

**Seaside Groundwater Basin Watermaster
New Board Member Orientation Session**

**Wednesday, June 7, 2023, 2:00 P.M.
Fourth District Supervisor's Office
2616 1st Avenue, Marina, CA 93933**

Watermaster Board:

City of Seaside – Mayor Ian Oglesby, Chairman
Laguna Seca Subarea Landowner – Director John Gaglioti
Monterey Peninsula Water Management District – Director George Riley
City of Monterey – Councilmember Kim Barber
City of Sand City – Mayor Mary Ann Carbone, Vice Chairman
California American Water – Director Chris Cook
City of Del Rey Oaks – Councilmember Kim Shirley
Monterey County/Monterey County Water Resources Agency –
Supervisor Wendy Root Askew, District 4
Coastal Subarea Landowner – Director Paul Bruno

Administrative Officer – Laura Paxton
Technical Program Manager – Robert Jaques

- I. CALL TO ORDER/ROLL CALL:** Meeting Facilitator – Director Paul Bruno
- II. INTRODUCTION:** The purpose of this session is to provide an opportunity and informal setting for the exchange of corporate knowledge between new and seasoned board members and staff. The Directors will take no formal action on the items.
- III. DISCUSSION ITEM:** Provide Watermaster Orientation for New Board Members
- IV. PUBLIC COMMENT ON ORIENTATION SESSION**
Please limit comments to three minutes.
- V. ADJOURNMENT**

This agenda was posted at the City Clerks Office at the City of Seaside on Wednesday, May 31, 2023 per the Ralph M. Brown Act. Government Code Section 54954.2(a). The agenda was forwarded via e-mail to the City Clerks of 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 and the California American Water Company for posting on May 31, 2023.

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Orientation Session Directors

FROM: Laura Paxton, Administrative Officer

DATE: June 7, 2023

SUBJECT: Watermaster Board Member Orientation Study Session

RECOMMENDATIONS: None – Informational

BACKGROUND AND DISCUSSION:

At the December 7, 2022 board meeting, Director Riley requested the board hold a study session on strategic issues so that newly appointed board members and others interested can benefit from the corporate knowledge of longstanding board members. The City of Monterey and Del Rey Oaks each appointed new Watermaster board representatives as of the March 3, 2023 Watermaster Board meeting so this orientation meeting is being held for them and any other interested party. The Watermaster website is <https://seasidebasinwatermaster.org>. An orientation binder can be viewed at <https://seasidebasinwatermaster.org/Other/2023%20WM%20Board%20Member%20Orientation%20Binder.pdf> – when the “Get Adobe Reader Now!” page comes up, choose File>Save As> and save to your computer. The full PDF portfolio can then be opened by your computer’s version of Acrobat.

Groundwater is water that exists beneath the land surface and is an important water supply source for businesses, individuals, and public agencies that overlie it. Groundwater fills the pores and fractures in underground materials such as sand, gravel, and other rock, much the same way that water fills a sponge. If groundwater can be removed by pumping in useful amounts, these materials are called aquifers. Groundwater levels are the upper surfaces of the saturated zones in the aquifers. Groundwater often moves slowly, sometimes only a few feet per year depending on the properties of the aquifer; as a result, water could remain in an aquifer for hundreds or thousands of years.

In 1966, California American Water purchased the southern Monterey Bay’s water infrastructure from California Water and Telephone Company and has since been supplying water to 85% of the Peninsula’s population. The City of Seaside, the other water purveyor that draws from the Basin, operates the Seaside Municipal Water System that serves roughly 4,000 customers. There are also approximately 37 groundwater wells owned and operated by various parties that extract water from the Seaside Basin. The overwhelming majority of the groundwater appropriated from the Basin has been and continues to be dedicated to public use.

The Seaside Groundwater Basin (the “Basin”) located in Monterey County is an approximately 19 square mile subbasin of the greater Salinas Valley Groundwater Basin. The Seaside Basin underlies portions of the cities of Seaside, Sand City, Del Rey Oaks, Monterey, and portions of unincorporated county areas, including the southern portions of the former Fort Ord, and Laguna Seca. Generally, the Seaside Basin is bounded by the Pacific Ocean on the west, the Salinas Valley on the north, the Toro Park/Corral de Tierra area on the east, and Highways 68 and 218 on the south. The Basin’s two principal aquifers in terms of water supply potential are known as the “Paso Robles” aquifer and the underlying “Santa Margarita” aquifer. Geologic features form partial barriers that create four subareas within the Basin. Most pumping occurs in the Northern Coastal Subarea. (See Attachment 1)

Establishment of Seaside Groundwater Basin Watermaster

When multiple parties withdraw water from the same aquifer, groundwater pumpers can ask the court to define the rights that various entities have to use groundwater resources. This is known as groundwater adjudication. Through this process, the courts have adjudicated 22 basins in California, 21 of which are in Southern California.

The 2006 Monterey Superior Court adjudication ruling (the “Decision”) found annual pumping from the Seaside Groundwater Basin was in excess of the safe yield and posed a risk of seawater intrusion. The Parties to the Decision were California American Water (the plaintiff) and the defendants: cities overlying the Basin and the County of Monterey; private enterprises; a cemetery; golf courses; and a private college-prep school, all dependent on continuing use of groundwater to remain viable.

Parties to the Decision are designated as Standard Producers, Alternative Producers, and Intervenor. Standard Producers can purvey water and were subject to the court-ordered triennial pumping reductions from an initial Operating Yield of 5,600 Acre-feet per Water Year (Water Year is October 1 – September 30) in 2006 to the court established Natural Safe Yield of 3,000 Acre-feet per Water Year (AFY) to be achieved by 2022. Natural Safe Yield (NSY) is the amount of water that exists in the Basin solely as a result of replenishment that can be extracted from a basin without exceeding the amount of replenishment that occurs naturally by rainfall or surface water percolation, as well as inflows from, and outflows to, adjacent basins.

Alternative Producers have a higher water right than Standard Producers. Alternative Producers are not subject to pumping reductions, can only use the water produced on their overlying property, and cannot carryover any unused allocation to the following year. The Decision established Alternative Producer Allocations as follows:

(1) Seaside Golf Courses	540AFY
(2) Security National Guaranty	90AFY
(3) Mountain Lake Development	59AFY
(4) Calabrese (Cypress)	6AFY
(5) Mission Memorial Park	31AFY
(6) City of Sand City	9AFY
(7) Pasadera Country Club	251AFY
(8) Laguna Seca Golf Resort (Bishop)	320AFY
(9) York School	32AFY
(10) Laguna Seca County Park	<u>41AFY</u>
	1,379AFY

The Basin-wide Operating Yield and Natural Safe Yield are both now 3,000AFY. Total Alternative Producer Allocations remain at 1,379 AFY. Standard Producer Allocations are calculated by multiplying Base Water Right (weighted %) by the portion of the Operating Yield which is in excess of the sum of the Alternative Producer Allocations. (Standard Production Allocations announced by Watermaster each winter involve factors/calculations too complex to go into here. Calculations below show only one basic case – if Alternative Producers produce the entire 1,379AF allocation in a year, which they never have, always less.)

(1) California American Water	$90.44\% * (3,000\text{AFY} - 1,379\text{AFY}) =$	1,466.03AFY
(2) City of Seaside Municipal	$7.42\% * (3,000\text{AFY} - 1,379\text{AFY}) =$	120.28AFY
(3) Granite Rock Company	$0.72\% * (3,000\text{AFY} - 1,379\text{AFY}) =$	11.35AFY
(4) DBO Development	$1.27\% * (3,000\text{AFY} - 1,379\text{AFY}) =$	20.59AFY
(5) Calabrese/Cypress	$0.17\% * (3,000\text{AFY} - 1,379\text{AFY}) =$	<u>2.76AFY</u>
		1,621AFY

The City of Del Rey Oaks city boundaries overlie the Basin however the City’s two wells are outside the boundaries of the Basin so the city is not a Producer party. Intervenor are Monterey Peninsula Water Management District (with storage rights to the Basin) and Monterey County Water Resources Agency.

Basin Conditions

Changing Levels

Since the 1960s, groundwater levels have fallen on average 0.6 feet per year. In 1995 there was a substantial decline when California American Water was ordered by the State to limit its production from

the Carmel River and began relying more on Seaside Basin water to serve customers. Groundwater elevations in the Basin are in some areas 40 feet or more below sea level. Adjacent basins pull hundreds of millions of gallons of water out of the Seaside Basin each year. Recharge from rainfall has not been sufficient to keep groundwater levels above sea level in order to protect the Basin against seawater intrusion.

Seawater Intrusion

Rain water seeps into the aquifers and slowly flows underground to the ocean. The outflowing fresh groundwater that meets seawater along the coast forms a buffer that keeps seawater from moving inland. Freshwater pressure from a healthy aquifer prevents seawater from moving inland and contaminating groundwater supply wells. As groundwater is pumped to keep up with increasing local water demand, and as groundwater flows out to adjacent basins seawater faces less resistance moving inland.

In addition to the threat of seawater intruding at the aquifer interface, there is the threat that as groundwater levels decline seawater intrusion into shallow sand layers will travel inland and be drawn down by pumping wells, contaminating production aquifers below.

Both the Pure Water Monterey facility in Marina that recycles wastewater and the Aquifer Storage and Recovery facilities that capture Carmel River Water store water in the Seaside Basin. As groundwater levels continue to decline, it is only a matter of when, not if, seawater will render the groundwater supply, including water stored in the Basin by the projects, unusable.

Replenishment

Groundwater replenishment, the intentional recharge of water deemed adequate to achieve protective water levels against seawater intrusion, is a strategy used to guarantee a basin's groundwater supply into the future. Replenishment occurs naturally when rain, stormwater, and to a lesser degree flow from rivers, streams and creeks seeps into an aquifer. The Court set what it considered to be the amount of Basin replenishment occurring naturally each year (3,000AF). This is the amount producers are allowed to pump.

Recent studies performed for the Watermaster concluded that as much as 4,600AF of water would need to be injected into the Basin every year to raise groundwater levels and sustain them high enough to prevent seawater intrusion. The risk and replenishment need will increase each year that groundwater levels continue to fall and remain below sea level. Although the Carmel River and Pure Water Monterey projects fill the Basin with water to a minor degree, it is only for a short time and, in drought years, the entire amount injected is withdrawn with no replenishment benefit to the Basin.

A source of replenishment water for the Basin is desperately needed. A combination of Desalination and the planned Pure Water Monterey Expansion Project have been determined to be the only sources of replenishment water that will protect the Basin against seawater intrusion.

Adjacent Basins

The passage of the Sustainable Groundwater Management Act (SGMA) in 2014 set forth a statewide framework to help protect non-adjudicated groundwater basins over the long-term. To the north of the Seaside Basin are several subbasins within the Salinas Valley Groundwater Basin that have prepared Groundwater Sustainability Plans. Immediately north of the Seaside Basin is the Monterey Subbasin, with the 180/400-foot Aquifer Subbasin north of that. (See Attachment 2.) Both these basins are severely depleted, draining thousands of AFY of water out of the Seaside Basin. Unfortunately, SGMA-designated basins and adjudicated basins follow separate directives that do not call for collaboration beyond the requirement that the sustainability actions of one basin cannot negatively impact another. Since the sustainability of the bordering subbasins is crucial to the sustainability of the Seaside Basin, the Watermaster board authorized Watermaster Technical Program Manager, Bob Jaques to represent Watermaster on the Salinas Valley Basin Groundwater Sustainability Agency's TAC, the Monterey Subbasin Groundwater Sustainability Plan's implementation committee, and other pertinent committees.

BOARD ROLE AND RESPONSIBILITIES

Protecting Seaside Basin's aquifers from seawater intrusion is the primary goal of the Seaside Groundwater Basin Watermaster by reducing pumping, replenishing the Basin to raise groundwater levels to protective elevations, and supporting sustainability of the adjacent subbasins in the Salinas Valley Groundwater Basin.

The Watermaster consists of thirteen (13) voting positions held among nine (9) representatives. The California American Water (CAW) representative possesses three (3) voting positions; the City of Seaside, MPWMD, and MCWRA representatives each possess two (2) voting positions; each representative from the Landowner Group has one-half of the Landowner Representative vote; and every other representative possesses one (1) voting position. Each representative under the Landowner Group may act as an alternate for the other. A minimum of six (6) representatives is required to constitute a quorum for the transaction of Watermaster affairs. Unless otherwise provided herein, the affirmative vote of seven (7) voting positions is required to constitute action by the Watermaster.

Only elected officials and public employees who make or influence governmental decisions are required to submit Conflict of Interest Forms 700. Watermaster is an arm of the court, and not an established governmental entity, and therefore its members are not required to file conflict of interest forms.

Watermaster board members assume office at the first regular meeting in January of every second year. The nomination and election of the Landowner Group representatives occurs in November of every second year by cumulative voting, with each member of the Landowner Group entitled to one (1) vote for each acre-foot of annual entitlement under the member's Alternative Production Allocation.

At the first meeting of each newly comprised Watermaster board, a chairman and a vice-chairman are elected from its membership, and a secretary and a treasurer who may but need not be Watermaster board members.

Regular board meetings are generally held the first Wednesday of each month. Often there are no actionable agenda items for a given month so meetings are often cancelled.

The Watermaster has two advisory committees – the Technical Advisory Committee made up of one committee member from each Board entity, and normally meets monthly; and the Budget and Finance Committee to advise the Board regarding the funding of implementation of the physical solution, including Watermaster operations, and meets as needed.

To administer the Decision, the Watermaster duties, powers, and responsibilities include:

Administrative

- Artificial Replenishment and Replenishment Assessments
- Budget Assessments
- Reports, Information, and Records
- Collection of Arrears
- Hearing Objections; Review and Approvals
- Rules and Regulations
- Employment of Staff and Consultants
- Investment of Funds
- Contracts
- Public Records

Technical

- Maintenance of Monitoring and Management Program
- Declaration of Operating Yield
- Requirement of Measuring Devices/Inspections by the Watermaster
- Monitoring and Study of the Seaside Basin and All Seaside Basin Activities
- Relocation of Authorized Production Locations
- Water Quality
- Annual Report
- Cooperation with Public and Private Entities
- Acquisition of Facilities

The Technical Advisory Committee determines the various studies, models, reports, evaluations, etc., it recommends the Board authorize, and is the first to address acute seawater intrusion indications. The TAC critiques annual operations and capital budgets and Seawater Intrusion Analysis Reports.

Steps If Seawater Intrusion Occurs

Detection

Seawater intrusion must be detected within the Adjudicated boundary of the Seaside Groundwater Basin, and declared by the Watermaster before the Seawater Intrusion Response Plan (SIRP) can be implemented. The following SIRP terminology is adopted for identifying and containing seawater intrusion:

Indicator: A chemical characteristic or groundwater level that suggests potential seawater intrusion.

No one indicator definitively identifies seawater intrusion so a combination is to be used.

Trigger: A specific group of indicators that, taken together, can identify seawater intrusion.

Contingency Actions: A series of actions that should be implemented if the triggers indicate seawater intrusion is occurring.

Actions

Verification by resampling indicative well(s)

Declaration of Seawater Intrusion by Watermaster Board

Notification to all producers, MPWMD, and interested parties of trigger data & locations

Pumping Redistribution Plan

FISCAL INFORMATION

The City of Seaside is the fiscal agent for Watermaster. Assessment revenues are deposited into a dedicated Watermaster Fund at the City from which Watermaster expenditures are paid by the City. The Watermaster Administrative Officer keeps an internal accounting of all Watermaster transactions and routinely reconciles against the City of Seaside's books. The calendar year is the Watermaster administrative fiscal year.

The three Watermaster budgets each fiscal year are funded by Budget Assessments. The budget for the Monitoring and Management Program has two components – Operations and Capital. Budget assessments against Standard Producers are calculated by multiplying the amount of the Monitoring and Management Program budget for the ensuing Fiscal Year by the following percentages:

(1) California American Water	90.44%
(2) City of Seaside	7.42%
(3) Granite Rock Company	0.70%
(4) D.B.O Development No. 30	1.27%
(5) Calabrese (Cypress Pacific Investors LLC)	0.15%

Budget Assessments against the below producers for the Administrative Fund Budget are calculated by multiplying the amount of the budget for the ensuing fiscal year by the following percentages:

(1) California American Water	83.00%
(2) City of Seaside	14.40%
(3) City of Sand City	2.60%

The Replenishment Fund Budget is calculated based upon the anticipated cost of obtaining replenishment water, and is assessed as set forth in Attachment 5. Funds so generated and accumulated are to be utilized solely for replenishment of the Basin with non-native water. However, due to the Decision allowing for credits against Replenishment Assessment equal to expenditures made for water supply augmentation that a party contends has or will result in replenishment of the Basin, there has been a credit balance in the Replenishment Fund nearly since inception. (See Attachment 5.) This has led to the Watermaster Board recently authorizing an ad hoc committee to meet and explore replenishment water funding options.

Each year the Budget and Finance Committee recommends to the board a Unit Cost of Replenishment Water calculated based on the cost of viable projects that could supply replenishment water, and is the basis for the calculation of Replenishment Assessments levied. (See Attachment 6.) Beginning in Water Year 2024, the unit cost calculation will have both weighted average costs of certain projects (historically the only method) and costs calculated in an unweighted format.

LEGAL

Watermaster has operated for the most part without contracted legal counsel, using the legal representatives from various parties to the Decision for rare Watermaster legal needs. A prospective Watermaster legal representative to augment the current services has been interviewed and will soon be presented to the board for consideration.

ATTACHMENTS:

- 1) Seaside Groundwater Basin Boundaries and Subbasins
- 2) Salinas Valley Basin Subbasins Adjacent to the Seaside Basin
- 3) Water Years 2006-2022 Chart of Ramp Down & Overproduction
- 4) Listing of Watermaster publications
- 5) Replenishment Assessments Fund
- 6) Replenishment Assessment Unit Cost 2023

ATTACHMENT 1

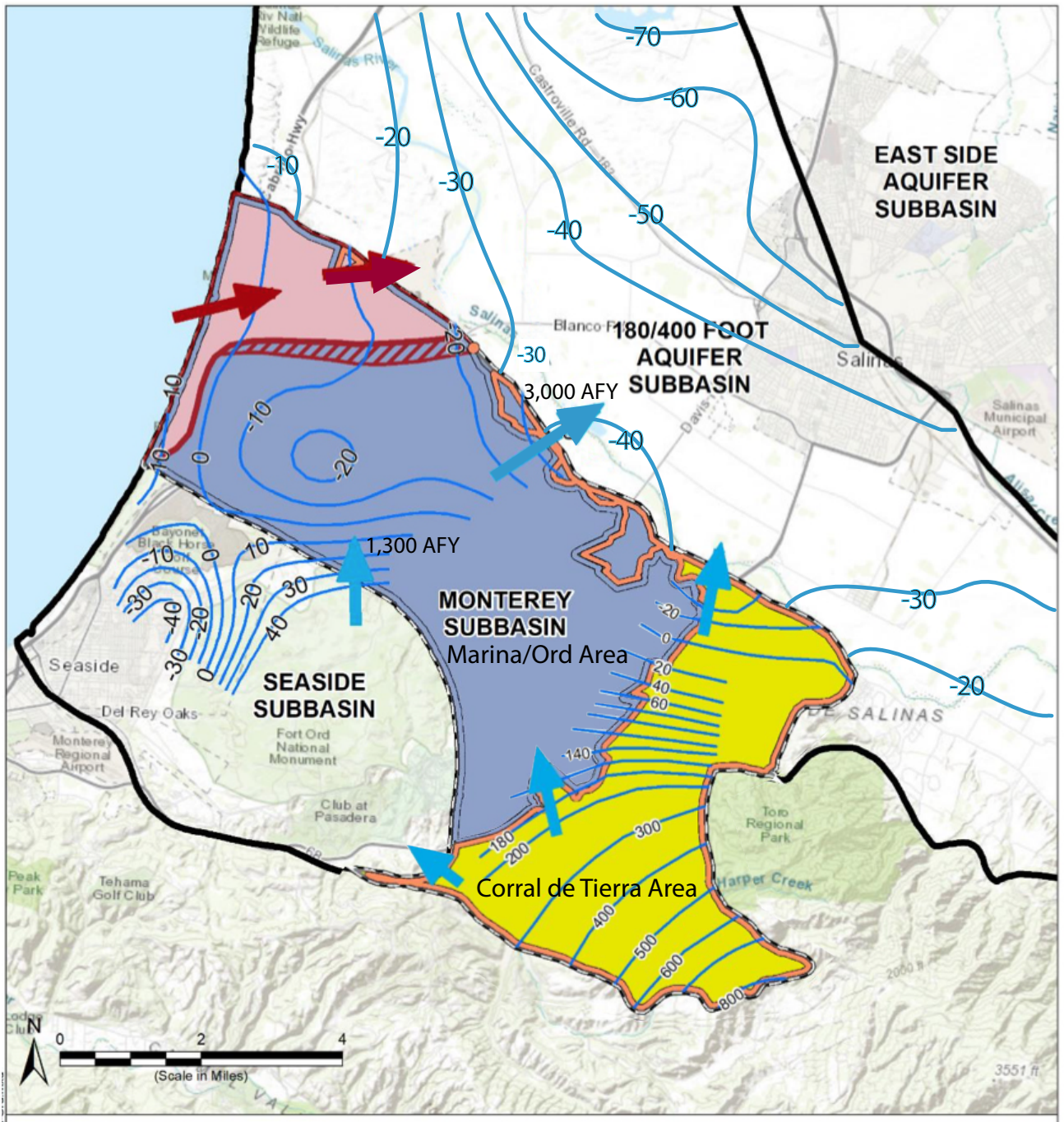
Seaside Groundwater Basin Boundaries and Subbasins






Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

- Wells with Water Quality Data
- MPVMD Monitoring Well
 - Watermaster Monitoring Well
 - Production Well
 - Adjudicated Seaside Basin Boundary

ATTACHMENT 2
Salinas Valley Basin Subbasins Adjacent to the Seaside Basin



-  = Groundwater flow
-  = Seawater intrusion flow
-  = Groundwater elevation contour

ATTACHMENT 3
Water Years 2006-2022 Chart of Ramp Down & Overproduction

AF				
WY Ending	NSY	Reduced	NSY Overproduction	OY Overproduction
2006	5600	0	2,056.77	44.60
2007	5600	0	2,420.10	71.80
2008	5600	0	2,254.15	20.50
2009	5180	420	1,417.26	21.74
2010	5040	560	1,592.68	29.77
2011	5040	560	1,197.55	0.00
2012	4480	1120	879.30	225.40
2013	4480	1120	941.59	299.37
2014	4480	1120	1,085.47	420.77
2015	3920	1680	807.94	462.09
2016	3920	1680	37.87	17.70
2017	3920	1680	94.87	3.35
2018	3360	2240	407.10	37.64
2019	3360	2240	312.67	31.41
2020	3360	2240	366.28	264.29
2021	3000	2600	25.52	25.52
2022	3000	2600	11.69	11.69
2023	3000	2600		
			15,908.81	1,987.64

*NSY = Natural Safe Yield initially 5,600AFY per Decision; OY = Operating Yield;
 AF = Acre-feet*

ATTACHMENT 4

Watermaster Publications & Agreements

Plans, Programs, and Modeling:

Seaside Basin Monitoring and Management Program	Revised September 5, 2006
Seawater Intrusion Response Plan	November 2008
Salt & Nutrient Management Plan (for MPWMD)	June 2014
Basin Management Action Plan	Updated 2018
Seaside Groundwater Model (Technical Memo)	Updated June 28, 2018

Studies:

Cross-Aquifer Contamination Wells Investigation Process and Conclusions	August 8, 2012
Coastal Injection Modeling	August 7, 2013
Groundwater Management Options for the Laguna Seca-El Toro Region	April 6, 2015
Updated Modeling of Seaside Basin Replenishment Options	January 28, 2022
Assessment of Potential Seawater Intrusion Travel Rates	February 25, 2022
Hybrid Water Budget Analyses of Replenishment Options & Alternate Assumptions	August 5, 2022
Replenishment Modeling & Analysis of Alternate Supply & Demand Assumptions	September 1, 2022

Annual Reporting:

Seawater Intrusion Analysis Report
Annual Report to Court
Calculation of Replenishment Unit Costs
Declaration of Artificial Replenishment Water Availability
Production Reporting

Agreements:

WM/CAW Overproduction Credit and Payback Arrangement	January 29, 2009
WM/CAW/ASR Storage Agreement	October 21, 2011
WM/MPWMD/MCWD/CITY of SEASIDE 686.8AF Golf Course Irrigation	February 2, 2012
WM/CAW Amended Overproduction Credit & Payback Arrangement	June 6, 2014
WM/MPWMD/PWM Cost Share Geochemical Modeling	February 10, 2018
WM/MPWMD/M1W Cost Share Groundwater Modeling Update	February 10, 2018
WM/MPWMD/CAW Storage & Recovery Agreement	February 1, 2019
WM/CITY of SEASIDE Storage/Recovery of Non-native Water Agreement	February 5, 2020

Other:

Watermaster Rules and Regulations	Revised March 1, 2023
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ATTACHMENT 5 Continued
Replenishment Assessment Fund

	Seaside Groundwater Basin Watermaster												
	Replenishment Fund												
	Water Year 2023 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2023)												
	Adopted 2023 Budget												
	2017	2018	2019	2020	WY 2021	Budget WY 2022	Totals WY 2006 Through 2022	Budget WY 2023	Projected Totals Through WY 2022				
	WY 16/17	WY 17/18	WY 18/19	WY 19/20	WY 2021	WY 21/22	WY 22/23	WY 23/23					
Assessment Water Year	\$2,872 / \$718	\$2,872 / \$718	\$2,872 / \$718	\$2,872 / \$718	\$2,947 / \$737	\$3,260 / \$815	\$3,461 / \$865						
Unit Cost:													
Cal-Am Water Balance Forward	(67,670.04)	(491,747)	(48,797,949)	(47,979,852)	(46,855,121)	(46,855,121)	(46,735,121)	(46,735,121)	(46,735,121)	(46,735,121)	(46,735,121)	(46,735,121)	
Cal-Am Water Production (AF)	2,029.57	2,229.45	2,120.22	2,245.88	1,664.04								
Cal-Am Water NSY Over-Production (AF)	64.40	374.65	294.95	334.21	-								
Exceeding Natural Safe Yield Considering Alternative Producers	\$ 184,957	\$ 1,075,995	\$ 818,097	\$ 959,859	\$ -	\$ 100,000	\$ 100,000	\$ 100,000	\$ 33,750,034	\$ 100,000	\$ 100,000	\$ 33,750,034	
Operating Yield Overproduction Replenishment													
Total California American	184,957	1,075,995	818,097	1,124,731	-	120,000	120,000	120,000	1,162,753	20,000	20,000	1,162,753	
CAMW Credit Against Assessment													
CAMW Unpaid Balance	(491,747)	(49,382,196)	-	-	-	-	-	-	(81,527,907)	-	-	(81,527,907)	
City of Seaside Balance Forward	(3,232,420)	(3,142,500)	(3,022,249)	(2,919,806)	(2,802,831)	(2,708,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	
City of Seaside Municipal Production (AF)	188.31	184.63	178.40	181.65	174.60								
City of Seaside NSY Over-Production (AF)	30.47	32.46	27.82	32.06	25.52								
Exceeding Natural Safe Yield Considering Alternative Producers	\$ 87,512	\$ 93,225	\$ 79,893	\$ 92,089	\$ 75,197	\$ 100,000	\$ 100,000	\$ 100,000	\$ 2,960,242	\$ 100,000	\$ 100,000	\$ 2,960,242	
Operating Yield Overproduction Replenishment													
Total Municipal	2,409	27,026	22,550	24,886	18,806	10,000	10,000	10,000	203,734	10,000	10,000	213,734	
Operating Yield Overproduction Replenishment													
Total City of Seaside - Golf Courses (APA - 540 AFY)	89,920	120,251	102,443	118,975	94,003	110,000	110,000	110,000	3,415,736	110,000	110,000	3,525,736	
Exceeding Natural Safe Yield - Alternative Producer													
Operating Yield Overproduction Replenishment													
Total Golf Courses	-	-	-	-	-	-	-	-	201,406	-	-	201,406	
Operating Yield Overproduction Replenishment													
Total City of Seaside*	89,920	120,251	102,443	118,975	94,003	110,000	110,000	110,000	3,415,736	110,000	110,000	3,525,736	
City of Seaside Late Payment 5%													
In-lieu Credit Against Assessment													
City of Seaside Unpaid Balance	(3,142,500)	(3,022,249)	(2,919,806)	(2,802,831)	(2,708,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	(2,598,828)	
Mission Memorial Park (APA - 31 AFY)													
Mission Memorial Park Production (AF)	13.74	14.43	16.07	20.00	46.77	31.00							
Mission Memorial Park NSY Over-Production (AF)	-	-	-	-	15.77	-							
Exceeding Natural Safe Yield - Alternative Producer													
Operating Yield Overproduction Replenishment													
Board Approved (5/4/22) Credit Against Assessment													
Mission Memorial Park Unpaid Balance	-	-	-	-	-	-	-	-	332.89	-	-	332.89	
Operating Yield Overproduction Replenishment													
Total Replenishment Fund Balance	(3,634,247)	(51,820,198)	(50,899,658)	(49,657,952)	(49,568,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	
Replenishment Fund Balance Forward	(3,909,129)	(3,634,247)	(51,820,198)	(50,899,658)	(49,657,952)	(49,568,949)	(49,568,949)	(49,568,949)	(49,568,949)	(49,568,949)	(49,568,949)	(49,568,949)	
Total Replenishment Assessments	274,877	1,196,246	920,540	1,241,706	94,003	230,000	230,000	230,000	38,287,410	230,000	230,000	38,517,410	
Total Paid and/or Credited													
Grand Total Fund Balance	(3,634,247)	(51,820,198)	(50,899,658)	(49,657,952)	(49,568,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	(49,333,949)	

ATTACHMENT 6
Replenishment Assessment Unit Cost 2023

WATER YEAR 2023 (October 1, 2022-September 30, 2023)

ANTICIPATED UNIT COSTS OF WATER THAT COULD POTENTIALLY BE USED FOR REPLENISHMENT OF THE SEASIDE BASIN

POTENTIAL SOURCE OF REPLENISHMENT WATER	POTENTIAL DATE REPLENISHMENT WATER COULD BECOME AVAILABLE	POTENTIAL VOLUME OF WATER THAT COULD BE SUPPLIED BY THE PROJECT (AFY) ⁽¹⁾	BASE UNIT COST (\$/AF)	BASE UNIT COST YEAR
Regional Desalination ⁽²⁾	2024	6,250	\$6,147	2021
Pure Water Monterey & PWMX ⁽⁶⁾	2020	5,750	3,486	2021
Monterey Peninsula Water Supply Project (Combined Regional Desalination with Groundwater Replenishment Project)	PWM in 2020; Regional Desalination in 2024	12,000	\$4,872⁽³⁾	2022
Seaside Basin ASR Expansion ⁽⁴⁾	2021	1,000	\$2,025	2016
Regional Urban Water Augmentation Project ⁽⁵⁾	2021	1,400-1,700	\$3,486	2021

$(\$4,872 + \$2,025 + \$3,486) / 3 =$

\$3,461 = 2023 Replenishment Assessment Unit Cost for NSY Overproduction

\$3,461/4 = \$865 Replenishment Assessment Unit Cost for OY Overproduction

FOOTNOTES:

(1) For the Regional Desalination Project this is the total amount of water from this source which could potentially come to the Cal Am distribution system, based on the desalination plant having a 6.4 MGD capacity equivalent to 7,169 AFY. Only a portion of this amount might be available as initially unused capacity that could be used to help replenish the Seaside Basin For the RUWAP this is the total amount of non-potable water from this source. Only a portion of this amount might be used for in-lieu replenishment of the Seaside Basin. For the ASR Expansion Project this is the additional amount of water that could potentially be provided by this project (see footnote 4). For the PWM & PWMX this is the quantity of water that is being planned at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project. *Note that if the desalination plant is not built, PWM and PWMX will have to bear conveyance, pumping, and delivery.*

(2) Base unit cost data based on PUC filing documents and provided by Dave Stoldt of MPWMD. This unit cost was confirmed in August 2021 by Ian Crooks of Cal Am as being the latest unit cost available for this project. *Note that if the desalination plant is not built, PWM and PWMX will have to bear conveyance, pumping, and delivery.*

(3) Flow-weighted average unit cost of the combined desalination and groundwater replenishment projects, calculated as:
 $(6,250 \times \$6,147 + 5,750 \times \$3,486) / 12,000 = \$4,872$

(4) Base unit cost data provided by MPWMD in 2016. No updated unit cost was provided for this project. The 1,000 AFY of potential water that this project could supply would be in addition to the 1,300 AFY included as part of the Monterey Peninsula Water Supply Project, and would be an annual average taking into account river flow and hydrologic conditions that change from year to year.

(5) Project data updated in 2022. Patrick Breen of MCWD noted that to determine total cost per acre-foot, use the \$3,486-acre foot cost from Pure Water Monterey (which would be RUWAP cost as well) and add MCWD O&M and Financing costs to be determined.

(6) Base unit cost effective September 19, 2022 based on information provided by Ian Crook of Cal Am. *Note that if the desalination plant is not built, PWM and PWMX will have to bear conveyance, pumping, and delivery.*