

SEASIDE GROUNDWATER BASIN WATERMASTER
REGULAR BOARD MEETING NOTICE/AGENDA *REVISED*****

Wednesday, August 7, 2019 – 2:00pm

**Monterey One Water Board Room, 5 Harris Court, Building “D”
Ryan Ranch, Monterey, California**

Watermaster Board

Coastal Subarea Landowner – Director Paul Bruno, Chair
City of Seaside – Mayor Ian Oglesby
California American Water – Director Christopher Cook
City of Sand City – Mayor Mary Ann Carbone
Monterey Peninsula Water Management District – Director George Riley
Laguna Seca Subarea Landowner – **Director Troy Thompson**
City of Monterey – Councilmember Dan Albert
City of Del Rey Oaks – Councilmember John Gaglioti
Monterey County/Monterey County Water Resources Agency – Supervisor Mary Adams, District 5

I. CALL TO ORDER

II. ROLL CALL

III. ELECTION OF OFFICER

Election of Vice Chairperson to the Watermaster Board of Directors (must be member of board of directors).....3

IV. PUBLIC COMMUNICATIONS

Oral communication is on each meeting agenda in order to provide members of the public an opportunity to address the Watermaster on matters within its jurisdiction. Matters not appearing on the agenda will not receive action at this meeting but may be referred to the Watermaster Administrator or may be set for a future meeting. Presentations will be limited to three minutes or as otherwise established by the Watermaster. In order that the speaker may be identified in the minutes of the meeting, it is helpful if speakers would use the microphone and state their names. Oral communications are now open.

V. REVIEW OF AGENDA

If there are any items that arose after the 72-hour posting deadline, a vote may be taken to add the item to the agenda pursuant to the requirements of Government Code Section 54954.2(b). (A 2/3-majority vote is required).

VI. MINUTES - Approve Minutes of Regular Board meeting held June 5, 20195

VII. CONSENT CALENDAR

A. Consider approving Summary of Payments Made During June 2019 totaling \$19,870.009
B. Consider Approving Fiscal Year 2019 Financial Reports through June 30, 201911
C. Change in Posting of Data to Watermaster Website.....15

VIII. ORAL PRESENTATION – None scheduled

IX. NEW BUSINESS	
A. Discuss/Consider Approval/Give Direction regarding City of Seaside Application for In-lieu Storage	17
B. Geochemical Modeling of the Pure Water Monterey Advanced Water Treatment Water	29
X. OLD BUSINESS - None	
XI. INFORMATIONAL REPORTS (No Action Required)	
A. Technical Advisory Committee (TAC) minutes from meetings held June 12 and July 10, 2019	35
B. Watermaster report of production of the Seaside Basin April 1, 2019 – June 30, 2019	43
C. Watermaster letter in support of Pure Water Monterey Project dated June 11, 2019	45
D. Article on three-dimensional models of subsurface freshwater/saltwater interfaces and mapping of coastline	47
XII. DIRECTOR’S REPORTS	
XIII. STAFF COMMENTS	
XIV. NEXT REGULAR MEETING DATE – Wednesday, September 4, 2019 - 2:00 P.M.	
XV. ADJOURNMENT	

This agenda was forwarded via e-mail to the City Clerks of Seaside, Monterey, Sand City and Del Rey Oaks; the Clerk of the Monterey Board of Supervisors, the Clerk to the Monterey Peninsula Water Management District; the Clerk at the Monterey County Water Resources Agency, Monterey One Water and the California American Water Company for posting on July 29, 2019 per the Ralph M. Brown Act, Government Code Section 54954.2(a).

SEASIDE GROUNDWATER BASIN
WATERMASTER

TO: Board of Directors
FROM: Laura Paxton, Administrative Officer
DATE: August 7, 2019
SUBJECT: Election of Vice Chair to the Watermaster Board of Directors

RECOMMENDATIONS: Consider electing a Vice Chair to the Watermaster Board.

BACKGROUND:

Each year the Watermaster board elects its officers, as was done at the January 2, 2019 regular board meeting where Laguna Seca Subarea Landowner Representative Bob Costa was elected Vice Chair.

DISCUSSION:

Vice Chair Costa recently resigned his position with Laguna Seca Golf Ranch and is no longer a member of the Watermaster Board of Directors. The Adjudication Decision states “At the first meeting of each newly comprised Watermaster board, the Watermaster shall elect a chairman and vice-chairman from its membership...” and the Watermaster Rules and Regulations state “At the first meeting of the Watermaster Board each year, the Watermaster Board shall elect a Chairperson, and a Vice Chairperson from its Membership.” Since the particular circumstance of an officer of the board vacating position during a term is not addressed, it is recommended that the board elect a vice-chairperson to fill the vacancy left by Director Costa.

FISCAL IMPACTS:

None

ATTACHMENTS:

None

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**SEASIDE GROUNDWATER BASIN WATERMASTER (Watermaster)
REGULAR MEETING MINUTES**

Monterey One Water Board Room, 5 Harris Court, Building “D”
Ryan Ranch, Monterey, California
June 5, 2019

I. CALL TO ORDER – The meeting was called to order at 2:00 p.m.

II. ROLL CALL

Coastal Subarea Landowner – Director Paul Bruno - Chair
City of Del Rey Oaks – Council Member John Gaglioti
City of Sand City – Mayor Mary Ann Carbone
California American Water (CAW) –Director Christopher Cook
City of Monterey – Council Member Dan Albert
Monterey County/Monterey County Water Resources Agency – Supervisor Mary Adams

Absent: City of Seaside – Mayor Ian Oglesby
Monterey Peninsula Water Management District (MPWMD) – Director George Riley
Laguna Seca Subarea Landowner

Others Present

Watermaster Technical Program Manager – Robert Jaques
Watermaster Administrative Officer – Laura Paxton
Lori Girard, CAW Legal Counsel
Don Freeman, City of Seaside City Attorney
Rick Reidl – City of Seaside
Bob Holden – Monterey One Water/Pure Water Monterey
Alison Nishimura – Monterey One Water/Pure Water Monterey
Sarah Hardgrave – Office of Supervisor Mary Adams
Derrick Williams – Montgomery and Associates

III. PUBLIC COMMUNICATIONS: None

IV. REVIEW OF AGENDA: There were no requested changes to the agenda.

V. APPROVAL OF MINUTES

It was moved by Councilmember Albert, seconded by Councilmember Gaglioti and unanimously carried to approve the minutes of the Regular Board meeting held January 2, 2019.

VI. CONSENT CALENDAR

- A. Consider approval of Summary for Payments made during January – May 2019 totaling **\$81,859.99**
- B. Consider Approving Fiscal Year 2018 Financial Reports through December 31, 2018
- C. Consider Approving Fiscal Year 2019 Financial Reports through April 30, 2019

Moved by Mayor Carbone, seconded by Councilmember Albert and unanimously carried to approve the consent calendar with noted correction from December 2019 to December 2018 within the January Summary of Payments Made.

- I. ORAL PRESENTATION:** Bob Holden, Monterey One Water Principal Engineer, gave a presentation on the backup Expanded Pure Water Monterey Groundwater Replenishment (PWM/GWR) Project. The proposed expanded project would reduce discharges of secondary effluent to Monterey Bay and would inject into the Seaside Groundwater Basin approximately 2,250 acre-feet per year (AFY) of additional purified recycled water. Combined with the existing PWM/GWR Project yield this expansion would result in a total water supply yield of approximately 5,750 AFY to replace existing water supplies for California American Water Company's (CAW) Monterey District service area and enable CAW to comply with the State Board's Cease and Desist Order (Orders 95-10, 2016-0016) as amended. At this time, the Expanded PWM/GWR Project is considered a "back-up plan" to the Monterey Peninsula Water Supply Project (MPWSP), CAW's planned 6.4 mgd desalination project. The Expanded PWM/GWR Project would be implemented in the event that the MPWSP encounters obstacles that prevent timely, feasible implementation. Comments on the Notice of Preparation are due by June 14th. Mr. Holden thanked Watermaster for the use of its groundwater model for project development.

In reference to the expansion project Notice of Preparation, Mr. Jaques stated that he had submitted a comment letter today on behalf of Watermaster stating that, based on groundwater modeling, injection of water near the coastline is more beneficial than other injection sites in raising Basin protective groundwater levels and requests coastal injection be considered in the project EIR scope.

IX. NEW BUSINESS:

- A. Consider Approving Updated Basin Management Action Plan.** The full document is available at https://www.seasidebasinwatermaster.org/Other/BMAP%20Final_07192019.pdf

Mr. Jaques gave an overview of the item. Derrick Williams, Montgomery and Associates presented the updated plan. He noted that the Seaside Basin deep aquifer is geologically separate from the adjacent MCWD area deep aquifer. He strongly encouraged coordination with the Salinas Valley Basin Groundwater Sustainability Agency (GSA) and Marina Coast Water District Groundwater Sustainability Agency to ensure that sustainable management criteria included in the neighboring Groundwater Sustainability Plans do not limit the Watermaster's sustainable management of the Basin. Mr. Jaques is Watermaster technical advisor to the GSA technical committee and attends the monthly meetings. He is poised to coordinate closely when groundwater elevation goals and other important factors are being developed.

Director Cook requested that the offset and supplemental supply from PWM be considered for injection via the Bishop/Ryan Ranch interconnect in an attempt to stabilize water elevations near the Laguna Seca Subarea eastern border.

Moved by Supervisor Adams, seconded by Councilmember Gaglioti and unanimously carried, to approve the Updated Basin Management Action Plan as presented.

B. Discussion and Possible Approval of Allocation of Water Rights After Decision-Required Pumping Ramp-Downs Have Been Completed

Mr. Jaques noted inconsistencies in the Decision complicate the calculation of water rights after ramp-downs are completed. The Watermaster Technical Advisory Committee (TAC) recommends the Board continue to use 3,000 acre-feet per year (AFY) as the Natural Safe Yield value when calculating the next ramp-down in pumping. Ramp-down calculations for a basin-wide Natural Safe Yield of 2,913 AFY are based on a slightly different interpretation of the Adjudication Decision however ramping down to 2,913 AFY would provide negligible additional benefit to the Basin. The Salinas Valley Basin Groundwater Sustainability Plans will need to be completed by 2022, and the TAC felt at that time it would be appropriate to reevaluate the Natural Safe Yield value, and also to consider the concept of Sustainable Yield versus Natural Safe Yield for basin management purposes.

Moved by Councilmember Gaglioti, seconded by Councilmember Albert and unanimously carried, to approve ramp-down to 3,000 AFY in Water Year 2021 and assign water allocations to each Producer as shown in Table 7 of Attachment 1 after all pumping ramp-downs have been completed.

C. Discussion of the Pros and Cons of Using the Sustainable Yield Approach in Place of the Natural Safe Yield Approach for Basin Management

Derrick Williams, Montgomery and Associates detailed the difference between safe yield (the pumping amount equal to the naturally occurring Basin recharge each year) versus sustainable yield (pumping with consideration of dynamic basin boundary conditions). The basis of sustainable yield is to prevent undesirable results (i.e. seawater intrusion) whereas safe yield is the management of pumping to balance an inflow/outflow equation. Director Cook felt that upcoming water supply projects would considerably alter Basin dynamics and that it would be better to perform a sustainable yield analysis after projects are operational.

Moved by Mayor Carbone, seconded by Director Cook and unanimously carried, to approve the TAC's recommendation:

- **To not perform a sustainable yield analysis at this time;**
- **To revisit the concept of using the Sustainable Yield Approach to replace the Natural Safe Yield approach after the Groundwater Sustainability Plan for the Monterey Subbasin of the Salinas Valley Groundwater Basin has been completed in 2022, and its impacts on the Seaside Groundwater Basin have been determined;**
- **To revisit the Decision if something is learned, or events occur, that would warrant performing a Sustainable Yield analysis sooner.**

D. California American Water Request for Credit against Replenishment Assessment

Moved by Mayor Carbone, seconded by Councilmember Gaglioti and unanimously carried, to approve California American Water's request to allow a credit for actual expenditures incurred October 2016 through January 2019 for the Monterey Pipeline and Pump Station amounting to \$49,382,196 to be used to offset the Seaside Basin Water Year 2018 Overproduction Replenishment Assessment.

E. Discuss/Consider Authorizing Watermaster Legal Counsel Services

Moved by Director Cook, seconded by Supervisor Adams and unanimously carried, for staff to solicit proposals for Watermaster legal services.

X. OLD BUSINESS: None

XI. INFORMATIONAL REPORTS:

- A.** Technical Advisory Committee (TAC) minutes from meetings held January 9, February 13, March 13, and May 8, 2019
- B.** Watermaster report of production of the Seaside Basin October 1, 2018 – March 31, 2019
- C.** MPWMD 2018 Annual Report
- D.** The Salinas Valley Basin Groundwater Sustainability Agency agenda for the May 16 meeting is available for viewing at <http://svbgsa.org> and includes minutes of the April 18th meeting.

XII. DIRECTOR'S REPORTS: There were no reports from directors.

XIII. STAFF COMMENTS: Staff commented on meeting schedules, and noted there had been no communication as of yet with newly appointed Watermaster Judge O'Farrell.

XIV. NEXT MEETING DATE: The next meeting of the Watermaster board will be held Wednesday, July 3, 2019 at the Monterey One Water board room at 5 Harris Court, Building "D" on Ryan Ranch in Monterey at 2:00 p.m.

XV. There being no further business, Chair Bruno adjourned the meeting at 3:35 p.m.

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Board of Directors
 FROM: Laura Dadiw, AO
 DATE: August 7, 2019
 SUBJECT: Summary of Payments made during the months of June - July 2019

RECOMMENDATIONS:

Consider approving payment of bills submitted and authorized to be paid June - July 2019

Summary of Payments Made June 2019**Paxton Associates (Administrative Officer (AO))**

April 26, 2019 through May 25, 2019 36 \$ 3,600.00

Responded to telephone inquiries, e-mail, and other correspondence as needed regarding the Seaside Basin. Reconcile books w/ City of Seaside. Prep for/attend PWM expansion mtg and follow up with Bob. Budget and finance mtg agenda/pkt prep. Account for Cypress wheeling to CAW. Prepare financials and summary of payments. prepare Board packet. Routinely picked up mail from PO Box; reconciled accounts to the City of Seaside Watermaster accounts; prepared financial reports; processed invoices; reviewed and posted items to web site.

Robert Jaques (Technical Program Manager)

March 30, 2019 through May 29, 2019 40 6,000.00

Responded to emails, telephone inquiries, and other correspondence on a variety of Watermaster issues; TAC agenda packet. Prep/attend SVBGSA TAC meetings. Prep/attend May budget finance mtg. Review draft City of Seaside in-lieu storage and recovery agmt app. prepare and submit comments to MIW on the PWM meeting agenda packet materials. Review tech memo from Pueblo Water Resources re: Geochem modeling and send comments to J. Lear. Review supplemental

Total for June 2019	\$ 9,600.00
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Summary of Payments Made July 2019**Paxton Associates (Administrative Officer (AO))**

May 26, 2019 through June 25, 2019 42.5 \$ 4,250.00

Responded to telephone inquiries, e-mail, and other correspondence as needed regarding the Seaside Basin. Draft Agenda; water production reporting followup; Freeman call re: legal svcs; Seaside In-lieu project. Prepare financials and summary of payments. Prepare legal svcs transmittal. Prepare and distribute Board packet. Prepare New Board member orientation binders. Prep for/Attend 6/5 Board meeting. Review TAC packet. Develop legal council RFP. Inquire of County counsel for WM legal svcs. Routinely picked up mail from PO Box; reconciled accounts to the City of Seaside Watermaster accounts; prepared financial reports; processed invoices; reviewed and posted items to web site.

Robert Jaques (Technical Program Manager)

May 30, 2019 through July 8, 2019 35.25 **5,287.50**
Responded to emails, telephone inquiries, and other correspondence on a variety of Watermaster issues; TAC agenda packet. Prep/attend SVBGSA TAC meetings. Prep/submit NoP comment letter re: M1W PWM Expansion Project. Prep for/attend June board meeting. Prep/send M1w letter of support for PMW's Expansion project grant application. Review MCWD indirect potable reuse feasibility study. 2020 M&MP Work Plan.

Montgomery & Associates (Technical Consultant)

May 2019 RFS 2019-01 General Consulting & TAC 3.5 **732.50**
Prepare presentations on the BMAP and sustainable yield for 6/5 Board meeting

Total for July 2019 **\$ 10,270.00**

Grand Total June - July 2019 **\$ 19,870.00**

Seaside Groundwater Basin Watermaster
Budget vs. Actual Administrative Fund
 Fiscal Year (January 1 - December 31, 2019)
 Balance through June 30, 2019

	<u>2019 Adopted Revised Budget</u>	<u>Contract Amount</u>	<u>Year to Date Revenue / Expenses</u>
Available Balances & Assessments			
Dedicated Reserve	-		-
FY (Rollover)	23,000.00		12,825.52
Admin Assessments	77,000.00		77,000.00
Available	<u>100,000.00</u>		<u>89,825.52</u>
Expenses			
Contract Staff	50,000.00	50,000.00	21,475.00
Legal Advisor	25,000.00		5,002.20
Filing fees and postage			-
Total Expenses	<u>75,000.00</u>	<u>50,000.00</u>	<u>26,477.20</u>
Total Available	25,000.00		
Dedicated Reserve	25,000.00		25,000.00
Net Available	<u><u>-</u></u>		<u><u>38,348.32</u></u>

Seaside Groundwater Basin Watermaster
Budget vs. Actual Monitoring & Management - Operations Fund
 Fiscal Year (January 1 - December 31, 2019)
 Balance through June 30, 2019

	2019 Adopted Budget	Contract Encumbrance	Year to Date Revenue/Expenses
Available Balances & Assessments			
Operations Fund Assessment	\$ 106,921.00	\$ -	\$ 106,921.00
Pass Through	-	3,915.00	2,049.00
Cost Share Reimbursement	-	-	-
FY 2018 Rollover	100,000.00	-	222,193.80
Total Available	\$ 206,921.00	\$ 3,915.00	\$ 331,163.80
Appropriations & Expenses			
GENERAL			
Technical Project Manager	\$ 50,000.00	\$ 50,000.00	\$ 31,012.50
Contingency @ 10% (not including TPM)	14,266.00	-	-
Total General	\$ 64,266.00	\$ 50,000.00	\$ 31,012.50
CONSULTANTS (Montgomery; Todd Groundwater; Web Site Database)			
Program Administration	\$ 21,140.00	\$ 19,400.00	\$ 8,141.25
Production/Lvl/Qlty Monitoring	2,400.00	-	-
Basin Management	30,000.00	-	-
Seawater Intrusion Analysis Report	21,550.00	21,100.00	-
Total Consultants	\$ 75,090.00	\$ 40,500.00	\$ 8,141.25
MPWMD			
Production/Lvl/Qlty Monitoring	\$ 48,832.00	48,832.00	-
Pass Through 2018	-	3,915.00	-
Basin Management	-	-	-
Seawater Intrusion	1,192.00	1,192.00	-
Direct Costs	-	-	-
Total MPWMD	\$ 50,024.00	\$ 53,939.00	\$ -
CONTRACTOR (Martin Feeney)			
Production/Lvl/Qlty Monitoring	\$ 17,541.00	\$ 17,540.56	\$ 7,175.29
Total Appropriations & Expenses	\$ 206,921.00	\$ 161,979.56	\$ 46,329.04
Total Available	-		284,834.76

Seaside Groundwater Basin Watermaster														ITEM VII.B.		
Replenishment Fund														8/7/19		
Water Year 2019 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2019)																
Balance through June 30, 2019																
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Totals WY 2006 Through 2018	Budget WY 2019	Projected Totals Through WY 2019
Replenishment Fund	WY 05/06	WY 06/07	WY 07/08	WY 08/09	WY 09/10	WY 10/11	WY 11/12	WY 12/13	WY 13/14	WY 14/15	WY 15/16	WY 16/17	WY 17/18		WY 18/19	
Unit Cost:	\$1,132 / \$283	\$1,132 / \$283	\$2,485 / \$621.25	\$3,040 / \$760	\$2,780 / \$695	\$2,780 / \$695	\$2,780 / \$695	\$2,780 / \$695	\$675.50	\$675.50	\$675.50	\$2,872 / \$718	\$2,872 / \$718		\$2,872 / \$718	
Cal-Am Water Balance Forward	\$ -	\$ 1,641,004	\$ 4,226,710	\$ (2,871,690)	\$ (2,839,939)	\$ (3,822,219)	\$ (6,060,164)	\$ (8,735,671)	\$ (6,173,771)	\$ (3,102,221)	\$ (676,704)	\$ (676,704)	\$ (491,747)		\$ (48,797,949)	
Cal-Am Water Production	3710.0 AF	4059.9 AF	3862.9 AF	2966.0 AF	3713.5 AF	3416.0 AF	3070.9 AF	3076.6 AF	3232.1 AF							
Exceeding Natural Safe Yield																
Considering Alternative Producers	2,106.652	2,565.471	5,199.014	3,773.464	4,112.933	3,187.854	2,280.943	2,380.842	2,790.539	2,113.414	-	184.957	1,075.995	\$ 31,772,078	100,000	\$ 31,872,078
Operating Yield Overproduction																
Replenishment	-	20,235	8,511	-	-	-	154,963	181,057	281,012	312,103	-	-	-	957,881	20,000	977,881
Total California American	\$ 2,106,652	\$ 2,585,706	\$ 5,207,525	\$ 3,773,464	\$ 4,112,933	\$ 3,187,854	\$ 2,435,907	\$ 2,561,899	\$ 3,071,550	\$ 2,425,516		\$ 184,957	\$ 1,075,995	\$ 32,729,958	\$ 120,000	\$ 32,849,958
CAW Credit Against Assessment	(465,648)		(12,305,924)	(3,741,714)	(5,095,213)	(5,425,799)	(5,111,413)						(49,382,196)	(81,527,907)		(81,527,907)
CAW Unpaid Balance	\$ 1,641,004	\$ 4,226,710	(2,871,690)	(2,839,939)	(3,822,219)	(6,060,164)	(8,735,671)	(6,173,771)	(3,102,221)	(676,704)	(676,704)	(491,747)	(48,797,949)	(48,797,949)	(48,797,949)	(48,677,949)
City of Seaside Balance Forward	\$ -	\$ 243,294	\$ 426,165	\$ 1,024,272	\$ 1,619,973	\$ 891,509	\$ (110,014)	\$ (773,813)	\$ (1,575,876)	\$ (2,889,325)	\$ (3,346,548)	\$ (3,232,420)	\$ (3,142,500)		\$ (3,022,249)	
City of Seaside Municipal Production	332.0 AF	387.7 AF	294.3 AF	293.4 AF	282.9 AF	240.7 AF	233.7 AF	257.7 AF	223.6 AF	223.6 AF	185.01 AF					
Exceeding Natural Safe Yield																
Considering Alternative Producers	219,689	174,082	402,540	465,300	314,721	141,335	163,509	236,782	142,410	69,630	102,330	87,512	93,225	\$ 2,613,063	100,000	\$ 2,713,063
Operating Yield Overproduction																
Replenishment	12,622	85	4,225	16,522	20,690	-	1,689	27,007	3,222	38	11,959	2,409	27,026	127,492	10,000	137,492
Total Municipal	232,310	174,167	406,764	481,823	335,412	141,335	165,198	263,788	145,631	69,667	114,290	89,920	120,251	2,740,556	110,000	2,850,556
City of Seaside - Golf Courses																
Exceeding Natural Safe Yield - Alternative Producer			131,705	69,701	-	-	-	-	-	-	-	-	-	201,406	-	201,406
Operating Yield Overproduction																
Replenishment			32,926	17,427	-	-	-	-	-	-	-	-	-	50,353	-	50,353
Total Golf Courses			164,631	87,128										251,759		251,759
Total City of Seaside*	\$ 232,310	\$ 174,167	\$ 571,395	\$ 568,951	\$ 335,412	\$ 141,335	\$ 165,198	\$ 263,788	\$ 145,631	\$ 69,667	\$ 114,290	\$ 89,920	\$ 120,251	\$ 2,992,315	\$ 110,000	\$ 3,102,315
City of Seaside Late Payment 5%	10,984	8,704	26,712	26,750	15,737									88,887		88,887
In-lieu Credit Against Assessment					(1,079,613)	(1,142,858)	(828,996)	(1,065,852)	(1,459,090)	(526,890)	(162)			(6,103,451)		(6,103,451)
City of Seaside Unpaid Balance	\$ 243,294	\$ 426,165	\$ 1,024,272	\$ 1,619,973	\$ 891,509	\$ (110,014)	\$ (773,813)	\$ (1,575,876)	\$ (2,889,325)	\$ (3,346,548)	\$ (3,232,420)	\$ (3,142,500)	\$ (3,022,249)	\$ (3,022,249)	\$ (2,912,249)	\$ (2,912,249)
Total Replenishment Fund Balance	\$ 1,884,298	\$ 4,652,874	\$ (1,847,417)	\$ (1,219,966)	\$ (2,930,710)	\$ (6,170,178)	\$ (9,509,483)	\$ (7,749,648)	\$ (5,991,546)	\$ (4,023,252)	\$ (3,909,125)	\$ (3,634,247)	\$ (51,820,198)	\$ (51,820,198)	\$ (51,590,198)	\$ (51,590,198)
Replenishment Fund Balance Forward	-	\$ 1,884,298	\$ 4,652,874	\$ (1,847,417)	\$ (1,219,966)	\$ (2,930,710)	\$ (6,170,178)	\$ (9,509,483)	\$ (7,749,648)	\$ (5,991,546)	\$ (4,023,252)	\$ (3,909,125)	\$ (3,634,247)	\$ (51,820,198)	\$ (51,590,198)	\$ (51,590,198)
Total Replenishment Assessments	2,349,946	2,768,576	5,805,632	4,369,165	4,464,082	3,329,189	2,601,104	2,825,688	3,217,182	2,495,183	114,290	274,877	1,196,246	35,811,161	230,000	36,041,161
Total Paid and/or Credited	(465,648)	-	(12,305,924)	(3,741,714)	(6,174,826)	(6,568,657)	(5,940,409)	(1,065,852)	(1,459,080)	(526,890)	(162)	-	(49,382,196)	(87,631,358)	-	(87,631,358)
Grand Total Fund Balance	\$ 1,884,298	\$ 4,652,874	\$ (1,847,417)	\$ (1,219,966)	\$ (2,930,710)	\$ (6,170,178)	\$ (9,509,483)	\$ (7,749,648)	\$ (5,991,546)	\$ (4,023,252)	\$ (3,909,125)	\$ (3,634,247)	\$ (51,820,198)	\$ (51,820,198)	\$ (51,590,198)	\$ (51,590,198)

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SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: August 7, 2019

SUBJECT: Change in Posting of Data to the Watermaster's Website

RECOMMENDATIONS:

Discontinue posting quarterly water level and water quality data on the Watermaster's website, and instead use the Annual Report posting to provide this data to the public.

BACKGROUND:

The Watermaster's annual contract with MPWMD includes a task to compile the Q1 and Q2 Water Quality and Water Level data from the wells in the Seaside Basin and to send it to the Watermaster for posting on our website. I recently learned from Mr. Lear at the MPWMD that they have had to use the hours allocated in their contract for performing that work to instead augment the hours in their contract to prepare and submit Watermaster data to the California Statewide Groundwater Elevation Monitoring Program (CASGEM). The Watermaster must submit that data to CASGEM as part of Department of Water Resource's (DWR) Adjudicated Basin reporting requirements under the Sustainable Groundwater Management Act (SGMA).

Mr. Lear explained that Adjudicated basins are the first basins under DWR's SGMA requirements to begin reporting data through the CASGEM porthole. This new reporting process has encountered numerous "bugs" and that has resulted in his having to spend over twice the hours allocated for this activity working with DWR staff to make the data upload process more efficient.

DISCUSSION:

The original purpose of compiling the Q1/Q2 report was to make the data available to interested parties more frequently than on a yearly basis. The full year's data is contained in the Watermaster's Annual Reports to the Court, which are posted on the Watermaster's website. The CASGEM data, which contains the water level data, is available online for the public to query at any time.

In view of the fact that in recent years the Watermaster has not received any inquiries from the public regarding the Q1/Q2 data, and since that data, along with the Q3/Q4 data, is included in the Watermaster's Annual Reports, it appears that it would be acceptable to discontinue having MPWMD provide a Q1/Q2 report. Any parties inquiring of the Q1/Q2 data could be referred to the CASGEM website to obtain water level data. If a party wished to obtain water quality data, the request could be sent by the Watermaster to MPWMD who could then provide that data.

At its July 10, 2019 meeting the TAC concurred with this approach, and recommended discontinuing posting water level and water quality data on the Watermaster's website, and instead using the Annual Report posting to provide this data. If this recommendation is implemented, posting of quarterly data to the Watermaster's website will be discontinued effective immediately, and quarterly data posting will be dropped from the 2020 Monitoring and Management Program.

ATTACHMENTS: None

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**SEASIDE GROUNDWATER BASIN
WATERMASTER**

TO: Board of Directors
FROM: Laura Paxton, Administrative Officer
DATE: August 7, 2019
SUBJECT: Discuss/Consider Approval/Give Direction Re: City of Seaside In-lieu Storage Agreement Application

RECOMMENDATIONS:

Consider approving City of Seaside In-lieu Storage Agreement Application or provide direction to staff on how best to obtain Decision clarification on in-lieu storage provisions.

BACKGROUND:

Watermaster received from the City of Seaside (City) an application to store and recover non-native water from the Seaside Groundwater Basin (Basin). The City contact for the application is Kurt Overmeyer, Economic Development Director. A letter dated April 5, 2019 from the City’s attorney Russ McGlothlin explaining the in-lieu storage program (substitution of recycled water on the Blackhorse and Bayonet Golf Courses) accompanied the application. The City seeks to store up to 2,357 acre-feet per year, the share of the City’s municipal total useable storage space set forth in the Decision, using Pure Water Monterey Project recycled water purchased from Marina Coast Water District (MCWD) for irrigation of the City’s golf courses in lieu of the current use of approximately 450 acre-feet per year. The stored water would be recovered at the City’s Well No. 4 to be delivered to MCWD for use within its service area for anticipated projects within the City’s portion of the Ord Community, and potential use within the City of Seaside service area.

DISCUSSION:

The Decision is not clear on the allowance of in-lieu storage (versus replenishment). Watermaster Technical Program Manager, Bob Jaques feels the proposed program should be contracted the same as the past in-lieu *replenishment* agreement whereby the City purchased water from MCWD and left unproduced golf course irrigation water in the ground to replenish the Basin due to Alternative Producers having no storage authority, and that providing recovered water back to MCWD violates the Alternative Producer directive to restrict its allocation to the overlying parcel(s). My perspective is that the past in-lieu replenishment agreement primarily allowed for monetary offset of the City’s Replenishment Assessment levied by Watermaster for overproduction of the City’s municipal water supply. The currently proposed in-lieu *storage* agreement seeks no direct replenishment assessment offset, although stored water may be used to offset City pumping overages thereby avoiding assessment by Watermaster. The program would use the City’s Decision-granted storage allocation to indirectly store and then later recover water, same as the Aquifer Storage and Recovery program run by California American Water and the Water Management District, monitored by Watermaster outside the accounting of production. The in-lieu exchange eliminates the City’s need to install at great cost injection/recovery wells to engage in a storage and recovery program. There would be no monetary impact to Watermaster in allowing the program, and the Basin would benefit by the addition of water.

The Watermaster Technical Advisory Committee reviewed the matter at its June 12 meeting and supported the project in concept however felt its consistency with the decision was a legal matter not a technical one.

If the board is indeterminate on the allowance of such a storage agreement, the City is willing to submit its application and program description to the Court for interpretation if desired.

FISCAL IMPACT:

Minimal

ATTACHMENTS:

- City of Seaside program cover letter
- City of Seaside Application to Store and Recover Non-native Water from the Seaside Groundwater Basin
- Past In-lieu Replenishment Agreement
- Decision excerpts regarding in-lieu replenishment

April 5, 2019

Russell M. McGlothlin
Attorney at Law
805.882.1418 tel
805.965.4333 fax
rmcglathlin@bhfs.com

VIA EMAIL

Laura Paxton (watermasterseaside@sbcglobal.net)
Bob Jaques (bobj83@comcast.net)
Seaside Groundwater Basin Watermaster
P.O. Box 51502
Pacific Grove CA 93950

Re: Proposed City of Seaside In-Lieu Storage Program (Substitution of Recycled Water on the Blackhorse and Bayonet Golf Courses)

Dear Laura and Bob:

I am writing to you in my capacity as special water counsel for the City of Seaside¹ to propose an in-lieu storage program in the Seaside Groundwater Basin as explained below. Pursuant to Section III.3.L.3.j.xx of the Amended Decision, the City submits the attached application for a storage and recovery agreement for the proposed program for Watermaster's consideration.

The proposed in-lieu storage program would result from substituting recycled water obtained from Marina Coast Water District ("MCWD") for irrigation of the City's Bayonet and Blackhorse Golf Courses in lieu of the current use of approximately 450 AFY of groundwater produced from the basin. The result of the substitution would cause the replenishment and storage of water in the basin.²

The delivery of recycled water to the golf courses would be metered and reported to Watermaster on a schedule and appropriate terms to be set forth in the storage and recovery agreement. The quantity of recycled water applied at the golf courses annually will establish the amount of water stored annually in the basin through in lieu storage.

The stored water would be recaptured by the City at its Well No. 4. Most, if not all, of the recovered water will be delivered to MCWD for use within MCWD's service area that is within the City's portion of the Ord Community (former Fort Ord). The water is necessary to serve anticipated projects for which there is presently insufficient water allocation pursuant to Fort Ord Reuse Authority's allocation

1 As we have previously discussed, I cannot simultaneously represent the Watermaster and the City on this matter. Pursuant to our conflict waiver, my firm will only be representing the City on this matter. Should the Watermaster desire legal counsel on this matter, I will gladly provide recommendations for alternative counsel.

2 In lieu storage occurs when a foreign water supply is used in lieu of native groundwater production. The process is a common and preferred method of groundwater replenishment throughout California because it avoids the necessity of infrastructure to inject or spread water for replenishment as well as any necessary treatment prior to injection or spreading.

Laura Paxton
April 5, 2019
Page 2

program, particularly the Campus Town and Main Gate projects. Some portion of the recovered stored water may also be used within the City's municipal water system to cover long-term demand exceedances in excess of the City's pumping right for its municipal system.

I look forward to working with you in processing the attached application. Please contact me with any questions or instructions respecting this matter.

Sincerely,

Russell M. McGlothlin

cc: Kurt Overmeyer, Economic Development Director
Enclosures: Application for Storage and Recovery Agreement

**APPLICATION TO STORE AND RECOVER NON-NATIVE WATER
FROM THE SEASIDE GROUNDWATER BASIN**

INSTRUCTIONS: This Application form is for use by Standard Producers in the Seaside Groundwater Basin (Seaside Basin) for the purpose of obtaining approval from the Seaside Basin Watermaster (Watermaster) to store Non-Native water in, and to subsequently recover that stored water from, the Seaside Basin. The application process is as described in Section III.L.3.j.xx of the Amended Decision of the Monterey County Superior Court, Case No. M66343, filed February 9, 2007.

City of Seaside (the “City”)

Name of Standard Producer (Applicant)

Contact Information for Applicant:

Contact Person: Kurt Overmeyer, Economic Development Director

Address: 440 Harcourt Ave, Seaside, CA 93955

Telephone: 831-899-6839

Proposed quantity of non-native water Applicant seeks to store through spreading or direct injection into the Seaside Basin (acre-feet per year):

Pursuant to Section III.3.L.3.j.xix of the Amended Decision and the Watermaster’s Declaration of Total Usable Storage Space, November 2, 2018 (“Declaration”), the City requests a storage and recovering agreement authorizing the City to store up to 2,357 acre-feet per year, which is the amount of the City’s share of the total usable storage space set forth in the Declaration.

Proposed location(s) where the spreading or direct injection of non-native water into the Seaside Basin will occur.

The City’s storage of water in the basin will result from substituting recycled water obtained from the Pure Water Monterey project (“Recycled Water”), obtained from the Marina Coast Water District (“MCWD”) for irrigation of the City’s Bayonet and Blackhorse Golf Courses in lieu of the current use of approximately 450 acre-feet per year of groundwater from the Seaside Basin. The result of the substitution of the Recycled Water for groundwater production to irrigate the golf courses will cause the replenishment and storage of water in the basin. The location where the Recycled Water would be delivered to the golf courses is shown in Attachment A.

Proposed location(s) where the stored water may be recovered.

The City will recover the stored water at City Well No. 4, located on Juarez Street in the City of Seaside, Assessor's Parcel Number 012-115-017-000, as shown in Attachment B. City Well No. 4 withdraws water from the Santa Margarita aquifer and is perforated at 390 to 420 feet below ground surface (bgs), 430 to 470 feet bgs and at 490 to 550 feet bgs. Most, if not all, of the recovered water will be delivered to MCWD for use to serve users within the City's portion of the Ord Community. Some portion may be used within the City's municipal water system to cover long-term demand exceedances in excess of the City's pumping right for its municipal system.

Water quality characteristics of the non-native water proposed for spreading or direct injection into the Seaside Basin.

Because the storage pursuant to this application would occur through in lieu storage procedures rather than injection or spreading, water quality should not be of concern. However, the substitution water is Recycled Water from the Pure Water Monterey Project, which is the same water that MPWMD will inject into the Seaside Basin pursuant to the California-American Water Company storage program previously approved by Watermaster. The water quality constituents in the Recycled Water will not exceed the water quality limits contained in the Waste Discharge Requirements and Water Recycling Requirements issued for the Pure Water Monterey Project issued by the Central Coast RWQCB in Order No. R3-2017-0003.

Permits and approvals from regulatory agencies.

The Central Coast RWQCB has issued Waste Discharge Requirements and Water Recycling Requirements for the Recycled Water under Order No. R3-2017-0003.

The City will enter into an agreement with MCWD specifying the terms of the delivery of Recycled Water to the Bayonet and Blackhorse Golf Courses and delivery of recovered stored water to MCWD.

**MEMORANDUM OF UNDERSTANDING BETWEEN THE SEASIDE BASIN
WATERMASTER AND THE CITY OF SEASIDE EXTENDING
THE GOLF COURSE IN LIEU REPLENISHMENT PROGRAM**

This Memorandum of Understanding (“MOU”) is entered into between the Seaside Groundwater Basin Watermaster (“Watermaster”) and the City of Seaside (“City”) (individually a “Party” and together the “Parties”) this first day of January, 2013 (“Effective Date”) with respect to the following:

RECITALS

A. On April 7, 2010, the City entered into a Memorandum of Understanding (“Original MOU”) with the Watermaster pertaining to an in lieu replenishment program (“Program”) involving the City-owned Blackhorse and Bayonet Golf Courses (“Golf Courses”).

B. The Program operates in conformance with the amended final decision (“Decision”) entered in the lawsuit, *California American Water v. City of Seaside et al.*, Monterey Superior Court, (Case No. M 66343), which governs groundwater production within the Seaside Groundwater Basin (“Basin”).

C. The City is a party to the above-referenced lawsuit and receives groundwater production allocation pursuant to the Decision as follows: (1) 540 acre-feet of Alternative Production Allocation¹ in relation to the Golf Courses; and (2) Standard Production Allocation in relation to the City Municipal Water System.²

D. The Decision provides that any party that exceeds its allocation of Natural Safe Yield shall incur a Replenishment Assessment for each acre-foot of Over-Production during each Water Year. The Replenishment Assessment is assessed in accord with Section 6.5 of the Watermaster’s Rules and Regulations. The Watermaster is obligated to use funds received from the Replenishment Assessments to obtain supplemental water to replenish the Basin.

E. The City annually incurs liability for Replenishment Assessments (“RA Liability”) imposed upon a portion of the groundwater that it produces from the Basin to supply the demands of the City’s Municipal Water System.

F. Pursuant to the Program, the City causes the Golf Courses to be irrigated with supplemental water to which it is entitled from the Marina Coast Water District (“MCWD Entitlement”) in lieu of producing the City’s Alternative Production Allocation associated with the Golf Courses, and in so doing provides a viable means for the Watermaster to obtain some of the replenishment water that it is obligated to procure pursuant to the Decision. Watermaster, in turn, provides a credit against the City’s RA Liability (“RA Credit”) for the MCWD Entitlement that is applied annually to irrigate the Golf Courses. The Program has operated successfully since its initiation.

¹ All capitalized terms used in this MOU are to be given the same meaning as set forth in the Decision, unless otherwise described.

² The Standard Production Allocation is set forth as a percentage of Operating Yield of the Coastal Subarea. The City’s Standard Production Allocation is roughly 10.47% of the Operating Yield.

G. The City presently possesses 1,389.7 acre-feet of its original MCWD Entitlement of 2,500 acre-feet.

H. Under the Program, the City has offset all of its previously accrued RA Liability and is projected to have a “surplus” of RA Credit in Water Year 2013 and beyond for so long as the City possesses remaining MCWD Entitlement from which to irrigate the Golf Courses.

I. By its terms, the Original MOU terminates three (3) months following the end of the Water Year in which the Chief Executive Officer of Watermaster anticipates that the City shall have accrued sufficient RA Credit to offset all of its then-accrued RA Liability. Watermaster projects that these criteria for termination shall be met following the end of the 2012 Water Year.

J. The Parties desire to continue the Program to use the City’s remaining MCWD Entitlement for in lieu replenishment of the Basin and for the city to accrue a further RA Credit. Accrued RA Credit shall only be used to offset accrued RA Liability.

K. Under projected irrigation demands, the Parties anticipate that remaining MCWD Entitlement shall provide sufficient irrigation water to satisfy the irrigation demands of the Golf Courses through the 2018 Water Year.

L. The Parties desire to enter into this MOU to memorialize the terms upon which the Program shall continue.

AGREEMENT

The Parties agree as follows:

1. **Program Continuance.** The Program shall continue without interruption pursuant to the terms of this MOU. The City shall apply all of its remaining MCWD entitlement for use within the Program and shall not use, lease, sell, or transfer its MCWD Entitlement for any other purpose.

2. **Term.** This MOU shall commence upon the Effective Date and continue until all of the City’s remaining MCWD Entitlement has been used within the Program, and all of the City’s RA Credit has been used the City or by another party should the City transfer its RA Credit.

3. **Accounting of Replenishment Assessment Credit**

3.1 Annual Accounting of In Lieu Replenishment. During the term of this MOU, the City shall report to the Watermaster the amount of MCWD Entitlement delivered to irrigate the Golf Courses in lieu of groundwater production from the Basin for the preceding calendar quarter, in writing, on or before January 15, April 15, July 15, and October 15 of each Water Year. The City shall record and report the deliveries of MCWD Entitlement to the Golf Courses based upon accurate meter readings. All meters used for such reporting shall be regularly calibrated and maintained by the City, or the City’s representative, and at the City’s expense, to ensure accuracy. When and if requested by the Watermaster, the City shall perform additional calibrations to verify meter accuracy. Such requests by the Watermaster will not be made more often than once every two years, unless metering data indicate a metering inaccuracy. If the

Watermaster disputes the reported quantity of MCWD Entitlement delivered for use on the Golf Courses, it shall inform the City of the basis of its objection within one (1) month of receipt of the City's accounting, and the Parties shall thereafter engage in good faith negotiations to attempt to resolve the dispute. Any dispute that cannot thereby be settled shall be referred to the Court for resolution.

3.2 Calculating RA Credit. At the end of each Water Year, the Watermaster shall grant an RA Credit to the City, which shall equal the amount of all MCWD Entitlement used to irrigate the Golf Courses during the proceeding Water Year, not to exceed the City's 540 acre-foot of Alternative Production Allocation, multiplied by the amount of the effective Replenishment Assessment Unit Cost for that Water Year.

3.3 City Use and/or Transfer of RA Credit. The RA Credit shall first be used to offset all RA Liability owed by the City for the preceding Water Year. All RA Credit earned by the City that is not required to offset the City's RA Liability shall carryover and build as a bank of accrued RA Credit. The City's accrued RA Credit may be used by the City to offset future RA Liability incurred by the City, or upon thirty (30) days advanced written notice to Watermaster, may be transferred to any other party possessing Standard Production Allocation under the Decision to be used to offset liability for replenishment assessments accrued by that party. In the event the RA Credit is transferred to another party, Watermaster shall afford that party a credit against its replenishment assessment in the same manner and amount as had the RA Credit been used to offset the City's RA Liability. Accrued RA Credit shall only be used to offset accrued RA Liability.

3.4 Watermaster Accounting of RA Credit. Watermaster shall maintain a detailed accounting of the quantity of RA Credit accrued by the City and the amount used by City. Deductions against the RA Credit shall be made when RA Credit is applied to offset the City's Replenishment Liability or when the City transfers RA Credit to another party. Watermaster shall report its accounting to the City annually and also upon written request by the City for a present accounting. If the City disputes the reported quantity of RA Credit, it shall inform the Watermaster of the basis of its objection within one (1) month of receipt of the Watermaster's accounting, and the Parties shall thereafter engage in good faith negotiations to attempt to resolve the dispute. Any dispute that cannot thereby be settled shall be referred to the Court for resolution.

4. **Miscellaneous Terms.** This MOU shall be governed by and construed in accordance with the laws of California, without regard to conflicts of law principles, with venue for all purposes to be proper only in the Court possessing jurisdiction over the Decision. If any actions are required to interpret or enforce the provisions of this MOU, the prevailing party shall be entitled to reasonable attorneys' fees and costs. Any failure to enforce any provision of this MOU shall not constitute a waiver thereof or of any other provision hereof. This MOU constitutes the entire understanding and agreement of the Parties with respect to the subject matter of this MOU, supersedes the Original MOU, and there have been no promises, representations, agreements, warranties or undertakings by any of the Parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This MOU may be altered, amended or modified only by an instrument in writing, executed by the Parties to this MOU and by no other means. Each Party waives its future right to claim, contest or assert that this MOU was modified, canceled, superseded, or changed by oral agreement, course of conduct, waiver or

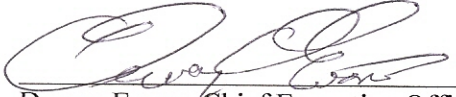
estoppel. All notices sent pursuant to this MOU shall be addressed to the contact information following each Party's signature below.

5. **Severability.** If any of the provisions contained in the Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions shall not be impaired thereby. If a part of this Agreement is valid, all valid parts that are severable from the invalid part remain in effect. If a part of this Agreement is invalid in one or more of its applications, the part remains in effect in all valid applications that are severable from the invalid applications.

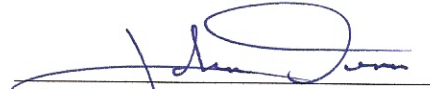
IN WITNESS WHEREOF the Parties hereby agree to perform pursuant to the terms set forth herein.

SEASIDE BASIN WATERMASTER

CITY OF SEASIDE



Dewey Evans, Chief Executive Officer
2600 Garden Road Suite 228
Monterey, CA 93940
watermasterseaside@sbcglobal.net



John Dunn, City Manager
440 Harcourt Ave
Seaside, CA 93955
jdunn@ci.seaside.ca.us

III.A.35

28. "Storage Allocation Percentage" means the percentage of Total Usable Storage

Space allocated to each Producer proceeding under the Standard Production Allocation. Producers proceeding under the Alternative Production Allocation are not allocated Storage rights and, consequently, their share of the Total Usable Storage Space is apportioned to the Producers proceeding under the Standard Production Allocation. Pursuant to the terms of Section III.B.3, Parties proceeding under the Alternative Production Allocation enjoy a one-time right to change to the Standard Production Allocation. Due to the recalculation of the Storage Allocation Percentage necessitated when a Party changes to the Standard Production Allocation, the Watermaster will maintain the up-to-date Seaside Basin Storage Allocation Percentages.

36. "Storage and Recovery Agreement" means an agreement between Watermaster and a Party for Storage pursuant to Section III.L.3.j.xx.

37. "Store" and other variations of the same verb refer to the activities establishing Stored Water in the Seaside Basin.

38. "Stored Water" means (1) Non-Native Water introduced into the Seaside Basin by a Party or any predecessors-in-interest by Spreading or Directly Injecting that Water into the Seaside Basin for Storage and subsequent Extraction by and for the benefit of that Party or their successors-in-interest; (2) Groundwater within the Seaside Basin that is accounted for as a Producer's Carryover; or (3) Non-Native water introduced into the Basin through purchases by the Watermaster, and used to reduce and ultimately reverse Over-Production.

III.B.3.

3. Alternative Production Allocation. The following Parties, which all assert overlying Groundwater rights, have chosen to participate in an Alternative Production Allocation: Seaside with regard to the Groundwater that it Produces for irrigation of its golf

courses; Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop, York School, and Laguna Seca.

The Alternative Production Allocation provides the aforementioned Parties with a prior and paramount right over those Parties Producing under the Standard Production Allocation to Produce the amount set forth in Table 2 in perpetuity, and said Alternative Production shall not be subject to any reductions under Section III.B.2 or at such times as the Watermaster determines to reduce the Operating Yield in accordance with Section III.L.3.j.ii., subject to the following terms:

a. The Alternative Production Allocation may not be transferred for use on any other property, but shall be limited to use on the respective properties (including subdivisions thereof) identified in Exhibit C;

b. The Party electing the Alternative Production Allocation may not establish Carryover Credits or Storage rights;

c. The Party electing the Alternative Production Allocation is obligated to adopt all reasonably Feasible Water conservation methods, including methods consistent with generally accepted irrigation practices;

d. In the event a Party electing the Alternative Production Allocation is required to utilize reclaimed Water for irrigation purposes, pursuant to the terms of sections 13550 and 13551 of the California Water Code, that Party shall have the first opportunity to obtain and substitute reclaimed Water for its irrigation demands. Should that Party not pursue such substitution with due diligence, any other Party may provide reclaimed Water for the irrigation purpose pursuant to the terms of sections 13550 and 13551 of the California Water Code. Under either circumstance, the Party providing the reclaimed Water for substitution shall obtain a credit to produce an amount of Groundwater equal to the amount of substituted reclaimed Water in that particular Water Year, provided that such credit shall be reduced proportionately to all reductions in the Operating Yield in accordance with Section III.L.3.j.ii. The Alternative Production Allocation of the Party utilizing the reclaimed Water shall be debited in an amount equal to the reclaimed Water being substituted.

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SEASIDE GROUNDWATER BASIN
WATERMASTER

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: August 7, 2019

SUBJECT: Geochemical Modeling of the Pure Water Monterey Advanced Water Treatment Water

RECOMMENDATIONS:

1. Accept the Technical Memorandum prepared by Pueblo Water Resources for the MPWMD as satisfactorily fulfilling MPWMD's obligation to perform geochemical modeling of the Pure Water Monterey AWT water, with the caveat that retesting with 40 mg/L alkalinity water will be done and the results do not indicate any adverse impacts. If there are adverse impacts resulting from the lower alkalinity, the AWT plant should be required to operate at a minimum alkalinity of 50 mg/L.
2. Defer geochemical modeling work on the desalination plant water at this time, and perform that work when/if the desalination plant begins construction.
3. Issue an amendment to the Pure Water Monterey Storage and Recovery Agreement to include the requirement that the AWT plant operate to produce water having a pH in the range of 7.5 to 8.5 and a minimum alkalinity of 50 mg/L unless reassessment using lower alkalinity water demonstrates that there will be no adverse impacts from the lower alkalinity.

BACKGROUND:

The Storage and Recovery Agreement for the Pure Water Monterey project's Advance Water Treatment (AWT) water, approved by the Board at its December 2018 meeting, states in part in Section 6 "...DISTRICT [MPWMD] agrees that prior to injecting any AWT Water into the Basin for Storage, it must provide to the WATERMASTER the geochemical interaction modeling assessment (including any recommended mitigation measures) ("Modeling Assessment") contemplated by the February 10, 2018 Memorandum of Agreement Between the Seaside Basin Watermaster, the Monterey Peninsula Water Management District, California American Water Company, and Monterey One Water to Share in the Costs of Performing Geochemical Modeling of the Seaside Basin Groundwater Basin (see http://seasidebasinwatermaster.org/Other/18%2020210%20WM_CAW_M1W_MPWMD%20MOU%20Geochem%20model%20.pdf). If the Modeling Assessment recommends implementation of mitigation measures to avoid a Material Injury (as defined in the Decision) resulting from the injection of AWT Water into the Basin, DISTRICT must, prior to the initial injection of AWT Water, demonstrate to the reasonable satisfaction of WATERMASTER that sufficient measures will be implemented to avoid Material Injury."

The geochemical interaction assessment is intended to determine if the change in aquifer water chemistry that will result from introducing a new source of water (the AWT water) will cause any adverse impacts on the quality of water in the aquifer. Such adverse impacts could result from “leaching” of harmful minerals (for example arsenic) from the soil matrix, causing them to go into solution and potentially into drinking water that will be pumped from the aquifer.

DISCUSSION:

MPWMD had its consultant, Pueblo Water Resources, perform a geochemical impact assessment of the PWM AWT water on samples of the soil matrix from the Santa Margarita aquifer taken from a recently-completed PWM project AWT water injection well. The PWM AWT water used in the assessment was taken from M1W’s AWT pilot plant located at its Regional Wastewater Treatment. That pilot plant employs the same treatment processes that the full-scale AWT plant will employ, and has been in operation for a number of months to provide data that M1W will use in the operation of the full-scale AWT plant.

Pueblo Water Resources prepared a Technical Memorandum describing how the geochemical assessment was performed. The Technical Memorandum is a complex and technical document, and is therefore not included as an attachment to this Agenda transmittal. However, should any Board members wish to examine the full document, it is posted on the Watermaster’s website with Agenda Item No. 3 of the agenda packet for the July 10, 2019 TAC meeting at this link: <http://www.seasidebasinwatermaster.org/Agenda.pdf/TAC%20Agenda%20B%207-10-19.pdf>.

In simple terms leaching was evaluated by comparing water quality before interaction with the soil matrix and after interaction with the soil matrix. The results indicated there were no significant changes in water quality, meaning that no appreciable leaching occurred, and the resultant water quality met all regulatory standards. The Technical Memorandum included the Conclusions and Recommendations contained in Attachment 1.

The TAC reviewed and discussed the Technical Memorandum at its June 12 and July 10 meetings.

At its July 10th meeting M1W’s representative, Mr. Robert Holden, reported to the TAC that the AWT plant is designed to produce water having an alkalinity in the range of 40 to 80 mg/l and a pH in the range of 7.5 to 8.5. The AWT pilot plant water sample that was used by Pueblo Water Resources in the geochemical impact assessment had an alkalinity of 54.5 mg/L and a pH of 7.96. Since this was the water quality of the sample that was available to Pueblo Water Resources to perform the geochemical impact assessment, it made the recommendation in its Technical Memorandum that the AWT plant be operated within a pH range of 7.5 and 8.5 (which Mr. Holden said it is designed to do) and with an alkalinity of at least 50 mg/L (which is slightly higher than the lower end of the plant’s design range, as reported by Mr. Holden).

Mr. Holden also reported that M1W is in the process of obtaining a sample from its AWT pilot plant that will have an alkalinity of 40 mg/L (or even slightly lower) and intends to perform a geochemical impact reassessment using that sample. M1W does not expect the findings of the reassessment to differ from those of the original sample, and that the recommendation in the Technical Memorandum will be able to be revised to state that the AWT plant should be operated with an alkalinity of at least 40 mg/L, rather than 50 mg/L as it currently states.

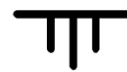
Following considerable discussion, the TAC approved making these recommendations to the Board:

1. Accept the Technical Memorandum as satisfactorily fulfilling MPWMD's obligation to perform geochemical modeling of the Pure Water Monterey AWT water, with the caveat that retesting with 40 mg/L alkalinity water will be done and the results do not indicate any adverse impacts. If there are adverse impacts resulting from the lower alkalinity, the AWT plant should be required to operate at a minimum alkalinity of 50 mg/L.
2. Defer geochemical modeling work on the desalination plant water at this time, and perform that work when/if the desalination plant begins construction.
3. Issue an amendment to the Pure Water Monterey Storage and Recovery Agreement to include the first recommendation in the Revised Technical Memorandum from Pueblo Water Resources (AWT water to have a pH in the range of 7.5 to 8.5, and a minimum alkalinity of 50 mg/L), unless reassessment using lower alkalinity water demonstrates that there will be no adverse impacts from the lower alkalinity.

Note: Recommendations 1 and 2 above were unanimously approved by the TAC, whereas recommendation 3 was approved by a vote of 5 to 1, with the MPWMD representative voting against the motion because he felt it was not necessary to include the Pueblo Water Resources recommendation as an amendment to the Storage and Recovery Agreement since the design parameters for the AWT plant had been approved by the State's Division of Drinking Water.

ATTACHMENTS:

1. Conclusions and Recommendations excerpted from Pueblo Water Resources Technical Memorandum dated July 1, 2019 titled "*Summary of Geochemical Interaction Investigation of PWM Waters for Artificial Recharge of the Santa Margarita Sandstone Aquifer System.*"



Conclusions

Based on our evaluation of the water quality and bench scale test program and our experience with similar artificial recharge project applications, we conclude the following:

- 1- The bench scale testing program results were in general agreement with the geochemical modeling study performed by Pueblo Water related to the Carmel River ASR 2 well.
- 2- The use of PWM-treated produced waters appears to be geochemically suitable for artificial recharge operations within the Tsm formations of the SGB aquifer.
- 3- The program results verified that equalized PWM-treated water met the Title 22 standards for inorganic chemical constituents after contacting Tsm mineral in a simulated aquifer storage scenario.
- 4- Water quality changes during bench scale testing were observed, including Ion Exchange, Redox, and Dissolution reactions, although pH remained stable throughout the bench testing program. Even though these reactions were at times substantial (particularly with respect to Ca, Mg, and SO₄ solubilization) they did not adversely affect final water quality with respect to inorganic drinking water standards. The pH stability throughout the test program indicates that the buffering capacity of the PWM water was not exceeded even with increased bicarbonate alkalinity after equilibration with Tsm cuttings.
- 5- Overall, the geochemical nature of the PWM-treated water, with its robust bicarbonate alkalinity buffering capacity appears to resist transition metal leaching; this was demonstrated in the substantially different cuttings compositions of the 465' and 595' samples used for the bench scale testing. Because of this empirical demonstration of geochemical stability, we conclude that specific modeling of interactions between PWM-treated waters and Carmel Valley-derived treated waters is not necessary at this time, as the PWM water appears to enhance, rather than impair adverse leaching potential due to its buffering capacity and lack of transition metal content. We opine that intermixing of PWM and Carmel River waters will likely improve the stability of Carmel River water with respect to inhibiting transition metal leaching potential.
- 6- Biochemical reactivity was not monitored in the bench testing program due to sample preservation issues and loss of microbes that would occur during bench testing procedures. If present, it did not measurably affect final water quality with respect to inorganic drinking water standards.
- 7- Overall, the bench test program results did not identify any fatal flaws or critical issues that would jeopardize the feasibility of a long term artificial recharge program implemented using PWM-treated water in the Tsm aquifer.



Recommendations

Based on the results of the bench testing program and our experience with artificial recharge operations via direct injection into the Tsm aquifer system, we provide the following recommendations regarding advancement of the PWM artificial recharge program in the SGB:

- 1- The water quality of PWM-treated AWTF water should be maintained as closely as possible with the waters tested in the bench scale test program. In particular, the pH and alkalinity of the AWTF process should be maintained to achieve a pH of between 7.5 and 8.5, and a Total Alkalinity of at least 50 mg/L as CaCO₃.
- 2- When Desal water becomes available, water quality analyses should be compared to existing PWM-treated waters with respect to geochemical similarity. At that time, additional bench scale testing with Tsm cuttings and Desal product water and potentially with other native and/or artificial recharge waters should be conducted. If large variations are observed between the PWM and Desal bench testing results, geochemical modeling should be performed to ascertain the mechanism(s) observed from the bench testing program. Because of the large range of variability in water quality between the various regional recharge waters, and the observed variability in mineralogy of the Tsm and Tm transitional formations, we opine that the combination of empirical bench testing followed by geochemical modeling will provide more accurate results than geochemical modeling simulations alone.

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D-R-A-F-T
MINUTES

**Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
June 12, 2019**

Attendees: TAC Members

City of Seaside – Rick Riedl
California American Water – Nina Miller (via telephone)
City of Monterey – Max Rieser (via telephone)
Laguna Seca Property Owners – No Representative
MPWMD – Jon Lear
MCWRA – Peter Kwiek (via telephone)
City of Del Rey Oaks – No Representative
City of Sand City – Leon Gomez (via telephone)
Coastal Subarea Landowners – No Representative

Watermaster

Technical Program Manager - Robert Jaques

Consultants

None

Others

Kurt Overmeyer – City of Seaside Economic Development Director

The meeting was convened at 1:33 p.m. after a quorum was established.

1. Public Comments

There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the May 8, 2019 Meeting

On a motion by Mr. Gomez, seconded by Mr. Rieser, the minutes were unanimously approved as presented.

3. Report on Geochemical Modeling for the Pure Water Monterey Project AWT Water

Mr. Jaques introduced this agenda topic by summarizing the agenda packet materials.

Mr. Lear provided an overview of the geochemical evaluation work that had been performed. He explained that drilling materials (cuttings) taken from wells drilled for the Pure Water Monterey project, and Advance Water Treatment water from the Monterey One Water pilot project were used to perform lab testing to evaluate geochemical interactions in the aquifer.

Mr. Riedl asked for an explanation of the term “leaching” as mentioned by Mr. Lear. Mr. Lear explained that leaching was evaluated by comparing water quality before interaction with the cuttings and after interaction with the cuttings. The results indicated there were no significant changes in water quality. Water was in contact with the soil matrix for 48 hours during the lab tests.

Mr. Jaques commented that the geochemical evaluation Technical Memorandum's recommendations for pH and alkalinity apparently may not be met by the Pure Water Monterey Advanced Water Treatment water quality, since the low end of the range of values that the Pure Water Monterey Advanced Water Treatment facility is expected to operate falls below the level recommended in the Technical Memorandum.

Mr. Lear said that MPWMD agrees with the comments from Monterey One Water that operating within the State-prescribed range of values for pH and alkalinity should be adequate. He explained that the consultant could only report in the Technical Memorandum based on the water quality that was available from the pilot plant.

Mr. Lear also said he felt recommendation number three in the Technical Memorandum for silt density index is an operational issue, not a water quality issue, so it should not be added to the storage and recovery agreement. Based on this input, Mr. Jaques said he was comfortable not including that recommendation in the storage and recovery agreement.

Mr. Riedl said he agreed with Mr. Jaques' comments with regard to pH and alkalinity. He felt that this needs to be addressed.

Mr. Lear reported that the Advanced Water Treatment facility is designed to operate between a pH of 7.5 and 8.0. He went on to say that this range of operating values is contained in the discharge requirements from the Regional Water Quality Control Board.

Mr. Riedl noted that the testing was done to determine if any water quality problems would result from injecting the water.

Ms. Miller said that although the State has a range it uses for everyone in terms of pH, this geochemical evaluation work was done to see what results would occur specifically in the Seaside Basin soil matrix. She questioned why the consultant did not put the State's range of pH and alkalinity values in the Technical Memorandum.

Mr. Lear said he felt the consultant would be willing to edit the Technical Memorandum to address these concerns regarding recommendations one and two.

Ms. Miller said she concurred with Mr. Jaques' concerns regarding those recommendations. She also noted that recommendation four of the Technical Memorandum is to do further testing when desalination water becomes available.

Mr. Riedl requested that Table 2 of the Technical Memorandum should have the Reporting Limit and Maximum Contaminant Level values added to it. Mr. Lear said he would have this done for those constituents that have Maximum Contaminant Level values established.

There was consensus to continue this item for further discussion at the July TAC meeting, at which a revised version of the Technical Memorandum addressing these concerns would be presented.

Note: At this point in the meeting, just prior to taking up Agenda Item 4, Mr. Riedel recused himself and stepped out of the meeting room.

4. Application from the City of Seaside for a Storage and Recovery Agreement

Mr. Jaques summarized the agenda packet materials for this item.

Mr. Overmeyer recapped Mr. McLaughlin's description of the basis for submitting the application for a storage and recovery agreement, as contained in Attachment 1 of the agenda packet.

Ms. Miller said she concurred with Mr. Jaques' recommendation to refer the matter to the Board for a legal determination, but also noted that she supported the concept of using recycled water for golf course irrigation in-lieu of using pumped groundwater.

A motion was made by Mr. Lear to refer the City of Seaside's application to the Board for their direction on legal issues, but to also report to the Board that the TAC supports the use of recycled water for golf course irrigation. The motion was seconded by Mr. Gomez and passed unanimously.

5. Schedule

Mr. Jaques reported that there were no significant changes in the schedule.

6. Other Business

Mr. Lear reported that the Monterey Peninsula Water Management District (MPWMD) is proposing an ordinance pertaining to restricting wells within a zone around the Pure Water Monterey injection wells, as required by the Division of Drinking Water for the Pure Water Monterey project.

He went on to say that the Division of Drinking Water has asked MPWMD to establish this zone to control the construction of drinking water wells. The Ordinance will go to the MPWMD Board of Directors starting next week for its first reading, and then a public comment period, followed by a second reading. The draft will be available for review on the MPWMD website by this Friday. (Note: the draft ordinance can be reviewed in the MPWMD board agenda packet at this link:

[_https://www.mpwmd.net/wp-content/uploads/June-17-2019-Board-Mtg-Agenda.pdf](https://www.mpwmd.net/wp-content/uploads/June-17-2019-Board-Mtg-Agenda.pdf)).

Mr. Lear also reported that by 2023, draft direct potable reuse regulations are expected to be released by the Division of Drinking Water. He said that those regulations may allow the control zone requirements to sunset.

Mr. Jaques will include this topic as an informational item on the next TAC agenda for any discussion or input by TAC members.

The next regular meeting will be held on Wednesday July 10, 2019 at 1:30 p.m. at the M1W Board Room.

The meeting adjourned at 2:33 p.m.

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D-R-A-F-T
MINUTES

**Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
July 10, 2019**

Attendees: TAC Members
City of Seaside – Rick Riedl (via telephone)
California American Water – Nina Miller
City of Monterey – No Representative
Laguna Seca Property Owners – Bob Costa
MPWMD – Jon Lear
MCWRA – Tamara Voss
City of Del Rey Oaks – No Representative
City of Sand City – Leon Gomez
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
None

Others
Bob Holden – M1W
Patrick Breen - MCWD

The meeting was convened at 1:35 p.m. after a quorum was established.

1. Public Comments

There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the June 12, 2019 Meeting

On a motion by Mr. Lear, seconded by Mr. Riedl, the minutes were unanimously approved as presented.

B. Reminder About Use of the Teleconference Line for Participation in TAC Meetings

Ms. Miller urged TAC members to attend in person whenever possible. Mr. Gomez noted that his client, the City of Sand City, has asked him to minimize costs wherever possible, and this has contributed in part to his attending some meetings by telephone.

C. MPWMD Activities Update

Mr. Jaques summarized the agenda packet materials for this item.

Mr. Lear elaborated on the issue of the hours spent on the CASGEM and Q1/Q2 data reporting. The new CASGEM reporting procedure has required more time than initially expected.

Following some discussion, a motion was made by Ms. Voss, seconded by Mr. Gomez, to discontinue Q1/Q2 and Q3/Q4 data preparation and posting. The motion passed unanimously.

Mr. Lear recommended discontinuing preparation of MPWMD'S water quality/water level annual report, and instead have that data included as an appendix to the Seawater Intrusion Analysis Report. Mr. Lear went on to say that he was still assessing the workload increase due to the Pure Water Monterey project. He would like to cut back on some of the reporting that is covered in MPWMD's Request for Service for these activities, and instead have the consultant (Montgomery and Associates) do the reporting in their documents.

Mr. Jaques suggested that this topic be further discussed under agenda item number five pertaining to the Work Plan for the 2020 Monitoring and Management Program.

3. Continued Discussion of Report on Geochemical Modeling for the Pure Water Monterey Project AWT Water

Mr. Jaques summarized the agenda packet materials for this item.

Mr. Holden reported that the Pure Water Monterey AWT plant has been designed to produce water having an alkalinity of between 40 and 80 mg/L, and a pH of between 7.5 and 8.5. He said that M1W is in the process of getting a new water sample for testing that will have an alkalinity of 40 mg/L. He wondered if action on this agenda item could be delayed until the results from testing using the new water sample have been completed. Mr. Jaques said he did not see any problem with postponing action per Mr. Holden's request.

Mr. Lear, however, expressed concern about getting the testing work completed before injection will actually begin. Mr. Holden estimated that injection could begin toward the end of September or in October of this year. Mr. Lear estimated it would take 4 to 6 weeks to get the new testing completed once the sample has been collected.

There was discussion that if testing with the new sample having an alkalinity of 40 mg/L is done, and the same results occur as in the previous testing, then Recommendation No.1 from the Pueblo Water Resources report could be revised to cite this lower alkalinity as being acceptable and this lower alkalinity level could be included in the Storage and Recovery Agreement without posing any operational issues of concern. However, if retesting does not show this, and some adverse impact from geochemical reaction using the lower alkalinity water were detected, then it would be appropriate to impose the higher alkalinity of 50 mg/L contained in Recommendation No.1.

Mr. Jaques commented that if testing with the lower alkalinity water shows no adverse geochemical effects, there would be no need to get further TAC input before going to the Board with a proposed addendum to the Storage and Recovery Agreement.

Following further discussion, the TAC took action on the recommendations at the bottom of page 8 of the agenda packet as follows:

Recommendation 1: There was consensus to accept the Revised Technical Memorandum as satisfactorily fulfilling MPWMD's obligation to perform geochemical modeling of the Pure Water Monterey AWT water, with the caveat that retesting with 40 mg/L alkalinity water is done and the results do not indicate any adverse impact. The data from the retesting would be provided to the TAC for information.

Recommendation 2: The TAC concurred with the Revised Technical Memorandum’s recommendation to defer geochemical modeling work on the desalination plant water at this time.

Recommendation 3: The TAC could not reach unanimous agreement on this recommendation to amend the Pure Water Monterey Storage and Recovery Agreement, so a motion was made by Ms. Voss to include the recommendation to issue an amendment to the Pure Water Monterey Storage and Recovery Agreement to include the first recommendation in the Revised Technical Memorandum from Pueblo Water Resources. The motion was seconded by Mr. Costa. Five of the TAC members voted in favor of the motion, so the motion passed. Mr. Lear voted against the motion, commenting that he felt it was not necessary to include the Pueblo Water Resources recommendation as an amendment to the Storage and Recovery Agreement because the design parameters for the plant had been approved by the Division of Drinking Water.

4. Proposed MPWMD Pure Water Monterey Well Ordinance

Mr. Lear asked if any TAC members had questions with regard to the Ordinance. Ms. Voss asked Mr. Lear to provide her a copy of Agreement A- 06181 which is cited in Finding No. 8 in the Ordinance on page 33 of today’s meeting agenda packet.

Mr. Lear said that a second reading of the Ordinance will be held by the MPWMD Board of Directors in the near future.

There was no further discussion of this item.

5. Initial Discussion Regarding Scope of Work for Monitoring and Management Program (M&MP) for FY 2020

Mr. Jaques summarized the agenda packet materials for this item.

Revisions were suggested to delete task I.2.b.6 of the 2020 Monitoring and Management Program in its entirety, and to add to task I.2.a.1 the following language “No reporting of water level or water quality data is required but MPWMD will promptly notify the Watermaster of any missing data or data collection irregularities that were encountered during the quarterly reporting period.”

It was also suggested that the following language be stricken from task I.2.a.1 “Another consultant will periodically post database information to the Watermaster’s website, so it will be accessible to the public and other interested parties.”

With regard to the additional work proposed under task I.3.a.3 Mr. Lear commented that if water were to be injected closer to the coast in order to achieve protective water levels, and if this resulted in additional water being lost to the ocean, then MPWMD would lose some revenue that it would otherwise receive because it would have less water to recover and sell.

Mr. Riedl reported that Todd Groundwater had performed a study to evaluate coastal versus inland injection and found no difference in terms of raising groundwater levels between those two injection locations. Mr. Jaques said he was not aware of that report and would appreciate getting a copy of it. Mr. Riedl said he would forward a copy to Mr. Jaques.

Discussion then turned to the recommendations contained in the recently updated Basin Management Action Plan, as outlined on pages 42 and 43 of today’s meeting agenda packet.

With regard to the five subparts of Recommendation 1 (Encourage Implementation of Selected Management Actions), the TAC felt that all five of these were good actions to take, but that at this time only subparts 3 (Water Conservation), 4 (Coordination with the Salinas Valley Basin GSAs) and 5 (Enhanced Stormwater Recharge within the City of Seaside) could actually be pursued.

With regard to subpart 1 (Install New Southern Coastal Subarea Wells) Mr. Lear commented that this would be a Cal Am undertaking, but noted that the Monterey Peninsula Water Supply Project would enable pumping reductions which might be preferable to installing new Southern Coastal Subarea wells. He suggested that once the Monterey Peninsula Water Supply Project is in full operation, its effect on groundwater levels be assessed to determine whether or not installing new Southern Coastal Subarea wells would be desirable.

With regard to subpart 2 (Recycled Water for Laguna Seca Golf Courses) it was noted that the Regional Urban Water Augmentation Project did not include recycled water for the Laguna Seca golf courses. Mr. Costa reported there was no excess recycled water from the Pasadera recycling plant because it was all being used on the Pasadera golf course. He went on to say that some years ago there was a small recycling plant used for irrigation of portions of the Laguna Seca golf course, but that it had been taken out of service and all of the wastewater was now being recycled at the Pasadera recycling plant.

With regard to subpart 5, Mr. Riedl said he was in favor of that and wondered if the benefit of enhanced stormwater recharge within the city of Seaside could somehow be quantified. Mr. Jaques said he would ask Ms. King of Montgomery & Associates about that.

With regard to Recommendation 2 pertaining to groundwater modeling, the TAC deferred to the Board's earlier determination to defer any action on this pending completion of the GSP for the Salinas Valley Groundwater Basin.

With regard to Recommendation 3 to continue ongoing groundwater monitoring, the TAC concluded that this is already being done.

With regard to Recommendation 4 pertaining to development of a long-term financing plan for replenishment water, the TAC felt that this would be appropriate to do, when and if a source of replenishment water has been identified.

6. Schedule

Mr. Jaques briefly reported on this item and there was no other discussion.

7. Other Business

No other business was discussed.

The next regular meeting will be held on Wednesday August 14, 2019 at 1:30 p.m. at the M1W Board Room.

The meeting adjourned at 3:12 p.m.

SEASIDE GROUNDWATER BASIN WATERMASTER
Reported Quarterly and Annual Water Production From the Seaside Groundwater Basin
For All Producers Included in the Seaside Basin Adjudication -- Water Year 2019

(All Values in Acre-Feet [AF])

	Type	Oct	Nov	Dec	Oct-Dec 18	Jan	Feb	Mar	Jan-Mar 19	Apr	May	Jun	Apr-Jun 19	Jul	Aug	Sep	Jul-Sep 19	Reported Total	Yield Allocation	from WY 2018	for WY 2019	
Coastal Subareas																						
CAW - Coastal Subareas	SPA	340.23	291.75	161.71	793.69	145.42	133.68	144.34	423.43				0.00				0.00	1,217.12	1,791.62	453.87	2,245.49	
	Luzern	1.25	4.51	0.00	5.76	0.00	4.57	0.00	4.57	0.00	0.00	8.96	8.96					19.29			0.00	
	Ord Grove	123.91	118.28	118.81	361.00	116.84	103.82	113.35	334.01	105.62	105.95	98.48	310.05					1,005.06				
	Paralta	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					0.00				
	Playa	0.00	1.97	32.07	34.04	8.91	0.00	13.80	22.71	31.99	7.85	7.82	47.65					104.40				
	Plumas	0.05	0.00	0.00	0.05	19.67	25.28	17.19	62.14	0.00	0.00	7.77	7.77					69.96				
	Santa Margarita	215.02	166.99	10.83	392.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					392.85				
City of Seaside (Municipal)	SPA	15.74	14.59	11.76	42.09	6.74	17.24	14.15	38.13	13.97	15.68	15.59	45.24				0.00	125.46	146.99	0.00	146.99	
Granite Rock Company	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00				0.00	0.00	13.87	221.99	235.86	
DBO Development No. 30	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00				0.00	0.00	25.16	403.96	429.12	
Calabrese (Cypress Pacific Inv.)	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00				0.00	0.00	3.37	16.09	19.46	
City of Seaside (Golf Courses)	APA	51.64	26.75	0.00	78.38	0.51	2.61	6.22	9.34	55.10	48.14	76.91	180.15				0.00	267.87	540.00		540.00	
Sand City	APA	0.20	0.21	0.04	0.46	0.04	0.04	0.04	0.12	0.08	0.14	0.11	0.34				0.00	0.91	9.00		9.00	
SNG (Security National Guaranty)	APA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00				0.00	0.00	149.00		149.00	
Calabrese (Cypress Pacific Inv.)	APA	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00				0.00	0.03	6.00		6.00	
Mission Memorial (Alderwoods)	APA	2.51	1.49	0.00	4.00	0.03	0.00	0.00	0.03	0.32	1.51	2.11	3.93				0.00	7.95	31.00		31.00	
Coastal Subareas Totals					1,712.32				894.49				604.10				0.00	3,210.91	2,716.01	1,095.91	3,811.92	
Laguna Seca Subarea																						
CAW - Laguna Seca Subarea	SPA	28.44	24.66	17.80	70.90	14.84	14.10	16.81	45.76				0.00				0.00	116.66	0.00		0.00	
	Ryan Ranch Unit	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.01	3.01				0.00	3.01				
	Hidden Hills Unit	11.24	9.73	7.31	28.29	7.11	5.93	6.97	20.01	8.31	11.90	11.67	31.88				0.00	80.17				
	Bishop Unit 3	17.20	14.93	10.48	42.62	7.74	8.17	9.84	25.75	11.68	15.10	11.09	37.86				0.00	106.23				
	Bishop Unit 1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.99	5.99				0.00	5.99				
The Club at Pasadera	APA	16.00	24.00	7.00	47.00	2.00	0.00	0.00	2.00	9.00	10.00	35.00	54.00				0.00	103.00	251.00		251.00	
Laguna Seca Golf Resort (Bishop)	APA	16.55	12.42	0.22	29.19	0.00	0.30	0.00	0.31				0.00				0.00	29.50	320.00		320.00	
York School	APA	1.33	0.49	0.00	1.81	0.03	0.00	0.00	0.03	1.69	1.47	1.78	4.94				0.00	6.78	32.00		32.00	
Laguna Seca County Park	APA	3.01	1.47	0.76	5.23	1.70	0.41	1.16	3.28	1.84	2.55	2.62	7.00				0.00	15.52	41.00		41.00	
Laguna Seca Subarea Totals					154.13				51.37				65.95				0.00	271.45	644.00	0.00	644.00	
Total Production by WM Producers					1,866.45				945.87				670.05				0.00	3,482.37	3,360.01	1,095.91	4,455.92	
																		Annual Production from APA Producers	431.56	1,379.00		
																		Annual Production from SPA Producers	1,459.24	3,076.92		

City of Seaside Golf Courses In-Lieu (MCWD source water)																					
MCWD delivery		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00			
CAW / MPWMD ASR (Carmel River Basin source water)																					
Injection		0.00	0.00	0.00	0.00	269.63	306.73	372.93	949.29	282.60	103.18	0.00	385.78				0.00	1335.07			
(Recovery)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				0.00	0.00			
Net ASR		0.00	0.00	0.00	0.00	269.63	306.73	372.93	949.29	282.60	103.18	0.00	385.78	0.00	0.00	0.00	0.00	1335.07			

Notes:

- The Water Year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2019 begins on October 1, 2018, and ends on September 30, 2019.
- "Type" refers to water right as described in Seaside Basin Adjudication decision as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M66343).
- Values shown in the table are based on reports to the Watermaster received by July 15, 2019.
- All values are rounded to the nearest hundredth of an acre-foot. Where required, reported data were converted to acre-feet utilizing the relationships: 325,851 gallons = 43,560 cubic feet = 1 acre-foot.
- "Base Operating Yield Allocation" values are based on Seaside Basin Adjudication decision. These values are consistent with the Watermaster Producer Allocations Water Year 2019 (see Item IX A. in 1/2/2019 Board packet).
- Any minor discrepancies in totals are attributable to rounding.
- APA = Alternative Producer Allocation; SPA = Standard Producer Allocation; CAW = California American Water.
- It should be noted that CAW/MPWMD ASR "Injection" and "Recovery" amounts are not expected to "balance" within each Water Year. This is due to the injection recovery "rules" that are part of SWRCB water rights permits and/or separate agreements with state and federal resources agencies that are associated with the water rights permits.

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**Seaside Basin Watermaster
P.O. Box 51502
Pacific Grove, CA 93950
(831) 641-0113**

June 11, 2019

United States, Bureau of Reclamation
Attn: Ms. Amanda Erath, Program Analyst
Denver Federal Center
P.O. Box 25007
Denver, CO 80225-0007
aerath@usbr.gov

Subject: Support for the Pure Water Monterey Project

Dear Ms. Erath:

On behalf of the Seaside Basin Watermaster, we support Monterey One Water's new project, Pure Water Monterey (PWM).

In short, PWM will produce 3,500 AFY of purified recycled water for injection into the Seaside Groundwater Basin. This project will provide up to 33 percent of the existing Monterey Peninsula's water supply plus it will diversify the area's water supply portfolio and improve groundwater sustainability.

Another benefit of the Project is that during wet and normal precipitation years, the Project will produce and inject an additional 200 AFY to create a drought reserve. This reserve will be built up for at least five years in order to create additional surplus of 1,000 AF for local water supplies.

As the Court-appointed body responsible for carrying out the requirements of the Adjudication Decision governing the Seaside Groundwater Basin, the Seaside Basin Watermaster has been involved with the Project for many years. This project will meet the rigorous water quality standards and regulations from both the Central Coast Regional Water Quality Control Board and the State of California's Division of Drinking Water. We expect this Project to meet or exceed all human health and safety concerns as it pertains to water quality within the Basin.

We are pleased to support this Project which will benefit the Basin by providing a new supplemental source of water to help mitigate over-drafting conditions.

Sincerely,

Robert S. Jaques

Robert S. Jaques, PE
Technical Program Manager
Seaside Basin Watermaster
83 Via Encanto
Monterey, CA 93940
Office: (831) 375-0517
Cell: (831) 402-7673

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Understanding a Growing Threat to Freshwater

April 18, 2019 | Water in the West | News

By Michelle Horton

Novel solution provides insight on intrusion of ocean saltwater into freshwater aquifers.

A crucial source of water for arid regions around the world faces a threat that has remained very difficult to predict or manage, until now. A Stanford-led team of researchers used remote sensing to identify areas of saltwater intrusion, a common cause of drinking water contamination in coastal areas – home to approximately 40 percent of the global population. Their novel solution, published in the *Journal of Hydrology: Regional Studies*

<https://www.sciencedirect.com/science/article/pii/S221458181930028X> , could provide valuable insight into aquifer systems, and increase the likelihood of freshwater security worldwide.

“Saltwater intrusion can have huge ecological and economic impacts. Accurately mapping and monitoring where saltwater is in the subsurface is critical for managing freshwater resources in coastal systems. With this new research, we aim to provide water managers with another tool to understand and manage these systems,” said Meredith Goebel, lead author and Environmental Geophysics Ph.D. candidate in Stanford’s School of Earth, Energy & Environmental Sciences <https://earth.stanford.edu/> .

Saltwater intrusion is the movement of ocean saltwater into freshwater aquifers due to changes in density and pressure gradients, determined by several factors including elevation and sediment type. Groundwater quality, quantity and subsurface water movement is traditionally measured through terrestrial monitoring wells. However, sampling offshore coastal aquifers proves more difficult and impractical due to the high cost and difficulty of installing and accessing wells underwater.

While shifts in groundwater salinity can naturally occur, human impacts often disrupt subsurface water flow, further compounding an already complex issue. A common cause of intrusion includes over-pumping of freshwater wells, which in turn drops the level of groundwater, allowing saltwater to flow further inland. Extreme weather events, such as hurricanes, sea level rise or storm surges can also worsen intrusion.

In partnership with Max Halkjær <https://ramboll.com/contact/rdk/maxh> , global service line leader for water resources management at Ramboll, the Stanford researchers used an airborne electromagnetic (AEM) method – a technology that detects variations in electrical conductivity of the ground – to capture conductivity depth profiles off the shore of California’s Monterey Bay. The system is capable of

penetrating the saline ocean waters and obtaining signals up to a depth of 50 to 200 meters below sea level. Since electrical conductivity signals typically indicate the presence of salt (an electrically conductive material) in the ground, variations in groundwater salinity – evidence of saltwater intrusion – can be interpreted. By combining 320 kilometers of AEM data with onshore ground-based data and monitoring well data, the team was able to create three-dimensional models of subsurface freshwater/saltwater interfaces and map the coastline up to 3.5 kilometers offshore.

“New information obtained from this study is of great value to the Santa Cruz Mid-County Groundwater Agency, who paid for the use of the AEM method. They are very concerned about the potential impact of saltwater intrusion on their water supply, so were thrilled to be able to see what is happening just offshore, beneath the seabed,” said Rosemary Knight, senior author on the study, professor at Stanford’s School of Earth, Energy & Environmental Sciences <<https://earth.stanford.edu/>> and affiliated faculty at the Stanford Woods Institute for the Environment <<https://woods.stanford.edu/>> .

To protect coastlines threatened by saltwater intrusion, the researchers suggest maintaining minimum groundwater levels based on groundwater modeling. Identifying lower salinity water zones offshore is also recommended, as these areas are thought to play an important role in maintaining pressure against saltwater intrusion. The team also highlights that the baseline dataset created in this study provides a means for assessing changes in the hydrologic system moving forward.

As climate change-influenced extreme weather events become more frequent, understanding where and how saltwater intrusion occurs will be crucial for managing safe drinking water resources in coastal communities.

“Our hope is that with this work we can continue to facilitate the use of geophysical methods for understanding, and sustainable managing, groundwater systems,” Goebel said.
