

Section 5.0 Recycled Water Development

5.0 Recycled Water Development

5.1 Regional Plans

MCWD is coordinating its recycled water plans with MCWRA and MCWD, in coordination with the MRWPCA as part of its Water Augmentation Project, is currently planning a transmission line through Marina, the Ord Community, and into the City of Monterey. MCWD would then build a recycled water distribution system to serve recycled water within the City of Marina and areas of the Ord Community. MRWPCA in coordination with MCWD will work with MPWMD and Cal-Am regarding recycled water deliveries for the Monterey Peninsula.

5.2 District Recycled Water Plans

MCWD and MRWPCA have recently evaluated two recycled water projects. The first was a 300 AF/Y recycled water project to serve the proposed City of Marina's Golf Course at the Marina Airport area and landscaping at the UCMBEST Center on a portion of the former Fort Ord. The remaining recycled water could be used for construction water use. This project was evaluated in a *Marina Airport Area Recycled Water Pipeline Project Facilities Plan Report November 2003*. MCWD certified an Environmental Impact Report to address the potential environmental effects of the construction of a pipeline to transmit recycled water from the SVRP to the Marina Airport area. Current projections by the City of Marina indicate that this project will not occur before 2010.

The second project evaluated was the Regional Urban Recycled Water Distribution Project (RUWWDP) (full scale recycled water alternative of the Water Augmentation Project). MCWD's *Regional Urban Water Augmentation Project EIR* included 1,727 AF/Y as the amount of water that could be provided under Phase I of the recycled water project. However, to take advantage of

recycled water available in winter when irrigation demands are low, additional water storage would have to be constructed. The storage would allow this water to be then available when irrigation demands are in excess of daily recycled water production during peak irrigation months of summer. Potential recycled water demand for the City of Marina and the former Fort Ord is shown in **Table 2-3**. Total annual recycled water demand is now estimated to be about 3,656 AF/Y by 2025. This is comparable to previous estimates in the 1996 Urban Water Management Plan update of 2,810 acre-feet, at 2020, based upon former Fort Ord development plans and other land use plans known at the time.

As directed by the FORA and MCWD Boards on June 10, 2005, MCWD will initiate scoping of the hybrid alternative, which includes a 1,500 AF/Y component of recycled water. This new source of water will augment limited supplies in Marina and the Ord Community and be an active component in the regional water augmentation project. This new source of water could also be used in the Monterey Peninsula, as identified in the RUWDUP and current planning documents by the California Public Utilities Commission. Extensive cooperation and coordination will be required among MCWD, MRWPCA, MCWRA, FORA, MPWMD and Cal-Am to address recycled water delivery issues on Ord Community lands and for the Monterey Peninsula in order to make the most efficient use of recycled water which may be made available.

Section 6.0 Urban Water Shortage Contingency Plan

6.0 Introduction and Background

This Water Shortage Contingency Plan is developed in compliance with California Water Code Section 10632. Requirements of subsections (a)-(i) are identified below and are accompanied by the required elements and information.

The Marina Coast Water District (MCWD) obtains all its groundwater from the Salinas Valley Groundwater Basin (SVGB). The SVGB is not adjudicated and provides water for growers, municipalities and other municipal and industrial uses in the Salinas Valley. Due to cumulative basin pumping, coastal aquifers are experiencing seawater intrusion. MCWD continues working with Monterey County Water Resources Agency (MCWRA) in developing plans to coordinate and encourage preservation of the SVGB aquifers by all municipal and agricultural users.

- **Systems Interconnection.** In 2005 MCWD will intertie its Central Marina and Ord Community water distribution systems. The intertie is driven by the immediate need to remove from service the Bayer Tank in Central Marina due to its poor structural condition. This intertie will enhance the robustness of both water distribution systems and provide each community an emergency, potable water source.
- **Regional Urban Water Supply Planning.** MCWD is an active participant in the regional urban water supply planning effort being led by the MCWRA. One possible regional project is the proposed desalination plant at Moss Landing. Project proponents include California-American Water Company, Pajaro/Sunny Mesa Water District, and the MCWRA. As planning for this project proceeds, MCWD will consider becoming directly involved as a water recipient.

Other coordinated efforts include the following:

- **Water Awareness Committee of Monterey County (WAC).** Representatives from several agencies throughout Monterey County work together coordinating

conservation and other water awareness efforts including education programs, information booths for special events and public understanding of Monterey County water challenges and opportunities.

California Water Code Section 10632(c) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies, including but not limited to, a regional power outage, an earthquake or other disaster.

The MCWD developed and adopted an Emergency Response Plan for emergency and disaster occurrences with guidelines and agreements for cooperative efforts with other State and local agencies, as required by the State Health Department. This Plan contains actions MCWD would initiate in the event of a catastrophic reduction in its water supply.

6.1 Stages of Action

California Water Code Section 10632(a) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply and an outline of specific water supply conditions which are applicable to each stage.

The MCWD developed a five-stage Water Conservation Plan that includes two voluntary and three mandatory stages.

Table 6-1

WATER CONSERVATION STAGES AND REDUCTION

<u>Stage</u>	<u>Demand Reduction Goal</u>	<u>Type Program</u>
Stage 1	10% reduction	Voluntary
Stage 2	15% reduction	Voluntary
Stage 3	25% reduction	Mandatory
Stage 4	35% reduction	Mandatory
Stage 5	50%+ reduction	Mandatory

Priorities for use of available water, based on California Water Code Chapter 3 are:

1. Health and Safety - interior residential and fire fighting
2. Commercial, Industrial, and Governmental - maintain jobs & economic base
3. Existing Landscaping - especially trees and shrubs
4. New Demand - projects without permits when shortage declared

California Water Code Section 10632(b) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.

This requirement is oriented toward water supply systems that are primarily supplied via surface waters and therefore can be directly affected by short-term fluctuations in hydrology i.e., drought conditions. MCWD's total current water supply is produced through groundwater pumping from the large SVGB. MCWD supply availability from this basin has not historically varied due to short-term hydrologic conditions. The minimum water supply available within the driest three-year sequence is expected to match demands as discussed in the Urban Water Management Plan.

CONSERVATION REQUIREMENTS AND APPEAL PROCEDURES

The following is MCWD's conservation requirements by customer type and stage and the appeals procedures. These requirements and procedures are adopted as part of MCWD's Water Shortage Contingency Plan.

Stage 1 Minimal Conservation Requirement: up to 10 percent -Voluntary Program

MCWD shall:

- notify all customers of the water shortage
- mail information to every customer and reasonably available potential water user explaining the importance of significant water use reductions
- provide technical information to customers on ways to improve water use efficiency
- conduct media campaign to remind consumers of the need to save water
- publicize the showerhead, toilet rebate and other efficiency programs
- enforce mandatory restrictions on water waste as provided in MCWD Code, Chapter 3

Stage 2 Moderate Conservation Requirement: >10-25 percent - Voluntary Program

In addition to the actions listed in Stage 1, MCWD shall call for voluntary reductions of up to 25% for each connection based on the average use during a base period proposed by the Water Conservation Commission and adopted by MCWD's Board of Directors.

Stage 3 Severe Conservation Requirement: >25 percent 35 percent - Mandatory Program

In addition to the actions listed in Stage 1 and 2, MCWD shall establish mandatory annual allotments for each connection based on the average use during a base period proposed by the Water Conservation Commission and adopted by MCWD's Board of Directors. When stage three use reduction becomes necessary, administration and enforcement of water conservation rules becomes the major focus of MCWD. If necessary, additional temporary personnel may be hired and special meetings of the Water Conservation Commission and /or Board of Directors may be scheduled.

1. Each water service connection shall receive an allotted quantity of water, typically specified in hundred cubic feet (hcf) units per billing cycle, as calculated by the Water Conservation Coordinator.
2. The Board of Directors may pass an emergency ordinance increasing the usage rate for potable water in order to ensure stable revenues for operation and maintenance of MCWD.
3. As individual customers are notified of allotments, it is expected that many requests for special consideration will be received. These petitions must be processed rapidly, efficiently and fairly. Every application for waiver must be heard, evaluated and acted upon by the Water Conservation Commission as rapidly as possible. Every action by the Water Conservation Commission shall be referred to MCWD's Board of Directors for consideration. The procedures for appeal are defined, below.
4. No building permits will be issued or meters installed for new accounts that had not received building permits before the "Severe Shortage" was declared.

Stage 4 Critical Conservation Requirement: >35-50 percent - Mandatory Program

In addition to the actions listed in the previous stages, MCWD shall establish allotments based upon a 35% -50% curtailment of water use. All new and previous appeals for waiver shall be evaluated by field audit and shall be reheard by the Water Conservation Commission, if necessary, upon recommendation of MCWD staff. Water rates may be increased by the Board of Directors.

Stage 5 Emergency Conservation Requirement: >50 percent - Mandatory Program

Appropriate 50% water shortage allotments shall be calculated and noticed to customers. Appropriate administration and enforcement of this stringent program shall be the highest priority of MCWD activity. All resources of MCWD will be directed toward improvement and increase of water supply to the system. Water rates may be further increased by the Board of Directors.

Appeals Procedure

1. Any person who wishes to appeal a customer classification or allotment shall do so in writing by using the forms provided by MCWD.
2. Appeals will be reviewed by the Water Conservation Coordinator and staff. Site visits may be scheduled if required.
3. A condition of granting an appeal shall be that all plumbing fixtures or irrigation systems be replaced or modified for maximum water conservation.
4. Examples of appeals that may be considered are as follows:
 - a. Substantial medical requirements.
 - b. Commercial/Industrial/Institutional accounts where any additional water supply reductions will result in unemployment or inappropriate hardship, after confirmation by the MCWD staff that the account has instituted all applicable water efficiency improvements.
5. In the event an appeal is requested for irrigation of trees or vegetation, MCWD staff may use the services of a qualified consultant in determining the validity of the request. Costs for such consulting services shall be paid by the party or parties making the request.
6. The Water Conservation Coordinator shall refer all appeals to the Water Conservation Commission. The Water Conservation Commission may refer appeals to MCWD's Board of Directors.

7. If the Water Conservation Commission and the applicant are unable to reach accord, then the appeal shall be heard by the MCWD Board of Directors, who will make the final determination.

8. All appeals shall be reported monthly to the Board as a part of the Water Supply Report.

6.2 Triggering Mechanisms

The SVGB is currently the most important source of water for MCWD. In 2004, the MCWD's groundwater withdrawals of about 4,606 acre-feet accounted for less than one percent of the estimated basin-wide annual extractions of roughly 550,000 acre-feet. Given this, MCWD conservation and contingency management activities can play only a small part within the SVGB. The foremost concern in developing appropriate triggers is achieving the maximum practical protection of an adequate long-term water supply of acceptable quality for MCWD customers. To that end, triggering mechanisms should be tied to factors that, directly or indirectly, have the greatest potential effect on the quality and quantity of available groundwater.

Two types of general threats could cause MCWD to reduce demands to its system: unanticipated catastrophic system failure due to an earthquake, terrorist attack or sudden contamination of water supply, or chronic system shortage due to seawater intrusion reaching water supply wells in concentrations such that those wells would have to be removed from service. In the case of a catastrophic failure, the MCWD would assess the nature and extent of the failure and the General Manager would identify the appropriate Conservation Stage in accordance with the expected level of water supply shortage. Should shortages be anticipated in amounts beyond fifty percent of normal demands, emergency actions will be taken in accordance with the MCWD's Emergency Response Plan, including enacting emergency ordinances as may be required by MCWD Board of Directors.

The chronic system threat to MCWD's present water supplies is seawater intrusion, which has occurred along the coastal margin of the Salinas Valley in response to historic overdrafting of the basin. Contamination from volatile organic compounds (VOCs) have also affected MCWD wells and could pose additional problems. Although seawater

intrusion has not yet affected the deep zone of the SVGB (which is the source of supply for Marina's— Well No.10, No.11, and No.12), it is possible that continued extractions in the 400' Aquifer could ultimately lead to contamination of these water supplies by seawater. MCWD monitors the rate of seawater intrusion and plans to develop alternative water resources, which would be insulated from intrusion. However, it is possible for intrusion to appear in a relatively short time span and reduce overall supplies available. Consequently, the MCWD structured its Water Shortage Contingency Plan with the primary goal of reducing water supply demands to allow time for alternative water supply measures, including the drilling of alternate wells in areas unaffected by intrusion and/or contamination. A specific triggering mechanism for various levels of conservation is tied to concentrations of chlorides in MCWD wells, and possibly concentrations of VOCs such as trichloroethylene (TCE) currently observed at low levels in Well No. 9 in Central Marina and Well No. 29 in the Ord Community. Chloride concentration is directly related to the seawater intrusion problem, and both parameters (chloride and VOCs) are related to the overall basin viability as a secure source of water supply.

Chloride concentrations, which are the proposed trigger for the most advanced stages of conservation, are also a key indicator of water quality degradation due to seawater intrusion. Tests for statistically significant changes in chloride concentrations assist in the detection of the earliest stages of intrusion and are appropriate indicators of a water supply emergency. In addition, MCWD currently monitors its Ord Community wells for the presence of TCE and other organic compounds, and works with the US Army regarding the Army's groundwater cleanup actions in the Ord Community. MCWD is currently retiring Well No. 9 in Central Marina.

PROPOSED TRIGGERING MECHANISMS FOR CONSERVATION STAGES

Triggering Mechanisms

These Triggering mechanisms shall be interpreted as guidelines and are summarized in **Table 6-2**. The General Manager and/or Board of Directors may impose any of the following conservation stages based upon facts and circumstances which may not have been otherwise anticipated in this plan.

Table 6-2 Conservation Level Triggering Mechanisms

Conservation Stage and Shortage Level	Triggering Mechanism
Stage One – 0-10% - Voluntary	<ol style="list-style-type: none"> 1) system malfunction resulting in up to 10% shortage 2) increase in chlorides which do not threaten to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending
Stage Two - >10-25% - Voluntary	<ol style="list-style-type: none"> 1) system malfunction resulting in greater than 10% shortage 2) increase in chlorides which may threaten to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending
Stage Three – >25-35% - Mandatory	<ol style="list-style-type: none"> 1) system malfunction resulting in greater than 25% shortage 2) increase in chlorides which are expected to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending or when remaining capacity is reduced by up to 25%
Stage Four >35-50% - Mandatory	<ol style="list-style-type: none"> 1) system malfunction resulting in greater than 35% shortage 2) increase in chlorides which are expected to exceed drinking water quality standard 3) increase in VOC concentrations which do not threaten to exceed standards with blending or when remaining capacity is reduced more than 35%
Stage Five - >50% - Mandatory	<ol style="list-style-type: none"> 1) system malfunction resulting in greater than 50% shortage 2) increase in chlorides which may threaten to exceed drinking water quality standard 4) increase in VOC concentrations which do not threaten to exceed standards or when remaining capacity is reduced more than 50%

STAGE 1: Up to 10% - Voluntary

Stage 1 conservation savings may be called as a result of malfunction of all or portions

Adopted by MCWD Board of Directors 5-25-05

of the water system that reduces supplies by up to 10% on a daily, peak seasonal or annual basis. It also may be called due to prolonged drought conditions and a need to focus public attention on water conservation.

Further triggering could also be based on:

- 1) detection of a statistically significant increase in chloride concentrations but where such concentrations do not threaten to exceed the CA DHS "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question.
- 2) detection of a statistically significant increase in VOC concentrations but where such concentrations do not threaten to exceed the primary drinking water maximum contaminant level (MCL) for each VOC at the well(s) in question and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards.

STAGE 2: >10% - 25% -Voluntary

Stage 2 conservation savings may be called upon due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 10% on a daily, peak seasonal or annual basis.

Further triggering could also be based on:

- 1) detection of a statistically significant increase in chloride concentrations where such concentrations may threaten to exceed the CA DHS "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or
- 2) detection of a statistically significant increase in VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC at the well(s) in question and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards.

STAGE 3: >25% - 35% - Mandatory

Stage 3 conservation savings may be called for due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 25% on a daily, peak seasonal or annual basis.

Further triggering could also be based on:

- 1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the CA DHS "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l at the well(s) in question, or
- 2) detection of VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and/or blending of this supply with other well supplies cannot maintain a distribution system concentration(s) below these standards, and/or when gross reduced well production of up to 25% is necessary to maintain adequate water quality.

STAGE 4: >35% - 50% - Mandatory

Stage 4 conservation savings may be called for due to malfunction or failure of all or portions of the water system that reduces supplies by greater than 35% on a daily, peak seasonal or annual basis.

Further triggering could also be based on:

- 1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the CA DHS "Upper Level" secondary (aesthetics) drinking water standard currently set at 500 mg/l

at the well(s) in question, or

- 2) detection of VOC concentrations, but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and/or blending of this supply with other well supplies cannot maintain a supply within the applicable standard, and/or gross reduced well production of up to 35% is necessary to maintain adequate water quality.

STAGE 5: >50% - Mandatory

Stage 5 conservation savings may be called for due to in malfunction or failure of all or portions of the water system that reduces supplies by 50 % or more on a daily, peak seasonal or annual basis.

Further triggering could also be based on:

- 1) detection of an increase in chloride concentrations where such concentrations are expected to exceed the short term primary drinking water standard of 600 mg/l at the well(s) in question, or
- 2) detection of VOC concentrations but where such concentrations do not threaten to exceed the primary drinking water MCL for each VOC, and blending of this supply with other well supplies cannot maintain a supply within the applicable standard, and/or gross reduced well production of over 50% is necessary to maintain adequate water quality.

6.4 Mandatory Prohibitions on Water Use

California Water Code Section 10632(d). Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning. Section 10632(e) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.

The MCWD adopted a "Water Waste/Water Conservation" Ordinance (Ordinance No. 20) in April 1990, which prohibits water waste and promotes water conservation. Since the initial adoption, revisions were adopted by the Board of Directors on 14 April 1992 and 4 October 1993. The ordinance has most recently been revised on 25 May 2005 and now appears as Chapter 3.36 of MCWD Code. Section 3.36.030, Mandatory Restrictions on Water Waste, details the applicable prohibitions of use. These prohibitions are in force at all times. Additional water use reduction methods available to water users or MCWD to adopt in order to comply with use reductions during the more restrictive stages of water shortages (Stages 4 and 5) include but are not limited to the following:

- a) elimination of turf irrigation with potable supplies
- b) restriction of landscape watering to shrubs and trees by hand or drip irrigation only
- c) elimination of vehicle washing except in car washes that have water recirculation systems
- d) prohibition on filling or topping off of swimming pools where damage to pumping equipment will not result
- e) elimination of water served in food service establishments unless requested
- f) elimination of the issuance of construction meters
- g) shut-off of dedicated landscape irrigation meters
- h) moratorium on provision of new supply meters

If water use reductions called for in Stages 3-5 are not achieved, the MCWD may amend this Water Shortage Contingency Plan to make any of the above available conservation

tactics mandatory.

6.5 Penalties or Charges For Excessive Uses

California Water Code Section 10632(f) Penalties or charges/or excessive use.

Section 3.36.050 of MCWD Code provides for a system of violations and notices. Violation of provisions of this Water Shortage Contingency Plan shall be enforced under Section 3.36.050 of MCWD Code.

6.6 Revenue and Expenditure Impacts

California Water Code Section 10632(g) – An analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.

Enforcement of the water shortage contingency plan is assumed to be covered by enhance revenues due to application of excess use charges and penalties. MCWD reserves may be utilized temporarily should revenues remain below expectations. MCWD's rate structure is based upon adopted rate ranges and allows for modification of rates on short notice within those ranges. MCWD retains the ability to modify rates to meet all legitimate MCWD needs. Revenue impacts from water sales losses are estimated as follows based upon marginal commodity rates of \$2.81/hcf and recognizing approximately 40% of MCWD's supplies are not metered as of 2005.

6.7 Water Shortage Contingency Plan Implementation

California Water Code Section 10632 (h) A draft water shortage contingency resolution or ordinance.

MCWD Board of Directors adopted this Water Shortage Contingency Plan in Resolution No. 2005-31, which enables implementation of the Plan upon advice of staff based in part on the triggering mechanisms discussed herein.

**Table 6-3
Potential Revenue Impacts of Implementation of Water Shortage Contingency Plan**

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Assumed Reduction	10 percent	20 percent	30 percent	40 percent	50 percent
Water Sales Loss	\$ (321,135)	\$ (642,270)	\$ (963,404)	\$ (1,284,539)	\$ (1,605,674)
<u>Revenue Source</u>					
Pumping Savings at \$135/af	\$ 35,411	\$ 70,821	\$ 106,232	\$ 141,642	\$ 177,053
Net Revenue Reduction	\$ (285,724)	\$ (571,449)	\$ (857,173)	\$ (1,142,897)	\$ (1,428,622)
Percent of Total Annual water System Revenue Loss	5%	10%	16%	21%	26%

6.8 Water Use Monitoring Procedures

California Water Code Section 10632 (i) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency plan.

Normal Monitoring Procedure

In normal water supply conditions, production figures are recorded daily by MCWD O&M personnel. Totals are reported monthly to the Water Conservation Coordinator and Water Quality Manager. Production figures are reported in the Annual Report to the Drinking Water Program, which is submitted to the California Department of Health Services each year.

Stage 1 and 2 Water Shortages

During a Stage 1 or 2 water shortage, daily production figures will be reported to the O&M Superintendent and Water Conservation Coordinator. The Water Conservation Coordinator compares the weekly production to the target weekly production to verify that the reduction goal is being met. Monthly reports are forwarded to the General Manager, the Water Conservation Commission and the MCWD Board of Directors. If

Adopted by MCWD Board of Directors 5-25-05

reduction goals are not met, the General Manager may notify the Board of Directors so that corrective action can be taken.

Stage 3 and 4 Water Shortages

During a Stage 3 or 4 water shortage, the procedure listed above will be followed, with the addition of a daily production report to the General Manager and weekly reports to the Water Conservation Commission and Board of Directors. Special meetings may be called for administration of the Water Shortage Contingency Plan.

Stage 5

During a Stage 5 shortage, production figures will be reported to the O&M Superintendent hourly, and to the General Manager and the Water Conservation Coordinator daily. Reports will also be provided to MCWD's Board of Directors, the Monterey County Office of Emergency Services, and land use jurisdictions located within MCWD's service territory.

Section 7.0 References

Agency for Toxic Substances and Disease Registry Division of Health Assessment and Consultation, Public Health Assessment Fort Ord Marina, Monterey County, California. September 24, 1996.

California Urban Water Conservation Council. BMP Costs and Savings Study. 2003

Denise Duffy & Associates in association with RBF Consulting, Draft Environmental Impact Report Regional Urban Water Augmentation Project. June 2004.

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Fort Ord Reuse Authority. Reuse Plan EIR. 1997

Mactec Engineering and Consulting Inc., Former Fort Ord Environmental Cleanup. Fortordcleanup.com. 2005

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Monterey County Water Resources Agency. Annexation Agreement and Groundwater Mitigation Framework For Marina Area Lands (1996), document recorded in the Office of the Monterey County Recorder on August 7, 1996, at Reel 3404 Page 749

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RBF Consulting, Regional Urban Recycled Water Distribution Project. 2003

Wright, Deep Aquifer Investigative Study, May, 2003

APPENDIX I

**RESOLUTION ADOPTING THE WATER SHORTAGE
CONTINGENCY ANALYSIS AND PLAN**

**Resolution No. 2005-31
Resolution of the Board of Directors
Marina Coast Water District
Authorizing the Approval of a Water Shortage Contingency Plan**

May 25, 2005

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("District"), at a regular meeting duly called and held on May 25, 2005 at the business office of the District, 11 Reservation Road, Marina, California as follows:

WHEREAS, Section 10632 of the California Water Code requires the Marina Coast Water District to maintain a water shortage contingency analysis within its Urban Water Management Plan; and,

WHEREAS, the District maintains a Water Shortage Contingency Plan and desires to update said plan to conform to the current Water Code and provide a guidance document for management of water shortages within the MCWD; and,

WHEREAS, the District posted notice of its intent to modify its Water Shortage Contingency Plan and offered opportunity for public comment on the intended modifications.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Marina Coast Water District as follows:

1. The Water Shortage Contingency Analysis and Plan is hereby adopted and ordered to be filed with the California Department of Water Resources included in the District's 2005 Urban Water Management Plan.
2. The General Manager shall recommend to the Board of Directors regarding additional procedures, rules, and regulations to carry out the effective and equitable allocation of water resources during a water shortage.

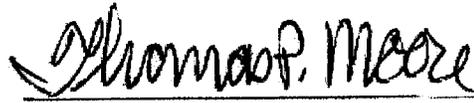
PASSED AND ADOPTED on May 25, 2005, by the Board of Directors of the Marina Coast Water District by the following roll call vote:

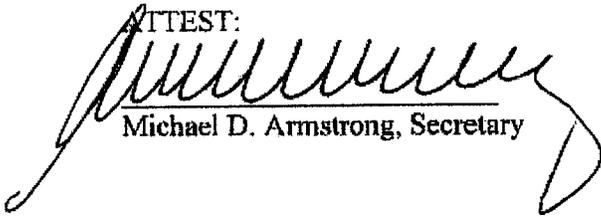
Ayes: Directors Nishi, Scholl, Gustafson, Brown, Moore

Noes: Directors None

Absent: Directors None

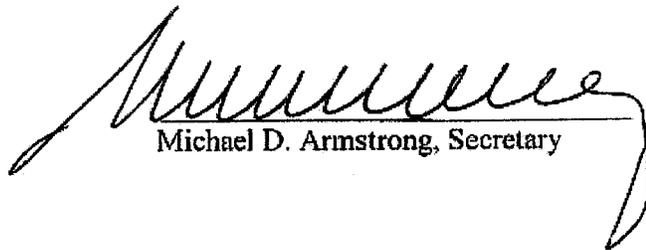
Abstained: Directors None


Thomas P. Moore, President

ATTEST:

Michael D. Armstrong, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2005-31 adopted May 25, 2005.


Michael D. Armstrong, Secretary

Appendix 2
Land Use Forecast and Water Demand Projections by
Jurisdiction

**LAND USE DATA FOR MCWD 2004 URBAN WATER MANAGEMENT PLAN
UPDATE, Revised 06/21/04**

Number of New Units or Square Footage by Land Use - City of Marina					
	2005	2010	2015	2020	2025
Land Use- Residential¹					
Residential- Low Density (<4 du's /acre), (DU)	360 ²	133 ³	50 ⁴	0	0
Single Family Residential (5 - 8 DU's /acre)	298 ³	778 ⁶	250 ⁷	0	0
Residential Moderate Density (8 - 15 du's /acre), (DU)	126 ⁸	1,286 ⁹	100 ¹⁰	0	0
Multi-family Residential (DU) > 15 du's/acre	25 ¹¹	535 ¹²	179 ¹³	100 ¹⁴	60 ¹⁵
Total Housing Units	809	2,732	579	100	60
Land Use - Commercial					
Hotel/Motel (rooms) (excluding MBEST)	0	650	400	0	0
Retail/Service (sq ft), includes new restaurants	10,000	741,300 ¹⁶	96,000 ¹⁷	46,000 ¹⁸	0
Office / R&D (sq ft) (excluding MBEST R & D)	0	249,000 ¹⁹	445,000 ²⁰	0	0
Other Commercial (sq ft) (i.e., Cypress Knolls)	0	60,000	60,000	0	0
Total Commercial sq. ft.	10,000	1,050,300	601,000	46,000	0
Land Use - Industrial and Other (Sq Ft)					
Light Industrial (sq ft)	0	430,000 ²¹	630,000	520,000	0
Governmental (sq ft)—Library, MST Transit Center, Fort Ord Fire Substation	0	40,000	0	0	0
Institutional (sq. ft.)—churches, Cypress Knolls Senior Center	0	21,000	5,000	5,000	0
Schools (K-12) (sq ft) ²²	0	34,160	77,760 ²³	110,500	0
Higher Education (excluding CSUMB) (sq ft) - MPC ²⁴	???	???	0	0	0
Landscape (acres) (open space, improved) ²⁵	3 ²⁶	37 ²⁷	15 ²⁸	14 ²⁹	0
Turf (ball fields, golf courses) (acres)	5 ³⁰	5 ³¹	173 ³²	16 ³³	0
Total Industrial and Other sq. ft.					

¹ Derived from AMBAG 2004 Population and Employment Forecast for City of Marina; data adjusted to exclude CSUMB and UCMBEST proposed housing and housing already constructed in the City -e.g., Abrams B and Monterey Meadows, to incorporate the 60 bed assisted living facility in Cypress Knolls as residential units, and to reflect the most current known status of major projects in Marina with respect to number of units, commercial square footage and phasing (e.g., the 1,237 units anticipated for University Villages).

² Includes 300 Cypress Knolls duplex units and 60 Marina Heights estate units.

³ 108 Cypress Knolls duplex units; 25 Marina Heights estate units.

⁴ 50 units—Armstrong Ranch.

⁵ Includes 265 Marina Heights single-family homes; the remainder would be transitional housing in former Fort Ord and new homes in Central Marina.

⁶ Includes 410 Marina Heights units and 368 Armstrong Ranch units.

⁷ 250 units—Armstrong Ranch.

⁸ 26 units—Central Marina; 100 Marina Heights town home and cottage units.

⁹ Includes 952 University Village units, 190 Marina Heights town home and cottage units and 144 Armstrong Ranch units.

¹⁰ Armstrong Ranch.

¹¹ Infill—Central Marina.

¹² Includes 72 new apartment units and 60 bed assisted living facility (each bed counted as one unit) for Cypress Knolls, 285 University Villages apartment and town house units and 100 Armstrong Ranch units.

¹³ 91 units—Central Marina; 88 units—Armstrong Ranch.

¹⁴ Central Marina infill.

¹⁵ Central Marina infill.

¹⁶ 582,000 square feet in University Villages; 123,300 square feet in Armstrong Ranch.

¹⁷ 50,000 square feet in Armstrong Ranch; 46,000 square feet in Central Marina.

¹⁸ Central Marina.

¹⁹ University Village

²⁰ University Village

²¹ 1.58 million square feet of light industrial use projected: 830,000 square feet in the Airport; 750,000 square feet on Armstrong Ranch.

²² Square footage based upon the State Education standards of 55 square feet per student for K through 6th grades, 75 square feet per student for 7th and 8th grade levels, and 85 square feet per student for high school students.

Approximately 1,740 elementary school age students, including 600 students from CSUMB and MBEST residential projects, 581 middle school age students (6th & 7th grade levels) and 1,300 high school students are projected based upon residential development levels projected herein and in the Marina vicinity. For purpose of these development projections, it is assumed that existing Marina elementary schools can accommodate up to 500 additional students.

²³ New elementary school and new middle school.

²⁴ An e-mail request was sent to MPC on 05/28/04 for information concerning its development projections.

Requested information has not yet been received.

²⁵ Landscaping and park turf equivalent to roughly one-half of the total acreage of improved parkland. A total of 133 acres of parkland projected through 2020, including: 7 acres of neighborhood parks for Marina Heights; the 22 acre Abrams Community Park and 27 acre site currently used as Equestrian Center; 23 acres of recreational conveyances in University Villages including the 19 acre Sports Complex; 35 acres of neighborhood parks and greenbelt in University Villages; and approximately 16 acres of parkland in Armstrong Ranch. *Landscaping/turf for the new MPC Satellite Campus is NOT included in acreage.*

²⁶ Landscaping associated with new library, Cypress Knolls (total of 3 acres of estimated parkland and landscaping; 2 acres included in table) and other smaller projects in Central Marina. See Footnote #23.

²⁷ Landscaping and park turf and turf associated with improvement of the Marina Heights park sites, 23 acres of recreational conveyances in University Villages, 35 acres of neighborhood parks and greenbelt in University Villages, and 8 acres of parkland in Armstrong Ranch.

²⁸ See Footnote #25. Consists of 4.0 acres of landscaping and turf (i.e., ½ of 8 acres total) in Armstrong Ranch; 11 acres of landscaping and turf as part of improvement of the Abrams Community Park (i.e., ½ of 22 acres total).

²⁹ See Footnote #25. Improvement of Equestrian Center site for park use.

³⁰ Play fields for new elementary school.

³¹ Play fields for new elementary school.

³² 8 acres of ball and play fields for new middle school; 165 acre golf course at Airport Resort.

³³ Sports fields for new high school.

52 1/2 48 1/2

24
25
8
66

Development Program Inputs Include: University Villages, Marina Heights, Cypress Knolls, Airport Business Park, and the Golf Course / Resort Hotel.

Land Use - Residential	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Single Family - Low Density (<4/acre), (DU)	0	0	19	49	85	85	85	85	85	85	85
Single Family Residence (6 - 8 DU/acre)	0	233	566	972	1,417	1,771	1,771	1,771	1,771	1,771	1,771
Single Family - High Density (8/acre), (DU)	0	0	45	134	209	243	243	243	243	243	243
Multi-Unit Residential (DU)	0	135	427	646	832	900	960	960	960	960	960
Total Housing Units	0	368	1,057	1,801	2,543	2,999	3,059	3,059	3,059	3,059	3,059
Land Use - Commercial											
Hotel/Motel (rooms)	0	0	100	500	500	500	850	850	850	850	850
Restaurants (sq ft)	0	0	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000	52,000
Retail/Service (sq ft)	0	0	555,100	591,300	614,300	614,300	614,300	614,300	614,300	614,300	614,300
Office / R&D (sq ft)	0	0	30,000	149,500	269,000	527,020	944,040	1,202,060	1,693,080	1,951,100	1,951,100
Other Commercial (sq ft)	0	0	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Total Commercial sq. ft.											
Land Use - Industrial and Other (Sq Ft)											
Industrial (sq ft)	0	0	0	0	0	150,000	300,000	450,000	600,000	750,000	750,000
Governmental (sq ft) ¹	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Institutional (sq. ft.) ¹	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Schools (K-12) (sq ft) ¹	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Higher Education (sq ft) ¹	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Landscape (acres) (Open space, improved) ²	0	16	30	48	61	78	78	78	78	78	92
Turf (Ball fields, golf courses) (acres) ²	0	2	14	24	31	255	255	255	255	255	269
Total Industrial and Other sq. ft.	0	0	0	0	0	150,000	300,000	450,000	600,000	750,000	750,000

Notes:

¹ KMA has insufficient information available to estimate square footages for these facilities.

² Excluding 19.3 acres in artificial turf for the University Village PBC parcels and excluding any turf or landscaping that may be associated with public facilities including governmental, institutional, roadway medians / parkways.

TABLE W-1: CUMULATIVE CSUMB POTABLE CONSUMPTIONS AND PROJECTED WATER DEMANDS COMPARED TO TARGET WATER USE WITH MITIGATION MEASURES - DRAFT Byron Buck and Associates amendments

EXISTING CSUMB CONSUMPTION FOR 2003	BASIS OF DEMAND	CURRENT			ESTIMATED		
		MCWVD	ESTIMATED	DEMAND (AFY)	MITIGATION MEASURE	ESTIMATED IMMEDIATE DEMAND	CSUMB ESTIMATED CURRENT DEMAND (AFY)
Usage Area							
Main Campus	Metered	61	0	61			
Campus Housing	Metered	20	0	20			
Main Campus Irrigation	Metered	30	0	30			
East Campus Housing	Estimated Demand by MCWVD based on 0.33 afy/unit x 1,196 units	375	23	352	8 - Metering will show units have benchmark demands in range of 0.25 afy/unit		
East Campus Irrigation*	Estimated Demand by MCWVD based on 2.5 afy/acre	67	20	47	d - Additional 7.9 acres of area to be removed from irrigation during metering project		
Total Estimated Consumption for 2003		653		510			

* Estimated demand for irrigation areas has historically been reported to be 14.3 afy, assuming 57.2 acres of CSUMB land is irrigated. Recent CSUMB irrigation audit indicates only 28.6 acres is served by the existing irrigation system, which is 15.3 acres of main parks & 11.3 acres of minor parks.

CSUMB Allocation of Potable Water By FORA (AFY)	1035	CSUMB Allocation of Potable Water By FORA (AFY)	1035
CSUMB Requested Reserve (AFY)	40	CSUMB Requested Reserve (AFY)	40
Surplus (Deficit) Allocation Available to Existing CSUMB (AFY)	442	Surplus (Deficit) Allocation Available to Existing CSUMB (AFY)	485

ESTIMATED CSUMB CONSUMPTION REDUCTIONS FOR EXISTING CONDITIONS	MITIGATION MEASURES?	ESTIMATED DEMAND REDUCTION BY 2015		CSUMB TARGET DEMAND BY 2015
		2015	2016	
Usage Area				
Main Campus	d	0	0	61
Campus Housing	d	0	0	20
Main Campus Irrigation	b, c, d	30	36	0
East Campus Housing	d	47	0	317
East Campus Irrigation	d	112	112	0
Total Consumption for 2003				398
Future Surplus (Deficit) Allocation Available to CSUMB with Mitigation Measures to Existing Consumption (AFY)				597

TABLE W-1: CUMULATIVE CSUMB POTABLE CONSUMPTIONS AND PROJECTED WATER DEMANDS COMPARED TO TARGET WATER USE WITH MITIGATION MEASURES - DRAFT Byron Buck and Associates amendments

CSUMB DEVELOPMENT WATER USAGE PROJECTIONS		BASIS OF DEMAND		ESTIMATED DEMAND (AFY)		MITIGATION MEASURES ²		ESTIMATED DEMAND REDUCTION BY 2015		CSUMB TARGET DEMAND BY 2015	
<i>Continued</i>											
2003 and Current Academic Development Projects											
Science Academic Center	68,000 s.f. @ 0.0001-AFY/s.f.	7		0							7
Dorm Building 211 Renovation	70 rooms @ 0.06AFY/room (MPY/MID)	4		0							4
Aquatic Center	Developed in CSUMB Master Plan from CSU Monterey Bay Aquatic Center Feasibility Study, April 2004	5		0							5
North Quad Housing	558 rooms @ 0.06-AFY/room (MPY/MID)	33		0							33
Visitor Center	12,500 s.f. @ 0.00012-AFY/s.f.	2		0							2
Library w/Office & Café	200,000 s.f. @ 0.00012-AFY/s.f.	24		0							24
Subtotal for 2003 and Current Academic Development Projects		76		0							75
Surplus (Deficit) Allocation Available to CSUMB w/Current Academic Development Projects (AFY)		367								522	
CSUMB DEVELOPMENT WATER USAGE PROJECTIONS											
Planning Horizon I (Academic year 2005-2015)											
Academic Development Projects from 2005 to 2015											
Academic Building II	70,000 s.f. @ 0.0001-AFY/s.f.	7		0							7
Student Union (Meeting Hall)	80,000 s.f. @ 0.0001-AFY/s.f.	8		0							8
Dining Commons	20,000 s.f. @ 0.0002-AFY/s.f. (MPY/MID)	4		0							4
Academic Building III	70,000 s.f. @ 0.0001-AFY/s.f.	7		0							7
Academic Building IV	70,000 s.f. @ 0.0001-AFY/s.f.	7		0							7
Academic Building V	70,000 s.f. @ 0.0001-AFY/s.f.	7		0							7
Panetta Institute	20,000 s.f. @ 0.0001-AFY/s.f.	2		0							2
IT/Tech Center	30,000 s.f. @ 0.0001-AFY/s.f.	4		0							4
Child Care Center	15,000 s.f. x 15 children/1000 s.f. @ 0.0072-AFY/child	2		0							2
Student Housing	824 rooms @ 0.06-AFY/room (MPY/MID)	55		0							55

TABLE W-1: CUMULATIVE CUMUL POTABLE CONSUMPTIONS AND PROJECTED WATER DEMANDS COMPARED TO TARGET WATER USE WITH MITIGATION MEASURES - DRAFT Byron Buck and Associates amendments

Project Description	Continued from Academic Development Projects from 2005 to 2015	
	2015	2016
Big 12 Renovation	5,600 s.f. @ 0.0001 AFY/s.f.	1
Big 12 Renovation	7,900 s.f. @ 0.0001 AFY/s.f.	1
Administrative/Student Building	26,000 s.f. @ 0.0001 AFY/s.f.	3
Landscape Irrigable Area Demand	Estimated Demand Per Monterey County	36
Additional Partnership	60,000 s.f. @ 0.0001 AFY/s.f.	6
COOPER Plant	No artificial water demand	0
Subtotal for Academic Development Projects to Year 2015		148
Surplus (Deficit) Allocation Available to CSUMB w/Academic Development Projects to Year 2015 (AFY)		216
		406

Planning Horizon I (Academic Year 2006-2016) continued

Project Description	AFY/Unit	Units	Category	2015	2016
New Term North Campus Housing					
Apartments (175)	0.23 AFY/Unit	40	b, c, d	0	40
Bungalow Courts (36)	0.26 AFY/Unit	9	b, c, d	0	9
Forrentones (78)	0.26 AFY/Unit	20	b, c, d	0	20
Small Single Family (150)	0.33 AFY/Unit	80	b, c, d	0	80
Large Single Family (53)	0.35 AFY/Unit	19	b, c, d	0	19
Arbiters, Parks & Swimming Pool	3.5 acres @ 2.5 AFY/acre + 2 AFY/pool	11	d	9	2
Subtotal for Faculty Staff Housing Projects to Year 2016		147		9	138
Surplus (Deficit) Allocation Available to CSUMB w/Academic Development Projects to Year 2016 & Faculty Staff Housing Projects to Year 2016 (AFY)		72			271

Other Planning Horizon I Faculty Staff Housing Projects to Year 2016

Project Description	AFY/Unit	Units	Category	2015	2016
633 unit-Product not established. Estimate average demand equal @0.26 AFY/unit		183	b, c, d	27	109
Subtotal for Other Faculty Staff Housing Projects to Year 2016		183		27	109
Surplus (Deficit) Allocation Available to CSUMB w/Academic Development Projects and all Faculty Staff Housing Projects to Year 2016 (AFY)		162			168

TABLE W-1: CUMULATIVE CSUMB POTABLE CONSUMPTIONS AND PROJECTED WATER DEMANDS COMPARED TO TARGET WATER USE WITH MITIGATION MEASURES - DRAFT Byron Buck and Associates amendments

CSUMB DEVELOPMENT WATER USAGE PROJECTIONS	BASIS OF DEMAND ¹	ESTIMATED DEMAND (AFY)	MITIGATION MEASURES ²	ESTIMATED DEMAND REDUCTION BY 2025	CSUMB TARGET DEMAND BY 2025	Continued	
Planning Horizon II (Academic Year 2015-2025)							
Academic Building VI	60,000 s.f. @ 0.0001 AFY/s.f.	5		0	5		
Academic Building VII	50,000 s.f. @ 0.0001 AFY/s.f.	5		0	5		
Multi-purpose Varsity Sports Center	50,000 s.f. @ 0.0002 AFY/s.f.	10		0	10		
Student Housing	462 rooms @ 0.08 AFY/room (APR/VMD)	28		0	28		
New Administrative Building	35,000 s.f. @ 0.0001 AFY/s.f.	4		0	4		
Neidum Complex	50 m x 25 yd. Pool	10	d	15	0	10	
Landscape Irrigable Area Demand	Per Monterey County	15		0	0	15	
Historical Partnership	50,000 s.f. @ 0.0001 AFY/s.f.	5		0	5		
Subtotal for Academic Development Projects to Year 2025		90		15	75		
Surplus (Deficit) Allocation Available to CSUMB w/Planning Horizon II Projects to Year 2015 (AFY)							
		(152)			80		
Planning Horizon III (after 2025)							
Student Housing	462 Rooms @ 0.08 AFY/room	28		0	28		
Institutional Partnership	50,000 s.f. @ 0.0001 AFY/s.f.	5		0	5		
Academic Building VIII	30,000 s.f. @ 0.0001 AFY/s.f.	3		0	3		
Academic Building IX	30,000 s.f. @ 0.0001 AFY/s.f.	3		0	3		
Administrative/Academic Buildings	20,000 s.f. @ 0.0001 AFY/s.f.	2		0	2		
Administrative/Academic Buildings	35,000 s.f. @ 0.0001 AFY/s.f.	4		0	4		
Subtotal for Faculty Staff Housing Projects after Year 2025		49		0	49		
Surplus (Deficit) Allocation Available to CSUMB w/Planning Horizon III Projects beyond Year 2025 (AFY)							
		(201)			41		

¹ Assigned water usage factors from MCWD Appendix C, or MCWD Ordinance and Code unless otherwise indicated
² Mitigation Measures
a = Install Water Meters on Individual Units (not a mitigation measure but required to measure demand reduction)
b = Tiered Rate Structure
c = Water Conservation Reducing Measures to reduce demand by 15%
d = Use Recycled Water/Eliminate Potable Water Dependency
NOTE: SOME IRRIGATION REDUCTIONS ARE CONTINGENT UPON RECYCLED WATER BEING AVAILABLE CURRENT PROJECTIONS ARE THAT THIS WATER WILL NOT BE AVAILABLE BEFORE 2010.

Number of New Units or Square Feet by Land Use – SEASIDE

Land Use- Residential	2005	2010	2015	2020	2025
Single Family – Low Density (<4/acre), (DU)	60 (to be completed)	91(1)	34	1492(7)	
Single Family Residence (6 - 8 DU/acre)					
Single Family – High Density (8/acre), (DU)		170(2)			
Multi-Unit Residential (DU)		287(3)			
Total Housing Units					
Land Use - Commercial					
Hotel/Motel (rooms)		330			
Restaurants (sq ft)		500 seat			
Retail/Service (sq ft)		790,000(4)			
Office / R&D (sq ft)		2500			
Other Commercial (sq ft)					
Total Commercial sq. ft.					
Land Use - Industrial and Other (Sq Ft)					
Industrial (sq ft)					
Governmental (sq ft)		25,000(5)			
Institutional (sq. ft.)					
Schools (K-12) (sq ft)		450 student			
Higher Education (sq ft)					
Landscape (acres) (open space, improved)					
Turf (ball fields, golf courses) (acres)		104 acre(6)			
Total Industrial and Other sq. ft.					

1. Seaside Resort Homes
2. Seaside Resort timeshare
3. Affordable Housing (100-seaside resort, 20 State Parks, 110 Lightfighter workforce, 57 Seaside highlands Affordable)
4. 550,000 main gate, 150,000 South lightfighter, 75,000 Firehouse, 15,000 Shopette
5. MST 10,000, Seaside Corp Yard 5,000, Shea's gym 10,000
6. 100 acres Veterans cemetery, 2 acres Seaside highlands Irrigation, 2 acres Chartwell School
7. Eastside 550 units, Eucalyptus 942

Number of New Units or Square Feet by Land Use Type from 2005 to 2025					
	2005	2010	2015	2020	2025
Land Use - Residential					
Single Family - Low Density (<4/acre), (DU)		200			
Single Family Residence (6 - 8 DU/acre)					
Single Family - High Density (8/acre), (DU)					
Multi-Unit Residential (DU)		330	250	210	200
Total Housing Units					
Land Use - Commercial					
Hotel/Motel (rooms)		150		250	250
Restaurants (sq ft)					
Retail/Service (sq ft)		582424	26000	26000	64889
Office / R&D (sq ft)		866060	444312	444312	645167
Other Commercial (sq ft)					
Total Commercial sq. ft.					
Land Use - Industrial and Other (Sq Ft)					
Industrial (sq ft)		326116			
Governmental (sq ft)					
Institutional (sq. ft.)					
Schools (K-12) (sq ft)					
Higher Education (sq ft)					
Landscapes (acres) (open space, improved)		4	18	18	19
Turf (ball fields, golf courses) (acres)		4	4	1	1
Total Industrial and Other sq. ft.					

Table 2-1 Projected Demands for East Garrison Development

Unit Type	No. Units	Use Factor af/yr/unit	MCWD Estimated Use in AF/YR	Factor Source/Notes
Apartments	280	0.23	64.4	MCWD Consumption records 2001-2003
Carriage Units	70	0.2	14.0	BBA Estimate -- no landscaped area
Towncenter Lofts	40	0.2	8.0	BBA Estimate -- no landscaped area
Live-Work Unit (22'x70')	49	0.23	11.3	BBA Estimate +- 100 sq.ft. landscaping
Art Habitat Unit	65	0.23	15.0	BBA Estimate +- 100 sq.ft. landscaping
Townhouse (22'x70')	186	0.25	46.5	UWMP and MCWD Consumption records
Grove Lot (30'x70')	192	0.3	57.6	BBA estimate -- weighted average of lot sizes = 3374 sq.ft. vs. UWMP factor of 0.33 at 5000-6000 sq.ft.
Garden Lot (35'x70')	201	0.3	60.3	"
Bungalow Lot (40'x100')	176	0.3	52.8	"
Courtyard Lot (70'x65')	60	0.3	18.0	"
Village Lot (50'x100')	140	0.3	42.0	"
Bluff Lot (50'x100')	21	0.3	6.3	"
Total Residential	1470		393.1	
Commercial				
Office (sf)	35000	0.0002	7.0	UWMP
Retail (sf)	20000	0.00004	0.8	2004 MCWD Consumption Data Review
Deli (sf)	4000	0.00027	1.1	MCWD Procedures and Guidelines and Design Req.
Restaurant (410 seats)	16000	0.29 per seat	11.9	MCWD Procedures and Guidelines and Design Req.
Arts Complex				
Art Studios	65026	0.00013	8.9	BBA based on occupancy of 169 persons @ 50 g/day
Performing Art Theatre	15400	0.0001	1.5	UWMP - Academic Institution
Community Art Center	11900	0.0001	1.2	UWMP - Academic Institution
Coffee Shop (35 seats)	1500	0.29 per seat	1.0	MCWD Procedures and Guidelines and Design Req.
Commercial Gallery	2000	0.00004	0.1	UWMP - retail
Non-profit office	2200	0.0002	0.4	UWMP - office
Music store	1400	0.00004	0.1	UWMP - retail
Food cooperative	3,000	0.00039	1.2	MCWD Procedures and Guidelines and Design Req.
Public Facilities/Civic (sf)	11,000	0.0003	3.3	UWMP
Active Parks (acres)	10.44	2.5 af/ac	26.1	BBA estimate
Landscape Parkways (Acres)	4.94	2.5 af/ac	12.4	BBA estimate
Native Landscape Space (acres)	22.37	2.5 af/ac	0.0 ^{***}	**Three-year temporary irrigation only; 55.9 af/yr
Total Non-Residential			78.9	
Total Development			470.0	

*note: BBA = Byron Buck and Asso.

Fred Meurer
 April 14, 2004
 Page 3 of 3

City of Monterey

City of Monterey					
	2005	2010	2015	2020	2025
Land Use - Residential					
Single Family - Low Density (<4/acre), (DU)					
Single Family Residence (6 - 8 DU/acre)					
Single Family - High Density (8/acre), (DU)					
Multi-Unit Residential (DU)					
Total Housing Units					
Land Use - Commercial					
Hotel/Motel (rooms)					
Restaurants (sq ft)					
Retail/Service (sq ft)					
Office / R&D (sq ft)	0	103250	206500	309750	413000
Other Commercial (sq ft)					
Total Commercial sq. ft.					
Land Use - Industrial and Other (Sq Ft)					
Industrial (sq ft)					
Governmental (acres) (acres) corporation yard *	0	33	33	33	33
Institutional (sq. ft.)					
Schools (K-12) (sq ft)					
Higher Education (sq ft)					
Landscape (acres) (open space, improved) *	25	25	25	25	25
Turf (ball fields, golf courses) (acres)					
Total Industrial and Other sq. ft.					

*Please note that all figures represent cumulative totals.

Marina Station Development			
Long Term Projected Water Demand in AF/Year			
Land Use	Units	demand factor	Projected Consumption
Single Family Homes (15,000 sf lots)	147	0.5	73.5
Single Family Homes (6,500sf lots)	669	0.33	220.8
Apartments	648	0.25	162.0
total	1484		
Non-Residential		Square Ft.	
Mixed Use Retail	60000	0.00021	12.6
Office Uses	143,808	0.000135	19.4
Light Industrial	651,624	0.00015	97.7
Landscape uses(@15% of indoor consumption)			19.5
Open Spaces		Acres	
Irrigated Parkland (less hardscape)	12.5	2.5	31.2
Passive open space - native landscape (1)	38.7	0	0.0
Passive open space - turf	4.3	2.5	10.8
subtotal			647.5
System Losses @5% of demands			32.4
Water Demand Total			679.9
Available Supply			920.0
Projected Project Demand			679.9
Net Water Surplus			240.1

(1) temporary irrigation only

source: Draft WSA Marina Station Project

Marine Coast Water District Projected Water Demands 2005-2025 by Jurisdiction Revised 12-17-05

<u>Jurisdiction</u>	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
<u>Current Demands Fort Ord Service Area</u>						
City of Marina	302					
City of Seaside	525					
Presidio of Monterey	529					
UCMBEST	4					
City of Monterey	0					
County of Monterey	5					
City of Del Rey Oaks	0					
CSUMB	602					
State Parks and Rec.	0					
City of Marina Sphere	0					
Assumed line losses	457					
total Fort Ord	2424					
<u>Current Demands Marina Service Area</u>						
City of Marina	2686					
Amesong Ranch	0					
RMC Lowstar Project	0					
Total Marina	2686					

<u>Jurisdiction</u>	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
<u>City of Marina - Central</u>						
SF Residential - low density						
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre		6.5	6.5	8.5	6.5	6.5
Multi family >15/acre		6.3	6.3	29.0	54.0	69.0
Residential subtotal		12.8	12.8	35.5	60.5	75.5
Hotel/Motel			110.5	178.5	178.5	178.5
Retail		2.1	2.1	11.76	21.42	21.42
Office/R&D						
Other Commercial						
Light Industrial			33.54	62.68	123.24	123.24
Governmental						
Institutional						
Schools k-12						
Higher Education						
Non-residential subtotal		2.1	146.1	272.9	323.2	323.2
Plus 15% for landscaping		2.4	168.1	313.9	371.6	371.6
Improved Landscaping						
Turf						
Current Marina Demands	2185	2185	2185	2185	2185	2185
New Marina Demands		15.2	180.8	349.4	432.1	447.1
Total Marina Demands	2185	2200.2	2365.8	2534.4	2617.1	2632.1

Jurisdiction**Marina Ord Community**

	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
SF Residential - low density			42.5	42.5	42.5	42.5
SF Residential - 6-8/du acre			584.4	584.4	584.4	584.4
Residential - 8-15 du/acre			60.8	60.8	60.8	60.8
Multi family >15/acre			225.0	240.0	240.0	240.0
Residential Subtotal			912.7	927.7	927.7	927.7
Hotel/Motel			85.0	144.5	144.5	144.5
Retail			129.0	129.0	129.0	129.0
Office/R&D			71.1	263.4	263.4	263.4
Other Commercial			21.0	21.0	21.0	21.0
Light Industrial			22.5	112.5	112.5	112.5
Governmental						
Institutional						
Schools k-12						
Higher Education						
Non-residential subtotal			328.7	670.4	670.4	670.4
Plus 15% for landscaping			377.9	771.0	771.0	771.0
Improved Landscaping			117.0	138.0	138.0	138.0
Turf			637.5	672.5	672.5	672.5
Current Marina Ord Community	264	264.0	264.0	264.0	264.0	264.0
New Demands Marina Ord			2045.1	2509.1	2509.1	2509.1
Total Marina Ord Community	264	264.0	2309.1	2773.1	2773.1	2773.1

Jurisdiction**Armstrong Ranch**

2004 2005 2010 2015 2020 2025

(demands per draft WSA Dec 2005 for Marina Station)

SF Residential - low density						
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre						
Multi family >15/acre						
Subtotal residential						
Hotel/Motel						
Retail						
Office/R&D						
Other Commercial						
Light Industrial						
Governmental						
Institutional						
Schools k-12						
Higher Education						
Non-residential subtotal						
Plus 15% for landscaping						
Improved Landscaping						
Turf						
Total Armstrong Ranch			680	680	680	680

Total City of Marina

2004 2005 2010 2015 2020 2025
 2267.0 2464.2 5090.9 5723.5 5806.3 5821.3

Jurisdiction**2004 2005 2010 2015 2020 2025****CSUMB**

SF Residential - low density			22.5	22.5	22.5	22.5
SF Residential - 5-8/du acre			46.2	46.2	46.2	46.2
Residential - 8-15 du/acre			37.5	37.5	37.5	37.5
Multi family >15/acre			50.0	50.0	50.0	50.0
Residential subtotal			156.2	156.2	156.2	156.2
Hotel/Motel and Timeshares						
Retail						
Restaurant (@9 sqft./seat *.7gsf)						
Office/R&D						
Other Commercial						
Light Industrial						
Governmental						
Institutional						
Schools k-12						
Higher Education			75.8	215.6	275.6	311.6
Non-residential subtotal			75.8	215.6	275.6	311.6
Plus 15% for landscaping			67.1	247.9	316.9	358.3
Improved Landscaping				315.0	399.0	525.0
Turf						
Current Use CSUMB	602.0	677.0	677.0	677.0	677.0	677.0
New Demands						
Total Demands	602.0	677.0	920.3	1081.1	1150.1	1191.5

Total CSUMB	602	677	920.3	1081.1	1150.1	1191.5
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Seaside

SF Residential - low density		30.0	75.5	92.5	838.5	838.5
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre			62.5	62.5	62.5	62.5
Multi family >15/acre			71.8	71.8	71.8	71.8
Residential subtotal		30.0	209.8	228.8	972.8	972.8
Hotel/Motel and Timeshares			56.1	56.1	56.1	56.1
Retail			165.9	165.9	165.9	165.9
Restaurant (@9 sqft./seat *.7gsf)			14.5	14.5	14.5	14.5
Office/R&D			0.3	0.3	0.3	0.3
Other Commercial						
Light Industrial						
Governmental			6.0	6.0	6.0	6.0
Institutional						
Schools k-12			9.9	9.9	9.9	9.9
Higher Education						
Non-residential subtotal			252.8	252.8	252.8	252.8
Plus 15% for landscaping			290.7	290.7	290.7	290.7
Improved Landscaping			0.0	0.0	0.0	0.0
Turf			260.0	260.0	260.0	260.0
Current Use Seaside	461.0	461.0	461.0	461.0	461.0	461.0
New Demands		30.0	760.4	777.4	1523.4	1523.4
Total Demands	461.0	491.0	1221.4	1238.4	1984.4	1984.4

Jurisdiction**2004 2005 2010 2015 2020 2025****UCMBEST**

SF Residential - low density			100.0	100.0	100.0	100.0
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre						
Multi family >15/acre			82.5	145.0	197.5	247.5

Residential subtotal	0.0	182.5	245.0	297.5	347.5	
Hotel/Motel and Timeshares		25.5	25.5	68.0	110.5	
Retail		122.3	127.8	133.2	148.9	
Restaurant (@9 sqft./seat * 7gsf)						
Office/R&D		116.9	176.9	236.9	324.0	
Other Commercial						
Light Industrial		48.0	48.0	48.0	48.0	
Governmental						
Institutional						
Schools k-12						
Higher Education						
Non-residential subtotal	0.0	313.6	379.1	487.0	630.3	
Plus 16% for landscaping	0.0	360.7	435.9	560.1	724.8	
Improved Landscaping		6.0	33.0	80.0	88.5	
Turf		7.5	17.5	20.0	22.6	
Current UCMBEST	4.0	4.0	4.0	4.0	4.0	
New Demands	0.0	0.0	556.7	731.4	937.6	1183.3
Total Demands	4.0	4.0	560.7	735.4	941.8	1187.3

Jurisdiction

County of Monterey (note: demands other than E. Garrison, preliminary, no land use data)

	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
SF Residential - low density						
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre						
Multi family >15/acre						
Residential subtotal						
Hotel/Motel and Timoshares						
Retail				26	26	26
Restaurant (@9 sqft./seat ^795f)				5	17	17
Office/R&D				15	90	147
Other Commercial						
Light Industrial				15	15	15
Governmental				10	10	10
Institutional				26.5	52.5	52.5
Schools k-12						
Higher Education						
Non-residential subtotal				112.125	242.075	307.625
Plus 15% for landscaping						
Improved Landscaping						
Turf						
East Garrison I Project (based on WSA)			470	470	470	470
East Garrison II Project estimate				470	470	470
Current Co. of Monterey	1	1	1	1	1	1
New Demands Co. of Monterey			567.5	680.5	1207.5	1207.5
Total Demands Co. of Monterey	1	1	568.5	681.5	1208.5	1208.5

<u>Jurisdiction</u>	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
City of Monterey						
SF Residential - low density						
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre						
Multi family >15/acre						
Residential subtotal						
Hotel/Motel and Timeshares						
Retail						
Restaurant (@9 sqft./seat *.7gsf)						
Office/R&D			13.9	27.9	41.8	55.8
Other Commercial						
Light Industrial						
Governmental (corporation yard 0.25 af/acre)			8.3	8.3	8.3	8.3
Institutional						
Schools k-12						
Higher Education						
Non-residential subtotal			22.2	36.1	50.1	64.0
Plus 15% for landscaping			25.5	41.5	57.6	73.6
Improved Landscaping		52.5	52.5	52.5	52.5	52.5
Turf						
Current City of Monterey	0.0	0.0	0.0	0.0	0.0	0.0
New Demands City of Monterey		52.5	78.0	94.0	110.1	126.1
Total Demands City of Monterey		52.5	78.0	94.0	110.1	126.1

<u>Jurisdiction</u>	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
City of Del Rey Oaks						
SF Residential - low density			25.0	25.0	25.0	25.0
SF Residential - 5-8/du acre			11.9	11.9	11.9	11.9
Residential - 8-15 du/acre			21.0	114.0	127.5	127.5
Multi family >15/acre			6.0	23.8	23.8	23.8
Residential subtotal			63.9	174.8	188.1	188.1
Hotel/Motel and Timeshares			17.7	89.3	93.5	93.5
Retail			0.9	20.9	20.9	20.9
Restaurant (@9 sqft./seat *.7gsf)				5.2	27.5	27.5
Office/R&D			1.0	28.0	55.0	65.0
Other Commercial			2.6	5.9	5.9	7.1
Light Industrial						
Governmental (corporation yard 0.25 af/acre)						
Institutional (Senior care units @0.25 unit)			17.5	43.8	43.8	43.8
Schools k-12						
Higher Education						
Non-residential subtotal			39.7	193.1	246.6	247.7
Plus 15% for landscaping			45.6	222.0	283.6	284.9
Improved Landscaping			0.0	0.0	0.0	0.0
Turf			362.5	365.0	365.0	365.0
Current Demands	0.0	0.0	0.0	0.0	0.0	0.0
New Demands Del Rey Oaks			472.0	761.7	836.7	838.0
Total Demands Del Rey Oaks	0.0	0.0	472.0	761.7	836.7	838.0

Presidio of Monterey - US Army

	<u>2004</u>	<u>2005</u>	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>
SF Residential - low density	529.0	529.0	556.6	1113.5	1113.5	1113.5
SF Residential - 5-8/du acre						
Residential - 8-15 du/acre						
Multi family >15/acre						
Residential subtotal						
Hotel/Motel and Timeshares						
Retail						
Restaurant (@9 sqft./seat *.7gsf)						
Office/R&D						
Other Commercial						
Light Industrial						
Governmental (corporation yard 0.25 af/acre)						
Institutional (Senior care units @0.25 unit)			7.5	7.5	7.5	7.5
Schools k-12						
Higher Education						
Non-residential subtotal						
Plus 15% for landscaping			8.6	8.6	8.6	8.6
Improved Landscaping						
Turf						
Current Demands Army	529.0	529.0	529.0	529.0	529.0	529.0
New Demands Army			572.6	1129.6	1129.6	1129.6
Total Demands Army	529.0	529.0	1101.6	1658.6	1658.6	1658.6



DEPARTMENT OF THE ARMY
 US ARMY GARRISON, PRESIDIO OF MONTEREY
 1759 LEWIS ROAD, SUITE 210
 MONTEREY, CA 93944-3223

REPLY TO
 ATTENTION OF

Office of the Garrison Commander

JUN 06 2005

Mr. Michael Armstrong
 General Manager
 Marina Coast Water District
 11 Reservation Road
 Marina, California 93933-2099

Dear Mr. Armstrong:

We are pleased to provide Marina Coast Water District (MCWD) with water use projections for inclusion in MCWD's Urban Water Management Plan (UWMP).

The Ord Military Community (OMC) water profile is comprised of Presidio of Monterey Garrison support activities and military housing managed through a public private venture between Clark Pinnacle and the U.S. Army (Residential Communities Initiative). Using MCWD's .5 acre feet per year (AFY) per unit factor for single family housing developments with a density less than 5 units per acre, Clark Pinnacle estimates the total residential water demand to be 1,235 AFY after full build out in 2014. Clark Pinnacle believes that 55 AFY could be supplied by your hybrid non-potable water project for irrigated common areas, thereby reducing OMC's anticipated "build-out" water demand to 1,180 AFY.

The chart below provides a detailed overview of water commitments for the Residential Communities Initiative.

RCI Commitments	Units /SF	AF Factor	Demand (AFY)
Seaside Kidney Trade			114
Kidney Replacement Units	392 units	0.5 af/res.	196
Southern Fitch Market Rate Units	188 units	0.5 af/res.	94
OMC Replacement Units	1,527 units	0.5 af/res.	763.5
Upper Stillwell Workforce Housing	120 units	0.5 af/res.	60
Rec. Center	22,625 sf	0.003af/sf	6.8
Rec Center Pool	3,375 sf	0.02af/100sf* surface area	.68
Total RCI Commitments			1,235

*0.02af/100sf factor borrowed from Monterey Peninsula Water Management District

Currently, 160 homes (replacement homes in Hayes Park) in OMC have individual water meters. There are 1,367 homes in our Marshall / Stillwell / Fitch Park neighborhoods that are not metered. These homes will not be individually metered until they are demolished and replaced. We anticipate completion of our last phase by 2014.

The Presidio of Monterey Garrison support activities water component is approximately 110 AFY based on meter estimates of our 37 individually metered buildings. However, Garrison water needs are expected to increase due to the rapidly growing need for trained linguists throughout the Department of Defense. Since buildable land on the Presidio of Monterey is almost exhausted, facility expansion is expected to occur throughout the OMC to support our mission requirements.

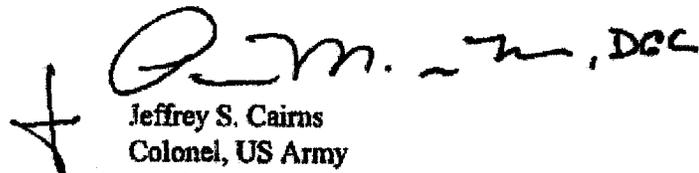
The Sacramento District Corps of Engineers is now preparing a Master Plan for the Presidio of Monterey and OMC. The POM Master Plan Environmental Impact Statement (EIS) is scheduled to be completed in early 2007. The purpose of this document is to analyze all potential environmental impacts associated with future development, including the Army's projected water requirements. We anticipate that your Agency will review the POM/OMC Master Plan and EIS. Your valuable input is encouraged to help improve our efforts.

Please note that the OMC water use estimates in your draft Urban Water Management Plan (UWMP) are grossly understated. It is possible that housing and mission related garrison support activities may actually exhaust the entire 1,577 AF of water rights held by the Army.

It has always been and continues to be our intent to honor the terms of the Fort Ord Economic Development Conveyance. We will transfer excess water rights, if any, to FORA once we have accurately defined all future water needs throughout the OMC through our master planning process. We respectfully request your patience while we carry out this vitally important process.

Please let me know if you have any questions or concerns regarding our master planning process. I can be reached at 831-242-6601.

Sincerely,


Jeffrey S. Cairns
Colonel, US Army
Garrison Commander

cc:
Marc Lucca, P.E., Deputy General Manager, MCWD

APPENDIX 3

**RESOLUTION ADOPTING THE URBAN WATER
MANAGEMENT PLAN**



Resolution No. 2005-64
Resolution of the Board of Directors
Marina Coast Water District
Approving and Adopting the District's 2005 Urban Water Management Plan

December 14, 2005

RESOLVED by the Board of Directors ("Directors") of the Marina Coast Water District ("District"), at a regular meeting duly called and held on December 14, 2005 at the business office of the District, 11 Reservation Road, Marina, California as follows:

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Plan Act) during the 1983-84 Regular Session, and as amended subsequently, which mandates that every supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for conservation and efficient use of water; and,

WHEREAS, the District is an urban supplier of water providing water to a population of about 28,000; and,

WHEREAS, the Plan must be adopted, after public review and hearing, and must be filed with the California Department of Water Resources within thirty days of adoption; and,

WHEREAS, pursuant to Water Code § 10642 the District posted notice of development of its Plan on its website in October of 2004, solicited input from affected land use jurisdictions in which the District serves water, prepared and circulated a draft 2005 UWMP beginning June 27, 2005, publicly notices and conducted a public hearing on the draft 2005 UWMP on August 24, 2005 which was continued through the Board meetings of September 28th and October 12th, and, at its November 9, 2005 deferred action on the 2005 UWMP until December 14, 2005 at the request of several land use jurisdictions and FORA Administrative Committee; and,

WHEREAS, copies of the adopted 2005 UWMP will be transmitted to land use jurisdictions in which the District serves water as well as the Monterey County Water Resources Agency and shall make the final plan available on its website by December 30, 2005.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the Marina Coast Water District does hereby:

- (1) approves and adopts the 2005 Urban Water Management Plan (UWMP), and,
- (2) authorizes and directs the General Manager to file the 2005 UWMP with the California Department of Water Resources within thirty days after this date, and,
- (3) authorizes and directs the General Manager to implement Water Conservation programs as set forth in the 2005 UWMP, which include a water shortage contingency analysis and recommendations to the District regarding necessary procedures, rules, and regulations to carry out effective and equitable water conservation and water recycling programs; and,

(4) during a water shortage, the General Manager is hereby authorized to declare a Water Shortage Emergency according to the Water Shortage Stages and Triggers as indicate in the Plan and implement necessary elements of the Plan.

PASSED AND ADOPTED on December 14, 2005 by the Board of Directors of the Marina Coast Water District by the following roll call vote:

Ayes: Directors Nishi, Gustafson, Scholl, Brown, Moore

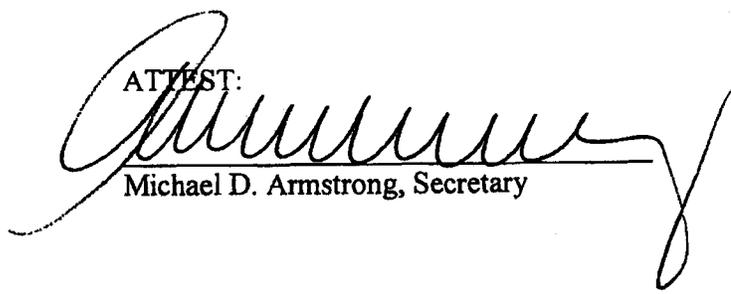
Noes: Directors None

Absent: Directors None

Abstained: Directors None

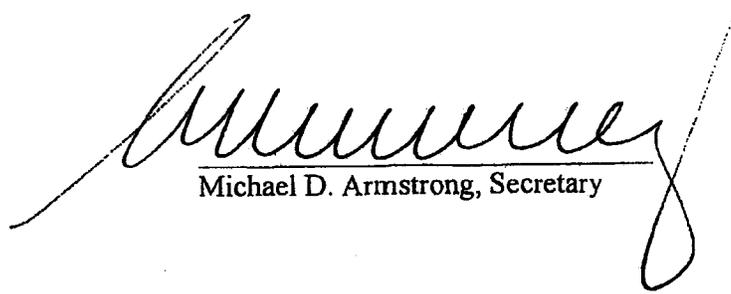

Thomas P. Moore, President

ATTEST:


Michael D. Armstrong, Secretary

CERTIFICATE OF SECRETARY

The undersigned Secretary of the Board of the Marina Coast Water District hereby certifies that the foregoing is a full, true and correct copy of Resolution No. 2005-64 adopted December 14, 2005.


Michael D. Armstrong, Secretary

APPENDIX 4

**COMMENTS BY MCWD ON THE SALINAS VALLEY PLAN AND
MCWRA RESPONSES TO THOSE COMMENTS ON THE DRAFT
ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT
STATEMENT FOR THE SALINAS VALLEY PLAN**





MARINA COAST WATER DISTRICT

11 RESERVATION ROAD • MARINA, CA 93933-2099
Home Page: www.mcwd.org
TEL (831) 384-6131 • FAX (831) 384-2479

23

August 27, 2001

RECEIVED

AUG 30 2001

**WATER RESOURCES
AGENCY**

Mr. Bob Meyer
Monterey County Water Resources Agency
P.O. Box 930
Salinas, CA 93902-0930

Subject: Salinas Valley Water Project: Draft Environmental Impact Report/Draft
Environmental Impact Statement (DEIR/DEIS)

Dear Mr. Meyer:

The Marina Coast Water District (MCWD) congratulates the MCWRA and the ACOE on the publication of the Salinas Valley Water Project (SVWP) DEIR/DEIS. This important document includes much useful information, and it represents the next step in a lengthy and complex process to achieve the objectives stated in the opening chapter: (1) to halt seawater intrusion, (2) to provide adequate water supplies to meet 2030 needs, and (3) to improve the hydrologic balance in the Salinas groundwater basin.

The MCWD hereby provides the following written comments on the DEIR/DEIS:

1. It is doubtful that the proposed project will halt seawater intrusion. As stated numerous times throughout the document, the proposed project – which includes a delivery component that provides Salinas River water to only the agricultural users within the Castroville Seawater Intrusion Project (CSIP) area (approximately 12,000 irrigated acres as shown in Figure 3-3) – has been designed to halt seawater intrusion in the Salinas groundwater basin. The text on page 2-1 states seawater intrusion is to be halted by hydrologically balancing the basin. Intrusion is seen in Figures 1-2 and 1-3, and encompasses an area far greater than the CSIP area. Delivery to the CSIP area will not likely halt intrusion; and, in particular, these planned deliveries will have an insufficient effect on intrusion in the Marina/Pt Ord area. Figure 1-3 which depicts the extent of intrusion in the critical 400' aquifer distinctly shows there are two primary areas along the coast where intrusion enters the basin: one near Castroville, and one near Marina.

23-1

The most recent intrusion data (1999) prepared by the MCWRA and as seen in Figures 1-2 and 1-3, indicates significant movement of saline water from the Monterey Bay in the Marina/Pt Ord area from earlier data. The amount of (1999) movement may be

attributable to the fact that monitoring and data collection in prior years did not include the Marina/Ft Ord area as comprehensively as it did the CSIP area. Nevertheless, the Agency's 1999 data clearly indicates there is a real and possibly urgent problem in the Marina/Ft Ord area. Decreasing pumping in the CSIP (Castroville) area may help the overall groundwater basin begin to recover thereby decreasing intrusion in the basin, but if the project is implemented as designed, with only delivery to the CSIP area, the Marina/Ft Ord area will not receive the level of protection required to halt intrusion. As a result, the wells that currently provide 100% of the Ft. Ord potable water supply will be in danger of contamination.

23-1
(cont'd)

On page 7-5, the document states, "*Further, more municipal/industrial growth is expected in the Salinas/Marina/Ft Ord area, where seawater intrusion is a more immediate issue, than in more southerly areas of the Salinas Valley.*" We would agree with this statement and note that while decreasing pumping between Salinas and the coast should improve the situation in the 400' aquifer for the Salinas area, this project would do little to control or halt intrusion in the Marina/Ft Ord area.

Page 2-3, states that, "*...hydrologic modeling shows that the project may not halt seawater intrusion in the long-term future (2030). If this were to occur, additional distribution capacity will be created in a new pipeline and water would be delivered outside the CSIP area to ensure project objectives are met and seawater intrusion is halted.*" We suggest that the available data clearly indicates that the project will not halt intrusion today in the Marina/Ft Ord area, and that the Agency will be ill-advised to delay the expansion of the delivery system by any amount of time, much less 30 years.

23-2

Page 2-3 also states, "*The hydrologic model used for the project shows that seawater intrusion would be halted in the short term, but may not be fully halted in the long term (2030). Seawater intrusion is not halted through deliveries to only the CSIP area in the long term. An expanded delivery system and expanded deliveries would be necessary to halt seawater intrusion in the long-term future.*" We request that the hydrologic model used for the project be specifically run to depict how this project would halt seawater intrusion in the short term in the Marina/Ft Ord area.

23-3

Page 5.2-9 states, "*This expanded distribution system would parallel the existing CSIP pipeline from the proposed diversion facility to a new turnout point, as displayed in Figure 3-3.*" Where the document discusses an expanded distribution system for the project (Alternative A), it indicates a parallel pipeline in an easterly direction to Highway 183, and then presumably south toward Salinas (see Figure 3-3 Legend: "Parallel Pipeline (if needed)"). Figure 4-1 (Alternative B) more appropriately indicates the

23-4

location of potential pipeline alignments that would be required to move diverted Salinas River water to areas of distribution in Salinas, Marina and Ft Ord. Page 4-9 states that Alternative B includes three delivery options: 1 – Maximize agricultural deliveries, 2 – Maximize Urban Deliveries, and 3 – Combination of Agricultural and Urban Deliveries. We believe that delivery option 2 or 3 would be needed and designed to deliver diverted water to the Marina/Ft Ord area to ensure intrusion is halted in this area.

23-4
(cont'd)

Page 3-23 states, "...without the preferred project the current groundwater problems in the basin are projected to continue in the future. Therefore, preferred project water is needed to offset groundwater pumping in order to meet the stated project objective/needs..." We generally agree with this statement. Project water is needed to help achieve the stated objectives. We disagree with the preferred project's delivery area.

23-5

Page 3-23 continues, "It is MCWRA's strategy to target delivery of diverted SVWP water so that it is (sic) has the greatest potential to efficiently meet the proposed project's objectives/needs. This would best be accomplished by making deliveries in the northern area of the Basin and correspondingly reducing withdrawals from the 180- and 400-Foot Aquifers in that area." We would agree that it is critical to carefully target the diverted SVWP water so that it has the greatest potential to meet the project's objectives/needs. We strongly disagree with the proposed CSIP delivery area. The project's delivery system should be designed now as part of the preferred project to halt the advance of seawater intrusion toward the Salinas and the Marina/Ft Ord areas.

23-6

Page 3-23 continues, "...the MCWRA determined that most or all of the primary project objective could be met by delivering water to agricultural uses already using a combination of MCWRA recycled water and groundwater." We request to see output from the hydrologic model that demonstrates that most or all of the intrusion in the Marina/Ft Ord area would be halted by delivering diverted SVWP water to the CSIP system.

23-7

Page 3-23 continues, "...While the SVIGSM indicates that seawater intrusion will be halted by the project (in conjunction with the CSIP deliveries) based on (1995) demands, with a projected increase in water demands (primarily associated with urban development) in the north valley area in the future, seawater intrusion may not be fully halted based on 2030 projections. For the year 2030, the modeling indicates seawater intrusion may be 2,200 AFY with surface water deliveries only to the CSIP area. This is substantially less than the 10,500 AFY of intrusion that would occur without the project"

23-8

Again, we request hydrologic model output that demonstrates intrusion in the Marina/Ft Ord area 180' and 400' aquifers would be halted based on 1995 demand. While the reduction of nearly 8,000 AFY of intrusion would be significant, the remaining (modeled) 2,200 AFY does not come close to meeting project objectives. And, these gross numbers do not address the need to halt intrusion along the entire coast line, specifically in the Marina/Ft Ord area.

23-8
(cont'd)

Page 3-24 states, "...The project could potentially halt intrusion in 2030 with deliveries only within the CSIP system...However, SVIGSM modeling does demonstrate that the delivery of an average 18,300 AFY of SVWP water in combination with recycled water to CSIP and agricultural uses outside of the CSIP area would fully halt seawater intrusion." We believe that in order to meet the project objective of halting intrusion, this level of diversion and the incorporation of an expanded delivery system – outside the CSIP area (as identified as Phase 2 during the Public Hearing) – will be required. The longer the Agency waits to come to this conclusion, the more irreversible the damage will be in areas of the basin's aquifers.

23-9

2. The Preferred Monitoring Program is insufficient. On pages 3-25 and 3-26, the preferred monitoring program is briefly described. It states, in part, "...the MCWRA is proposing to tailor, and supplement where necessary, existing monitoring efforts...Monitoring will occur over time. It will determine if the proposed project is successful in halting seawater intrusion based on current demands and in the future, with deliveries to only the CSIP area. If the SVWP is not successful at meeting project objectives, additional facilities (e.g., expanding the distribution / delivery area) would be considered at a future date." As stated above in our preceding comments, the MCWD believes that the preferred project (Alternative A) as proposed and described in this document would fail to achieve the primary objective: to halt seawater intrusion in the basin. The coastal monitoring program is an integral component of any SVWP alternative. Current, accurate information about the status and location of intrusion must be available to all water users in the basin. We believe that the "tailoring" and "supplementing" of the existing monitoring will have to be significant to produce a strong program that is capable of providing accurate, comprehensive information about intrusion all along the coast and as far inland as is necessary. Only such a complete and integrated monitoring system – that fully includes the Marina/Ft Ord area – will be capable of providing reliable data to be used to help determine the need for additional facilities or management strategies. As an enhanced monitoring program is essential to the success of the SVWP, it should be more fully described in the DEIR/DEIS.

23-10

3. The hydrologic modeling conducted in support of the preparation of the DEIR/DEIS is not sufficient. At the bottom of page 5-1, the document provides three reasons why the SVIGSM was not updated to do reruns of Alternative B. Paraphrasing the three reasons, the documents states that (1) impacts on the reservoirs and river are similar to Alternative A; (2) its costly to do model runs; and, (3) Alternative B is no longer the preferred alternative, and the model's accuracy is sufficient to compare Alternatives A and B.

Further, on page 5.3-11 the document states, in part, "*Nevertheless, the results of the 1998 EIR modeling of Alternative B compared with hydrologic conditions defined using the same model yield generally the same relative level of change as would result from using the updated model.*"

23-11

Before this project can be supported as the preferred project to halt seawater intrusion in the basin, it must be demonstrated that the project is capable of halting intrusion. Not merely in gross, basin inflow-outflow calculations, but demonstrating intrusion will be halted across the entire coastal/basin interface. Ultimately, the Agency must not be persuaded to opt for the least expensive alternative without convincing data that demonstrates that once implemented it will completely solve the problem. The water users in the Salinas Basin can not afford to wait to learn whether or not the proposed preferred project -- delivering diverted Salinas River water to only the CSIP area -- can achieve the primary objective of halting intrusion. This is an especially imperative issue for the water users in the Marina/Ft Ord area. Without a delivery system to provide diverted water to the Marina/Ft Ord area to be used to reduce the amount of ground water pumping in this area (as in the CSIP area to the north, between Salinas and the coast) intrusion is likely to continue its inland movement in the 180' and 400' aquifers. This would have significant and costly impacts on MCWD operations for our Marina and Ft Ord customers, who pay Zone 2/2A assessments, and who, presumably, will be asked to help pay for this SVWP.

4. MCWD Allocation. Page 7-9 states that MCWD has access to 4,400 AFY of Basin water. The 1996 *Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands* identifies: 3,020 AFY as MCWD's limit of potable groundwater from the Basin for land in the Marina area outside the former Ft Ord Military Reservation; to be increased by 920 AFY if the Armstrong Ranch is annexed into the Zones; and further increased by 500 AFY if the Lonestar property is annexed into the Zones. The EIR/EIS should likewise clarify this 4,440 AFY total possible MCWD allocation.

23-12

In summary, the MCWD supports a Salinas Valley Water Project that (1) can obtain the required permits for all components, (2) can be reliably operated in accordance with stated procedures, (3) includes a delivery system that delivers new supplemental water supplies to targeted areas designed to uniformly halt seawater intrusion along the coast, (4) hydrologically balances the basin, (5) provides adequate water supplies to meet 2030 needs, and (6) is supported by equitable assessments or charges based on demonstrable cost-benefit analysis among participants.

Our primary concern is that the SVWP described in this DEIR/DEIS will not achieve the majority of these objectives or benchmarks. When the MCWD annexed into Zones 2/2A in 1996 by signing the *Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands*, along with the MCWRA, City of Marina, Armstrong and Lonestar, the District voluntarily agreed to limit its groundwater extractions in the basin and to conserve and help manage the basin's water resources. In exchange for this voluntary limitation and commitment, and the \$2.45 million in required annexation fees which were dedicated to the Basin Management Plan (BMP) process, the MCWRA agreed to a BMP that includes benefits for the Marina area, including consideration of the Marina area for a Basin alternative to groundwater pumping in the Marina area. Three years prior to that, in 1993, the US Army annexed the lands of the former Ft Ord into Zones 2/2A at a cost of over \$7 million and agreed to take no more than 6,600 AFY from the Salinas Basin. In that agreement, the County committed to providing the Ft Ord lands a replacement water supply system to provide a long-term, reliable water supply and protection for the residents and property owners of the former military installation.

23-13

The DEIR/DEIS does not seriously consider the Marina/Ft Ord area for a BMP/SVWP alternative to groundwater pumping as called for in the 1993 and 1996 annexation agreements. Rather, the Agency has described a project that will provide distinct direct benefits to the CSIP growers, and, hopefully identifiable benefits to the Salinas area in slowing or halting intrusion in that portion of the Pressure Area. MCWRA's strategy as stated in the DEIR/DEIS is to put this project in-place in the Castroville area now and wait for years as a more comprehensive monitoring program is completed to see if seawater intrusion is halted. It is doubtful that this project will halt intrusion in the Marina/Ft Ord area as can be seen by overlaying the DEIR/DEIS Figures 1-2, 1-3 and 3-3. Clearly, reduced pumping in the CSIP area will have an insufficient effect to the south. In order to halt the southern intrusion front, pumping in the 180' and 400' aquifers will need to be curtailed and/or a supplemental source of water supplied, specifically to replace or augment the existing Ft Ord wells.

Mr. Bob Meyer
August 27, 2001
Page 7

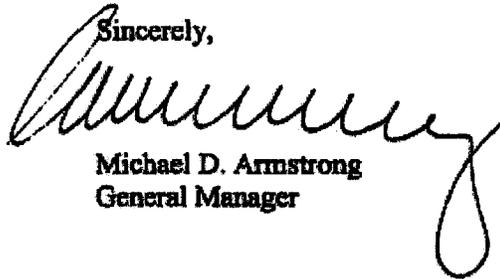
The Marina/Ft Ord area has been identified by the County as an area of great economic importance. The redevelopment of the former military installation lands depends primarily on the availability of a reliable, sustainable source of water. Without such a water source, the thousands of new housing units, the hundreds of thousands of square feet of new educational/commercial/industrial space, and the thousands of new jobs planned for the former installation will be jeopardized.

Finally, by focusing on the proposed project components as described – (Nacimiento Spillway Modification/Reservoir Reoperation, River Diversion, and CSIP Delivery) – as the solution to seawater intrusion in the basin; as the means to balance the basin hydrologically; and, as the source of water supply to 2030; we believe the Agency sends an incorrect message to the public: that this relatively inexpensive project will be sufficient to achieve these objectives. Hydrologic balance *may* be achievable in the Castroville area, but that has never been the objective of the BMP process. The Agency has historically sought to design, build and operate a project that would protect all basin water users. Certainly, the documented presence of accelerating intrusion in the Marina/Ft Ord area, the more than \$10 million paid to the Agency which enabled the BMP/SVWP, the voluntary commitments in the Marina/Ft Ord area to limit groundwater extractions (the only such voluntary commitments in the entire basin), and the critically important role this area is slated to play in the County's economy, all argue for an SVWP that provides a complete solution. We can not wait many more years while more square miles of irreplaceable aquifer storage is polluted to conclude that the Marina/Ft Ord area must be included in a comprehensive solution.

23-13
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The MCWD respectfully requests that the MCWRA consider moving forward with the SVWP and that the Agency commit to immediately designing, evaluating and incorporating an expanded delivery system, identified as Phase 2 during the Public Hearing, that will bring supplemental water to where it is perhaps needed most: the Marina/Ft Ord area. The MCWD can not support a project that does not include delivery of supplemental water to this area.

Sincerely,



Michael D. Armstrong
General Manager

Marina Coast Water District
Michael D. Armstrong, General Manager
August 27, 2001

- 23-1 Please see response to Comment 20-25. As discussed, the SVIGSM shows that seawater will be halted under short-term conditions in the entire basin, including Marina/Fort Ord, and that the system may need to be expanded to extend deliveries in the long term. It is acknowledged that this is based on modeling, which is a predictive tool. However, there are no other tools available to better evaluate the ultimate fate of intruded seawater, and the commenter offers no substantial evidence to support the conclusion that seawater will not be halted.
- 23-2 Please see response to Comment 20-25. The expanded delivery system would be proposed to be implemented at such time that monitoring of SVWP performance indicated that it was not effective in stopping seawater intrusion (if such a result were found), based on an extensive monitoring system (see Section 3.2.7 of the Draft EIR/EIS).
- 23-3 Please see response to Comment 20-5. Because it would be speculative at this time to design a distribution system based on unknown future conditions, only a conceptual system is considered in this EIR/EIS.
- 23-4 The commenter's preference for delivery option 2 or 3 under Alternative B is noted. As discussed above and previously, it would be premature to commit to any specific delivery options if seawater intrusion is not halted in the future. Hydrologic modeling shows that seawater intrusion is halted in the short term and may not be in the long term. The modeling calculates the fate of over 300,000 AFY in the Salinas River and determines seawater intrusion would be halted, with 1,000 AFY flowing in the groundwater basin out to the ocean. In the long-term (year 2030), modeling shows that seawater intrusion is predicted to occur at a rate of 2,200 AFY without an expanded distribution system. However, it needs to be recognized that these are modeled results only and both results (short term and long term) show that the project operates on the margin of whether seawater intrusion would be halted. Given this conclusion, it would be imprudent to commit to design and construction of a system that further expands deliveries when it is not known if an expanded system will be needed and, if so, where. Hence, the MCWRA is committing to an extensive monitoring system (see Draft EIR/EIS Section 3.2-7), the purpose of which is to determine project success and any needed adjustment, including an expanded distribution system. See also response to Comment 20-25.
- 23-5 Please see responses to Comments 20-5 and 23-4.

represents a wide range of hydrologic and climatic conditions. Extending the hydrologic period an additional six years from October 1994 to September 2000 was not deemed necessary because projected land and water use estimates used in the analysis have not changed, and a review of the extra hydrologic data indicated that incorporating the data into the extensive set of data already being used in the model analysis was not warranted. The purpose of using the model is to assess the impacts of the SVWP under a wide range of hydrologic and climatic data, which the existing model accomplishes with the 46-year hydrologic period. See also response to Comment 19-5, Master Response MR-1 and Master Response MR-4.

20-24 Please see Master Response MR-1.

20-25 The preferred alternative is intended to halt seawater intrusion to all areas of the Salinas Valley, including the Marina/Fort Ord area. As noted in Figures 5.3-22, 5.3-23, 5.3-51, and 5.3-52, the SVWP would benefit the Marina/Fort Ord area in the same manner as the Castroville area.

The expanded distribution system is described and evaluated at a conceptual level in the Draft EIR/EIS (see pages 3-23 and 3-24 for a preliminary description). If monitoring of project effectiveness were to indicate that an expanded distribution system is necessary in the future to meet the project objectives, a more detailed analysis of monitoring data would be conducted to determine where an expanded distribution system would be placed to achieve optimum benefit. At that time, a project level environmental analysis would be conducted to assess the impacts and effectiveness of different distribution system alternatives and describe in greater detail the location of the distribution system. Given that the need for such a system is highly speculative, and may never be needed, additional detail and analysis at this time is not warranted. See also response to Comment 3-9.

It must also be noted that the project's "impacts" on seawater intrusion are only beneficial. Thus, if the project were not as effective as modeled in some areas of the basin – and this is not expected – the "impact" would be that the beneficial effects were not as great as hoped. But in no cases would adverse impact to groundwater quality be expected.

20-26 Please see response to Comments 3-9 and 20-25 regarding the expanded deliveries. The effects of conditions under expanded deliveries are evaluated in Section 5.9. See the references to future (2030) conditions. For example, Tables 5.9-8 and 5.9-10 provide information on reservoir surface elevations under 2030 conditions with and without the project. The recreation impacts summarized on pages 2-16 and 2-17 apply to both the existing and future SVWP scenarios. As can be seen, 2030 conditions slightly reduce the magnitude of impacts to recreation (and visual resources), as more of the diverted water would be composed of recycled water than current conditions (because more recycled water would be available).

20-27 A nitrate management workplan to stop nitrate contamination in the Basin is not included as part of the current project but is the subject of separate planning efforts by the MCWRA. Section 4 of the 1998 Draft of the Salinas Valley Water Project

