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8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 COUNTY OF MONTEREY

10
11 CALIFORNIA AMERICAN WATER,

12 Plaintiff,

13 v.

14 CITY OF SEASIDE, et al.,

15 Defendant.

Case No. M66343

**SEASIDE BASIN WATERMASTER
NOTICE OF FILING OF ANNUAL
REPORT**

Assigned for All Purposes to the Hon. Robert
O' Farrell

Action Filed: August 14, 2003

16 MONTEREY PENINSULA WATER
17 MANAGEMENT DISTRICT,

18 Intervenor,

19 v.

20 MONTEREY PENINSULA WATER
21 MANAGEMENT DISTRICT,

22 Intervenor.

23 AND RELATED CROSS-ACTIONS
24
25

26 TO ALL PARTIES AND TO THEIR RESPECTIVE COUNSEL OF RECORD:
27 PLEASE TAKE NOTICE that Seaside Groundwater Basin Watermaster hereby files the Seaside
28 Basin Watermaster Annual Report – 2021 ("Report"). The report is required to be filed on or

1 before January 15, 2022, consistent with the provision of the Decision in this action, as amended
2 by the Order Amending Judgment filed March 29, 2018.

3 A copy of the main body of the Report will be served on each of the Parties by
4 Seaside Groundwater Basin Watermaster along with a copy of this Notice.

5 DATED: January 11, 2022 BAKER MANOCK & JENSEN, PC

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By: /s/ Christopher L. Campbell
Christopher L. Campbell
Attorneys for Seaside Groundwater Basin
Watermaster

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PROOF OF SERVICE

**California American Water v. City of Seaside, et al.
M66343**

STATE OF CALIFORNIA, COUNTY OF FRESNO

At the time of service, I was over 18 years of age and not a party to this action. I am employed in the County of Fresno, State of California. My business address is 5260 North Palm Avenue, Suite 201, Fresno, CA 93704.

On January 11, 2022, I served true copies of the following document(s) described as **SEASIDE BASIN WATERMASTER NOTICE OF FILING OF ANNUAL REPORT** on the interested parties in this action as follows:

SEE ATTACHED SERVICE LIST

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing, following our ordinary business practices. I am readily familiar with the practice of Baker Manock & Jensen, PC for collecting and processing correspondence for mailing. On the same day that correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service, in a sealed envelope with postage fully prepaid. I am a resident or employed in the county where the mailing occurred. The envelope was placed in the mail at Fresno, California.

BY ELECTRONIC SERVICE: I electronically filed the document(s) with the Clerk of the Court by using the Odyssey electronic file and serve system. Participants in the case who are represented by counsel will be served by the Odyssey electronic file and serve system. Participants in the case who are not represented by counsel will be served by mail or by other means permitted by the court rules.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on January 11, 2022, at Fresno, California.



Tina L. Webb

SERVICE LIST
California American Water v. City of Seaside, et al.
M66343

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SEASIDE BASIN WATERMASTER ANNUAL REPORT – 2021

January 6, 2022

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SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2021

Integral to the Superior Court Decision (Decision) rendered by Judge Roger D. Randall on March 27, 2006 is the requirement to file an Annual Report. This 2021 Annual Report is being filed on or before January 15, 2021, consistent with the provisions of the Decision, as amended by the Order Amending Judgment filed March 29, 2018.

This Annual Report addresses the specific Watermaster functions set forth in Section III. L. 3. x. of the Decision. In addition, this Annual Report includes sections pertaining to:

- Water quality monitoring and Basin management
- Information that the Watermaster would otherwise include within a Case Status Conference Statement, including:
 - A summary of basin conditions and important developments concerning the management of the Basin
 - Planned near- and long-term actions of the Watermaster
 - Information concerning the status of regional water supply issues
 - Management activities that may bear on the Basin's wellbeing.

A. Groundwater Extractions

The schedule summarizing the Water Year 2021 (WY 2021) groundwater production from all the producers allocated a Production Allocation in the Seaside Groundwater Basin is provided in Attachment 1, “Seaside Groundwater Basin Watermaster, Reported Quarterly and Annual Water Production from the Seaside Groundwater Basin for all Producers Included in the Seaside Basin Adjudication During Water Year 2021.” Water Year 2021 is defined as beginning October 1, 2020 and ending on September 30, 2021.

B. Groundwater Storage

Monterey Peninsula Water Management District (MPWMD), in cooperation with California American Water (CAWC), operates the Seaside Basin Aquifer Storage and Recovery (ASR) program. Under the ASR program, CAWC diverts water from its Carmel River sources during periods of flow in excess of NOAA-Fisheries’ bypass flow requirements, and transports the water through the existing CAWC distribution system for injection and storage in the Seaside Basin at the MPWMD’s Santa Margarita ASR site and CAWC’s Seaside Middle School ASR site. During WY 2021, 66 acre-feet was diverted and stored in the Seaside Basin under the ASR program. Rainfall in the area was about 51% of normal, and Carmel River flow was about 24% of normal.

Based upon production reported for WY 2021, the following Standard Producers are entitled to Free and Not-Free Carryover Credits to 2021 in accordance with the Decision, Section III. H. 5:

<u>Producer</u>	<u>Free Carryover Credit</u> (Acre-feet)	<u>Not-Free Carryover Credit</u> (Acre-feet)
Granite Rock	202.02	19.98
DBO Development	375.62	28.35 (-2.31 transfer)
Calabrese (Cypress)	13.47	2.61 (-3.17 transfer)
CAWC	00.00	00.00 (+5.48 transfer)
City of Seaside Muni	00.00	00.00

C. Amount of Artificial Replenishment, If Any, Performed by Watermaster

Per the Decision, “Artificial Replenishment” means the act of the Watermaster, directly or indirectly, engaging in contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It also includes programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water (referred to herein as “In-lieu Replenishment”).

During Water Year 2021 the Watermaster did not indirectly engage in In-lieu Replenishment of the Basin. No non-native water was made available to the Basin during Water Year 2021 under the April 7, 2010 Memorandum of Understanding and Agreement entered into by Watermaster with the City of Seaside for its golf course irrigation program creating in-lieu replenishment water.

As reported in the 2019 Annual Report, on September 4, 2019 the City of Seaside filed a motion with the Court seeking the Court’s approval of the City’s request for a Storage and Recovery Agreement for in-lieu storage and recovery of water. On October 25, 2019 the Court approved the City’s request. Court documents pertaining to the City’s request were contained in Attachment 15 of the 2019 Annual Report. On February 5, 2020 the Watermaster executed a Storage and Recovery Agreement with the City of Seaside, a copy of which was included in Attachment 7 of the 2020 Annual Report.

D. Leases or Sales of Production Allocation and Administrative Actions

As reported in the 2019 Annual Report, in WY2019 a transfer or assignment of water allocation was activated, as provided for in the Cypress Pacific Investors (CPI), successor to Muriel L. Calabrese 1987 Trust, front-loading delivery of water agreement that was contained in Attachment 14 of the 2019 Annual Report. Per the agreement, CPI leases to California American Water Company (CAWC) 8.0 AF of water (subject to reduction per the formulas in the Decision) for the purpose of producing such water from, or moving the production of such water to, the inland wells operated by CAWC and for delivery of such water by CAWC to one or more CPI properties. In Water Year 2016-17 CPI assigned its entire Standard Production Allocation water right to CAWC effective October 1, 2016.

As discussed in Attachment 13 of the 2018 Annual Report, in 2019 Security National Guarantee (SNG) indicated it intended to convert a portion of its Alternative Production Allocation to Standard Production. However, SNG subsequently decided not to make such a conversion.

During WY 2021 the Watermaster Board did not make any revisions to its *Rules and Regulations*.

During WY 2021 the Watermaster Board was comprised of the following Members and Alternates:

<u>MEMBER</u>	<u>ALTERNATE</u>	<u>REPRESENTING</u>
Director Paul Bruno	N/A	Coastal Subarea Landowner
Christopher Cook	Tim O'Halloran	California American Water
Wesley Leith	N/A	Laguna Seca Subarea Landowner
Director George Riley	Director Alvin Edwards	MPWMD
Mayor Mary Ann Carbone	City Manager Aaron Blair	City of San City
Supervisor Mary Adams	Supervisor Wendy Askew	Monterey County (MCWRA)
Councilmember John Gaglioti	Council Member Scott Donaldson	City of Del Rey Oaks
Councilmember Dan Albert	Mayor Clyde Roberson	City of Monterey
Mayor Ian Oglesby	Council Member Jon Wizard	City of Seaside

E. Use of Imported, Reclaimed, or Desalinated Water as a Source of Water for Storage or as a Water Supply for Lands Overlying the Seaside Basin

The CAWC/MPWMD ASR Program operated in WY 2021 and 66.06 acre-feet of water was injected into the Basin as Stored Water Credits and 0 acre-feet was extracted.

As reported in the 2019 Annual Report, the Watermaster issued a Storage and Recovery Agreement to CAWC and MPWMD governing the injection and recovery of water from PWM. A copy of the agreement was included in Attachment 13 of the 2019 Annual Report. The quantities of water that were stored and recovered in accordance with that Agreement during WY 2021 are reported in the lower portion of the spreadsheet in Attachment 1.

F. Violations of the Decision and Any Corrective Actions Taken

Section III. D. of the Decision enjoins all Producers from any Over-Production beyond the Operating Yield in any Water Year in which the Watermaster declares that Artificial Replenishment is not available or possible. Section III. L. 3. j. iii. requires that the Watermaster declare the unavailability of Artificial Replenishment in December of each year, so that the Producers are informed of the prohibition against pumping in excess of the Operating Yield.

In WY 2021 the Watermaster implemented a final ramp-down in production to achieve the Basin's Decision-established Natural Safe Yield of 3,000 AFY. The Watermaster made its declaration regarding the availability of Artificial Replenishment Water, and the Total Usable Storage Space of the Basin, for WY 2021 at its Board meeting of December 2, 2020. Copies of these declarations are contained in Attachment 2.

Total pumping for WY 2021 did not exceed the Operating Yield (OY) of the Basin, and did not exceed the Natural Safe Yield (NSY) of the Basin.

G. Watermaster Administrative Costs

The total estimated Administrative costs through the end of Fiscal Year 2021 amounted to \$75,000 including a \$25,000 dedicated reserve. Costs include the Administrative Officer salary and legal counsel fees. The “Fiscal Year 2021 Administrative Fund Report” and “Fiscal Year 2021 Operations Fund Report” are provided in Attachment 3.

H. Replenishment Assessments

At its meeting of September 1, 2021 the Watermaster Board determined that beginning with WY 2022 the Natural Safe Yield Replenishment Assessment unit cost should be updated to \$3,260 per acre-foot, and the Operating Yield Replenishment Assessment unit cost should be updated to \$815 per acre-foot. The Agenda transmittal which explains the basis of calculation for these new unit costs is contained in Attachment 4.

Alternative and Standard Producers report their production amounts from the Basin to the Watermaster on a quarterly basis.

Based upon the reported production for WY 2021, the City of Seaside’s Replenishment Assessment for its Municipal System for Overproduction in excess of its share of the Natural Safe Yield is \$75,196.61, and for overproduction in excess of its share of the Operating Yield is \$18,805.53. The City of Seaside did not exceed its Alternative Production Allocation for its Golf Course System production.

Based upon the reported production for WY 2021, Mission Memorial Park (Alderwoods)’s Replenishment Assessment for Overproduction in excess of its share of the Natural Safe Yield is \$46,488.32, and for overproduction in excess of its share of the Operating Yield is \$11,626.02. In early January 2022 Mission Memorial Park, through its attorney, filed a writ with the Court asking that its WY 2021 replenishment assessment be waived. It is expected that the Court will rule on this in 2022, and the Watermaster will report on that ruling in its 2022 Annual Report.

A summary of the calculations for Replenishment Assessments for WY 2021 is contained in Attachment 5. Credits against Replenishment Assessments are contained in Attachment 6.

I. All Components of the Watermaster Budget

The Watermaster budget has four separate funds: Administrative Fund; Monitoring & Management–Operations; Monitoring and Management–Capital Fund and; Replenishment Fund. Copies of the budgets for Fiscal Year 2022 are contained in Attachment 6.

The Watermaster Board is provided monthly financial status reports on all financial activities for each month with year-to-date totals.

J. Water Quality Monitoring and Basin Management Water Quality Analytical Results

Groundwater quality data continued to be collected and analyzed on a quarterly basis during WY 2021 from the enhanced network of monitoring wells. The low-flow sampling method implemented in 2009 continued to be used in 2021 and is expected to continue to be used in the future to improve the efficiency of sample collection. Except as discussed below regarding Monitoring Well FO-9 Shallow, no modifications to the quarterly data collection frequency from the enhanced network of monitoring wells were made during WY 2021.

Monitoring and Management Program for the Upcoming Year

The 2022 Monitoring and Management Program (M&MP) contained in Attachment 8 includes the types of basin management activities conducted in prior years.

Other than cost changes due to changes in hourly rates for some of the consultants, the following are the principal differences between the 2021 M&MP and the 2022 M&MP, and their respective budgets:

Technical Program Manager: Due to the large number of meetings being held by the Salinas Valley Basin's and Marina Coast Water District's Groundwater Sustainability Agency's committees that I serve on representing the Watermaster, and the increasing work associated with working toward obtaining replenishment water to protect the Seaside Basin against the threat of seawater intrusion, the budget amount for the Technical Program Manager had to be increased in 2021 through a mid-year budget amendment from an initial \$60,000 to \$95,000. I anticipate that this increased workload will begin to reduce in 2022 after the Monterey Subbasin GSP has been completed. Therefore, the proposed line-item budget amount has been reduced to \$75,000 in 2022.

Tasks M.1.c, M.1.d, and M.1.e (On-call/as-needed Consulting Services): In 2020 and again in 2021 we have needed a greater amount of assistance from Montgomery and Associates in evaluating a number of different issues that have come before the TAC, than has been the case in prior years. In 2022 there will be some hourly rate increases for the Montgomery and Associates staff that will likely be the ones to provide on-call/as-needed hydrogeological consulting services under Tasks M.1.c, M.1.d, and M.1.e (Derrick Williams, Pascual Benito, and Georgina King). I also anticipate that there may be an ongoing need for a greater level of services in 2022, and have accordingly increased the on-call consulting services allowance for this budget line-item.

Task M.1.g (SGMA Documentation Preparation): Although the scope of work for this Task is unchanged from 2021, in 2022 there will be some hourly rate increases for the Montgomery and Associates staff that perform this work. Therefore, the amount proposed for 2022 is slightly increased from 2021 amount.

Tasks I.2.a.1 (Conduct Ongoing Data Entry/ Database Maintenance/Enhancement), I.2.b.2 (Collect Water Levels), and I.2.b.3 (Collect Quarterly Water Quality Samples and Perform Sentinel Well Induction Logging): Although the scope of work for these Tasks is essentially unchanged from 2021, in 2022 there will be significant hourly rate increases for the MPWMD staff that perform this work, and additional charges for direct and indirect MPWMD costs associated with performing this work. Also, under the new Scope of Work being used with MPWMD under the new Master Agreement starting in 2022, some of the cost allocations between their work on these Tasks is slightly different than in 2021.

The proposed cost for the induction logging work that is performed by Mr. Feeney and his subcontractor in Task I.2.b.3 is slightly higher than it was in 2021. This is because more maintenance work on the Sentinel wells is anticipated in 2022, and the induction logging contractor's costs have gone up.

Therefore, the amounts proposed for these Tasks in 2022 differ significantly from the 2021 amounts, and are generally higher than they were in 2021.

Task I.2.b.6 (Reports): Although the scope of work for this Task is unchanged from 2021, in 2022 there will be hourly rate increases for the MPWMD staff that perform this work. Therefore, the amount proposed for 2022 is slightly increased from 2021 amount.

Task I.2.b.7 (CASGEM Data Submittal for Watermaster's Voluntary Wells): MPWMD expects to be able to reduce the amount of time needed to format and submit this data to DWR in 2022 to comply with the SGMA requirements for adjudicated basins. Even with MPWMD's hourly rate increases, it has been possible to reduce the budget for this Task in 2022 from the amount budgeted in 2021.

Task I.3.a.3 (Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions): Included in Task I.3.a.3 is \$40,000 to perform work to update modeling performed in 2013 pertaining to injection of water to raise groundwater levels. This additional work was initially proposed for 2020, but was removed based on input from Todd Groundwater and Montgomery & Associates that pointed out that if all the water injected by the PWM and desalination plant projects is subsequently extracted, there would be little if any net increase in groundwater levels. Reinstating that work was proposed for 2021 in order to work on getting additional water above and beyond that which would be injected by the desalination plant or the PWM Expansion Project (depending on which of these moves forward to construction) and not extracted, in order to raise groundwater levels to protective elevations Basinwide. However, in the event the Board decides to defer this work until 2022, funds to perform that work have been included in the 2022 budget for this Task. If the Board proceeds with that work in 2021, the scope and budget for it will be deleted from the 2022 M&MP and its budget.

Task I.4.c (Annual Report- Seawater Intrusion Analysis): Although the scope of work for this Task is essentially unchanged from 2021, Montgomery & Associates has been able to slightly reduce its costs to prepare the 2022 Seawater Intrusion Analysis Report, and no costs for MPWMD to perform work under this Task are anticipated. Therefore, the amount proposed for 2022 is lower than the 2021 amount.

A Capital Project to replace monitoring well FO-9 Shallow is anticipated in 2022.

Basin Management Database

Pertinent groundwater resource data obtained from a number of sources has been consolidated into the Watermaster's database to allow more efficient organization and data retrieval. No modifications or enhancements to the database are planned in FY 2022.

Enhanced Monitoring Well Network

The Seaside Basin M&MP uses an Enhanced Monitoring Well Network to fill in data gaps in the previous monitoring well network used by the Monterey Peninsula Water Management District (MPWMD), and others, in order to improve the basin management capabilities of the Watermaster. The Enhanced Monitoring Well Network has been described in detail in previous Watermaster Annual Reports. It continues to be used to obtain additional data that is useful to the Watermaster in managing the Basin.

In 2021 it was discovered that one of the monitoring wells in this Network, monitoring well FO-9 Shallow, had developed a leak in its casing. This was allowing salty water from the shallow Dunes Sand aquifer to flow down the casing and into the Paso Robles aquifer. Because this was causing the water quality samples taken from this well to no longer be representative of water quality in the Paso Robles aquifer, water quality sampling from this well was discontinued in early 2021. The Monterey County Environmental Health Department directed that this well be destroyed to prevent cross-aquifer contamination, and this was accomplished by the well owner, MPWMD, in late 2021. The potential to have this monitoring well replaced through a three-party cost-sharing agreement (between MPWMD, the Watermaster, and MCWD) was being pursued in late 2021, and a Capital Project for the estimated Watermaster share of the replacement cost is included in the 2022 M&MP Capital Budget.

Basin Management Action Plan (BMAP)

The BMAP constitutes the basic plan for managing the Seaside Groundwater Basin. The BMAP identifies both short-term actions and long-term strategies intended to protect the groundwater resource while maximizing the beneficial use of groundwater in the basin. It provides the Watermaster a logical set of actions that can be undertaken to manage the basin to its Safe Yield.

The Watermaster's first BMAP was completed in 2009 and was approved by the Watermaster Board at its February 2009 meeting. The Executive Summary from that BMAP was contained in Attachment 9 of the 2009 Annual Report, and the complete document is posted on the Watermaster's website at: http://www.seasidebasinwatermaster.org/Other/BMAP_FINAL_5-Feb-2009.pdf.

Over the nine years since the 2009 BMAP was completed, the Watermaster collected much groundwater level and quality data, and conducted various studies to improve the understanding of the basin. This improved understanding was incorporated into a 2019 Updated BMAP to facilitate ongoing responsible management of the groundwater resource. The Watermaster Board approved the 2019 Updated BMAP at its June 5, 2019 meeting. The Executive Summary from that document was contained in Attachment 7 of the 2019 Annual Report, and the complete document is posted on the Watermaster's website at: http://www.seasidebasinwatermaster.org/Other/BMAP%20Final_07192019.pdf.

One of the findings in the Updated BMAP is that the Natural Safe Yield (NSY) of the Basin is 2,370 AFY, which is lower than the Adjudication Decision's initially-established 3,000 AFY. Another finding was that the Total Usable Storage Space of the Basin was increased from 52,030 acre-feet to 104,170 acre-feet as reported on page 52 of the BMAP partly due to an error in the 2009 estimate as the deficit volume was subtracted, thereby resulting in a lower

combined volume than it should have been; and partly because a different protective elevation contour map was used in this updated estimation.

Attachment 10 of the 2019 Annual Report contains a Memo titled “Seaside Groundwater Basin Natural Safe Yield Allocations to Producers.” The Memo describes how the Adjudication Decision allocated water rights to each of the Producers (both Standard and Alternative Producers), and the water rights that each Producer would have after all of the Adjudication Decision-required ramp-downs in pumping have been completed. The Memo also briefly describes the water rights impacts that would result from lowering the NSY of the Basin from 3,000 AFY to 2,370 AFY.

As discussed in the Memo, the approach used to make these calculations is based on the assumption that the Adjudication Decision contemplated that all of the Basin’s NSY comes from the Laguna Seca and the Coastal Subareas, and that none of it comes from the Northern Inland Subarea. Two options for arriving at the water rights for each Producer are presented in the Memo. As noted in the Memo, there are some inconsistencies in the Adjudication Decision which complicate the calculation of water rights after the Adjudication Decision-mandated ramp-downs in pumping are completed.

The Memo contains a set of ramp-down calculations for a basin-wide NSY of 3,000 AFY, because 3,000 AFY had been the ramp-down figure that was developed when CAWC was sizing its Monterey Peninsula Water Supply Project. That analysis led to the conclusion that CAWC’s ultimate water right in the Basin would be 1,474 AFY, based on a basin-wide Natural Safe Yield of 3,000 AFY. This calculation approach was approved by Judge Randall in his Order dated 9 February 2007. Therefore, it was appropriate to include the ramp-down analysis leading to CAWC’s 1,474 AFY of ultimate water right. Also contained in the Memo is a set of ramp-down calculations for a basin-wide NSY of 2,913 AFY, based on a slightly different interpretation of the Adjudication Decision.

The Memo provided to the Watermaster Board all of the necessary background information and calculations for use in determining which of the two ramp-down figures (3,000 AFY or 2,913 AFY) should be used when the next (and presumably final) ramp-down occurs in WY 2021. At its meeting of June 5, 2019 the Watermaster Board determined that there should be a final ramp-down to 3,000 AFY in WY 2021 and that water allocations to each Producer should be assigned as shown in Table 7 of Attachment 10 in the 2019 Annual Report, after all pumping ramp-downs have been completed. The Board reached this decision in part because ramping-down to 3,000 AFY would cause less hardship on the Alternative Producers by not requiring them to ramp-down along with the Standard Producers, and because ramping down to 2,913 AFY would provide negligible additional benefit and would require both the Standard and Alternative Producers to ramp-down.

In conjunction with updating the BMAP, Montgomery & Associates and Todd Groundwater (a hydrogeologic consultant the Watermaster used to perform a peer review of a draft version of the Updated BMAP) recommended that at some point in the future the Watermaster change to a different approach (Sustainable Yield) rather than continuing to use the Natural Safe Yield approach that was used in the Adjudication Decision, for basin management purposes.

Attachment 11 in the 2019 Annual Report contains a discussion of the pros and cons of using the Sustainable Yield approach vs. the Natural Safe Yield approach. The Watermaster Board

considered the information contained in that attachment at its June 5, 2019 meeting and made the following determinations:

- A Sustainable Yield analysis should not be performed at this time.
- The concept of using the Sustainable Yield approach to replace the Natural Safe Yield approach should be revisited after the Groundwater Sustainability Plan for the Monterey Subbasin of the Salinas Valley Groundwater Basin has been completed, and its impacts on the Seaside Groundwater Basin have been determined.
- If something is learned, or events occur, that would warrant performing a Sustainable Yield analysis sooner, the Board should revisit the decision at that time.

The Watermaster Board revisited this topic at its September 1, 2021 meeting, and concluded the following:

- Sustainable Yield (SY) is a technically superior Basin management approach compared to the Natural Safe Yield (NSY) approach used in the Decision, and an SY analysis should be performed at some point in time.
- Because of the historical over pumping from the Basin, regardless of the approach that is used for Basin management, be it NSY or SY, even reducing pumping levels to match either the NSY or SY pumping levels will not achieve protective groundwater elevations. This is because these approaches only seek to stabilize groundwater levels and do not take into account that the Basin would still be at risk of seawater intrusion at some time in the future. An additional source(s) of water (replenishment water) that can be injected into the Basin to raise groundwater levels, and to maintain them at protective water levels, will be necessary regardless of which approach is used for Basin management.
- In view of the expense and complexity of changing to the SY approach, the Board concluded that making this change would not be justified until a source for this replenishment water has been secured.

Development of the Groundwater Sustainability Plan for the Monterey Subbasin was started in 2020 and is expected to be completed in late 2021 or early 2022. Following completion of that Groundwater Sustainability Plan, the Watermaster may revisit the issue of changing to the Sustainable Yield approach.

Seawater Intrusion Response Plan

HydroMetrics LLC (now Montgomery and Associates) was hired by the Watermaster to prepare a long-term Seawater Intrusion Response Plan (SIRP), as required in the M&MP.

The Final SIRP was approved by the Watermaster Board in 2009 and a summary of the Seawater Intrusion Contingency Actions from the SIRP were contained in Attachment 10 of the 2009 Annual Report. The complete document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

When water quality sampling from monitoring well FO-9 Shallow in late 2020 and again in early 2021 appeared to indicate that seawater intrusion might have been detected in the Paso Robles aquifer in the vicinity of that well, the SIRP was immediately reviewed to determine what steps should be taken in response to that finding. However, subsequent investigation of that well led to the determination that the increased chloride levels in the water quality sampling of that well were due to a casing leakage, and not from seawater intrusion in the Paso

Robles aquifer as initially feared. Consequently, no actions to implement the SIRP were taken and no modifications to the SIRP were made in 2021.

Seawater Intrusion Analysis Report

The Seawater Intrusion Analysis Report (SIAR) examines the “health” of the Basin with regard to whether or not there are any indications that seawater intrusion is either occurring or is imminent. Previous SIARs have stated that depressed groundwater levels, continued pumping in excess of recharge and freshwater inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin.

The Watermaster retained Montgomery & Associates to prepare the WY 2021 SIAR required by the M&MP. The WY 2021 SIAR provided an analysis of data collected during that Water Year.

Based on an evaluation of geochemical indicators in prior years, seawater intrusion has not historically been observed in existing monitoring and production wells in the Seaside Basin. However, as noted in the previous two SIAR reports (2019 and 2020), two monitoring wells in the Watermaster’s network have experienced increased chloride concentrations. One of these, monitoring well FO-10 Shallow, is north of and outside of the Seaside Basin, and the other, monitoring well FO-9 Shallow, is just inside the northern boundary of the Northern Coastal Subarea of the Seaside Basin. Induction logging of both wells took place in March 2021 to evaluate if seawater intrusion was evident. A structural failure was identified in monitoring well FO-9 Shallow that most likely acts as a conduit, allowing known shallow intruded groundwater in the dune sands to flow into the well and potentially into underlying aquifers. To prevent further leakage of poorer quality water, Well FO-9 Shallow is scheduled for destruction before the end of 2021. Downhole induction logging of Well FO-10 Shallow confirmed chloride concentrations in groundwater, but was inconclusive as to whether this is a result of seawater intrusion. Induction logs of the Sentinel Wells remain stable over the historical record.

There continue to be ongoing detrimental groundwater conditions within the Basin that pose a potential threat of seawater intrusion. Groundwater levels below sea level, the cumulative effect of pumping in excess of recharge and freshwater inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion has the potential to occur in the Seaside Groundwater Basin. However, No data collected in Water Year (WY) 2021 indicate that seawater intrusion is occurring within the Seaside Groundwater Basin.

The SIAR is lengthy, but the full *Executive Summary Section* from it is provided in Attachment 7. A complete copy of the document is posted for viewing and downloading from the Watermaster’s website at: <http://www.seasidebasinwatermaster.org/>. All recommendations contained in the SIAR are being or will be carried out and are included in the budgeted activities contained in Attachment 6 and described in Attachment 8.

Geochemical Impact Assessments

When new sources of water are introduced into an aquifer, with each source having its own unique water quality, there can be chemical reactions that may have the potential to release minerals into solution which have previously been attached to soil particles, such as arsenic or

mercury, and thus into the water itself. This has been experienced in some other locations where changes in water quality occurred as a result of water being injected into an aquifer.

MPWMD's consultant (Pueblo Water Resources) has been using geochemical impact assessments to predict the effects of injecting Carmel River water into the Seaside Groundwater Basin under the ASR program. As discussed in the 2018 Annual Report under the heading titled "Monitoring and Management Program Work Plan for the Upcoming Year," in order to predict whether there will be groundwater quality changes that will result from the introduction of desalinated water, additional ASR water (under the Monterey Peninsula Water Supply Project), and advanced wastewater treatment (AWT) water under the Pure Water Monterey Project (PWM) geochemical impact assessments have been, or will be, performed by Pueblo Water Resources for use in the areas of the Basin where injection of these new water sources will occur. A description of this work was provided in Attachment 11 of the 2018 Annual Report.

In 2019 an assessment of the geochemical impacts of injecting AWT water from the PWM was performed. A Technical Memorandum describing that work is contained in Attachment 12 of the 2019 Annual Report. The assessment found that if the quality of the PWM AWT water is maintained within the ranges set forth in the Division of Drinking Water (DDW) Operations Report, there will be no adverse geochemical impacts on the aquifers within the Seaside Basin.

In 2021 no additional geochemical impact assessments needed to be performed, since the Monterey Peninsula Water Supply Project was still in the process of obtaining the permits necessary to move forward with that project.

Sustainable Groundwater Management Act (SGMA)

As reported in the 2015 Annual Report the Watermaster Board determined that the Watermaster should monitor the development of the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) and the State Department of Water Resources' (DWR) development of SGMA regulations with the intent to collaborate with these entities as appropriate.

At the State Level:

During 2021 DWR did not issue any new regulations, or revisions to prior regulations, that impacted the Seaside Groundwater Basin or the Watermaster. In March of 2021 the Watermaster submitted to DWR the reporting information required of it, as an adjudicated basin, under SGMA.

At the Monterey County level:

As reported in the 2018 Annual Report, the SVBGSA, the Marina Coast Water District (MCWD), and the City of Marina all submitted Notifications with DWR to serve as the GSA for overlapping portions of the Monterey and/or the 180/400-foot aquifer subbasins. The SVBGSA, MCWD, and the City of Marina embarked on processes to address and resolve these overlaps.

In its notification to DWR, the City of Marina proposed becoming the GSA for the portion of the 180/400-foot Subbasin lying within the City's jurisdictional boundaries. However, since this overlapped with the SVBGSA's proposal to be the GSA for that area, DWR concurred with the SVBGSA's proposal, as authorized by SGMA, to have the County of Monterey be the

GSA for that area. The County then delegated authority to prepare the Groundwater Sustainability Plan (GSP) for that area to the SVBGSA. The SVBGSA submitted its GSP for the 180/400-foot Subbasin to DWR in January 2020.

With regard to the proposals by both MCWD and the SVBGSA to be the GSA for portions of the Monterey Subbasin, the result was agreement between the MCWD GSA and the SVBGSA to break the Monterey Subbasin into two Management Areas, described as follows:

- Marina-Ord Area: This Management Area consists of the lands within the City of Marina and the former Fort Ord. The MCWD GSA will be the GSA for this Management Area.
- Corral de Tierra Area: This Management Area consists of the remainder of the subbasin, which are generally south of State Route 68 and includes a parcel located between the City of Marina and the former Fort Ord. The SVBGSA will be the GSA for this Management Area.

The MCWD GSA and the SVBGSA agreed to work together to develop a single GSP for the Monterey Subbasin, as required by SGMA, with each of these two entities preparing the portion of that GSP to address their respective Management Areas.

In 2020 MCWD began development of a GSP for the Marina-Ord Area portion of the Monterey subbasin. DWR determined that this subbasin is not critically overdrafted and therefore has a GSP submittal deadline two years later (January 2022) than the deadline for critically overdrafted subbasins. The Watermaster is participating in the stakeholder group the MCWD GSA has formed to provide input during development of this GSP.

In 2020 the SVBGSA began development of a GSP for the Corral de Tierra Area portion of the Monterey subbasin. DWR determined that this subbasin is not critically overdrafted and therefore has a GSP submittal deadline two years later (January 2022) than the deadline for critically overdrafted subbasins. The Watermaster is participating in the Monterey Subbasin GSP Committee that the SVBGSA has formed to provide input during development of this GSP. In 2020 the Watermaster's Technical Program Manager, jointly with Montgomery & Associates, made a PowerPoint presentation to that Committee describing issues of mutual concern between the Corral de Tierra area and the Seaside Groundwater Basin. The presentation highlighted the impacts that pumping in the Corral de Tierra area is having on groundwater levels in the Laguna Seca Subarea of the Seaside Basin.

In addition, the Watermaster is participating in the development of the SVBGSA's other GSPs through its membership on the SVBGSA's Advisory Committee.

The Watermaster's participation in these committees and stakeholder groups will help to ensure that there is close coordination between the SVBGSA, MCWD GSA, and the Watermaster on matters of mutual interest.

K. Information that the Watermaster Would Otherwise Include within a Case Status Conference Statement

This Section was added to the Annual Report beginning in 2018 year as directed by the Court in its Order Amending Judgment filed March 29, 2018. It is formatted to contain the topic headings below, which were requested by the Court in its March 29, 2018 Order.

Summary of Basin Conditions and Important Developments Concerning the Management of the Basin

The condition of the Basin is discussed in the *Water Quality, Seawater Intrusion Analysis Report*, and *Basin Management Action Plan* subheadings in Section J of this Annual Report.

In summary, the *2021 Seawater Intrusion Analysis Report*, which analyzes the water quality data collected under the Watermaster's sampling program, reported that while conditions exist within the Basin that pose a risk of seawater intrusion, none of the data collected in WY 2021 indicate that seawater intrusion has actually occurred.

The 2019 updated *Basin Management Action Plan* found that in spite of recent pumping at levels less than the Decision-established Natural Safe Yield of 3,000 AFY, water levels in some portions of the Basin are continuing to drop. It is expected that once the MPWSP becomes operational, or if that project is not constructed but an expansion of the PWM project is constructed, and CAWC is able to further reduce its pumping from the Basin by 700 AFY through its 25-year overpumping repayment program, the rate of drop in groundwater levels will be at least partially mitigated.

Planned Near and Long-term Actions of the Watermaster

Near-term actions are described in the 2022 Monitoring and Management Program discussed in Section J and Attachment 8 of this Annual Report.

Long-term actions will include:

- Continuing to carry out the duties and responsibilities assigned to the Watermaster by the Decision
- Continuing to coordinate with the Monterey County Water Resources Agency in their development of an updated hydrogeologic model of the Salinas Valley Basin, as discussed under the *Coordination of Watermaster's Seaside Groundwater Model with Salinas River Basin Model* subheading in Section J of the 2018 Annual Report (Note: In 2020 completion of this model was delayed and was still being completed as of the date of preparation of this 2021 Annual Report. The Watermaster will continue to coordinate with the Monterey County Water Resources Agency on this, once the model is completed and promulgated. However, it was found that the Salinas River Basin model did not adequately address groundwater conditions in the Monterey Subbasin, and for this reason MCWD retained a hydrogeologic consultant (EKI Environment and Water) to develop a new model for the Monterey Subbasin. This new model is being used in the preparation of the GSP for that subbasin, including the Marina-Ord and Corral de Tierra subareas. As discussed above under the *Sustainable Groundwater Management Act (SGMA)* subheading in Section J, the Watermaster is participating in the development of that GSP, and is having its hydrogeologic consultant (Montgomery & Associates) actively interface with EKI Environment and Water to ensure that there is hydrogeologic agreement between the new Monterey Subbasin model and the Watermaster's Seaside Basin model.
- Continuing to coordinate with the Salinas Valley Basin Groundwater Sustainability Agency to develop measures to aid in groundwater management of the Laguna Seca Subarea, as discussed under the *Sustainable Groundwater Management Act* subheading in Section J of this Annual Report.

Information Concerning the Status of Regional Water Supply Issues

MPWSP

Implementation of the Monterey Peninsula Water Supply Project (MPWSP) continues to be vigorously pursued by California American Water.

In mid-November 2019 the California Coastal Commission held a hearing on CAWC's application for a Coastal Development Permit for construction of the portions of the MPWSP located within the coastal zone. The Commission received public input at that hearing but deferred taking action on the application until early 2020. That action was originally scheduled for the Commission's May 2020 meeting, but was rescheduled to a September 2020 meeting by Commission staff, who stated that they needed more time to adequately evaluate all of the documents that had been submitted. Just prior to the scheduled September 2020 Commission meeting date, CAWC decided to withdraw its application in order to see if it could negotiate modifications to the project with the opposing parties that would address their concerns and objections. On November 5, 2020 CAWC formally resubmitted its application for a Coastal Development Permit with the Coastal Commission. The Coastal Commission requested that CAWC submit additional information in order for the Commission to deem the application to be complete.

On December 3, the Coastal Commission sent a Notice of Incomplete application, identifying certain additional information needed to consider the application complete. On March 5, 2021 CAWC submitted a partial response to the Coastal Commission's Notice of Incomplete, noting that additional information on the few remaining requested items would be submitted shortly. CAWC supplemented that response on May 19, 2021.

On March 26, 2021, the City of Marina and MCWD each submitted a letter to the Coastal Commission urging rejection of CAWC's response as incomplete. On April 2, 2021, the Coastal Commission responded to CAWC's response, noting the receipt of additional information the Coastal Commission had requested and the few still outstanding items. CAWC supplemented its response to the Coastal Commission on May 19, 2021. On June 18, 2021, the Coastal Commission responded, acknowledging the responses and requesting certain additional information before the application could be considered complete. CAWC is currently working on preparing the additional information the Coastal Commission has requested.

Detailed update reports on the MPWSP are posted on the MPWSP website at <https://www.watersupplyproject.org>. The most recent update (as of the date of preparation of this Annual Report) provided this information:

- CAWC resubmitted its application for the Monterey Peninsula Water Supply Project to the California Coastal Commission. The resubmission came roughly a month after the company withdrew its application, prior to the Commission hearing that had been scheduled on the project in September 2020. CAWC reported that its withdrawal was made as it attempted to address some of the issues raised by Commissioners, staff and stakeholders, and that CAWC had taken the intervening time to reach out to the City of Marina to see if it would be possible to resolve their concerns as well as to further examine options for low income customers who will be served by the project.

- A week after withdrawing its application, CAWC sent a letter to the City of Marina offering several major options to modify the project in response to objections raised by stakeholders in the Marina community. These included options to purchase water from the project, own infrastructure, enter into a franchise agreement and perform mitigation and restoration work at the proposed project well site, above and beyond what is required to comply with the California Environmental Quality Act. The City responded with a letter indicating these options were insufficient but stating they would nevertheless be willing to talk. CAWC said it remained open to working with the City and maintaining its project to help to address regional inequities in housing and economic opportunities that effect the entire region.
- Once the Commission deems CAWC's renewed application complete, the Commission will have 180 days to make a decision on the project. CAWC said that it was hoping for a hearing as soon as possible, because time is of the essence given the pending restrictions on pumping from the Carmel River.
- CAWC informed the State Water Resources Control Board (SWRCB) it would not meet the 2020 desal project construction milestone required by the Board's Cease and Desist Order after the Coastal Commission postponed a vote on the project in November 2019. Recently, CAWC sent another letter to the SWRCB acknowledging the missed milestone and the accompanying diversion reduction imposed by the CDO, as well as CAWC's understanding that a discretionary waiver of that reduction from the SWRCB was unlikely. Nevertheless, CAWC expressed the need for continuing discussions regarding the 2021 milestone and final cutback scheduled for December 31, 2021, noting the need to ensure the SWRCB understood that CAWC was still working diligently to develop a permanent replacement supply for the community and to protect the river. CAWC went on to say that the desalination project remains the only viable option that can solve the issues long term, which is what the Cease and Desist Order requires.

Approval by the Coastal Commission is the last major permit needed to allow construction of the project to begin. The schedule on the MPWSP website has not been updated since CAWC anticipated getting its Coastal Development Permit approved in December 2018. If the Coastal Commission approves CAWC's resubmitted Coastal Development Permit in the first quarter of 2022, and if the same time periods for implementation of the project which are shown on the last posted schedule are accurate, the MPWSP desalination plant could become operational in the fall of 2024.

PWM

Construction work on Monterey One Water's (M1W) Pure Water Monterey (PWM) recycled water project in Marina was completed in late 2019, and the Advanced Water Treatment plant began producing water in early 2020. Water began being injected into the Seaside Groundwater Basin in February 2020. During the time period of September 2020 through July of 2021 a total of 2,781 acre-feet of water had been injected.

M1W experienced some problems with the shallow injection wells (called vadose zone injection wells) shortly after it began injecting water into the Basin. It was found that some subsidence was occurring at these shallow wells, and also that it was not possible to inject the amounts of water in these shallow wells that was expected. As a result, in early 2021 M1W

rehabilitated the wells where subsidence was occurring, and was constructing two additional deep injection wells in order to bring the PWM injection capacity up to the intended levels. Those new deep injection wells are planned to be completed in late 2021, at which time the PWM project is expected to be able to inject approximately 3,500 AFY of advanced treated recycled water into the Seaside Basin for subsequent recovery and service to CAWC customers.

The Title 22 Indirect Potable Reuse (IPR) Groundwater Replenishment regulations require that the water from the PWM project be retained underground no less than two months before it reaches the closest downgradient drinking water well. This is referred to as the Response Retention Time, and is intended to provide sufficient response time to identify a treatment failure and a quick response.

Underground retention time can be determined in three ways: (1) numerical modeling, (2) an intrinsic tracer study, or (3) an added (extrinsic) tracer study. A different credit factor for removal of pathogens is applied to each of these estimation methods to reflect the accuracy of the method. For numerical modeling, the factor is 0.5, for an intrinsic tracer study, the factor is 0.67, and for an extrinsic tracer study, the factor is 1.0.

Before the intrinsic tracer study was done, the numerical modeling predicted that the underground detention time would be 10.8 months before the water would reach ASR Wells 1 and 2. Once the intrinsic tracer study was completed, and the model was calibrated with data from this tracer study, the model showed that the shortest travel time from Deep Injection Well No.1 to ASR Monitoring Well No. 1 (adjacent to ASR Wells 1 and 2) was only 2.5 months. ASR-1 had been offline since February 2021, for independent reasons, and M1W began collaborating with MPWMD and CAWC as soon as the model results were learned regarding future use of ASR-1 .

PWM began injection in March of 2020 and injected water was detected at ASR Well 1 and PWM Monitoring Well No. 1 in mid-September 2020, six months after injection began. There was no time when water extracted from ASR Well 1 had a travel time shorter than 2 months.

At the time of preparation of this Annual Report, M1W was in the process of seeking State Division of Drinking Water approval to conduct an extrinsic tracer study involving the addition of dyes, in order to get the most accurate understanding of underground travel time and to be able to get full credit for underground retention time (factor of 1.0).

In late 2021 M1W was also applying to the Division of Drinking Water to obtain additional pathogen reduction credits for certain of the treatment processes the PWM AWT provides, but which had not been previously used in determining the AWT's reduction credits.

Public Buyout of CAWC Water System

Voters approved Measure J in the November 2018 general election. That Measure instructed the Monterey Peninsula Water Management District to undertake a feasibility study on the public takeover of California American Water's Monterey Water System.

At its November 2019 meeting MPWMD reviewed and discussed a preliminary valuation assessment and cost of service evaluation regarding the feasibility of securing and maintaining

public ownership of CAWC's Monterey Water System. The preliminary valuation assessment consisted of completion of a preliminary desktop valuation assessment of the Monterey Water System to estimate the cost required to be incurred to acquire the Monterey Water System. The cost of service analysis was completed to compare the cost of public ownership, operation, and maintenance of the Monterey Water System (i.e. the public ownership scenario) with a status quo scenario, which is the anticipated cost of continued ownership, operation, and maintenance of the system by CAWC. The cost of service analysis was compared in terms of the annual Monterey Water System revenue requirements and typical residential customer bill impacts associated with the various scenarios that were developed.

The preliminary valuation assessment and cost of service evaluation concluded that acquisition of the Monterey Water System by MPWMD appeared to be economically feasible. Economic feasibility was assessed by comparing the estimated revenue requirements of the water system under MPWMD ownership versus CAW ownership, which indicated significant revenue requirement savings could be achieved under the MPWMD ownership scenarios. MPWMD's assessment was prepared by consultants hired by MPWMD, and did not take into account an appraisal prepared by CAWC consultants which indicated that higher costs to customers would be expected under MPWMD ownership.

MPWMD does not presently have the legal authority to provide retail water service in Monterey County, and would need Monterey County Local Agency Formation Commission (LAFCO) authorization to do that. In order for the MPWMD Board to consider in the future a Resolution of Public Necessity for the potential acquisition of CAWC's Monterey Water System, LAFCO must allow MPWMD to activate certain latent powers authorized by its legislation, as well as consider annexation of approximately 56 parcels to MPWMD. LAFCO will require CEQA findings, action by MPWMD, and a filing of a Notice of Determination with the State. At its August 17, 2020 meeting MPWMD's Board of Directors adopted Resolution 2020-12, seeking authorization to activate latent District powers and to adopt a sphere of influence amendment and annexation. As a step toward fulfilling CEQA requirements, at its October 29, 2020 meeting the MPWMD Board certified a Final Environmental Impact Report (FEIR) for the Potential Acquisition of Monterey Water System and District Boundary Adjustment.

In February 2021 MPWMD submitted an application to LAFCO that included the following components:

- 1) Activation of MPWMD's latent powers to provide potable water production and distribution services for retail customers, and
- 2) Authorization for MPWMD to amend its sphere of influence and annex affected parcels.

In response to MPWMD's application, LAFCO issued a completeness review letter on March 28, 2021, stating that the application was incomplete. The letter listed items needed from MPWMD to complete the application before scheduling a public hearing. The letter also called attention to other matters that were relevant to LAFCO's evaluation of the proposal. With respect to those matters, LAFCO held an informal study session agenda item on April 26, 2021 where it received presentations from staff, MPWMD, and CAWC, received public comment, asked questions regarding MPWMD's incomplete application, and continued the discussion to its next meeting on June 28.

On May 3, 2021, the District submitted an amended application to LAFCO. Subsequently,

LAFCO issued a completeness review letter on June 2, 2021, listing the remaining completeness items of: 1) a property tax transfer agreement and 2) analysis and mitigation regarding reduction in annual property tax revenue to local taxing agencies.

The Monterey County Board of Supervisors approved the property tax transfer agreement item on June 22, and MPWMD transmitted a consultant analysis of the property tax revenue reduction issue on July 12. On July 30 LAFCO issued a Certificate of Filing determining the amended application to be complete.

On June 28, 2021 LAFCO provided direction to staff to obtain an independent financial review of MPWMD's proposal and complete the review before a public hearing on MPWMD's proposal. LAFCO determined that it would be MPWMD's responsibility to pay for the independent financial review. LAFCO staff was also preparing a municipal service review and sphere of influence study for MPWMD.

At its September 20, 2021 meeting MPWMD's Board of Directors approved expenditure of and additional \$428,000 in funds to prepare the independent financial review and for other services related to acquisition of CAWC's Monterey Water System. The independent financial review was provided to LAFCO on October 11, 2021, and LAFCO set the public hearing to consider MPWMD's application for October 25, 2021.

No decision was reached by LAFCO at its October 25, 2021 hearing, and the matter was scheduled for a further hearing on December 6, 2021. At the December 6 meeting, on a 5 to 2 vote, LAFCO denied MPWMD's application. MPWMD indicated it would be considering taking legal action to try to overturn LAFCO's denial.

Management Activities that May Bear on the Basin's Wellbeing

1. *Water Conservation.* From a water conservation standpoint, customers of CAWC are doing an exceptional job. CAWC's Monterey system has one of the highest levels of voluntary conservation in the state. There has essentially been no back-off in conservation following the end of mandatory conservation that occurred after the wet winter of 2016-2017.

2. *Storm Water and Recycled Water.* Storm water and recycled water are both components of the Pure Water Monterey (PWM) project that is being implemented by Monterey One Water (M1W). CAWC has already contracted to receive 3,500 AFY of PWM recycled water for injection into, and recovery from, the Seaside Basin. M1W, in coordination with others, has been looking at the potential to expand the delivery capacity of the PWM project by using additional sources of recycled water and storm water, and in late 2019 completed preparation of a Supplemental Environmental Impact Report (SEIR) to fulfill the CEQA requirements for such an expansion.

At its April 2020 meeting the M1W Board voted not to certify the SEIR. However, at its April 26, 2021 meeting the M1W Board did vote to certify the SEIR.

In September 2021 the Boards of Directors of both MPWMD and M1W approved an Amended and Restated Water Purchase Agreement with CAWC for purchase of water produced by the Pure Water Monterey and Pure Water Monterey Expansion Projects.

Work to begin design and then construction of the Pure Water Monterey Expansion Project is set to begin in late 2021, with the potential for the expansion project to become operational as early as late 2023 or early 2024.

3. *Sustainable Groundwater Management Act*. Coordination between the Watermaster and the SVBGSA and the MCWD GSA is ongoing and is discussed in more detail above under Section J of this Annual Report. That coordination will aid in groundwater management of the Laguna Seca and Corral de Tierra subareas.

4. *Climate Change*. Higher seawater levels could exacerbate seawater intrusion concerns, which punctuates the importance of monitoring and long-term management to avoid seawater intrusion. From a water supply perspective, reliance on groundwater with sustainable management is ideal because the resource is a reservoir and therefore not subject to sharp fluctuations in availability resulting from year-to-year precipitation amounts as is the case with surface water supplies. Updating of the Watermaster's *Groundwater Model* in 2018 (discussed in Section J of the 2018 Annual Report) and *Basin Management Action Plan* in 2019 (discussed in Section J of the 2019 Annual Report) incorporated projected impacts from climate change and sea level rise.

5. *New Technical Issues or Activities*.

- Stormwater Projects Being Evaluated in the Monterey Peninsula Stormwater Resource Plan (SWRP).

As reported in the 2018 Annual Report, Monterey One Water as the lead entity coordinated the development of a Stormwater Resource Plan (SWRP) for the Monterey Peninsula, Carmel Bay, and South Monterey Bay (Monterey Peninsula) Integrated Regional Water Management Plan (IRWMP) area.

The purpose of the SWRP is to identify opportunities to capture stormwater that could be utilized as new water supply sources for the Monterey Peninsula and provide additional water quality and environmental benefits. Some of those projects have the potential to minimally benefit the Seaside Basin, and are discussed in the 2019 Updated Basin Management Action Plan.

Of the seven priority projects that were identified in the SWRP, several projects have been able to receive funding and proceeding as described below.

City of Seaside: The Del Monte Manor project in the City of Seaside received grant in the amount of approximately \$560,000 to complete the project, and the City filed notice of exemption for the project. The City retained Whitson Engineers to complete the design and has thus far received 60% design drawings. The City anticipates design to be completed by the end of November, 2021. Assuming that milestone is achieved, the following is the tentative schedule to complete construction of the project:

- Construction project put out to bid by end of 2021
- Construction contract awarded in January of 2022
- Construction started in March of 2022
- Construction completed in August of 2022

City of Sand City: The City of Sand City has two green street retrofit projects. They are the West End Stormwater Improvement Projects on Contra Costa Street and Catalina Street. The Contra Costa Street project is funded by an SWRCB Proposition 1 Stormwater Grant (technical assistance and implementation) and the Catalina Street project is funded by a DWR Proposition 1 IRWMP Grant. Although these projects were not top priority projects in the SWRP, they were projects identified in the plan and were eligible for State funding. These projects are described in more detail below:

West End Stormwater Improvement Project – Contra Costa Street
Project Description

The West End Stormwater Improvement Project is a retrofit of an existing major collector street, Contra Costa Street between Olympia Avenue and Redwood Avenue. The Project will integrate Low Impact Development (LID) strategies to address flood control, water quality, and meet several community objectives. The Project proposes to install bioretention facilities (i.e. urban rain gardens), trash capture, permeable pavement, landscaping, and subsurface infiltration chambers and will improve pedestrian and Americans with Disability Act (ADA) access throughout the corridor. The Project will improve urban storm water runoff quality, augment groundwater quantity, provide climate change adaptation, reduce flooding, and create urban green space. The City developed the Project with a grant from the State Water Resources Control Board Proposition 1 Technical Assistance Funding Program for disadvantaged communities.

West End Stormwater Improvement Project – Catalina Street
Project Description

The West End Stormwater Improvement Project is a retrofit of an existing minor collector street, Catalina Street, between Olympia Ave. and Ortiz Avenue. The Project will integrate Low Impact Development (LID) strategies to address flood control, water quality, and meet several community objectives. The Project proposes to install bioretention facilities (i.e. urban rain gardens), trash capture, permeable pavement, landscaping, and subsurface infiltration chambers and will improve pedestrian and Americans with Disability Act (ADA) access throughout the corridor. The Project will improve urban storm water runoff quality, augment groundwater quantity, provide climate change adaptation, reduce flooding, and create urban green space. The conceptual design of the Project was funded through a Proposition 1 Stormwater Technical Assistance grant which the City was previously awarded. Construction of the Project will be funded through a Proposition 1 Round 1 Integrated Regional Water Management (IRWM) Grant.

Note: Both Projects are designed to capture, treat, and infiltrate urban storm water runoff to reduce the amount of pollutants such as metals, bacteria, nutrients, and trash that are currently being discharged into the Monterey Bay. Both Projects will increase the reliability of the Seaside Groundwater Basin through infiltration of treated storm water and will incorporate City and regional objectives for economic vitality, community livability, and environmental equity. In addition, the Project will improve regional water self-reliance and strengthen collaborative efforts between local agencies to provide sustainable water resources. The City obtained community input regarding storm water management priorities which influenced the design of the Projects.

City of Monterey: The City of Monterey is working to identify potential funding opportunities to proceed with priority urban stormwater diversion opportunities within the City."

- Reduction in Pumping in the Laguna Seca Subarea

In late 2020 CAWC completed construction of an intertie pipeline that enables it to serve the customers in its Bishop and Ryan Ranch Units in the Laguna Seca Subarea with water from its Main System. With the completion of this pipeline, CAWC has been able to discontinue pumping from the Laguna Seca Subarea to serve those customers. This is expected to reduce total pumping from the Laguna Seca Subarea by about 28%.

6. Obtaining Replenishment Water. As described in Section J under the subheading “Basin Management Action Plan,” portions of the Seaside Basin have groundwater levels below sea level. Therefore, even with the pumping reductions achieved to date the Basin will remain vulnerable to seawater intrusion. Replenishing the Basin by injecting water and leaving it in the Basin, rather than withdrawing it as is done in the ASR and PWM projects, could help to raise groundwater levels high enough to protect the Basin against seawater intrusion.

Replenishment water could potentially be obtained from either the MPWSP’s desalination plant, or the proposed PWM Expansion Project, during their initial years of operation when projected water demands will be less than the production capacities of either of these projects. The replenishment water would be obtained by operating either of these projects at their full capacities and injecting the excess water into the Basin. Doing this would increase the operational costs of those projects, and funds to cover those costs would be needed.

Research was performed to determine if there were any State or Federal funding programs that could provide money to purchase replenishment water. It was found that all of those programs only provide funding for planning, design, and construction of projects, but not for operational costs once the projects are constructed. In view of this, efforts were initiated by the Watermaster in 2021 to see if funds to cover these costs could be generated through some form of fee mechanism. Initial meetings involving the Watermaster, MPWMD, MIW, and CAWC led to the conclusion that MPWMD had the legal authority to levy fees to help pay for replenishment of the Basin. Further meetings to pursue obtaining replenishment water are expected to be held in 2022, and will be reported on in the 2022 Annual Report.

L. Conclusions and Recommendations

The Seaside Basin Watermaster Board has worked diligently to meet all of the Court’s established deadline dates. All of the Phase 1 Scope of Work activities, which are described in the “Implementation Plan for the Seaside Basin Monitoring and Management Program” dated March 7, 2007, have been completed. At the Watermaster Board meeting held on September 1, 2021 the Board adopted the FY 2022 budgets contained in Attachment 6, which support carrying out all elements of the 2022 Seaside Groundwater Basin Monitoring and Management Program (M&MP). The M&MP is contained in Attachment 8 and describes the activities that the Watermaster plans to conduct during Fiscal Year 2022.

As described in Section J above, information from the Enhanced Monitoring Well Network is being utilized to detect any seawater intrusion. The response actions described in the Watermaster’s Seawater Intrusion Response Plan, which was contained in the 2009 Annual Report, will be implemented if seawater intrusion is detected within the Basin.

As of the date of preparation of this 2021 Annual Report, no future status conferences with the Court have been scheduled.

LISTING OF ACRONYMS USED IN THIS ANNUAL REPORT

AF - acre-feet
ASR - Seaside Basin Aquifer Storage and Recovery program
Basin - The adjudicated Seaside Groundwater Basin
BLM - Bureau of Land Management
BMAP - Basin Management Action Plan
CASGEM - California Statewide Groundwater Elevation Monitoring
CAWC - California American Water Company
Decision - Decision filed February 9, 2007 by the Superior Court in Monterey County under Case No. M66343 - California American Water v. City of Seaside et al.
DWR - California State Department of Water Resources
GSA - Groundwater Sustainability Agency
GSP - Groundwater Sustainability Plan
LSSA - Laguna Seca Subarea
M1W - Monterey One Water (formerly Monterey Regional Water Pollution Control Agency)
MCWD - Marina Coast Water District
MPWMD - Monterey Peninsula Water Management District
MPWSP - Monterey Peninsula Water Supply Project
M&MP - Monitoring and Management Program
NSY - Natural Safe Yield
PWM - Pure Water Monterey Project
SGMA - Sustainable Groundwater Management Act
SIAR - Seawater Intrusion Analysis Report
SIRP - Seawater Intrusion Response Plan
SVBGSA - Salinas Valley Basin Groundwater Sustainability Agency
SWRCB - State Water Resources Control Board
TAC - Technical Advisory Committee
USGS - United States Geological Survey
WY - Water Year

ATTACHMENT 1

GROUNDWATER EXTRACTIONS

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 2021
 (All Values in Acre-Feet [AF])

	Type	Oct	Nov	Dec	Oct-Dec 20	Jan	Feb	Mar	Jan-Mar 21	Apr	May	Jun	Apr-Jun 21	Jul	Aug	Sep	Jul-Sep 21	Reported Total	Yield Allocation	from WY 2020	for WY 2021
Coastal Subareas																					
CAW - Coastal Subareas	SPA	233.22	194.47	258.49	686.18	-31.97	18.91	22.63	9.58	33.67	28.35	35.19	97.21	394.25	174.61	107.62	676.48	1,469.44	1,466.02	5.48	1,471.50
Luzern		62.71	59.24	23.86	145.81	0.03	0.00	39.07	39.10	2.17	48.97	39.92	91.06	0.00	42.36	52.88	95.24	371.21			
Ord Grove		122.95	117.17	121.44	361.56	118.00	27.62	52.71	198.32	114.80	119.77	114.86	349.43	115.97	116.34	109.65	341.97	1,251.28			
Panola		108.31	101.89	64.52	274.73	0.00	7.56	95.55	103.11	144.08	85.74	68.98	298.80	80.17	78.95	72.11	231.23	907.87			
Playa		32.31	27.38	8.13	67.83	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	67.85			
Plumas		18.83	23.76	7.88	50.47	0.00	15.30	30.12	45.42	29.16	29.06	27.44	85.66	0.00	28.05	28.13	56.18	237.73			
Santa Margarita #1		188.11	165.03	132.65	485.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	485.79			
Santa Margarita #3		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	132.83	184.69	208.02	525.54	198.12	158.90	150.29	507.31	1,032.86			
ASR 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	0.00	0.00	0.00			
PWM Recovery		(300.00)	(300.00)	(100.00)	(700.00)	(150.00)	(31.57)	(194.81)	(376.38)	(389.38)	(439.91)	(424.02)	(1,253.31)	(142.04)	(250.00)	(305.45)	(697.49)	(3,027.18)			
City of Seaside (Municipal)	SPA	13.48	13.93	13.37	40.79	12.26	13.94	13.18	39.38	14.79	15.95	17.09	47.83	15.74	16.12	14.83	46.70	174.69	120.28	0.00	120.28
Granite Rock Company	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	0.00	11.35	222.00	222.00
DBO Development No. 30	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	0.00	20.59	403.96	403.96
Calabrese (Cypress Pacific Inv.)	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	0.00	2.76	13.32	16.08
City of Seaside (Golf Courses)	APA	46.99	14.60	14.94	76.54	8.62	6.31	43.73	58.66	47.99	76.12	77.18	201.28	55.49	37.82	63.08	156.39	492.86	540.00		540.00
Sand City	APA	0.15	0.14	0.06	0.35	0.06	0.05	0.06	0.17	0.08	0.12	0.13	0.34	0.17	0.17	0.16	0.50	1.35	9.00		9.00
SNG (Security National Guaranty)	APA	0.00	0.00	0.02	0.02	0.00	0.04	0.05	0.09	0.01	0.01	0.00	0.02	0.00	0.02	0.00	0.02	0.15	149.00		149.00
Calabrese (Cypress Pacific Inv.)	APA	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	0.00	0.00	0.00	6.00		6.00
Mission Memorial (Alderwoods)	APA	3.17	3.07	3.91	10.15	2.70	1.64	3.41	7.76	3.37	4.16	5.43	12.96	4.81	6.01	5.09	15.91	46.77	31.00		31.00
Coastal Subareas Totals					814.02				115.63				359.62				895.99	2,185.26	2,356.00	644.76	2,968.82
Laguna Seca Subarea																					
CAW - Laguna Seca Subarea	SPA	34.97	25.48	13.11	73.56	8.38	6.53	8.55	23.46	12.21	12.26	13.90	38.37	22.82	18.99	17.41	59.21	194.60	0.00		0.00
Ryan Ranch Unit		5.02	3.56	0.99	9.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.57			
Hidden Hills Unit		13.86	10.44	9.10	33.39	8.38	6.53	8.55	23.46	12.21	12.26	13.90	38.37	22.82	18.99	17.41	59.21	154.43			
Bishop Unit 3		8.20	5.84	1.51	15.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.55			
Bishop Unit 1		7.89	5.64	1.52	15.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.05			
The Club at Pasadena	APA	15.90	6.30	2.00	24.20	3.30	2.00	4.00	9.30	19.00	30.00	18.00	67.00	19.00	34.00	33.00	86.00	186.50	251.00		251.00
Laguna Seca Golf Resort (Bishop)	APA	18.28	1.54	0.00	19.82	7.39	1.34	3.26	11.98	18.09	25.19	36.93	80.21	33.71	37.50	30.82	102.02	214.03	320.00		320.00
York School	APA	1.07	1.63	0.93	3.63	0.65	0.25	0.13	1.04	2.49	2.52	2.86	7.86	2.10	2.75	2.88	7.73	20.26	32.00		32.00
Laguna Seca County Park	APA	1.70	0.67	0.56	2.93	0.84	0.65	0.99	2.48	1.81	1.29	3.12	6.22	7.44	2.34	6.24	16.02	27.64	41.00		41.00
Laguna Seca Subarea Totals					124.14				48.25				199.66				270.98	643.03	644.00	0.00	644.00
Total Production by WM Producers					938.16				163.89				559.28				1,166.96	2,828.29	3,000.00	644.76	3,612.82
																		989.56	1,379.00		
																		1,838.73	2,233.82		

CAW/MPWMD ASR Injection and Recovery (Carmel River Basin source water)																		Previous Balance		Total	
Injection	0.00	0.00	0.00	0.00	43.56	22.50	0.00	66.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.06			
(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	0.00	0.00	0.00	0.00			
Net ASR	0.00	0.00	0.00	0.00	43.56	22.50	0.00	66.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.06	735.49	801.55	
Pure Water Monterey (PWM) Injection and Cal-Am Recovery																					
Injection Operating Reserve	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	166.57	0.00	0.00	166.57	166.57	1,035.12	1,201.69	
Injection Drought Reserve	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	0.00	0.00	0.00	0.00	0.00	0.00	
Delivery to Basin	190.12	222.99	173.77	586.88	297.05	266.37	313.71	877.13	308.57	320.44	292.61	921.62	306.57	306.91	292.65	906.13	3,291.76	0.00	0.00	3,291.76	
CAW	(300.00)	(300.00)	(100.00)	(700.00)	(150.00)	(31.58)	(194.81)	(376.39)	(389.38)	(439.91)	(424.02)	(1,253.31)	(142.04)	(250.00)	(305.45)	(697.49)	(3,027.19)	0.00	0.00	(3,027.19)	

Notes:

- The Water Year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2021 begins on October 1, 2020, and ends on September 30, 2021.
- "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 October 15, 2021.
- 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 2021 (see Item VIII.B. in 12/2/2020 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.

3.91

ATTACHMENT 2

**WATERMASTER DECLARATION
OF
NON-AVAILABILITY
OF
ARTIFICIAL REPLENISHMENT WATER**

NOTICE TO ALL SEASIDE GROUNDWATER PRODUCERS:

Case No. M66343 Amended Decision Section III.B.2.

Commencing with the fourth Water Year, and triennially thereafter, the Operating Yield for both Subareas will be decreased by ten percent (10%) until Operating Yield is the equivalent of the Natural Safe Yield unless:

- a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or*
- b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or*
- c. Any combination of a and b above which results in the decrease in Production of Native Water required by this Decision; or*
- d. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion.*

The Watermaster has determined that the conditions necessary to avoid the ten percent Operating Yield reduction have not been met as follows:

1. Watermaster has not secured water for adding an equivalent amount of Non-Native water to the Basin on an annual basis.
2. The Watermaster has not secured reclaimed water in an equivalent amount.
3. The Watermaster has not secured Non-Native water or reclaimed water that results in the decrease in Production of Native Water required by the Decision.
4. The firm contracted by Watermaster for technical analyses continued to report in 2019 that Groundwater levels within the Santa Margarita and Paso Robles aquifers are not at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion, so the requirement for this item continues to not be met.

Section III.L.3.j.iii: Watermaster declares that for Water Year 2021 Artificial Replenishment Water is not available to offset Operating Yield Over-Production and producers are limited in production to the following quantities of water:

Coastal Subarea Alternative Producers:

Seaside (Golf)	540.00 acre-feet
SNG	149.00 acre-feet
Cypress (Calabrese)	6.00 acre-feet
Mission Memorial (Alderwood)	31.00 acre-feet
Sand City	9.00 acre-feet

Laguna Seca Subarea Alternative Producers:

The Club at Pasadera	251.00 acre-feet
Bishop	320.00 acre-feet
York School	32.00 acre-feet
Laguna Seca County Park	41.00 acre-feet

Coastal Subarea Standard Producers:

California American Water.....	1,471.50 acre-feet*
Seaside (Municipal)	120.28 acre-feet**
Granite Rock	233.35 acre-feet***
D.B.O. Development 30	422.24 acre-feet****
Cypress (Calabrese)	16.08 acre-feet*****

Laguna Seca Subarea Standard Producers:

California American Water.....	0.0 acre-feet
--------------------------------	---------------

* Total is the 2021 base allocation of 1,466.03 acre-feet, plus transferred credits of 3.17 & 2.31 acre-feet. California American Water has a positive balance of 845.93 acre-feet of stored water credit at WY-end 2020 from Basin extractions exceeding injections since WY 2010 under the CAW/MPWMD ASR Program, formalized through a Storage Agreement in 2012.

** Total is the 2021 base allocation of 120.28 acre-feet.

*** Total includes 194.88 acre-feet of “free” carryover and 27.12 acre-feet of “not-free” carryover credit from previous water years, plus the 2021 base allocation of 11.35 acre-feet.

**** Total includes 364.98 acre-feet of “free” carryover plus 38.98 acre-feet of “not-free” carryover credit from previous water years, minus 2.31 in transferred water rights, plus the 2021 base allocation of 20.59 acre-feet.

***** Total includes 14.91 acre-feet of “free” carryover and 1.58 acre-feet of “not-free” carryover credit from previous water years, minus 3.17 acre-feet in transferred water rights, plus the 2021 base allocation of 2.76 acre-feet.

Note: Carryover is not capped for D.B.O. Development 30 and Granite Rock in Water Year 2021 due to recalculation of *Total Useable Storage Space* in the *2018 Basin Management Action Plan* update finalized in 2019. (See allocation of recalculated total useable storage space next page.)

NOTICE TO ALL SEASIDE GROUNDWATER PRODUCERS

Pursuant to Section III.3.L.3.j.xix of the Amended Decision Filed February 2, 2007 in the Superior Court of the State of California, in and for the County of Monterey, Case No. M66343 (the “Decision”), the Seaside Basin Watermaster hereby Declares that the Total Usable Storage Space in the Seaside Groundwater Basin (“Basin”) is as follows:

Total Usable Storage Space in the Coastal and Northern Inland Subareas is 75,610 acre-feet.

Total Usable Storage Space in the Laguna Seca Subarea is 28,560 acre-feet.

Total Usable Storage Space in the entire Seaside Groundwater Basin is 104,170 acre-feet.

Pursuant to Section III.B.3.b of the Decision, Alternative Producers do not receive a storage allocation, only Standard Producers receive such an allocation. Pursuant to Section III.H.2 of the Decision, the Seaside Basin Watermaster further Declares that the Total Usable Storage Space in the Basin shall be allocated to the Standard Producers, who are identified in the Decision, as follows:

Producer	Current Allocation (Using Table 1 of the Decision)		
	Operating Yield Allocation Percentage (1)	Usable Storage Allocation Percentage (2)	Useable Storage Allocation Acre-Feet
Coastal and Northern Inland Subareas			
California American Water (3)	77.55%	90.44%	68,382
City of Seaside (Municipal)	6.36%	7.42%	5,610
Granite Rock Company	0.60%	0.70%	529
DBO Development No. 27	1.09%	1.27%	960
Calabrese (Cypress Pacific Investors LLC)	0.15%	0.17%	129
SUBAREAS TOTAL	85.75%	100.00%	75,610
Laguna Seca Subarea			
California American Water (3)	45.13%	100.00%	28,560
SUBAREA TOTAL	45.13%	100%	28,560
BASIN TOTAL		100%	104,170

Footnotes:

- (1) From Table 1 on page 19 of the Decision.
- (2) Calculated as each Standard Producer’s percentage of the total Standard Producers’ operating yield allocation percentages within each subarea.
- (3) CAW’s Usable Storage Allocation is subject to the provisions and requirements of Section III.H.3 of the Decision.

Pursuant to Section III.H.6 of the Decision, no Producer may store water in the Basin without first executing with the Watermaster a Storage and Recovery Agreement

Nov 2, 2019

ATTACHMENT 3

**WATERMASTER ADMINISTRATIVE AND OPERATIONS COSTS
FOR
WY 2021**

10/31/2021

Seaside Groundwater Basin Watermaster
Budget vs. Actual Administrative Fund
 Fiscal Year (January 1 - December 31, 2021)
 Balance through October 31, 2021

	<u>2021 Adopted Budget</u>	<u>Contract Amount</u>	<u>Year to Date Revenue / Expenses</u>
Available Balances & Assessments			
Dedicated Reserve	-		-
FY (Rollover)	38,000.00		54,000.00
Admin Assessments	62,000.00		62,000.00
Available	<u>100,000.00</u>		<u>116,000.00</u>
Expenses			
Contract Staff	50,000.00	50,000.00	42,800.00
Legal counsel	25,000.00	25,000.00	9,057.00
Filing fees and postage			-
Total Expenses	<u>75,000.00</u>	<u>75,000.00</u>	<u>51,857.00</u>
Total Available	25,000.00		
Dedicated Reserve	<u>25,000.00</u>		<u>25,000.00</u>
Net Available	<u>-</u>		<u>39,143.00</u>

Seaside Groundwater Basin Watermaster
Budget vs. Actual Monitoring & Management - Operations Fund
Fiscal Year (January 1 - December 31, 2021)
Balance through October 31, 2021

10/31/2021

	2021 Adopted Budget	2021 Adopted Budget Amended 09/01/21*	Contract Encumbrance	Year to Date Revenue/Expenses
Available Balances & Assessments				
Operations Fund Assessment	\$ 220,000.00	\$ 220,000.00	\$ -	\$ 220,000.00
Pass Through			3,915.00	-
FY 2020 Rollover	64,069.00	64,069.00	-	180,964.60
Total Available	\$ 284,069.00	\$ 284,069.00	\$ 3,915.00	\$ 400,964.60
Appropriations & Expenses				
GENERAL				
Technical Project Manager*	\$ 60,000.00	\$ 91,600.00	\$ 91,600.00	\$ 67,500.00
Contingency @ 10% (not including TPM)	20,370.00	32.00	-	-
Total General	\$ 80,370.00	\$ 91,632.00	\$ 91,600.00	\$ 67,500.00
CONSULTANTS (Montgomery; Web Site Database)				
Program Administration	\$ 17,320.00	\$ 75,719.50	\$ 76,520.00	-
Production/Lvl/Qlty Monitoring	2,400.00	2,400.00		
Basin Management	80,000.00	*		23,047.50
Seawater Intrusion Analysis Report	26,310.00	26,310.00	26,310.00	-
Total Consultants	\$ 126,030.00	\$ 104,429.50	\$ 102,830.00	\$ 23,047.50
MPWMD				
Production/Lvl/Qlty Monitoring	\$ 49,926.00	\$ 49,926.00	49,926.00	17,165.00
Pass Through 2021			3,915.00	-
Basin Management	-	-		-
Seawater Intrusion	1,192.00	1,192.00	1,192.00	-
Direct Costs	-	-	-	-
Total MPWMD	\$ 51,118.00	\$ 51,118.00	\$ 55,033.00	\$ 17,165.00
CONTRACTOR (Martin Feeney)				
Hydrogeologic Consulting Services	\$ 4,000.00	\$ 4,000.00	4,000.00	-
Production/Lvl/Qlty Monitoring	18,551.00	28,889.50	28,839.00	29,664.18
	\$ 22,551.00	\$ 32,889.50	\$ 32,839.00	\$ 29,664.18
CONTRACTOR (Todd Groundwater)				
Hydrogeologic Consulting Services	\$ 4,000.00	\$ 4,000.00	\$ 4,000.00	1,865.00
Total Appropriations & Expenses	\$ 284,069.00	\$ 284,069.00	\$ 286,302.00	\$ 139,241.68
Total Available	-	-		261,722.92

ATTACHMENT 4

**UPDATED REPLENISHMENT ASSESSMENT UNIT
COSTS**

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Watermaster Board of Directors
FROM: Laura Paxton, Administrative Officer
DATE: September 1, 2021
SUBJECT: Consider Approving the Proposed 2022 Replenishment Assessment Unit Costs for Natural Safe Yield and Operating Yield Overproduction

RECOMMENDATION:

Recommend approval of a Replenishment Assessment Unit Cost of \$3,260/AF and \$815/AF for Natural Safe Yield and Operating Yield Overproduction, respectively, for Water Year 2022.

BACKGROUND:

Per page 33 of the Decision, “The per acre-foot (AF) amount of the Replenishment Assessments shall be determined and declared by Watermaster in October of each Water Year in order to provide Parties with advance knowledge of the cost of Over-Production in that Water Year.” Thus, the per acre-foot amount determined by the Board on or before October of 2021 will be used to calculate Replenishment Assessments for pumping that occurs during Water Year 2022 (October 1, 2021 through September 30, 2022).

For Water Years 2014, 2015, and 2016 the Board adopted a Replenishment Assessment Unit Cost of \$2,702/AF for Natural Safe Yield Overproduction. This unit cost was developed starting with Water Year 2014 by taking the average of the Base Unit Cost (\$/AF) of the four potential water supply projects that the Board felt were the most likely to be implemented. For Water Year 2017 the Board adopted a revised Replenishment Assessment Unit Cost of \$2,872. This revised Unit Cost was calculated using updated unit cost data for the three projects which the Board at that time felt were the most likely to be implemented. The number of projects was reduced from four to three, because when the WY 2017 Unit Cost was being calculated, it was determined that two of the previous four projects (Regional Desalination and the Pure Water Monterey Groundwater Replenishment Projects) would be part of a combined project referred to as the Monterey Peninsula Water Supply Project (MPWSP). The unit cost for Water Year 2017 was carried over to the three subsequent Water Years because no updated cost data was available for those projects, and no other viable projects could be identified. In 2020, a blended unit cost value was provided for the Monterey Peninsula Water Supply Project based on a reduced size desalination plant offset by water to be provided by the Pure Water Monterey Project. Based on the updated Pure Water Monterey Project’s unit cost, the blended unit cost for that combined project was updated from \$4,591/AF to \$4,817/AF, resulting in a Water Year 2021 Replenishment Assessment Unit Cost of \$2,947/AF.

DISCUSSION:

The attached Table includes updated cost data for two of the three projects, the Pure Water Monterey Project (PWM) and a partial updated cost for the Regional Urban Water Augmentation Project (RUWAP). In the attached Table, a blended unit cost value is provided for the MPWSP based on an updated PWM unit cost. The blended unit cost for that combined project was updated from \$4,817/AF to \$4,948/AF. Patrick Breen of Marina Coast Water District (MCWD) advised that a RUWAP Rate Study is underway to determine project operations & maintenance and financing costs; stating the per-acre foot cost could be noted as the PWM \$2,808/AF cost with the project O&M and financial costs added once determined. For purposes of the 2022 Replenishment Assess Unit Cost calculation, \$2,808 was used as the RUWAP cost/AF. Monterey Peninsula Water Management District had not yet provided updated costs for Aquifer Storage and Recovery expansion.

The updated Unit Cost would therefore be \$3,260/AF, calculated as: $(\$4,948 + \$2,025 + \$2,808) / 3$. These are the three **bold-faced** unit costs in the attached Table. The Operating Yield Over Production Replenishment Assessment Unit Cost is 25% of that amount, or \$815. At its August 16, 2021 meeting the Budget and Finance Committee reviewed, discussed, and approved these Unit Costs.

ATTACHMENTS: Updated Unit Cost Data Table 2022; Water Year 2017; 2021; & 2014 Unit Cost Data

WATER YEAR 2022 (October 1, 2021-September 30, 2022)

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

POTENTIAL SOURCE OF REPLENISHMENT WATER	POTENTIAL DATE REPLENISHMEN T 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
Groundwater Replenishment Project (Pure Water Monterey) ⁽⁶⁾	2020	3,500	2,808	2021
Monterey Peninsula Water Supply Project (Combined Regional Desalination with Groundwater Replenishment Project)	GWRP in 2020; Regional Desalination in 2024	9,750	\$4,948⁽³⁾	2021
Seaside Basin ASR Expansion ⁽⁴⁾	2021	1,000	\$2,025	2016
Regional Urban Water Augmentation Project ⁽⁵⁾	2021	1,400-1,700	\$2,808+TBD	2021

$$(\$4,948 + \$2,025 + \$2,808) / 3 =$$

**\$3,260 = 2022 Replenishment Assessment Unit Cost for NSY
Overproduction**

**\$3,260/4 = \$815 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 GWRP this is the quantity of water that is being planned at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project.
- (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.
- (3) Flow-weighted average unit cost of the combined desalination and groundwater replenishment projects, calculated as:

$$(6,250 \times \$6,147 + 3,500 \times \$2,808) / 9,750 = \$4,948$$
- (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 by MCWD in 2021. Patrick Breen of MCWD noted that to determine total cost per acre-foot, use the \$2,808-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 fall of 2021.
- (6) Base unit cost effective July 1, 2021 based on information provided by Ian Crook of Cal Am.

WATER YEAR 2021 (October 1, 2020-September 30, 2021)

**ANTICIPATED UNIT COSTS OF WATER 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⁾	2022	6,250	\$6,147	2019
Groundwater Replenishment Project (Pure Water Monterey) ⁽⁶⁾	2020	3,500	\$2,442	2020
Monterey Peninsula Water Supply Project (Combined Regional Desalination with Groundwater Replenishment Project)	GWRP in 2020 Regional Desalination in 2022	9,750	\$4,817 ⁽³⁾	2018-2020
Seaside Basin ASR Expansion ⁽⁴⁾	2020	1,000	\$2,025	2016
Regional Urban Water Augmentation Project ⁽⁵⁾	2020	1,400-1,700	\$2,000	2018

FOOTNOTES:

(1) For the Regional Desalination Project this is the total amount of water from this source which could potentially come to the CAW distribution system, based on the desalination plant having a 6.4 MGD capacity which is 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 GWRP this is the quantity of water that is being planned at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project.

(2) Base unit cost data based on PUC filing documents and provided by Dave Stoldt of MPWMD. This unit cost was confirmed in August 2020 by Tim O'Halloran of Cal Am as being the latest unit cost available for this project.

(3) Flow-weighted average unit cost of the combined desalination and groundwater replenishment projects, calculated as:

$$(6,250 \times \$6,147 + 3,500 \times \$2,442) / 9,750 = \mathbf{\$4,817}.$$

(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 provided by MCWD in 2016. This unit cost was confirmed in August 2020 by Patrick Breen of MCWD as being the latest unit cost available for this project.

(6) Base unit cost based on information provided by Dave Stoldt of MPWMD as reported in the Carmel Pine Cone in early August

TABLE 2

WATER YEAR 2017 (October 1, 2016-September 30, 2017)				
ANTICIPATED UNIT COSTS OF WATER COULD POTENTIALLY BE USED FOR REPLENISHMENT OF THE SEASIDE BASIN				
POTENTIAL SOURCE OF REPLENISHMENT WATER	POTENTIAL DATE REPLENISH-MENT 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⁾	2020	6,250	\$6,147	2019
Groundwater Replenishment Project (Pure Water Monterey) ⁽²⁾	2018	3,500	\$1,811	2018
Monterey Peninsula Water Supply Project (Combined Regional Desalination with Groundwater Replenishment Project)	GWRP in 2018 Regional Desalination in 2020	9,750	\$4,591	
Seaside Basin ASR Expansion ⁽³⁾	2020	1,000	\$2,025	2016
Regional Urban Water Augmentation Project ⁽⁴⁾	2018	1,400-1,700	\$2,000	2018
FOOTNOTES:				
(1) For the Regional Desalination Project this is the total amount of water from this source which could potentially come to the CAW distribution system, based on the desalination plant having a 6.4 MGD capacity which is 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 3). For the GWRP this is the quantity of water that is being planned at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project.				
(2) Base unit cost data based on PUC filing documents and provided by Dave Stoldt of MPWMD .				
(3) Base unit cost data provided by MPWMD. 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.				
(4) Project data provided by MCWD.				

WATER YEAR YEAR 2014 (October 1, 2013-September 30, 2014)

ANTICIPATED UNIT COSTS OF REPLENISHMENT WATER FOR 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⁾	LEVEL OF PROJECT DEVELOPMENT	CONTINGENCY INCLUDED IN BASE UNIT COST ⁽²⁾ (%)	BASE UNIT COST (S/AF)	BASE UNIT COST YEAR	ADDITIONAL CONTINGENCY ADDED TO REFLECT LEVEL OF PROJECT DEVELOPMENT ⁽³⁾ (%)	UNIT COST INCLUDING ADDITIONAL CONTINGENCY (S/AF)	UNIT COST INFLATED @ 3% FROM YEAR TO YEAR REPLENISHMENT WATER COULD BECOME AVAILABLE (S/AF)	VOLUME-WEIGHTED AVG %
Monterey Peninsula Water Supply Project (Regional Desalination) ⁽⁴⁾	2018	9,752	Project Report	30%	\$3,507	2012	0%	\$3,507	\$4,188	56.53%
Seaside Basin ASR Expansion ⁽⁵⁾	2015	1,000	Conceptual	11%	\$1,800	2012	39%	\$2,502	\$2,734	5.80%
Regional Urban Water Augmentation Project ⁽⁶⁾	2017	3,000	Design	5%	\$2,000	2013	10%	\$2,200	\$2,476	17.39%
Groundwater Replenishment Project (GWRP) ⁽⁷⁾	2017	3,500	Conceptual	50%	\$3,500	2017	0%	\$3,500	\$3,500	20.29%
Total Quantity of Replenishment Water (AFY) the Listed Projects Could Cumulatively Potentially be Able to Produce Within the Next 10 Years⁽⁸⁾ =										17,252

FOOTNOTES:

- (1) For the Monterey Peninsula Water Supply Project this is the total amount of water from this source which could potentially come to the CAW distribution system. 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 water from this source. Only a portion of this amount might be used for in-leaf 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 5). For the RUWAP this is the total amount of water that this project is expected to produce. Only a portion of this amount might be used as in-leaf replenishment of the Seaside Basin. For the GWRP this is the quantity of water that is being considered at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project.
- (2)(3) The following Contingency percentages were considered reasonable for the indicated levels of project development: Conceptual Level - 50%, Project Report Level - 30%, and Design Level - 15%. The sum of the values in the columns titled "Contingency Included in Base Unit Cost" and "Additional Contingency Added to Reflect Level of Project Development" equals the Contingency appropriate for the project's level of development.
- (4) Project data based on documents provided by Cal Am and MPWMD.
- (5) Project data provided by MPWMD. 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.
- (6) Project data provided by MCWID.
- (7) Project data provided by MRWPCA. MRWPCA reported that the GWRP quantity being used in the current CEQA documentation is 3,500 AFY, but that the project could potentially supply 6,500 AFY or more. The unit cost would be lower if a quantity larger than 3,500 AFY were produced.
- (8) This value is the cumulative production capacity of all of the Potential Sources of Replenishment Water that listed in this table, and is used only to determine the "Volume-Weighted Average." It is not the amount of water that is expected to be available to the Seaside Basin.

ATTACHMENT 5

**REPLENISHMENT ASSESSMENT
CALCULATIONS FOR WY 2021**

WATERMASTER PRODUCER ALLOCATIONS WATER YEAR 2021 IN ACRE-FEET (AF)														
INCLUDING A 10% TRIENNIEL REDUCTION FOR 100% OF THIS WATER YEAR														
Initial Basin-Wide Operating Yield ¹⁾			3000.00		Coastal Operating Yield ¹⁾			2356.00						
Natural Safe Yield (NSY) ²⁾			3000.00		Laguna Seca Operating Yield ³⁾			644.00						
ALTERNATIVE PRODUCER ALLOCATIONS														
				ALTERNATIVE PRODUCER AMOUNT PUMPED WY 2021										
Coastal Subarea ⁴⁾		AF	Laguna Seca Subarea ⁴⁾		AF	Coastal Subarea ⁴⁾		AF	Laguna Seca Subarea ⁴⁾		AF	Total Alternative Producer WY 2021 Production		
Seaside (Golf)		540.00	Nicklaus Club Monterey		251.00	Seaside (Golf)		492.86	The Club at Pasadera		186.50			
SNG		149.00	Bishop		320.00	SNG		0.15	Bishop		214.03			
Calabrese		6.00	York School		32.00	Calabrese		0.00	York School		20.26			
Mission Memorial (Alderwood)		31.00	Laguna Seca County Park		41.00	Mission Memorial (Alderwood)		46.77	Laguna Seca County Park		27.64			
Sand City		9.00				Sand City		1.35						
Total ⁵⁾		735.00	Total ⁵⁾		644.00	Total ⁵⁾		541.13	Total ⁵⁾		448.43	989.56		
STANDARD PRODUCER ALLOCATIONS														
Coastal Operating Yield Available to Standard Producers (A)				1621.00		Laguna Seca Operating Yield Available to Standard Producers (AF)				0.00				
Coastal Subarea		Standard Producer Allocations		AF Available to This Producer	Laguna Seca Subarea	Standard Producer Allocations		AF Available to This Producer						
		Base Water Right % ⁶⁾	Weighted % ⁶⁾			Base Water Right % ⁶⁾	Weighted % ⁶⁾							
California American Water (CAW)		77.55%	90.44%	1466.03	CAW	45.13%	100.00%	0.00						
Seaside (Municipal)		6.36%	7.42%	120.28										
Granite Rock		0.60%	0.70%	11.35										
D.B.O. Development No. 30		1.09%	1.27%	20.59										
Calabrese (Cypress Pacific Investors LLC)		0.15%	0.17%	2.76										
Total		85.75%	100.0%	1621.00	Total	45.13%	100.0%	0.00						
Allocation of Available Operating Yield Among Standard Producers		Base Water Right Available to this Producer (AF)	% NSY to SPA (Base Water Right / Total Water Right)	NSY Available to Producers (AF) Current Water Year	Free Carryover Credits from Prior Water Year	Not-Free Carryover Credits from Prior Water Year	Water Rights Transferred / Sold DBO to CAW 710 Amador (0.16) DBO to CAW 2 Upper Ragsdale (2.15)	Water Rights Transferred / Sold Calabrese to CAW Ryan Ranch CHOMP	Total Producer NSY (AF) (NSY Available + Free Carryover Credits)	Total Authorized Production Current WY (Base Water Right + APA non production ⁷⁾ + All Carryover ⁸⁾	Actual AF Pumped by Producer in WY 2021	Free Carry over Credits to WY 2021	Not-Free Carry over Credits to WY 2021	Stored Water Credits to WY 2022
			NSY 3000 - 989.56 AF =	WY 2021 APA Pumped 989.56 AF					NSY 3000 - 989.56 AF	WY 2021 APA Pumped 989.56 AF				
			2010.44	2010.44					2010.44	2010.44				
California American Water		1466.03	90.44%	1818.23	0.00	0.00	2.31	3.17	1823.71	1823.71	1664.04	0.00	159.67	2003.24
Seaside (Municipal)		120.28	7.42%	149.17	0.00	0.00	0.00	0.00	149.17	149.17	174.69	0.00	0.00	0.00
Granite Rock		11.35	0.70%	14.07	194.88	27.12	0.00	0.00	208.96	236.07	0.00	208.96	27.12	0.00
D.B.O. Development No. 30		20.59	1.27%	25.54	364.98	38.98	(2.31)	0.00	388.20	427.19	0.00	388.20	38.98	0.00
Calabrese (Cypress Pacific Investors LLC)		2.76	0.17%	3.42	14.91	1.58	0.00	(3.17)	15.16	16.74	0.00	15.16	1.58	0.00
Total		1621.01	100.00%	2010.44	574.76	67.69	0.00	0.00	2585.20	2652.89	1838.73	612.32	227.36	2003.24
Footnotes:														
(1) From page 17 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.														
(2) From page 14 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.														
(3) From page 21 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.														
(4) From Table 1 on page 19 of Exhibit A (Amended Decision) of Court Order filed February 9, 2007.														
(5) Calculated from the Base Water Right percentages in the adjacent column. Any discrepancy in totals is due to rounding.														
(6) Base Water Right plus Free and Not Free Carryover Credit = 2018 Production Allocation capped at storage allocation (see 2018 Declaration from 12/6/2017 Watermaster board meeting)														
(7) Commencing Water Year 2021 Natural Safe Yield = Operating Yield of 3,000AF. Therefore, the remainder of 3,000AF - APA production is applied to both NSY & OY Standard Producer allocations														
Note: Calabrese (Cypress Pacific Investors LLC) opted to convert 8AF of its 14AF Alternative Production Allocation to Standard Production Allocation on January 22, 2015 (notice filed by Cypress with Superior Court).														
Producers carryover is capped at their storage capacity.														

CALCULATION OF REPLENISHMENT ASSESSMENTS WATER YEAR 2021

Using the Basin-wide methodology approved by the Court on January 12, 2007, and as shown in detail on the spreadsheet contained in this attachment, Watermaster calculated the Water Year (WY) (October 1st through September 30th) 2021 Replenishment Assessments as follows:

	2021 Replenishment Assessment NSYO Unit Charge =				\$2,947.00				
	2021 Replenishment Assessment OSYO Unit Charge =				\$737.00				
	2021 Natural Safe Yield (NSY) Available to Standard Producers =				2,010.44	AF (3,000 AF NSY - 989.56 Alternative Producers 2021 Production)			
Standard Producers	WY 2021 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
California American Water	1,664.04	90.44%	1,818.23	-	\$ -	1,823.71	-	\$ -	\$ -
Seaside (Municipal)	174.69	7.42%	149.17	25.52	75,196.61	149.17	25.52	18,805.53	94,002.14
Granite Rock	-	0.70%	14.07	-	-	236.07	-	-	-
D.B.O. Development No. 30	-	1.27%	25.54	-	-	427.19	-	-	-
Calabrese (Cypress Pacific Inv.)	-	0.17%	3.42	-	-	16.74	-	-	-
Total Production	1,838.73	100.00%	2,010.44	25.52	\$ 75,196.61	2,652.89	25.52	\$ 18,805.53	\$ 94,002.14
Alternative Producers	WY 2021 Production (AF)	% of NSY Available	Volume of NSY Available (AF)	NSY Overproduction (AF)	NSY Overproduction Assessment	Operating Yield Available (AF)	Operating Yield Overproduction (AF)	Operating Yield Overproduction Assessment	Total Assessment
City of Seaside (Golf Courses)	492.86	N/A	540.00	0.00	\$ -	540.00	0.00	\$ -	\$0
Security National Guaranty	0.15	N/A	149.00	0.00	-	149.00	0.00	-	-
Calabrese (Cypress Pacific Inv.)	-	N/A	6.00	0.00	-	6.00	0.00	-	-
Mission Memorial (Alderwoods)	46.77	N/A	31.00	15.77	46,488.32	31.00	15.77	11,626.02	58,114.34
City of Sand City	1.35	N/A	9.00	0.00	-	9.00	0.00	-	-
Nicklaus Club Monterey	186.50	N/A	251.00	0.00	-	251.00	0.00	-	-
Laguna Seca Golf Resort (Bisho)	214.03	N/A	320.00	0.00	-	320.00	0.00	-	-
York School	20.26	N/A	32.00	0.00	-	32.00	0.00	-	-
Laguna Seca County Park	27.64	N/A	41.00	0.00	-	41.00	0.00	-	-
Total Production	989.56	N/A	1,379.00	15.77	\$ 46,488.32	1,379.00	15.77	\$ 11,626.02	\$58,114

ATTACHMENT 6

WATERMASTER BUDGETS FOR 2022

**Seaside Groundwater Basin Watermaster
Administrative Fund
Proposed Budget August 16, 2021
Administrative Year 2022**

	<u>2021</u> <u>Adopted</u> <u>Budget</u>	<u>2021</u> <u>Total</u>	<u>2022</u> <u>Adopted</u> <u>Budget</u>
Assessment Income			
Reserve/Rollover*	\$ 38,000	\$ 56,000	\$ 34,500
Administrative Assessment	<u>62,000</u>	<u>62,000</u>	<u>65,500</u>
Totals	<u>100,000</u>	<u>118,000</u>	<u>100,000</u>
Expenditures			
Contractual Services - Administrative	50,000	48,000	55,000
Legal Services	<u>25,000</u>	<u>10,500</u>	<u>20,000</u>
Total Expenses	<u>75,000</u>	<u>58,500</u>	<u>75,000</u>
Total Available	25,000	59,500	25,000
Less Reserve	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>
Net Available	<u>\$ -</u>	<u>\$ 34,500</u>	<u>\$ -</u>

** Note: The reserve/rollover balance of \$34,500 was determined upon completion by Watermaster staff of a detailed reconciliation from 2006 through March 2021 of the Administrative Fund financial records held at the Watermaster office against the Administrative Fund financial records held by the City of Seaside - the Watermaster fiscal agent.*

Monitoring and Management Program Operations Budget For Tasks to be Undertaken in 2022							Comparative Costs from 2021 Budget	
Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽³⁾				Total
				MPWMD	Private Consultants	Contractors		
Labor								
			Technical Project Manager ⁽¹⁸⁾	\$0	\$75,000	\$0	\$75,000	\$60,000
M.1 Program Administration								
	M.1.a		Project Budget and Controls	\$0	\$0	\$0	\$0	\$0
	M.1.b		Assist with Board and TAC Agendas	\$0	\$0	\$0	\$0	\$0
	M.1.c, M.1.d. & M.1.e		Preparation for and Attendance at Meetings and Peer Review of Documents and Reports ⁽⁸⁾	\$0	\$27,560	\$0	\$27,560	\$23,000
	M.1.f		QA/QC	\$0	\$0	\$0	\$0	\$0
	M.1.g		SGMA Documentation Preparation	\$0	\$2,380	\$0	\$2,380	\$2,320
I.1 Initial Phase 1 Monitoring Well Construction (Task Completed in Phase 1)								
I.2 Production, Water Level and Quality Monitoring								
	I.2.a.		Database Management					
		I.2.a.1.	Conduct Ongoing Data Entry/ Database Maintenance/Enhancement ⁽¹⁵⁾	\$20,776	\$2,400	\$0	\$23,176	\$17,004
		I.2.a.2.	Verify Accuracy of Production Well Meters	\$0	\$0	\$0	\$0	\$0
	I.2.b.		Data Collection Program					
		I.2.b.1.	Site Representation and Selection ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0
		I.2.b.2.	Collect Water Levels ⁽⁶⁾	\$21,490	\$0	\$0	\$21,490	\$3,726
		I.2.b.3.	Collect Quarterly Water Quality Samples and Perform Sentinel Well Induction Logging ⁽¹⁾⁽⁵⁾	\$18,770	\$0	\$20,565	\$39,335	\$42,101
		I.2.b.4.	Update Program Schedule and Standard Operating Procedures.	\$0	\$0	\$0	\$0	\$0
		I.2.b.5.	Monitor Well Construction ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0
		I.2.b.6.	Reports	\$3,136	\$0	\$0	\$3,136	\$2,086
		I.2.b.7.	CASGEM Data Submittal for Watermaster's Voluntary Wells	\$4,704	\$0	\$0	\$4,704	\$5,960
I.3 Basin Management								
	I.3.a.		Enhanced Seaside Basin Groundwater Model	(Costs Shown in Subtasks Below)				
		I.3.a.1	Update the Existing Model ⁽¹¹⁾	\$0	\$0	\$0	\$0	\$0
		I.3.a.2	Develop Protective Water Levels ⁽¹²⁾	\$0	\$0	\$0	\$0	\$0
		I.3.a.3	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions ⁽¹⁰⁾	\$0	\$60,000	\$0	\$60,000	\$70,000
	I.3.b.		Complete Preparation of Basin Management Action Plan	\$0	\$0	\$0	\$0	\$0
	I.3.c.		Refine and/or Update the Basin Management Action Plan	\$0	\$0	\$0	\$0	\$0
	I.3.d.		Evaluate Coastal Wells for Cross-Aquifer Contamination Potential	\$0	\$0	\$0	\$0	\$0
	I.3.e		Seaside Basin Geochemical Model ⁽¹³⁾	\$0	\$10,000	\$0	\$10,000	\$10,000
I.4 Seawater Intrusion Contingency Plan								
	I.4.a.		Oversight of Seawater Intrusion Detection and Tracking ⁽¹⁷⁾	\$0	\$0	\$0	\$0	\$0
	I.4.c.		Annual Report- Seawater Intrusion Analysis ⁽¹⁶⁾	\$0	\$26,290	\$0	\$26,290	\$27,502
	I.4.e.		Refine and/or Update the Seawater Intrusion Response Plan ⁽²⁾⁽⁹⁾	\$0	\$0	\$0	\$0	\$0
	I.4.f.		If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ⁽²⁾	(No Costs are Included for This Task, as This Task Will Likely Not be Necessary During 2021. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)				
TOTALS CONSULTANTS & CONTRACTORS				\$68,876	\$128,630	\$20,565		
SUBTOTAL not including Technical Program Manager =							\$218,071	\$203,699
Contingency (not including Technical Program Manager) @ 10% ⁽⁴⁾ =							\$21,807	\$20,370
Technical Program Manager =							\$75,000	\$60,000
TOTAL ⁽¹⁹⁾ =							\$314,878	\$284,069

Footnotes:

- (1) Under this Subtask the Watermaster will directly contract with an outside contractor to perform the Sentinel Well induction logging work, and to also collect water level data in conjunction with doing the induction logging. MPWMD will perform the other portions of the work of this
- (2) The response plan would only be implemented in the event sea water intrusion is determined to be occurring.
- (3) Within the context of this document the term "Consultant" refers either to a Private Consultant providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.
- (4) Due to the uncertainties of the exact scopes of some of the larger Tasks listed above at the time of preparation of this Budget it is recommended that a Contingency of approximately 10% be included in the Budget.
- (5) The MPWMD portion of this Task includes: (1) \$900 to purchase a new sampling pump if an existing one needs to be replaced, (2) \$476 for vehicle mileage costs for both this Task and Task I.2.b.2, (3) \$6,200 for laboratory analytical costs, (4) \$150 for CO2 bottles to run the sample pumps, and (5) \$504 of administrative support costs for preparing billings and processing invoices from the water quality laboratory.
- (6) Does not include costs for MPWMD to collect water level data or water quality samples from wells other than those that are part of the basic monitoring well network, i.e. for private well owners who have requested that the Watermaster obtain this data for them. Costs to obtain that data are to be reimbursed to the Watermaster by those well owners, so there should be no net cost to the Watermaster for that portion of the work under these Tasks. Includes the purchase and installation of one new replacement datalogger at a price of \$850 including installation parts, or to keep in inventory as a spare if needed.
- (7) A replacement for monitoring well FO-9 Shallow is expected to be constructed in 2022. The costs for this work are contained in the Capital Budget for 2022 and no costs for it are included in the Operations Budget for 2022.
- (8) This cost is for Montgomery and Associates, Todd Groundwater, and Martin Feeney to provide hydrogeologic consulting assistance to the Watermaster, beyond that associated with performing other specified Tasks, when requested to do so by the Technical Program Manager. This work may include, but not be limited to, participation in conference calls and reviewing documents prepared by others.
- (9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.
- (10) The 2021 budget line-item for this Task included doing replenishment water updated modeling for an estimated \$50,000. A cost proposal for this work was received and it was found that this work could be performed for approximately \$40,000. The 2021 budget also included \$20,000 for evaluating other issues the Board might wish to evaluate. Depending on direction from the Board, the replenishment modeling update work may be performed in 2021. If so, the funds in this Task would only be used if there were other issues the Board wished to evaluate and which were not covered in the updated BMAP, and the budget amount for this Task would be reduced from \$60,000 to \$20,000.
- (11) The Model was updated and recalibrated in 2018, so no costs for this Task are anticipated in 2022.
- (12) The protective water levels developed in 2009 were examined in 2013 to see if they needed to be updated. It was concluded that the 2009 protective levels were still satisfactory for Basin management purposes, and that no revisions were needed. No work under this Task is anticipated in 2022.
- (13) This was a new Task that was started in 2018, and was completed for the PWM AWT water in 2019. Funds allocated for this Task in 2022 would only be used if geochemical modeling is performed in 2022 for the MPWSP desalination plant water, and if that modeling indicates the need to have Montgomery and Associates use the Seaside Basin groundwater model to provide additional information needed by the geochemical model to develop mitigation measures for any adverse water quality impacts the geochemical model predicts could occur from introducing desalinated water into the Basin.
- (14) This Task is included to provide funds for the Watermaster to perform modeling and other investigative work to aid in making Basin management decisions.
- (15) Includes \$200/month for an outside consultant to maintain the Watermaster's website and post documents on it. Also includes \$1,960 for MPWMD to respond to requests from consultants and others for data from the database.
- (16) MPWMD's costs to assist in this Task are included in its costs under Task I.2.b.6.
- (17) MPWMD's and Montgomery & Associates' costs to provide oversight in this Task are included under their other Tasks.
- (18) The amount originally budgeted for the Technical Program Manager in 2021 was \$60,000. However, this was increased to \$95,000 by a budget amendment in mid-year when it became apparent that more work needed to be done than was originally anticipated.
- (19) As noted in footnote 10, the Total Cost for the 2022 M&MP budget would be reduced by \$40,000 if the replenishment water modeling update is performed in 2021.

Monitoring and Management Program Capital Budget For Tasks to be Undertaken in 2022

A replacement for monitoring well FO-9 Shallow is expected to be constructed in 2022. All costs including consultants for design and the well drilling contractor for construction are included in this Capital Budget. It is assumed that there will be a 3-way cost sharing agreement between the Watermaster, MPWMD, and MCWD for that work. MPWMD estimated the cost of a replacement well with a depth of 600 feet would be approximately \$114K, based on an estimated per-foot cost of \$140 and a construction supervision cost of \$30K. Mr. Feeney estimated it would cost about \$280 per-foot, which would increase the MPWMD estimated cost to \$198K. The amount budgeted for this Task is based on a 3-way share of an estimated cost of \$200K, with the Watermaster's share being \$66,667.

Seaside Groundwater Basin Watermaster											
Replenishment Fund											
Water Year 2021 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2021)											
Balance through October 31, 2021											
Replenishment Fund	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Assessment Water Year	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
Unit Cost:	a \$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	\$2,702/\$675.50	\$2,702/\$675.50	\$2,702/\$675.50
Cal-Am Water Balance Forward	b \$ -	\$ 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)
Cal-Am Water Production (AF)	c 3,710.00	4,059.90	3,862.90	2,966.02	3,713.52	3,416.04	3,070.90	3,076.61	3,232.10	2,764.73	1,879.21
Cal-Am Water NSY Over-Production (AF)	d 1,862.69	2,266.32	2,092.16	1,241.27	1,479.47	1,146.71	820.48	856.42	1,032.77	782.17	-
Exceeding Natural Safe Yield Considering Alternative Producers	e \$ 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	\$ -
Operating Yield Overproduction Replenishment	f \$ -	\$ 20,235	\$ 8,511	\$ -	\$ -	\$ -	\$ 154,963	\$ 181,057	\$ 281,012	\$ 312,103	\$ -
Total California American	g \$ 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	
CAW Credit Against Assessment	h \$ (465,648)		\$ (12,305,924)	\$ (3,741,714)	\$ (5,095,213)	\$ (5,425,799)	\$ (5,111,413)				
CAW Unpaid Balance	i \$ 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)
City of Seaside Balance Forward	j \$ -	\$ 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)
City of Seaside Municipal Production (AF)	k 332.00	287.70	294.20	293.44	282.87	240.68	233.72	257.73	223.64	185.01	195.16
City of Seaside NSY Over-Production (AF)	l 194.07	153.78	161.99	153.06	113.21	50.84	58.82	85.17	52.71	25.77	37.87
Exceeding Natural Safe Yield Considering Alternative Producers	m \$ 219,689	\$ 174,082	\$ 402,540	\$ 465,300	\$ 314,721	\$ 141,335	\$ 163,509	\$ 236,782	\$ 142,410	\$ 69,630	\$ 102,330
Operating Yield Overproduction Replenishment	n \$ 12,622	\$ 85	\$ 4,225	\$ 16,522	\$ 20,690	\$ -	\$ 1,689	\$ 27,007	\$ 3,222	\$ 38	\$ 11,959
Total Municipal	o \$ 232,310	\$ 174,167	\$ 406,764	\$ 481,823	\$ 335,412	\$ 141,335	\$ 165,198	\$ 263,788	\$ 145,631	\$ 69,667	\$ 114,290
City of Seaside - Golf Courses (APA - 540 AFY)											
Exceeding Natural Safe Yield - Alternative Producer	p \$ -	\$ -	\$ 131,705	\$ 69,701	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Yield Overproduction Replenishment	q \$ -	\$ -	\$ 32,926	\$ 17,427	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Golf Courses	r \$ -	\$ -	\$ 164,631	\$ 87,128	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total City of Seaside*	s \$ 232,310	\$ 174,167	\$ 571,395	\$ 568,951	\$ 335,412	\$ 141,335	\$ 165,198	\$ 263,788	\$ 145,631	\$ 69,667	\$ 114,290
City of Seaside Late Payment 5%	t \$ 10,984	\$ 8,704	\$ 26,712	\$ 26,750	\$ 15,737						
In-lieu Credit Against Assessment	u				\$ (1,079,613)	\$ (1,142,858)	\$ (828,996)	\$ (1,065,852)	\$ (1,459,080)	\$ (526,890)	\$ (162)
City of Seaside Unpaid Balance	v \$ 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)
Mission Memorial Park											
Mission Memorial Park Production (AF)	w		20.80	26.40	12.80	22.40	27.00	24.95	24.89	17.97	13.67
Mission Memorial Park NSY Over-Production (AF)	x	-	-	-	-	-	-	-	-	-	-
Exceeding Natural Safe Yield - Alternative Producer	y \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Operating Yield Overproduction Replenishment	z \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Mission Memorial Park	aa \$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Replenishment Fund Balance	bb \$ 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)
Replenishment Fund Balance Forward	cc \$ -	\$ 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)
Total Replenishment Assessments	dd \$ 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
Total Paid and/or Credited	ee \$ (465,648)	\$ -	\$ (12,305,924)	\$ (3,741,714)	\$ (6,174,828)	\$ (6,568,657)	\$ (5,940,409)	\$ (1,065,852)	\$ (1,459,080)	\$ (526,890)	\$ (162)
Grand Total Fund Balance	ff \$ 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)
* 2010 = 319.55 AF golf course in-lieu replenishment and 68.8 AF 4-party agrmt in-lieu replenishment											
2011 = 411.1 AF golf course in-lieu replenishment											
2012 = 298.2 AF golf course in-lieu replenishment											
2013 = 383.4 AF golf course in-lieu replenishment											
2014 = 552.4 AF golf course in-lieu capped at 540 AF											
2015 = 195.0 AF golf course in-lieu											
2016 = 00.06 AF golf course in-lieu											
2017 = 00.00 AF golf course in-lieu											

[illegible]

ATTACHMENT 7

**EXECUTIVE SUMMARY
FROM THE
WY 2021 SEAWATER INTRUSION ANALYSIS REPORT**



EXECUTIVE SUMMARY

This report fulfills part of the annual reporting requirements contained in the Seaside Groundwater Basin Adjudication (California American Water v. City of Seaside, Monterey County Superior Court, Case Number M66343). The annual report addresses the potential for, and extent of, seawater intrusion in the Seaside Groundwater Basin.

Seawater intrusion may occur under basic hydrogeologic conditions as a wedge beneath fresh groundwater, or in more complex hydrogeology with various intrusion interfaces among the different aquifers. Continued pumping in excess of recharge and fresh water inflows, coastal groundwater levels well below sea level, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin.

Seawater intrusion is typically identified through regular chemical analyses of groundwater which can identify geochemical changes in response to seawater intrusion. No single analysis definitively identifies seawater intrusion, however by looking at various analyses we can ascertain when fresh groundwater mixes with seawater. At low chloride concentrations, it is often difficult to identify incipient seawater intrusion. This is due to the natural variation in fresh water chemistry at chloride concentrations below 1,000 milligrams per liter (mg/L). Mixing trends between groundwater and seawater are more easily defined when chloride concentrations exceed 1,000 mg/L. Common geochemical indicators of seawater intrusion are cation and anion ratios, chloride trends, sodium/chloride ratios, and electric induction logging.

As noted in the previous two SIAR reports (M&A, 2019; M&A, 2020), 2 monitoring wells in the Watermaster's network have experienced increased chloride concentrations. One of these, monitoring well FO-10 Shallow, is north of and outside of the Seaside Basin, and the other, monitoring well FO-9 Shallow, is just inside the northern boundary of the Northern Coastal Subarea of the Seaside Basin. Induction logging of both wells took place in March 2021 to evaluate if seawater intrusion was evident. A structural failing was identified in monitoring well FO-9 Shallow that most likely acts as a conduit, allowing known shallow intruded groundwater in the dune sands to flow into the well and potentially into underlying aquifers. To prevent further leakage of poorer quality water, Well FO-9 Shallow is scheduled for destruction before the end of 2021. Downhole logging of FO-10 Shallow confirmed chloride concentrations in groundwater, but was inconclusive as to whether this is a result of seawater intrusion. Sentinel Wells' induction logs remain stable over the historical record. No data collected in Water Year (WY) 2021 indicate that seawater intrusion is occurring within the Seaside Groundwater Basin.

The induction logging of FO-9 described above rules out the occurrence of seawater intrusion in the Paso Robles aquifer. However, no structural failing was found in FO-10 Shallow to account

for increasing chloride concentrations which led to inconclusive results regarding seawater intrusion at this location just north of the basin boundary. There continue to be ongoing detrimental groundwater conditions within the Basin that pose a potential threat of seawater intrusion. Groundwater levels below sea level, the cumulative effect of pumping in excess of recharge and freshwater inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion has the potential to occur in the Seaside Groundwater Basin. Based on the findings of this report, ongoing detrimental groundwater conditions that pose a direct threat of seawater intrusion are:

- Both the Paso Robles and Santa Margarita aquifers in the Seaside Groundwater Basin are susceptible to seawater intrusion. The Paso Robles aquifer is in direct hydrogeologic connection with Monterey Bay, and seawater will eventually flow into it if inland groundwater levels continue to be below sea level. The Santa Margarita aquifer may not be in direct connection with Monterey Bay. If that is the case, then seawater intrusion will take longer to appear because the pathway for seawater into that aquifer will be longer as seawater would need to move through the clay rich deposits adjacent to that aquifer before entering the aquifer itself and thereafter make its way into Santa Margarita production wells. It is not if, but when, seawater intrusion into these aquifers will occur if protective water elevations are not achieved.
- Deep groundwater levels in the Northern Coastal subarea continue to be below sea level. The WY2021 2nd quarter (winter/spring) deep aquifer coastal groundwater levels are more than 40 feet below sea level and the 4th quarter (summer/fall) levels are more than 60 feet below sea level. Pumping depressions expanded both vertically and spatially from the previous year in both the shallow and deep aquifer system.
- Groundwater levels remain below protective elevations in all deep target monitoring wells (MSC deep, PCA-W Deep, and sentinel well SBWM-3). Currently, MSC Shallow one of the three shallow wells with protective elevation has its groundwater levels below its protective elevation. Two years ago, groundwater elevations at PCA-W Shallow were temporarily just above its protective elevation, but since WY2020 has remained below its protective elevation.

Data that indicate that seawater intrusion is not occurring are described in the bulleted items below:

- Most groundwater samples for WY2021 from depth-discreet monitoring wells generally plot in a single cluster on Piper diagrams, with no water chemistry changes towards seawater. Increased chloride in recent measurements at FO-9 Shallow and FO-10 Shallow has shifted how these wells plot on Piper diagrams. Currently, they appear to be shifting

towards a chlorinated water type, however they still generally plot between sodium-chloride and sodium-bicarbonate type waters. As described above, induction plotting of these wells indicates seawater intrusion in the Paso Robles or Santa Margarita aquifers is not causing this change in water quality. FO-9 Shallow is scheduled for destruction and will not be included in next year's report. Groundwater quality in FO-10 Shallow, outside of the basin, should be monitored closely to identify if further increases occur.

- In some production wells, groundwater quality plot on Piper diagrams is different than the groundwater quality in the monitoring wells. This may be a result of mixed water quality from both shallow and deep aquifers in which these wells are perforated. None of the production wells' groundwater qualities are indicative of seawater intrusion.
- None of the Stiff diagrams for monitoring and production wells show the characteristic chloride spike that typically indicates seawater intrusion in Stiff diagrams. The Stiff diagrams for monitoring wells FO-9 Shallow and FO-10 Shallow show a slightly different shape than other shallow wells because of increased chloride. As described above, FO-09 Shallow is scheduled for destruction, and results suggest intrusion in the Paso Robles or Santa Margarita aquifer is not the source of these water quality changes.
- Chloride concentration trends are stable for most monitoring wells, except FO-9 Shallow and FO-10 Shallow. Chloride increases in FO-09 Shallow result from structural failing in the well introducing intruded dune sand water into the well and not seawater intrusion of the Paso Robles or Santa Margarita aquifers. Monitoring well FO-10 Shallow experienced a 48 mg/L increase in chloride concentrations last year, and rose by another 3 mg/L this year. The elevated concentrations in themselves do not indicate seawater intrusion, and recent induction logging of the well did not conclusively indicate seawater intrusion as the source of elevated chloride.
- Sodium/chloride molar ratios in most monitoring wells remained constant or increased over the past year. The sodium chloride ratio in 2 of the 3 samples taken at FO-10 Shallow in WY2021 were lower than what has been seen historically at the location and significantly below the ratio of 0.86 that may differentiate between a domestic and seawater chloride source. Accordingly, water quality in FO-10 Shallow should be monitored consistently to determine if increasing chloride concentrations are temporary, and whether they are a result of seawater intrusion.
- Maps of chloride concentrations for the shallow aquifer do not show chlorides increasing towards the coast. As noted previously well FO-10 Shallow has increased chloride concentrations that started in WY2020, though induction logging suggests these are not a result of seawater intrusion. Deep aquifer chloride concentration maps show that the highest chloride concentrations are limited to coastal monitoring wells PCA-West Deep

and MSC Deep, but these are not indicative of seawater intrusion since their concentrations are less than 155 mg/L and they do not have increasing trends.

- Induction logging data at the coastal Sentinel Wells do not show historical or recent changes over time that are indicative of seawater intrusion.

Other important findings from the analysis contained in this report are:

- Due to its distance from the coast, seawater intrusion is not an issue of concern in the Laguna Seca subarea. However, groundwater levels in the eastern Laguna Seca subarea have historically declined at rates of 0.6 feet per year in the shallow aquifers, and up to 4 feet per year in the deep aquifers. These declines have occurred since 2001, despite triennial reductions in allowable pumping. The cause of the declines is due in part to the Natural Safe Yield of the subarea being too high and in part due to the influence of wells east of the Seaside Basin. In WY2021, groundwater elevations in the area appeared to experience some stabilization and recovery, potentially correlated with a cessation of pumping at the Ryan Ranch wells.
- Native groundwater production in the Seaside Groundwater Basin for WY2021 was 2,858 acre-feet, which is 465 acre-feet less than WY2020 and 142 acre-feet less than the Decision-ordered Operating Yield for WY2021 of 3,000 acre-feet. Despite WY2021 being an extremely dry year, recovery of over 3,027 acre-feet from the PWM project helped offset pumping.

The following recommendations should be implemented to monitor and track seawater intrusion.

1. Monitoring well FO-9 Shallow be destroyed as soon as possible to prevent leakage of the shallower dune sand high chloride water through the cracked casing to underlying aquifers. A similarly constructed monitoring well should replace the destroyed well so it can provide a continuation of the groundwater level data already collected in the shallow aquifer at this location.
2. Given the increasing chloride concentrations at FO-10 Shallow noted in 2 consecutive SIARs, groundwater quality sampling at this well should continue at the increased frequency of quarterly recommended last year.
3. The assessment of year-to-year trends underpinning each SIAR evaluation relies on consistently collecting groundwater levels and quality in the 2nd and 4th quarters to compare to previous years. When data are not collected according to their specific schedules, or results are not assembled in a timely manner, analysis of whether seawater intrusion is occurring becomes less robust. Additionally, there is a tight schedule of about a month from when data are requested to completion of the draft SIAR that is to be reviewed by the TAC. When well data are delayed, this only leaves a couple of weeks to

prepare the SIAR. It is recommended that all production, groundwater level and groundwater quality data be available by mid-October each year.

4. Seawater intrusion is a threat to the basin, and data must be collected and analyzed regularly to identify incipient intrusion. Maps, graphs, and analyses similar to what are found in this report should continue to be developed every year

It is important to remain vigilant and to closely monitor groundwater quality even though seawater intrusion has not yet been observed in monitoring or production wells in the Seaside Groundwater Basin. As outlined in the most recent Basin Management Action Plan (M&A, 2018a), it is important that the Watermaster continues to identify ways to reduce pumping native groundwater and/or to recover groundwater elevations with water that is left in the basin and is not extracted out as water supply.

Based off last year's SIAR recommendation, groundwater elevation data from the Carmel River water Aquifer Storage and Recovery project (ASR) and PWM monitoring wells are now incorporated into the analysis of groundwater elevations. As these and any future projects are implemented, groundwater levels, groundwater flow directions, and potentially groundwater quality will change. It is important that data from monitoring wells associated with these projects be evaluated in future SIARs.

ATTACHMENT 8

SEASIDE GROUNDWATER BASIN 2022 MONITORING AND MANAGEMENT PROGRAM

Seaside Groundwater Basin 2022 Monitoring and Management Program

The tasks outlined below are those that are anticipated to be performed during 2022. Some Tasks listed below are specific to 2022, while other Tasks are recurring such as data collection, database entry, and Program Administration Tasks.

Within the context of this document the term “Consultant” refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term “Contractor” refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

**M. 1. a
Project Budget and
Controls
(\$0)**

Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.

**M. 1. b
Assist with Board and TAC
Agendas
(\$0)**

Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.

**M. 1. c., M. 1. d, & M.1.e
Preparation for and
Attendance at Meetings,
and Peer Review of
Documents and Reports
(\$27,560)**

The Consultants’ work will require internal meetings and possibly meetings with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Tasks M.1.c, M.1.d, and M.1.e will be:

- Those associated with attendance at TAC meetings (either in person or by teleconference connection), including providing periodic progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings, when requested by the Watermaster to do so. These progress reports will typically include project progress that has been made, problem identification and resolution, and planned upcoming work.
- From time-to-time when Watermaster staff asks Consultants to make special presentations to the Watermaster Board and/or the TAC, and which are not included in the Consultant’s contracts for other tasks.

Appropriate Consultant representatives will attend TAC meetings (either in person or by teleconference connection) when requested to do so by Watermaster Staff, but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.

When requested by the Watermaster staff, Consultants may be asked to

	assist the TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.
M. 1. f QA/QC (\$0)	A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program. These costs are included in the other tasks.
M.1.g Prepare Documents for SGMA Reporting (\$2,380)	Section 10720.8 of the Sustainable Groundwater Management Act (SGMA) requires adjudicated basins to submit annual reports. Most of the documentation that needs to be reported is already generated by the Watermaster in conjunction with preparing its own Annual Reports. However, some information such as changes in basin storage is not currently generated and will require consultant assistance to do so. This task will be used to obtain this consultant assistance, as needed.
<i>I. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program</i>	
I. 2. a. Database Management	
I. 2. a. 1 Conduct Ongoing Data Entry and Database Maintenance/ Enhancement (\$23,176)	The database will be maintained by a Consultant (MPWMD) performing this work for the Watermaster. MPWMD will enter new data into the consolidated database, including water production volumes, water quality and water level data, and such other data as may be appropriate. Other than an annual reporting of data to another Watermaster Consultant at the end of the Water Year, as mentioned in Task I.4.c below, no reporting of water level or water quality data during the Water Year is required. However, MPWMD will promptly notify the Watermaster of any missing data or data collection irregularities that were encountered. Under this Task, when requested MPWMD will also respond to requests from consultants and others for data from the database. At the end of the Water Year MPWMD will prepare an annual water production, water level, and water quality tabulation in Access format and will provide the tabulation to another Watermaster Consultant who will use that data in the preparation of the SIAR under Task No. I.4.c of the Monitoring and Management Program. No enhancements to the database are anticipated during 2022. A separate consultant will maintain the Watermaster's website.
I. 2. a. 2 Verify Accuracy of Production Well Meters (\$0)	To ensure that water production data is accurate, the well meters of the major producers were verified for accuracy during 2009 and again during 2015. No additional work of this type is anticipated during 2022.
I. 2. b. Data Collection Program	
I. 2. b. 1 Site Representation and Selection (\$0)	The monitoring well network review that was started in 2008 has been completed, and sites have been identified where future monitoring well(s) could be installed, if it is deemed necessary to do so in order to fill in data gaps. No further work of this type is anticipated in 2022.

I. 2 b. 2 Collect Water Levels (\$21,490)	Each of the monitoring wells will be visited on a regular basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers. The wells where the use of dataloggers is feasible or appropriate have been equipped with dataloggers. All of the other wells will be manually measured. This Task includes the purchase of one datalogger and parts for the datalogger to keep in inventory as a spare if needed.
I. 2. b. 3 Collect Water Quality Samples. (\$39,335)	Water quality data will be collected quarterly from certain of the monitoring wells, but will no longer be collected from the four coastal Sentinel Wells. Discontinuing water quality sampling in those wells is the result of the finding made in 2018 that the water quality samples being extracted from those wells are not representative of the aquifer. Those wells were designed for the purpose of electric induction logging, and will therefore continue to be induction logged twice a year in WY 2022. In 2012 water quality analyses were expanded to include barium and iodide ions, to determine the potential benefit of performing these additional analyses. These two parameters have been useful in analyzing seawater intrusion potential in other vulnerable coastal groundwater basins, and are briefly mentioned in the Watermaster's annual Seawater Intrusion Analysis Reports. These parameters were added to the annual water quality sampling list for the 3 most coastal MPWMD monitoring wells (MSC, PCA, and FO-09). Barium and iodide analyses will continue being performed on the 3 most coastal MPWMD monitoring wells in 2022. As discussed in the 2013 Annual Report, the Watermaster reduced the frequency of water quality sampling at monitoring well SBWM-5 (the Camp Huffinan well) to once every 3 years beginning in WY 2014. This was based on the January 2010 well construction report in which the well installation hydrogeologic consultant (Martin Feeney) recommended doing initial sampling annually for several years, then reducing the frequency of sampling once it was felt that the water chemistry had been established. Mr. Feeney suggested going to once every five years after initial water quality had been established. Starting with WY 2014 the Watermaster elected to go to once every three years as a more conservative approach. The results from water quality sampling that has performed to date on these wells shows there has been little change in water quality at these wells. Therefore, the sampling frequency has been reduced to once every five years beginning in 2022. Water quality data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant or Contractor selected to perform this work will make this judgment based on consideration of costs and other factors.

	Under this Task in 2013 retrofitting to use the low-flow purge approach for getting water quality samples was completed on all of the wells that are sampled. This sampling equipment sits in the water column and may periodically need to be replaced or repaired. Accordingly, an allowance to perform maintenance on previously installed equipment has been included in this Task. Also, in the event a sampling pump fails or is found to be no longer adequate due to declining groundwater levels, an allowance of \$900 to purchase a replacement sampling pump has been included in this Task. Improvements to the QA/QC program for the water quality sampling work were adopted in mid-2017 and will be included in this work in 2022.
I. 2. b. 4 Update Program Schedule and Standard Operating Procedures. (\$0)	All recommendations from prior reviews of the data collection program have been implemented. No additional work of this type is anticipated in 2022.
I. 2. b. 5 Monitor Well Construction (\$0)	A well to replace Monitoring Well FO-9 Shallow, which in 2021 was found to have a leaking casing, is expected to be installed in 2022. The costs for this work are included in the 2022 M&MP Capital Budget, and are not included in the 2022 Operations Budget.
I. 2. b. 6 Reports (\$3,136)	This task was essentially eliminated starting in 2020 by having the data collected by MPWMD under tasks I.2.b.1, I.2.b.2, and I.2.b.3 reported in the SIAR under Task I.4.c. The work remaining under this task is for MPWMD to prepare and provide the data appendix to the Consultant that prepares the SIAR. No formalized reporting on a quarterly basis is required. However, MPWMD will promptly notify the Watermaster and the Consultant that prepares the SIAR of any missing data or data collection irregularities in the water quality and water level data collected under Tasks I.2.b.2 and I.2.b.3.
I.2.b.7 CASGEM Data Submittal (\$4,704)	On the Watermaster's behalf MPWMD will compile and submit data on the Watermaster's "Voluntary Wells" into the State's CASGEM groundwater management database. The term "Voluntary Well" refers to a well that is not currently having its data reported into the CASGEM system, but for which the Watermaster obtains data. This will be done in the format and on the schedule required by the Department of Water Resources under the Sustainable Groundwater Management Act.
<i>I. 3 Basin Management</i>	
I. 3. a. Enhanced Seaside Basin Groundwater Model (Costs listed in subtasks below)	The Watermaster and its consultants use a Groundwater Model for basin management purposes.

I.3.a.1 Update the Existing Model (\$0)	The Model, described in the report titled “Groundwater Flow and Transport Model” dated October 1, 2007, was updated in 2009 in order to develop protective water levels, and to evaluate replenishment scenarios and develop answers to Basin management questions. The Model was again updated in 2014. In 2018 the Model was recalibrated and updated. No further work of this type is anticipated in 2022.
I. 3. a. 2 Develop Protective Water Levels (\$0)	A series of cross-sectional models was created in 2009 in order to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work is discussed in Hydrometrics’ “Seaside Groundwater Basin Protective Water Elevations Technical Memorandum.” In 2013 further work was started to refine these protective water levels, but it was found that the previously developed protective water levels were reasonable. Protective water levels will be updated, if appropriate, as part of the work of Task I.3.c.
I. 3. a. 3 Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions (\$60,000)	In 2009 the updated Model was used to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. This work is described in HydroMetrics’ “Seaside Groundwater Basin Groundwater Model Report.” In 2010, and again in 2013, HydroMetrics used the updated Model to develop answers to some questions associated with Basin management. Modeling performed to date indicates that the solution to the problem of water levels in the Seaside Basin being below Protective Water Levels will be to inject replenishment water. Within the next few years there may be the ability of either of two projects to provide additional water for Basin replenishment. One of these is the Monterey Peninsula Water Supply Project’s (MPWSP) desalination plant. The other is the Pure Water Monterey (PWM) Expansion Project. Growth is built into each of these projects’ plant capacity, and the full capacity of these plants will likely not all be needed for some years into the future. During the time period that these projects would have excess capacity, they could potentially provide water for Basin replenishment. Montgomery & Associates agrees that injection is the quickest way to bring groundwater levels up in the Seaside Basin. The original 3,500 AFY PWM Project is already in operation, and construction of either the MPWSP desalination plant or the PWM Expansion Project is expected to begin within the next few years. Modeling to determine the additional amount of replenishment water needed to achieve protective groundwater level elevations throughout the Basin, after either or both of those projects are constructed, would be performed to aid the Watermaster in pursuing approaches to obtain that additional water for Basin replenishment. Based on input from Montgomery & Associates it is expected to cost about \$40,000 to update the earlier replenishment water modeling that was performed in 2013. Hence, this Task includes a \$40,000 allowance to perform this modeling, if so directed by the Watermaster Board.

	Modeling performed in 2014, 2015, and 2016 led to the conclusion that groundwater levels in parts of the Laguna Seca Subarea will continue to fall, even if all pumping within that subarea is discontinued, because of the influence of pumping from areas near to, but outside of, the Basin boundary. Additional modeling work may be performed in 2022 after the Groundwater Sustainability Plan for the Monterey Subbasin (being jointly prepared by the Salinas Valley Basin and the Marina Coast Water District Groundwater Sustainability Agencies) to further examine this situation. This Task provides a \$20,000 allowance to perform modeling or other work to develop answers to basin management questions, if so directed by the Watermaster Board.
I. 3. b. Complete Preparation of Basin Management Action Plan (\$0)	The Watermaster's Consultant completed preparation of the Basin Management Action Plan (BMAP) in February 2009. The BMAP serves as the Watermaster's long-term seawater intrusion prevention plan. The Sections that are included in the BMAP are: Executive Summary Section 1 – Background and Purpose Section 2 – State of the Seaside Groundwater Basin Section 3 – Supplemental Water Supplies Section 4 –Groundwater Management Actions Section 5 – Recommended Management Strategies Section 6 – References
I. 3. c. Refine and/or Update the Basin Management Action Plan (\$0)	In 2019 the BMAP was updated based on new data and knowledge that has been gained since it was prepared in 2009. No further work of this type is anticipated in 2022. However, although no funds are budgeted for this Task in 2022, at some point after the Groundwater Sustainability Plan (GSP) for the adjacent Monterey Subbasin of the Salinas Valley Groundwater Basin is completed, it may be appropriate to further update the BMAP to reflect the impacts of implementing that GSP. That GSP is scheduled to be completed by early 2022.
I. 3. d. Evaluate Coastal Wells for Cross-Aquifer Contamination Potential (\$0)	If seawater intrusion were to reach any of the coastal wells in any aquifer, and if a well was constructed without proper seals to prevent cross-aquifer communication, or if deterioration of the well led to casing leakage, it would be possible for the intrusion to flow from one aquifer to another. An evaluation of this was completed in 2012 and is described in MPWMD's Memorandum titled "Summary of Seaside Groundwater Basin Cross-Aquifer Contamination Wells Investigation Process and Conclusions" dated August 8, 2012. This Memorandum did not recommend performing any further work on this matter, other than to incorporate into the Watermaster's Database data from wells that were

newly identified by the work performed in 2012. That data has now been incorporated into the Database. In 2021 the Watermaster TAC examined the feasibility of performing conductivity profiling of certain of the near-coastal wells that were evaluated in the 2012 Memorandum, as a method of determining if any of those wells was allowing downward migration of intruded water from the shallow dunes aquifer to enter the Paso Robles aquifer. However, it was concluded that conditions in those wells would make it infeasible to perform such work.

In late 2017 a request was made to MPWMD to destroy one of its no-longer-used monitoring wells that is perforated in multiple aquifers (Well PCA-East Multiple). MPWMD performed this work in 2018.

No further work of this type is anticipated in 2022.

**I.3. e.
Seaside Basin Geochemical
Model
(\$10,000)**

When new sources of water are introduced into an aquifer, with each source having its own unique water quality, there can be chemical reactions that may have the potential to release minerals which have previously been attached to soil particles, such as arsenic or mercury, into solution and thus into the water itself. This has been experienced in some other locations where changes occurred in the quality of the water being injected into an aquifer. MPWMD's consultants have been using geochemical modeling to predict the effects of injecting Carmel River water into the Seaside Groundwater Basin under the ASR program.

In order to predict whether there will be groundwater quality changes that will result from the introduction of desalinated water and additional ASR water (under the Monterey Peninsula Water Supply Project) and advance-treated water (under the Pure Water Monterey Project) geochemical evaluations, and potentially modeling, will be performed in the areas of the Basin where injection of these new water sources will occur.

In 2019 a geochemical evaluation of introducing advance-treated water from the Pure Water Monterey Project was performed. That evaluation concluded that there would be no adverse geochemical impacts as a result of introducing that water into the Basin. A similar evaluation of the impact of introducing ASR water also concluded that there would be no adverse geochemical impacts. An evaluation of introducing desalinated water will be performed, if the Monterey Peninsula Water Supply Project's desalination plant proceeds into the construction phase.

If the geochemical evaluation of injecting desalinated water indicates the potential for problems to occur, then Montgomery and Associates may use the Watermaster's updated groundwater model, and information about injection locations and quantities, injection scheduling, etc. provided by MPWMD for each of these projects, to develop model scenarios to see if the problem(s) can be averted by changing delivery schedules and delivery quantities. This Task includes an allowance of \$10,000 to have Montgomery and Associates perform such modeling, if necessary.

If the modeling predicts that there may be adverse impacts from introducing these new sources of water, measures to mitigate those impacts will be developed under a separate task that will be created for that purpose when and if necessary.

I. 4 Seawater Intrusion Response Plan (formerly referred to as the Seawater Intrusion Contingency Plan)

I. 4. a. Oversight of Seawater Intrusion Detection and Tracking (\$0)	Consultants will provide general oversight over the Seawater Intrusion detection program under the other Tasks in this Work Plan.
I. 4. c. Annual Report- Seawater Intrusion Analysis (\$26,290)	At the end of each water year, a Consultant will reanalyze all water quality data. Water level and water quality data will be provided to the Consultant in MS Access format. The Consultant will put this data into a report format and will include it as an attachment to the Seawater Intrusion Analysis Report. If possible, semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff.
I. 4. e. Refine and/or Update the Seawater Intrusion Response Plan (\$0)	At the beginning of 2009, and again in 2021, it was thought that it might be beneficial or necessary to perform work to refine the SIRP and/or to update it based on new data or knowledge that was gained subsequent to the preparation of the SIRP. However, this did not prove to be necessary, and no further work of this type is anticipated in 2022.
I. 4. f. If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan (\$0)	The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.

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8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 COUNTY OF MONTEREY

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11 CALIFORNIA AMERICAN WATER,

12 Plaintiff,

13 v.

14 CITY OF SEASIDE, et al.,

15 Defendant.

Case No. M66343

**SEASIDE BASIN WATERMASTER
NOTICE OF FILING OF ANNUAL
REPORT**

Assigned for All Purposes to the Hon. Robert
O' Farrell

Action Filed: August 14, 2003

16 MONTEREY PENINSULA WATER
17 MANAGEMENT DISTRICT,

18 Intervenor,

19 v.

20 MONTEREY PENINSULA WATER
21 MANAGEMENT DISTRICT,

22 Intervenor.

23 AND RELATED CROSS-ACTIONS
24
25

26 TO ALL PARTIES AND TO THEIR RESPECTIVE COUNSEL OF RECORD:
27 PLEASE TAKE NOTICE that Seaside Groundwater Basin Watermaster hereby files the Seaside
28 Basin Watermaster Annual Report – 2021 ("Report"). The report is required to be filed on or

1 before January 15, 2022, consistent with the provision of the Decision in this action, as amended
2 by the Order Amending Judgment filed March 29, 2018.

3 A copy of the main body of the Report will be served on each of the Parties by
4 Seaside Groundwater Basin Watermaster along with a copy of this Notice.

5 DATED: January 11, 2022 BAKER MANOCK & JENSEN, PC

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By: /s/ Christopher L. Campbell
Christopher L. Campbell
Attorneys for Seaside Groundwater Basin
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STATE OF CALIFORNIA, COUNTY OF FRESNO

On January 11, 2022, I served true copies of the following document(s) described as **SEASIDE BASIN WATERMASTER NOTICE OF FILING OF ANNUAL REPORT** on the interested parties in this action as follows:

BY MAIL: I enclosed the document(s) in a sealed envelope or package addressed to the persons at the addresses listed in the Service List and placed the envelope for collection and mailing, following our ordinary business practices. I am readily familiar with the practice of Baker Manock & Jensen, PC for collecting and processing correspondence for mailing. On the same day that correspondence is placed for collection and mailing, it is deposited in the ordinary course of business with the United States Postal Service, in a sealed envelope with postage fully prepaid. I am a resident or employed in the county where the mailing occurred. The envelope was placed in the mail at Fresno, California.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.


Tina L. Webb

SERVICE LIST
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M66343

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