Committee Members

City of Seaside
Victor Damiani - Chair

California American Water
Chris Cook

City of Sand City
Mary Ann Carbone

Coastal Subarea Landowners
Paul Bruno

SEASIDE GROUNDWATER BASIN WATERMASTER

NOTICE
BUDGET AND FINANCE COMMITTEE MEETING, SEPTEMBER 19, 2022
3:30 P.M. – via Zoom Teleconference

AGENDA

IN KEEPING WITH GOVERNOR NEWSOMS EXECUTIVE ORDERS N-29-20 AND N-35-20, THE BUDGET AND FINANCE COMMITTEE MEETING WILL NOT BE HELD IN PERSON YOU MAY ATTEND AND PARTICIPATE IN THE MEETING AS FOLLOWS: JOIN FROM A PC, MAC, IPAD, IPHONE OR ANDROID DEVICE (NOTE: ZOOM APP MAY NEED TO BE DOWNLOADED FOR SAFARI OR OTHER BROWSERS PRIOR TO LINKING) BY GOING TO THIS WEB ADDRESS:
https://us02web.zoom.us/j/7265830564?pwd=RkFJbUpTUDNsNm9hbUV0YUkzM1Y4QT09
If joining the meeting by phone, dial either of these numbers:
+1 408 638 0968 US (San Jose) +1 669 900 6833 US (San Jose)
If you encounter problems joining the meeting using the link above, you may join from your Zoom screen using the following information:
Meeting ID: 837 9730 6932 **Password:** 341244

The public may comment 3 minutes on any item within the committee's jurisdiction.

Action Items:

1. Fiscal Year 2023 Annual Budgets
   A. Administrative Fund 3
   B. Monitoring and Management Fund—Operations 5
   C. Monitoring and Management Fund—Capital 11
   D. Replenishment Fund (Informational only) 23
2. Replenishment Assessment Unit Costs for Natural Safe Yield and Operating Yield Overproduction for Water Year October 1, 2022 through September 30, 2023 25

Other Items: None

If requested, the agenda and documents in the agenda packet shall be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof.

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Watermaster Budget and Finance Committee

FROM: Laura Paxton, Administrative Officer (AO)

DATE: September 19, 2022

SUBJECT: Proposed Fiscal Year (Calendar Year) 2023 Annual Administrative Fund Budget

RECOMMENDATION:
Recommended the Board approve the attached proposed Administrative Fund Budget for FY 2023.

DISCUSSION:
The court decision states that next fiscal year's budgets must be approved by the Board of Directors no later than the end of October each year in order for tentative budgets to be circulated to each adjudication Party "no earlier than November 1 and no later than November 15" each fiscal year.

The need for legal services in 2022 has been minimal with $6,500 spent to date. There is nothing foreseen for 2023 of legal significance. A $25,000 administrative reserve is in place that could cover unforeseen legal issues that may arise. Therefore, the Legal line item has been reduced to $12,000.

The Watermaster Public Awareness Committee approved developing a 3D rendering of the Seaside Groundwater Basin for presentations and ultimate placement on the Watermaster website. $3,000 was committed to that effort in 2022, and $3,000 more is being proposed to keep the 3D model updated and revised so it can be tailored to meet the needs of what is presented by the committee, and for the web administrator to develop the web page and post the 3D model.

FISCAL IMPACT:
An estimated $39,500 in unspent 2022 funds are expected to be carried over to 2023.

An Administrative Fund Assessment of $60,500 is proposed:
$60,000(AO)+$12,000(Legal)+$3,000(PAC)+$25,000(Reserve) = $100,000-$39,500(Carryover) = $60,500

The assessments for the parties required to contribute to the Administrative Fund are:

California American Water 83.0%	$50,215
City of Seaside 14.4%	8,712
City of Sand City 2.6%	1,573
	$60,500

ATTACHMENTS
1) Proposed Administrative Fund Budget for FY (Calendar Year) 2023

Seaside Groundwater Basin Watermaster
Administrative Fund Budget
Proposed Budget September 19, 2022
Administrative Year 2023

	2022 Adopted Adjusted Budget 5/4/2022	2022 Estimated Total	2023 Proposed Budget
Assessment Income			
Reserve/Rollover*	$ 34,500	$ 52,000	$ 39,500
Administrative Assessment	65,500	65,500	60,500
Mission Memorial Legal Costs		8,500	
Totals	100,000	126,000	100,000
Expenditures			
Contractual Services - Administrative	55,000	55,000	60,000
Legal Services	20,000	6,500	12,000
Public Awareness Committee	3,000	3,000	3,000
Total Expenses	78,000	61,500	75,000
Total Available	22,000	64,500	25,000
Less Reserve	22,000	25,000	25,000
Net Available	$ -	$ 39,500	$ -

** Note: The reserve/rollover balance of $39,500 was determined upon completion by Watermaster staff of a detailed reconciliation from 2006 through August 2022 of the Administrative Fund financial records held at the Watermaster office.*

SEASIDE BASIN WATER MASTER
BUDGET & FINANCE COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	September 19, 2022
AGENDA ITEM:	1. B. & C.
AGENDA TITLE:	Approve the FY 2023 Monitoring and Management Program (M&MP) Operations and Capital Budgets
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Attached are the proposed M&MP Operations and Capital Budgets for 2023 and 2024. The Board has asked that two-year budgets be developed to alert the Board to potential changes in scope and/or cost in near future years. Only the 2023 budgets are before the TAC for approval, the 2024 budgets are for information only.

The following are comments and/or principal revisions from the 2022 M&MP Budget:

Technical Program Manager: Although the Groundwater Sustainability Plan for the adjacent Monterey Subbasin has been completed and was submitted in early 2022 by the Salinas Valley Basin and the Marina Coast Water District Groundwater Sustainability Agencies, there will continue to be regular meetings of their GSP-related committees that I serve on representing the Watermaster. Also, there will likely be further work related to obtaining replenishment water for the Basin, as well as the installation of a monitoring well to replace FO-9 Shallow. Therefore, I anticipate that the 2023 workload will be similar to that of 2022, so the proposed line-item budget amount has been maintained at $75,000 in 2023.

Tasks Involving MPWMD Montgomery & Associates: The scopes-of-work for both MPWMD and Montgomery & Associates are essentially unchanged from 2022. However, both will have hourly-rate increases in 2023, so the costs of the Tasks in which they are involved will all reflect somewhat higher dollar amounts in 2023 compared to 2022. MPWMD's costs are expected to be about $920 higher in 2023 and Montgomery & Associates' costs are expected to be about $1,690 higher in 2023.

Task I.2.a.1 (Conduct Ongoing Data Entry/Database Maintenance Enhancement: Dean Paxton has been maintaining the Watermaster's website since its inception and his costs are covered in this line-item. Laura Paxton has asked that in 2023 he convert the format on the website from its current format to the WordPress format which she reports is now the industry standard for websites. If at some point in time maintenance of the website passes from Mr. Paxton to someone else, it would be much more expensive to have the current format maintained. In addition, the graphics being developed for the Watermaster's Public Awareness Committee are better suited for WordPress than the current format. Included in the proposed budget for this Task is $5,000 to make the format conversion, and an additional $100/month (from $200/month in 2022 to $300/month in 2023) for Mr. Paxton to maintain the website. His $200 monthly fee has not been increased in many years.

SEASIDE BASIN WATER MASTER
BUDGET & FINANCE COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	1. B. & C. (Continued)

Task I.2.b.3 (Collect Water Quality Samples): Task I.2.b.3 reflects reducing the induction logging of the Sentinel Wells from twice per year to once per year, as approved by the TAC and the Board earlier this year. The cost for this Task will be slightly reduced from the amount shown in the attached budget, once MPWMD revises its costs to reflect discontinuing the analysis for barium and iodide in the three monitoring wells where these two parameters have been historically monitored.

Task I.3.a.3 (Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions): The amount budgeted for this Task is unchanged from the 2022 amount. Included in this Task is an estimated $30,000 to perform additional Flow Direction/Flow Velocity analyses, if the Board wishes to perform such work, and $30,000 for other work the Board may wish to undertake related to basin management.

As a result of the changes described above, as indicated by the right-hand column titled "Comparative Costs from 2022 Budget" in Attachment 1, the proposed 2023 Budget is $10,052 higher ($324,930 - $314,878) than the 2022 Budget.

Following TAC approval of the 2022 M&MP and Budgets, they will be forwarded to the Budget and Finance Committee and then to the Board for approval.

It is anticipated that a new well to replace monitoring well FO-9 Shallow will be constructed in 2023, and the costs to install that well are included in the 2023 M&MP Capital Budget. The 2022 M&MP Capital Budget will cover the costs to plan and design that well, which is expected to be performed in late 2022.

ATTACHMENTS:	1. 2023 and 2024 M&MP Operations Budgets 2. 2023 and 2024 M&MP Capital Budgets
RECOMMENDED ACTION:	Approve, or make changes to, the attached Budgets and then recommend these for approval by the Board

Monitoring and Management Program Operations Budget For Tasks to be Undertaken in 2023								Comparative Costs from 2022 Budget
Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS[3]			Total	
				MPWMD	Private Consultants	Contractors		
Labor								
			Technical Project Manager	$0	$75,000	$0	$75,000	$75,000
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	$28,280	$0	$28,280	$27,560
	M.1.f		QA/QC	$0	$0	$0	$0	$0
	M.1.g		SGMA Documentation Preparation	$0	$2,464	$0	$2,464	$2,380
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]	$23,638	$8,600	$0	$32,238	$23,176
		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]	$20,042	$0	$0	$20,042	$21,490
		I. 2. b. 3.	Collect Water Quality Samples and Perform Sentinel Well Induction Logging[1][5]	$17,196	$0	$11,014	$28,210	$39,335
		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	$3,568	$0	$0	$3,568	$3,136
		I. 2. b. 7.	CASGEM Data Submittal for Watermaster's Voluntary Wells	$5,352	$0	$0	$5,352	$4,704
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	$60,000
	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	$27,176	$0	$27,176	$26,290
	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		**$69,796**	**$211,520**	**$11,014**		
							SUBTOTAL not including Technical Program Manager =	$217,330	$218,071
							Contingency (not including Technical Program Manager) @ 15%[4] =	$32,600	$21,807
							Technical Program Manager =	$75,000	$75,000
							TOTAL=	**$324,930**	**$314,878**

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 Subtask. As reported in the 2022 Annual Report, starting in WY 2023 the Sentinel Wells will be induction logged once per year (in September) rather than twice per year as had been the practice in preceding years.

(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 15% 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) $712 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 2023, but the planning and design of the well is expected to be performed in 2022. All of the costs for this work were contained in the Capital Budget for 2022, but only the planning and design work is expected to be charged to the 2022 Capital Budget. The costs for installation of the well have been included in the Capital Budget for 2023. No costs for any work on this well are included in the Operations Budget, all costs are included in the Capital Budgets.

(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) This Task is included to provide funds for the Watermaster to perform modeling and other investigative work to aid in making Basin management decisions. The line-item budget for this Task includes an estimated $30,000 to perform additional modeling to refine the evaluation performed in 2022 regarding the flow direction and flow velocity of seawater intrusion, if it were to occur. It includes an additional $30,000 for other work that the Board may wish to perform in 2023.

(11) The Model was updated and recalibrated in 2018, so no costs for this Task are anticipated in 2023.

(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 2023.

(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 2023 would only be used if geochemical modeling is performed in 2023 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 miitgation measures for any adverse water quality impacts the geochemical model predicts could occur from introducing desalinated water into the Basin.

(14) Not used.

(15) Includes $300/month for an outside consultant to maintain the Watermaster's website and post documents on it, and a one-time amount of $5,000 for him to reformat it into theWordPress format, which is now is the industry standard.. Also includes $2,230 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.

Monitoring and Management Program Operations Budget

For Tasks to be Undertaken in 2024[12]

Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS[3]			Total
				MPWMD	Private Consultants	Contractors	
Labor							
			Technical Project Manager	$0	$75,000	$0	$75,000
M.1 Program Administration							
	M.1.a		Project Budget and Controls	$0	$0	$0	$0
	M.1.b		Assist with Board and TAC Agendas	$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	$29,128	$0	$29,128
	M.1.f		QA/QC	$0	$0	$0	$0
	M.1.g		SGMA Documentation Preparation	$0	$2,538	$0	$2,538
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	$24,347	$8,858	$0	$33,205
		I. 2. a. 2.	Verify Accuracy of Production Well Meters	$0	$0	$0	$0
	I. 2. b.		Data Collection Program				
		I. 2. b. 1.	Site Representation and Selection[7]	$0	$0	$0	$0
		I. 2. b. 2.	Collect Monthly Water Levels[6]	$20,643	$0	$0	$20,643
		I. 2. b. 3.	Collect Quarterly Water Quality Samples[1][5][6]	$17,712	$0	$11,344	$29,056
		I. 2. b. 4.	Update Program Schedule and Standard Operating Procedures.	$0	$0	$0	$0
		I. 2. b. 5.	Monitor Well Construction[7]	$0	$0	$0	$0
		I. 2. b. 6.	Reports	$3,675	$0	$0	$3,675
		I. 2. b. 7.	CASGEM Data Submittal for Watermaster's Voluntary Wells	$5,513	$0	$0	$5,513
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	$0	$0	$0	$0
		I. 3. a. 2	Develop Protective Water Levels	$0	$0	$0	$0
		I. 3. a. 3	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	$0	$20,000	$0	$20,000
	I. 3. b.		Complete Preparation of Basin Management Action Plan	$0	$0	$0	$0
	I. 3. c.		Refine and/or Update the Basin Management Action Plan [11]	$0	$0	$0	$0
	I. 3. d		Evaluate Coastal Wells for Cross-Aquifer Contamination Potential[13]	$0	$0	$0	$0
	I. 3. e		Seaside Basin Geochemical Model[14]	$0	$0	$0	$0
I.4 Seawater Intrusion Contingency Plan							
	I. 4. a.		Oversight of Seawater Intrusion Detection and Tracking	$0	$0	$0	$0
	I. 4. b.		Analyze and Map Water Quality from Coastal Monitoring Wells	(Costs Included Under I.4.a)			
	I. 4. c.		Annual Report- Seawater Intrusion Analysis	$0	$27,991	$0	$27,991
	I. 4. e.		Refine and/or Update the Seawater Intrusion Response Plan[2][9]	$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 2019. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)			
		TOTALS CONSULTANTS & CONTRACTORS		**$71,890**	**$88,516**	**$11,344**	
						SUBTOTAL not including Technical Program Manager =	$171,750
						Contingency (not including Technical Program Manager) @ 15%[4]=	$25,762
						Technical Program Manager	$75,000
						TOTAL=	**$272,512**

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 Subtask.

(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 Tasks listed above at the time of preparation of this Budget, it is recommended that a 15% Contingency be included in the Budget.

(5) A portion of this cost is for maintaining sampling equipment that was installed in prior years.

(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.

(7) No additional monitoring well is expected to be constructed in 2024.

(8) 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.

(9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.

(10) Not used.

(11) If necessary to reflect knowledge gained from modeling work or other data sources. Since the BMAP was updated in 2018, no work on this Task is anticipated in 2024.

(12) Includes a 3% inflation factor on most annually recurring costs in the 2023 Budget, except the Technical Program Manager cost which has no inflation factor applied to it.

(13) No further work on this Task is anticipated in 2024.

(14) It is assumed that all work of this Task will be completed in 2023 and that no further work on this Task will be performed in 2024.

Monitoring and Management Program Capital Budget For Tasks to be Undertaken in 2023

A replacement for monitoring well FO-9 Shallow was initially expected to be installed in 2022, but is now not expected to be installed until 2023. The consultant is expected to plan and design the well in 2022 and for those costs to be paid out of the 2022 Capital Budget. However, the actual installation of the well is not expected to be performed until 2023, and for the installation work to be paid for out of the 2023 M&MP Capital Budget. The estimated cost for the well drilling contractor to install the well, and consultant costs to oversee that work, are included in this 2023 Capital Budget. It is hoped that there will be a 3-way cost sharing agreement between the Watermaster, MPWMD, and MCWD for that work. However, the Watermaster will likely have to pay the largest share of the cost. A scope and cost proposal provided to the Watermaster by its consultant, Montgomery & Associates, indicates that the well installation costs that are expected to be incurred in 2023 will be approximately $240K. This figure includes the well driller's costs, consultant costs for construction management, preparation and filing of the necessary Well Installation Report, and a small allowance for miscellaneous costs such as providing a source of water to the drilling site, permits, and approvals, etc. To ensure that the well can be installed in 2023, the amount budgeted for this Task is the full $240K. Assuming that a 3-way cost-sharing agreement can be achieved, the Watermaster's actual costs would be lower than this by some amount, depending on the agreement for allocating costs between the three parties.

Monitoring and Management Program Capital Budget For Tasks to be Undertaken in 2024

No Capital projects are anticipated to be undertaken in 2024, so this budget is $0.

SEASIDE BASIN WATER MASTER
BUDGET & FINANCE COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	September 19, 2022
AGENDA ITEM:	1. B. & C.
AGENDA TITLE:	Monitoring and Management Program (M&MP)
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At its July 13, 2022 meeting the TAC reviewed and discussed a Draft version of the proposed FY 2023 Management and Monitoring Program (M&MP). The only potential change to the Draft version that was discussed at that meeting was what the cost was to analyze water quality samples for barium and iodide, and whether these analyses could be discontinued as a cost-saving measure. Barium and chloride data has been useful in analyzing seawater intrusion potential in other vulnerable coastal groundwater basins, and these parameters are briefly mentioned in the Watermaster's annual Seawater Intrusion Analysis Reports. In 2012 water quality analyses in the three monitoring wells closest to the coast, MSC West, PCA, and FO-09, were expanded to include these two additional ions,

The two wells at each of these three locations are sampled quarterly for water quality, so each quarter 6 samples from these wells are analyzed for the basic panel of parameters, plus these two additional parameters. The additional cost to analyze for barium is $15 and for iodide it is $75 (higher because Monterey Bay Analytical Services has to subcontract with another lab to perform this analysis). So if analysis of these two parameters was discontinued at these wells the annual cost savings for the reduction in laboratory work would be approximately $2,160.

I contacted M&A for their recommendation on this matter, and the response Derrik Williams was:

> *I looked back at our earliest Seawater Intrusion memoranda. They mention the fact that other investigators have used barium and iodide in seawater intrusion investigations, but don't go into detail.*
>
> *Reviewing the original USGS report, it looks like both barium and iodide are used to discriminate between sources of saline water once it has been observed, not to identify incipient intrusion. We can identify higher salinity without barium or iodide. If we see increasing salinities, and if it is important to discriminate the source of salinity, we can restart sampling barium and iodide at that time. And discriminating the source of salinity might be unnecessary.*
>
> *Therefore, I think we can stop sampling for barium and iodide at this time.*

Sampling for and analyzing these constituents is an appreciable cost. If the TAC feels that the 10 years of background data for these parameters is sufficient, and in keeping with Mr. Williams' conclusions, then analysis of these parameters will be discontinued, and only resumed if the other water quality parameters are indicative of seawater intrusion.

Assuming the TAC approves discontinuing the analysis for these two parameters, the language in Task I. 2. b. 3 (Collect Water Quality Samples) has been revised to reflect this and the cost for this Task will be reduced accordingly.

SEASIDE BASIN WATER MASTER
BUDGET & FINANCE COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	1. B. & C. (Continued)

Under Task I. 3. a. 3 "Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions" the $60,000 budget includes the following: An estimated $30,000 for additional Flow Direction/Flow Velocity analysis, if the Board wishes to perform such work, and $30,000 for other work the Board may wish to undertake related to basin management.

The costs for the various tasks have been updated based on input received from MPWMD, Montgomery & Associates, and Martin Feeney. No other changes to the Draft version of the M&MP have been made from the draft version presented to the TAC at its July 13, 2022 meeting, and the version that is attached to this Agenda Item is the proposed Final 2023 M&MP.

ATTACHMENTS:	Proposed Final FY 2023 Seaside Groundwater Basin M&MP
RECOMMENDED ACTION:	Provide Input to the Technical Program Manager Regarding Any Corrections or Additions to the proposed Final FY 2023 M&MP, and recommend its approval to the Board

Seaside Groundwater Basin
2023 Monitoring and Management Program

The tasks outlined below are those that are anticipated to be performed during 2023. Some Tasks listed below are specific to 2023, 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** **($28,280)**	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 videoconference 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 videoconference 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** **($2,464)**	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. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program

I. 2. a. Database Management	
I. 2. a. 1 **Conduct Ongoing Data Entry and Database Maintenance/ Enhancement** **($32,238)**	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 2023. 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 2023.
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 2023.

I. 2 b. 2
Collect Water Levels
($20,492)

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.
($28,210)

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 have historically been logged twice a year. Because many years of logging data have shown essentially no change in aquifer water quality, beginning in WY2023 the frequency of induction logging of the Sentinel Wells will be reduced to once per year.

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). Since these analyses have now created 10 years of data, the analyses will no longer be performed starting in WY 2023, and will only be resumed if the other water quality parameters are indicative of seawater intrusion.

As discussed in the 2013 Annual Report, the Watermaster reduced the frequency of water quality sampling at monitoring well SBWM-5 (the Camp Huffman 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 was 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 2023.
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 2023.
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 2023. The costs for this work were included in the 2022 M&MP Capital Budget, and funds from that Budget will be used to perform the planning, design, and permitting for this work in 2022. The cost to install the is included in the 2023 M&MP Capital Budget. No costs for this work are included in the 2023 Operations Budget.
I. 2. b. 6 Reports ($3,568)	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 ($5,352)	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. 3 Basin Management

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 2023.
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, 2013, and again in 2022, the updated Model was used 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 or both 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, was performed in 2022 to aid the Watermaster in pursuing approaches to obtain that additional water for Basin replenishment. 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 or other work may be performed in 2023 to update the previous work. This Task includes a $60,000 allowance to perform further modeling or analyses pertaining to Basin management issues 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 2023. However, although no funds are budgeted for this Task in 2023, since the Groundwater Sustainability Plan (GSP) for the adjacent Monterey Subbasin of the Salinas Valley Groundwater Basin was completed in early 2022, at some point it may be appropriate to further update the BMAP to reflect the impacts of implementing that GSP.
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 2023.

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** **($27,176)**	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 induction 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 2023.
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.

Seaside Groundwater Basin Watermaster

Replenishment Fund

9/19/22

Water Year 2023 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2023)

Proposed 2023 Budget

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)	$ (6,174,826)	$ (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 agmt 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

Seaside Groundwater Basin Watermaster 9/19/22

Replenishment Fund Page 2

Water Year 2023 (October 1 - September 30) / Fiscal Year (January 1 - December 31, 2023)

Proposed 2023 Budget

Replenishment Fund		**2017**	**2018**	**2019**	**2020**	**WY 2021**	**Budget WY 2022**	**Totals WY 2006 Through 2022**	**Budget WY 2023**	**Projected Totals Through WY 2023**
Assessment Water Year		WY 16/17	WY 17/18	WY 18/19	WY 19/20	WY 20/21	WY 21/22		WY 22/23	
Unit Cost:	a	$2,872 / $718	$2,872 / $718	$2,872 / $718	$2,872 / $718	$2,947 / $737	$3,260/ $815		$3,476/ $869	
Cal-Am Water Balance Forward	b	**$ (676,704)**	**$ (491,747)**	**$ (48,797,949)**	**$ (47,979,852)**	**$ (46,855,121)**	**$ (46,855,121)**		**$ (46,735,121)**	
Cal-Am Water Production (AF)	c	*2,029.51*	*2,229.45*	*2,120.22*	*2,245.88*	*1,664.04*		*46,041.03*		
Cal-Am Water NSY Over-Production (AF)	d	*64.40*	*374.65*	*284.85*	*334.21*	-		*14,638.57*		
Exceeding Natural Safe Yield Considering Alternative Producers	e	$ 184,957	$ 1,075,995	$ 818,097	$ 959,859	$ -	$ 100,000	$ 33,650,034	$ 100,000	$ 33,750,034
Operating Yield Overproduction Replenishment	f				$ 164,872	$ -	$ 20,000	$ 1,142,753	$ 20,000	$ 1,162,753
Total California American	g	**$ 184,957**	**$ 1,075,995**	**$ 818,097**	**$ 1,124,731**	**$ -**	**$ 120,000**	**$ 34,792,786**	**$ 120,000**	**$ 34,912,786**
CAW Credit Against Assessment	h		$ (49,382,196)	$ -	$ -	$ -	$ -	$ (81,527,907)	$ -	$ (81,527,907)
CAW Unpaid Balance	i	***$ (491,747)***	***$ (48,797,949)***	***$ (47,979,852)***	***$ (46,855,121)***	***$ (46,855,121)***	***$ (46,735,121)***	***$ (46,735,121)***	***$ (46,615,121)***	***$ (46,615,121)***
City of Seaside Balance Forward	j	**$ (3,232,420)**	**$ (3,142,500)**	**$ (3,022,249)**	**$ (2,919,806)**	**$ (2,802,831)**	**$ (2,708,828)**		**$ (2,598,828)**	
City of Seaside Municipal Production (AF)	k	*188.31*	*184.63*	*178.40*	*181.65*	*174.69*		*3,733.83*		
City of Seaside NSY Over-Production (AF)	l	*30.47*	*32.46*	*27.82*	*32.06*	*25.52*		*1,235.62*		
Exceeding Natural Safe Yield Considering Alternative Producers	m	$ 87,512	$ 93,225	$ 79,893	$ 92,089	$ 75,197	$ 100,000	$ 2,960,242	$ 100,000	$ 3,060,242
Operating Yield Overproduction Replenishment	n	$ 2,409	$ 27,026	$ 22,550	$ 24,886	$ 18,806	$ 10,000	$ 203,734	$ 10,000	$ 213,734
Total Municipal	o	$ 89,920	$ 120,251	$ 102,443	$ 116,975	$ 94,003	$ 110,000	$ 3,163,977	$ 110,000	$ 3,273,977
City of Seaside - Golf Courses (APA - 540 AFY)										
Exceeding Natural Safe Yield - Alternative Producer	p	$ -	$ -	$ -	$ -	$ -		$ 201,406		$ 201,406
Operating Yield Overproduction Replenishment	q	$ -	$ -	$ -	$ -	$ -		$ 50,353		$ 50,353
Total Golf Courses	r	$ -		$ -	$ -	$ -		$ 251,759		$ 251,759
Total City of Seaside*	s	**$ 89,920**	**$ 120,251**	**$ 102,443**	**$ 116,975**	**$ 94,003**	**$ 110,000**	**$ 3,415,736**	**$ 110,000**	**$ 3,525,736**
City of Seaside Late Payment 5%	t							$ 88,887		$ 88,887
In-lieu Credit Against Assessment	u					-	-	$ (6,103,451)	-	$ (6,103,451)
City of Seaside Unpaid Balance	v	***$ (3,142,500)***	***$ (3,022,249)***	***$ (2,919,806)***	***$ (2,802,831)***	***$ (2,708,828)***	***$ (2,598,828)***	***$ (2,598,828)***	***$ (2,488,828)***	***$ (2,488,828)***
Mission Memorial Park (APA - 31 AFY)										
Mission Memorial Park Production (AF)	w	*13.74*	*14.43*	*16.07*	*20.00*	*46.77*	*31.00*	*332.89*		
Mission Memorial Park NSY Over-Production (AF)	x	-	-	-	-	*15.77*	-	*15.77*		
Exceeding Natural Safe Yield - Alternative Producer	y	$ -	$ -	$ -	$ -	$ 46,488	$ -	$ 46,488		$ 46,488
Operating Yield Overproduction Replenishment	z	$ -	$ -	$ -	$ -	$ 11,626	$ -	$ 11,626		$ 11,626
Board Approved (5/4/22) Credit Against Assessment						(33,114)		$ (33,114)	-	$ (33,114)
Mission Memorial Park Unpaid Balance	aa	$ -		$ -	$ -	***$ -***	$ -	$ -		$ -
Total Replenishment Fund Balance	bb	**$ (3,634,247)**	**$ (51,820,198)**	**$ (50,899,658)**	**$ (49,657,952)**	**$ (49,563,949)**	**$ (49,333,949)**	**$ (49,333,949)**	**$ (49,103,949)**	**$ (49,103,949)**
Replenishment Fund Balance Forward	cc	**$ (3,909,125)**	**$ (3,634,247)**	**$ (51,820,198)**	**$ (50,899,658)**	**$ (49,657,952)**	**$ (49,588,949)**		**$ (49,358,949)**	
Total Replenishment Assessments	dd	$ 274,877	$ 1,196,246	$ 920,540	$ 1,241,706	$ 94,003	$ 230,000	$ 38,297,410	$ 230,000	**$ 38,527,410**
Total Paid and/or Credited	ee		$ (49,382,196)			$ (25,000)	$ -	$ (87,656,358)	$ -	**$ (87,656,358)**
Grand Total Fund Balance	ff	**$ (3,634,247)**	**$ (51,820,198)**	**$ (50,899,658)**	**$ (49,657,952)**	**$ (49,588,949)**	**$ (49,358,949)**	**$ (49,358,949)**	**$ (49,128,949)**	**$ (49,128,949)**

SEASIDE GROUNDWATER BASIN WATERMASTER

TO: Watermaster Budget and Finance Committee
FROM: Laura Paxton, Administrative Officer
DATE: September 19, 2022
SUBJECT: Consider Approval of Unit Costs for Water Year 2022/23 Over Production Replenishment Assessment

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RECOMMENDATION:
Recommend to the Watermaster board at its October 5, 2022 board meeting to adopt a Replenishment Assessment Unit Cost of $3,476/AF and $869/AF for Natural Safe Yield and Operating Yield Overproduction, respectively, for Water Year 2023.

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 2022 will be used to calculate Replenishment Assessments for pumping that occurs during Water Year 2023 (October 1, 2021 through September 30, 2023).

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. In 2022, a blended unit cost value was calculated 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. 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.

DISCUSSION:
The attached Table includes updated data for the Pure Water Monterey Project (PWM) and its expansion (PWMX) as the expected delivery from both projects is 5,750AFY, up from 3,500AFY. In the attached Table, a blended unit cost value is provided for the MPWSP based on the updated PWM/PWMX unit cost. The blended unit cost for that combined project was updated from $4,948/AF to $5,596/AF. For purposes of the 2023 Replenishment Assess Unit Cost calculation, $2,808 was used as the RUWAP cost/AF.

The updated Unit Cost would therefore be $3,476/AF, calculated as: ($5,596+$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 $869.

ATTACHMENTS: Updated Unit Cost Data Table 2023; Water Year 2017; 2021; 2022; & 2014 Unit Cost Data

WATER YEAR 2023 (October 1, 2021-September 30, 2023)

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

POTENTIAL SOURCE OF REPLENISHMENT WATER	POTENTIAL DATE REPLENISHMENT WATER COULD BECOME AVAILABLE	POTENTIAL VOLUME OF WATER THAT COULD BE SUPPLIED BY THE PROJECT (AFY) [1]	BASE UNIT COST ($/AF)	BASE UNIT COST YEAR
Regional Desalination [2]	2024	6,250	$6,147	2021
Pure Water Monterey & PWMX [6]	2020	5,750	2,808	2021
Monterey Peninsula Water Supply Project (Combined Regional Desalination with Groundwater Replenishment Project)	PWM in 2020; Regional Desalination in 2024	9,750	**$5,596[3]**	2022
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

($5,596 + $2,025 + $2,808) / 3 =

$3,476 = 2023 Replenishment Assessment Unit Cost for NSY Overproduction

$3,476/4 = $869 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 sesalination plant having a 6.4 MGD capacity equivalent to 7,169 AFY. Only a portion of this amount might be available as initially unused capacity that could be used to help replenish the Seaside Basin For the RUWAP this is the total amount of non-potable water from this source. Only a portion of this amount might be used for in-lieu replenishment of the Seaside Basin. For the ASR Expansion Project this is the additional amount of water that could potentially be provided by this project (see footnote 4). For the PWM & PWMX this is the quantity of water that is being planned at this time by CAW for inclusion in its Monterey Peninsula Water Supply Project.

(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:
(6,250x$6,147 + 5,750x$2,808)/9,750 = $5,596

(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 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 REPLENISHMENT WATER COULD BECOME AVAILABLE	POTENTIAL VOLUME OF WATER THAT COULD BE SUPPLIED BY THE PROJECT (AFY) (1)	BASE UNIT COST ($/AF)	BASE UNIT COST YEAR
Regional Desalination (2)	2024	6,250	$6,147	2021
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: (6,250x$6,147 + 3,500x$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:

(6,250x$6,147 + 3,500x$2,442)/9.750 = **$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 2014 (October 1, 2013-September 30, 2014)

ANTICIPATED UNIT COSTS OF REPLENISHMENT WATER FOR 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]	LEVEL OF PROJECT DEVELOP-MENT	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 REPLENISH-MENT 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 MCWD.

(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.