ATTACHMENT 2

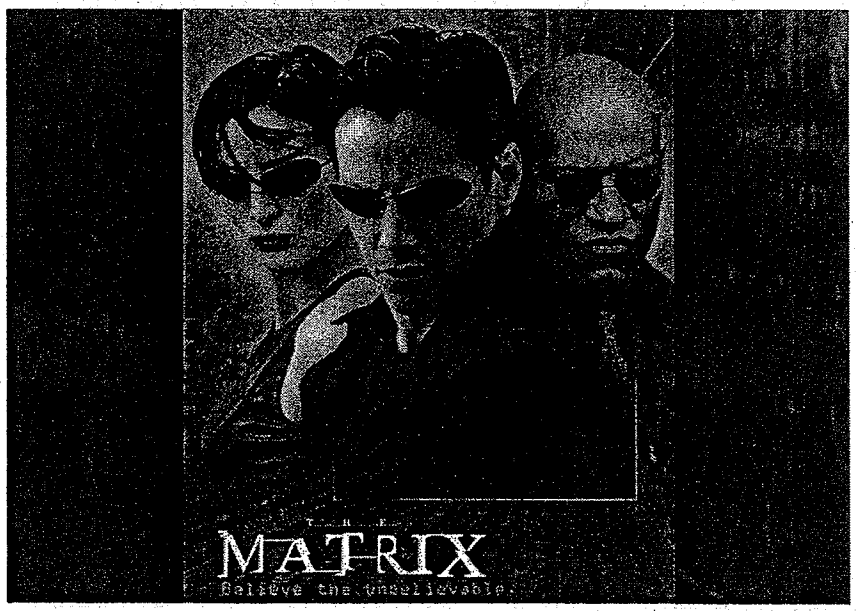
Comparison of Five Water Supply Options

MPWMD Strategic Planning Workshop
September 29, 2004
Contact: Henrietta Stern, Project Manager

U/hs/ppt/2004/brdmatrix092904.ppt

1

A crack team of experts toiled to create ....



Purpose of Matrix

- Comply with Board direction of July 29, 2004 to consolidate known information on five water supply options;
- Compare and contrast projects based on information provided by sponsors; only regulatory process separately reviewed.
- Identify information gaps and uncertainties;
- Facilitate Board discussion of next steps, including selection criteria.

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Five Water Supply Proposals

- Coastal Water Project (Cal-Am);
- North Monterey County Desalination Project (Pajaro/Sunny Mesa CSD);
- Long-Term Water Supply Project (MPWMD)
- Aquifer storage and recovery (ASR) in Seaside Basin (MPWMD);
- Regional Urban Recycled Water Project (MRWPCA/MCWD); groundwater recharge concept also briefly discussed.

4

Matrix Decision Elements

- Project description
- Yield and phasing
- Project cost/details
- Financing assumptions
- Agency permits
- Site control
- Project operations and proponent capability
- MPWMD and other entity participation
- Public involvement
- List of acronyms

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Project Descriptions

- Three desalination projects, two in Moss Landing, one in Sand City area. All require pilot projects.
- Desal basic goal is compliance with Order 95-10; Moss Landing projects could meet regional existing and future needs.
- "Small" ASR and reclaimed water would need to be combined with other projects to address Monterey Peninsula needs.

6

Reliable Yield - Desal

CWP and NMC: over 20,000 AFY

- 10,730 AFY for Order 95-10 + 1,000 AFY to offset Seaside Basin pumping;
- 3,572 AFY for future Mont. Penin. needs;
- 4,970 AFY for North MoCo needs.

MPWMD Desal: 8,400 AFY (possibly 11,000 AF)

- Focus is Order 95-10 compliance at today's demand (<11,285 AF diversions).

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Reliable Yield - Others

- ASR: 700-1,300 AFY for "small ASR," depending on modeling and operations assumptions. Could add on and/or serve as backup for desal projects.
- RURWP: 300 AFY of eventual 3,100 AFY designated for potential non-potable reclaimed water customers in Cal-Am service area.

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Cost Estimates Are Preliminary

- All cost estimates are considered to be incomplete and potentially inaccurate (general versus site-specific).
- All estimates are missing important components such as mitigation measures.
- All estimates have not fully considered important assumptions that affect construction and operation costs.

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Project Capital Cost Estimates

CWP: $261 million (20,000 AFY)

NMC: $176 million (20,000 AFY)

WSP: $176 million (8,400 AFY)

ASR/Recl: $21-34 million (300-1,300 AFY)

- CWP/NMC have significant differences for plant, pipelines, ROW, permits etc and contingencies; only CWP has ASR.
- WSP needs intake and brine facilities; high permit/other estimates.

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Est. Cost to Cal-Am Customers

- Unit cost ($/AF) incomplete and yield dependent ($1,100 – $2,800/AF).
- Data on consumer bill available for CWP;
- $2.40/mo (2006); then $27.04/mo (2011);
- 7% to 62% increase over projected base in future years; higher if compared to today.

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Project Financing

- Interest rates range from 3% to 7%; term ranges from 20-30 years. (Suggest comparing desal projects at same rates.)
- MRWPCA assumes loans for reclaimed project; others exploring grants and loans.
- MPWMD election required for District projects; no election needed for others. Prop. 218 does not apply to water projects paid solely by user fees.

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Timeline - Desal

- 3-5 years for water delivery, depending on assumptions; unique challenges for all.
- NMC assumes one year faster (2005) for environmental review and permits (concurrent); MPWMD staff believes 2006 for permits is more realistic for all projects.
- All sponsors are uncertain about NEPA.
- MPWMD assumes 24 mos. for construction (vs. 18 mos) and adds 6 mos. for vote.

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Timeline - Others

- ASR on line within 3 years, based on existing 50-year lease and extensive testing for several years. Water rights is critical path item.
- All major reclaimed water facilities exist; need extensions to new customer areas. Phase 1 (3 yrs); Phase II (5 years).

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Permits/Regulatory Agencies

- All projects require many permits at federal, state, regional and local level.
- Federal process complex and lengthy; NMC alignment avoids federal land as possible.
- Natl. Marine Sanctuary involved with CCC and RWQCB permit decisions.
- SWRCB water rights process for any Carmel River diversions (CWP and ASR).
- Cal-Am needs CPUC approval for rates.

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Site Control

- Desal sponsors all have preferred sites, but only NMC project has confirmed plant site. Others have identified alternatives.
- Note role of Moss Landing Harbor District re: intake/outfall pipelines.
- MPWMD has 50-year lease for ASR; MRWPCA has existing facilities.
- All need ROW for pipelines, etc.

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Operations Issues

- Entities have or can obtain TMF (technical, managerial, financial) capabilities.
- Pajaro/SM will need to upsize Board, staff, outsourcing; funding source for near-term environmental and engineering unclear.
- All acknowledge need to address power and water source interruptions; Cal-Am system has ASR and existing wells as backup. Pajaro/SM exploring solar energy.

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Project Participants

- Cal-Am envisions eventual public project; relationship with County unclear at present.
- Pajaro/SM authorized to create JPA with MPWMD; potentially open to others.
- MPWMD envisions its desal and ASR as public projects.
- MRWPCA does not envision additional partners at this time.

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Public Involvement

- Cal-Am has ongoing outreach program.
- Pajaro/SM has focused on presentations to agencies and jurisdictions.
- MPWMD has web-based outreach (weekly letters); previous quarterly workshops.
- MRWPCA has outreach planned, none at present.

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Key Unresolved Questions

- What is role of feds/NEPA for all projects, and how will timeline be affected?
- Should ASR be assumed for all as backup and/or add-on? Who owns and operates?
- Clarify Cal-Am/County relationship. Are other public partners like MPWMD viable?
- When will more site-specific work be performed for NMC desal? Who pays?

20

Key Questions, *continued*

- What are MPWMD plans for its pending EIR and engineering studies on HDD wells?
- What are MPWMD plans for ASR? Does Seaside Basin litigation affect ASR?

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Questions to Address Today

- What criteria are most important (e.g., timeline, cost, site control, MPWMD partnership, environmental effects?)
- Should criteria be weighted?
- What level of certainty about accuracy of information is desired?
- Should costs, timeline and other key assumptions be independently reviewed?

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Future Decisions

- October 28, 2004 special Board meeting is currently proposed.
- Assumed goal is for Board to identify alternative(s) for pursuit and/or further investigation.
- Level of staff and consultant effort has budget/resource implications.

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EXHIBIT 7-A

	A	B	C	D	E	F
1	DRAFT for 9/29 Board Pak		MPWMD Decision Matrix Comparing Long-Term Water Supply Options			
2	Subject to Revision	Sep 23, 2004	11:45 PM	Version 9; all edits		matrixaltsv9combo_092404.xls
3						
4	DECISION ELEMENT	COASTAL WATER PROJECT	NORTH MONTEREY COUNTY DESALINATION PROJECT	LONG-TERM WATER SUPPLY PROJECT (Sand City Desal)	AQUIFER STORAGE AND RECOVERY (Seaside Basin)	REGIONAL URBAN RECYCLED WATER PROJECT
5	PROPONENT/SPONSOR	California American Water	Pajaro/Sunny Mesa CSD	MPWMD	MPWMD	MRWPCA and MCWD
6	PROJECT DESCRIPTION	Moss Landing desal plant assuming use of Duke Energy site and intake/outfalls. Includes energy recovery; 24 mi pipelines; 3 pump stations; 2 storage tanks; connect into five existing water systems. Includes ASR component to store CR and desal water in Seaside Basin.	Desal plant at National Refractories site; use existing intake/outfall and/or Duke's if available. Includes energy recovery; possible 30-ac solar energy. Current focus on P/SM service area; willing to expand to serve other areas. No ASR is planned, but could be combined with MPWMD ASR project.	Desal plant at Sand City with potential intake and outfall locations from Seaside State Beach to coastal Fort Ord. HDD well technology needed to achieve 8,409 AF yield goal; brine disposal via MRWPCA outfall likely needed. Could be combined with MPWMD ASR project.	Divert treated excess Carmel River winter flow via existing Cal-Am pipelines (plus new pipeline up Gen Jim Moore Rd) to ASR wells owned and operated by MPWMD in Seaside Basin.	Reclaimed wastewater provided for nonpotable irrigation in Marina, Ft. Ord, Seaside, Del rey Oaks and Monterey area. Two phases: 1700 AFY and 3100 AFY total. Surface storage reservoir, ASR and/or tank to meet peak demand in Ph. II. Entitlements are within MCWRA share.
7	Pilot Project	Planned for Duke site Jan 05 - Feb 06	Planned to operate 6-12 mos.; managed by K/J expert	None planned currently, but will be required by DHS	Successful pilot and full-scale test wells since 1998.	12 years successful use of reclaimed water. Pilot project on golf course.
8	PROJECT YIELD	Actual yield based on commitments of purveyors	Actual yield based on commitments of purveyors	8,409 AFY yield goal; possibly 11,000 AFY (uncertain)	720-1,300 AFY depending on assumptions and modeling	300 AFY earmarked for Cal-Am system in Phase I
9	Comply with Order 95-10? (10,730 AFY assumed)	Yes, 10,730 AFY assumed	Yes, 10,730 AFY assumed	Unlikely unless expanded or combined with another project	No, unless teamed with another large project	No, unless teamed with another large project
10	Future Mont. Penin. Needs?	1,000 AFY for Seaside Basin; 3,572 AFY for jurisdictions	Potentially yes, as requested	Current project goal is legalizing existing use	No, unless teamed with another large project	No, unless teamed with another large project
11	Future Non-MP Needs	4,970 AFY for MCWD, NorCo	3,500-4,500 AFY for NorCo; possibly up to 5,000 AF	None	None	2,800 AFY (Phase II)
12	TOTAL YIELD	20,272 AFY	20,000-30,000 AFY (20,000 AFY used for cost estimates)	8,400-11,000 AFY depending on assumptions	720-1,300 AFY depending on modeling assumptions	3,100 AFY (Phase II)
13	Yield Phasing to Mont Penin	phasing based on demand; assume 10,730 AF min first	phasing based on demand; assume 10,730 AF min first	no phasing; build plant	no phasing; build plant	300 AFY in Phase I and II.
14						
15	PROJECT COST	see CWP materials	see P/SM text 2.2.4 and Table 1	varies with specific site	varies based on assumptions	see MRWPCA materials
16	Capital - see lines 77-114	$260,985,000	$175,831,000 for 18 MGD plant (20,000 AFY)	$176,200,000	$20,641,000 - $21,661,000	$33,500,000 total ($19 + $14.5 mil for Phases I & II)
17	Amortized Cap. Cost ($/yr)	$21,035,000/yr	$11,447,000/yr	$14,202,000/yr	$1,664,000 - $1,746,000/yr	$2,250,000/yr total
18	O&M per year	$10,484,000/yr	$13,360,000/yr	$8,790,000/yr	$293,000 - $296,000/yr	$800,000/yr (I); $1.1 mil/yr (I&II)
19	Assumed energy cost ($/kwh)	$0.07/kwh	$0.05-0.06/kwh (solar can help)	$0.12/kwh	$0.12/kwh	$0.11/kwh
20	Total Annual Cost	$31,519,000/yr	$24,807,000/yr	$22,992,000/yr	$1,957,000 - $2,042,000/yr	$2.08 mil/yr (I); $3.43 mil/yr (I&II)
21	Time frame for estimates	August 2004	2004	December 2002	Dec 2002 - Aug 2004	June 2003

	A	B	C	D	E	F
4	**DECISION ELEMENT**	**COASTAL WATER PROJECT**	**NORTH MONTEREY COUNTY DESALINATION PROJECT**	**LONG-TERM WATER SUPPLY PROJECT (Sand City Desal)**	**AQUIFER STORAGE AND RECOVERY (Seaside Basin)**	**REGIONAL URBAN RECYCLED WATER PROJECT**
22	**COST TO PENINSULA**	**see CWP handouts**	**see text 2.2.5**			
23	Share of total project cost	75% of yield to MP; CAP COSTS are $1,100/AF for MP, $940/AF for MCWD, $750/AF for NorCo; O&M COSTS are $503/AF for MP, $585/AF for others.	Cost of water based on contract volume (capacity+annual usage charges); separate charge for pipelines and pumping facilities. $1240/AF for water only.	Entire cost to be paid by Peninsula consumers. $2,730/AF based on 7.5 MGD (8,409 AFY) project	Entire cost to be paid by Peninsula consumers. $2,800/AF based on 700 AFY (CDM); $1,570/AF based on 1,300 AFY (RBF).	Only recycled water users pay for their share at about $1,100/AF.
24	How share determined	Prorata share of participation	see line 23	N/A	N/A	Prorata share
25	Cost sharing of existing vs. future Cal-Am ratepayers	no information provided	Future capacity cost based on construction and transmission	New users pay connection fee similar to current system	New users pay connection fee similar to current system	Only recycled water users pay for their share at about $1,100/AF.
26	Cost of Water ($/AF)	see line 23; ratepayer cost could be higher	see line 23; need to add transmission and other costs	see line 23; need to add distribution and other costs	see line 23 -- includes Cal-Am system improvements	No change in Cal-Am rates is anticipated.
27	Impact to Cal-Am Bill	$2.40/mo in 2006; $27.04/mo in 2011 over rates at that time	no information provided	no information provided	no information provided	no impacts anticipated
28						
29	**FINANCING ASSUMPTIONS**	yet to be determined	revenue bonds or COPs	pursuant to District Law	pursuant to District Law.	
30	Interest rate (%)	7%	current rate is 5%	7%	7%	3% (assume SRF loan)
31	Term (yrs)	30	30 years	30 years	30 years	20 years
32	Public vote required?	not currently contemplated; possible if public financing	Not required of P/SM unless Prop 118	Yes, if MPWMD project. No, if JPA.	Yes, if MPWMD project. No, if JPA.	No
33	Grants (describe)	May apply for EPA or Prop 50 grants	eligible; will submit applic to DWR and BurRec for planning, envtl and pilot project costs	none currently	none currently	No grants anticipated; assume SRF loan.
34						
35	**TIMELINE**	see CWP charts	see P/SM text Figure 3	Assume 11/1/04 Start Work	Assume 11/1/04 Start Work	see MRWPCA materials
36	Draft EIR (and/or EIS)	PEA to CPUC mid-05; no info on CPUC or other entity re: DEIR timing; NEPA reqts uncertain	CEQA compliance Oct 04-Sep 05; assume limited NEPA review and no EIS.	DEIR Apr 05 (5 mos, evaluate onshore HDD); assume NEPA tiers on EIR.	DEIR Spring 2005 (5 mos, including IS/NOP + 3 mo eval)	DEIR distributed Aug 04; assume NEPA tiers on EIR
37	Certify FEIR (EIS ROD)	FEIR Feb 06; NEPA uncertain	Sep 05; NEPA tiers on EIR	Fall 05 FEIR; NEPA uncertain	Sum 05 FEIR; NEPA unclear	2005; no info on NEPA
38	Obtain key permits	Spring 2006 for DHS, MBNMS and RWQCB; CCC in Dec 06	Jan-Sep 05 to obtain permits	Fall 2006 (assume 12-18 mos from DEIR)	Spring 2006 (assume 1 yr from DEIR)	2005
39	Secure financing	timeframe not provided	timeframe not provided	Spring 2007 (6 mo. for vote)	late 2006 (6 mo for vote)	2005
40	Secure ROW/property access	after environmental studies	no information provided	2007	2007	2005
41	Start construction	Jan-Mar 2007	mid-2006	2007	2007	2006
42	Commence water delivery	Fall 2008 (18-mo construct)	Jan 2008 (18 mo construct)	2009 (24 mo construction)	2007-2008 (6 mo construct)	Fall 2007 (Ph I); 2009 (Ph II)
43	Total time to water delivery	4.0 years from Oct 04	3.3 years from Oct 04	5 years from Oct 04)	3+ years from Oct 04	3-5 yrs from Oct 04 (Ph I, II)

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44						
45	PERMITS/REGS	see CWP materials	see P/SM materials			
46	Federal Agencies	USACOE, USFWS, USArmy BRAC; USBLM, USEPA, MBNMS, NOAA Fish, USCG	Same as CWP except no CPUC or SWRCB permit needed for ASR; fewer stream crossings and avoidance lessen federal permits; P/SM serves as lead agency	Similar to CWP; no pipeline under sloughs and streams lessens some federal permits	US Army Ft Ord; amend existing lease agreement for site	USACOE; USBR; other federal agencies possible as part of NEPA review
47	EIS needed?	NEPA review required by fed law; EIS possible based on pipeline alignment	NEPA review may be needed; EIS unlikely if demonstrate avoidance, reduced impact	NEPA review assumed; EIS is possible	NEPA review, but may tier off EIR and existing permit	NEPA review required but EIS not anticipated (tier off EIR)
48	Fed lead agency?	Army Corps likely	to be determined, if needed	TBD (US Army?)	US Army	USBR assumed
49	Sanctuary permit?	Permit to construct; review NPDES application	Yes, related to NPDES/outfall; need to confirm outfall capacity.	Yes, related to intake and discharge	No	none expected to be required
50	State Agencies	CCC, CPUC (if Cal-Am); RWQCB, CEC, CDFG, DHS, CalTrans, DPR, SLC, CDTS	Same as CWP, except no CPUC	Same as CWP except no CPUC	SWRCB, CDFG, DHS	DHS, RWQCB, CCC anticipated
51	CPUC approval?	Needed for Cal-Am rates; Cal-Am submitted application for CWP Sept 20, 2004.	N/A	N/A	N/A	N/A
52	EIR lead agency	TBD-- CPUC presently assumed	Pajaro/Sunny Mesa CSD	MPWMD	MPWMD	MRWPCA and/or MCWD
53	SWRCB/Water Rights	Needed for ASR or any other new Carmel River diversions	N/A, no ASR planned	No	Yes, diversion of Carmel River; Petition for Change	N/A; loan from SWRCB
54	Regional Agencies	MBUAPCD	Same as CWP	Same as CWP	none	MPWMD, MBUAPCD, FORA
55	Monterey County	MCWRA, P&B, MCEH	construction and use permits	MCEH, P&B (?)	MCEH, P&B (?)	Pub wks, P&B, MCEH, MCWRA
56	Local Agencies	MPWMD, MLHD; FORA, all affected cities and jurisdictions for encroachment and construction permits	Similar to CWP; jurisdictions may vary	Construction and use permits within affected jurisdictions	Construction and use permits within affected jurisdictions	Marina, Seaside, Del Rey Oaks, Monterey
57						
58	SITE CONTROL					
59	Confirmed site?	No, pilot project only. Duke wants no impact to current permits + public support. Expect Duke approval after EIR and permits.	Yes, lease agreement with owner of Natl Refractory site. No info on possible use of Duke outfall (see line 6)	Sites and alternatives identified but no agreement with owners at present. Use of MRWPCA outfall needed for larger sizes	Current 50-year lease with US Army at present site of full-scale test well.	Yes. All facilities exist; only pipeline and pump station ROW will be needed
60	Alternative sites?	3 sites identified off Dolan Rd.	None needed	Yes, several (see BRDEIR).	None planned at present.	N/A

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61						
62	OPERATIONS/OTHER					
63	Technical, Managerial and Financial Capabilities (TMF) to meet DHS standards	Cal-Am has extensive TMF capabilities and current certifications to own/operate water systems. Over 39,000 customers in Monterey County	P/SM has current TMF certification by DHS. Planned enhancement for desal project includes expanded board, new staff and outsourcing engineering and legal services.	Assume certified entity would operate plant in coordination with Cal-Am system, with MPWMD oversight.	Assume Cal-Am would operate well and integrate into Cal-Am system with oversight by MPWMD.	MRWPCA and MCWD are established and certified water system and reclamation plant operators.
64	Water production interruptions (e.g., power or intake water)	Consistent w/ Duke operations; forebay, storage tanks & ASR as backup; other Cal-Am sources	Back-up generators and onsite solar, if feasible	Redundant plant design; back-up generators; ASR source	Back-up generators	Pump stations have back-up generators
65						
66	PROJECT PARTICIPANTS	Information subject to change				
67	Overview	Cal-Am and County relationship presently uncertain; Cal-Am intent is ultimate public ownership.	Focus on P/SM needs; willing to expand plant to meet needs of others such as FORA, MCWD and Monterey Peninsula	Funded by MPWMD via methods allowed by MPWMD Law; possible public-private partnership or JPA.	Funded by MPWMD via methods allowed by MPWMD Law; possible public-private partnership or JPA.	Areas receiving water already established; previous agreements spell out MCWRA entitlements.
68	MPWMD participation	Uncertain. Written materials show Cal-Am as owner/operator for ASR, but public presentations indicate MPWMD as ASR entity, in cooperation with Cal-Am.	Authorized to develop JPA with MPWMD	MPWMD currently envisioned as sole sponsor.	MPWMD envisioned as sole sponsor in coordination with Cal-Am.	No MPWMD participation required. Possible co-sponsorship through agreement with project proponents.
69	Other entities participation	Other water purveyors are wholesale water customers.	Ongoing discussions with FORA and MCWD. Have not met with Cal-Am.	None specified; partnerships possible.	ASR could be coordinated with any other larger desal project.	None anticipated at this time.
70						
71	PUBLIC INVOLVEMENT					
72	Outreach programs	Formal outreach program with 20 town hall meetings; presentations to jurisdictions. Website.	Presentations to MPWMD, City of Monterey, MCWD, FORA, DHS as requested	Monthly written updates and quarterly public workshops 2002-early 2004.	Monthly or quarterly updates; oral reports Board meetings.	Anticipated once EIR completed; $200,000 budgeted. Golf courses would be largest customers.
73						
74	INFORMATION SOURCES	Aug 24, 2004 CWP handouts; answers to MPWMD questions at 7/29/04 workshop; cost details provided by Cal-Am 08/25/04; matrix info provided by MCWRA (8/24/04); misc communications with Cal-Am, RBF and MCWRA. Draft Engineering Report (see line 115).	Slides and responses to questions at 7/29/04 MPWMD workshop (meeting minutes); written Decision Matrix materials dated September 10, 2004. E-mails and phone correspondence with Kennedy Jenks and Marc Del Piero	Board Review Draft EIR, MPWMD Water Supply Project, December 2003.. Regulatory agency worksheets prepared by Jones & Stokes Sept 2004. See line 115 for technical reports with cost information. MPWMD staff and consultant estimates.	MPWMD staff and consultant estimates. Engineering Reports (see line 115 for cost references).	Presentation by Keith Israel at 7/17/04 MPWMD Board meeting. Materials materials submitted by Bob Jaques, Chief Engineer, on September 14, 2004. B. Jaques edits and comments. Engineering Report for costs (see line 115).
75						

EXHIBIT 7-A

	A	B	C	D	E	F
4	DECISION ELEMENT	COASTAL WATER PROJECT	NORTH MONTEREY COUNTY DESALINATION PROJECT	LONG-TERM WATER SUPPLY PROJECT (Sand City Desal)	AQUIFER STORAGE AND RECOVERY (Seaside Basin)	REGIONAL URBAN RECYCLED WATER PROJECT
76						
77	CAPITAL COST DETAIL				first number is MPWMD	first # in paren is Phase I
78	DESALINATION				second number is Cal-Am	second # in paren is Phase II
79	Intake	$8,072,000	$500,000	$21,600,000	N/A	N/A
80	Pre-treatment	included in plant cost	included in plant cost	included in plant cost	N/A	N/A
81	Desal Plant	$119,620,000	$81,000,000	$28,250,000	N/A	N/A
82	Post-treatment	included in plant cost	included in plant cost	included in plant cost	N/A	N/A
83	Brine discharge	included in intake cost	$1,500,000	$18,656,000	N/A	N/A
84	Storage	$8,082,000	$14,000,000	included in transmission pipeline	N/A	N/A
85	Transmission Pipelines	$31,320,000	$16,830,000	$12,692,000	N/A	N/A
86	Pump stations	$7,955,000	included in storage cost	included in transmission pipeline	N/A	N/A
87	Energy facilities	none identified	none identified	$1,000,000	N/A	N/A
88	DESAL SUBTOTAL	$175,049,000	$113,830,000	$82,198,000	N/A	N/A
89						
90	ASR COSTS	$10,124,000	N/A	N/A	$3,062,000 - $10,124,000	N/A
91	RECYCLED WATER COSTS	N/A	N/A	N/A	N/A	$26.5 mil total ($15 mil + $11.5 mil)
92	OTHER WATER SOURCES	N/A	N/A	N/A	N/A	N/A
93						
94	ADDL CAPITAL COSTS					
95	Pilot Plant	$1,114,000	included in desalination project	none identified	MPWMD already operational	N/A
96	Distribution system improvements	included in desal and ASR costs	none identified	none identified	$6,516,000 - $4,750,000	N/A
97	Right-of-way	$4,400,000	none identified	$6,500,000	$1,100,000 - $1,100,000	none identified
98	Envtl review, permits, etc.	$46,572,000	$3,415,000	$61,702,000	$7,377,000 - $3,718,000	$7 mil total ($4 mil + $3 mil)
99	Engineering	included in envt/permits	$11,383,000	included in envt/permits	included in envt/permits	included in envt/permits
100	Construction Management	included in envt/permits	$8,537,000	included in envt/permits	included in envt/permits	included in envt/permits
101	Admin/legal	included in envt/permits	$3,415,000	included in envt/permits	included in envt/permits	included in envt/permits
102	Mitigation measures	none identified	none identified	none identified	none identified	none anticipated
103	Contingencies	$23,726,000	$35,251,000	$25,800,000	$2,586,000 - $1,969,000	included in envt/permits
104	SUBTOTAL	$75,812,000	$62,001,000	$94,002,000	$17,579,000 - $11,537,000	$7,000,000 total - see line 98
105						
106	TOTAL CAPITAL COST	$260,985,000	$175,831,000	$176,200,000	$20,641,000 - $21,661,000	$33.5 mil total ($19 mil + $14.5 mil)
107						
108	ANNUAL O&M COST DETAIL		for 20,000 AFY plant			
109	Energy	included in total O&M	$4,432,000	$7,250,000	included in total O&M	included in total O&M
110	Facilities O&M	included in total O&M	$8,928,000	$1,540,000	included in total O&M	included in total O&M
111	Mitigation O&M	none identified	none identified	none identified	none identified	none anticipated
112	TOTAL O&M ($/yr)	$10,484,000	$13,360,000	$8,790,000	$293,000 - $296,000	$800,000/yr Phase 1; $1,100,000/yr Phase I & II
113						

	A	B	C	D	E	F
4	DECISION ELEMENT	COASTAL WATER PROJECT	NORTH MONTEREY COUNTY DESALINATION PROJECT	LONG-TERM WATER SUPPLY PROJECT (Sand City Desal)	AQUIFER STORAGE AND RECOVERY (Seaside Basin)	REGIONAL URBAN RECYCLED WATER PROJECT
114						
115	SOURCES FOR COSTS	Draft Preliminary Project Description, Coastal Water Project, Aug 2004, RBF Consulting, pp 4-3 and 4-5	North Monterey County Desalination Project, MPWMD Decision Matrix, Sept 10, 2004, Kennedy/Jenks Consultants; e-mail refinements from Thomas Yeager, K/J Senior Engineer	Monterey Peninsula Water Supply Project, Phase 2 Technical Memorandum, Project Facilities Alternatives for the Sand City Desalination Project, June 23, 2004, CDM, p 6-2.	First number: Monterey Peninsula Water Supply Project Alternatives, Final Phase 1 Technical Memorandum, March 2003, CDM, p 3-29. Second number: Draft Preliminary Project Description, Coastal Water Project, Aug 2004, RBF, pp 4-3 and 4-5.	Regional Urban Recycled Water Distribution Project, Prepared for MCWD and MRWPCA, July 2003, RBF Consulting, pp 6-3 and 6-9; and materials from Bob Jaques, MRWPCA Chief Engineer, September 14, 2004.
116						
117	ACRONYMS					
118	$/AF	cost per acre-foot				
119	$/kwh-	cost per killowatt-hour				
120	ac	acre				
121	AFY	acre-feet per year				
122	ARB	Air Resources Board				
123	ASR	aquifer storge and recovery				
124	BRAC	Base Realignment and Closure Office (US Army)				
125	BRDEIR	Board Review Draft EIR on MPWMD Water Supply Project (interim draft, Dec 2003)				
126	Cal-Am	California American Water				
127	CalTrans	Cal. Dept. of Transportation				
128	CAW	California American Water				
129	CCC	California Coastal Commission				
130	CDFG	Cal. Dept. Fish & Game				
131	CDM	Camp Dresser & McKee, Inc.				
132	CDTS	Cal. Dept. of Toxic Substances				
133	CEC	California Energy Commission				
134	CEQA	California Environmental Quality Act				
135	COP	Certificate of Participation				
136	CPUC	Cal. Public Utilities Commission				
137	CR	Carmel River				
138	CSD	Community Services District				
139	CWP	Coastal Water Project				
140	DBO	design-build-operate				
141	DEIR	Draft EIR				
142	DHS	Cal. Dept. of Health Services				
143	DPR	Cal. Dept. of Parks & Recreation				
144	Duke	Duke Energy Corporation				
145	DWR	Cal. Dept. of Water Resources				
146	EIR	Environmental Impact Report				
147	EIS	Environmental Impact Statement				
148	FEIR	Final EIR				
149	FORA	Fort Ord Reuse Authority				
150	HDD	horizontal directional drilling				
151	IS	Initial Study				
152	JPA	Joint Powers Authority				

	A	B	C	D	E	F
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153	MBNMS	Monterey Bay National Marine Sanctuary				
154	MBUAPCD	Monterey Bay Unified Air Pollution Control District				
155	MCEH	Monterey County Environmental Health				
156	MCWD	Marina Coast Water District				
157	MCWRA	Monterey County Water Resources Agency				
158	MLHD	Moss Landing Harbor District				
159	MoCo	Monterey County				
160	MP	Monterey Peninsula				
161	MPWMD	Monterey Peninsula Water Management District				
162	MRWPCA	Monterey Regional Water Pollution Control Agency				
163	N/A	not applicable				
164	NEPA	National Environmental Policy Act				
165	NMCDP	North Monterey County Desalination Project				
166	NOAA Fish	National Marine Fisheries Service (part of Natl Oceanic and Atmospheric Administration)				
167	NOP	Notice of Preparation				
168	NorCo	North Monterey County				
169	O&M	operations and maintenance				
170	PEA	Proponent's Environmental Assessment				
171	P&B	Monterey County Dept. Planning & Building Inspection				
172	P/SM	Pajaro/Sunny Mesa Community Services District				
173	RBF	RBF Consulting, Inc				
174	ROD	Record of Decision				
175	ROW	right-of-way				
176	RWQCB	Regional Water Quality Control Board				
177	SLC	State Lands Commission				
178	SRF	State Revolving Fund, a loan administered by SWRCB				
179	SWRCB	State Water Resources Control Board				
180	TBD	to be determined				
181	USACOE	US Army Corps of Engineers				
182	USBLM	US Bureau of Land Management				
183	USBR	US Bureau of Reclamation				
184	USCG	US Coast Guard				
185	ESEPA	US Environmental Protection Agency				
186	USFWS	US Fish & Wildlife Service				
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