

SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2018

January 2, 2019

Table of Contents

Seaside Basin Watermaster Annual Report - 2018.....	4
Groundwater Extractions	4
Groundwater Storage	4
Amount of Artificial Replenishment, If Any, Performed by Watermaster.....	5
Leases or Sales of Production Allocation and Administrative Actions.....	5
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	6
Violations of the Decision and Any Corrective Actions Taken	7
Watermaster Administrative Costs.....	7
Replenishment Assessments.....	8
All Components of the Watermaster Budget	8
Water Quality Monitoring and Basin Management.....	8
Change in Watermaster’s Primary Hydrogeological Consultant.....	8
Water Quality Analytical Results	9
Monitoring and Management Program Work Plan for the Upcoming Year	9
Basin Management Database.....	11
Enhanced Monitoring Well Network.....	11
Basin Management Action Plan (BMAP).....	11
Seawater Intrusion Response Plan	11
Seawater Intrusion Analysis Report.....	12
Groundwater Modeling.....	12
Principle Findings from Updating the Seaside Basin Groundwater Model.....	12
Coordination of Watermaster’s Seaside Groundwater Model with Salinas River Basin Model	13
Geochemical Modeling.....	13
Sustainable Groundwater Management Act	15
Addition Information.....	16
Summary of Basin Conditions and Important Developments Concerning the Management of the Basin.....	17
Planned Near and Long-term Actions of the Watermaster	17
Coordination of Watermaster’s Seaside Groundwater Model with Salinas River Basin Model	17
Information Concerning the Status of Regional Water Supply Issues	17
Management Activities that May Bear on the Basin’s Wellbeing.....	18
Conclusions and Recommendations.....	21
Listing of Acronyms Used in this Annual Report.....	22
ATTACHMENT 1 - Groundwater Extractions	23
ATTACHMENT 2 - Watermaster Declaration of Non-Availability of Artificial Replenishment Water.....	25
ATTACHMENT 3 - Watermaster Administrative and Operations Costs.....	29
ATTACHMENT 4 - Replenishment Assessment Unit Cost Determination for Water Year 2019.....	32
ATTACHMENT 5 - Replenishment Assessment Calculations for WY 2018.....	36
ATTACHMENT 6 - Watermaster Budgets for 2019.....	39

ATTACHMENT 7 - Water Quality Analytical Results 46
**ATTACHMENT 8 - Executive Summary from the WY 2018 Seawater Intrusion
Analysis Report..... 96**
**ATTACHMENT 9 - Seaside Groundwater Basin 2019 Monitoring and Management
Program..... 100**
ATTACHMENT 10 - Seaside Groundwater Model Update..... 108
ATTACHMENT 11 – Geochemical Modeling 146
ATTACHMENT 12 –Storage and Recovery Agreement 155
**ATTACHMENT 13 –Documents Pertaining to Intended Partial Allocation
Conversion 182**

SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2018

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 2018 Annual Report is being filed on or before January 15, 2019, 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
- 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.

Case Management Conferences were held before the Honorable Leslie C. Nichols (the second judge appointed to this action) in 2016, 2017, and 2018. Conference statements and transcripts of the conferences are available for viewing on the Watermaster web site at <http://www.seasidebasinwatermaster.org/> under Postings and Records. The postings are organized by chronological date. Materials for the June 20, 2016 status conference are under the date June 17, 2016. Watermaster notes that the link titled “Report,” accompanying the June 17, 2016 entries, includes a detailed discussion of background information and contemporary issues relevant to the management of the Basin pursuant to the decision. Other documents pertinent to conferences before Judge Nichols include the transcript of the 2016 conference (website date of entry June 16, 2016), the 2017 conference statement (website date of entry March 1, 2017), the transcript of the 2017 conference (website date of entry March 17, 2017), and the 2018 conference statement (website date of entry March 23, 2018).

A. Groundwater Extractions

The schedule summarizing the Water Year 2018 (WY 2018) 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 2018.” For the purposes of this Annual Report Water Year 2018 is defined as beginning October 1, 2017 and ending on September 30, 2018.

B. Groundwater Storage

Monterey Peninsula Water Management District (MPWMD), in cooperation with

California American Water (CAW), operates the Seaside Basin Aquifer Storage and Recovery (ASR) program. Under the ASR program, CAW 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 CAW distribution system for injection and storage in the Seaside Basin at the MPWMD’s Santa Margarita ASR site and CAW’s Seaside Middle School ASR site. During WY 2018, 530 AF was diverted and stored in the Seaside Basin under the ASR program. Rainfall in the area was about 64% of normal, Carmel River flow was 67% of normal. WY 2018 was classified as “Below Normal” by MPWMD.

Based upon production reported for WY 2018, the following Standard Producers are entitled to Free and Not-Free Carryover Credits to 2018 in accordance with the Decision, Section III. H. 5:

<u>Producer</u>	<u>Free Carryover Credit</u> <u>(Acre-feet)</u>	<u>Not-Free Carryover Credit</u> <u>(Acre-feet)</u>
Granite Rock	180.68	41.32
DBO Development	341.51	62.45
Calabrese (Cypress)	14.36	1.73
CAW	182.91	270.96
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 2018 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 2018 under the 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.

D. Leases or Sales of Production Allocation and Administrative Actions

In WY2018 there were no transfers or assignments of water allocations. However, as documented in Attachment 13, in 2019 Security National Guarantee (SNG) intends to convert a portion of its Alternative Production allocation to Standard Allocation in order to sell that portion of its allocation to Montage Health. If that transaction is accomplished in 2019 it will be reported upon in the 2019 Annual Report.

During WY 2018 the Watermaster Board did not make any revisions to its *Rules and Regulations*. However, the mailing address for the Watermaster changed to: Seaside Basin Watermaster, P.O. Box 51502, Pacific Grove, CA 93950.

During WY 2018 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
Eric Sabolsice/Christopher Cook	Nina Miller	California American Water
Director Bob Costa	N/A	Laguna Seca Subarea Landowner
Director Jeanne Byrne	Andrew Clarke	MPWMD
Mayor Mary Ann Carbone	Todd Bodem	City of Sand City
Supervisor Mary Adams	Jane Parker	Monterey County (MCWRA)
Mayor Jerry Edelen	Kristin Clark	City of Del Rey Oaks
Councilmember Dan Albert	Mayor Clyde Roberson	City of Monterey
Mayor Ralph Rubio	Dennis Alexander	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 CAW/MPWMD ASR Program operated in WY 2018 and accordingly 530 acre-feet of water was injected into the Basin as Stored Water Credits and 1,210 acre-feet was extracted.

In accordance with Section III. L. 3. j. xx, CAW and MPWMD applied to the Watermaster for Storage in the Seaside Basin of water from the Pure Water Monterey Project (PWM). The application was considered by the Watermaster at its publicly noticed October 3, 2018 meeting. No member of the public present at the meeting voiced concerns about approval of the application or PWM. After consideration and discussion, the Watermaster Board approved the application.

The Watermaster Board considered approval of a Storage and Recovery Agreement between the Watermaster, CAW, and MPWMD governing the future injection and recovery of water from PWM at its publicly noticed January 2, 2019 meeting. No member of the public present at the meeting voiced concerns about approval of the

agreement or PWM. After consideration and discussion, the Watermaster Board approved the agreement. A copy of the agreement is included in Attachment 12 of this Annual Report.

It is noted that in August of 2018, the Watermaster filed a *Notice of Lodging of Correspondence Received re Pure Water Monterey Project* with the court. The correspondence lodged contained concerns expressed by a member of the public regarding the injection of PWM water into the Basin. As noted above, none of those concerns were expressed to the Watermaster during its October 3, 2018 meeting when it considered approving the storage and recovery application submitted by CAW and MPWMD.

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.

Because the December 5, 2018 Board meeting was canceled, the Watermaster made its declaration regarding the availability of Artificial Replenishment for WY 2019 at its Board meeting of January 2, 2019. A copy of this declaration is contained in Attachment 2. In WY 2018 the Watermaster implemented another 10% water production reduction required under Section III.B.2 of the Decision. No additional water production reductions were implemented in WY 2018.

Total pumping for WY 2018 did not exceed the Operating Yield (OY) of the Basin, and exceeded the Natural Safe Yield (NSY) of the Basin by 363.21 acre-feet.

California American Water reported annual pumping quantities that exceeded its Standard Production NSY allocation by 374.64 acre-feet, and reported annual pumping quantities that did not exceed its Operating Yield allocation. The Watermaster will assess California American Water's Replenishment Assessment for this over production, as further described in Section H, below.

The City of Seaside reported annual pumping quantities that exceeded its Standard Production NSY allocation by 32.46 acre-feet, and reported annual pumping quantities that exceeded its Operating Yield allocation by 33.89 acre-feet. The City of Seaside did not exceed its Alternative Production NSY. The Watermaster will assess the City of Seaside a Replenishment Assessment for these over productions, as further described in Section H, below.

G. Watermaster Administrative Costs

The total estimated Administrative costs through the end of Fiscal Year 2018 amounted

to \$80,000 including an \$18,000 dedicated reserve. Costs include the Administrative Officer salary and legal counsel fees. The “Fiscal Year 2018 Administrative Fund Report” and “Fiscal Year 2018 Operations Fund Report” are provided as Attachment 3.

H. Replenishment Assessments

At its meeting of October 3, 2018 the Watermaster Board determined that the Natural Safe Yield Replenishment Assessment unit cost of \$2,872 per acre-foot, and the Operating Yield Replenishment Assessment unit cost of \$718 per acre-foot, which are the unit costs that were used in WY 2018, should remain the same for WY 2019.

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 2018, California American Water’s Replenishment Assessment for Overproduction in excess of its share of the Natural Safe Yield is \$1,075,994.80, and no overproduction in excess of its share of the Operating Yield.

The City of Seaside’s Replenishment Assessment for its Municipal System for Overproduction in excess of its share of the Natural Safe Yield is \$93,225.12, and for overproduction in excess of its share of the Operating Yield is \$27,025.66. The City of Seaside did not exceed its Alternative Production Allocation for its Golf Course System production. A summary of the calculations for Replenishment Assessments for WY 2018 is contained in Attachment 5.

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 2018 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

Change in Watermaster’s Primary Hydrogeological Consultant

Much of the Watermaster’s work is performed through contracts with hydrogeological consultants. The primary hydrogeological consultant the Watermaster has used for many years, HydroMetrics LLC, was purchased in July 2018 by the hydrogeological consulting firm of Errol L. Montgomery & Associates (Montgomery & Associates) of Tucson, Arizona.

Mr. Derrik Williams, President of the former HydroMetrics WRI, explained that he had known and worked with many of the principles of Montgomery & Associates for over 30 years, and that they are a groundwater focused company. He reported that he found Montgomery & Associates to have a highly qualified staff who have the same technical expertise and commitment to both clients and employees as HydroMetrics WRI.

The Watermaster was assured that it would continue to receive the same or better level and quality of services from Montgomery & Associates that it had been receiving from HydroMetrics WRI and that Derrik Williams (President of HydroMetrics) and Georgina King (a Senior Hydrogeologist at HydroMetrics), both of whom have performed and/or directed all of the work previously performed for the Watermaster, would continue to be the staff with whom the Watermaster would normally interact.

Based on those assurances, the Watermaster's Technical Advisory Committee and Board of Directors were comfortable with the change in ownership. Effective July 1, 2018, the Watermaster entered into a contract with Montgomery & Associates for the hydrogeological services formerly provided by HydroMetrics WRI.

Water Quality Analytical Results

Groundwater quality data continued to be collected and analyzed on a quarterly basis during WY 2018 from the enhanced network of monitoring wells. The low-flow sampling method implemented in 2009 continued to be used in 2018 and is expected to continue to be used in the future to improve the efficiency of sample collection. As discussed in the 2013 Annual Report, the Watermaster reduced the frequency of water quality sampling at SBWM-MW5 to once every 3 years.

No modifications to the quarterly data collection frequency from the enhanced network of monitoring wells were made during WY 2018.

Up until WY 2010 quarterly geophysical (induction) logging was performed at the four coastal Watermaster Sentinel wells that were installed in 2007. The induction logging results showed very little variations and trends were steady since that monitoring began, indicating that the coastal water quality conditions were not changing at this sample frequency. Therefore, beginning in WY 2010 the Court approved reducing the induction logging frequency to semi-annually at these wells.

The expanded water quality analyses begun in WY 2012 were continued in WY 2018. However, as discussed and recommended in the 2017 Annual Report (refer to Attachments 8 and 13 of the 2017 Annual Report), in WY 2018 water quality sampling was discontinued in the Watermaster's Sentinel Wells located along the coast (wells SBWM-1, SBWM-2, SBWM-3, and SBWM-4), because those water quality samples were found to not be representative of the water quality in the aquifers in which these wells were completed. Water quality sampling was continued for the 3 most coastal MPWMD monitoring wells (MSC, PCA, and FO-09).

Copies of the sampling results are contained in the report in Attachment 7.

Monitoring and Management Program Work Plan for the Upcoming Year

The 2019 Monitoring and Management Program (M&MP) Work Plan contained in Attachment 9 includes the types of basin management activities conducted in prior years as well as revisions approved by the Board at its October 3, 2018 meeting.

Other than small changes due to changes in hourly rates for some of the consultants, the following are the principle differences between the 2018 M&MP and the proposed 2019 M&MP, and their respective budgets:

Task I.2.b.3 (Collect Quarterly Water Quality Samples): In 2018 the total amount budgeted for this Task was \$51,128. That cost included collecting and analyzing water quality samples from the Watermaster's Sentinel Wells. In early 2018 it was determined that water quality samples that have historically been collected from the Sentinel Wells were not representative of the quality of the water in the aquifers. Therefore, the decision was made to discontinue collecting and analyzing samples from these wells. This led to the reduction in cost for this Task to \$42,083 in 2019.

Task I.3.a.1 (Update the Existing Model): \$54,370 was included in the 2018 budget for this Task to have HydroMetrics update the existing groundwater model of the Seaside Basin. That work was completed in 2018 and therefore does not need to be included in the M&MP budget for 2019. This led to the reduction in cost for this Task to \$0 in 2019.

Task I.3.c (Refine and/or Update the Basin Management Action Plan): \$45,260 was included in the 2018 budget for this Task to have HydroMetrics update the existing Basin Management Action Plan. That work has been completed and therefore does not need to be included in the M&MP budget for 2019. This led to the reduction in cost for this Task to \$0 in 2019.

Task I.3.e (Seaside Basin Geochemical Model): This was a new Task for 2018, and the amount for this Task in the 2018 budget was \$50,000. The Task is being performed by MPWMD's Consultant, Pueblo Water Resources, Inc., and is expected to be completed in 2019. However, Montgomery & Associates (formerly HydroMetrics) may need to work on this task if the initial modeling results find that there could be adverse water quality impacts in the aquifers due to the introduction of water from the Monterey Peninsula Water Supply Project (desalinated water), the Pure Water Monterey Project (advance treated wastewater) and/or Aquifer Storage and Recovery Water (Carmel Basin water). If the modeling results in this finding, Montgomery & Associates may need to use the Seaside Basin groundwater model to help Pueblo Water Resources develop means/measures to mitigate such impacts. A \$10,000 amount is included in the 2019 budget to cover the costs of Montgomery & Associates' work, if such work needs to be done.

The full cost of the geochemical modeling is being borne by the three proponents of the projects that intend to inject new sources of water into the Basin. These are California American Water, MPWMD, and Monterey One Water (formerly MRWPCA).

It is anticipated that if Montgomery & Associates needs to perform work on this Task in 2019, one or more of the project proponents will either pay for or reimburse the Watermaster for all of the costs to perform this work. Therefore, there should be no net cost to the Watermaster for the work of this Task.

No new monitoring wells are planned for installation in 2019. Consequently, no monies are budgeted in the M&MP Capital Budget for 2019.

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 2018.

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.

Basin Management Action Plan (BMAP)

HydroMetrics LLC was hired by the Watermaster to prepare the original BMAP which contains these Sections:

- Executive Summary
- The Background and Purpose of the Plan
- The State of the Basin
- Supplemental Water Supplies (long-term water supply solutions)
- Groundwater Management Actions (to be taken as interim measures while long-term supplies are being developed)
- Recommended Management Strategies
- References

The Final BMAP was approved by the Watermaster Board at its February 2009 meeting, and the Executive Summary from the BMAP was contained in Attachment 9 of the 2009 Annual Report. That complete document may be viewed and downloaded from the Watermaster's website at: <http://www.seasidebasinwatermaster.org/>.

The Watermaster was having the BMAP updated in 2018, and it was initially expected that the work would be completed in time for inclusion in this Annual Report. However, the work was still ongoing at the time this Annual Report was completed, so the results of it will be included in next year's Annual Report.

Seawater Intrusion Response Plan

HydroMetrics LLC 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/>. No modifications to the SIRP were made in 2018.

Seawater Intrusion Analysis Report

The 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 fresh water 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 2018 Seawater Intrusion Analysis Report (SIAR) required by the M&MP. The WY 2018 SIAR provided an analysis of data collected during that Water Year.

The 2018 SIAR reported that the evaluation of the data from the sampling and monitoring program continued to indicate that seawater intrusion was not occurring.

The SIAR is lengthy, but the full *Executive Summary Section* from it is provided in Attachment 8. 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 9.

The Watermaster continues to analyze the data that is being gathered at the various monitoring sites in order to keep a close watch on the conditions within the Basin, as discussed under the "Enhanced Monitoring Well Network" heading above. Because none of the data indicates the presence of seawater intrusion, the Watermaster does not at this time plan to move forward with the Work Plan to investigate sources of fluctuating chlorides in the Sentinel Wells, as described in Attachment 12 of the 2017 Annual Report. However, should future data warrant it, the Watermaster may reconsider undertaking the initial phase of that Work Plan.

Groundwater Modeling

As projected in the 2017 Annual Report the Seaside Basin Groundwater Model, which had been updated in 2009, was again updated in 2018. The 2018 updated model was prepared by HydroMetrics LLC, and a Technical Memorandum describing the work that was performed is contained in Attachment 10. The cost of updating the model was shared through an agreement between the Watermaster, MPWMD, and Monterey One Water, with the Watermaster paying 50% of the cost, and those two other entities paying the other 50% of the cost.

Principle Findings from Updating the Seaside Basin Groundwater Model.

1. Simulated groundwater levels are sensitive to the specified heads along the northeastern boundary with the Salinas Valley. The behavior of the boundary was found to impact the calibration of areas of the model at some distance from the boundary. It

was found that in the absence of the most recent Salinas Valley Integrated Hydraulic Model (SVIHM), currently being developed by the USGS, assigning boundary head elevations that match the general observed average groundwater levels along the boundary is more important than capturing smaller scale seasonal fluctuations along the boundary. It is recommended that when the SVIHM has been completed, an assessment of how well it simulates historical groundwater conditions in the Seaside Basin be conducted. If it is concluded that the new data improves simulation of groundwater level in the Seaside Basin, the boundary condition can be revised using parts of the SVIHM that improve model calibration of the Seaside Basin model.

2. The model recalibration improved calibration statistics over the original 2009 model calibration. As a result, simulated groundwater levels throughout the model, as a whole, better match observed groundwater levels.

3. The groundwater model should be updated in a maximum of five years and its calibration reevaluated at that time. However, if groundwater related projects are implemented in the basin before that time, the update and calibration reevaluation may need to be performed sooner.

Coordination of Watermaster's Seaside Groundwater Model with Salinas River Basin Model

As reported in the 2017 Annual Report the Monterey County Water Resources Agency (MCWRA) is having its hydrologic model of the Salinas Valley Groundwater Basin updated. That model is referred to as the SVIHM. In 2017 the MCWRA determined that the Technical Advisory Committee (TAC) it had convened to assist in the preparation of the updated model had fulfilled its purpose, and there have not been any subsequent meetings of that TAC since then. However, if the MCWRA reconvenes its TAC, the Watermaster will participate in future meetings of that TAC in order to ensure that the SVIHM coordinates well with the Watermaster's Seaside Basin model.

Geochemical Modeling

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 consultant (Pueblo Water Resources) has been using geochemical modeling to predict the effects of injecting Carmel River water into the Seaside Groundwater Basin under the ASR program.

As mentioned above in the heading entitled *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 and additional ASR water (under the Monterey Peninsula Water Supply Project) and advance-treated wastewater (under the Pure Water Monterey Project) a geochemical model is being

developed by Pueblo Water Resources for use in the areas of the Basin where injection of these new water sources will occur. The geochemical modeling work is described in Attachment 11. The plan is to perform the geochemical modeling work in the following manner:

Step 1: Pueblo Water Resources will use the water quality and water delivery schedule data provided by each of the project proponents to develop and run the geochemical model. If the geochemical modeling indicated there will be no water chemistry problems then there would be no need to perform Step 2.

Step 2 (if needed): If the geochemical modeling in Step 1 indicates the potential for problems to occur, then Montgomery & Associates will use the Watermaster's Seaside Basin 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/or delivery quantities. The effect of these changes would be evaluated by Pueblo Water Resources using the geochemical model. Implementing these mitigation measures would be done under a separate task that would be created for that purpose, when and if necessary.

Work on the geochemical modeling started in May 2018. Through an agreement between the Watermaster, MPWMD, California American Water, and Monterey One Water, the work is funded entirely by the three parties that are the sponsors of the aquifer recharge projects described above, at no cost to the Watermaster.

As of the date of preparation of this 2018 Annual Report, progress on this work has been as follows:

- Initial review of the available data from these aquifer recharge projects indicated that less-than-adequate information existed for purposes of performing the geochemical modeling work. Initial work has therefore focused on filling data gaps and obtaining complete mineralogical data on the Santa Margarita formation. Data compilation to date includes the following:
- Sample collection and analysis of the effluent from the PWM pilot facility is being analyzed for both base water quality constituents and bench-scale testing for leaching potential with Santa Margarita formation mineral samples obtained in September 2018 from the construction of one of the PWM injection wells.
- The bench scale protocol described above is also being repeated using treated, potable Carmel River water from Cal-Am's Begonia Iron Removal Plant (which provides water for the ASR project and is located in Carmel Valley) to further assess findings from 2009 testing of the water supplies from that plant. This data will also be used in the overall geochemical assessment.
- Santa Margarita formation cuttings collected from the PWM injection well are being analyzed by X-Ray Diffraction (XRD) which is used to determine

mineralogy by shining X-Rays at a solid and measuring the diffraction pattern, as well as by conventional mineralogy assessment. The samples are being further analyzed via complete acid digestion to quantify the presence and composition of trace metals within the Santa Margarita formation matrix. Results of this assessment may lead to further analysis via Dynamic Secondary Ion Mass Spectrometry (SIMS) to further identify mineral compositions prior to geochemical interaction modeling. SIMS uses an ion stream to pulse at a surface and then measures the cast-off ions in a mass spectrometer to determine the elemental state of minerals.

It is anticipated that results from these tests will be available by the end of January 2019, at which time it will be possible to proceed with the modeling work itself. As noted in Section 6 of the Storage and Recovery Agreement contained in Attachment 12, the initial modeling work will only evaluate the impacts of introducing advance-treated wastewater from the PWM Project into the Basin. The impacts of introducing water from the other recharge projects will be separately evaluated in conjunction with developing the Storage and Recovery Agreements for those projects, in a manner similar to that described in the paragraphs below.

The planned schedule once the modeling work itself begins is as follows:

- Develop the geochemical model – estimated task duration 3 weeks
- Model mixing ratios – estimated task duration 6 weeks

After these tasks have been completed on the PWM Project water (expected before the end of the first quarter of 2019) Pueblo Water Resources will provide a Technical Memorandum summarizing the results of the modeling and recommendations for additional model scenarios, if any, based on the initial output runs.

If the initial modeling work identifies mixture simulations that show undesirable geochemical reactions (i.e. mineral precipitation or gas evolution) Pueblo Water Resources will rerun those model simulations under various modifications of mix ratios and/or aquifer conditions to identify methods of mitigating the observed adverse reactions and to identify potential operational scenarios which would prevent such adverse geochemical reactions from occurring. If this work is needed, it is estimated that this phase (described above as Step 2) will have a duration of 4 to 6 weeks. Following that Pueblo Water Resources would develop an overall summary report and recommendations for process and/or operational changes to reduce or avoid adverse geochemical reactions.

A procedure similar to that described above will be used in conjunction with evaluating the impacts of introducing water from the other recharge projects into the Basin.

Sustainable Groundwater Management Act

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 and the State Department of Water Resources' (DWR)

development of regulations pertaining to requesting boundary revisions, with the intent to collaborate with these entities as appropriate.

At the State Level:

In late 2016 DWR released the final 2016 modifications to California's groundwater basin boundaries. The boundary modification request submitted by the Monterey Peninsula Water Management District (MPWMD) to remove some areas near Monterey from the Salinas Valley Groundwater Basin, and to recognize the boundaries of the Adjudicated Seaside Basin, was approved. These modifications are reflected in the basin boundary map that is now posted on the DWR website.

DWR has included new basin boundaries in its interim update of Bulletin 118, which came out in 2017. It includes the boundary of the Adjudicated Seaside Basin, as requested in the boundary modification request submitted in 2016 by the Monterey Peninsula Water Management District (MPWMD).

During 2018 DWR did not issue any new regulations, or revisions to prior regulations, that impacted the Seaside Groundwater Basin or the Watermaster. In March of 2018 the Watermaster submitted to DWR the reporting information required of it, as an adjudicated basin, under SGMA.

At the Monterey County level:

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) (a joint powers authority) and the Marina Coast Water District (MCWD) submitted Notifications with DWR to serve as the GSA for portions of the Monterey and the 180/400 foot aquifer Subbasins that overlapped. Subsequently, the City of Marina submitted an untimely notice to also serve as the GSA over the overlapping areas. The SVBGSA, MCWD, and the City of Marina have embarked on a process to address and resolve the overlaps. The process envisions that MCWD will carry out the Groundwater Sustainability Plan (GSP) activities within its Marina and Ord Community service areas, regardless of whether MCWD or the SVBGSA is ultimately determined by the Department of Water Resources to be the appropriate party to serve as the GSA for those areas, and either MCWD or the SVBGSA will look out for the interests of the City of Marina.

During 2018 the administrative structure of the SVBGSA was developed, and the SVBGSA continued moving ahead with GSP development. An initial conclusion was that it would be preferable for the SVBGSA to prepare separate GSPs for each subbasin, and work began in late 2018 on the preparation of those GSPs. The Watermaster is participating in the development of those GSPs through its membership on the SVBGSA's Advisory Committee, which will help ensure that there is close coordination between that agency and the Watermaster on matters of mutual interest.

K. Additional Information

This Section was added to the Annual Report beginning this year as directed by the Court in its Order Amending Judgment filed March 29, 2018. It replaces the Section that was added to the 2017 Annual Report titled "Updates to the Court" and is formatted to

contain the topic headings below, which were requested by the Court in its March 29, 2018 Order.

By email dated August 13, 2018, Judge Nichols, who replaced Judge Randall on this matter effective January 27, 2016, informed the Parties that he would soon be withdrawing as judge on the case as a result of changes to the Assigned Judges Program which caps the total number of days an assigned judge may serve. The parties to the action have now stipulated to the assignment of retired Monterey County Judge Robert O'Farrell.

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 *Seawater Intrusion Analysis Report*, which analyzes the water quality data collected under the Watermaster's sampling program, found that no seawater intrusion is being detected within the Basin. The 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 (discussed below) becomes operational, CAW will further reduce its pumping from the Basin by 700 AFY through its 25-year overpumping repayment program. This combined with the final triennial reduction to the Operating Yield in 20210, should substantially slow, if not eliminate, declines in groundwater levels.

Planned Near and Long-term Actions of the Watermaster

Near-term actions are described in the 2019 Monitoring and Management Program discussed in Section J and Attachment 9 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 this Annual Report
- 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

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

On September 13, 2018 the CPUC approved a modified MPWSP consisting principally of a reduced-size 6.4 mgd desalination plant (size originally proposed was 9.6 mgd with no reclaimed water), 3,500 AFY of PWM reclaimed water (previously and separately approved by the CPUC in 2017), and increased ASR water; adopting settlement agreements to resolve conflicts relating to the desalination project; issued a Certificate of Public Convenience and Necessity; and certified the combined EIR/EIS for that Project. California American Water is in the process of seeking necessary approvals from the California Coastal Commission and other permitting agencies.

Construction of the first major element of the MPWSP, the Monterey Pipeline and Pump Station (MPPS), was completed in December 2018. The MPPS will carry PWM water that is recovered after storage in the Basin, desalination water, and expanded Aquifer Storage and Recovery (ASR) water between the northern portions of the California American Water system overlying the Seaside Basin to southern portions of the system. The pipeline extends about 7 miles from the City of Seaside to the City of Pacific Grove.

Construction work is well underway on Monterey One Water's (M1W) PWM recycled water project in Marina. This project will produce approximately 3,500 AFY of advanced treated recycled water that will be delivered to the Seaside Basin for injection into the Basin and subsequent recovery and service to California American Water customers. M1W has also executed an agreement with Marina Coast Water District (MCWD) to use a MCWD pipeline that will convey the water from the PWM advanced water treatment plant to the Seaside Basin. The PWM component of the MPWSP is currently projected to become operational in late 2019. Construction of the desalination plant is currently scheduled to begin in late 2019. The desalination plant and the expanded ASR system are expected to become operational in late 2021. Detailed quarterly update reports on the MPWSP are posted on the MPWSP website at <https://www.watersupplyproject.org>.

On October 12, 2018, the City of Marina and the MCWD each filed petitions for writ of review before the California Supreme Court challenging the CPUC's certification of the Final EIR/EIS and issuance of the Certificate of Public Convenience and Necessity for the MPWSP. On December 12, 2018, the Petitions for Review were denied without prejudice to the filing of renewed submissions upon completion of the rehearing proceedings pending before the CPUC. A copy of the Supreme Court docket in the proceeding can be found at: http://appellatecases.courtinfo.ca.gov/search/case/dockets.cfm?dist=0&doc_id=2266655&doc_no=S251935&request_token=NiIwLSIkXkg9WYApSCI9XE1IQDg0UDxTJiJOIzlSICAgCg%3D%3D.

Management Activities that May Bear on the Basin's Wellbeing

1. *Water Conservation.* From a water conservation standpoint, customers of Cal-Am are doing an exceptional job. California American Water'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 (formerly Monterey Regional Water Pollution Control Agency). Cal-Am has already contracted to receive 3,500 AFY of PWM recycled water for injection into, and recovery from, the Seaside Basin by Cal-Am. Monterey One Water, in coordination with others, is looking at the potential to expand the delivery capacity of the PWM project by using additional sources of recycled water and storm water.

3. *Sustainable Groundwater Management Act.* Coordination between the Watermaster and the Salinas Valley Groundwater Basin Sustainability Agency is ongoing and is discussed in more detail 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* and *Basin Management Action Plan* in 2018 (discussed in Section J) incorporated projected impacts from climate change and sea level rise.

5. *Potential Replenishment of the Basin with Water Purchased from Marina Coast Water District (MCWD).* As mentioned in the 2017 Annual Report and in the March 2018 Status Conference Statement, the Watermaster received an initial proposal, and later a revised proposal, from Marina Coast Water District (MCWD) (not a party to the Decision) to sell replenishment water to the Watermaster. The Watermaster Board and its Technical Advisory Committee studied the proposals but found that insufficient information was provided to determine whether they were viable. Then, in May of 2018 Watermaster staff was informed by MCWD that the revised proposal was "on hold." In September of 2018 the CPUC found that the proposal was not shown to be a reliable, secure supply at a reasonable price. Therefore, the Watermaster does not plan to take any further action on the MCWD proposal.

6. *New Technical Issues or Activities.* This is a new Section added beginning with this 2018 Annual Report, in response to the Court's request during the March 2017 Status Conference that it be updated on any new technical issues of interest to the Watermaster.

- *Electrical Resistivity Tomography in the Monterey Bay Area.*

The Watermaster has researched whether electrical resistivity tomography, which was discussed in Sections 8.2.9.1 and 8.9.2.2 of the FEIR/FEIS for the MPWSP, could be used to help detect the location of the seawater intrusion front offshore of the Seaside Groundwater Basin. The Watermaster's Technical Program Manager contacted Ms.

Rosemary Knight and Mr. Adam Pidlisecky, who were authors of the reference reports cited in the FEIR/FEIS for the ERT/AEM work described in Section 8.2.9.1.

Ms. Knight responded that she was dealing with a family medical issue and was not in a position to respond to questions at that time.

Mr. Pidlisecky had made a presentation to the Watermaster's Technical Advisory Committee on this technology several years ago, and at that time reported that the technology could not be used to locate the seawater intrusion front offshore, because the aquifers were deep and the overlying seawater in the Bay would prevent the front from being detected. When contacted again in April 2018 he responded that the technique used in the 2017 survey is not well suited to offshore work, because saltwater attenuates the signal. Having 100% saltwater overlying the seafloor, beneath which lie the aquifers, severely attenuates the signal and greatly limits the depth of investigation. He said that although people have used the technique over water, it has usually been done on a much smaller scale, only over a length of a few hundred meters as opposed to kilometers such as was done in the 2017 survey.

Based on the findings of the FEIR/FEIS and Mr. Pidlisecky's response, it continues to appear that the use of ERT/AEM technology to locate the seawater intrusion front offshore of the Seaside Groundwater Basin is not feasible.

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

Monterey One Water (M1W), formerly the Monterey Regional Water Pollution Control Agency (MRWPCA), was the lead entity in the development of a Stormwater Resource Plan (SWRP) for the Monterey Peninsula, Carmel Bay, and South Monterey Bay (Monterey Peninsula) Integrated Regional Water Management (IRWM) Planning Area. A Consultant Project Team consisting of Geosyntec Consultants, Inc. (Geosyntec), EOA, Inc. (EOA), and Denise Duffy & Associates, Inc. (DD&A) prepared the SWRP and conducted associated analyses. Preparation of the Monterey Peninsula SWRP was funded by a Proposition 1 Planning Grant and local match funds, including the locally funded Monterey Peninsula Water Recovery Study Report, the results of which are integrated into the SWRP.

The purpose of the SWRP is to identify stormwater capture project opportunities that could be utilized as new water supply sources for the Monterey Peninsula and provide additional water quality and environmental benefits. The purpose of the Monterey Peninsula Water Recovery Study, which was conducted as part of the development of this Monterey Peninsula Region SWRP, was to examine the feasibility of establishing a Peninsula-wide water recovery and reclamation system, including identifying and evaluating potential projects that could capture sources of wet and dry weather runoff within the Monterey Peninsula IRWM Planning Area for water recovery and use. The water recovery projects were specifically identified based on their potential to reduce the Peninsula's dependence on the Carmel River, Carmel Valley Alluvial Aquifer, and adjudicated Seaside Groundwater Basin. The study considered how to store, treat, and

transport potential sources of runoff prior to entering existing water and wastewater infrastructure for use, but did not identify projects that expand existing water distribution and wastewater storage, treatment, and conveyance system capacities, or determine if this will be needed.

Seven projects were selected for conceptual design in the SWRP. Six of the seven projects would have the potential to slightly increase flows to the M1W reclamation facilities, and thus have the potential of modestly augmenting wastewater flows to the M1W reclamation facilities. This could help enable the PWM project to produce a small amount of additional water for use in recharging, or reducing pumping from, the Seaside Groundwater Basin. Since these projects are in the early planning stages and are not currently funded or otherwise being pursued by project sponsors, they are considered only to be potential sources of water that M1W could use to increase the capacity of its PWM project. Thus, no specific quantities of water that would be used for the benefit of the Seaside Groundwater Basin can currently be identified for these projects. However, none of these six projects would have the capability of capturing more than a few acre-feet of stormwater per year.

The seventh project lies within the watershed of the City of Carmel-by-the-Sea and would not be of benefit to the Seaside Basin.

L. Conclusions and Recommendations

The Seaside Basin Watermaster Board has worked diligently to meet all of the Court's established deadlines. 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 October 3, 2018 the Board adopted the FY 2019 budgets contained in Attachment 6, which support carrying out all elements of the "Seaside Groundwater Basin Monitoring and Management Program 2019 Work Plan." That Work Plan describes the M&MP activities that will be conducted during Fiscal Year 2019. A copy of this Work Plan is contained in Attachment 9.

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.

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

MCWD - Marina Coast Water District

MPWMD - Monterey Peninsula Water Management District

M&MP - Monitoring and Management Program

NSY - Natural Safe Yield

SGMA - Sustainable Groundwater Management Act

SIAR - Seawater Intrusion Analysis Report

SIRP - Seawater Intrusion Response Plan

SVBGSA - Salinas Valley Basin Groundwater Sustainability Agency

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 2018
(All Values in Acre-Feet [AF])

	Type	Oct	Nov	Dec	Oct-Dec 17	Jan	Feb	Mar	Jan-Mar 18	Apr	May	Jun	Apr-Jun 18	Jul	Aug	Sep	Jul-Sep 18	Reported Total	Yield Allocation	from WY 2017	for WY 2018	
Coastal Subareas																						
CAW - Coastal Subareas	SPA	367.69	307.12	315.00	989.81	245.45	241.90	170.36	657.71	71.12	85.16	122.41	278.69	0.00	0.00	0.00	0.00	1,926.21	1,791.62	708.80	2,500.41	
City of Seaside (Municipal)	SPA	16.46	13.37	14.39	44.22	13.05	13.64	13.31	39.99	16.11	16.97	16.83	49.91	17.39	16.23	16.89	50.50	184.63	146.99	0.00	146.99	
Granite Rock Company	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	0.00	13.87	252.77	266.63	
DBO Development No. 30	SPA	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	--	--	--	0.00	0.00	25.16	481.76	506.92	
Calabrese (Cypress Pacific Inv.)	SPA	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	3.37	12.72	16.09	
City of Seaside (Golf Courses)	APA	45.04	6.11	15.49	66.64	1.94	26.13	8.92	36.99	34.42	83.58	67.24	185.24	88.06	71.86	63.12	223.03	511.90	540.00		540.00	
Sand City	APA	0.02	0.10	0.02	0.14	0.08	0.19	0.15	0.41	0.10	0.13	0.09	0.32	0.09	0.06	0.06	0.22	1.09	9.00		9.00	
SNG (Security National Guaranty)	APA	--	--	--	--	0.00	0.00	0.58	--	--	--	--	--	--	--	--	--	0.00	0.00	149.00		149.00
Calabrese (Cypress Pacific Inv.)	APA	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.07	6.00		6.00	
Mission Memorial (Alderwoods)	APA	2.31	0.46	1.02	3.79	0.64	0.44	0.12	1.20	0.22	1.86	1.25	3.33	3.01	2.53	0.57	6.11	14.43	31.00		31.00	
Coastal Subareas Totals					1,104.60				736.33				517.51				279.87	2,638.31	2,716.00	1,456.04	4,172.04	
Laguna Seca Subarea																						
CAW - Laguna Seca Subarea	SPA	24.00	18.60	23.59	66.19	19.19	21.63	18.47	59.29	19.66	27.54	31.26	78.46	33.52	35.04	30.74	99.30	303.24	0.00		0.00	
Ryan Ranch Unit		2.29	3.97	4.20	10.46	3.66	0.93	0.00	4.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.05				
Hidden Hills Unit		10.24	5.63	9.87	25.74	7.75	8.80	7.82	24.37	8.29	10.88	12.23	31.40	13.60	14.61	12.26	40.47	121.98				
Bishop Unit		11.47	9.00	9.52	29.99	7.78	11.90	10.65	30.33	11.37	16.66	19.03	47.06	19.92	20.43	18.48	58.83	166.21				
Nicklaus Club Monterey	APA	23.00	0.00	0.00	23.00	0.00	2.00	0.00	2.00	7.00	18.00	27.00	52.00	35.00	22.00	9.00	66.00	143.00	251.00		251.00	
Laguna Seca Golf Resort (Bishop)	APA	30.81	0.00	0.00	30.81	5.68	2.24	0.17	8.10	6.21	29.52	42.09	77.82	43.22	43.86	36.06	123.13	239.87	320.00		320.00	
York School	APA	2.24	0.08	0.71	3.02	0.01	0.54	0.01	0.56	0.85	2.05	1.58	4.48	4.64	2.31	1.81	8.76	16.83	32.00		32.00	
Laguna Seca County Park	APA	1.01	0.65	0.97	2.63	1.15	1.18	0.60	2.93	1.36	1.56	2.06	4.99	1.30	4.04	6.08	11.42	21.96	41.00		41.00	
Laguna Seca Subarea Totals					125.65				72.87				217.75				308.62	724.89	644.00	0.00	644.00	
Total Production by WM Producers					1,230.26				809.20				735.26				588.49	3,363.21	3,360.00	1,456.04	4,816.04	
Annual Production from APA Producers																		949.13	1,379.00			
Annual Production from SPA Producers																		2,414.08	3,437.04			
																		3,363.21				
City of Seaside Golf Courses In-Lieu (MCWD source water)																						
MCWD delivery		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
CAW/MPWMD ASR (Carmel River Basin source water)																						
Injection		0.00	0.00	0.00	0.00	0.00	0.00	341.23	341.23	189.26	0.00	0.00	189.26	0.00	0.00	0.00	0.00	530.49				
(Recovery)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	(43.15)	(43.15)	(360.11)	(414.34)	(392.12)	(1166.57)	-1209.72				
Net ASR		0.00	0.00	0.00	0.00	0.00	0.00	341.23	341.23	189.26	0.00	-43.15	146.11	-360.11	-414.34	-392.12	-1166.57	-679.23				

Notes:

- The Water Year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2018 begins on October 1, 2017, and ends on September 30, 2018.
- "Type" refers to water right as described in Seaside Basin Adjudication decision as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M66343).
- Values shown in the table are based on reports to the Watermaster received by July 15, 2018.
- 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 2018](#) (see Item IX B. in 12/6/2017 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.

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 2018 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 2019 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:

Nicklaus Club Monterey	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	2,245.49 acre-feet*
Seaside (Municipal)	146.99 acre-feet**
Granite Rock	235.86 acre-feet***
D.B.O. Development 30	429.12 acre-feet****
Cypress (Calabrese).....	19.46 acre-feet*****

Laguna Seca Subarea Standard Producers:

California American Water.....	0.0 acre-feet
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-
- * Total is the 2018 base allocation of 1,791.62 acre-feet plus 182.91 of not free carryover plus 270.96 free carryover.
California American Water has a positive balance of 144.78 acre-feet of stored water credit at WY-end 2018 from Basin extractions exceeding injections since WY 2010 under the CAW/MPWMD ASR Program, formalized through a Storage Agreement in 2012.
 - ** Total is the 2019 base allocation of 146.99 acre-feet.
 - *** Total includes 180.68 acre-feet of “free” carryover and 41.32 acre-feet of “not-free” carryover credit from previous water years *capped at the producers storage allocation of 222.0 acre-feet*, plus the 2019 base allocation of 13.87 acre-feet.
 - **** Total includes 341.51 acre-feet of “free” carryover plus 62.45 acre-feet of “not-free” carryover credit from previous water years *capped at the producers storage allocation of 403.96 acre-feet*, plus the 2019 base allocation of 25.16 acre-feet.
 - ***** Total includes 14.36 acre-feet of “free” carryover and 1.73 acre-feet of “not-free” carryover credit from previous water years plus the 2019 base allocation of 3.37 acre-feet.

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 31,770 acre-feet.
 Total Usable Storage Space in the Laguna Seca Subarea is 20,260 acre-feet.
 Total Usable Storage Space in the entire Seaside Groundwater Basin is 52,030 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%	28,733
City of Seaside (Municipal)	6.36%	7.42%	2,357
Granite Rock Company	0.60%	0.70%	222
DBO Development No. 27	1.09%	1.27%	404
Calabrese (Cypress Pacific Investors LLC)	0.15%	0.17%	54
SUBAREAS TOTAL	85.75%	100.00%	31,770
Laguna Seca Subarea			
California American Water ⁽³⁾	45.13%	100.00%	20,260
SUBAREA TOTAL	45.13%	100%	20,260
BASIN TOTAL		100%	52,030

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.

February 3, 2010
 Revised January 15, 2015

ATTACHMENT 3

**WATERMASTER ADMINISTRATIVE AND OPERATIONS
COSTS**

Seaside Groundwater Basin Watermaster
Budget vs. Actual Administrative Fund
Fiscal Year (January 1 - December 31, 2018)
Balance through November 30, 2018

	<u>2018 Adopted Revised Budget</u>	<u>Contract Amount</u>	<u>Year to Date Revenue / Expenses</u>
Available Balances & Assessments			
Dedicated Reserve	-		-
FY (Rollover)	42,000.00		32,782.94
Admin Assessments	40,000.00		40,000.00
Available	<u>82,000.00</u>		<u>72,782.94</u>
Expenses			
Contract Staff	40,000.00	40,000.00	30,350.00
Legal Advisor	24,000.00	24,000.00	19,155.00
Filing fees and postage			226.42
Total Expenses	<u>64,000.00</u>	<u>64,000.00</u>	<u>49,731.42</u>
Total Available	18,000.00		
Dedicated Reserve	<u>18,000.00</u>		<u>18,000.00</u>
Net Available	<u><u>-</u></u>		<u><u>5,051.52</u></u>

Seaside Groundwater Basin Watermaster
Budget vs. Actual Monitoring & Management - Operations Fund
 Fiscal Year (January 1 - December 31, 2017)
 Balance through November 30, 2017

	2017 Adopted Amended Budget	Contract Encumbrance	Year to Date Revenue/Expenses
Available Balances & Assessments			
Operations Fund Assessment	\$ 100,000.00	\$ -	\$ 100,000.00
Pass Through 2017	-	4,788.00	2,664.00
FY 2016 Rollover	270,965.98	-	270,965.98
Total Available	\$ 370,965.98	\$ 4,788.00	\$ 373,629.98
Appropriations & Expenses			
GENERAL			
Technical Project Manager	\$ 60,000.00	\$ 60,000.00	\$ 37,300.00
Contingency @ 20% (not including TPM)	12,091.00	-	-
Total General	\$ 72,091.00	\$ 60,000.00	\$ 37,300.00
CONSULTANTS (Hydrometrics; Todd Groundwater; Web Site Database)			
Program Administration	\$ 26,276.00		
Production/Lvl/Qty Monitoring	2,400.00	\$ 23,800.00	\$ 19,658.46
Basin Management Action Plan	48,881.76		
Seawater Intrusion Analysis Report	20,890.00	20,890.00	17,893.75
Total Consultants	\$ 98,447.76	\$ 44,690.00	\$ 37,552.21
MPWMD			
Production/Lvl/Qty Monitoring	\$ 52,558.00	53,454.00	16,495.00
Pass Through 2017	-	4,788.00	2,310.00
Basin Management	-		-
Seawater Intrusion	896.00	-	-
Direct Costs	-	-	-
Total MPWMD	\$ 53,454.00	\$ 58,242.00	\$ 18,805.00
CONTRACTOR (Martin Feeney)			
Production/Lvl/Qty Monitoring	\$ 36,203.80	\$ 36,203.80	35,660.58
Reserve			
Transfer Out to Capital Fund			-
Total Appropriations & Expenses	\$ 260,196.56	\$ 199,135.80	\$ 129,317.79
Total Available	110,769.42		244,312.19

ATTACHMENT 4

**REPLENISHMENT ASSESSMENT UNIT COST
DETERMINATION FOR WATER YEAR 2019**

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Board of Directors
FROM: Laura Dadiw, Administrative Officer
DATE: October 3, 2018
SUBJECT: Unit Cost for Water Year 2018/19 Over Production Replenishment Assessment Amounts

RECOMMENDATION:

It is recommended that the Board approve a Proposed Replenishment Assessment Unit Cost of \$2,872 for Operating Yield Overproduction and \$718 (25% of \$2,872) for Natural Safe Yield Over Production for Water Year 2019 (October 1, 2018 - September 30, 2019).

On August 21, 2018 the Budget and Finance Committee approved the proposed Unit Cost for Water Year 2018/19 Over Production Replenishment Assessment Amounts and recommended board approval.

SUMMARY:

The Replenishment Assessment Unit Cost is used to calculate the Replenishment Assessments that are charged to any Standard Producer that exceeds its allocations (both Operating Yield and Natural Safe Yield allocations) during the Water Year.

Per page 33 of the Decision, *“The per acre-foot 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 2018 will be used to calculate Replenishment Assessments for pumping that occurs during the Water Year which begins on October 1, 2018 and ends on September 30, 2019.

BACKGROUND:

For each of the three Water Years 2014, 2015, and 2016, the Board adopted a unit cost of \$2,702/AF. This unit cost was developed starting with Water Year 2014 by taking the average of the Base Unit Cost (\$/AF) listed in Table 1 for each project $[\$3,507+\$1,800+\$2,000+\$3,500]/4$, as the Replenishment Assessment Unit Cost. The Water Year 2014 unit cost was carried over to the two subsequent Water Years because no updated cost data was available for the projects listed in Table 1, and no other viable projects could be identified. For Water Year 2016/17 the Budget and Finance Committee updated the basis from which the annual calculation of the Unit Cost of replenishment water is established, a blended cost of a reduced size desalination plant for the Monterey Peninsula Water Supply Project and groundwater replenishment provided by the Pure Water Monterey Project $[(\$4,591+\$2,025+\$2,000)/3] = \$2,872$ (see Table 2).

DISCUSSION:

Due to the lack of more supportable data the recommendation is to continue using \$2,872, the average of the Base Unit Cost (\$/AF) listed in Table 2 for each project $[(\$4,591+\$2,025+\$2,000)/3]$ as the Operating Yield Over Production Replenishment Assessment Unit Cost for the Water Year 2018/2019. The Natural Safe Yield Replenishment Assessment Unit Cost is 25% of that amount, or \$718.

ATTACHMENTS:

- Table 1: Water Year 2014 Unit Cost Calculation Data
- Table 2: Updated Unit Cost Data

Table 1

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 (\$/AF)	BASE UNIT COST YEAR	ADDITIONAL CONTINGENCY ADDED TO REFLECT LEVEL OF PROJECT DEVELOPMENT ⁽³⁾ (%)	UNIT COST INCLUDING ADDITIONAL CONTINGENCY (\$/AF)	UNIT COST INFLATED @ 3% FROM COST BASIS YEAR TO YEAR REPLENISHMENT WATER COULD BECOME AVAILABLE (\$/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-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 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-lieu 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 MCVWD.
- (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.

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 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⁾	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.				

ATTACHMENT 5

**REPLENISHMENT ASSESSMENT
CALCULATIONS FOR WY 2018**

WATERMASTER PRODUCER ALLOCATIONS WATER YEAR 2018 IN ACRE-FEET (AF)													
INCLUDING A 10% TRIENNIEL REDUCTION FOR 100% OF THIS WATER YEAR													
Initial Basin-Wide Operating Yield ⁽¹⁾			3360.00			Coastal Operating Yield ⁽²⁾			2716.00				
Natural Safe Yield (NSY) ⁽³⁾			3000.00			Laguna Seca Operating Yield ⁽²⁾			644.00				
ALTERNATIVE PRODUCER ALLOCATIONS				ALTERNATIVE PRODUCER AMOUNT PUMPED WY 2018									
Coastal Subarea ⁽⁴⁾		AF	Laguna Seca Subarea ⁽⁴⁾		AF	Coastal Subarea ⁽⁴⁾		AF	Laguna Seca Subarea ⁽⁴⁾		AF		
Seaside (Golf)		540.00	Nicklaus Club Monterey		251.00	Seaside (Golf)		511.90	Nicklaus Club Monterey		143.00		
SNG		149.00	Bishop		320.00	SNG		0.00	Bishop		239.87		
Calabrese		6.00	York School		32.00	Calabrese		0.07	York School		16.83		
Mission Memorial (Alderwood)		31.00	Laguna Seca County Park		41.00	Mission Memorial (Alderwood)		14.43	Laguna Seca County Park		21.95		
Sand City		9.00				Sand City		1.09					
Total ⁽⁵⁾		735.00	Total ⁽⁵⁾		644.00	Total ⁽⁵⁾		527.47	Total ⁽⁵⁾		421.65	Total Alternative Producer WY 2018 Production 949.13	
STANDARD PRODUCER ALLOCATIONS													
Coastal Operating Yield Available to Standard Producers (AF)				1981.00		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)	77.53%	90.44%	1791.62	CAW	45.13%	100.00%	0.00						
Seaside (Municipal)	6.39%	7.42%	146.99										
Granite Rock	0.60%	0.70%	13.87										
D.B.O. Development No. 30	1.09%	1.27%	25.16										
Calabrese (Cypress Pacific Investors LLC)	0.15%	0.17%	3.37										
Total	85.75%	100.0%	1981.00	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	Water Rights Transferred / Sold DBO to CAW ± Upper Ragsdale	Total Producer NSY (AF) (NSY Available + Free Carryover Credits)	Total Authorized Production Current WY (Base Water Right Plus All Carryover) ⁽⁶⁾	Actual AF Pumped by Producer in WY 2018	Free Carry over Credits to WY 2019	Not-Free Carry over Credits to WY 2019	Stored Water Credits to WY 2019
		NSY 3000 - 949.13 AF =	2050.87										
California American Water	1791.62	90.44%	180.60	0.00	706.49	0.16	2.15	182.91	2500.41	2229.45	182.91	270.96	144.78
Seaside (Municipal)	146.99	7.42%	152.17	0.00	0.00	0.00	0.00	152.17	146.99	184.63	0.00	0.00	0.00
Granite Rock	13.87	0.70%	14.36	166.32	86.45	0.00	0.00	180.68	266.63	0.00	180.68	41.32	0.00
D.B.O. Development No. 30	25.16	1.27%	26.05	317.77	166.30	(0.16)	(2.15)	341.51	506.92	0.00	341.51	62.45	0.00
Calabrese (Cypress Pacific Investors LLC)	3.37	0.17%	3.49	10.87	1.85	0.00	0.00	14.95	15.99	0.00	14.95	1.73	0.00
Total	1981.00	100.00%	376.67	494.97	961.07	0.00	0.00	871.63	3437.04	2414.08	719.46	376.46	144.78

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.
(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)
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).

CALCULATION OF REPLENISHMENT ASSESSMENTS WATER YEAR 2018

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) 2018 Replenishment Assessments as follows:

					2018 Replenishment Assessment NSYO Unit Charge =	\$2,872.00			
					2018 Replenishment Assessment OSYO Unit Charge =	\$718.00			
					2018 Natural Safe Yield (NSY) Available to Standard Producers =	2,050.87			AF (3,000 AF NSY - 949.13 Alternative Producers 2018 Production)
Standard Producers	WY 2018 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	2,229.45	90.44%	1,854.80	374.65	\$ 1,075,994.80	2,500.41	-	\$ -	\$ 1,075,994.80
Seaside (Municipal)	184.63	7.42%	152.17	32.46	93,225.12	146.99	37.64	27,025.66	120,250.78
Granite Rock	-	0.70%	14.36	-	-	266.63	-	-	-
D.B.O. Development No. 30	-	1.27%	26.05	-	-	506.92	-	-	-
Calabrese (Cypress Pacific Inv.)	-	0.17%	3.49	-	-	16.09	-	-	-
Total Production	2,414.08	100.00%	2,050.87	407.10	\$ 1,169,219.92	3,437.04	37.64	\$ 27,025.66	\$ 1,196,245.58
Alternative Producers	WY 2018 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)	511.90	N/A	540.00	0.00	\$ -	540.00	0.00	\$ -	\$0
Security National Guaranty	-	N/A	149.00	0.00	-	149.00	0.00	-	-
Calabrese (Cypress Pacific Inv.)	0.07	N/A	6.00	0.00	-	6.00	0.00	-	-
Mission Memorial (Alderwoods)	14.43	N/A	31.00	0.00	-	31.00	0.00	-	-
City of Sand City	1.09	N/A	9.00	0.00	-	9.00	0.00	-	-
Nicklaus Club Monterey	143.00	N/A	251.00	0.00	-	251.00	0.00	-	-
Laguna Seca Golf Resort (Bishop)	239.87	N/A	320.00	0.00	-	320.00	0.00	-	-
York School	16.83	N/A	32.00	0.00	-	32.00	0.00	-	-
Laguna Seca County Park	21.96	N/A	41.00	0.00	-	41.00	0.00	-	-
Total Production	949.13	N/A	1,379.00	0.00	\$ -	1,379.00	0.00	\$ -	\$0