Monterey Peninsula, Carmel Bay, and South Monterey Bay
Integrated Regional Water Management Plan and
Integrated Coastal Watershed Management Plan

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

PROJECT TITLE: Seaside Groundwater Basin Aquifer Storage and Recovery (ASR), Phase 1

PROJECT DESCRIPTION: The project entails diverting excess winter flows from the Carmel River Basin during high flow periods using existing California American Water (CAW) wells in the lower stretches of the river. Diverted water would be treated to potable drinking water standards and pumped approximately six miles through the CAW distribution system to the hydrologically-separate Seaside Basin, where the water is injected into specially-constructed ASR wells for later recovery during dry periods (see attached maps).

The project would divert up to 2,426 AF annually between December and May and would require minimal new construction, as it would take advantage of existing water collection, delivery and injection/extraction facilities, owned and operated by CAW and MPWMD. This existing infrastructure would allow transport of up to 2,426 AFA to the existing Santa Margarita well site for injection. A second injection/extraction well would be constructed adjacent to the Santa Margarita well site, allowing for injection and extraction of water at approximately 800 feet below the ground surface, in the Santa Margarita Sandstone aquifer. These two wells would allow for injection of Carmel River system water during wet periods and extraction of water for use by CAW customers during dry periods. Maximum extraction would be approximately 2,028 AFA, leaving a portion of the injected water in the aquifer to allow for groundwater basin recovery.

PROJECT DIRECTOR: Joe Oliver, Water Resources Division Manager
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GRANT FUNDS REQUESTED: $ 2,788,000

LOCAL COST MATCH: $467,600

TOTAL BUDGET: $3,255,600

PROJECT GOAL(S) AND BENEFIT(S):

For many years it has been recognized that the current level of pumping from the Carmel River Basin has adverse effects, particularly in dry years, on lower Carmel River natural resources including steelhead fish, California red-legged frogs, aquatic habitat, and riparian vegetation. Groundwater pumping and the drawdown of the Carmel River

Aquifer has caused short and long term moisture stress leading to significant losses of riparian vegetation, which have been associated with episodes of bank erosion and degradation of aquatic habitat.

CAW, MPWMD and the State (SWRCB, CDFG) have sought alternative water sources and alternative water management actions so that pumping could be reduced in the lower river and natural habitats could recover. Pumping of water from the Seaside Groundwater Basin has increased, especially in dry periods, to allow for a lowered level of pumping in the Carmel River Basin. This increased groundwater pumping has, in turn, led to a gradual lowering of water levels in the Seaside Basin, threatening its long-term reliability as a local source of domestic water supply.

The Seaside Groundwater Basin Aquifer Storage and Recovery, Phase 1 Project is one way to improve: (a) water management capabilities to the benefit of Carmel River natural resources; b) Seaside Groundwater Basin long-term reliability; c) improve the water quality in the Santa Margarita Sandstone aquifer.

SCHEDULE: The proposed construction start date is Summer 2006 with completion of improvements scheduled for Fall 2007 (see attached cost summary and schedule).

COORDINATES: 36.61° North; 121.80° West

WATERSHED: Carmel River and Seaside Groundwater Basin

COUNTY: Monterey

COOPERATING ENTITIES: Monterey Peninsula Water Management District and California American Water.

PROJECT CATEGORY: The project meets the following objectives of the IRWM/ICWM Plan:

4.2. Manage surface and groundwater supply
4.3. Augment water supplies
4.4. Restore ecosystems
4.5. Maintain and/or improve water quality
4.6. Increase opportunities for recreation and public access
4.7. Resolve conflicts and legal issues

PROJECT STATUS:

Environmental Review: A Draft Combined Environmental Impact Report/Environmental Assessment is in preparation and is scheduled for circulation in Sept 2005 with California Environmental Quality Act Certification by the MPWMD Board anticipated in February 2006. MPWMD will be seeking a finding of no significant impacts (FONSI) and a Federal easement for this project from the U.S. Army Base Realignment and Closure Directorate. A letter concerning a FONSI could be available as early as Spring

2006. At this time there are no known obstacles, constraints, or public opposition to carrying out this project.

Water Rights Conversion: The State Water Resources Control Board (SWRCB) is the entity that administers water rights in the Carmel Valley alluvial aquifer area. Previous decisions by the SWRCB have identified water rights held (or permits that need to be obtained) by various entities in Carmel Valley. The SWRCB has determined that the Carmel River is over-appropriated in the drier season of the year (i.e., May 1 to December 31). The MPWMD was issued water rights associated with main stem reservoirs on the Carmel River (SWRCB Permits 20808 and 7130B). As part of the existing ASR project testing, the SWRCB has issued annual temporary urgency permits to MPWMD to divert Carmel River water for injection well testing. In October 2001, MPWMD submitted Petitions for Change to the 1995 water rights permits associated with the New Los Padres Project. The petitions request use of the Seaside Basin as a place of storage for some of the Carmel River water, rather than use of a dam on the Carmel River. The petitions were revised in September 2003. Approval of these petitions would provide a water source (up to 7,300 AFA) for the ASR project. The SWRCB will use the information in the EIR to help determine whether the petition should be granted.

Groundwater Management Plan Compliance: In compliance with California Water Code section 10753.7, MPWMD proposes to develop, adopt, and implement the Seaside Groundwater Basin Management Plan by March 2006.

Final project design plans are scheduled to be completed in Spring 2006. Construction is scheduled to begin in Summer 2006 and be completed by December 2008.

Project Description/ Proposed Action and Alternatives

Background

The MPWMD manages and regulates the use, reuse, reclamation, and conservation of water within its boundaries. The MPWMD conserves and augments water supplies by the integrated management of ground and surface water resources. About 80% of water within the MPWMD boundaries is collected, stored, and distributed by Cal-Am, which serves about 95% of Peninsula residents and businesses. Over 70% of the water delivered by Cal-Am is diverted from the Carmel River Basin. Cal-Am owns two dams and a series of wells along the Carmel River. For many years it has been recognized that the current level of pumping from the Carmel River Basin has adverse effects on lower Carmel River natural resources, particularly in dry years. Cal-Am, MPWMD and the State have sought alternative water sources and alternative water management actions so that pumping could be reduced in the lower river and natural habitats could recover. Pumping of water from the Seaside Groundwater Basin has increased, especially in dry periods, to allow for a lowered level of pumping in the Carmel River Basin. This increased groundwater pumping has, in turn, led to a gradual lowering of water levels in the Seaside Basin, threatening its long-term reliability as a local source of domestic water supply.

Since 1996, the MPWMD has evaluated the feasibility of an ASR project. Efforts have included hydrogeologic testing and construction of pilot and full-scale test ASR wells in the coastal area of the Seaside Basin. This testing has found that the basin can be successfully used to store water for future use in the Cal-Am system. In 2004, MPWMD's Santa Margarita test ASR well was used to provide a back-up supply due to a well failure elsewhere in the Cal-Am system. An ASR project is viewed by MPWMD as one way to improve water management capabilities to the benefit of Carmel River natural resources and Seaside Groundwater Basin long-term reliability.

Water Rights

The SWRCB is the entity that administers water rights in the Carmel Valley alluvial aquifer area. Previous decisions by the SWRCB have identified water rights held (or permits that need to be obtained) by various entities in Carmel Valley. The SWRCB has determined that the Carmel River is fully-appropriated in the drier season of the year (i.e., May 1 to December 31). The MPWMD was issued water rights associated with main stem reservoirs on the Carmel River

(SWRCB Permits 20808 and 7130B). As part of the existing ASR project testing, the SWRCB issued annual temporary urgency permits to MPWMD to divert Carmel River water for injection well testing. In October 2001, MPWMD submitted a Petition for Change based on the 1995 water rights permits associated with the New Los Padres Reservoir Project. The petition requests use of the Seaside Basin as a place of storage for some of the Carmel River water, rather than use of a dam and reservoir on the Carmel River. The petition was revised in September 2003. Approval of this petition would provide a water source (up to 7,300 AFA) for the ASR project that is the subject of this EIR. The SWRCB will use the information in this EIR to help determine whether the petition should be granted.

Proposed ASR Project

Project Location

The project is located in Monterey County, California and is within the boundaries of the MPWMD (Figure 1). The infrastructure for the ASR project includes existing groundwater extraction wells in the Carmel River Basin; an existing pipeline extending from Carmel Valley north to Seaside (i.e., the Cañada Segunda pipeline); a temporary, above-ground pipeline along General Jim Moore Boulevard from Hilby Avenue to the Santa Margarita test well site, existing water pumping, storage and treatment facilities located along this pipeline; and one existing and one new injection and extraction well located on former Fort Ord. The project also includes a new pipeline to connect the two wells to the existing Cal-Am water supply system west of General Jim Moore Boulevard (Figures 2, 3 and 4).

Project Overview

The ASR project would require minimal new construction and would take advantage of existing water collection, delivery and injection/extraction facilities, owned and operated by Cal-Am and MPWMD. Water would be diverted from the Carmel River during high flow periods using existing Cal-Am wells in the lower stretches of the river. Up to 2,426 AF would be diverted annually between December and May, and would be treated at the Cal-Am Begonia Iron Removal Plant (BIRP) before being transported through the Segunda pipeline to the Seaside portion of the Cal-Am water distribution network (Figure 2).

This existing infrastructure would allow transport of up to 2,426 AFA to the existing Santa Margarita well site for injection. A second injection/extraction well would be constructed adjacent to the Santa Margarita well site, allowing for injection and extraction of water at approximately 800 feet below the ground surface, in the Santa Margarita Sandstone aquifer. These two wells would allow for injection of Carmel River system water during wet periods and extraction of water for use by Cal-Am customers during dry periods. Maximum extraction would be approximately 2,002 AFA, leaving a portion of the injected water in the aquifer to allow for groundwater basin recovery.

Carmel River Diversions

Seasons and Amounts of Diversions

The water needed to support the ASR project would be extracted from the Carmel River Basin during the wet season (December to May). The anticipated maximum annual extraction would be 2,426 AF and the maximum instantaneous diversion rate would not exceed 6.7 cubic feet per second (cfs). The timing of these extractions would have to be consistent with National Marine Fisheries Service (NOAA Fisheries) recommendations for maintenance of flows in the river to protect steelhead, a native fish in the Carmel River. Extractions would only occur when flows in the Carmel River below River Mile (RM) 5.5 exceed the recommended bypass flows. These flows will range from 40 to 200 cfs depending on the season, current flow condition, and expected water-year type. Annual extractions would vary from year to year, based on the levels of precipitation and subsequent runoff in the Carmel River watershed.

Facilities Used for Diversions

All of the facilities used to divert, treat and transport Carmel River water to the Fort Ord area for this project are already or soon to be in place. Cal-Am wells that are located along the Carmel River would be used to extract the water for this project. Existing pipelines would carry the water from the wells to the BIRP for treatment, and then through the Segunda pipeline to the Seaside area. This infrastructure would deliver Carmel River water to the two project wells overlying the Seaside Basin (Figure X).

Carmel River Pumping

Current Cal-Am Pumping Regime

Cal-Am currently operates a series of wells located along the Carmel River to collect water for its domestic supply system. The State Water Resources Control Board (SWRCB) has set Cal-Am's maximum annual production from the Carmel River Basin at 11,285 AF. Cal-Am alters the location and volume of pumping from this system to meet the fluctuating demand and to insure the lowest possible effect on Carmel River flows. In dry periods, Cal-Am alters its extraction pattern to emphasize use of water in the lower sections of the river. This action allows flows in the river to traverse as much of the river course as possible before being affected by pumping. It also results, however, in periodic elimination of surface flows in the lower river. This reduction in flow has adverse effects on native fish and on all of the plants and animals that use the lower river as essential habitat.

Pumping Regime as Modified by the Project

At times when Carmel River flows exceed minimum flow requirements, additional production from Cal-Am's Carmel Valley wells will be diverted for injection into the Seaside Basin. The Cal-Am wells will be operated such that the additional production for ASR diversion will occur from as far downstream in the Carmel Valley aquifer as possible. The maximum rate of additional

production for ASR diversion is anticipated to be 3,000 gpm, or 6.7 cfs. Presently, existing Cal-Am production well capacity below RM 5.5 is 8.4 cfs, and is sufficient to supply the proposed maximum ASR diversion rate.

Existing Santa Margarita Injection/Extraction Well

Location

MPWMD's existing injection/extraction well is located on land owned and managed by the Army on the former Fort Ord military base (Figure X). The site is immediately east of General Jim Moore Boulevard and approximately 300 feet south of Eucalyptus Road. Access to the site is by an unpaved road from General Jim Moore Boulevard. This site was selected by MPWMD in 1999for its ASR test well. The cleared site includes approximately 0.25 acres and houses an 18-inch diameter well drilled to approximately 720 feet below surface elevation. The perforated portion of the well is within the Santa Margarita sandstone aquifer between depths of 480 and 700feet. The well is operated by a 400 horsepower pump and is capable of injecting 1,000 to 1,300 gallons per minute (gpm) and extracting 2,000 to 2,400 gpm. MPWMD estimates that the well is capable of injecting up to 1,050 AF of Carmel River water annually, and recovering up to 1,620 AF annually for use in the Cal-Am water supply system.

From 2001 to the present, the well has functioned as a test facility to determine the feasibility of diverting water from the Carmel River and injecting and then extracting water from the Seaside Basin in the vicinity of Seaside, California. In 2004 the well was used as a backup source of water for the Cal-Am domestic water supply system, as Cal-Am experienced maintenance problems with its Paralta well. The MPWMD Santa Margarita well is connected to the Cal-Am delivery system through a pipe that extends from the well to a temporary, above-ground Cal-Am line west of General Jim Moore Boulevard.

Operation and Maintenance

As described above, the Santa Margarita test ASR well will typically be operated in injection mode during the December through May period (up to 183 days), subject to sufficient excess Carmel River flow conditions. The well will be idle during the intervening storage period, likely at least 30 days and typically during the month of June. Well pumping for recovery will typically occur during the July through November period (up to 153 days). When the well is operated in injection mode, injection operations will be shut down temporarily to conduct backflush pumping of the well. This shut down will occur for approximately 2 to 3 hours on a weekly basis, during which a small volume (approximately 0.75 AF) will be discharged to an on-site backflush pit. This water will then percolate into the ground and eventually back into the Seaside Basin aquifer system. Upon recovery, water will be pumped from the well, treated on site for disinfection (i.e., chlorination) and transported through the Cal-Am system for delivery to customers. Periodically (i.e., approximately every two to five years), the well will be serviced for pump, motor and casing inspection, maintenance, and cleaning.

Connection to Cal-Am Infrastructure

The Santa Margarita test ASR well is presently connected to the Cal-Am system via a buried 12-inch high-density polyethylene (HDPE) pipeline with an undercrossing through an existing 24-inch culvert under General Jim Moore Boulevard. This existing 12-inch pipeline will be replaced with a new 16-inch pipeline through the existing culvert as part of the project.

New Injection/Extraction Well

Location

The new injection/extraction well would be located approximately 250 feet to the east of the existing Santa Margarita test ASR well (Figure X). Approximately 0.7 acres of land would be cleared to accommodate the new well and its associated facilities. Access to the new well site would be via an unpaved road from the existing well site. This site overlies the Seaside Basin on the former Fort Ord military base land currently owned and managed by the U.S. Army.

The pipeline that would connect the new well to the Cal-Am water supply system would extend westward approximately 500 feet to a Cal-Am water pipeline west of General Jim Moore Boulevard (Figure X).

Construction Methods

Construction of the new well and the connecting pipelines would employ standard land clearing, well drilling and pipeline trenching equipment. This would include one drill rig, one water tank, plus a pipe truck and several service vehicles. Construction activity would normally extend from 7 A.M. to 7 P. M. 5 days a week, however, there would be brief periods of 24-hour operation associated with well completion and initial well testing. Approximately 10 vehicle trips per day would be generated to and from the construction site, including workers and construction-related materials deliveries. All waste material generated by land clearing and drilling that need to be disposed of offsite would be transported to an approved facility. These materials may include bentonite-based drilling fluids.

Operations and Maintenance

Daily and annual operations and maintenance activities associated with the ASR project would be similar to those described for the existing Santa Margarita test well above.

Water Treatment Following Extraction

The water quality of the extracted water will be similar to that of the originally injected water. The primary difference is that the chlorine residual in the injected water will have dissipated after several weeks of aquifer storage.

As soon as the water is extracted from the well, it will be re-chlorinated to restore the chlorine disinfectant residual before it reenters the Cal-Am distribution system. The system will be located on site, and consist of a 3,000 to 5,000 gallon

bulk storage tank, dual/redundant chemical metering pumps, and chlorine residual analyzer. All of the equipment will be located indoors in the Chemical/Electrical building to be constructed on site. Safety features for the system will include double containment for all chemical storage and dispensing equipment, protective vent fume neutralizers, safety showers for operating personnel, and a forced-air ventilation system.

Sodium Hypochlorite solution (12.5 percent NaOCl) will be delivered by tanker truck as needed to replenish the system. Anticipated chemical use will be less than 100 gallons per day of Hypochlorite, and bulk deliveries would be limited to one trip per month. The system will function automatically based on the well flow and analyzer outputs; status signals and emergency shut down indicators will be relayed to Cal-Am via SCADA.

Other Site Facilities

In addition to the two ASR wells and 240,000 gallon backflush percolation pit, a single story concrete block building, 24 feet by 45 feet (1,080 sq. ft.), will be located in the southwest corner of the site. The building will house all of the electrical switchgear, instruments, and SCADA equipment, as well as the chemical storage and dispensing systems for chlorination (and potential dechlorination) of the water.

The building will be of conventional design, with two regular doors and one 12-foot rollup door for equipment removal. Because the system will be unmanned, no restroom facilities will be included in the building.

Energy Requirements

The primary energy source for operation of the ASR project would be electricity from the local Monterey Peninsula grid. Electricity would be needed to operate the Carmel Valley wells and water treatment plant, the pumps that move water through the Segunda pipeline, and the wells and water treatment facilities at the Santa Margarita ASR well site. Based on the anticipated injection and extraction scheme described above, the project would require approximately 2 millionkilowatt hours (kwh) of electricity annually. (Note to MPWMD/JSA: this power requirement value includes only the Hilby booster pump and the ASR well pumping requirements, and does not include the Cal-Am costs to move water from the CV/BIRP to Hilby. If this latter info is to be included, Cal-Am will need to provide). Daily demand for electricity would vary, as the system would be operated with significant seasonal variation. Under maximum daily operation, the demand would be approximately 10,000 kwh per day. The peak demands would occur during high flow events on the Carmel River and during extended dry periods when Cal-Am would be trying to minimize pumping along the Carmel River.

Costs

The overall costs for the ASR project would include one-time design and permitting costs, one-time construction costs and ongoing operation and maintenance costs. The initial costs would include final design and engineering

for the new well, on-site facilities, and connecting pipelines, and permits from the U.S. Army, the City of Seaside, and Monterey County Department of Health Services. These initial costs are estimated to be$300K. Construction costs would include land clearing (which could involve ordnance clearing), well and on-site facilities construction, connecting pipeline construction, and construction management. Total construction costs are estimated to be $2.3M. Operation costs would include the energy costs associated with the Cal-Am diversion wells in Carmel Valley, water treatment in the Carmel Valley, pumps needed to move the water from Carmel Valley to the Seaside area, operation of the ASR wells, and water treatment needed prior to introducing extracted water back into the Cal-Am water distribution system. Maintenance costs would include periodic servicing of the associated pumps, pipelines, wells and water treatment facilities. Annual non-power operation and maintenance costs are estimated to be $100K.

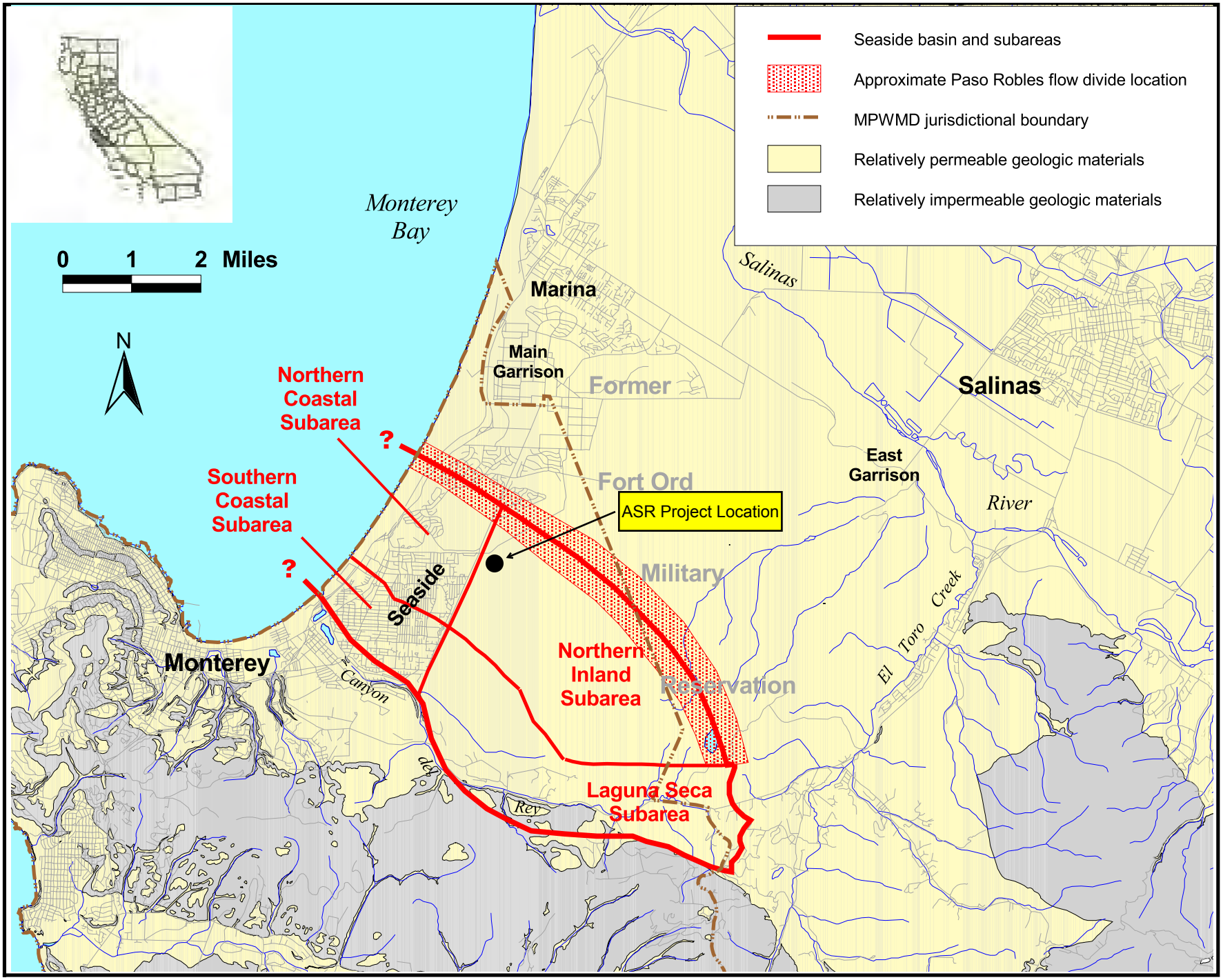
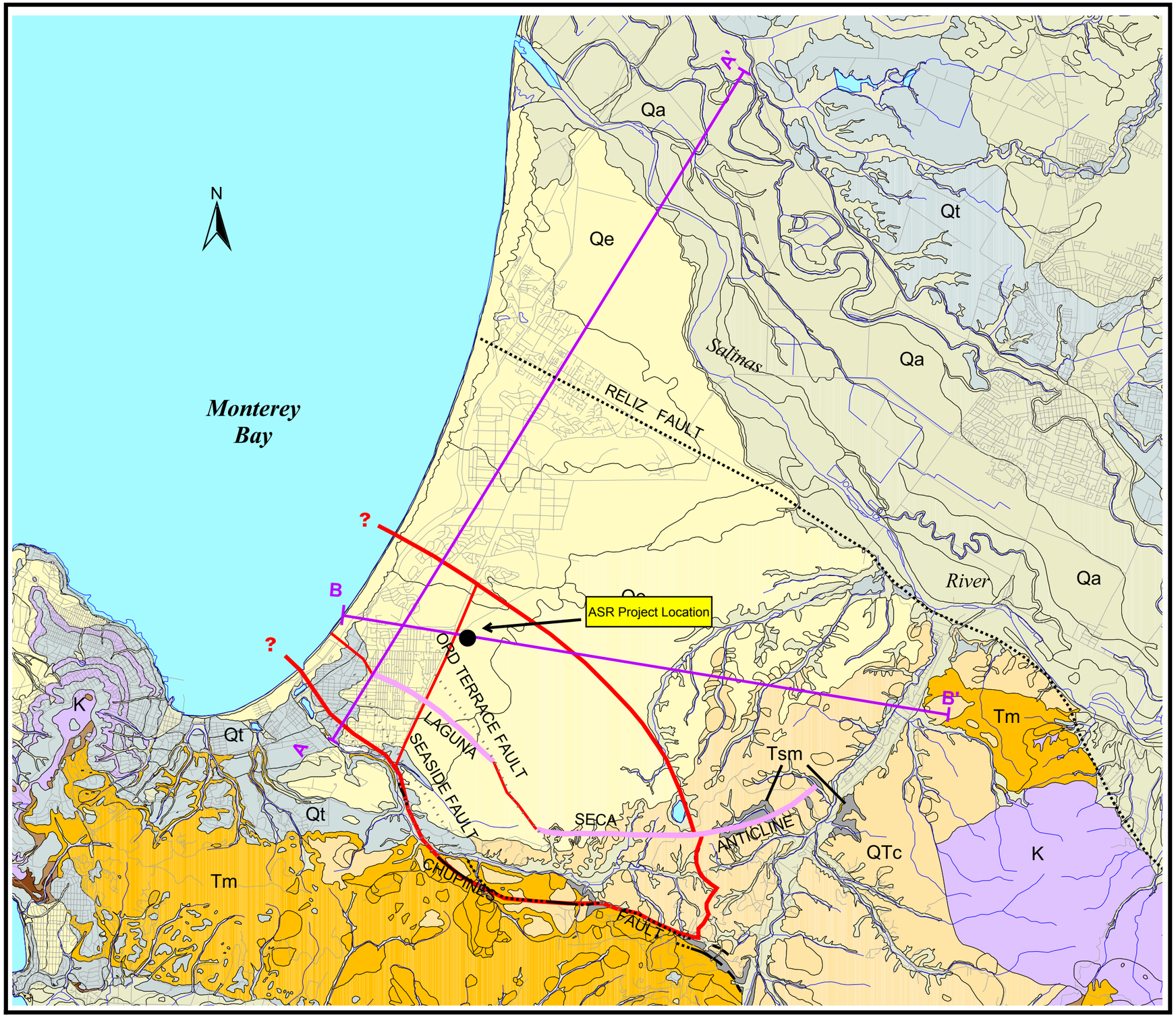


Figure 1. Location of the Seaside Groundwater Basin

Figure 2 Regional Geologic Map



DESCRIPTION OF MAP UNITS

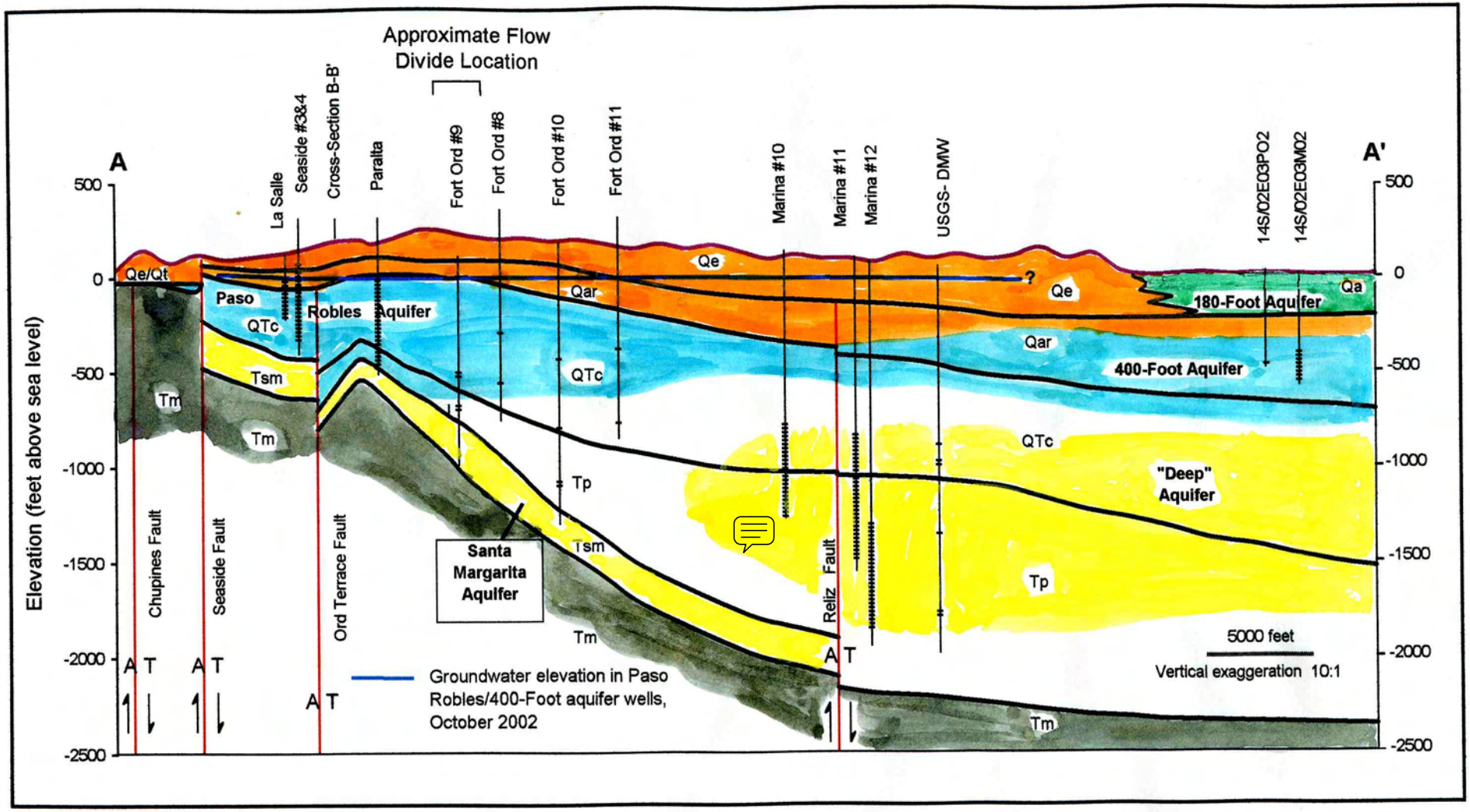
Qa	**Alluvial deposits, undivided (Holocene and Pleistocene)** Includes alluvium, colluvium, and river-channel, floodplain, basin and hillslope deposits.
Qe	**Eolian deposits (Pleistocene and Holocene).** Dunes and older dune deposits.
Qt	**Coastal and fluvial terrace deposits (Pleistocene)**
QTc	**Continental deposits, undivided (Pleistocene-Pliocene?)** Includes Paso Robles aquifer.
Tsm	**Santa Margarita Sandstone (Miocene)**
Tm	**Monterey Formation (Miocene)** Includes other Miocene clastic sediments.
K	**Intrusive igneous rocks (Late Cretaceous)**

DESCRIPTION OF MAP SYMBOLS

- **Seaside Basin boundary**
- **Basin subarea boundaries**
- **Laguna Seca Anticline**
- **Fault, certain**
- **Fault, approximately located**
- **Fault, concealed**
- **Fault, inferred**
- A — A' **Geologic cross-section**

0 1 2 Miles

Geology simplified from Rosenberg (2001). Mapped landslides are grouped with the surrounding or source-area geologic unit.



Location of cross-section is shown on Figure 3. Geology from Clark and others, 1997; Fugro West, Inc., 1997b: and WRIME, Inc., 2003. Formations: Tm = Monterey Formation; Tsm = Santa Margarita Sandstone; Tp = Purisima Formation; QTc = continental deposits; Qar = Aromas Sand; Qe = eolian deposits (dunes); Qt = terrace deposits; Qa = undifferentiated alluvial deposits. See text and Figure 3 for descriptions. Fault movement: arrows indicate vertical movement; A = horizontal movement away from the viewer; T = toward viewer.

Figure 3 Hydrogeologic Cross-Section A-A'

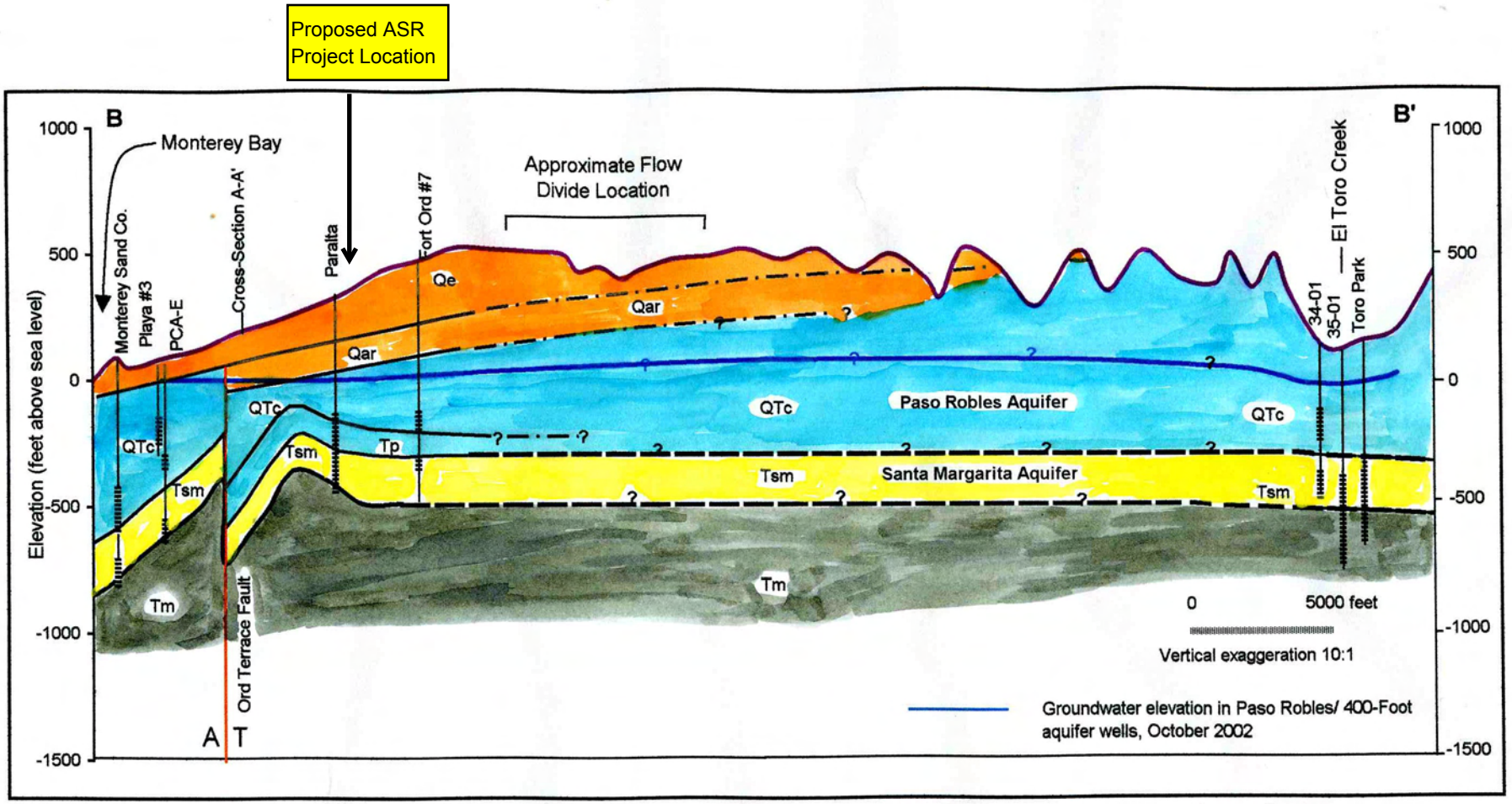


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Figure 4 Hydrogeologic Cross-Section B-B'

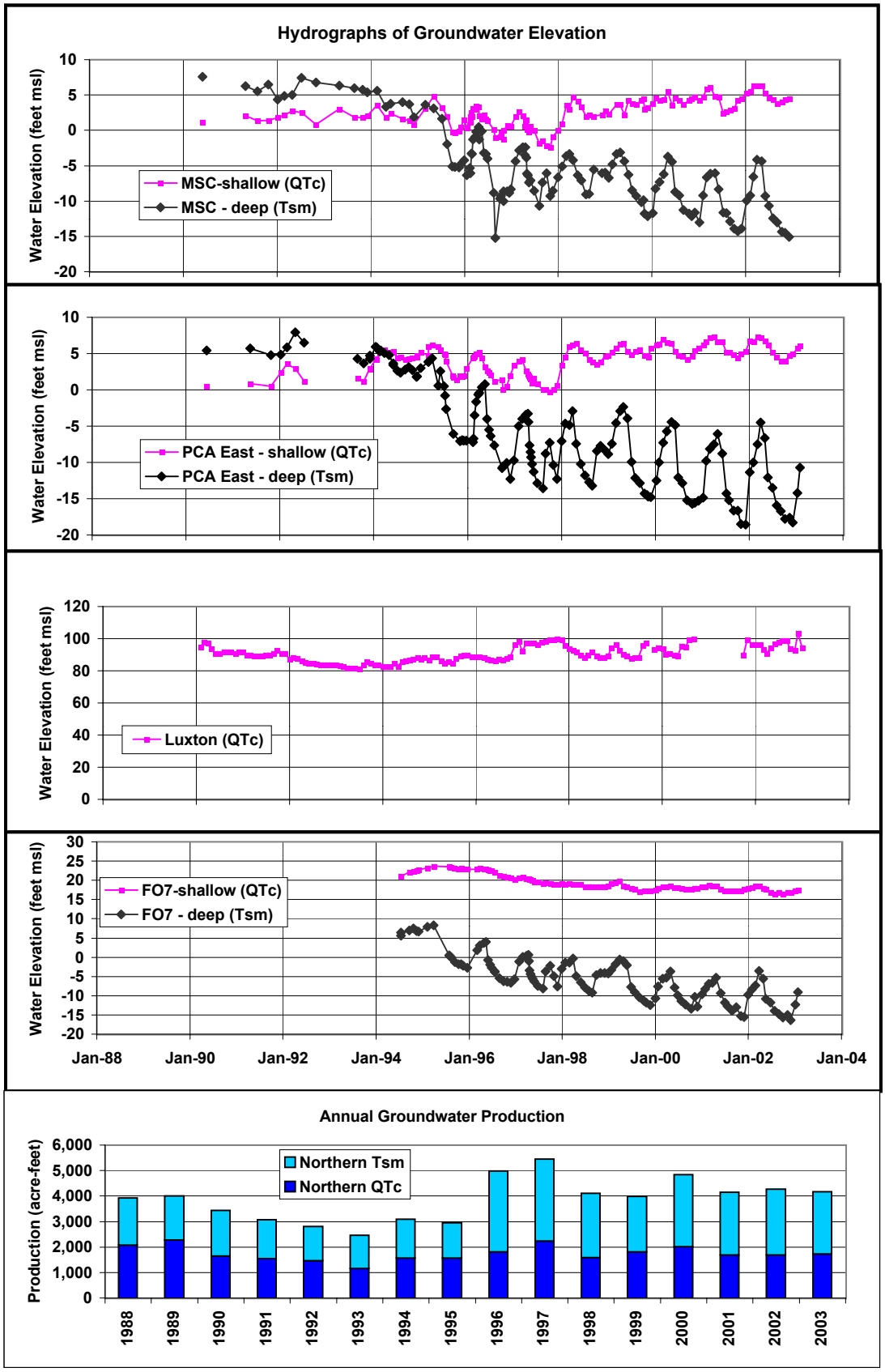

Figure 5 Groundwater Levels and Production in the Northern Coastal Subarea

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Preliminary Cost Summary

Second ASR Well and Associated ASR Facilities Construction
Phase I Seaside Basin ASR Project

Fiscal Year	Activity	Probable Completion Date		Cost Estimate
	Seaside Basin injection/recovery			
	1. Conduct Water Year 2005 testing program	June 2006		$ 75,000
2005-06	2. PG&E	June 2006		
2005-06	3. Temporary Permit Application Fee	June 2006		7,000
	4. 2nd ASR Well			
2005-06	a. Army Lease Amendment	June 2006		10,000
2005-06	b. Complete Planning, Specifications & Engineering	June 2006		15,000
2005-06	c. Expansion Site Planning	June 2006		75,000
2005-06	d. Permits/Regulatory	June 2006		5,000
2005-06	e. Contingency	June 2006		25,000
2005-06	EIR for Long Term ASR Project	March 2006		70,600
2005-06	Maintain viability of permits (SWRCB & Corps of Engr)	ongoing		5,000
	FY 2005-2006 subtotal			**$ 287,600**
	SMTIW II ASR Well (i.e., second well at existing site)			
2006-07	Permitting (MCHD, Army, Seaside, SWRCB, CDHS, etc.)	Summer 2006		30,000
2006-07	Backflush pit, site grading, fencing	Summer 2006		75,000
2006-07	Well construction, pump, motor, downhole FCV	Summer/Fall 2006		820,000
2006-07	PG&E coordination / service upgrade to 750 KVA	Fall 2006		50,000
2006-07	Monitor well construction	Fall 2006		100,000
2006-07	Engineering and construction management	Summer/Fall 2006		200,000
2006-07	Summer / Fall project contingency (20%)	Summer/Fall 2006		255,000
	FY 2006-2007 subtotal (Q1 - Q2)			**$ 1,530,000**
	ASR Facilities (i.e., on-site facilities)			
2006-07	Chemical / electrical bldg. const. (1,200 Sq.Ft.)	Fall 2006/Winter 2007		225,000
2006-07	Permanent piping and instrumentation	Fall 2006/Spring 2007		100,000
2006-07	Electrical system (i.e., MCC, switchboard, VFD, X-fer sw.)	Fall 2006/Spring 2007		250,000
2006-07	Engineering and construction management	Fall 2006/Spring 2007		200,000
2006-07	Fall / Spring project contingency (20%)	Fall 2006/Spring 2007		155,000
	FY 2006-2007 subtotal (Q2 - Q4)			930,000
2007-08	Access road improvements	Summer/Fall 2007		65,000
2007-08	Disinfection treatment system	Summer/Fall 2007		55,000
2007-08	Engineering and construction management	Summer/Fall 2007		45,000
2007-08	Summer / Fall project contingency (20%)	Summer/Fall 2007		33,000
	FY 2007-2008 subtotal			**$ 198,000**
	FY 2005-2008 subtotal			**$ 2,945,600**
	Project Administration (~10%)			**$ 310,000**
	Project Total			**$ 3,255,600**

Task	Seaside Basin Aquifer Storage and Recovery - Schedule	2006																		2007												2008
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Seaside Basin Injection/Recovery																															
1	Conduct Water Year 2005 testing program																															
	Seaside Groundwater Basin Management Plan																															
2	Develop and adopt plan																															
	Phase I Planning, Environmental Compliance, Design, Permit Acquisition																															
3	Complete EIR/CEQA Compliance																															
4	Convert Existing Water Rights																															
5	Army Lease Amendment																															
6	Complete Planning, Specifications & Engineering																															
7	Permitting (MCHD, Army, Seaside, SWRCB, CDHS, etc.)																															
	Phase I Well Construction																															
8	Backflush pit, site grading, fencing																															
9	Well construction, pump, motor, downhole FCV																															
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13	Permanent piping and instrumentation																															
14	Electrical system (i.e., MCC, switchboard, VFD, X-fer sw.)																															
15	Access road improvements																															
16	Disinfection treatment system																															

EXHIBIT C

Cost Estimate Table Proposal Title: Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan and Integrated Coastal Watershed Management Plan Project Title: Aquifer Storage and Recovery				
Budget Category		Non-State Share (Funding Match)	Requested State Share (Grant Funding)	Total
(a)	Direct Project Administration Costs	$150,000	$0	$150,000
(b)	Land Purchase/Easement	0	0	0
(c)	Planning/Design/Engineering/Environmental Documentation	317,600	150,000	467,600
(d)	Construction/Implementation	0	1,740,000	1,740,000
(e)	Environmental Compliance/Mitigation/Enhancement	0	10,000	10,000
(f)	Project Summary [Sum (a) through (e) for each column]	$467,600	$1,900,000	$2,367,600
(g)	Construction Administration	0	445,000	445,000
(h)	Other (Explain): _____	0	0	0
(i)	Construction/Implementation Contingency	0	443,000	443,000
(j)	Grant Total [Sum (f) through (i) for each column]	$467,600	2,788,000	3,255,600
Source(s) of funds for Non-State Share (Funding Match)		MPWMD User Fee, Property Taxes		