Characterization Studies. The MRWPCA NPDES permit would require brine characterization studies to assess brine constituents and how constituent levels relate to the permitted levels in the NPDES permit.
- Project Description. Using information from the 2004 CDM study, the project description for all project aspects would be updated and finalized. This would include identifying specific WTP locations, evaluating raw and treated water pipeline alignments and connections to CAW distribution/transmission facilities. Project facilities layouts and cost estimates would be prepared.

3. Prepare Phase 3 EIR.

ICF Jones & Stokes, with support from CDM, would prepare a draft and final EIR on the project and alternatives identified in Phase 2.

Table 6. Summary of Next Steps, Schedule and Initial Budget Estimates

Activity/Task	Schedule	Budget	
1. Complete Policy Review for Projects Additional consultations with MCWRA, RWQCB, DPR	Sep – Oct 2008	\$13,000	- \$19,000
2. Authorize Phase 2 Scope of Work - Detailed Facilities Plan for EIR	Nov 2008 – Apr 2010		
Field Hydrogeology Investigations		\$150,000	- \$250,000
Groundwater Modeling		\$70,000	- \$150,000
Outfall Brine Characterization Studies		\$50,000	- \$100,000
Finalize Project Descriptions		\$40,000	- \$80,000
Project Management		\$40,000	- \$80,000
		\$350,000	- \$660,000
3. Authorize Phase 3 Scope of Work - Prepare EIR	May – Dec 2010	\$200,000	- \$250,000
Project Totals		\$563,000	- \$929,000

5 References

Printed References

- California Coastal Commission. 2004. *Seawater Desalination and the California Coastal Act*. California Coastal Commission, San Francisco, CA.
- California Regional Water Quality Control Board, Central Coast Region. n.d. *Waste Discharge Requirements for the Monterey Regional Water Pollution Control Agency Regional Treatment Plant (Order No. R3-2008-0008)*. California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA.
- California State Water Resources Control Board. 1968. *Resolution 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California*. California State Water Resources Control Board, Sacramento, CA.
- California State Water Resources Control Board. 2007. *Scoping Document, Amendment of the Water Quality Control Plan – Ocean Waters of California*. Division of Water Quality, Sacramento, CA.
- Camp, Dresser & McKee, Inc. 2004. *Sand City Desalination Project Feasibility Study*. Final Report, Volume 1. Walnut Creek, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Environmental Science Associates. 2004. *Fort Ord Dunes State Park Preliminary General Plan and Draft Environmental Impact Report*. San Francisco, CA. Prepared for California Department of Parks and Recreation, Sacramento, CA.
- Feeney, M. B. 2007. *Seaside Groundwater Basin Watermaster: Seawater Sentinel wells Project, Summary of Operations*. Ventura, CA. Prepared for Seaside Basin Watermaster, Seaside, CA.
- Jones & Stokes. 2004. *Monterey Peninsula Water Management District Water Supply Project Draft Environmental Impact Report, Board Review Draft*. Sacramento, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Laredo, David. 2006. *Water Rights Relating to Sand City Desalination Projects, Memorandum to Andrew Bell, Monterey Peninsula Water Management District*. Pacific Grove, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Philip Williams & Associates, Ltd. 2008. *Draft Coastal Regional Sediment Management Plan for Southern Monterey Bay*. San Francisco, CA. Prepared for Association of Monterey Bay Area Governments, Marina, CA.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration. 2006. *Monterey Bay National Marine Sanctuary Draft Management Plan*. Volume III. National Ocean Service, National Marine Sanctuary Program. Washington, D.C..

Watermaster, 2008. Compilation of Seaside Basin Geology compiled by Derrick Williams of Hydrometrics for the Seaside Basin Watermaster's Draft Basin Management Action Plan. Seaside Basin Watermaster, Monterey, CA.

Yates, E.B., M.B. Feeney and L.I. Rosenberg. 2005. *Seaside Groundwater Basin: Update on Water Resource Conditions*. Ventura, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.

Personal Communications

Damitz, Brad. Environmental Policy Specialist, Monterey Bay National Marine Sanctuary, Monterey, CA. July 15 and 23, 2008 – telephone conversations.

Ewing, Leslie. Ocean Engineer, California Coastal Commission, San Francisco, CA. July 23, 2008 – telephone conversation.

Feeney, Martin. 2008. Hydrogeologist. Independent Consultant, Ventura, CA; Williams, Derrick. Hydrogeologist, HydroMetrics, Oakland, CA; Oliver, Joe. Hydrogeologist. Monterey Peninsula Water Management District, Monterey, CA. June 30, 2008 - Roundtable discussion on Seaside Basin geology during Design Charrette Workshop at Monterey Peninsula Water Management District, Monterey CA.

Feeney, Martin. 2008. Hydrogeologist. Independent Consultant, Ventura, CA. June 10, 2008 and July 28, 2008 - telephone conversations.

Ghandour, Ed. Corporate representative. SNG Development Corporation. San Francisco, CA. July 24, 2008 – telephone conversation.

Gray, Ken. Staff Park and Recreation Specialist. California Department of Parks and Recreation, Monterey District. Monterey, CA. June 5, 2008 – Meeting.

Gray, Ken. Staff Park and Recreation Specialist. McMenamy, Mike. Supervising State Park Ranger. Palkovic, Amy, Environmental Scientist. California Department of Parks and Recreation, Monterey District. Monterey, CA. July 16, 2008 – Meeting.

Haertel, Garrett. Compliance Engineer, Monterey Regional Water Pollution Control Agency, Monterey, CA. July 16, 2008 – Meeting.

Israel, Keith. General Manager. Hagemann, Brad. Assistant General Manager. Holden, Robert. Principal Engineer. Crook, James. Special Projects Engineer/Reclamation. Monterey Regional Water Pollution Control Agency, Monterey, CA, June 5, 2008 – Meeting.

Johnson, Rob. Chief of Water Management and Planning, Monterey County Water Resources Agency, Salinas, CA. July 2008 – telephone conversation.

Luster, Tom. Environmental Scientist, California Coastal Commission, San Francisco, CA. July 30, 2008 – telephone conversation.

Martin, Jacob. Senior Biologist, U.S. Fish and Wildlife Service, Ventura, CA. August 5, 2008 – telephone conversation.

Matarazzo, Steve. Community Development Director. Heisinger, James. Legal Counsel. Simonich, Rich. City Engineer. City of Sand City, CA. June 5, 2008 – Meeting.

Von Langen, Peter. Engineering Geologist, Central Coast Regional Water Quality Control Board, San Luis Obispo, CA. July 16, 2008 – Meeting.

Weeks, Curtis. General Manager. Johnson, Rob. Chief of Water Management and Planning, Monterey County Water Resources Agency. Salinas, CA. August 5, 2008 – Meeting.

Williams, Derrik. Hydrogeologist, HydroMetrics, Oakland, CA. Draft Memorandum to Martin Feeney, *Preliminary Modeling Results for the MCWD Desalination Intake*. July 23, 2008 – Memorandum.

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Water Management District 95-10 Project. August. (ICF J&S 00494.08.)
Sacramento, CA. Prepared for: Monterey Peninsula Water Management
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Acronyms and Abbreviations

AFA	acre-feet annually
CAW	California American Water
CCA	California Coastal Act
CCC	California Coastal Commission
CDM	Camp Dresser & McKee
DFG	California Department of Fish and Game
DPR	California Department of Parks and Recreation
FORA	Fort Ord Reuse Authority
gpm	gallons per minute
HCP	Habitat Conservation Plan
HDD	horizontal directionally drilled
LCP	local coastal plan
MBNMS	NOAA Monterey Bay National Marine Sanctuary
MCWD	Marina Coast Water District
MCWRA	Monterey County Water Resources Agency
mgd	million gallons per day
MPWMD	Monterey Peninsula Water Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
NMFS	National Marine Fisheries Service
Park	Fort Ord Dunes State Park
RWQCB	Regional Water Quality Control Board
Sand City	City of Sand City
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
WWTP	wastewater treatment plant

Constraints Analysis Monterey Peninsula Water Management District 95-10 Project

1 Introduction

Project Overview

The Monterey Peninsula Water Management District (MPWMD) manages and regulates the use, reuse, reclamation and conservation of water within its boundaries on the Monterey Peninsula. About 80% of the water collected, stored, and distributed within the MPWMD boundaries is done so by California American Water (CAW), which serves approximately 95% of Monterey Peninsula residents and businesses. Approximately 70% of the water delivered by CAW is diverted from the Carmel River Basin. In 1995, the State Water Resources Control Board (SWRCB) determined that the Carmel River was over-appropriated in the drier seasons of the year and issued Order WR 95-10 to reduce CAW's unlawful diversions from the Carmel River. Since issuance of WR 95-10, MPWMD has sought to develop and/or support projects that would meet the order's direction to seek alternative sources of water for the Monterey Peninsula.

In 2002, MPWMD initiated engineering and environmental evaluations of a local desalination project in the City of Sand City (Sand City)/former Fort Ord region of the Monterey County coast, seeking to develop a project that could supply up to 8,400 acre-feet annually (AFA) of potable water to the CAW system for delivery to the community. This is equivalent to 7.5 million gallons per day (mgd), average daily production. The project considered the use of horizontal directionally drilled (HDD) or radial wells to provide feed water from the shallow coastal Dune Sands aquifer, the construction of a local desalination water treatment plant, and the disposal of brine either back to the shallow aquifer along the coast or to the Monterey Regional Water Pollution Control Agency (MRWPCA) regional wastewater outfall near the mouth of the Salinas River.

Feed water collection alternatives for the earlier project focused on locating wells in the Sand City area and southern part of former Fort Ord, west of Highway 1, and drilling offshore from the coast to target the Dune Sands aquifer offshore. Field geotechnical and geophysical studies concluded that the Dune Sands aquifer did not extend significantly offshore, and that only radial wells, or HDD wells parallel to the shore were likely feasible. These options would require

siting collector wells in Sand City and former Fort Ord, and using the regional wastewater treatment plant outfall for brine disposal. Development of this local project was halted in 2004 to consider participation in larger, regional water supply projects that were being planned by other entities.

In January of 2008, the MPWMD Board of Directors authorized staff and its consultants to develop a scope and cost to re-initiate the evaluation of the Sand City/former Fort Ord area desalination project. Following receipt of proposals from ICF Jones & Stokes and Camp Dresser & McKee (CDM), the Board of Directors acted on April 21, 2008 to authorize staff and consultants to embark on the first phase of a phased approach to update the work completed in 2002-2004.

The first phase is a constraints analysis to determine whether there are feasible feed water intake and brine discharge conceptual designs with no irreconcilable policy or regulatory constraints that would discourage further evaluation of the desalination project. It also considers discharging brine from the water treatment process through the MRWPCA wastewater outfall to Monterey Bay. The proposed project considered in this report is now being described as the MPWMD 95-10 Project. This phase identifies the largest project that is feasible, as well as the largest feed water alternative that could be implemented more quickly, due to fewer implementation or regulatory issues or technical data gaps that would require additional field investigation. This first phase did not evaluate treatment plant sites because the original sites located in Sand City were found to be unavailable and the alternative sites identified in the past two months have not been discussed in sufficient detail with the owners to determine their availability. The Phase 1 study does not provide preliminary design or project construction and operation cost information. This information will be developed in Phase 2 of the study, should it be authorized by the MPWMD Board of Directors.

Phase 1 Study Overview

The objective of this first phase of work is to re-evaluate the earlier MPWMD seawater desalination project and identify whether a project can be developed that would provide a new potable water supply yielding up to 8,400 AFA (7.5 mgd average production). For a seawater source production capacity of 7.5 mgd, 15 mgd of firm feed water collection capacity is required. Firm well capacity is defined as the well capacity that could be in-service at any given time, with some wells out of service due to planned maintenance or unplanned equipment problems. Depending on the collector well technology, 16.5 to 19 mgd of total well capacity would be required to insure a firm capacity of 15 mgd. The first phase also re-evaluated the use of the MRWPCA wastewater outfall to Monterey Bay as the brine disposal mechanism. This element of the project was considered to be the only feasible method of brine disposal, regardless of the location or nature of the feed water collection system selected. Further work to refine outfall disposal requirements and review alternate desalination water treatment plant site locations, initially planned in Phase 1, was deferred based on discussions with MPWMD staff, pending selection of well collector alternatives that could move forward into a subsequent phase. This phase identifies feasible

collector well project sizes, implementation issues and next steps, so that the MPWMD Board of Directors can determine whether to proceed with a full engineering and environmental analysis of the 95-10 Project. To achieve this objective, the study team performed the following tasks for the Phase 1 analysis. The results of each of these tasks are presented in a subsequent section of the report.

- **Develop Conceptual Geologic Model (Section 2).** Hydrogeologic information related to the Seaside Basin was compiled and reviewed, and used to develop a conceptual geologic model of the Aromas Sand and the dunes sands, collectively referred to as the Dune Sands aquifer, the target aquifer for feed water collection wells. Information was compiled for the Sand City and former Fort Ord areas, from a variety of sources, including field information from the Sand City desalination project, the Seaside Basin sentinel well program, and Fort Ord groundwater monitoring and cleanup activities.
- **Identify Constraints and Opportunities (Section 2).** The team compiled information on various technical, policy and regulatory issues that could affect siting of feed water collection wells. GIS tools were used to overlay technical information about constraints on maps of the Sand City and former Fort Ord coastal areas, and identify preliminary feed water collection alternatives. MPWMD staff and consultants also participated in a series of meetings with key planning, regulatory and resource agency staff. Initial meetings were held with Sand City and California Department of Parks and Recreation (DPR) to discuss potential land use restrictions and other policies that would affect siting of wells. Subsequent meetings with these and other agencies presented project location and design information to agency staff and obtained input about potential policy and regulatory issues that would affect implementation of alternatives.
- **Develop Alternatives (Section 2).** Using information from the constraints analysis and initial meetings with Sand City and DPR representatives, the team identified preliminary feed water collection well alternatives, and refined these in a design charrette (a collaborative technical workshop) with technical experts from MPWMD and the consulting team. Alternatives were further refined based on information gathered in agency meetings.
- **Develop Project Screening Criteria (Section 3).** The screening criteria presented in Section 3 address key technical, policy, and regulatory issues to be considered for project viability. They were used to evaluate how different feed water collection alternatives perform. Initial criteria were identified at the project outset. These were consolidated and refined by the team during Phase 1 work into four criteria addressing technical, regulatory, policy and cost considerations.
- **Screen Alternatives (Section 3).** Feed water alternatives were scored for each of the project screening criteria to determine a prioritized list of projects that could be developed. Sensitivity analysis was conducted as part of the screening to assess how changes in stakeholder perception of the relative importance of the objectives could influence the selected feed water options.

- **Present Findings and Next Steps (Section 4).** Highest ranked projects from the screening analysis are identified, along with data gaps, and next steps that would be required for project implementation.

Tasks were structured to develop and present information in collaborative workshops with MPWMD staff and consultants, leveraging the collective hydrogeologic expertise of MPWMD staff and technical experts who have worked for many years on local groundwater issues. Subsequent sections of this summary report document the evaluations and findings for each of these activities.

2 Alternatives Development

This section describes the process used to develop potential feed water collection alternatives and presents the results of the alternatives development, including development of the geologic model, identification of constraints and opportunities and formulation of alternatives, as described in Section 1. Each topic is described in detail below.

Geologic Model

A conceptual geologic model of Sand City and former Fort Ord coastal area was developed to aid in the placement of potential seawater collector wells for the 95-10 Project. The geologic model relies on the most recent geologic interpretation developed by Derrick Williams and Martin Feeney (Williams and Feeney pers. comm.) which compiled many sources of data and information from previous studies as part of the Seaside Basin Watermaster's Draft Basin Management Action Plan. The conceptual model only pertains to the coastal geologic formations thought to be in direct hydrogeologic connection with the Monterey Bay. Two water bearing units were identified with the potential to provide feed water to the 95-10 Project. These units include the Dune Sands aquifer and the saline-intruded 180-foot aquifer in the southern Salinas Basin. Both of these units are described in more detail below in addition to a discussion on the boundary between the Seaside and Salinas Groundwater Basins.

Aromas Sand and Dune Sands

The Aromas Sand and the dune sands (collectively referred to as Dune Sands) are extensive from Seaside to Ford Ord in both the Seaside Basin and the southern extent of the Salinas Basin on former Fort Ord. The Dune Sands are in direct communication with the ocean and are only saturated at the coastal margin. Consequently, they provide little value as a freshwater aquifer in the Seaside or southern Salinas Groundwater Basins.

The Dune Sands has a high potential to produce seawater using HDD wells, radial wells (Ranney collectors), or conventional vertical wells. The extent of the Dune Sands along the coastal margin is depicted in Figure 1 with the cross section location shown in Figure 2. The saturated thickness of the Dune Sands throughout the Seaside Basin and southern Salinas Basin varies from 20 to 50 feet as determined by groundwater monitoring wells installed for Sand City in 2004 as part of its desalination project investigation (CDM 2004). Groundwater extraction wells installed in the Dune Sands by Sand City for brackish groundwater extraction have shown extraction rates on the order of 600 gallons per minute (gpm) with only minimal well drawdown (Feeney 2008 pers. comm.). For the constraints analysis, we have assumed that the Dune Sands will have similar aquifer production properties along the coastal margin with the ability to produce 2-3 gpm per linear foot of casing for horizontally completed wells and 500 gpm for conventional wells.

In the Seaside Basin, the two principal aquifers beneath the 95-10 Project area are the Paso Robles Formation and the Santa Margarita Sandstone. The Paso Robles Formation underlies the Dune Sands and is fresh water-bearing. A lower permeable silt/clay unit has been identified separating the Dune Sands from the Paso Robles Formation at a depth of approximately 50-75 feet below sea level. In close proximity to the beach (less than 400 feet from the ocean), this unit appears continuous from Sand City to Fort Ord. There is less geologic data on this unit to the east and consequently, its inland (greater than 400 feet from the ocean) continuity is not known, but is thought to be discontinuous (Feeney et al. pers. comm.).

The Santa Margarita Sandstone is not present north of Watermaster Well MW-4 or grades into the lower Purisima Formation (see Figure 1). Because of this formation's depth and separation from the Dune Sands by the lower permeable Purisima Formation, extraction of sea water from the Dune Sands is likely to have no effect on the Santa Margarita Sandstone aquifer.

The extent of Dune Sands offshore into the marine environment is little understood but is not expected to be significant. In 2004 CDM, together with CapRock (CDM 2004), attempted to map the offshore environment using geophysical techniques. The purpose of the work was to identify offshore sediment thickness for the purpose of supporting offshore HDD or radial collector wells. This study identified one area in the Fort Ord area (see Figures 3 and 4) that may have suitable sediment thickness (~40 feet) to support offshore wells.

180-Foot Aquifer

The 180-foot aquifer is one of the primary water bearing units of the Salinas Basin. The aquifer naming process in the Salinas Basin historically used the depth of the principal water bearing formation to name the aquifer. The 180-foot aquifer is most often correlated with the younger alluvial deposits associated with the Salinas River. The 180-foot aquifer corresponds most closely with the depths of the Aromas Sand and /or upper Paso Robles Formation in the coastal portion

of the Seaside Basin (see Figure 1), but the Paso Robles produces substantially less water. In the Salinas Basin, the 180-foot aquifer is intruded by saline groundwater and the regional groundwater gradient is driving groundwater flow inland (Williams pers. comm.).

Work by HydroMetrics using the groundwater model developed for the Fort Ord Sites 2 and 12 groundwater remediation program, have demonstrated that extracting groundwater from the 180-foot aquifer in the vicinity of the abandoned wastewater treatment plant at former Fort Ord has a net positive effect on reducing saline intrusion into the Salinas Basin (see Figure 4 for the location of the former wastewater treatment plant). This is principally the case if the future regional groundwater gradient and flow continue inland from the ocean, damaging a larger area of the aquifer system. If flow gradients are reversed at a future date, extracting from the 180-foot aquifer would induce a small area of saline intrusion that would otherwise not occur. However, modeling results demonstrate that all the well-induced saline intrusion would be captured by the extraction wells (Williams pers. comm.).

A well in the 180-foot aquifer is capable of producing several thousand gallons per minute and would be capable of producing desalination feed water from the saltwater-intruded zone (Feeney 2008).

Seaside Basin and Salinas Basin Boundary

The Seaside and Salinas Basins' shared boundary is an important descriptive element for the purposes of defining a feed water extraction project as part of this constraints analysis. The MPWMD's boundary extends into the Salinas Basin and the Monterey County Water Resources Agency (MCWRA) currently prohibits the transfer of water out of the Salinas Basin (see constraints analysis discussion below). The northern boundary of the Seaside Basin is a flow divide where groundwater to the north of this divide flows to the Salinas Basin and groundwater to the south flows to the Seaside Basin. The approximate flow divide between the Salinas and the Seaside Basins is depicted in Figure 5 for the Paso Robles Formation (Note: because of pumping and aquifer characteristics differences, the flow divide for the Santa Margarita Sandstone is different). This flow divide is influenced by pumping in both basins and can change over time as a function of pumping rates and locations. As shown in Figure 5, the basin boundary is not a defined line but a zone subject to fluctuation over time. The basin boundary in the Dune Sands is not defined. Because the Dune Sands are in direct hydraulic communication with the ocean and only saturated along the coastal margin, there is unlikely to be any defined Salinas Basin/Seaside Basin flow boundary for this unit.

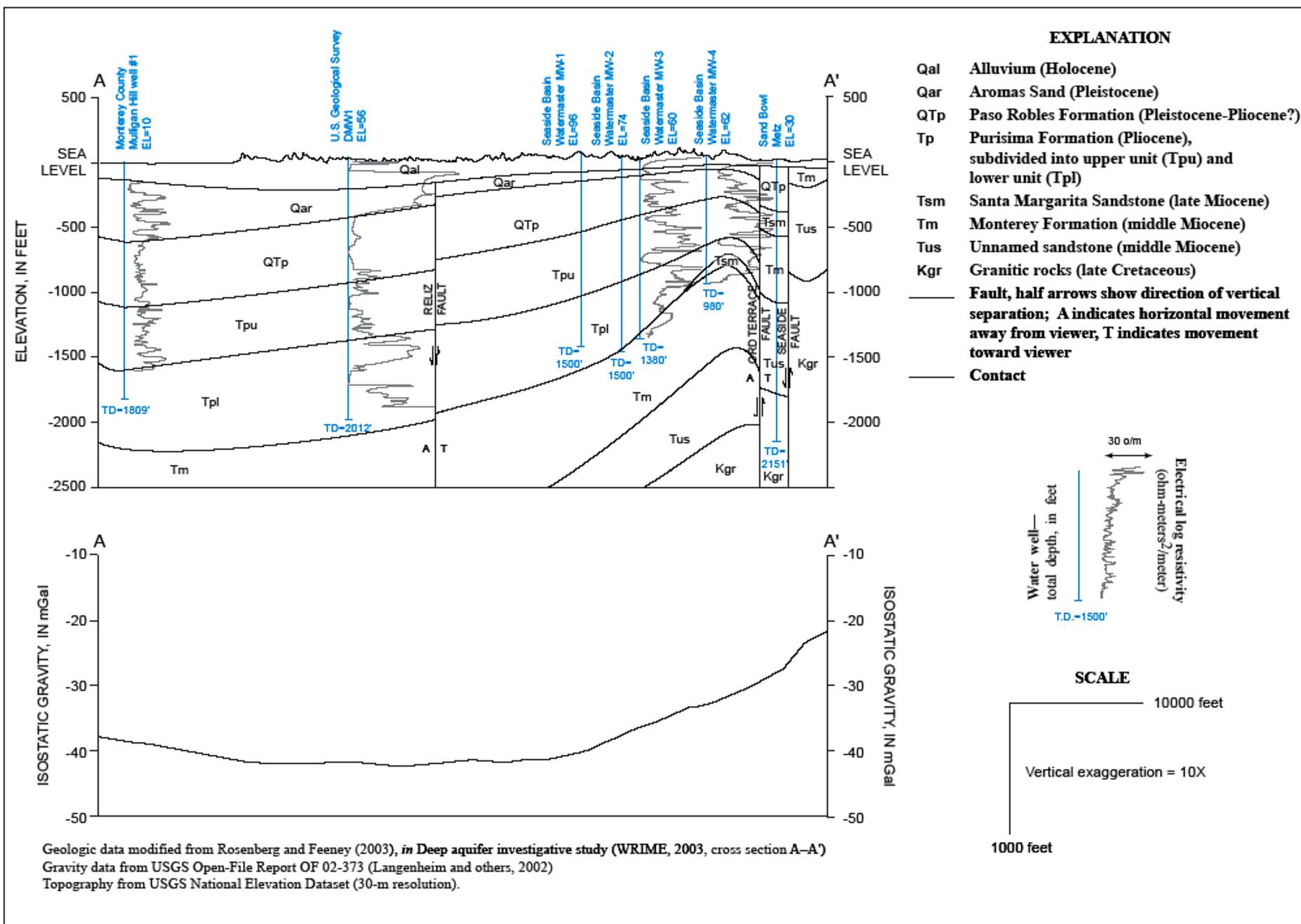


Figure 1
Cross-Section A-A'

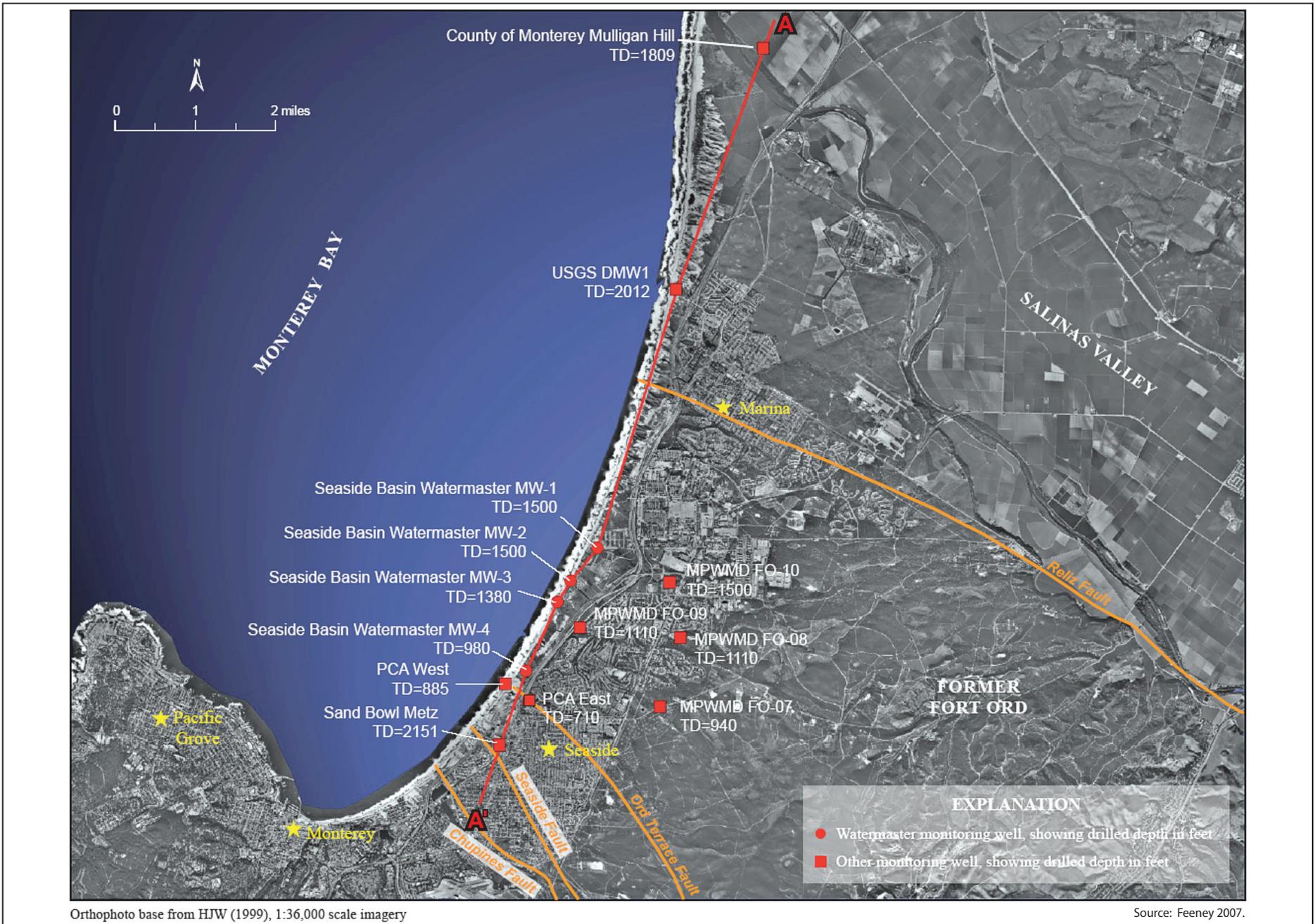


Figure 2
Location of Cross-Section A-A'



Figure 3
Constraints Analysis—South



Figure 4
Constraints Analysis—North

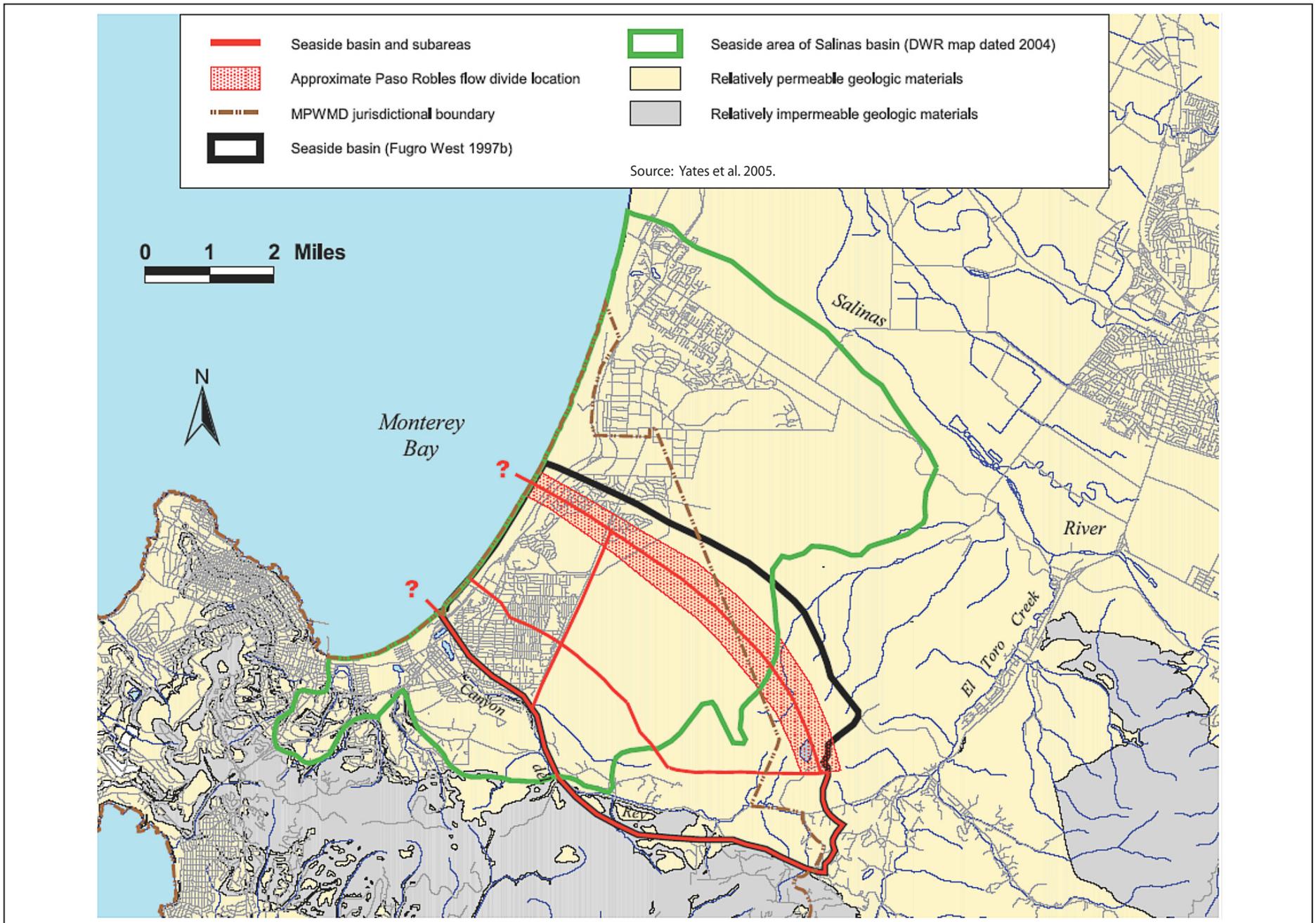


Figure 5
Seaside Basin Boundaries

Constraints and Opportunities

Engineering/Geology Issues

The following sections present the engineering and geologic opportunities and constraints that the project team identified to help guide well placement and gauge potential well performance.

Dune Sands Production. The Dune Sands as described above have the potential to deliver the required quantity of feed water for the 95-10 Project. This formation is in direct hydraulic communication with the ocean and the unit is only saturated in the coastal environment, separating it from other adjudicated water in the Seaside Basin. A clay layer separates this unit from the underlying Paso Robles Formation along the coastal margin.

180-Foot Aquifer. The 180-foot aquifer is intruded with salt water in the Salinas Basin both locally at Fort Ord and more regionally. Producing water from the 180-foot aquifer could slow saline migration into the Salinas Basin by developing a cutoff groundwater depression. The 180-foot aquifer is highly productive and has the capacity to supply substantial quantities of groundwater from the ocean for the 95-10 Project.

Offshore Well Production. Consideration was given to completing HDD or radial wells off the coast. Geophysical work conducted by CDM in 2004 identified only a small area at Fort Ord where the Dune Sands Formation appeared to extend off shore (see area bounded in pink on Figure 3). Attempting to place well infrastructure in other locations would require costly boat-based geotechnical investigations to verify the competence of marine formations to support collector well production rates. Drilling wells offshore without additional geotechnical data presents potentially unacceptable “frac out” (loss of drilling fluids) risk to the Monterey Bay marine environment. Additionally, the costs for the HDD well infrastructure would be very high and without marine formation geologic data, the well production rates would be unknown. Other associated constraints are presented in the drilling technologies discussion below.

Fort Ord Groundwater Contamination. The Fort Ord area contains a chlorinated solvent groundwater contamination plume currently in remediation (See Figure 4). Attempts were made to avoid the contaminated groundwater when siting well infrastructure.

Drilling Technologies. Three well completion technologies were reviewed to provide feed water to the project. These methodologies included: HDD wells, radial (Ranney collector) wells, and conventional wells. HDD wells are drilled horizontally with a boring machine. For the purpose of developing high-flow production wells, there must be an entrance and exit location for the boring machine, essentially eliminating any “dead end” locations including drilling offshore. HDD technology is expensive and potentially impractical at Fort Ord given the high elevation of the land surface near the coastline, with respect to the

target aquifer depths. The maximum practical distance for HDD application of this type (groundwater collection) is approximately 1,000 feet at former Fort Ord.

Radial wells operate by first installing a caisson to the target groundwater production depth (approximately 50 feet below sea level for the 95-10 Project area) and horizontally drilling or jacking wells in a radial fashion into the target formation. Radial well technology is well understood but generally expensive. At Fort Ord, radial well completion cost would be more expensive given the depth of caisson required to reach the target groundwater zone. Ground surface elevations at potential well sites range from about 60 feet to 80 feet. Within a limited construction footprint, radial wells can produce large quantities of groundwater. The maximum practical distance wells can be horizontally advanced from the caisson is approximately 200 feet.

Conventional wells drilled into the Dune Sands or 180-foot aquifer present a significant cost opportunity when compared to other drilling technologies. Conventional wells can be used to produce water from the Dune Sands or the 180-foot aquifer. To supply the fully contemplated 95-10 Project capacity from the Dune Sands using conventional wells would require a large number of potential sites.

Policy and Regulatory Issues

The development of potential policy and regulatory constraints has been a two step process. The first step was to reconsider the location and nature of the structural features of the project. MPWMD staff and consultants met to review the project features developed in 2002-2004 and to discuss changed circumstances and new information developed since that time that would influence the project's location and design. This effort included participation in a design charrette. With the information from this first step, staff and consultants participated in a series of meetings with key planning, regulatory and resource agency staff. At these meetings, the consultants presented project locations and design information to the agency staff and asked questions about potential policy and regulatory issues that would affect the success of the 95-10 Project. A series of project designs and locations were discussed. The information gathered in those meetings and information collected through additional research is the basis for this constraints discussion.

Land Use

Concerns with land use planning consistency and compatibility are primarily the responsibility of the land use planning bodies in the project area. The principal entities are Sand City, DPR and the California Coastal Commission (CCC). On private property, the land owner is also a major factor in determining the feasibility of constructing water supply facilities.

Sand City. Sand City was the principal site investigated for feed water collection and water treatment in the 2002-2004 study conducted for MPWMD (Jones & Stokes 2004). The collection facilities were located west of Highway 1 in the vicinity of Seaside State Beach. In meetings with Sand City staff in June 2008, it was determined that Sand City had its own desalination project in the early stages of construction near this Seaside State Beach location (Figure 3); staff were opposed to any new project being constructed in the area that would adversely affect the groundwater extraction facilities. Sand City staff also indicated that other properties within the city limits along the coast were in various stages of development and would be unlikely locations for MPWMD desalination facilities. Proposals to place such facilities in the coastal area would likely require a coastal development permit, zoning amendment, design and encroachment permits, and possibly a general plan amendment. The Sand City staff also indicated that there were no remaining one-acre parcels in the city limits that would be available for a desalination water treatment facility (Matarazzo, Simonich, Heisinger pers. comm.).

California Department of Parks and Recreation. DPR currently manages all of the former Fort Ord land west of Highway 1. It is planned as the Fort Ord Dunes State Park (Park). These lands are still in Army ownership, but are set to be transferred to DPR in the near future. Currently, any proposed third party actions within the Park require Army review and approval. Any use of the former Fort Ord wastewater treatment plant (WWTP) site would also require approval from Marina Coast Water District (MCWD), as it holds an easement on this property (Gray, McMenamy, Palkovic pers. comm.).

The principal land use policy issues that exist with placement of desalination facilities on DPR property are consistency with planned park uses and habitat restoration plans. Any facilities constructed in the Park would need to be placed in areas planned for development in the Park general plan. The general plan identifies four significant development zones within the park, allowing adequate space to accommodate radial or conventional groundwater extraction wells (see Figures 3 and 4 for development zones). These sites are designated for a variety of visitor-serving uses, including utilities (Environmental Science Associates 2004). Conversations with DPR staff in Monterey did not indicate that extraction wells would be prohibited if they were located in these zones (Gray pers. comm.). Facilities proposed for areas outside of the development zones would interfere with planned habitat restoration or would impact existing sensitive habitats and would be discouraged.

A third policy concern raised by DPR staff relates to placement of permanent infrastructure within state parks as a general practice. Problems with abandoned third-party infrastructure in state parks have resulted in a general opposition to the introduction of new third-party structures. It would be necessary to seek approval from regional- or state-level managers to determine whether specific projects would be allowed (Gray pers. comm.).

From a regulatory perspective, well construction on DPR property would require a lease. DPR cannot issue a lease for more than 5-10 years; any lease longer than that would have to be issued by the State Department of General Services. This

was not described as a “fatal flaw” for the MPWMD project being considered (Gray, McMenamy, Palkovic pers. comm.).

California Coastal Commission. The CCC regulates coastal development through authorities contained in the California Coastal Act (CCA). The 95-10 Project, whether located within Sand City or Fort Ord Dunes State Park, would require issuance of a CCC coastal development permit. The CCC would review the project’s consistency with policies in the Sand City Local Coastal Plan (LCP) and the CCA through this permit process. The CCA has specific policies that address protection of marine and terrestrial biological resources, public access and recreation, water quality, visual impacts, agricultural lands, commercial fisheries, industrial uses, power plants, ports, and public works. Conversations with CCC staff (Ewing and Luster pers. comms.) made it clear that desalination projects in the coastal zone are reviewed on a case-by-case basis. There are no policies that encourage or reject the location of desalination plants in the coastal zone; each must be reviewed in light of its consistency with the policies mentioned above (Luster pers. comm.). There is no evidence that a well-planned 95-10 Project would be unlikely to receive a coastal development permit from the CCC. The CCC’s guidance for considering desalination facilities along the California coast are contained in a March 2004 document entitled *Seawater Desalination and the California Coastal Act* (California Coastal Commission 2004). In this document, the CCC indicates support for considering subsurface intake of source water where feasible and evaluating use of existing wastewater outfalls for brine disposal. The CCC also suggests it would be concerned about any desalination project that would induce growth in or near the coastal zone.

Private Landowners. Several coastal parcels within the project study area are in private ownership. The largest of these, referred to as the SNG site, is located immediately south of former Fort Ord and north of the Monterey Peninsula Regional Park District park site (see Figure 3). A plan for a coastal development at this site has already been approved by Sand City and is in the final stages of approval through the CCC. A conversation with a representative of SNG determined that the site is not available for major desalination facilities. The current plan does not include such facilities and there is a concern that any changes in site use could lead to added regulatory review of the development that is already proposed. (Ghandour pers. comm.)

Biological Resources

The only element of the proposed project that would directly affect marine biological resources is the discharge of brine through the MRWPCA ocean outfall. The potential for changes in ocean salinity at the outfall site is of concern for larger mobile species such as marine mammals and fish, and smaller micro flora and fauna that are moved through the water column primarily by ocean currents. Salinity changes below the outfall structure, either on the ballast rocks or on the ocean bottom, are also of concern for non-mobile species that attach to the rocks or live on or within the ocean’s sandy or muddy substrate.

The proposed project's feed water collection, water treatment and water transmission facilities all have the potential to adversely affect sensitive coastal wildlife habitats. Of special concern are the areas beaches which are home to protected bird species, and the coastal sand dunes that are home to protected plant, reptile and invertebrate species.

Management and protection of marine and coastal biological resources are shared by a number of agencies (NOAA Monterey Bay National Marine Sanctuary [MBNMS], U.S. Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], CCC, California Department of Fish and Game [DFG], DPR, State Water Resources Control Board [SWRCB], Central Coast Regional Water Quality Control Board [RWQCB]). None of these agencies have policies or regulations that ban discharge of brine to the ocean or construction of well facilities along the coast of southern Monterey Bay.

Monterey Bay National Marine Sanctuary. The MBNMS was established to protect the marine resources of a large section of the central California coast, including Monterey Bay biological resources. The draft sanctuary management plan includes a desalination action plan that encourages a regional approach to desalination around the bay. It suggests development of a regional desalination program that evaluates the benefits of joint facilities serving multiple jurisdictions versus construction of multiple smaller plants (U.S. Department of Commerce, National Oceanic and Atmospheric Administration 2006). As a part of its management plan implementation process, the MBNMS is also developing desalination facility siting guidelines that will minimize impacts to MBNMS resources. The siting guidelines will encourage use of appropriately sited existing pipelines into the ocean to minimize seabed alteration (Damitz pers. comm.).

U.S. Fish and Wildlife Service. The FWS is involved in a federal Endangered Species Act compliance planning process with the Fort Ord Reuse Authority (FORA) regarding all former Fort Ord lands. This area includes the coastal lands currently managed by DPR as the Fort Ord Dunes State Park. The FWS would be concerned about any change in land use in the State Park that would diminish the habitat values being protected and enhanced by the Habitat Conservation Plan (HCP) currently being developed by FORA. An initial conversation with FWS staff working on the HCP indicated that construction of well facilities within areas already planned for development in the park general plan would not be a major concern if approved by DPR and if construction and operation activities would not adversely affect adjacent sensitive biological resources (Martin pers. comm.).

National Marine Fisheries Service. The NMFS is responsible for management and protection of anadromous fish in state waters and marine mammals along the California coast. This agency would be concerned if the desalination facilities had adverse effects or might result in take of these biological resources. To date, there is no evidence that the proposed project would adversely affect or take anadromous fish or marine mammals. NMFS would participate in project review through the CEQA process.

California Coastal Commission. The CCC participates in the review and approval of coastal desalination facilities through its authority under the CCA, and particularly through its coastal development permit process (see above under Land Use). The CCC has a major responsibility for the stewardship of biological resources along the coast as directed in the CCA. One of the principal policies in this legislation relates to the protection, enhancement and restoration of important habitats and biological communities (California Coastal Commission 2004). Any project requiring review through the coastal development permit process will have to present detailed information on the potential effects on coastal biological resources. In the 95-10 Project area, sensitive coastal dune habitats and related endangered species will need to be addressed. Most of the projects being considered in this constraints analysis are located to avoid effects on coastal habitats and sensitive species. The planned use of the MRWPCA wastewater outfall for brine disposal is consistent with the CCC's recommendation regarding brine discharges to coastal waters. The use of groundwater extraction wells for feed water collection is also consistent with the CCC's concern regarding construction of any new ocean floor seawater intakes (California Coastal Commission 2004, pg. 68).

California Department of Fish and Game. DFG is responsible for the management and protection of the fish and wildlife resources of the state. Its chief concerns for the desalination project are related to sensitive plant and animal species present along the southern Monterey Bay coast line and at the MRWPCA ocean discharge location. This agency is participating in the HCP development process mentioned above in the FWS section and would be concerned about any changes in land use on Fort Ord Dunes State Park that were not consistent with the intent of the HCP habitat protection and restoration goals. DFG would also be concerned about any effects of project construction along the parts of the coast within Sand City. Sensitive dune vegetation and beach habitats are of greatest concern in this area. DFG would participate in review of the desalination project through the CEQA process, and possibly through a compliance review of the California Endangered Species Act.

California Department of Parks and Recreation. The DPR is a steward of all biological resources located on its park properties. At Fort Ord Dunes State Park, wildlife habitat protection and restoration are principal goals of the facility. Through conversations with DPR staff, it is clear that any desalination facilities located within the state park would have to be consistent with these protection and restoration goals (Gray pers. comm.). The alternatives development process for this desalination project has guided the location of facilities on lands that are already developed or planned for development so that habitat loss would not be a concern.

State Water Resources Control Board. The SWRCB establishes water quality standards for the near-shore waters of California through its Ocean Plan. These standards are designed to protect the beneficial uses of the ocean, including commercial and sport fishing, mariculture, rare and endangered species, marine habitat, fish migration, fish spawning and shellfish harvesting among others. The Ocean Plan was first adopted in 1972 and is updated every three years. There is currently an Ocean Plan update going through a review process. This update

includes a proposed amendment that directly addresses desalination facilities and brine disposal. The SWRCB is considering an Ocean Plan objective that would protect the biological beneficial uses of the ocean from adverse salinity increases. A scoping document for this amendment recommends establishment of a narrative water quality objective where salinity should not exceed a certain percentage of natural background (California State Water Resources Control Board 2007). The percentage has not been established. While establishment of a salinity objective is unlikely to eliminate ocean disposal of desalination brine, it may dictate stringent mixing requirements at open ocean discharge locations.

Central Coast Regional Water Quality Control Board. The Central Coast RWQCB regulates the MRWPCA ocean discharge of wastewater through an NPDES permit and waste discharge requirements. These requirements must insure protection of ocean beneficial uses as described in the SWRCB Ocean Plan. The current MRWPCA NPDES permit includes a provision for discharge of brine through the wastewater outfall. If the volume of brine is increased beyond what is already allowed (375,000 gallons average daily flow), MRWPCA must first conduct a brine disposal study that would identify the characteristics of the brine and assess the effect of this new waste on the plant's ability to meet waste discharge requirements. Any new facilities needed to accommodate the added brine would also have to be described (California Regional Water Quality Control Board, Central Coast Region n.d.). In a meeting with Central Coast RWQCB staff, the potential for adding brine to the MRWPCA outfall was discussed and there was no indication that this discharge mode would be un-approvable (von Langen pers. comm.). A significant study effort, however, would be needed to analyze the effects of the brine on the beneficial uses of the ocean.

Water Resources

Seaside Groundwater Basin. The Seaside Basin is an adjudicated groundwater basin whereby the courts have imposed a physical solution to eliminate the overdraft of groundwater created by basin users. The adjudication decision specifically assigned water rights to Sand City to extract an unspecified quantity of brackish water from the Aromas Sands Formation for the purposes of supplying a desalination facility. As part of the adjudication order, Sand City can produce brackish water so long as it does not cause substantial adverse physical impact to the Seaside Basin or any of its users. The Seaside Basin Adjudication does not specifically limit the production of seawater that does not cause adverse impacts to other basin users including Sand City's right to produce brackish groundwater (Laredo 2006).

Sand City has begun construction of its desalination facility including the plant and installation of brackish water extraction wells (two each at Tioga Avenue and Vista del Mar, see Figure 3). Sand City has stated concern over the 95-10 Project and has sought assurance that any facilities proposed for the 95-10 Project would not impact their project by increasing salinity or pump lifts.

In addition to not impacting the Sand City project, any proposed 95-10 Project along the coastal margin producing ocean water from the Dune Sands, must not create a material injury to the Seaside Basin or any of its users. Consequently, any proposed project would need to clearly demonstrate that its source water is separated from both the Paso Robles and Santa Margarita aquifers. The project would require concurrence from the Seaside Basin Watermaster.

Salinas Groundwater Basin. As presented in the geology section above, the boundary between the Seaside and Salinas Basins is represented by a flow divide. This flow divide is influenced by pumping in both basins and can change over time as a function of pumping rates and locations. The MCWRA Act, Chapter 52-21 specifically prohibits the extraction and export of groundwater outside of the Salinas Basin except for water used at Fort Ord. The act is incorporated into the California Water Code and would require the approval of the State legislature to amend it.

Export could technically include both the 180-foot aquifer and groundwater produced in the Dune Sands within the Salinas Basin. The Dune Sands are in direct hydraulic communication with the ocean and only saturated along the coastal margin, consequently, there is unlikely to be a defined flow boundary represented by the Salinas and Seaside Basins. However, because this extraction could occur within the legally recognized Salinas Basin, approval for export of the Dune Sands water could be required from the MCWRA. Further work is required to define the Salinas and Seaside Basins' boundary for the Dune Sands.

The 180-foot aquifer is a recognized water bearing unit in the Salinas Basin. Extraction of brackish water from this unit could assist in mitigating saline intrusion by developing a groundwater depression; however, there are technical, legal, and political challenges to using this water source necessitating early collaboration with the MCWRA. In discussions with MCWRA representatives (Weeks, et. al, pers. comm.), groundwater extraction from the 180-foot aquifer in the Salinas Basin for export for municipal use outside the Salinas Basin would be precedent setting, and therefore would have significant institutional and policy ramifications for Salinas Basin users. Although extraction from the 180-foot aquifer would be more politically sensitive, a project in the Dune Sands aquifer could be controversial and would need to demonstrate that it is extracting seawater and not impacting brackish groundwater.

SWRCB Anti-Degradation Policy. The RWQCB is responsible for implementing the SWRCB's anti-degradation policy (Policy 68-16) which requires that the quality of surface water and groundwater be maintained to the maximum extent possible. Relative to the 95-10 Project, the project cannot result in a degradation of groundwater quality from saline intrusion below that which currently exists. Exceptions include reducing water quality if it will not reasonably affect beneficial uses and can be demonstrated to benefit the people of California. The policy specifies that groundwater quality is defined as the best quality since enactment of the policy in 1968.

It is likely that producing groundwater from the Dune Sands will be exempt from the anti-degradation policy due to its close proximity to the ocean and high salt

content. Extracting groundwater from the 180-foot aquifer presents different challenges as this unit was once fresh water bearing and long-term Salinas Basin plans propose to raise groundwater heads, reversing the saltwater intrusion and restoring the groundwater to potable quality.

MRWPCA Outfall. The current concept for the 95-10 Project includes use of the MRWPCA regional wastewater outfall to Monterey Bay for brine disposal. Other brine disposal methods are not being investigated. To address this element of the project, two meetings were held with MRWPCA staff. One of the meetings was attended by a RWQCB representative. MRWPCA identified several potential constraints to this use of the outfall. First, the MRWPCA NPDES permit allows discharge of a small amount of brine with the wastewater; however, it requires a significant study of effects on wastewater quality and diffusion at the outfall site if a larger brine disposal volume is contemplated. The MRWPCA is concerned about how the brine might affect its ability to meet the chemical constituent limits and dilution requirements of its permit. Modeling would have to be undertaken to answer questions around this issue (Haertel pers. comm.). Second, some structure would need to be constructed to allow connection of a brine disposal line into its wastewater outfall. While these are potential constraints, the MRWPCA staff was supportive of the MPWMD efforts to further its investigation of a Sand City/former Fort Ord area desalination facility using the wastewater outfall for brine disposal (Crook, Hagemann, Holden, Israel pers. comm.). RWQCB staff at the second meeting indicated that MPWMD was going in the right direction by considering use of an existing outfall for brine disposal (von Langen pers. comm.). A significant effluent discharge modeling effort would be needed to allow both the MRWPCA and the RWQCB to seriously consider brine disposal through the outfall.

Geological Processes

Shoreline erosion. The threat of shoreline erosion is the major geological process constraint to establishment of new desalination facilities along southern Monterey Bay. Numerous studies in the past ten years have revealed the extent of ocean bluff migration inland; some of these studies have also made attempts at establishing future erosion rates (Philip Williams & Associates, Ltd. 2008). Because of the significant erosion that has occurred, any leases, easements or permits issued by land management agencies along the coast would be subject to careful review of erosion hazards. Setback requirements would need to be predicted and then placed as conditions on any project. The principal agencies that would be interested in this issue are Sand City, DPR and CCC. Wells or pipelines placed along the coast would have to be located sufficiently back from the coast to avoid being exposed to ocean wave action during the life of the facilities, or be able to be moved farther inland cost effectively when erosion became a threat (Ewing pers. comm.). There are planned development areas on Fort Ord Dunes State Park that are sufficiently back from the ocean that they should not be threatened by erosion during the life of a typical conventional or radial well system.

Alternatives

Table 1 and Figures 6 and 7 summarize feed water collection alternatives identified in the analysis. Using maps and information on potential project constraints, 25 feed water collection alternatives were identified at nine different sites. Five sites are in Sand City; four are in former Fort Ord. At each location, the following three drilling technologies, capacities and spacing requirements were used to identify total collection capacity:

- **HDD Wells:** Wells would be horizontal directionally drilled and installed parallel to the shoreline in the Dune Sands. Well casing length of up to 1,000 feet in length, with collector well capacities of up to 2,000 gpm, based on a collector rate of 2 gpm per lineal foot of screen.
- **Radial Wells:** Wells would include a caisson with five collector spokes radiating out from the caisson a length of 200 feet into the Dune Sands. Collection capacity of 3,000 gpm per well, based on a collector rate of 3 gpm per foot of screen. Wells spaced a minimum of 500 feet apart.
- **Conventional Wells:** Conventional wells would produce from the Dune Sands or the 180-foot aquifer. Most well locations were assumed to be screened in the Dune Sands with a collection capacity estimated at 500 gpm per well. Two locations farther north in former Fort Ord evaluated conventional wells screened in the 180-foot aquifer, which is in the coastal area of the Salinas Basin, where this aquifer is saline intruded. Wells screened in the 180-foot aquifer were assumed to have collection capacities of 2,000 gpm per well, but could be much greater. All conventional wells were spaced a minimum of 100 feet apart.

Offshore HDD wells were initially considered in the analysis, targeting an area off the coast of former Fort Ord, where geophysical surveys conducted in 2004 showed Dune Sands potentially extending offshore. However, this area, outlined in pink on Figures 3 and 6, has no onshore road access from former Fort Ord. Therefore, offshore HDD wells were not used to formulate collector well alternatives. Given the unknowns associated with permeable marine deposits and potential risk of frac-out during drilling, no other sites were considered viable for offshore well placement.

Collector rates for the Dune Sands Formation were developed based on field data from the Sand City desalination project, where a test well was capable of producing 600 gpm (30 feet of saturated well), with insignificant drawdown 100 feet away from the well. Well capacities would depend on formation thickness and formation transmissivity. Since there are few data to estimate transmissivity in northern Sand City or on former Fort Ord, a range of collector well capacities was used, with Sand City test data used to define the upper bound of anticipated production capacity.

Collector rates for the 180-foot aquifer formation were developed based on personal experience of planning team member Martin Feeney, who has performed extensive production work in the 180-foot aquifer.

Legend

- Conventional Wells
- ⊗ Sentinel Wells
- Radial Well
- ⊗ CDM Exploration Wells
- ⊗ Sand City Production Wells
- District Boundary
- Sand City Brine Disposal Wells
- - Faults
- Ft Ord Road
- Regional Sewer line
- Approximate Paso Robles Flow Divide
- Former Landfill
- State Parks Planned Developed Area
- Property Boundary
- 80 ft Ground Elevation
- Potential Offshore Extension of Dune Sands



Figure 6
Alternatives—South

Legend

- 180 ft AQ Wells
- Conventional Wells
- Radial Well
- ⊗ CDM Exploration Wells
- TCE Concentrations
- District Boundary
- - - Faults
- Ft Ord Road
- Regional Sewer line
- Approximate Zone of Paso Robles Flow Divide
- State Parks Planned Developed Area
- ▭ Property Boundary
- 80 ft Ground Elevation

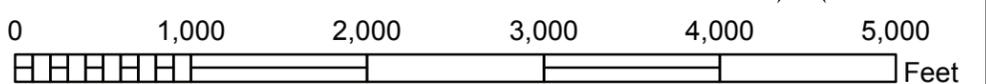
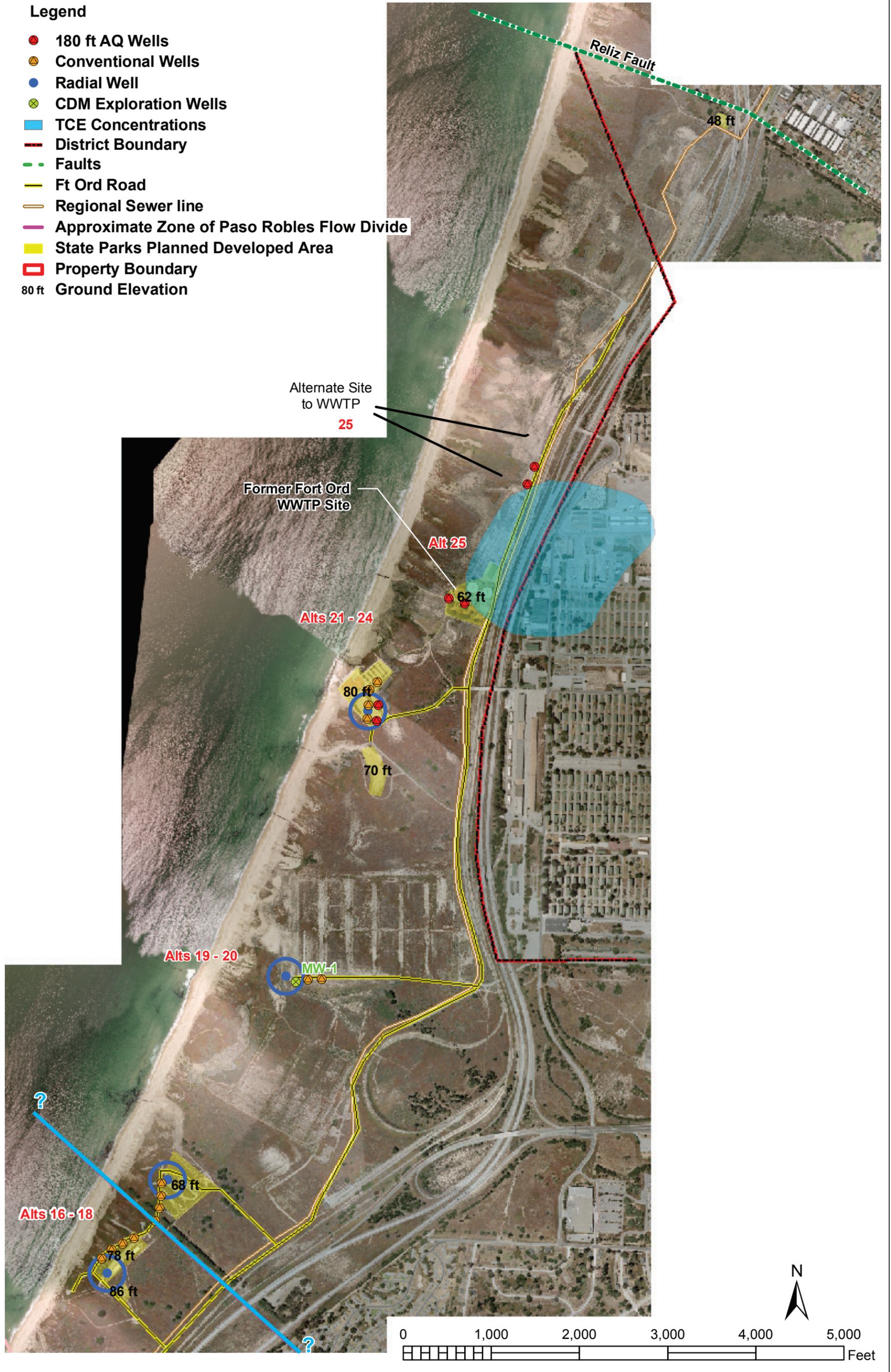


Figure 7
Alternatives—North

Collector well locations were identified based on land use and technical constraints. Projects that could have significant policy issues that would affect project implementation, such as a project that would impact Sand City's desalination project and require replacement of Sand City's supply, were not categorically excluded from consideration. Rather, significant issues affecting project implementation were addressed as part of the alternatives screening process, discussed in Section 3. The following considerations were taken into account in identifying well locations:

- **Sand City:** Most properties evaluated have planned redevelopment, and well locations would need to be compatible with planned site uses. Southernmost properties have the potential to impact the Sand City's desalination project, which is currently under construction. Groundwater modeling would be required for these sites to demonstrate that they do not impact the City's project, or identify mitigation that would be required to compensate Sand City for any loss in water production. Portions of the Monterey Peninsula Regional Parks District site have been developed for park uses and would be visually sensitive. A former landfill was located on the northern part of the property, but has been excavated and recontoured.
- **Former Fort Ord:** Siting of facilities was based on review of the Fort Ord Dunes State Park General Plan (Environmental Science Associates 2004) and discussions with a local DPR representative (Gray pers. comm.). DPR either has begun or has future plans to restore much of the park area to native coastal habitat, and would allow construction only in disturbed areas, along road rights-of-way, or areas where facilities are planned. Based on these constraints, well sites were selected that are closer to the bluffs, to target higher transmissivity, more saline areas within the shallow aquifer formation, along roads that will be maintained for park access to trails or other recreation facilities, or in areas where active recreational facilities, such as campgrounds or trailheads, and supporting road and parking infrastructure is planned.

Table 1 summarizes alternatives, starting at the southernmost extent of the area evaluated, working north. Figures 6 and 7 identify the general project locations, with conceptual locations for wells indicated on the map.

Table 1. Summary of Feed Water Collection Well Alternatives

Alt	Location <u>Owner</u>	Description	Well Type	Details	Flow Rate	Public property?
1	<u>Sand City</u> Desal Site-	South of Tioga Avenue.	HDD	1,500 ft	3,000 gpm	Y
2		Project facilities located in vicinity of Sand City	Radial	2 wells	6,000 gpm	Y
3		collection and disposal wells.	Conv. (Shallow)	15 wells	7,500 gpm	Y
4	<u>Sand City -</u> <u>Malibu</u> <u>Development</u> <u>LLC</u>	North of Tioga Avenue.	HDD	500 ft	1,000 gpm	N
5		Property slated for re-development, though no	Radial	1 well	3,000 gpm	N
6		identified active plans.	Conv. (Shallow)	2 wells	1,000 gpm	N
7	<u>Sand City -</u> <u>Sand City Re-</u> <u>Development</u> <u>Agency</u>	Property owned by Sand	HDD	500 ft	1,000 gpm	N
8		City Re-development	Radial	2 wells	6,000 gpm	N
9		Agency. An EIR is underway for a resort planned at this site.	Conv. (Shallow)	7 wells	3,500 gpm	N
10	<u>Sand City -</u> <u>Monterey</u> <u>Peninsula</u> <u>Regional Parks</u> <u>District</u>	Property owned by	HDD	1,000 ft	2,000 gpm	Y
11		Monterey Peninsula	Radial	1 well	3,000 gpm	Y
12		Regional Parks District.	Conv. (Shallow)	5 wells	2,500 gpm	Y
13	<u>Sand City -</u> <u>SNG</u> <u>Development</u> <u>Corporation</u>	Property owned by SNG.	HDD	600 ft	1,200 gpm	N
14		Property slated for re-development.	Radial	2 wells	6,000 gpm	N
15			Conv. (Shallow)	6 wells	3,000 gpm	N
16	<u>Former Fort</u> <u>Ord: Bunker</u> <u>Site-</u> <u>DPR</u>	Approximate northern	HDD	1,000 ft	2,000 gpm	Y
17		extent of Seaside Basin.	Radial	2 wells	6,000 gpm	Y
18		Former ammunition supply bunkers. Slated for development as a camping area.	Conv. (Shallow)	8 wells	4,000 gpm	Y
19	<u>Former Fort</u> <u>Ord: MW-1-</u> <u>DPR</u>	Location of Seaside Basin	Radial	1 well	3,000 gpm	Y
20		Sentinel Well # 1, and test boring location in 2004 CDM study.	Conv. (Shallow)	2 wells	1,000 gpm	Y
21			HDD	1,000 ft	2,000 gpm	Y
22	<u>Former Fort</u> <u>Ord: Stilwell-</u> <u>DPR</u>	Former site of Stillwell	Radial	1 well	3,000 gpm	Y
23		Hall. Planned parking area	Conv. (Shallow)	4 wells	2,000 gpm	Y
24		and trail access point.	Conv. (180')	2 wells	4,000 gpm	Y
25	<u>Former Fort</u> <u>Ord: WWTP</u> <u>DPR</u>	Site of former Fort Ord Wastewater Treatment Plant.	Conv. (180')	2 wells	4,000 gpm	Y

3 Alternatives Screening

Project Screening Criteria

The team identified project screening criteria to evaluate different feed water collection alternatives. The criteria address key technical, policy, and regulatory issues to be considered for project viability and were used to evaluate how different feed water collection alternatives perform compared with other alternatives.

The consulting team and MPWMD staff developed initial screening criteria, summarized in Table 2, at the project outset, based on the team’s understanding of the issues at that time. The table summarizes the initial criteria, including a description of specific evaluation considerations, and how each criterion was used or modified during Phase 1 based on information gathered during the analysis.

Table 2. Initial Criteria Identified for Screening Alternatives

Initial Screening Criteria and Descriptions	How Used in Phase 1 Analysis
Potential Quantity of Supply	
This criterion identifies the projected supply yield that could be developed by an alternative. Quantity of supply was ultimately not used as a screening criterion, but rather used as part of the project scoring, with alternatives that produce higher yields rated higher than projects that produce smaller yields.	Used as part of project scoring, to provide a relative ranking of projects based on their project yield.
Certainty of drilling technology	
This criterion considers whether an alternative relies on proven technology (e.g. radial, conventional, onshore HDD wells), or relies on new technology that may not be proven in the proposed application (offshore HDD wells).	Retained as part of a more general criterion Drilling and Siting Complexity

Initial Screening Criteria and Descriptions	How Used in Phase 1 Analysis
Frac-out risk	
<p>This criterion assesses what risk of frac out is presented by the well drilling needed to implement the option. Frac out is a concern for offshore wells, and could occur if overlying materials above the drilled well are uplifted during drilling, due to localized pressure exerted by the advancement of the bore hole. Frac out is a concern because drilling fluids would be released into Monterey Bay.</p>	<p>Eliminated as a criterion once offshore drilling alternatives screened from further consideration</p>
Influence on adjudicated groundwater	
<p>This criterion assesses what degree of impact an alternative would have on adjudicated groundwater in the Seaside Basin.</p>	<p>Retained as part of a more general policy criterion to assess an alternative’s potential impacts to the Sand City desalination project. Alternatives target the Dune Sands aquifer to avoid impacts to Seaside Basin water supply wells that draw from the Paso Robles and Santa Margarita Formations.</p>
Regulatory considerations	
<p>This criterion assesses various policy, regulatory, and environmental factors, including land use constraints, endangered species effects, permitting and how they affect implementation.</p>	<p>Retained.</p>
Development water cost	
<p>This criterion provides a relative measure of cost to develop the feed water collector alternative, since cost estimates were not prepared as part of this phase of work.</p>	<p>Retained</p>

As part of a design charrette, consultants and MPWMD staff refined and consolidated the initial set of criteria, based on information gathered during Phase 1 evaluations. Table 3 summarizes the four criteria that were selected. The table also indicates relative weights assigned to each of the criterion by the team. The relative weights, which sum to 100 percent, reflect the team’s collective opinions about the relative importance of each criterion. As discussed in the Alternatives Analysis section, sensitivity analysis was also conducted to assess the sensitivity of criteria weights on alternative rankings. Table 3 summarizes the final criteria used to evaluate alternatives, and the relative weights assigned by the consulting and MPWMD staff.

Table 3. Final Criteria Used in Alternative Screening

Criterion	Relative Weight Used in Analysis
Drilling and Siting Complexity	
This criterion considers whether an alternative relies on proven technology (e.g. radial, conventional, onshore HDD wells), or new technology that may not be proven in the proposed application (offshore HDD wells). The criterion also considered site factors that would affect the complexity of well installation (e.g. construction in bluffs vs. beach).	20%
Policy Considerations	
This criterion includes legal, public or policy issues that would affect project implementation. This criterion assesses whether policy issues are likely to preclude, complicate or lengthen project implementation.	40%
Regulatory Considerations	
This criterion assesses various environmental and permitting factors, including land use constraints, biological and water resources effects, geological processes and others that would be instrumental in regulatory approvals of a project.	30%
Development water cost	
This criterion provides a relative measure of cost to develop the feed water collector alternative, since cost estimates were not prepared as part of this phase of work.	10%

Alternatives Screening

Table 4 and Figure 8 present the results of the alternatives screening process. Each of the 25 alternatives described above was ranked with high, medium, or low constraints under each of the four final screening criteria. The high, medium, and low rankings were established by the consultant team based primarily on professional judgment of relative risk to the success of a desalination project at the alternative location. Final rankings are presented with and without regard to the amount of water likely to be available from the site.

For the drilling and siting complexity criterion, construction of conventional wells was given a low ranking. The simplicity of the technology and the minimal space needed for construction and operation make this type of well most likely to be successful. Radial wells were given a medium ranking because of the size of the equipment needed and the relative difficulty of extending a large caisson to significant depths, especially at former Fort Ord locations. The HDD technology was given a high constraint likelihood because of the difficulty of slant drilling, especially to significant depths at former Fort Ord.

As stated earlier, the policy criterion includes a variety of potential constraints, including restrictions contained in law, in policy and planning documents, or in judgments stated by public agency representatives. The most significant constraints were contained in legislation relating to inter-basin transfer of groundwater, which would affect the success of the Stilwell and Fort Ord Former WWTP alternatives, and in statements made by Sand City officials regarding the availability of undeveloped land within the city, which would affect the Sand City and Sand City Redevelopment collection well alternatives, as well as location of a treatment plant. The remaining collection well alternatives have potentially restrictive issues from a land use plan consistency standpoint, or from the perspective of agency concerns. None of the alternatives were judged to have a low potential for constraints from a policy perspective.

Regulatory constraints were judged from the likelihood of carrying a project through the permitting process, given the various environmental issues and regulations that must be considered. The Monterey Peninsula Regional Park District alternatives were given a high constraint because of its status as a park with no development planned, its high visibility and its status as a habitat preserve area. The Bunker, Stilwell and Fort Ord WWTP alternative sites were given a low constraint ranking because there are areas with existing or planned development at these sites, and this preliminary review indicates there is space to locate facilities a sufficient distance from the coast to avoid coastal erosion issues. There is also potential at these sites for participation in habitat restoration efforts as part of project implementation.

Development water costs were judged qualitatively, relative to the different collector well technologies considered and the production estimated for each type of collector well technology. In general, the HDD and radial well technologies were rated medium to high cost because they require more specialty construction and equipment relative to the yield they produce. Construction costs for conventional wells were rated low to medium because well construction can be performed using conventional construction methods. Construction costs for all technologies would generally be higher at former Fort Ord due to the additional depth to reach the target formation.

Table 4 lists the projects, running from south to north, and provides information on the location, type of collector well technology, and estimated yield. As noted above, each alternative was assigned a high, medium or low rating (low being “best” or least constrained, high being “worst” or most constrained). These ratings were then converted to ten-point scale scores and projects were ranked in order of their scores, with a score of 1 indicating the “best” or least constrained alternative. Rankings are shown on the right-hand side of the figure, both without regard to flow and with regard to flow. The rankings with regard to flow factor the alternative’s flow rate into the score. For example, Alternative 1, with a flow rate of 3,000 gpm and Alternative 7, with a flow rate of 1,000 gpm, have the same ratings. Both have the same ranking without regard to flow, but Alternative 1 has a better (lower) rank when considering project flow rate.

Figure 8 graphically shows all of the alternatives, with their relative scores based on the 10-point scale. In developing recommendations for alternatives that could

Monterey Peninsula Water Management District
Preliminary Screening - Well Siting

View Chart Flow Parameters Point Values

Public property?
Y / N

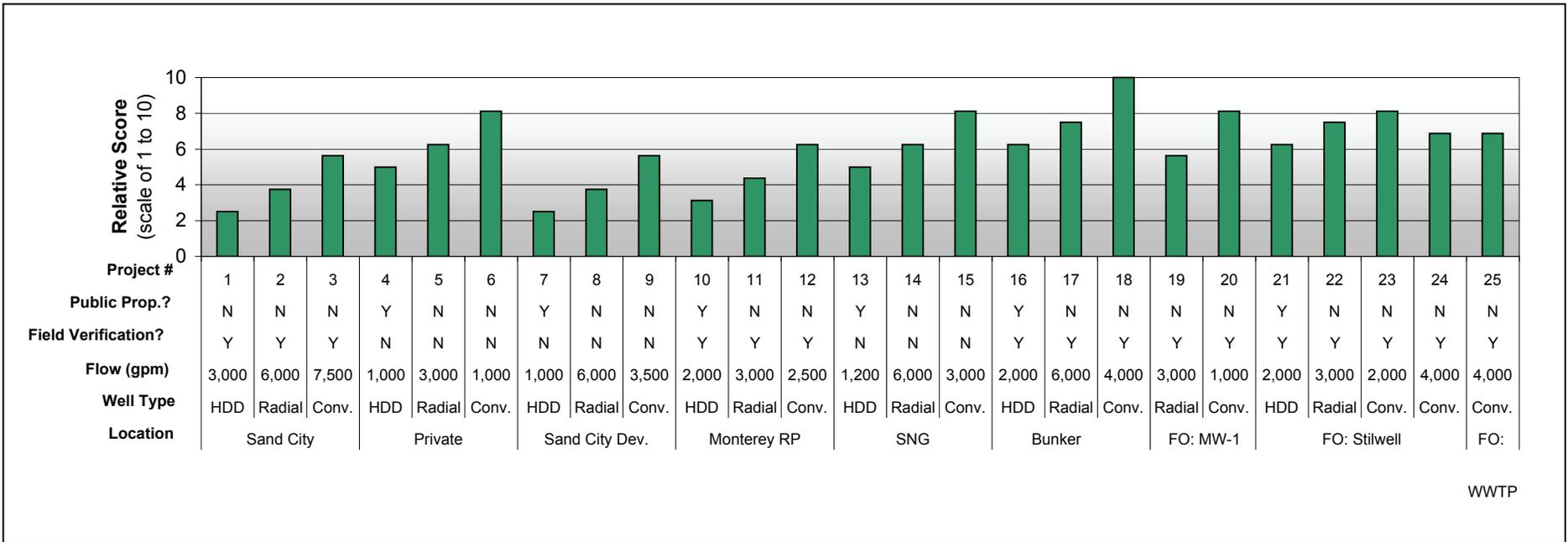
Screening Criteria			
Drilling and Siting Complexity	Policy Restriction	Regulatory Restriction	Feed Water System Cost
H / M / L	H / M / L	H / M / L	H / M / L

Criteria Weighting			
20%	40%	30%	10%

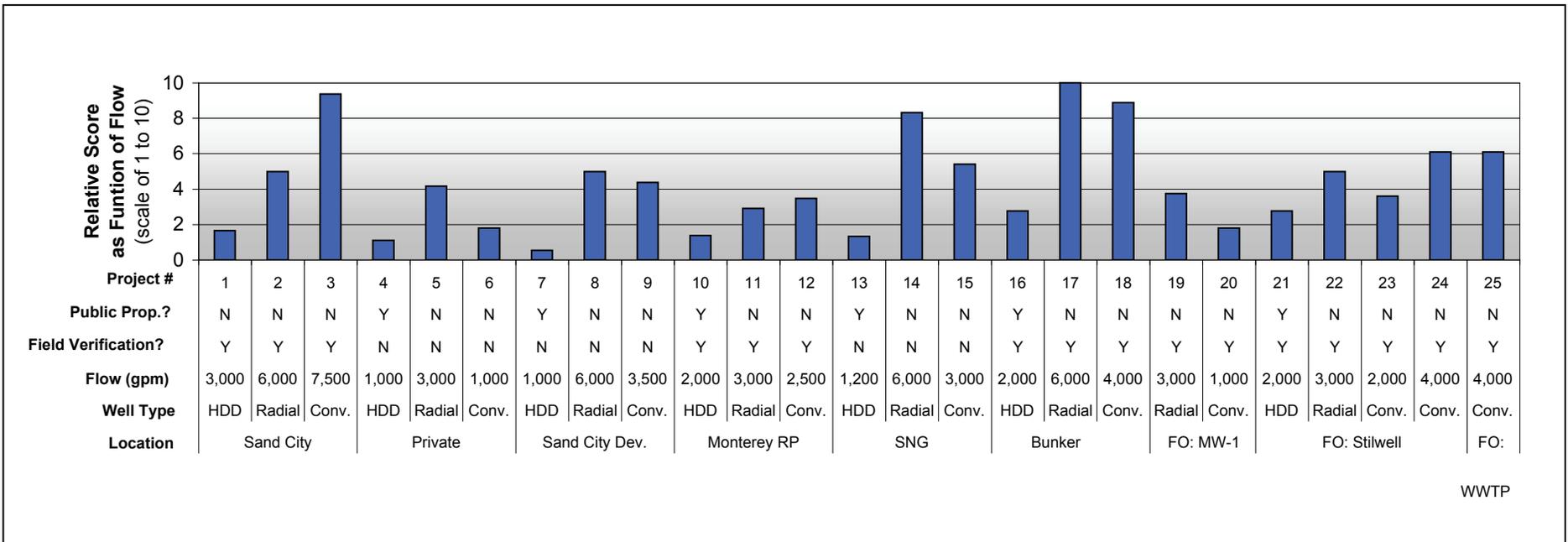
Final Ranking	
Without Regard to Flow	With Regard to Flow

Project #	Location	Well Type	Details	Flow Rate	Public property?	Drilling and Siting Complexity	Policy Restriction	Regulatory Restriction	Feed Water System Cost	Without Regard to Flow	With Regard to Flow
1	Sand City	HDD	1,500 ft	3,000 gpm	Y	H	H	M	M	24	21
2	Sand City	Radial	2 wells	6,000 gpm	Y	M	H	M	M	21	9
3	Sand City	Conv. (Shallow)	15 wells	7,500 gpm	Y	L	H	M	L	16	2
4	Private	HDD	500 ft	1,000 gpm	N	H	M	M	M	18	24
5	Private	Radial	1 well	3,000 gpm	N	M	M	M	M	10	12
6	Private	Conv. (Shallow)	2 wells	1,000 gpm	N	L	M	M	L	3	19
7	Sand City Dev.	HDD	500 ft	1,000 gpm	N	H	H	M	M	24	25
8	Sand City Dev.	Radial	2 wells	6,000 gpm	N	M	H	M	M	21	9
9	Sand City Dev.	Conv. (Shallow)	7 wells	3,500 gpm	N	L	H	M	L	16	11
10	Monterey RP	HDD	1,000 ft	2,000 gpm	Y	H	M	H	M	23	22
11	Monterey RP	Radial	1 well	3,000 gpm	Y	M	M	H	M	20	16
12	Monterey RP	Conv. (Shallow)	5 wells	2,500 gpm	Y	L	M	H	L	12	15
13	SNG	HDD	600 ft	1,200 gpm	N	H	M	M	M	18	23
14	SNG	Radial	2 wells	6,000 gpm	N	M	M	M	M	10	4
15	SNG	Conv. (Shallow)	6 wells	3,000 gpm	N	L	M	M	L	3	7
16	Bunker	HDD	1,000 ft	2,000 gpm	Y	H	M	L	H	12	17
17	Bunker	Radial	2 wells	6,000 gpm	Y	M	M	L	H	6	1
18	Bunker	Conv. (Shallow)	8 wells	4,000 gpm	Y	L	M	L	L	1	3
19	FO: MW-1	Radial	1 well	3,000 gpm	Y	M	M	M	H	15	13
20	FO: MW-1	Conv. (Shallow)	2 wells	1,000 gpm	Y	L	M	M	L	3	19
21	FO: Stilwell	HDD	1,000 ft	2,000 gpm	Y	H	M	L	H	12	17
22	FO: Stilwell	Radial	1 well	3,000 gpm	Y	M	M	L	H	6	8
23	FO: Stilwell	Conv. (Shallow)	4 wells	2,000 gpm	Y	M	M	L	M	2	14
24	FO: Stilwell	Conv. (180')	2 wells	4,000 gpm	Y	L	H	L	M	8	5
25	FO: Former WWTP	Conv. (180')	2 wells	4,000 gpm	Y	L	H	L	M	8	5

Table 4. Results of Collector Well Screening



WWTP



WWTP

Figure 8
Alternatives and Relative Scores

move forward, the team identified alternatives that were generally ranked higher, and had consistent scores.

In general, HDD options performed poorly when compared with radial and conventional well alternatives because of their higher drilling and siting complexity, their higher cost and lower yield. Also, sites at former Fort Ord generally performed better than sites in the Sand City area, due to potential land use constraints and potential impacts to the Sand City project currently under construction.

The four criteria used for the screening analysis were weighted by the consulting team and MPWMD staff based on their perceived relative importance. The relative weights, which sum to 100 percent, reflect the team's collective opinions about the relative importance of each criterion. The two technical criteria, siting and drilling complexity and cost, total 30 percent, with policy and regulatory issues totaling 70 percent.

A sensitivity analysis was performed to determine the effect of changing the relative weights of the criteria to the alternatives ranking. The sensitivity analysis was performed assigning 70 percent to technical criteria and 30 percent to policy and regulatory criteria. The sensitivity analysis found that these changes had relatively little impact on alternatives, with the following exceptions:

- Alternative 3, conventional wells at Sand City, has a high score for ranking, with regard to flow, or without regard to flow. This reflects the fact that the most significant issues on this project are policy-related, due to potential impacts to the Sand City desalination project.
- Alternatives 17 and 22, radial wells at former Fort Ord, significantly fall in the rankings, due to the more difficult construction issues and higher relative cost for construction of these wells at former Fort Ord, where the water table is much deeper due to the presence of the coastal bluffs.

Formulation of Potential Projects

Based on the results of the screening, alternatives at three different sites were evaluated for project pairing. These alternatives are summarized below:

- **Alt 17 or 18: Fort Ord, Bunker Site.** Developed with either radial wells (6,000 gpm) or conventional wells (4,000 gpm).
- **Alt 25: Fort Ord, Former Wastewater Treatment Plant Site.** Developed with conventional wells in the 180-foot aquifer (4,000 gpm).
- **Alt 22, 23 or 24: Fort Ord, former Stilwell Hall Site.** Developed with radial wells (3,000 gpm), conventional wells in the Dune Sands aquifer (2,000 gpm), or conventional wells in the 180-foot aquifer (4,000 gpm).

As discussed in the beginning of this report, MPWMD is seeking a project with a production capacity of 8,400 AF/year, or 7.5 mgd. For a production capacity of

7.5 mgd, 15 mgd (10,400 gpm) of feed water collector capacity is required. Additional capacity must also be included, assuming that at least one well is out of service at any given time for maintenance. Table 5 summarizes four possible combinations of the alternatives that could be developed into a project.

Table 5. Potential Projects and Capacities

Project	Alternatives in Project	Total Capacity	Firm Capacity (1)	WTP Capacity	Notes
<i>Projects in the Dune Sands Aquifer</i>					
Example Project 1					
	Alt 18: Conventional Wells at Bunker Site	<u>4,000</u>			Least implementation issues of all projects evaluated.
	Totals (gpm)	4,000	3500		
	Totals (mgd)	5.8	5.0	2.5	
<hr/>					
Example Project 2					
	Alt 18: Conventional Wells at Bunker Site	4,000			Potential inter-basin transfer issues for wells at Stilwell.
	Alt 23: Conventional Wells at Stilwell Site	<u>2,000</u>			
	Totals (gpm)	6,000	5,500		
	Totals (mgd)	8.6	7.9	4.0	
<hr/>					
<i>Projects in the Dune Sands Aquifer and 180-foot Aquifer</i>					
Example Project 3					
	Alt 18: Conventional Wells at Bunker/Dune Sands	4,000			Potential inter-basin transfer issues for wells at Stilwell and WWTP
	Alt 24: Conventional Wells at Stilwell/180-foot Aquifer	4,000			
	Alt 25: Conventional Wells at WWTP/180-foot Aquifer	<u>4,000</u>			
	Totals (gpm)	12,000	10,000		
	Totals (mgd)	17.3	14.4	7.2	
<hr/>					
Example Project 4					
	Alt 18: Conventional Wells at Bunker/Dune Sands	4,000			Potential inter-basin transfer issues for wells at Stilwell and WWTP
	Alt 22: Radial Well at Stilwell/Dune Sands	3,000			
	Alt 24: Conventional Wells at Stilwell/180-foot Aquifer	4,000			
	Alt 25: Conventional Wells at WWTP/180-foot Aquifer	<u>4,000</u>			
	Totals (gpm)	15,000	12,000		
	Totals (mgd)	21.6	17.3	8.7	
<hr/>					
(1) Computed assuming the largest well out of service as a standby					

As the table shows, the only way to assemble projects to meet the 7.5 mgd production goal for the project is with wells drilled in the 180-foot aquifer, paired with shallow wells at the Bunker Site. No pairing of conventional or radial wells at the sites using the Dune Sands aquifer would provide sufficient collector well capacity to meet the project production goal of 7.5 mgd.

4 Findings and Next Steps

Findings

The ICF Jones & Stokes/CDM team has identified the following feed water development findings for the 95-10 Project:

- A project with an estimated WTP production capability of up to 8,400 AFY (7.5 mgd) is technically feasible, with wells installed on former Fort Ord, making use of the Dune Sands aquifer and the 180-foot aquifer of the Salinas Groundwater Basin. Initial conversations with MCWRA indicate that inter-basin transfer of water from the 180-foot aquifer would be extremely politically sensitive and would ultimately require State legislature approval to amend the MCWRA Act, which could significantly lengthen the project implementation timeline.
- If the 180-foot aquifer is not used as a source for feed water, the anticipated project yield is less than 8,400 AFY. Depending on project configuration, a project with an estimated WTP production capability of 2,800 AFY (2.5 mgd) to 4,400 AFY (4.0 mgd) is technically feasible.
- All of the options evaluated presented institutional and land use obstacles of far greater significance than technical concerns. While none of the agencies interviewed identified issues that would preclude a project at this stage, successful implementation of any project option will require aggressive and collaborative discussion and negotiations with land use, resource, and regulatory agencies.
- The analysis found that projects at or in the vicinity of the Sand City desalination project currently under construction are technically viable and could have a production capability of 6,000 AFY (5.0 mgd) or more with the least cost. However, in a meeting and subsequent conversations with Sand City staff, they expressed strong objections to siting any desalination facilities within the city limits. Their objections included potential for impacts to the Sand City desalination project and incompatibility with planned development at potential project sites. Therefore, none of the projects in Sand City were recommended for further consideration.

Data Gaps and Next Steps

Key data gaps identified in the Phase 1 analysis and next steps to implement a project are presented below. Table 6 summarizes the next steps, including a schedule and budget range.

1. Address Policy Issues Related to Implementation Feasibility

Three significant policy issues were identified that could affect project implementation. Although agency discussions were held as part of this Phase 1 analysis, further work is advisable to more definitively address these issues and determine whether they preclude project implementation. It is assumed that ICF Jones & Stokes staff would initiate these discussions, with support from CDM as needed.

- Inter-basin Transfer. As noted in this document, Chapter 52-21 of the MCWRA enabling legislation specifically prohibits the extraction and export of groundwater outside of the Salinas Basin except for use at Fort Ord. Initial discussions with the MCWRA indicate that while not a fatal flaw, this issue is significant and could considerably lengthen the implementation timeline for a project. Further discussion with MCWRA and agricultural stakeholders regarding use of the 180-foot and Dune Sands aquifers in the northern portion of former Fort Ord is advised. Additionally, a hydrogeologic determination- consisting of review and interpretation of existing information- should be conducted for the Dune Sands basin boundary.
- SWRCB Anti-Degradation Policy. Per this policy, a project cannot result in degradation of groundwater quality from saline intrusion below that which currently exists. Confirmation is advised as to how the policy would be applied to use of the 180-foot and Dune Sands aquifers along the southern Monterey Bay coastline.
- Site Review with DPR. General plan information was used to identify Fort Ord Dunes State Park “development areas” (areas not set aside as habitat) with potential for well sites, and two meetings were held to review well placement concepts with local DPR representatives. Additional work is needed to define specific DPR plans/locations for facilities, to refine site constraints and identify potential well site locations, both for field programs and permanent facilities. A meeting should also be held with regional representatives at DPR to review potential projects.

2. Perform Phase 2 Technical Evaluations

If completion of the policy issues review indicates that a project is still feasible, MPWMD should authorize Phase 2 of the CDM engineering scope for collection and analysis of additional hydrogeology and engineering information to describe a project and alternatives. Key activities are identified below:

- Field Hydrogeologic Investigations. Conduct field investigations to refine well siting locations and yields. Field activities would include:
 - Place exploratory borings to verify the extent and continuity of the clay layer overlying the Paso Robles Formation at the project sites.
 - Install test production and observation wells in the Dune Sands aquifer at Bunker and Stilwell sites to assess potential project yields. The Stilwell site testing could also be used to further assess whether the Dune Sands aquifer in this location is within the Salinas Basin.
 - Perform flow testing and monitoring on installed test production wells.
- Groundwater Modeling. Conduct groundwater modeling to assess potential impacts to the Salinas and Seaside Basins.
- Outfall Brine Characterization Studies. The MRWPCA NPDES permit would require brine characterization studies to assess brine constituents and how constituent levels relate to the permitted levels in the NPDES permit.
- Project Description. Using information from the 2004 CDM study, the project description for all project aspects would be updated and finalized. This would include identifying specific WTP locations, evaluating raw and treated water pipeline alignments and connections to CAW distribution/transmission facilities. Project facilities layouts and cost estimates would be prepared.

3. Prepare Phase 3 EIR.

ICF Jones & Stokes, with support from CDM, would prepare a draft and final EIR on the project and alternatives identified in Phase 2.

Table 6. Summary of Next Steps, Schedule and Initial Budget Estimates

Activity/Task	Schedule	Budget	
1. Complete Policy Review for Projects Additional consultations with MCWRA, RWQCB, DPR	Sep – Oct 2008	\$13,000	- \$19,000
2. Authorize Phase 2 Scope of Work - Detailed Facilities Plan for EIR	Nov 2008 – Apr 2010		
Field Hydrogeology Investigations		\$150,000	- \$250,000
Groundwater Modeling		\$70,000	- \$150,000
Outfall Brine Characterization Studies		\$50,000	- \$100,000
Finalize Project Descriptions		\$40,000	- \$80,000
Project Management		\$40,000	- \$80,000
		\$350,000	- \$660,000
3. Authorize Phase 3 Scope of Work - Prepare EIR	May – Dec 2010	\$200,000	- \$250,000
Project Totals		\$563,000	- \$929,000

5 References

Printed References

- California Coastal Commission. 2004. *Seawater Desalination and the California Coastal Act*. California Coastal Commission, San Francisco, CA.
- California Regional Water Quality Control Board, Central Coast Region. n.d. *Waste Discharge Requirements for the Monterey Regional Water Pollution Control Agency Regional Treatment Plant (Order No. R3-2008-0008)*. California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA.
- California State Water Resources Control Board. 1968. *Resolution 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California*. California State Water Resources Control Board, Sacramento, CA.
- California State Water Resources Control Board. 2007. *Scoping Document, Amendment of the Water Quality Control Plan – Ocean Waters of California*. Division of Water Quality, Sacramento, CA.
- Camp, Dresser & McKee, Inc. 2004. *Sand City Desalination Project Feasibility Study*. Final Report, Volume 1. Walnut Creek, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Environmental Science Associates. 2004. *Fort Ord Dunes State Park Preliminary General Plan and Draft Environmental Impact Report*. San Francisco, CA. Prepared for California Department of Parks and Recreation, Sacramento, CA.
- Feeney, M. B. 2007. *Seaside Groundwater Basin Watermaster: Seawater Sentinel wells Project, Summary of Operations*. Ventura, CA. Prepared for Seaside Basin Watermaster, Seaside, CA.
- Jones & Stokes. 2004. *Monterey Peninsula Water Management District Water Supply Project Draft Environmental Impact Report, Board Review Draft*. Sacramento, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Laredo, David. 2006. *Water Rights Relating to Sand City Desalination Projects, Memorandum to Andrew Bell, Monterey Peninsula Water Management District*. Pacific Grove, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.
- Philip Williams & Associates, Ltd. 2008. *Draft Coastal Regional Sediment Management Plan for Southern Monterey Bay*. San Francisco, CA. Prepared for Association of Monterey Bay Area Governments, Marina, CA.

U.S. Department of Commerce, National Oceanic and Atmospheric Administration. 2006. *Monterey Bay National Marine Sanctuary Draft Management Plan*. Volume III. National Ocean Service, National Marine Sanctuary Program. Washington, D.C..

Watermaster, 2008. Compilation of Seaside Basin Geology compiled by Derrick Williams of Hydrometrics for the Seaside Basin Watermaster's Draft Basin Management Action Plan. Seaside Basin Watermaster, Monterey, CA.

Yates, E.B., M.B. Feeney and L.I. Rosenberg. 2005. *Seaside Groundwater Basin: Update on Water Resource Conditions*. Ventura, CA. Prepared for Monterey Peninsula Water Management District, Monterey, CA.

Personal Communications

Damitz, Brad. Environmental Policy Specialist, Monterey Bay National Marine Sanctuary, Monterey, CA. July 15 and 23, 2008 – telephone conversations.

Ewing, Leslie. Ocean Engineer, California Coastal Commission, San Francisco, CA. July 23, 2008 – telephone conversation.

Feeney, Martin. 2008. Hydrogeologist. Independent Consultant, Ventura, CA; Williams, Derrick. Hydrogeologist, HydroMetrics, Oakland, CA; Oliver, Joe. Hydrogeologist. Monterey Peninsula Water Management District, Monterey, CA. June 30, 2008 - Roundtable discussion on Seaside Basin geology during Design Charrette Workshop at Monterey Peninsula Water Management District, Monterey CA.

Feeney, Martin. 2008. Hydrogeologist. Independent Consultant, Ventura, CA. June 10, 2008 and July 28, 2008 - telephone conversations.

Ghandour, Ed. Corporate representative. SNG Development Corporation. San Francisco, CA. July 24, 2008 – telephone conversation.

Gray, Ken. Staff Park and Recreation Specialist. California Department of Parks and Recreation, Monterey District. Monterey, CA. June 5, 2008 – Meeting.

Gray, Ken. Staff Park and Recreation Specialist. McMenamy, Mike. Supervising State Park Ranger. Palkovic, Amy, Environmental Scientist. California Department of Parks and Recreation, Monterey District. Monterey, CA. July 16, 2008 – Meeting.

Haertel, Garrett. Compliance Engineer, Monterey Regional Water Pollution Control Agency, Monterey, CA. July 16, 2008 – Meeting.

Israel, Keith. General Manager. Hagemann, Brad. Assistant General Manager. Holden, Robert. Principal Engineer. Crook, James. Special Projects Engineer/Reclamation. Monterey Regional Water Pollution Control Agency, Monterey, CA, June 5, 2008 – Meeting.

Johnson, Rob. Chief of Water Management and Planning, Monterey County Water Resources Agency, Salinas, CA. July 2008 – telephone conversation.

Luster, Tom. Environmental Scientist, California Coastal Commission, San Francisco, CA. July 30, 2008 – telephone conversation.

Martin, Jacob. Senior Biologist, U.S. Fish and Wildlife Service, Ventura, CA. August 5, 2008 – telephone conversation.

Matarazzo, Steve. Community Development Director. Heisinger, James. Legal Counsel. Simonich, Rich. City Engineer. City of Sand City, CA. June 5, 2008 – Meeting.

Von Langen, Peter. Engineering Geologist, Central Coast Regional Water Quality Control Board, San Luis Obispo, CA. July 16, 2008 – Meeting.

Weeks, Curtis. General Manager. Johnson, Rob. Chief of Water Management and Planning, Monterey County Water Resources Agency. Salinas, CA. August 5, 2008 – Meeting.

Williams, Derrik. Hydrogeologist, HydroMetrics, Oakland, CA. Draft Memorandum to Martin Feeney, *Preliminary Modeling Results for the MCWD Desalination Intake*. July 23, 2008 – Memorandum.

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

(April 2012)

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: OCT 25, 2012 (1:30pm @ Oldmeyer Ctr, 55)

Name: TOM ROWLEY, Vice President

Affiliation: MPTA (Monterey Peninsula Taxpayers Assoc.)

Address: 2004 Mansala Circle Monterey, CA 93940
TEL: (831) 373-5204

Email address: TomR2004@hotmail.com

} I AM A
CAL-AM
taxpayer.

Check here if you would NOT like to be added to the CEQA mailing list.

Tom Rowley

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

*This project is "smoke & mirrors" because:

(1) ASR is NOT sustainable, ^{& NOT} reliable on a yearly basis, e.g. 131 AF injected (WY11-12)

G_MPTA-01

(2) GWR is speculative (at best) because rights to seepage is not assured at this time & project approval was voted down by MRWPCA.

G_MPTA-02

(3) Proposed source of Feed Water for Desal plant on Marina Beach-Front does NOT have water rights.

G_MPTA-03

*RECOMMEND CPUC reject this "3-legged" Proposal ASAP, & direct CAL-AM to submit a new OR revised MPWSPA!

G_MPTA-04

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: 10/24/12
Name: JONAS MINTON
Affiliation: Planning And Conservation League
Address: 1107- 9th St. Suite 901

Email address: jinton@pcl.org

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

NO PROJECT NEEDS TO
SHOW what happens with
enforcement of the Cease and Desist
Order.

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: 10/24/2012
Name: KARIN LOCKE
Affiliation: SUSTAINABLE PACIFIC GROVE
Address: 878 BAYVIEW AVE
PACIFIC GROVE CA 93950
Email address: WISTERIA6MA@COMCAST.NET

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

My concerns are related to the long term effects on the Monterey Bay with the brine and cleaning agents being dispensed over time - I see this as not studied enough as to the long term impacts on habitat.

G_SPG-01

My other concern is future developments and water needs to increase capacity for water demands. - example is Monterey Downs and (2) 200 room hotels, 1,000 horse stables (manure + urine + bedding affecting ground water) - plus future developments proposed by City of Seaside in Endowment property on Pt. Ord. (housing)

G_SPG-02

I support a mixture of uses - ground water replenishment etc.

G_SPG-03

Q - Why is Cal Am proposing salt wells?

G_SPG-04

Comment Form for the Monterey Peninsula Water Supply Project Environmental Review Process

Comment continued:

- How many desalination plants can the Monterey Bay Support Host the science developed data. Santa Cruz and San Jose, already have plants - I heard up to 10 to 12 are proposed in the future, to meet our needs.
- What is updated groundwater modeling? Not explained and no citation G_SPG-05
 - What is acceptability of salinity out falls at ocean G_SPG-07
 - My understanding is that Desalination requires a lot of energy - this should be green energy & be regulated by a CCA in the future G_SPG-08
- Mention of increased Conservation in Geopark report -
- yet Monterey County has not mandated Greywater reclamation, Rainwater Cisterns for Gardens and to Support wildlife - This has to happen in concert with any & all Conservation efforts. G_SPG-09
- There is no Climate Action plan and w/ increased Conservation, almost 20 years at least Cal Am is not solving issues, rates are too high - water is a right and should be public owned. G_SPG-10

Dr. Carol Reeb - Stanford U. at Hopkins

Marin Station

Reed Tide effects in Saline Environments

SHUTE MIHALY
& WEINBERGER LLP

396 HAYES STREET, SAN FRANCISCO, CA 94102
T: 415 552-7272 F: 415 552-5816
www.smwlaw.com

November 9, 2012

Via E-Mail and U.S. Mail

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108
Email: mpwsp-eir@esassoc.com

Re: Notice of Preparation of an Environmental Impact Report for the
CalAm Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale:

On behalf of Surfrider Foundation, thank you for the opportunity to review the Notice of Preparation of an Environmental Impact Report for California American Water's Monterey Peninsula Water Supply Project. Surfrider Foundation is a non-profit organization that works to protect the world's oceans, waves, and beaches through grassroots organization and advocacy. Surfrider Foundation looks forward to participating in the Public Utilities Commission's continuing efforts to ensure that Monterey Peninsula achieves a secure water supply while minimizing impacts that new water projects will have on the marine and coastal environments.

Cal-Am is proposing the Project to replace water that it currently draws from the Carmel River to supply the Monterey water service district. As alternatives to this Project, the Commission is also reviewing competing desalination proposals—the DeepWater Desal project and the People's Moss Landing Water Desalination Project—that would also replace Carmel River water. Because each desalination proposal could significantly impact Monterey Bay's marine and coastal environments, Surfrider Foundation expects to actively participate in the Commission's evaluation of each proposal and its associated impacts.

Mr. Andrew Barnsdale
 November 9, 2012
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I. Probable Environmental Impacts

The Notice identifies numerous potential environmental impacts that will accompany construction and operation of the Project. Key among these are (1) impacts to marine organisms and water quality from brine discharge, (2) water intake structures' contribution to coastal erosion and impacts on sensitive coastal habitat, and (3) greenhouse gas emissions associated with powering the desalination plant. Because each of these impacts could significantly harm marine and coastal ecosystems, Surfrider Foundation encourages the Commission to fully analyze them.

G_Surfrider-01

A fourth impact absent from the Notice is the probable entrainment and impingement of marine organisms in open-ocean intake systems. Although the proposed Project may avoid this impact by utilizing slant wells for water intake, the desalination alternatives use open-ocean intakes. The Commission should carefully review these alternatives and consider their entrainment and impingement impacts. To facilitate this review, the EIR should estimate the levels of marine mortality associated with each alternative.

G_Surfrider-02

The Commission should also evaluate specific measures to mitigate environmental impacts from brine discharge and the Project's intake structures. For instance, the Project can reduce brine-discharge impacts by diluting the brine with wastewater treatment effluent and by employing a pressurized spray-diffuser for brine disposal. This analysis should consider adverse impacts within the zone of initial dilution, as well as long-term impacts from brine accumulation in the "far field" benthic environment. Further, the Commission should consider that diluting brine with effluent may diminish the possibility of purifying and reusing the effluent as an alternative source of water.

G_Surfrider-03

G_Surfrider-04

Additionally, the Commission should consider mitigation measures, such as beach and dune protection, that preserve environmentally sensitive coastal habitat and do not hasten coastal erosion. The Commission's analysis of erosion rates and mitigation must further account for projected sea-level rise. In designing mitigation measures, the Commission must require each measure be fully enforceable and contain features to ensure its effectiveness.

G_Surfrider-05

Finally, environmental review of any water-supply project that involves an uncertain source must consider alternative sources and the environmental impacts of developing these sources. *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, 447. Here, the Commission has at least two reasons to believe that the Project is an uncertain means of replacing Carmel River water. First, the State Water Quality Control Board's Ocean Plan amendment concerning

G_Surfrider-06

Mr. Andrew Barnsdale
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seawater intake and brine disposal, which is expected in 2014, could include requirements that make the Project or the desalination alternatives infeasible. Second, energy price volatility could harm the Project's economic viability. In either of these events, Cal-Am would need to implement a contingency plan for providing water to its customers. The EIR must review any such plan and carefully evaluate its environmental impacts.

G_Surfrider-06
 (Cont')

II. Project Alternatives and Objectives

Identification of Project objectives and evaluation of Project alternatives will also be critical to an adequate, effective EIR. An EIR must describe range of alternatives to the proposed project that would feasibly attain the project's basic objectives while avoiding or substantially lessening the project's significant impacts. Pub. Res. Code § 21100(b)(4); CEQA Guidelines § 15126.6(a). A broad alternatives analysis is essential for the Commission to comply with CEQA's mandate that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126.6(a); *Citizens for Quality Growth v. City of Mount Shasta*, 198 Cal. App. 3d 433, 443–45 (1988).

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In outlining Project objectives, the EIR must not narrowly tailor the objectives to the proposed desalination plant, but instead should focus on ensuring that future water supply will meet the Peninsula's water needs. To this end, the Commission should craft the EIR's description of the Project objectives to account for planned and complementary water projects that will help replace the 3,376 acre-feet per year (afy) that Cal-Am can no longer draw from the Carmel River. For instance, the City of Pacific Grove has developed three small water projects that will reduce the need for replacement water by up to 500 afy. The EIR's Project objectives must account for this and any other planned source of replacement water.

The EIR should also recognize that the magnitude of environmental impact is directly correlated with a desalination plant's size. Consequently, the Commission must consider that approving the smallest feasible design for the Project will reduce adverse impacts to the marine environment and other impacts associated with high energy demand. It is thus likely that the smallest feasible desalination plant, or an alternative that meets Peninsula water demand without a desalination plant, will be the environmentally superior alternative. If such an alternative meets the Project objectives, it should be approved.

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However, some impacts, such as beach erosion and dune habitat disturbance, will likely remain, regardless of a desalination plant's size. Thus, the Commission should

G_Surfrider-09

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fully evaluate the standalone Conservation Alternative as a potential means to meet the Peninsula's water requirements and provide further environmental benefits. For instance, landscape modifications can reduce irrigation needs, capture rainwater onsite, and recharge groundwater resources while adding environmental co-benefits by reducing the volume of polluted runoff and curtailing the need for fertilizers, herbicides and pesticides. Similarly, "grey water" reuse for landscaping decreases new source water demand on a one-to-one basis. Water audits and eliminating water system leaks also reduce water demand. Roughly 30% of the homes supplied by Cal-Am have yet to be retrofitted, which highlights the potential for further reductions in demand.

G_Surfrider-09
 (Cont)

In considering the feasibility of any alternative including conservation measures, the EIR should recognize the cost reductions achievable through rebates to maximize demand reduction. In this light, conservation measures may compare favorably to desalination with its capital, construction and operational costs.

The EIR's alternatives analysis should also thoroughly analyze maximizing the potential output of wastewater recycling and groundwater replenishment. Maximizing GWR will significantly lessen the Project's potential impacts by reducing greenhouse gas emissions, and reducing impacts on the marine ecosystem from the seawater intake and brine disposal. Indeed, Surfrider Foundation understands that currently up to 10,000 afy of wastewater flows into Monterey Bay. The EIR should analyze the greatest possible reuse of that water and the associated reduction in adverse environmental impacts from a desalination facility. Additionally, maximizing GWR will likely yield further environmental benefits by reducing the discharge of partially treated effluent to the ocean.

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Finally, Surfrider Foundation urges the Commission to consider an additional reduced-capacity desalination alternative that incorporates maximum achievable water conservation measures. Such an alternative would allow downsizing of either the Project or the 5.4-mgd Desalination Plant alternative which would reduce environmental impacts. The Notice itself anticipates the need for such a reduced-project alternative by raising the possibility that "the Conservation Alternative, implemented in conjunction with desalination, would enable the proposed MPWSP desalination plant to be reduced in size." Notice of Preparation at 13.

G_Surfrider-11

Thus, Surfrider Foundation encourages the Commission to expand its consideration of conservation measures beyond a stand-alone Conservation Alternative. A separate alternative should consider feasible conservation measures, and potential supply alternatives, in conjunction with construction of a much smaller desalination plant.

Mr. Andrew Barnsdale
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Page 5

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

A handwritten signature in blue ink, consisting of two distinct parts. The first part is a stylized, cursive signature that appears to be 'G.M.B. Ross'. The second part is a long, horizontal, sweeping line that extends to the right, likely representing the signature of 'Edward T. Schexnayder'.

Gabriel M.B. Ross
Edward T. Schexnayder

442955.1

Salinas Valley Water Coalition



P.O. Drawer 2670 • Greenfield, CA 93927

(831) 674-3783 • FAX (831) 674-3835

Transmitted via Email

Mr. Andrew Barnsdale
 California Public Utilities Commission
 Energy Division
 Transmission and Environmental Permitting
 505 Van Ness Avenue
 San Francisco, Ca 94102-3298

2 October, 2012

Re: A.12-04-019, California American Water Monterey Peninsula Water Supply Project

Dear Mr. Barnsdale;

It is our understanding that you are managing the CEQA process associated with the above referenced project. The Salinas Valley Water Coalition (SVWC) request that the environmental review conducted pursuant to the California Environmental Quality Act ("CEQA") evaluate an alternative locations for the source water intake for the desalination facility proposed as part of the Monterey Peninsula Water Supply Project ("MPWSP").

The SVWC has consistently expressed their concerns regarding the lack of water rights associated with the proposed MPWSP, as well as concerns as to the potential exacerbation of seawater intrusion and/or other impacts to the Salinas Valley Groundwater Basin (SVGB). We believe that alternate locations outside of the SVGB could mitigate and/or avoid these, and other, impacts associated with the current proposed location for the source water wells of the proposed MPWSP.

The SVWC wants the Peninsula to be successful in obtaining a project that meet their water needs, but that success cannot be achieved at the expense of the Salinas Valley Groundwater Basin, its water right holders, users and ratepayers. We ask that the CEQA review that will be prepared for the MRWSP include alternative locations for the source wells that are outside the SVGB.

LandWatch Monterey County submitted an analysis that was prepared for the Monterey Water Management District, titled "Monterey Peninsula Water Management District, 95-10 Project Constraints Analysis", to you with their October 1, 2012 letter. This analysis identified and evaluated 25 potential feed water collection well site

Mission Statement: The water resources of the Salinas River Basin should be managed properly in a manner that promotes fairness and equity to all landowners within the basin. The management of these resources should have a scientific basis, comply with all laws and regulations, and promote the accountability of the governing agencies.

locations and their constraints, most of which are not located within the SVGB. We think the re-evaluation of the well site locations outside the SVGB identified in this analysis, is a good starting place for inclusion in your alternative analysis for the MPWSP.



G_SVWC1-01
(Con't)

We thank you for your consideration of our request.

Sincerely,

A handwritten signature in cursive script that reads "Nancy Isakson".

Nancy Isakson, President
Salinas Valley Water Coalition

Salinas Valley Water Coalition



P.O. Drawer 2670 • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

Transmitted via Email

Andrew Barnsdale
California Public Utilities Commission
C/O Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, Ca 94108

9 November, 2012

Re: Comments on Scoping of Monterey Peninsula Water Supply Project (MPWSP)

Dear Mr. Barnsdale;

The Salinas Valley Water Coalition (SVWC) is a not-for-profit organization comprised of agricultural landowners, farmers and businesses within the Salinas Valley. Salinas Valley Water Coalition and its members have actively supported the development of water projects within the Salinas Valley. Two reservoirs, the Castroville Seawater Intrusion Project (CSIP), the Salinas Valley Reclamation Project and the Salinas Valley Water Project (SVWP) have all been approved and funded in an effort to sustain our basin's water resources and to address the seawater intrusion problem.

We have worked with our neighbors and other organizations to resolve our differences so these projects could be successfully financed and implemented. We have made significant progress but we are not finished – seawater intrusion continues to advance into the Salinas Valley Groundwater Basin (SVGB). The overdraft is stable; additional intrusion is substantially reduced, but still advancing. We are concerned that the stability and security of these water resources and water rights are threatened and at stake in many ways with the proposed MPWSP. The northern part of our SVGB still has significant water resource problems and needs.

Salinas Valley Water Coalition (SVWC) has operated 20 years to specifically address our local water issues. We are actively participating in the PUC hearing on Cal-Am's proposed MPWSP because their proposed desal facility and wells are to be located at the northern end of the SVGB and would pump water to the Monterey Peninsula to solve their water problems.

SVWC wants the Peninsula to be successful in securing their water needs. But their needs cannot be met at the expense of degradation to the Salinas Valley Groundwater Basin. The communities and ratepayers of the Salinas Valley have spent hundreds of millions of dollars to build two reservoirs, the Castroville Seawater Intrusion Project, the Salinas Valley Reclamation Project and the Salinas Valley Water Project to solve its basin's water problems. Stakeholders have worked as neighbors to resolve their differences so these projects could be

successfully financed and implemented. Cal-Am's proposed project for the Monterey Peninsula puts a 'straw' into the Salinas Valley Basin in the 180-foot aquifer, which is most vulnerable to seawater intrusion. Therefore, it is imperative that the scope of the environmental issues for MPWSP EIR includes the following:

Project Purpose:

- The Notice of Preparation (NOP) states that a "secondary purpose of the MPWSP is to provide adequate supplies for CalAm to meet its duty to serve customers in its Monterey District, as required by Public Utilities Code Section 451." This statement seems to allow for review and consideration of a water supply beyond the 'replacement supplies' needed to comply with the SWRCB Order 2009-0060—essentially providing for 'growth'. If this is the case, the EIR must clearly state so, along with defining and evaluating a specific amount of an "adequate" water supply to meet this 'duty'. The EIR should also include a detailed map with boundaries of CalAm's Monterey District.

G_SVWC2-01

Issues to be Addressed in the EIR:

- The project proposes to pump water from wells to be located in the 180-foot aquifer adjacent to Monterey Bay. A previous model was used to evaluate the groundwater impacts of the proposed pumping. However, that previous groundwater model does not represent essential elements of the groundwater system. In particular, it assumes a direct offshore connection between the 180-foot aquifer and Monterey Bay, while various hydrogeologic reports by the U. S. Geological Survey indicate that clayey deposits overlie the 180-foot aquifer beneath Monterey Bay. Those deposits limit the offshore connection between the aquifer and Monterey Bay. The previous groundwater modeling must be updated to adequately represent the actual hydrogeologic setting. Additionally, the model must be used with an appropriate baseline condition to evaluate the potential impacts to the Salinas Valley Groundwater Basin (SVGB). To meet these requirements, the following must be included in the model development and use:
 - A hydrogeologic assessment to define the extent and thicknesses of the sand-dune aquifer and the underlying aquitard within the proposed well-field area, including extrapolations to the offshore area underlying Monterey Bay. The assessment must additionally include the identification of discontinuities within the aquitard.
 - Assessment of potential offshore hydraulic connections between the 180-foot aquifer and Monterey Bay, the sand-dune aquifer and Monterey Bay, and the sand-dune aquifer and the 180-foot aquifer. The assessment should be based on the hydrogeologic assessment described above, groundwater level data, and water-quality data (including isotopic data).
 - Require and evaluate pre-design aquifer testing using multi-level monitoring wells within the sand-dune aquifer, aquitard, and the 180 foot aquifer.
 - Development and utilization of an adequate groundwater model (flow and transport). The model may need to include the seawater-density effects on groundwater flow. The model must be based on a hydrogeologic conceptualization that represents the essential elements of the actual hydrogeologic setting. The

G_SVWC2-02

model must be appropriately calibrated, including assessments of parameter uncertainty and the effects of parameter uncertainty on the predictive reliability of the model simulations.

- A clear, well-defined, set of baseline conditions. The public and decision-makers must fully understand the basis by which the impacts are being measured. The previous modeling used a baseline that assumes an expansion of the CSIP service area. This is an inappropriate baseline because (1) the assumed expansion is unlikely to occur, and (2) a model simulation without the CSIP expansion will show more impact than a simulation with the expansion.
- The model must be used to simulate not only the project operation but also conditions after the project life. The project will induce seawater intrusion into the groundwater system (which the wells will be specifically designed to cause). After the project end, the unextracted seawater mass accumulated within the groundwater system during the project life will redistribute itself when pumping stops. The model must be used to simulate that impact.

- The NOP states, that “if it is determined that the MPWSP needs to return water to the Salinas Valley Groundwater Basin, water could be conveyed ...to the existing Castroville Seawater Intrusion Project pond...for subsequent distribution to agricultural users in the Salinas Valley.” This concept creates two issues: 1) the return of desal water to replace groundwater pumped and exported out of the SVGB, does not serve to mitigate the adverse impact of exporting the groundwater in the first place. Any exportation of groundwater from the SVGB is a significant adverse impact, is inconsistent with MCWRA’s legislative act, and one that cannot be mitigated. 2) The EIR must show and evaluate how, and on what basis, this amount of water can be utilized within the CSIP 80-acre foot storage pond.

- While water rights are not considered to be an environmental issue by some, the potential impact to agricultural lands because of impacts to existing legal water rights users should be considered a significant adverse environmental impact. Under what water right, and whose, will groundwater be pumped and on what basis? Therefore, the water rights and legal use of water by the agricultural community within the Salinas Valley Groundwater Basin and any impact to these rights and use, should be considered within the context of the EIR. We strongly believe that **any** impact to these rights and use because of groundwater pumped by the MPWSP and then exported out of the basin, must be considered a significant adverse impact and fatal flaw.

Alternatives:

CalAm’s Contingency Plan Compliance Filing submitted November 1, 2012 to the PUC states their “decision to install shallower wells is currently incorporated into the project”. They are proposing that these shallower wells will pump the needed source water from the sand-dune aquifer, rather than the 180 foot aquifer, in the same location. Therefore, the EIR must fully review and evaluate the potential impacts of the proposed shallower wells pumping from the sand-dune aquifer in the same manner and vigor as the slant wells in the 180-foot aquifer as proposed by the project. The groundwater model and underlying hydrogeologic assessment should be updated to include all the requirements described above for assessing the shallower wells in the sand-dune aquifer.



G_SVWC2-02
(Con't)

G_SVWC2-03

G_SVWC2-04

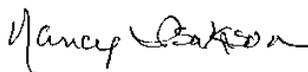
G_SVWC2-05

The SVWC has consistently expressed their concerns regarding the lack of water rights associated with the proposed MPWSP, as well as concerns as to the potential exacerbation of seawater intrusion and/or other impacts to the Salinas Valley Groundwater Basin (SVGB). These concerns remain and we believe that alternate well site locations outside of the SVGB could mitigate and/or avoid these, and other, impacts associated with the current proposed location for the source water wells of the proposed MPWSP. We ask that the EIR include alternative locations for the source wells that are outside the SVGB. On October 1, 2012, LandWatch Monterey County submitted to you an analysis that was prepared for the Monterey Water Management District, titled "Monterey Peninsula Water Management District, 95-10 Project Constraints Analysis". This analysis identified and evaluated 25 potential feed water collection well site locations and their constraints, most of which are not located within the SVGB. We request that the re-evaluation of the well site locations outside the SVGB identified in this analysis be included in your EIR Alternative Analysis for the MPWSP.

G_SVWC2-06

Thank you for your consideration of our comments and concerns.

Sincerely,



Nancy Isakson, President
Salinas Valley Water Coalition

4 October 2012

Via E-mail

Andrew Barnsdale
California Public Utilities Commission
Energy Division
Transmission and Environmental Permitting
505 Van Ness Avenue
San Francisco, CA 94102-3298

bca@cpuc.ca.gov

**Re: A.12-04-019: CALIFORNIA AMERICAN WATER (U210W)
MONTEREY PENINSULA WATER SUPPLY PROJECT**

Dear Mr. Barnsdale:

On behalf of WaterPlus and in support of LandWatch Monterey County, I write to request that the environmental review under the California Environmental Quality Act (“CEQA”) evaluate an alternative location for the source water intake for the desalination facility proposed as part of the Monterey Peninsula Water Supply Project (“MPWSP”).

In particular, because of the state Agency Law prohibiting the exportation of any groundwater from the Salinas Valley basin, WaterPlus specifically requests that the CEQA review evaluate the intake of sea water at the Moss Landing site proposed by the Pacific Grove Desalination Project, also known as the People’s Moss Landing Water Desalination Project, which is proposed as part of MPWSP.

WaterPlus believes that an alternative source-water location outside the Salinas Valley groundwater basin (“SVGB”) may mitigate or avoid a number of impacts. First, it may avoid legal conflicts with groundwater rights in that over-drafted basin. Second, it may avoid or minimize impacts to groundwater resources, as well as the consequent impacts to agricultural resources and to land use plans calling for dedication of groundwater to agriculture. Third, as noted previously, it would avoid conflicts with the legal ban on exporting water from the SVGB. Note particularly that the Agency Law does not differentiate between raw and processed groundwater. It prohibits the exportation of all groundwater except for use on former Fort Ord land.

Accordingly, I ask that the CEQA review prepared for the MPWSP consider alternative locations for the source water that are outside the SVGB.

Very truly yours,

Ron Weitzman
President, WaterPlus

cc: Nancy Isakson, SVWC, nisakson@mbay.net
Russell McGlothlin, MPWRA, rmcglothlin@bhfs.com
Amy White, LandWatch, awhite@mclw.org
John Farrow, jfarrow@mrwolfeassociates.com
Jonathan Knapp, DRA, jp8@cpuc.ca.gov

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: 10-25-12
 Name: DICK ROTTER
 Affiliation: WATER PLUS
 Address: 14500 MOUNTAIN VAL
SALINAS, CA 93904
 Email address: DROTTER@gmail.com

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

CalAm does not maintain its present properties. Sillings of San Clemente Dam - a leakage rate of 1290 per year. They lose 500,000 gallons a month from leakage. That equal to 1950000 a month per customer. With this record of poor maintenance, how can they be trusted to maintain a desal. This is 500,000 gallons per month just for existing leakage.

Cal Am leak rate highest in state

Our local Cal Am does not hold water. Its leakage at 12 percent is the worst of Cal Am districts in the state. Consider this: An acre-foot of water is 325,851 gallons that, when multiplied by 13,000 acre-feet annual usage, is 4.2 billion gallons per year. At 12 percent leakage, that is a loss of 508 million gallons per year, and for one month, 42 million gallons. Our local Cal Am has about 40,000 customers. That makes the leakage for each customer equal to 1,059 gallons per month! And this has been going on for how many years?

Dick Rotter

Monterey

From: Ron Weitzman [ronweitzman@redshift.com]
Sent: Wednesday, October 31, 2012 4:12 PM
To: MPWSP-EIR
Subject: Scoping Suggestions for Cal Am Project EIR from Water Plus

Water Plus would add the following topics for inclusion in the new EIR on Cal Am's current water-supply proposal for its Monterey County District (A.12-04-019):

1. New to this project is the extensive involvement of the Seaside groundwater basin in both aquifer storage and recovery and groundwater replenishment. Both of these auxiliary water sources will be critical to the project if it is limited to only 5,500 acre-feet per year of desalinated water, which represents one of the two directions the project may take. Since both directions are possibilities, the EIR must consider both. The direction involving the two auxiliary water sources depends on storage in the Seaside water basin. This dependency would make the total water supply available extremely unreliable and threaten increased saltwater intrusion in the basin. That is because both these sources would not supply sufficient water in dry years. The Carmel River would not have excess winter flow for storage, and farmers would need the treated sewer water in winter as well as summer during these dry periods. Equally troublesome is the fact that aquifers leak. If they didn't, they would become lakes. Their discharge rate must therefore be equal to their recharge rate. According to a 2007 study of the Seaside basin by hydrologist Timothy J. Durbin, the recharge rate is about one-third of an acre-foot for every acre of surface area over the basin. At this rate, the leakage could be as much as 12,000 acre-feet a year, depending on the extent of the basin's surface area. This is definitely a topic that deserves study in the EIR because the project envisions storing water at one time and removing it for use at a later time, perhaps even years later. In that case, the removal could create a net loss in basin water volume so great as to result in saltwater intrusion. The EIR must consider these possible contributions to unreliability of water supply and saltwater intrusion into the Seaside groundwater basin, especially as global warming progressively increases the frequency of dry years..
2. Although cost and financing are not topics of direct concern to an EIR, they certainly will be topics of at least indirect concern in the case of the current project. That is because this project envisions possible financing via the state's revolving fund at about 2.5% interest. Because funding from this source for a private company depends on the project's prevention or elimination of nonpoint pollution, as well as the borrower's being a non-profit organization, the project must identify a source of nonpoint pollution together with a demonstration of how it would prevent or eliminate it. That is certainly a topic for an EIR study to consider, regardless of whether Cal Am's financing plan could somehow circumvent the non-profit requirement.
3. For the project to proceed as proposed, the CPUC must make a certification of public convenience and necessity to preempt the Monterey County Ordinance 10.72 prohibiting a private company from owning and operating a desalination plant in the county. That certification depends on the non-existence of any feasible alternative project. Because at least one publicly-owned project has been proposed—the Pacific Grove or People's project—the EIR must determine its feasibility at least from an environmental viewpoint. This determination is especially important to Water Plus as a ratepayer advocacy group because a publicly-owned desalination plant can obtain financing at a much lower cost than a privately -owned one. For both convenience and necessity, a publicly owned and operated desalination plant would be far superior to one owned by a private company.

G_Water
Plus3-01G_Water
Plus3-02G_Water
Plus3-03

--Ron Weitzman, President, Water Plus

From: Ron Weitzman [ronweitzman@redshift.com]
Sent: Friday, November 09, 2012 4:44 PM
To: MPWSP-EIR
Subject: More on Scoping from WaterPlus

Follow Up Flag: Follow up
Flag Status: Flagged

WaterPlus suggests one more item for the EIR on Cal Am's current water--supply project to consider: the state Agency Act's prohibition of the exportation of groundwater (not just fresh water, but any groundwater) from the Salinas Valley Groundwater Basin, except for Fort Ord. The Cal Am proposal assumes, incorrectly, that the prohibition applies only to fresh water, but nowhere does the act refer to fresh water. The act is concerned that exportation of groundwater (of any kind) from the basin will lower the water table, permitting seawater intrusion. The EIR should definitely examine this issue. –Ron Weitzman, President, WaterPlus

G_WaterPlus
4-01

From: Dick Rotter [dickrotter@gmail.com]
Sent: Tuesday, November 06, 2012 12:20 PM
To: MPWSP-EIR
Subject: Scope of the EIR

Maintenance should be an integral part of the new EIR for the CalAm proposed new desal project. CalAm has stated that they have a 12 percent leakage in their delivery system. 12 percent of the 13,000 acre feet of water they deliver for a month is 42,360,089, gallons or 1 1/2 acre feet, and for the 40,000 customers, 1,059 gallons per month for each customer. CalAm states they will charge \$5000 dollars per acre foot from the new plant making this wasted water, \$7500 dollars per month, \$90,000 dollars per year. This leakage has been going on for many years, and will continue until CalAm is ordered to repair them. Last month, CalAm repaired an old valve that lost 300,000 gallons of water before it was fixed. The damage to the environment was devastating.

CalAm, also through any proper maintenance, let the San Clemente dam silt up to point it has been ordered to be removed. CalAm is now stating that the Los Padres dam is silting up. Will the ratepayers have to pay for its removal if its ordered to be removed? The San Clemente dam held 10,000 acre feet of water, the exact amount of water the Peninsula needs. Proper maintenance has been a large factor in causing the Peninsula all it's water problems today. CalAm is in the process of removing the silt from the San Clemente on the old roads in the area, that are barely at best 1 1/2 lanes wide and very sharp curves that cars have trouble negotiating. Each trip made in very large trucks with trailers, is 20 miles one way. CalAm is now proposing to build new roads that will cost \$10,000,000 dollars. This project will completely devastate the tranquility and beauty of this rural area of the county. When this project is completed, who will have to pay the taxes, upkeep, and maintenance on these one-time roads? All of this because CalAm took no responsibility for the maintenance of their property that they bought, ratepayers paid for, and now the residences have to lose this beautiful area of our county.

What kind of requirements will be put in place in the EIR that will guarantee that the ratepayers will not have to pay once again for CalAm's track record of not providing proper care and maintenance of their property?

Dick Rotter, Monterey, CA

Sent from my iPad

G_Water
Plus5-01

G_Water
Plus5-02

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Dear Mr. Barnsdale,

We attended the meeting on October 24, 2012 giving residents on Monterey County the opportunity to communicate to the California Public Utilities Commission what issue should be addressed in the latest EIR for California American Water's proposed \$370,000,000 Monterey Peninsula Water Supply Project. We were very impressed by the presentation by Andrew Barnsdale, but his comments raised many troubling issues and questions. The presentation is only the 'FIRST STEP' in drafting an EIR for a new desalination plant which replaces other desalination proposals on which Mr. Barksdale admits he has spent the last thirteen years.

That is correct---thirteen years and now Cal Am has to start over. Mr. Barnsdale estimates that the earliest completion date of the EIR is the end of 2014. Then surely comes more lawsuits and delaying annoyances followed by implementation of the Cease and Desist Order shutting off most of the county's water in 2016.

I_Bottomley-01

The Assistant Public Advisor and her associate from the CPUC were courteous and somewhat knowledgeable about THE PROCESS, but they a) did not know where Pebble Beach was located, b) alluded to the "lush" golf courses that the wealthy residents play using valuable water, totally unaware that that the Pebble Beach Company uses recycled wastewater from The Carmel Area Wastewater District's treatment plant (which The Pebble Beach Co. built at their own expense) on the golf courses, c) and were only vaguely aware and unsympathetic that Cal Am is sending out \$1000-10000 monthly water bills to residences under the tiered system the CPUC approved. Their answer to most of my questions were "send in your questions and comments so we can get it in the record", which then will appear in a 3000+ EIR report that someone might read.

The presenters and station monitors all asked for feedback for the "public record" so I am responding. We spent the evening listening to impressive consultants hired by Cal Am (who will in turn bill their customers for the charges) and the CPUC representatives (who are paid by the taxpayers). We looked around the room and saw representatives of environmental groups, competing desalination projects, and Salinas agriculture water users who were obviously gathering information so they can eventually sue and further delay MPWMD and Cal Am's latest attempt to provide a source of water for it's customers. We then reflected back on the rationale of WR 95-10 when the California State Water Board ruled that Cal Am did not present enough evidence to determine whether it had the "claimed pre-1914 appropriation right" and were "not entitled to additional water under the progressive use and development doctrine." Thus, our only water provider is limited to the estimated actual use by Cal Am's

I_Bottomley-02

predecessor in 1913. The average water rate payer and taxpayer can only ask, "What is wrong with this picture?"

Monterey County has been and continues to be the most environmentally and conservation oriented area in the United States and maybe the world as evidenced by the per capita water usage figures. We CARE, but because our residents have done such an historically conscientious job of conservation, the new Cal Am tiered rate system, approved by the CPUC, is proving onerous on every tax paying water consumer. Again, one is forced to question "what is wrong with the picture?" that shows the most water usage responsible constituency in the country also pays the highest monthly water bills. And with 2016 looming and Cal Am's Monterey Peninsula Water Supply Project approval PROCESS sure to be delayed, the good people of Monterey are destined to see much higher than the already painful water bills and/or have no water at all.

I_Bottomley-02
(Con't)

Someone needs to bring some sanity to the Monterey Peninsula water situation. The needed "grand bargain" or "grand compromise" failed at a national level, but hopefully California can finally accomplish a solution that is fair to all parties. I hope we can all agree that conservatives, liberals, Democrats, and Republicans all need a reliable and affordable supply of water to live. We encourage the involved water entities to join in:

- a) accelerating THE PROCESS for some agreed upon desalination plant if desalinization is the best solution.
- b) asking the current California State Water Board to revisit WR 95-10 by admitting the county has grown and changed since 1914 and current population needs water on which to live,
- c) having Governor Brown step in to mediate a compromise for the consumers as the mindboggling number of government agencies with their respective overlapping involvement and no level headed overseeing entity. Quite frankly the bureaucratic mess makes the water situation virtually impossible to comprehend and a path to some solutions discouraging--- coordination needs to come from the Governor,
- d) revisiting all options of the dam issue including dredging, retrofitting/rebuilding Los Padres -----a Los Padres Dam storing approximately 18,000 acre feet (originally approved for 24,000 AF) simultaneous demolition of San Clemente would probably be far more cost effective than a \$370,000,000 desalination plant and be an excellent solution to the environmental issues on the Carmel River which currently costs in excess of \$2 million per year). We also understand that the cost of water deliver from the dam would be much less than from the desalination plant.
- d) enabling Cal Am to take more winter excess run off from the Carmel River and properly store it in the Seaside Underground Basin or elsewhere,
- e) mediating a solution between the Salinas agriculture interests and the Monterey Peninsula Water Management District to allow the District to take unused winter water processed by the Marina Wastewater Treatment Plant to replenish the Seaside Aquifer---certainly contracts can be signed to assure the agriculture interests do not give up their future rights to the water purified in their plant. We understand that a sizeable portion of this wastewater processed by the plant actually originates from the District's system anyway.

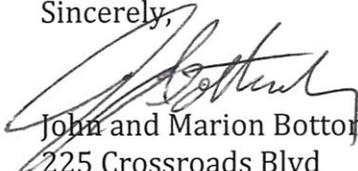
I_Bottomley-03

We are desperately in need of solutions from the people and organizations who supposedly represent the taxpayers. We are just two retired people shocked into becoming involved by our previous three months' Cal Am bills of \$913.56,, \$981.14, and \$1,009.45. Like most of our neighbors, we trying to afford the fabulous life style which Monterey Peninsula provides. We, however, feel we have no political influence or seemingly any productive avenues of appeal. We are desperate just trying to insure that we have affordable water on which to live, let alone being concerned about the future economic viability and the future growth prospects of our region. We must plead with responsible parties to "man up" and do something quickly.



I_Bottomley-03
(Con't)

Sincerely,


John and Marion Bottomley
225 Crossroads Blvd
Carmel, California 93923
11/02/2012

From: gbrehmer@aol.com
Sent: Friday, November 09, 2012 12:58 PM
To: MPWSP-EIR
Subject: Scope of Cal Am EIR on Cal Am's proposed water project

Follow Up Flag: Follow up
Flag Status: Flagged

Gentle Persons:

The EIR on Cal Am's proposed project is an EIR on water supply for the Monterey Peninsula and its surrounding areas served by Cal Am. Harvesting rain water and reuse of greywater are sources which must be considered. These sources will give ratepayers some direct control over the water supply and protect them in drought years. Such empowerment will foster an attitude of self-reliance and diminish government dependence.

Harvesting rain water is discussed in quite a few Internet articles. Bryce Kantz completed a rain water harvesting study for the Monterey Peninsula in 2009 as part of his work at California State University, Monterey Bay. It is readily accessible on the internet.

Greywater is also discussed on the Internet. Its use should be examined and encouraged for the same positive reasons as rain water harvesting. Each of these "hands on" approaches directly educate children resulting in their appreciation, independent thinking and skill.

The forgoing water sources must be considered in the EIR. The issue is water supply.

George Brehmer
Attorney at Law
9801 Club Place Lane
Carmel, CA 93923
(831) 594-2336
gbrehmer@aol.com

I_Brehmer-01

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: October 26, 2012
 Name: Bill Carrothers
 Affiliation: Every Breath You Take...
 Address: 46 Stone Street, Unit 19
Jalinas, California 93901
 Email address: cih 5102 @ earthlink.net

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

The CalAm Monterey Water Supply Project ("the Project") shows a sophistication and technical elegance woefully lacking in ~~its public sector~~ several of the competing public sector proposals. Moreover, the leadership of CalAm can lay claim to a long history of working to supply water to the customers it supplies, and a long history of working with the political and regulatory agencies of this area.

Rather than mount a public relations barrage for some rather "pie in the sky" propositions (i.e., use of solar power as a major energy source) the project stays with tested, "off the shelf" engineering, which favors completion of the project within the increasingly limited time that remains.

Comment Form for the Monterey Peninsula Water Supply Project Environmental Review Process

Comment continued:

I am confident that Cal. Am's technical leadership (they are the operators of the ~~Santa~~ Sand City desal facility) will translate into a buildable, bondable, and successful project, which can be improved over time as proven technology advances.

In spite of today's technological marvels, the last time I checked, water still travels through pipes, and pumps are still used to move it uphill. Cal Am is well supplied with talented employees who can locate leaks and illegal connections, ^{fix pumps,} measure water consumption, and send out bills to customers. Their business model is tested, their employees are motivated and experienced, and I believe their management has the vision and business acumen to make this project a success. In the end, any endeavor is only as good as the people who staff the company, and the responsible, responsive, and seasoned leadership & ~~history~~ history of California American Water Company ~~is~~ is a major plus for their proposal.

Bill Carrothers

October 26, 2012

Roger J. Dolan

DATE

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Dear Mr. Barnsdale:

In response to the Notice of Preparation for the CalAm Monterey Peninsula Water Supply Project, I have some thoughts to share with you.

1) Concerns have been raised about the proposed test slant well that would be drilled on the Cemex property in North Marina. While in some ways this might be considered to be an ideal site for the production wells, it is predicted by hydro-geologic analysis to produce well water containing a measurable component of fresh water. Considerable opposition to the drilling of wells of any sort has developed in the Salinas Valley. This subject has long been a flash point as the basin is already overdrafted and the multi-billion dollar agricultural industry is fighting to prevent any further depletion of their essential water resources.

I_Dolan-01

The practical alternative to the wells is an open water intake. SWRCB and the California Coastal Commission (CCC) have a regulatory role on the acceptability of an open water intake. CCC has indicated that they will require that all subsurface options will need to be eliminated before they will accept an open water intake. I strongly recommend that shallow horizontal collectors and an open water intake be considered as alternatives to the slant wells for the North Marina project. Even the shallow horizontal collectors are not free from concern, as reports have been made of benthic freshwater seeps in the North Marina area. Any water in such seeps would be Salinas Valley groundwater. Furthermore, any reduction in such seeps would be likely to raise concerns of the marine biologists who study what might be rare, low-saline benthic communities.

I_Dolan-02

If the technical team analyzing the source water issue concludes, as I have, that it is a waste of time and money to drill test wells and fight legal battles with the ag community, then clearly expressing that opinion in the environmental documentation would be an enormous help in convincing CCC and others that we need to find the most environmentally safe location for an open water intake and stop spending time and money on subsurface options.

2) In the incredible event that some freshwater component is pumped from the Salinas Valley that is deemed acceptable but must be offset by excess production and retention within the valley, please consider sale of that water to the CalAm customers within the Toro basin, a tributary basin to the Salinas groundwater basin. I have suggested this to CalAm, but they rejected the idea

I_Dolan-03

27996 Mercurio Road, Carmel CA 93923

Tel: 831.622.9016

Roger J. Dolan

DATE

due to the length of pipe required and the fact that the Toro basin, which is indisputably overdrafted, has not been adjudicated. If and when it is adjudicated, or when all the wells run dry, there will be no other source of water available. These customers should pay full production cost for the water.



I_Dolan-03
(Con't)

3) To deal with the environmental consequence of the high energy demand of desal, I suggest that, wherever the desal plant is built, that the following non-standard combined cycle configuration be analyzed. Electrical energy could be produced by a gas turbine. Such turbines are typically around 25% efficient. The other 75% is discharged in the form of heat in the exhaust stream. This heat could be captured in a boiler that would feed a multiple effect flash evaporator that would develop a significant share of the product water. The product water or brine from MEFE could be used to warm the incoming water stream by means of a heat exchanger, further reducing the power requirements.



I_Dolan-04

Balancing the total water and total energy demand is a challenge that is well within the capability of established technology and it should produce a facility with the lowest possible life-cycle cost.

The only source of energy would be natural gas, a product that is predicted to have a relatively flat price projection and would be free of pricing complications like time-of-day pricing for power. Installation of solar panels that are widely recognized as being extremely cost-inefficient is fake solution to a problem that should be solved by reducing both cost and CO₂, hoping to make people feel good at considerable cost and no real benefit.



I_Dolan-05

DeepWater Desal claims to have the right of lower cost power by avoiding the PG&E grid for distribution. I hope that is true, but it will have to be evaluated by the analysts. If it is true, that will affect the applicability of this concept for that one option.

Thank you for the chance to make suggestions on the scope of the environmental documentation.

Very truly yours,

Roger J. Dolan

2 November 2012

Andrew Barnsdale
 California Public Utilities Commission
 c/o Environmental Science Associates
 550 Kearny Street, Suite 800
 San Francisco, CA 94108

Subj: Comments of Ken Ekelund concerning scoping of the EIR for the Monterey Peninsula Water Supply Project (Application A.12-04-019)

My name is Ken Ekelund. I am a resident of Monterey County and I sit on the Monterey County Water Resources Agency Board of Directors. I am writing these comments on my own behalf and my opinions are not necessarily those of the agency board.

I would like to provide two comments concerning the scoping of the EIR for the Monterey Peninsula Water Supply Project (Application A.12-04-019). The stakes are extremely high for Monterey Peninsula, which needs a secure and safe water supply. Both of my points and questions below go to the statement made by the Administrative Law Judge to measure many times and cut once. We cannot afford any further delays because we ran off again with a project that can't be built.

1. First Matter: Three competing projects to address Peninsula's water supply insecurity

Statement: In addition to the CalAm proposal, A.12-04-019, two other competing projects are being proposed. It is possible that these other projects may be found to be superior to the CalAm proposal because of environmental impacts or feasibility. I believe that it is important to point out that given the complications that might result from the CalAm project, I believe that it is critical all three projects that have been proposed should be thoroughly explored in the EIR. It is possible that some aspects of more than one of the project might find themselves into the final, approved project. Questions on water rights, open ocean intakes, outfalls, public ownership, etc. may lead to major changes in the proposed project. If these options are not sufficiently explored before the final project selection, the delays would be significant and could result in no project in place in time to meet the Cease and Desist Order.

I_Ekelund-01

Question: Will the proposed EIR for the Monterey Peninsula Water Supply Project study all aspects of the three proposed projects to address the Peninsula's water supply insecurity, so that if it is determined that an alternative project or a hybrid of existing proposals is superior to the CalAm proposal, we can still move ahead as quickly as possible?

2. Second Matter: Impacts of conflicting state and (possibly federal) agency policies and regulations, which have made a solution to date impossible to achieve.

I_Ekelund-02

Given the conflicting sets of instructions of several state (and possibly federal) agencies involved in the Peninsula's water crisis, it is critical that the EIR addresses this issue by

indicating which state or federal policies or regulations takes precedence over the other conflicting state or federal direction. It is my opinion that the CPUC will need to sit down with the State Water Resources Control Board, California Coastal Commission and possibly the State Lands Commission to work out the institutional barriers that must be addressed before we will have successful project. Locally, we have no way to resolve what are essentially conflicting inter-agencies directives and policies. If it is proven that the project cannot get water rights from the Salinas Valley Groundwater Basin, then some sort of alternative source water system, probably an ocean intake, would have to be approved before the project could move ahead. Up to now an open ocean intake has been assumed by many to be a “show-stopper”. Also, I understand that it is the policy of the Coastal Commission to prohibit private ownership of a desal facilities. Even though the CPUC has ruled that its authority supersedes the Monterey County ordinance concerning private ownership, the Coastal Commission may not permit the project for reasons not connected to the county ordinance. The National Marine Sanctuary or another federal agency may similarly make an open intake impossible to be permitted. Our local government has no power to resolve conflicts between different agencies at the state level or federal level. The Monterey Peninsula will need your help overcoming significant regulatory barriers to find a solution.

Question: Will the EIR discuss and recognize the existing conflicting regulatory environment and will alternative and/or options be included in the document that clearly state how the various conflicting regulations will be addressed to allow a project to move forward?

Thank you for your attention to this matter. I look forward to your responses.

Respectfully,

Ken Ekelund
35811 Highway 1
Monterey, CA 93940

I_Ekelund-02
(Con't)

Monterey CA
Nov. 7, 2012

Dear Sir,

My wife and I oppose the granting of a Certificate of Public Convenience and Necessity to the California American Water Company.

We prefer, as I believe the majority of the Cal Am rate payers, to have a publicly built owned, operated and maintained desal plant to meet our water needs.

Please keep us informed on this vital matter.

Thank you,

Manuel and Janine Fierro
461 Line Street
Monterey CA 93940

This matter pertains to the request by Cal Am on the application of (A. 12-04-019)

Manuel Fierro
Janine Fierro

I_Fierro-01

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: 10/24/12
 Name: MIKE FILLMON
 Affiliation: CARMEL, RESIDENT
 Address: 225 CROSSROADS BLVD.
150
CARMEL, CA 93923
 Email address: BMFillmon@aol.com

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

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Comment: FINALLY MAKING SOME SENSE OF THE PROJECT,
TIMELINE & PLAYERS. MEETING REPRESENTATIVE VERY
KNOWLEDGABLE & HELPFUL - PROJECT CONFIDENCE !!!
IMPROVING FOR ME.

From: razorharrod1@comcast.net
Sent: Thursday, November 08, 2012 10:57 AM
To: MPWSP-EIR
Cc: Harrod Jr, Ray
Subject: comments on water projects

To: Andrew Barnsdale,

My continued comment is that the size of any water project not only replace the lost Carmel River water, but add some additional water to any project size so that people who have lots of record can obtain a building permit and build their home.

We own a lot in the hills above Carmel and are on the Monterey County Water Resource Agency water "Wait List".

Our plans have been approved on a lot that was approved and recorded back in 1935, yet, because it was not built on and additional development was later approved, a water hookup moratorium is now in place.

Myself and the several dozen lot owners who are on the "wait list" would like any project being considered to produce enough additional water so that we can build our homes on our recorded lots of record.

Most of us have been on this list for several years and would like any water solution to consider the needs of all of us in this same situation.

Thank you for your consideration on this comment,

Ray M. Harrod Jr.

I_Harrod-01

From: Chris Herron [sparkysmom64@yahoo.com]
Sent: Wednesday, October 24, 2012 6:41 PM
To: MPWSP-EIR
Subject: Comments to the MPWSP NOP-EIR

Categories: Yellow Category

I live and own a well in North Monterey County.

My property is assessed under the Zone 2C.

I believe that the area in which I reside may be impacted by CalAm's proposed MPWSP basin extraction. Therefore, I request that the CPUC MPWSP EIR assess and report the following environmental impacts that were not addressed in the CPUC's EIR for the Regional Desalination Project:

Impact 1. Saltwater intrusion

Impact 2. Well levels

I_Herron-01

Thank you,
Chris Herron
80 1/2 Spring Point Rd
Elkhorn, CA 95012

Public Utilities Commission
505 Van Ness Avenue
San Francisco, California
94102-3298

Re: Monterey Peninsula
Water Supply Project.

Dear Commission:

Regarding the request by Cal Am to own the desal plant they propose to build and bill the cost to all of us ratepayers, I hope you do not allow this company to acquire ownership. They have not been very good stewards of OUR water. Recently there has been several instances where they have billed outrageous amounts and not been flexible enough to forgive a huge bill, which in some instances, licensed plumbers have searched and found no leaks. Over time they have demonstrated they are acting for their shareholders. Some of the high bills are the result of the tiers of usage and I ask you why do they get the increased amount to put in their coffers when it is legally OUR water. It seems as if the ratepayers should get any increase in monies that are a result of a customer going over his allotted rate. I do believe Cal Am makes enough profit.

I have included an article that gauls me and most of my friends. It involves the ??solution?? for road usage while Cal Am dismantles the Carmel dam. They are going to charge rate-payers for repair and refurbishment of a road that is about 40 miles longer for hauling away materials from the dam. Why? The main, legal road Cal Am has used since the dam was managed by them goes through a gated community of 60 people. In order to not disrupt 60 people's lives they are going around the community and instead, disrupting 2,000 people on this chosen road. This is going to cost taxpayers more and it shows disgusting favoritism to a small, privileged, well off community. It adds greatly to my distrust of this company and I hope you will investigate this and the claim for reimbursement they want for loss of revenue when they give a ratepayer a break when the water bill is outrageously and unaffordably too high for unknown reasons.

I_Holston-01

Please be fair and do the right thing with your votes.

Sincerely,

Christina W. Holston

Christina W. Holston

414 Granite Street
Pacific Grove, Ca 93950
831-646-1903



cc:
"Dam removal route running up the cost"
Self

Dam removal route running up the cost

By SARAH HAUSSERMANN

Guest commentary

San Clemente Dam is being removed in the name of the environment.

I support the removal. I do not support sending dam-removal construction traffic on the longest, most dangerous, most costly route, where it will impact 2,000 working-class and low-income people instead of 50 in the upper class, and where it will have the most significant environmental impact.

Yet that is what Cal Am plans to do. If you are a Cal Am customer, you ought to know what's going on, because you will foot the bill: \$105 extra each year for each household.

Cal Am dam-removal trucks will start their day in Salinas and drive the direct way to Carmel Valley Village. But instead of taking the direct route, onto San Clemente Drive, trucks will travel a circuitous and dangerous 20-mile route along East Carmel Valley Road, Tassajara Road and Cachagua Road, looping around to the back of the dam.

To make the "scenic route" work, existing roads will be extensively modified and a miles-long road will be built through scenic slopes. Thousands of oak trees will be hacked down to make that happen.

Cal Am has not calculated the cost of fuel and labor for sending trucks on the extra 40-mile round trip. So cost was not a factor in the decision-making process.

Nor was time a factor. The "scenic route" takes two hours. The direct route takes 30 minutes.

Given the mystifying lack of Cal Am cost figures and my own background in finance and the

problem.

About 50 residents live around San Clemente Drive in the gated subdivision called Sleepy Hollow, on the direct route to the dam. About 2,000 people live in Cachagua, along the scenic route, but nowhere near the dam.

You would think all this might have been factored into the environmental impact study, but it wasn't. Of course, it's 50 rich white people and 2,000 not-so-rich, not-so-white people.

Dam-removal traffic will affect everyone's daily lives in Cachagua. We are a remote community and Tassajara and Cachagua roads are our only means of ingress and egress. With so many people and businesses (wineries, Tassajara Hot Springs, contractors, etc.) out here, there is just no way to mitigate all the problems we'll have. Years of road work and construction traffic will have great impact on our time, our wallets, our level of stress and our safety.

In the next few weeks, Cal Am will negotiate with large businesses in Cachagua to compensate them for their financial losses, another uncalculated cost to be passed to ratepayers. But Cal Am stated emphatically at a recent meeting that us middle-class and low-income folks will not be compensated for our additional financial burden.

Drive the scenic route for yourself. It is often only one lane. It is miles of blind hairpin curves and potholes and is shared with bicycles. San Clemente Drive, which is much shorter, has vastly less traffic.

I have read the EIR and its supplements. Nowhere is there a

environmental industry, I ran the numbers for myself. Here's what I came up with: Cal Am customers will pay an estimated \$4.2 million extra to send dam-removal construction traffic on the scenic route for four years. Cal Am vehicles will drive more than a quarter of a million extra, unneeded miles.

Since 1921, when San Clemente Drive was used as part of the dam construction project, it has been the water company's exclusive means to access the dam. All types of vehicles have traveled that road. This includes large construction equipment. In 1972, heavy machinery was trucked in via San Clemente Drive to build an airstrip upstream of the dam.

San Clemente Dam has been heavily silted for 65 years and officials have been publicly mulling solutions to that problem since long before anyone started building houses on San Clemente Drive, about 25 years ago. Folks who bought those houses were aware of and could reasonably expect their road would be used to solve this

side-by-side comparison of the environmental impact or costs of using the alternate routes. There is no comparison of emissions or the impact on streams. No comparison of the number or type of trees to be removed. No comparison of the fossil fuels consumed. No comparison of the relative safety. Yet if the Monterey County Planning Commission gives Cal Am the green light on Oct. 31, Cal Am has its shovels ready and this project could be under way as soon as Nov. 1.

If this kind of illogical and unjust decision-making makes you as angry as it makes me, email the supervisors at cob@co.monterey.ca.us. Copy the 10 Monterey County planning commissioners at novom@co.monterey.ca.us.

Sarah Haussermann recently retired from a 25-year career in business and education that included five years as a financial analyst and three years in the environmental industry. She has lived in Cachagua for 15 years.



From: Hebard/Peggy Olsen [hebard@sonic.net]
Sent: Friday, October 19, 2012 4:43 PM
To: MPWSP-EIR
Subject: CEQA for CAL AM is missing 5 most important issues!

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Yellow Category

>1. Some mitigation is necessary when Cal Am has funds ,shown
 >in election to study replacing them, to survey the public to find out
 >what the public will support; but is unable to complete a project for
 >17 years! The PUC has allowed them to choose the most improbable
 >solutions taking water from Salinas basin which requires lawyers to
 >challenge it add 10% profit on it and charge the rate payers for
 >lawyers who do not generate water . The more the project costs the more
 >money Cal Am makes. That is not in the public interest of the
 >residents of the Peninsula! The mitigation would be for the PUC to
 >limit charging of lawyers to rate payers!

I_Olsen-01

>2. The PUC has taken charge of the health and safety issues for
 >which the county required a public partner without a way incase Cal Am
 >sells out to a company incapable of operating the system because they
 >ran into filter clogging etc problems from which they want to
 >bail out because it is not profitable! They could hamper efforts
 >of the county to find out what the problem is to solve it. The
 >mitigation would be to prevent Cal Am to in any way obstruct entering
 >their property to investigate or resolve the problem if the correct
 >quality and amount was not coming from the plant!

I_Olsen-02

> 3 It is likely a ship desalination plant could set down
 > anchor in Monterey Bay on short notice, because they can move to any
 >place needing water so do not loose their investment if not needed,
 >when it appears Cal AM is not going to meet the deadline. Permits
 >should be acquired to enable that event since it seems unlikely Cal
 >AM will meet that deadline based on the progress over the last 17
 >years! The PUC would not be serving the public interest of those on
 >the peninsula if these permits were opposed. It is more likely that
 >the Peoples desal plant in Moss landing would function before Cal AM's
 >,considering 17 years of lack of suscess , so that permit should be
 >sought also.

I_Olsen-03

>4. The consumed brine may be needed by certain organisms which
 >will be eliminated.

I_Olsen-05

>5. Evaluate the effect of pesticides down Salinas river on
 >quality of the water and fertilizers on growth of organisms on filters
 >in the plant.

I_Olsen-06

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



COMMENT FORM

California American Water Company (CalAm) Monterey Peninsula Water Supply Project

Date: 10/24/12
Name: Robert Siegfried
Affiliation: Carmel Area Wastewater District
Address: PO Box 1932
Carmel 93921
Email address: robsiegfried@gmail.com

Check here if you would NOT like to be added to the CEQA mailing list.

Privacy Notice: All information provided on this form will become part of the public record. Unless indicated by you otherwise, you will automatically be added to the CEQA mailing list. Please provide comments on the scope of the Environmental Impact Report for the Monterey Peninsula Water Supply Project in the space provided below. To submit your comments, please fax the completed comment form to (415) 896-0332, email it to MPWSP-EIR@esassoc.com, or mail it to the following address:

Attn: Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Comments should pertain to the scope of the Environmental Impact Report to be prepared for the MPWSP, including potentially significant environmental impacts, ways to mitigate those impacts, and feasible alternatives. All comments must be received by the CPUC no later than 5pm on November 9, 2012. PLEASE PRINT LEGIBLY.

Comment:

Permeate, or product, water quality is a parameter that affects project design and operation aspects, and one which will directly affect the amount of salt imported into the service area through landscape irrigation. The community has not yet been polled on the water quality they desire, nor given associated costs. Salts added to soils change a soils ability to provide ecosystem services. Added sodium ~~has an~~ strongly affects infiltration rates when irrigated with rain water. Consequently, EIR should consider effects of several water qualities on the hydrologic balance of the service area.

From: Bob Siegfried [robsiegfried@gmail.com]
Sent: Saturday, October 27, 2012 10:18 AM
To: MPWSP-EIR
Subject: scoping comment

Categories: Yellow Category

27 October 2012

Robert Siegfried
Carmel Area Wastewater District
PO Box 1932
robsiegfried@gmail.com

MPWSP-EIR:

I am filing this comment as a citizen not as a representative of CAWD, hence my personal address and email.

Production of potable water by desalination at the Carmel Area Wastewater District (CAWD) and distribution via the existing potable water conveyance system should be evaluated as a partial alternative in the CalAm MPWSP. Microfiltration and reverse osmosis facilities are in place and operating. Expansion and modification may be equal or less costly to fund because CAWD is a public agency. Concentrate currently produced from wastewater recycling is available for dilution¹ of the seawater concentrate.

I_Siegfried2-01

Subsidiary evaluations should consider whether to obligate CalAm to purchase water produced by CAWD or to direct CalAm to make available its distribution system for direct delivery of potable water to Carmel and Carmel Valley from CAWD. There are potential savings in energy consumption available from not having to pump water to Carmel, Carmel Valley and, perhaps, Pebble Beach from the proposed desal plant location.

¹Investigation of use of a portion of CAWD's concentrate for augmentation of the Carmel Lagoon is currently underway. Augmentation is not anticipated to use all of the concentrate. The cease and desist order (CDO) may render lagoon augmentation unnecessary. There is limited consensus that the CDO is insufficient to solve the problems of the Carmel River's health. In that case, adjudication is likely to be considered.

Regards,
Robert Siegfried

From: Bob Siegfried [robsiegfried@gmail.com]
Sent: Saturday, October 27, 2012 1:57 PM
To: MPWSP-EIR
Subject: Re: scoping comments (2nd ed. rev.)

Categories: Yellow Category

27 October 2012

Robert Siegfried
Carmel Area Wastewater District
PO Box 1932
robsiegfried@gmail.com

MPWSP-EIR:

I am filing these comments as a citizen not as a representative of CAWD, hence my personal address and email.

1. Addition of waters to the Seaside Aquifer that differ in temperature and in salt composition from the water with which the aquifer materials are in equilibrium will mobilize minerals from those materials. Mobilized minerals may be deleterious to water quality, and require further water treatment to protect human health. Estimates should be made of the requirements for further treatment of waters from the desal plant intended to be injected into and withdrawn from the aquifer. Minerals known to occur in the aquifer materials probably all have well documented stability diagrams available in the literature, which should facilitate analysis.

I_Siegfried3
-01

2. Reverse osmosis tends to produce water which contains a higher ratio of sodium to calcium compared to a parent water. There are statistical data sets in the literature showing differences in human mortality as a function of the sodium and calcium concentrations of drinking water. Proposed product water should be evaluated against available data sets from the U.S. and U.K., at least, to estimate possible effects on human health, and to require mitigating measures if necessary to achieve a high probability that the water will exceed beneficial health effects of existing water.

I_Siegfried3
-02

3. Boron is difficult to remove from sea water. ASR sources will provide dilution, but quantities from ASR will vary. Product water boron content and measures to dilute boron should be evaluated. Because high boron concentrations pose risks to human health and to vegetation, requirements should be put in place to make boron amelioration decisions transparent to the public and receptive to public governance.

I_Siegfried3
-03

4. Evaluation of #2 and #3 should account for potential decreases in flows to Monterey Regional resulting from increases in the cost of water. Plant design should be adaptable to expansion if necessary to compensate for reduced supplies from Monterey Regional.

I_Siegfried3
-04

5. Here follows a more formal statement of a comment I filed at the scoping meeting. The boundaries of the MPWSP project area should include the entire CalAm service area. Water from the project is likely to be distributed throughout the CalAm service area. This water is likely to have a salt balance differing from current water in that it may contain a higher proportion of sodium. Sodidity is highly injurious to soils' provision of ecosystem services, most especially during episodes of precipitation. Use of MPWSP product water for irrigation may retard infiltration of winter precipitation, create flashier streams and increase soil salt content. Increased soil salt content is highly injurious to *Sequoia sempervirens* (see "Solutions Project Report", <http://www.valleywater.org/programs/agriculture.aspx>, for soil and Sequoia impacts). Mitigation may consist of

I_Siegfried3
-05
I_Siegfried3
-06

adjusting the sodium adsorption ratio below 3.0.

Regards,
Robert Siegfried

November 15, 2012

Roy L. Thomas, DDS
26535 Carmel Rancho Blvd, 5A
Carmel, CA 93923

Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Association
550 Kearny Street, Suite 800
San Francisco, CA 94108

Dear Mr. Barnsdale,

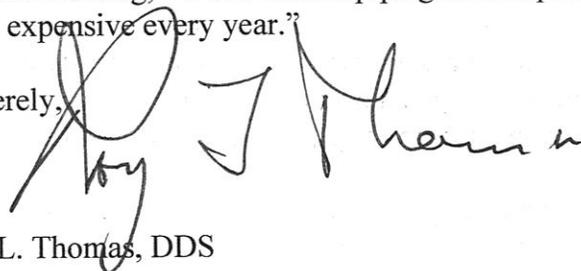
I would like to comment on the scope of the environmental analysis for MPWSP. The preliminary list of alternatives to the project left out the cheapest, most available and least environmentally damaging and most poorly reviewed alternative. The project is similar to Santa Barbara's connection to the Central Valley Water Project.

The San Felipe project today brings central valley water to Hollister. Farmers can buy this water for \$60/acre foot. Senator Feinstein authored a rider on a bill that allows farmers to sell central valley farm water to cities. There are plenty of willing sellers at prices much cheaper than desalination. Even though the peninsula did not join the San Felipe water project originally, there is still water saved for Watsonville farmers that is unused. There was a claim that the capacity of the huge pipe going through the mountains to San Luis Reservoir was at capacity. I doubt that to be true, but I'm sure the winter season capacity is nowhere near met. Water could be delivered to Seaside for A.S.R. input during winter months.

There is even a cheaper way to get central valley water to the peninsula. Water passing through the tunnel to San Luis Reservoir could be released as the tunnel daylight into the south fork of Pacheco Creek. The water for the peninsula could enhance the flow and habitat in Pacheco Creek and the Pajaro River and be reclaimed at Highway 1 near the ocean and then pumped to Cal-Am's proposed sources water pipe and to Seaside's A.S.R. injection wells.

There are plenty of willing sellers in the central valleys, and as one of the water engineers said at a public meeting, "Water from a pipe gets cheaper every year, while water from desalination gets more expensive every year."

Sincerely,



Roy L. Thomas, DDS