M E E T I N G N O T I C E AND A G E N D A

TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, November 15, 2017
MEETING TIME: 1:30 p.m.
Monterey Regional Water Pollution Control Agency Offices
5 Harris Court, Building D (Ryan Ranch)
Monterey, CA 93940

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (712) 432-1212. Use the Meeting ID 355890617. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.

OFFICERS
Chairperson: Nina Miller, California American Water Company
Vice-Chairperson: Jon Lear, MPWMD

MEMBERS
California American Water Company | **City of Del Rey Oaks** | **City of Monterey**
City of Sand City | **City of Seaside** | **Coastal Subarea Landowners**
Laguna Seca Property Owners | **Monterey County Water Resources Agency**
Monterey Peninsula Water Management District

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SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the September 13, 2017 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.

ATTACHMENTS:	Minutes from this meeting
RECOMMENDED ACTION:	Approve the minutes

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
September 13, 2017

Attendees: TAC Members

City of Seaside – No Representative
California American Water – Nina Miller
City of Monterey – No Representative
Laguna Seca Property Owners –Bob Costa
MPWMD – Jon Lear
MCWRA – Tamara Voss
City of Del Rey Oaks – No Representative
City of Sand City – No Representative
Coastal Subarea Landowners – Paul Bruno (via telephone)

Watermaster
Technical Program Manager - Robert Jaques

Consultants
HydroMetrics – Georgina King (via telephone for Items 3, 4, & 5 only)

Others
None

The meeting was convened at 1:38 p.m. after a quorum had been established.

1. Public Comments
There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the July 12, 2017 Meeting
On a motion by Ms. Voss, seconded by Mr. Costa, the minutes from this meeting were unanimously approved as presented, with Mr. Bruno abstaining.

B. Sustainable Groundwater Management Act (SGMA) Update
Mr. Jaques summarized the agenda packet materials for this item. There was no other discussion.

3. Continued Discussion of Potential Changes in Groundwater Quality Resulting from Introducing New Sources of Water into the Aquifers

Mr. Jaques summarized the agenda packet materials for this item. He described a revised approach, rather than the one contained in the agenda packet, based on a conference call he had with Derrik Williams, Jon Lear, and Pueblo Water Resources representatives, as follows:

Step 1: MPWMD's consultant (Pueblo Water Resources) would 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 would be no water chemistry problems then there would be no need perform Step 2.

Step 2 (if needed): If the geochemical modeling in Step 1 indicates the potential for problems to occur, then HydroMetrics may use the Watermaster's existing 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.

The TAC was supportive of including geochemical modeling using this approach in the 2018 M&MP.

4. Consider Revisions to How the Seawater Intrusion Analysis Report (SIAR) is Prepared in FY 2018

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

Ms. King commented that most wells accept the Sentinel Wells do not show seasonal fluctuation. Mr. Lear said that only the coastal wells (approximately 10 total) are sampled 2 times or more per year. Only these could have seasonal fluctuation determined. All the others are sampled only once per year.

Ms. King said that statistical analysis of the wells that are only sampled once per year could be done.

Ms. Voss asked if the expense was necessary. She said she would want to review the SIAR to see what has been done in the past. Also, she was interested in knowing how many wells the statistical analysis would apply to.

Ms. King said this was mainly being recommended in order to be less subjective in determining whether there were water quality changes of significance.

Mr. Jaques suggested that perhaps the work could not be initially performed. Then, if information arose indicating that it would be beneficial, it could be done as a supplemental authorization funded through the contingency line-item in the budget.

There was a motion by Mr. Lear, seconded by Ms. Voss, to approve Mr. Jaques' recommendation. The motion passed unanimously.

5. Approve Work Plan for FY 2018 Monitoring and Management Program (M&MP) and FY 2018 and 2019 M&MP Operations and Capital Budgets

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

Ms. Miller asked what the actual expenses were this year to date. Mr. Jaques said he did not have that information, but knew that expenses were under budget.

Mr. Lear asked if the water level trend analysis could be done for the Laguna Seca Subarea in the SIAR in 2018. Ms. King responded yes. Mr. Lear said he would like to discuss that topic with Ms. King when the SIAR is being prepared. He noted that water levels are falling to the point that the level may fall below the well screen in the easterly-most monitoring well in the Laguna Seca Subarea, well FO – 04.

Mr. Jaques said he would revise the wording of Task I.3.e in accordance with the approach described under Agenda item 3 of today's meeting.

A motion was made by Mr. Lear, seconded by Ms. Voss to approve the 2018 Monitoring and Management Program Work Plan and the Operations and Capital budgets. The motion passed unanimously.

6. Schedule

Mr. Jaques reported that there were no significant changes in the schedule, but highlighted that there would be no October TAC meeting. There was no other discussion of this item.

7. Other Business

Mr. Lear provided an update on destruction of the PCA-East monitoring well. He explained that the old wellsite has been worked over and the well is no longer visible and he was not able to find it even with a metal detector. He has asked MPUSD, on whose property the well is located near the Seaside High School, to help dig it up so MPWMD can destroy it.

Mr. Jaques reported that in 2018 he will be gone on a trip all of the month of September. He described the following proposed revised schedule to address this:

- The Preliminary Draft 2019 M&MP documents would be included in the July 2018 TAC agenda.
- The August 2018 TAC meeting would be on the 3rd Wednesday, not the 2nd Wednesday of the month, to provide more time to prepare the M&MP Work Plan and Budgets for TAC approval.
- There would be no TAC meetings in September or October in 2018.
- The November 2018 TAC meeting would be on the 3rd Wednesday of the month as has been done in preceding years.

The TAC felt this was reasonable.

8. Set Next Meeting Date

Since no TAC business needs to be acted upon in October, there will be no need for an October TAC meeting.

The next regular meeting was set for Wednesday November 15, 2017 at 1:30 p.m. at the MRWPCA Board Room. Note that this will be the 3rd Wednesday in November, not the usual 2nd Wednesday of the month.

The meeting adjourned at 2:18 p.m.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

**** * * AGENDA TRANSMITTAL FORM * * ****

MEETING DATE:	November 15, 2017
AGENDA ITEM:	2.B
AGENDA TITLE:	Well Completion Logs for the Pure Water Monterey Groundwater Replenishment Project
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
Maureen Hamilton, Project Manager for the Pure Water Monterey Injection Wells, provided the attached well completion logs from their Monitoring Well 1 Deep and Monitoring Well 1 Shallow wells.

This is provided to the TAC for information.

ATTACHMENTS:	Well completion logs
RECOMMENDED ACTION:	None required

TRIPLICATE
Owner's Copy

Page 1 of 2

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. E0345825

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW 1D
Date Work Began 6/12/2017, Ended 6/23/2017
Local Permit Agency MONTEREY COUNTY
Permit No. 17-12841 Permit Date 6/30/2017

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)
DRILLING METHOD ROTARY FLUID WATER

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
0	290	MEDIUM SAND
290	305	FINE TO MEDIUM SAND
305	340	MEDIUM TO COARSE SAND
340	360	SILTY SAND WITH ORANGE STREAKS
360	365	FINE SAND, SILT, AND CLAY
365	395	FINE SAND AND SILT
395	405	FINE TO COARSE SAND AND SILT
405	415	MEDIUM AND COARSE SAND
415	420	SILTY AND SAND
420	425	FINE, MEDIUM AND COARSE SAND
425	445	SILT AND SAND
445	465	FINE TO MEDIUM SAND
465	505	MEDIUM TO COARSE SAND
505	515	SILTY SANDS
515	520	MEDIUM SAND
520	525	SILTY SAND
525	540	MEDIUM SAND
540	545	SILTY SAND
545	580	MEDIUM SAND WITH CONCRETIONS
580	630	MEDIUM TO CORSE SAND
630	635	MEDIUM SAND, LARGER ANGULAR CLASTS
635	675	MEDIUM TO COARSE SAND
675	715	COARSE SAND
715	720	COARSE SAND AND FINE GRAVEL
720	730	MEDIUM TO COARSE SAND
730	735	COARSE SAND AND FINE GRAVEL
735	765	COARSE SAND
765	775	FINE TO MEDIUM SAND
775	780	MEDIUM TO COARSE SAND
780	790	FINE TO MEDIUM SAND

TOTAL DEPTH OF BORING 833 (Feet)
TOTAL DEPTH OF COMPLETED WELL 820 (Feet)

WELL OWNER

Name MONTEREY PENINSULA WATER
Mailing Address 5 HARRIS COURT BLDG G
MONTEREY CA 93940
CITY STATE ZIP

WELL LOCATION

Address GENERAL JIM MORE / EUCALYPTUS
City SEASIDE CA
County MONTEREY
APN Book 031 Page 151 Parcel 062000
Township — Range — Section —
Latitude — DEG. MIN. SEC. — DEG. MIN. SEC.

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

— NEW WELL
MODIFICATION/REPAIR
— Deepen
— Other (Specify)
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG"

PLANNED USES (✓)

WATER SUPPLY
— Domestic — Public
— Irrigation ✓ Industrial
MONITORING ✓
TEST WELL —
CATHODIC PROTECTION —
HEAT EXCHANGE —
DIRECT PUSH —
INJECTION —
VAPOR EXTRACTION —
SPARGING —
REMEDIATION —
OTHER (SPECIFY) —

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER — (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 418 (Ft.) & DATE MEASURED —
ESTIMATED YIELD * 20 (GPM) & TEST TYPE AIR LIFT
TEST LENGTH 30 (Hrs.) TOTAL DRAWDOWN 0 (Ft.)
May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	520	12 1/4"	✓				PVC	4"	SCH80	
520	810	12 1/4"		✓			PVC	4"	SCH80	.020
810	820	12 1/4"	✓				PVC	4"	SCH80	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	135	✓			10.3 SACK
135	501		✓		QUICK GROUT
501	511		✓		HOLE PLUG
511	833			✓	2/12 SAND

ATTACHMENTS (✓)

— Geologic Log
— Well Construction Diagram
— Geophysical Log(s)
— Soil/Water Chemical Analysis
— Other —
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME BRADLEY & SONS
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
3625 S. HIGHLAND DEL REY CA 93616
ADDRESS CITY STATE ZIP
Signed Mary Salinas 07/07/17 414178
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

TRIPLICATE
Owner's Copy

Page 2 of 2

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

Owner's Well No. MW 1D

No. E0345825

Date Work Began 6/12/2017, Ended 6/23/2017

Local Permit Agency MONTEREY COUNTY

Permit No. 17-12841 Permit Date 6/30/2017

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)

DRILLING METHOD ROTARY FLUID WATER

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
790	795	MEDIUM TO COARSE SAND
795	815	MEDIUM AND COARSE SAND, FINE GRAVEL
815	820	MEDIUM/COARSE SAND, FINE GRAVEL
		ANGULAR SHELL FRAGMENTS
820	830	SAND, SILT AND CLAY, ANGULAR SHELL
		FRAGMENTS
830	833	DARK GRAY SOFT, STICKY SILT, SANDY CLAY

TOTAL DEPTH OF BORING 833 (Feet)

TOTAL DEPTH OF COMPLETED WELL 820 (Feet)

WELL OWNER

Name MONTEREY PENINSULA WATER

Mailing Address 5 HARRIS COURT BLDG G

MONTEREY CA 93940
CITY STATE ZIP

WELL LOCATION

Address GENERAL JIM MORE / EUCALYPTUS

City SEASIDE CA

County MONTEREY

APN Book 031 Page 151 Parcel 062000

Township ____ Range ____ Section ____

Latitude ____ DEG. ____ MIN. ____ SEC. ____ DEG. ____ MIN. ____ SEC.

LOCATION SKETCH

NORTH

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

— NEW WELL

MODIFICATION/REPAIR
— Deepen
— Other (Specify)

— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG"

PLANNED USES (✓)

WATER SUPPLY
— Domestic — Public
— Irrigation ✓ Industrial

MONITORING ✓
TEST WELL —
CATHODIC PROTECTION —
HEAT EXCHANGE —
DIRECT PUSH —
INJECTION —
VAPOR EXTRACTION —
SPARGING —
REMEDIATION —
OTHER (SPECIFY) —

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 418 (Ft.) & DATE MEASURED ____

ESTIMATED YIELD * 20 (GPM) & TEST TYPE AIR LIFT

TEST LENGTH 30 (Hrs.) TOTAL DRAWDOWN 0 (Ft.)

May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	520	12 1/4"	✓				PVC	4"	SCH80	
520	810	12 1/4"		✓			PVC	4"	SCH80	.020
810	820	12 1/4"	✓				PVC	4"	SCH80	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	135	✓			10.3 SACK
135	501		✓		QUICK GROUT
501	511		✓		HOLE PLUG
511	833			✓	2/12 SAND

ATTACHMENTS (✓)

— Geologic Log
— Well Construction Diagram
— Geophysical Log(s)
— Soil/Water Chemical Analysis
— Other ____

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME BRADLEY & SONS
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

3625 S. HIGHLAND DEL REY CA 93616
ADDRESS CITY STATE ZIP

Signed Mary Dalgas 07/07/17 414178
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

TRIPLICATE
Owner's Copy

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. E0345826

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./ STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW 1S
Date Work Began 6/26/2017, Ended 6/30/2017
Local Permit Agency MONTEREY COUNTY
Permit No. 17-12842 Permit Date 6/30/2017

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL — HORIZONTAL — ANGLE — (SPECIFY)
DRILLING METHOD ROTARY FLUID WATER

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain, size, color, etc.*
0	290	MEDIUM SAND
290	305	FINE TO MED SAND
305	340	MEDIUM TO COARSE SAND
340	360	SILTY SAND WITH ORANGE STREAKS
360	365	FINE SAND, SILT AND CLAY
365	395	FINE SAND AND SILT
395	405	FINE TO COARSE SAND AND SILT
405	415	MEDIUM AND COASE SAND
415	420	SILT AND SAND
420	425	FINE, MEDIUM, AND COARSE SAND
425	445	SILT AND SAND
445	460	FINE TO MEDIUM SAND

TOTAL DEPTH OF BORING 460 (Feet)
TOTAL DEPTH OF COMPLETED WELL 450 (Feet)

WELL OWNER

Name MONTEREY PENINSULA WATER
Mailing Address 5 HARRIS COUT, BUILDING G
MONTEREY CA 93940
CITY STATE ZIP

WELL LOCATION

Address GENERAL JIM MORE / EUCALYPTUS
City SEASIDE CA
County MONTEREY
APN Book 031 Page 151 Parcel 062000
Township ____ Range ____ Section ____
Latitude ____ DEG. MIN. SEC. ____ DEG. MIN. SEC.

LOCATION SKETCH

NORTH / WEST / EAST / SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

— NEW WELL
MODIFICATION/REPAIR
— Deepen
✓ Other (Specify)
— DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

WATER SUPPLY
— Domestic — Public
— Irrigation ✓ Industrial
MONITORING ✓
TEST WELL —
CATHODIC PROTECTION —
HEAT EXCHANGE —
DIRECT PUSH —
INJECTION —
VAPOR EXTRACTION —
SPARGING —
REMEDIATION —
OTHER (SPECIFY) —

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ____ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL 418 (Ft.) & DATE MEASURED 6/26/2017
ESTIMATED YIELD * 20 (GPM) & TEST TYPE AIR LIFT
TEST LENGTH 30 (Hrs.) TOTAL DRAWDOWN ____ (Ft.)
May not be representative of a well's long-term yield.

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	380	12 1/4"	✓				PVC	4"	SCH80	
380	440	12 1/4"		✓			PVC	4"	SCH80	.020
440	450	12 1/4"	✓				PVC	4"	SCH80	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	190	✓			10.3 SACK
190	360		✓		QUICK GROUT
360	370		✓		3/8 HOLEPLUG
370	460			✓	2/12 SAND

ATTACHMENTS (✓)

— Geologic Log
— Well Construction Diagram
— Geophysical Log(s)
— Soil/Water Chemical Analysis
— Other ____
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME BRADLEY & SONS
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
3625 S. HIGHLAND ADDRESS DEL REY CITY CA STATE 93616 ZIP
Signed [signature] WELL DRILLER/AUTHORIZED REPRESENTATIVE
07/07/17 DATE SIGNED
414178 C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	2.C
AGENDA TITLE:	Sustainable Groundwater Management Act (SGMA) Update
PREPARED BY:	Robert Jaques, Technical Program Manager

At the State level:
Since my last update, I have not received any new materials from the State that would impact the Watermaster.

At the Monterey County level:
At its October 12, 2017 meeting the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) approved their Advisory Committee's recommended appointment of Bob Jaques to that Committee. Thus, the Watermaster will have a direct means of communicating and coordinating with the SVBGSA. The Advisory Committee normally meets every other month, and I will attend those meetings whenever issues pertaining to topics of interest to the Watermaster are on the agenda.

At that same meeting the SVBGSA approved Mr. Gary Peterson to serve as its General Manager, through a contract with Regional Government Services (RGS). Mr. Peterson has been serving as the Public Works Director for the City of Salinas and as the interim General Manager of the SVBGSA. The Joint Powers Agreement forming the SVBGSA calls for the appointment by the Board of Directors of an "Executive Director." That position was originally envisioned to be an employee of the SVBGSA. The Board subsequently determined to contract with RGS to provide the person to fill this position. In order to distinguish the positions, and avoid any implication of an employment status, the position provided by RGS will be called the General Manager. The Board may consider appointment of an Executive Director at a future time.

Mr. Petersen is expected to begin his RGS assignment in the immediate future. As the RGS project leader for the administrative team assigned to the SVBGSA, he will lead agency support services, and have full responsibility for supporting the Board's goals to establish a Groundwater Sustainability Plan and a long-term fiscal foundation for the agency.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	2.D
AGENDA TITLE:	Letter from MCWD Proposing to Sell Water to Replenish the Seaside Basin for Use in the Ord Community
PREPARED BY:	Robert Jaques, Technical Program Manager

The Watermaster received the attached letter from the Marina Coast Water District (MCWD) proposing to sell water to the Watermaster to help replenish the Seaside Basin. The water would be limited to use within the Ord Community portion of the former Fort Ord.

I anticipate that the Watermaster Board will want the TAC's review of the letter in order to identify issues that will need to be clarified before the Board considers the proposal. The following are issues that I believe need to be clarified:

- In paragraph 1 the letter states in part "…Nothing in this offer...restricts MCWD's or the Watermaster's discretion with respect to any activity or project developed in accordance with this offer, including MCWD's consideration of any alternatives and mitigation measures for such activities or projects." What types of activities or projects might MCWD undertake that would affect the delivery of water under the proposal? What types of alternatives or mitigation measures might be undertaken by MCWD, and how would they affect delivery of water?
- In paragraph 1 of page 1 the letter states in part that MCWD intends that CEQA, and all other applicable environmental compliance laws, will be fully complied with prior to any binding decisions with respect to the water sale. What issues associated with the proposal would need to be addressed in the CEQA process, or in complying with applicable environmental compliance laws? How time-consuming and difficult would it be to achieve compliance with these requirements?
- The figure attached to the letter needs to be updated to reflect the basin boundary revisions made by DWR in its Bulletin 118 to show the Adjudicated Seaside Basin.
- In paragraph 2 of page 1 the letter states in part that MCWD has excess groundwater allocations for existing and projected near term demands and is willing to explore synergistic arrangements with the Watermaster. What are these allocations? How are they determined? How long do they last? Who administers/regulates these allocations? Can the administering/regulating authority change the allocations or are they fixed and guaranteed?
- Is the groundwater that MCWD proposes to sell of potable quality as-is, or would treatment be required before it could be used or injected into the Seaside Basin?
    - If the water were to be injected into the basin for replenishment purposes how and where would it be injected?
- In paragraph 2 of page 2 the letter states that MCWD would provide 4,300 AF over a six-year period. If 700 AFY were provided this would total 4,200 AF, not 4,300 AF.
- In paragraph 4 of page 2 the letter states in part that the water provided by MCWD would replace Cal Am's need to use 700 AFY of MPWSP desalinated water to payback the Watermaster during at least the term of this sale. Why would Cal Am want to do that, since Cal Am would still have the obligation, under its Agreement with the Watermaster, to repay 700 AFY? How would doing this benefit the Seaside Basin?

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	2.D (Continued)

- In paragraph 5 of page 2 the letter states in part that "…none of the water from this sale may be directly used outside of MCWD's Ord Community service area…" MCWD provides the water supply to this area and has no wells in the Seaside Basin. How could the water be provided to the Watermaster in such a manner that it would only be delivered into that area?
- In paragraph 5 of page 2 the letter also states that the sale of this water would need the approval of the CPUC and the SWRCB. What issues would those parties be concerned about which might affect their willingness to grant their approvals? How long would it take to get those approvals? Would the Watermaster incur any expenses associated with getting them?
- In paragraph 5 of page 2 the letter also states that if the CPUC authorized Cal Am to acquire this water then Cal Am would have to submit to the SWRCB a revised set of milestones that would take this water into account. Would Cal Am want to do this?
- In paragraph 2 of page 3 the letter lists three conditions of the sale.
  - The first condition calls for the water to be sold to the Watermaster. Where would the money come from to purchase the water?
  - The second condition sets a price of $2,872 per AF which is the Watermaster's Replenishment Assessment unit price. That unit price was developed by the Watermaster through a volume-weighted blending of estimated water costs from several potential water supply projects. The Watermaster's intent in purchasing any water for replenishment would be to acquire it at the lowest possible cost, which would presumably be no more that the supplier's cost to provide the water. MCWD's cost to supply the water would likely be much lower than $2,782/AF.
  - The third condition prohibits the use of any of this water on the Peninsula. Thus, while the water could be of potential benefit to the Basin, it would not benefit Cal Am in fulfilling its water supply obligations. Given this, would Cal Am be interested in accepting the offer?
  - Would the Watermaster incur any costs, other than to purchase the water, if it accepted MCWD's offer?

The TAC is invited to add to this list any other issues it feels warrant clarification. This information will then be provided to the Board for its use.

ATTACHMENTS:	MCWD Letter
RECOMMENDED ACTION:	Identify issues in the proposal that need clarification and provide that information to the Board for their use

MARINA COAST WATER DISTRICT

11 RESERVATION ROAD, MARINA, CA 93933-2099
Home Page: www.mcwd.org
TEL: (831) 384-6131 FAX: (831) 883-5995

September 27, 2017

Board of Directors
Seaside Groundwater Basin Watermaster
PO Box 51502
Pacific Grove, CA 93950

Re: Offer to Sell 700 AFY of MCWD's Existing Potable Groundwater as Seaside Basin Replenishment Water starting in Water Year 2018 for use within the Ord Community portion of the Seaside Basin

Dear Board of Directors:

Nothing in this offer or any other agreement between the Marina Coast Water District (MCWD) and the Seaside Groundwater Basin Watermaster (Watermaster): (a) commits either Party to any particular decision regarding the proposed water sale; (b) confers any vested rights on either Party; or (c) restricts MCWD's or the Watermaster's discretion with respect to any activity or project developed in accordance with this offer, including MCWD's consideration of any alternatives and mitigation measures for such activities or projects. In addition, MCWD intends that CEQA, and all other applicable environmental compliance laws, will be fully complied with prior to any binding decisions with respect to the water sale. (See *Save Tara v. City of Los Angeles* (2008) 45 Cal. 4th 116.)

A significant portion of the Seaside Basin is within MCWD's Ord Community service area. See enclosed map. MCWD's Central Marina service area and the rest of the Ord Community service area are located predominantly within the adjoining Monterey Subbasin. We have a mutual interest in achieving groundwater sustainability within both subbasins. Much of the Seaside Basin's groundwater is exported to the Monterey Peninsula. However, the amount of allowable Seaside Basin groundwater pumping will be significantly reduced through Triennial Rampdowns starting in 2018 as prescribed in the Amended Seaside Basin Adjudication Decision unless outside water resources are obtained. In the interim, MCWD has excess groundwater allocations for existing and projected near term demands and is willing to explore synergistic arrangements with the Watermaster.

The MCWRA Act (Agency Act) exempts from the Act's export prohibition groundwater extracted from the Salinas Valley Groundwater Basin (SVGB) but used within the boundaries of Fort Ord, now MCWD's Ord Community, within the Seaside Basin.

As detailed below, MCWD is proposing an interim sale of 700 AFY of its excess groundwater to the Watermaster. This sale would provide at the least the following benefits to the Watermaster:

First, it provides Replenishment Water to the Watermaster and could prevent the Triennial Rampdown in Seaside Basin Pumping pursuant to Section III.B.2, page 18 of the Amended Seaside Basin Adjudication Decision. The Court may grant relief from the triennial rampdown if

> "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
>
> "a. (sic) Any combination of a and b which results in the decrease in Production of Native Water required by this decision."

This sale would satisfy Section III.B.2a by providing 4,300 AF over the six-year period 2018 through 2023 and, therefore, could provide relief from the two triennial rampdowns projected to begin in 2018 and in 2021.

On pages 20-21 of his 2016 Report to the Court, Watermaster attorney Russ McGlothlin suggested to the Court that the sale of 2,500 AF of potable water from MCWD to the City of Seaside should be considered as a reasonable basis to postpone the 2018-2021 rampdown because the 2,500 AF is greater than the three-year rampdown total of 1,600 AF (560 AF x 3 years). However, Mr. McGlothlin admitted that the above language from the Amended Decision requires the Watermaster, and not any of the Producers (e.g., City of Seaside), to buy the additional water. In his 2017 Report to the Court, Mr. McGlothlin referred back to this 2016 discussion.

Second, this sale would replace CalAm's need to use 700 AFY of MPWSP desalinated water to payback the Watermaster during at least the term of this sale. The Watermaster has entered into an agreement with CalAm for CalAm to replenish its over-pumping of the Seaside Basin by repaying 700 AFY for 25 years (plus) from the proposed MPWSP if and when the project becomes operational. This is the MPWSP DEIR/EIS Primary Project Objective #3.

Third, while none of the water from this sale may be directly used outside of MCWD's Ord Community service area, this sale may indirectly contribute toward preventing the SWRCB from reducing CalAm's authorized Carmel river diversion limit because of missed CDO milestone deadlines. This sale would need the approval of the CPUC. A preliminary and then final filing once approved by the CPUC would need to be made with the SWRCB by CalAm pursuant to Footnote 17, page 20, of SWRCB Order WR 2016-0016 (July 19, 2016), which states:

> If at any point prior to completion of the facilities listed in these Milestones the CPUC authorizes Cal-Am to acquire more than 1,000 afa of water from an alternative source, then the following shall occur. Cal-Am shall submit to the [SWRCB] Executive Director within 60 days a revised set of milestones taking this water supply source into account. If the proponents of the alternative project are unable to reach concurrence with Cal-Am on revised milestones to propose, the proponents may also submit revised milestones within that time period. The Executive Director shall determine whether to bring forward a recommendation to the State Water Board regarding amendment of the milestones.

For example, the SWRCB's Cease and Desist Order (CDO) Milestone Deadline for the issuance of a Certificate of Public Convenience and Necessity to Construct the MPWMD by the CPUC is September 30, 2018. If this sale is implemented during 2018 and prevents the Triennial Rampdown from occurring in 2018, then the Watermaster would not need to curtail CalAm's Seaside Basin pumping, which has the same effect as obtaining 700 AFY from an alternative source.

MCWD's offer is as follows:

1. Sell to the Watermaster 700 AFY of MCWD's potable well water as Replenishment Water during Calendar Years 2018 through 2023 – six years. From and after January 1, 2020, the Parties may extend the term of this agreement by mutual agreement.

2. The price for this water would be at the Watermaster's Water Year 2016/2017 Over Production Replenishment Assessment Rate of $2,872 per AF. The price per AF shall be adjusted annually based upon the then Over Production Replenishment Assessment Rate, but in no case shall the price per AF be less than $2,872 per AF.

3. Because of the Agency Act's export prohibition exemption for the Ord Community, any groundwater sold must only be used within that portion of the Ord Community within the Seaside Basin. Since this water must be used within the former Fort Ord within the Seaside Basin, none of this water can be sold for use on the Peninsula.

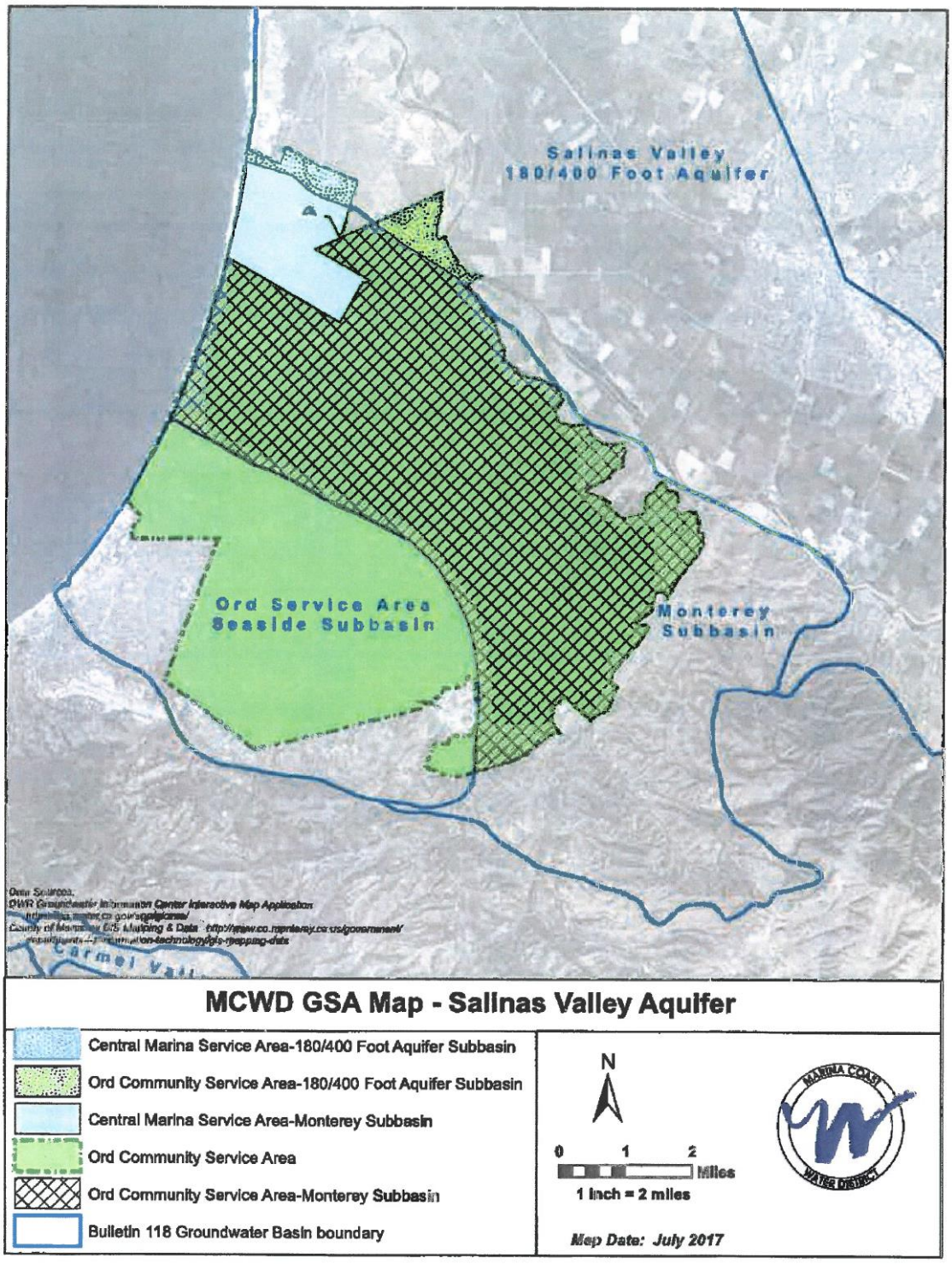
I am available to make a formal presentation of this offer to the Board of Directors. Please don't hesitate to contact me if you have any questions or need any additional information.

Very truly yours,

Keith Van Der Maaten
General Manager

Enclosure – Map

cc: Board of Directors, Marina Coast Water District


Salinas Valley
180/400 Foot Aquifer
Ord Service Area
Seaside Subbasin
Monterey
Subbasin
Data Sources:
DWR Groundwater Information Center Interactive Map Application
County of Monterey GIS Mapping & Data
MCWD GSA Map - Salinas Valley Aquifer
Central Marina Service Area-180/400 Foot Aquifer Subbasin
Ord Community Service Area-180/400 Foot Aquifer Subbasin
Central Marina Service Area-Monterey Subbasin
Ord Community Service Area
Ord Community Service Area-Monterey Subbasin
Bulletin 118 Groundwater Basin boundary
N
0 1 2
Miles
1 inch = 2 miles
Map Date: July 2017
MARINA COAST
WATER DISTRICT

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	2.E
AGENDA TITLE:	Monterey Peninsula Stormwater Resource Plan (MPSRP)
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

A study titled the **"**Monterey Peninsula Stormwater Resource Plan (MPSRP)" is being initiated by the entities participating in development of the Integrated Regional Water Management Plan for the greater Monterey Bay area.

Attached is background information describing the study.

Certain aspects of the study appear to have the potential to be of benefit to the Seaside Basin. Therefore, I have been invited to be a member of the Technical Stakeholder Group that will provide input to the study.

The consultants performing the study, Geosyntech Consultants, reports that they will begin conducting the analysis starting in about 3 weeks. The next communication with the technical stakeholder group will be in January, to share the results of the study.

ATTACHMENTS:	Background information on the MPSRP
RECOMMENDED ACTION:	None required

BACKGROUND INFORMATION

The entities involved in developing the Integrated Regional Water Management Plan for the area within which the Seaside Basin is located are initiating a study called the Monterey Peninsula Water Recovery Study. It will evaluate the feasibility of establishing a Peninsula-wide water recovery and reclamation system. The methodology will focus on identifying and evaluating potential projects to capture sources of wet and dry weather runoff within the Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management (IRWM) Region (the Planning Area) for water recovery and use. These water recovery projects are meant to reduce the Peninsula's dependence on the Carmel River, Carmel Valley Alluvial Aquifer, and adjudicated Seaside Groundwater Basin (currently the primary water supply sources in the Planning Area). The study will consider how to store, treat, and transport potential sources of runoff to existing water and wastewater infrastructure for use, but will not identify projects that expand the water and wastewater systems, or determine if this will be needed.

Study Objectives

The objectives of the Water Recovery Study include:

1. Examine the feasibility of a region-wide water recovery and reclamation system to reduce dependence on existing water supply sources.
2. Consider stormwater and non-stormwater sources (wet and dry weather runoff) and how the sources can be stored, treated, and transported.

Study Tasks

The tasks conducted as part of this Study include:

- Task A: Develop a memorandum describing the methodology used to examine the feasibility of peninsula-wide water recovery and reclamation system; conduct outreach to technical stakeholders.
- Task B: Use the methodology to identify projects focusing on treatment, transport, and storage, consider system optimization, and document the results in a report.
- Task C: Develop concept designs for the preferred project and one alternative project.
- Task E: Complete a CEQA checklist for the preferred project and prepare a 30% design.
- Task F: Develop a project implementation plan.

This memorandum is the deliverable associated with Task A. The methodology for identifying projects is described in Section 2 and the methodology for evaluating project feasibility is described in Section 3. Next steps associated with Tasks C, E, and F are described in Section 4.

Planning Area and Watersheds

The Planning Area is located in Central Coast Regional Water Quality Control Board (RWQCB Region 3) and lies between the Salinas River groundwater basin and the Big Sur coast. The Planning Area was established based on watershed and groundwater basin limits, portions of the near-shore environment areas affected by inland area activities, and takes into consideration jurisdictional limits, powers, and responsibilities for water resource management. The planning region is approximately 340 square miles and consists of coastal watershed areas in Carmel Bay and south Monterey Bay between Point Lobos on the south and Sand City on the north – a 38.3-mile stretch of the coast that includes two Areas of Special Biological Significance (Carmel Bay and Pacific Grove). The area encompasses the six Monterey Peninsula cities of Carmel-by-the-Sea, Del Rey Oaks, Pacific Grove, Monterey, Sand City, Seaside, and

extends into portions of the unincorporated area of Monterey County at the former Fort Ord, in the Carmel Highlands, Pebble Beach, the inland areas of Carmel Valley and the Laguna Seca area.

The U.S. Geological Survey (USGS) and California Department of Water Resources (DWR) watersheds that are located within the Planning Area will be used as the basis for the Water Recovery Study. The jurisdictional boundaries within these watersheds will also be used to further delineate planning priorities. The USGS and DWR watersheds in the region include:

- The Carmel River Basin watershed,
- Most of the Canyon Del Rey/ Frontal Monterey Bay watershed,
- A small portion of the Big Sur/ Frontal Pacific Ocean watershed, and
- A small portion of the El Toro Creek/ Salinas River watershed.

The Carmel River Basin watershed makes up the most area within the Planning Region (255 square miles) and is the only watershed fully contained within the Planning Area boundary. The Carmel River and the Carmel Valley Alluvial Aquifer (approximately 6.8 miles within the Carmel River Basin watershed) currently represent the largest source of potable water for the region. The watershed has less urban development than the Canyon Del Rey/ Frontal Monterey Bay watershed.

The Canyon Del Rey/ Frontal Monterey Bay watershed (69 square miles, approximately 53 of which are within the Planning Area) contains the majority of urbanized areas within the Planning Region, as well as a majority of the water demand. The watershed is underlain by the adjudicated Seaside Groundwater Basin and small portions of the Salinas Valley Groundwater Basin, which are hydraulically connected and used for water supply. The extent of these groundwater aquifers is 69 square miles, 25 square miles of which are within the Planning Area. Those 25 square miles make up 47% of the portion of the Canyon Del Rey/ Frontal Monterey Bay watershed that is within the Planning Area.

A small portion of the Big Sur/ Frontal Pacific Ocean watershed is within the Planning Region, consisting of approximately 24 square miles of the 167-square mile watershed. The watershed does not have a main groundwater basin within the Project Region, though there is some water supply from miscellaneous formations of groundwater within the watershed.

A very small portion of the El Toro Creek/ Salinas River watershed is within the Planning Region, consisting of approximately 6 square miles of the 415-square mile watershed. This area is east of the Canyon Del Rey/ Frontal Monterey Bay watershed and is entirely underlain by the Seaside and Salinas Valley Groundwater Basins.

Technical Stakeholder Group

The project team has identified a Water Recovery Study Technical Stakeholder Group, which includes participants in the region that are familiar with stormwater and wastewater distribution systems, treatment, and/or have technical knowledge of the Carmel River and Carmel Valley Alluvial Aquifer or the Seaside Groundwater Basin. The Technical Stakeholder Group will be asked to provide input on project evaluation once the initial analysis is complete. The list of Technical Stakeholders is provided at the end of this Background paper.

Water Recovery Study Methodology Overview

The Water Recovery Study methodology includes the following components:

1. Identification of Water Recovery Study projects, and
2. Evaluation of Water Recovery Study project feasibility characteristics.

In addition to the Water Recovery Study components described herein, additional analyses will be conducted to evaluate the Water Recovery Study projects as part of the Stormwater Resource Plan (SWRP).

Water Recovery Study Project Identification

The first step to conduct the Water Recovery Study is to identify potential projects that could recover wet and dry weather runoff for use for water supply. There are five categories of water recovery projects that will be considered in the study. They include:

- Lakes and Reservoirs
- Storm Drain Diversions to Sanitary Sewer
- Infiltration into a Water Supply Aquifer
- On-site Capture and Use
- Micro-treatment and Injection into Perched Aquifers

Of these five categories, the one that appears most applicable to the Seaside Basin is the third one, Infiltration into a Water Supply Aquifer. The scope of that portion of the study is described below:

Passive recharge into a water supply aquifer entails locating an infiltrating stormwater capture facility over a groundwater basin used for water supply. The two groundwater basins over which potential passive recharge projects will be identified include the Seaside Groundwater Basin and the Carmel Valley Alluvial Aquifer. Considerations will be made regarding the location of potential passive recharge projects above the aquifers.

Overbank flood waters can be considered a source of water recovery if it is stored on the floodplain and allowed to percolate into a water supply aquifer. Candidates for infiltration projects will include riparian areas where floodplain connectivity can safely increase without causing flood impacts to infrastructure. One such proposed project is the Carmel River Floodplain Restoration and Environmental Enhancement Project, led by the Big Sur Land Trust and located just east of Highway 1. The southern floodplain proposed for restoration does overlay the Carmel River Groundwater Basin, although yield from this portion of the aquifer for water supply is not appreciable due to environmental considerations associated with supporting the local steelhead salmon population. Additional riparian floodplains that have permeable soils and are located above aquifers used for water supply will also be identified for consideration, as feasible given time and budget constraints.

A geospatial opportunity analysis will be conducted to identify potential passive recharge projects. This analysis involves overlaying geographic information regarding physical constraints that could preclude infiltration. Physical constraints that will be identified and mapped as part of this effort include but are not limited to:

- Underlying soil type - National Resource Conservation Service (NRCS) Hydrologic Soil Group (HSG) ‘A’ and ‘B’ type soils are considered conducive for infiltration.
- Depth to groundwater – A separation of at least 5 feet from the base of a facility, potentially more if underlying infiltration rates are significantly high, is recommended to protect groundwater quality.
- Geotechnical hazards – Infiltration is not considered feasible if landslides are present or if there is high or very high liquefaction potential.
- Contamination – Adjacent or underlying soil or groundwater contamination creates an infeasible condition for groundwater recharge due to the potential for migration of pollution.

- Set-backs – Infiltration must be located a sufficient distance away from water supply wells and septic fields, for groundwater quality purposes. Set-backs from structures and utilities may also be needed to prevent infiltration from impacting structural stability.

After geospatial data associated with the constraints identified above are combined, locations that do not coincide with any of the identified constraints, that also overlie one of the identified water supply aquifers, can be identified as potentially feasible for infiltration. These potentially feasible locations (parcels and rights-of-way [ROWs]) will be further evaluated for hydrogeological considerations related to infiltrating into a water supply aquifer. For instance, not all runoff that is infiltrated, even if directly above a groundwater basin, can be considered instantaneously recovered by an aquifer due to evapotranspiration losses in the vadose zone and geologic hydraulic constrictions, which can affect the timeframe of recharge. Locations that are feasible based on geospatial surface examinations and hydrogeological considerations will be identified as physically feasible for infiltration.

Resulting locations physically feasible for infiltration will be further screened to identify locations with sufficient tributary drainage and undeveloped or open space area to implement regional projects, and/or locations that could be considered for smaller distributed infiltration projects. These locations will be considered opportunities for implementation of passive regional or distributed stormwater and dry weather runoff recharge projects.

Documentation

The findings for feasibility for each Water Recovery Study project will be documented in a feasibility characterization matrix, which will be included in a Water Recovery Study Report developed at the conclusion of the analyses.

Next Steps

Next steps for the project include conducting analyses associated with the SWRP, selecting one Water Recovery Study project and one alternative Water Recovery Study project for development of concept designs and completing 30% design, CEQA checklist (as part of the SWRP), and a project implementation plan for the selected Water Recovery Study project.

All Water Recovery Study projects will be included in the identified list of projects in the Monterey Peninsula SWRP, and will be analyzed as part of the SWRP project. This will entail classification and metrics-based evaluation.

Technical Stakeholder Group

Agency/Organization	Name	Contact Information
Monterey One Water	Jeff Condit	jeff@my1water.org
Monterey One Water	Alison Imamura	alison@my1water.org
Monterey One Water	Mark Malanka*	markm@mrwpca.com
Monterey One Water	Mike McCollugh	
Monterey Peninsula Water Management District	Larry Hampson	Larry@mpwmd.net
Monterey Peninsula Water Management District	Tom Lindberg*	Tom@mpwmd.net
Carmel Area Wastewater District	Drew Lander	Lander@cawd.org
City of Seaside	Scott Ottmar	sottmar@ci.seaside.ca.us
City of Monterey	Jeff Krebs	krebs@monterey.org
City of Monterey	Tricia Wotan	wotan@monterey.org
City of Monterey	Laurie Willamson	williamson@monterey.org
City of Pacific Grove	Milas Smith	msmith@cityofpacificgrove.org
City of Carmel	Agnes Topp	atopp@ci.carmel.ca.us
City of Sand City	Leon Gomez	lgomez@cdengineers.com
Monterey County	Tom Harty	hartytr@co.monterey.ca.us
Seaside Groundwater Basin Technical Manager	Bob Jaques	bobj83@comcast.net
Monterey Peninsula Regional Water Authority	Jim Cullem*	j.ecull@comcast.net
California American Water	Christopher Cook	Christopher.Cook@amwater.com
California American Water	Ian Crooks	Ian.Crooks@amwater.com
USGS	Rich Niswonger*	rniswon@usgs.gov
Monterey County Water Resources Agency	Howard Franklin*	franklinh@co.monterey.ca.us
Marina Coast Water District	Brian True*	btrue@mcwd.org
Big Sur Land Trust	Sarah Hardgrave	shardgrave@bigsurlandtrust.org
Stanford	Rosemary Knight*	rknight@stanford.edu

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	3
AGENDA TITLE:	Discuss Data Obtained from Conductivity and Temperature Profiling of the Sentinel Wells
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The attached Technical Memo from Martin Feeney describes the profiling of the Sentinel Wells that was performed in October 2017. The data from that work led to these conclusions:

- The water quality samples that have been collected in the past are representative of the water quality in the casing at the depths at which those samples were taken.
- There is high conductivity (high TDS) water at the bottom of the casing of SBWM#1 and SBWM#2 – wells with samples that have been elevated in specific conductance and chlorides. The source of this water remains unknown.
- There is very different water quality between the two aquifer zones (Purisima on top, underlain by Santa Margarita) in SBWM#4 that has always been reflected in the downhole samples.
- There has been entry of surface water into Sentinel Well SBWM#3. However in the perforated intervals, the fluid conductivity values document that water is moving through the casing and that the depth-specific samples are consistent with the values from the well prior to the entry of surface water.
- The activities of sampling and logging disturb stratification of water quality in the wells. However, this disturbance does not appear to affect the validity of the samples from the zones sampled.

Mr. Feeney or Ms. King will be available to respond to TAC questions about this work.

ATTACHMENTS:	Conductivity and temperature profiling data and explanatory Technical Memo from Martin Feeney
RECOMMENDED ACTION:	Provide direction on any follow-up work to be done as a result of this data

Martin B. Feeney
Consulting Hydrogeologist

P.G. 4634
C.E.G. 1454
C.Hg 145

TECHNICAL MEMORANDUM

To:	Seaside Basin Watermaster	Date:	November 7, 2017
From:	Martin Feeney, PG, CEG, CHg	Project No:	
Subject:	Sentinel Wells Fluid Resistivity Logging		

Introduction

Presented in this Technical Memorandum are the results from the fluid resistivity logging of the 4 monitoring wells on Fort Ord State Beach (Sentinel Wells). The Sentinel Wells were constructed in 2008 to allow periodic induction logging to capture changes in pore-fluid conductivity, throughout the entire thickness of the aquifer system, that would occur if seawater was intruding into the aquifer system. In addition, depth-specific downhole water quality samples within the perforated interval have been collected for laboratory analysis. Water level data are also collected. Induction logging has been performed semi-annually since 2008 and no significant change in pore-fluid conductivity has been detected in the lower aquifer system. Seasonal changes in conductivity have been captured in the shallower portion of the wells; the strata where seawater intrusion is known to exist.

Recently, there has been some divergence between the induction logging conductivity values and the laboratory conductivity values of the depth-specific samples in several of the wells; the conductivity values in the samples being higher than the induction logging values. This has raised questions as to the source of the high conductivity water in the samples, which conductance value to honor (induction or laboratory) and to the validity of the sampling methods. In response to these questions, it was proposed that the conductance of the water in the wells be measured to help answer these questions. This technical memorandum presents the findings of this work.

Methodology

The fluid resistivity logging was performed by Newman Well Logging in October 2017. The fluid resistivity tool was manufactured by Mount Sopris Geophysical and the tool lowered into the well on a wireline. The tool measures raw resistivity and temperature. The raw resistivity values can be corrected to specific conductance with the temperature data. Unlike induction logging which measures the aggregate conductance of the all materials in an approximate 6-foot diameter sphere surrounding the tool, down-hole fluid resistivity (inverse of conductance) measures the conductivity of the fluid in the casing. Whereas, induction logging "sees" through the water in the well, the casing, the gravel pack out into the formation, the fluid resistivity tool measures the resistivity of the fluid across a narrow gap in the tool within the 3-inch casing[1]. Given the differences in scale (1-inch to 6 feet), the induction tool is relatively insensitive to the conductance of the fluid in the casing. The result of the fluid resistivity logging reveals much about the nature of the water in the casing, although this information is not necessarily reflective of conditions in the aquifer in the 6 foot diameter surrounding the casing.

[1] In practice the spacing of the electrodes in the tool are spaced about a 1-inch apart.

P.O. Box 23240, Ventura, CA 93002 ♦ **Phone: 831/915-1115** ♦ e-mail mfeeney@ix.netcom.com

The results of the fluid resistivity logging are presented in Figures 1 through 5. Presented on the figures are the construction of each well, the corrected fluid conductivity values, the temperature values, the laboratory values for the depth-specific samples and the most recent induction logging conductivity. The reader is advised that all the data presented on the graphic were not collected at the same time. The induction logging and depth-specific sampling were performed in late August, and the fluid resistivity logging in early October. Also, some of the graphs of the data are presented in a 10X wrap mode. That is, when the trace goes off the right axis, it returns at 10 times the value from the left axis.

Each of the Figures is discussed in more detail below.

Results

SBWM#1 – Figure 1

The fluid conductivity, presented as Specific Conductance, is presented in the left-center panel with the blue trace. There is no fluid in the well until a depth of about 110 feet (water table). Below this depth, water conductivity is relatively high (1,500 to 2,000 uS) to the top of the perforations, where it sharply falls to about 400 uS. At the bottom, below 1480, there is water with a conductivity above 1,200 uS. The depth-specific laboratory water quality data, which was collected a month earlier than the fluid resistivity logging, are also shown in green. The upper water quality sample compares well with the fluid resistivity trace. The lower samples are significantly higher. It might be speculated that the conductivity kick at the bottom may move up seasonally[2] or that the act of sampling resulted in mixing. Water temperature in the well goes from about 16C degrees to about 38C degrees at the bottom of the well.

SBWM#2 – Figure 2

Again, fluid conductivity is in the left-center panel with the blue trace. The water table is at about 100 feet below ground surface. The conductivity of the water below the water surface is around 1000 uS to about 280 feet and steadily declines to the top of the perforations. Between the perforations 1150 and 1250 feet, the conductivity again increases to about 1000 uS. Again, there is poorer quality water in the bottom interval with a conductivity of about 2,500 uS. Depth-Specific samples match fairly well (the blue trace is wrapped, the green bar is not – labeled). Water temperature in the well goes from about 16C degrees to about 38C degrees at the bottom of the well.

SBWM#3 – Figure 3

Conductivity data documents the water table at a depth of approximately 80 feet. Below this depth the water is very fresh, averaging 100 uS to about the top of the perforations where it increases to approximately 400 uS. This fresh water above the perforations is interpreted as rainwater that entered the well during periods when the well head was flooded[3]. The increase in conductivity in the perforated interval is indicative that water is moving through the perforations. Both the conductivity values of both the depth-specific water quality samples compare well with the conductivity trace. Water temperature in the well goes from about 16C degrees to about 35C degrees at the bottom of the well.

[2] Either through the inland movement of a wedge of saline water or the upconing of saline water from the underlying Monterey Shale.

[3] It was observed that after sufficient rain, the paved area where SBWM#3 was located was flooded to the extent that there was as much as 6 inches of water above the well vault. It was also observed in the data logger record that the temperature would decline in the water column suggesting that water was entering casing. After this problem was discovered, a drain was installed in the low point of the paved area which has eliminated this problem. Also, the well seals/caps have been improved.

SBWM#4 – Figure 4 and 5

Two separate fluid resistivity logs were performed on SBWM#4, one following induction logging and sampling in August, the other as part of the logging of all the wells in October. Both runs of induction logging on SBWM#4 were performed with the same tool.

Figure 4 - Conductivity logging reveals water level in the well to be about 80 feet below surface. Below this depth fluid conductivity is about 850 uS slowly declining to the top of the perforations where it is around 750 uS. At 800 feet, the conductivity sharply increases to about 1000 uS to the bottom of the well. Because the well is shallower, the range in water temperature is lower. Water temperature in the well goes from about 18C degrees to about 32C degrees at the bottom of the well.

Figure 5 - This figure presents a comparison of the two fluid resistivity logs of SBWM#4; the one from August and the one performed in October. The curves are relativity similar; however the mixing of the water in the upper perforations with the water in the lower perforation can be seen in the smoother transition between the two zones in the cruse on the right. The trace on the right was performed after the sampling tool had been down the well twice and the induction tool had been to bottom. The depth-specific samples are presented on the contemporaneous fluid resistivity log. The laboratory values for conductivity compare well with the conductivity values from the logging.

Conclusions

- Fluid resistivity logging has confirmed that the depth-specific samples are representative of the water in the casing at the specified depth.
- Fluid resistivity logging has documented the presence of high conductivity (high TDS) water at the bottom of the casing of SBWM#1 and SBWM#2 – wells with samples that have been elevated in specific conductance and chlorides. The source of this water remains unknown.
- The fluid resistivity logging has confirmed the very different water quality between the two aquifer zones (Purisima on top, underlain by Santa Margarita) in SBWM#4 that has always been reflected in the downhole samples.
- There has been entry of surface water into Sentinel Well SBWM#3. However in the perforated intervals, the fluid conductivity values document that water is moving through the casing and that the depth-specific samples are consistent with the values from the well prior to the entry of surface water.
- The activities of sampling and logging disturb stratification of water quality in the wells. However, this disturbance does not appear to affect the validity of the samples from the zones sampled.

Figure 1

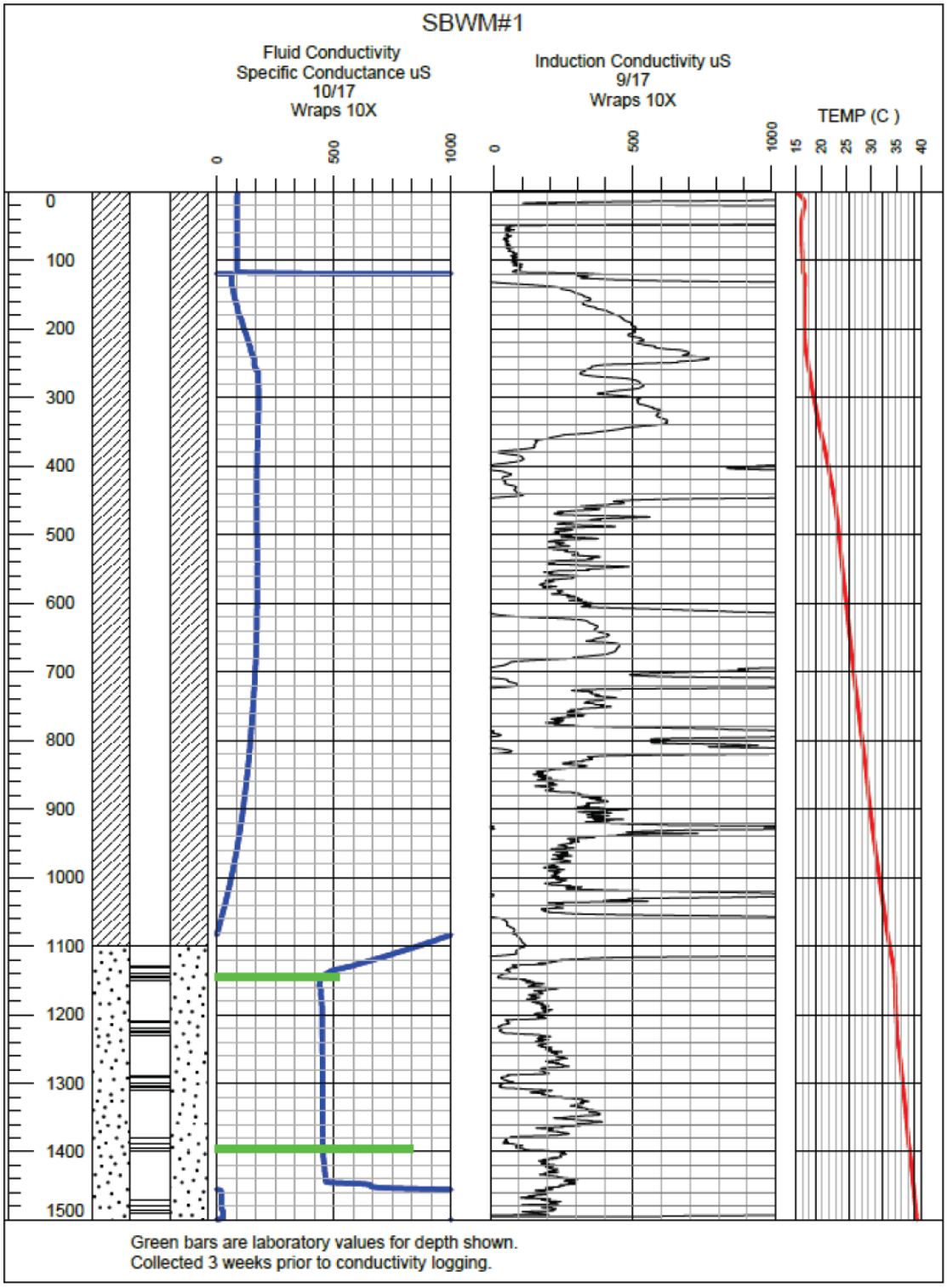

SBWM#1
Fluid Conductivity
Specific Conductance uS
10/17
Wraps 10X
Induction Conductivity uS
9/17
Wraps 10X
TEMP (C)
0
500
1000
15
20
25
30
35
40
100
200
300
400
500
600
700
800
900
1100
1200
1300
1400
1500
Green bars are laboratory values for depth shown.
Collected 3 weeks prior to conductivity logging.

Figure 2

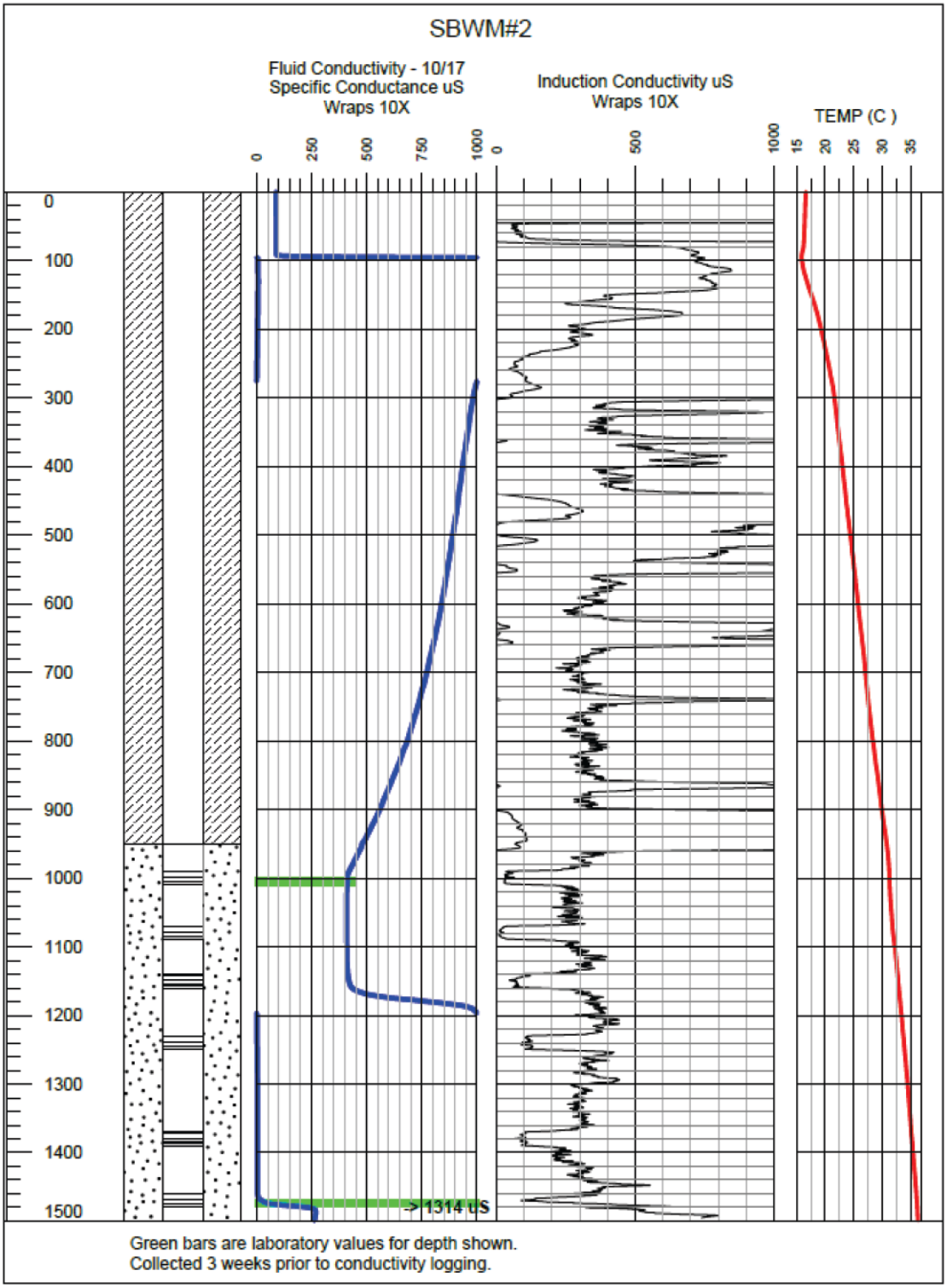

SBWM#2
Fluid Conductivity - 10/17
Specific Conductance uS
Wraps 10X
Induction Conductivity uS
Wraps 10X
TEMP (C)
0
250
500
750
1000
0
500
1000
15
20
25
30
35
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
-> 1314 uS
Green bars are laboratory values for depth shown.
Collected 3 weeks prior to conductivity logging.

Figure 3

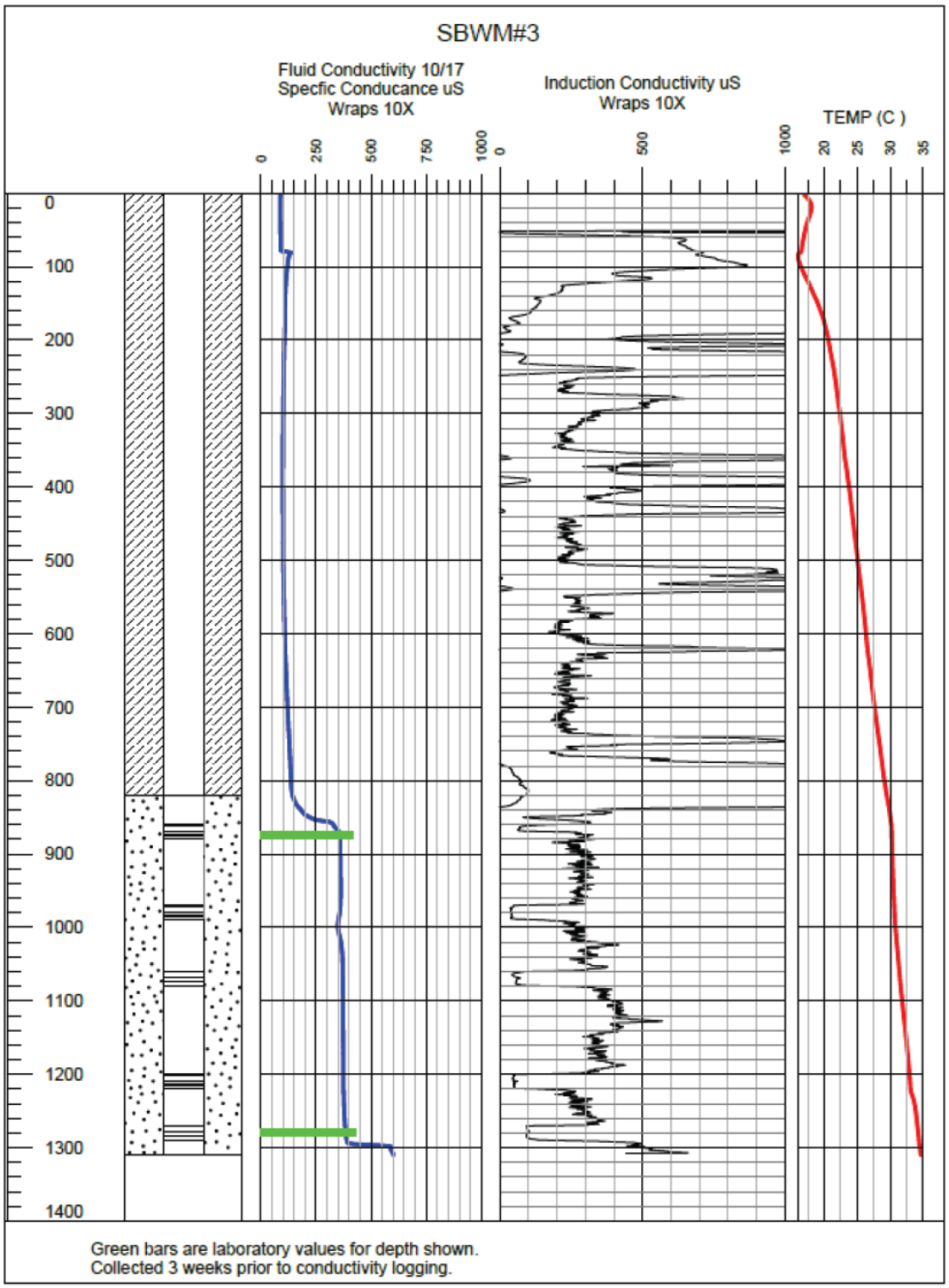

SBWM#3
Fluid Conductivity 10/17
Specfic Conducance uS
Wraps 10X
Induction Conductivity uS
Wraps 10X
TEMP (C)
0
250
500
750
1000
0
500
1000
20
25
30
35
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
Green bars are laboratory values for depth shown.
Collected 3 weeks prior to conductivity logging.

Figure 4

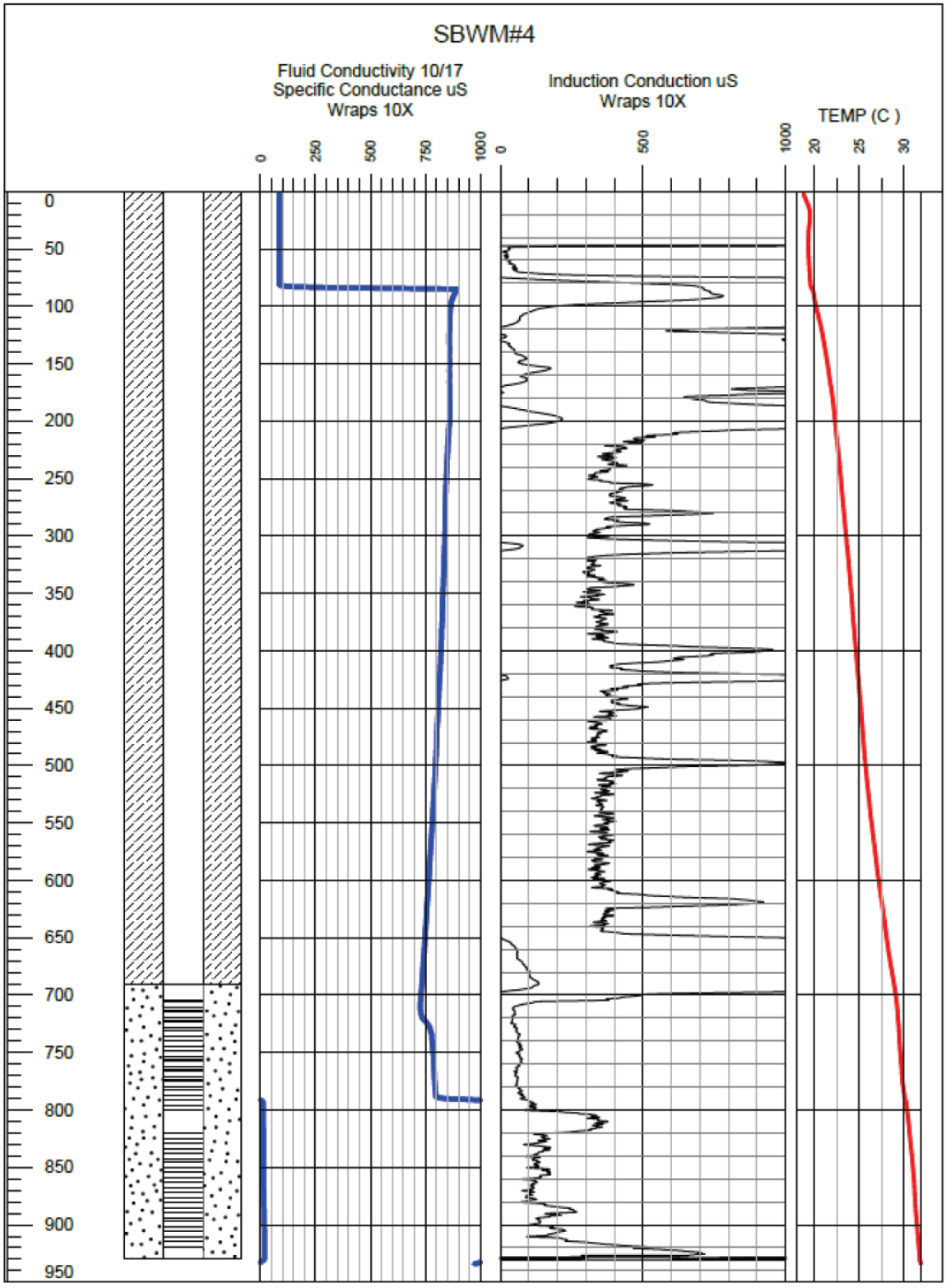
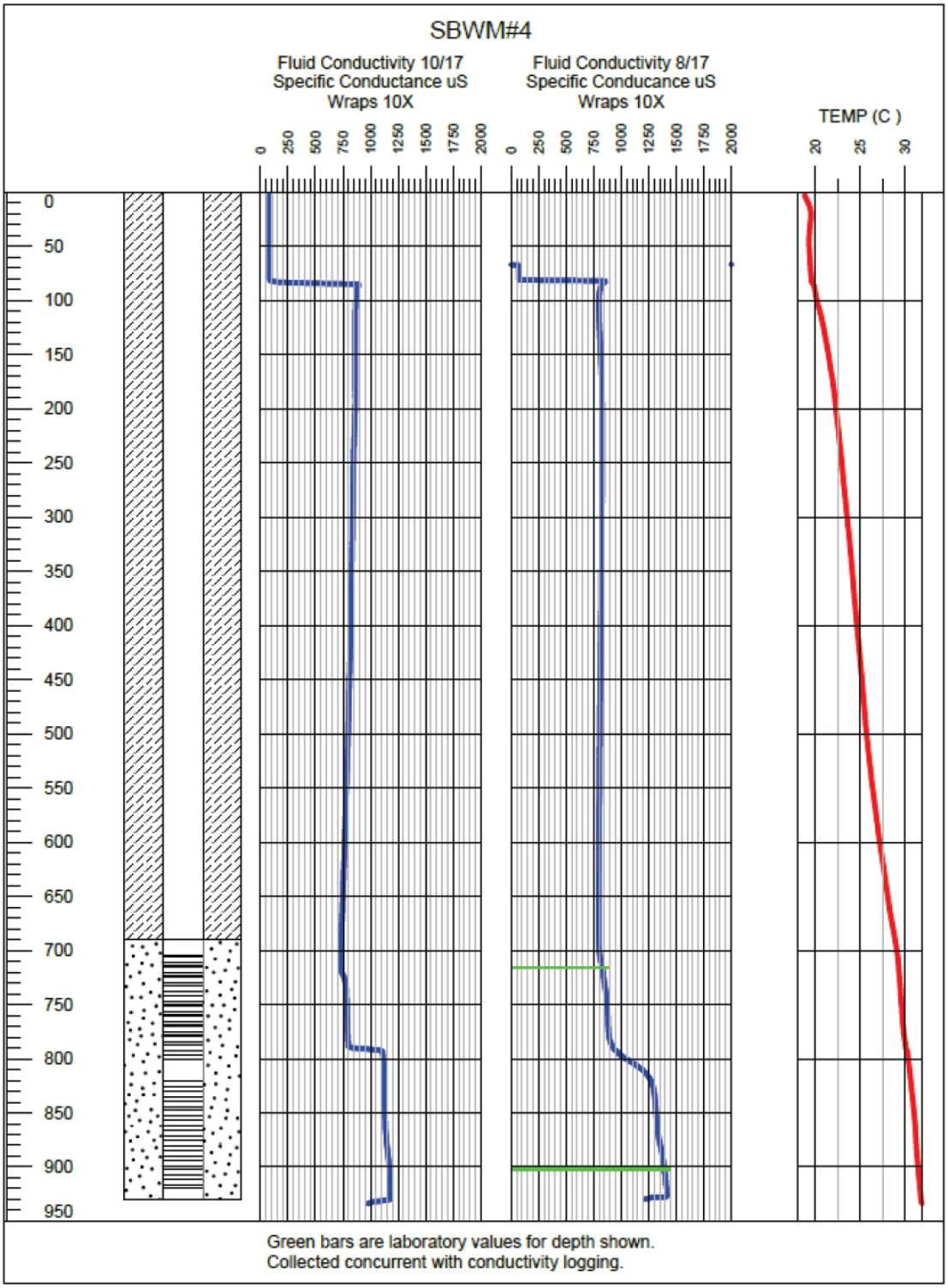

SBWM#4
Fluid Conductivity 10/17
Specific Conductance uS
Wraps 10X
Induction Conduction uS
Wraps 10X
TEMP (C)
0
250
500
750
1000
0
500
1000
20
25
30
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950

Figure 5


SBWM#4
Fluid Conductivity 10/17
Specific Conductance uS
Wraps 10X
Fluid Conductivity 8/17
Specific Conducance uS
Wraps 10X
TEMP (C)
0 250 500 750 1000 1250 1500 1750 2000
20 25 30
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950
Green bars are laboratory values for depth shown.
Collected concurrent with conductivity logging.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE
** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	4
AGENDA TITLE:	Approve PSA for Martin Feeney and Initial RFSs for MPWMD, HydroMetrics, Todd Groundwater, and Martin Feeney for 2018
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: Attached are the proposed initial contracts for each of the Watermaster's consultants that are expected to work on M&MP activities during 2018. Each of these consultants are currently working under a master form of agreement with the Watermaster called a "Professional Services Agreement" (PSA). Actual work assignments are made through the issuance of Requests for Service (RFS) under the umbrella language of the PSA. The attached RFSs constitute the proposed initial 2018 work assignments for each of these consultants as follows:

- HydroMetrics RFS No. 2018-01 covering their providing general hydrogeologic consulting services and for providing assistance in preparing documents that the Watermaster will need to submit to fulfill its reporting requirements under the Sustainable Groundwater Management Act.
- HydroMetrics RFS No. 2018-02 covering their preparing the 2018 SIAR.
- MPWMD RFS No. 2018-01 covering their anticipated 2018 M&MP tasks. The differences in the tasks anticipated in 2017 compared to 2016 were discussed in a prior TAC meeting and were included in the approved 2018 M&MP Work Plan. These tasks are similar to those in preceding years.
- MPWMD RFS No. 2018-02 covering their obtaining water quality and water level data from private producers who ask the Watermaster collect this data for them. The costs for this work are reimbursed by the private producers, and there is no net cost to the Watermaster for work performed under this RFS.
- Martin Feeney RFS No. 2018-01 covering his performing induction logging of certain of the Watermaster's monitoring wells and providing that data as well as water quality data to MPWMD for their use in preparing the 2018 Water Quality and Water Level Report.
- Martin Feeney RFS No. 2018-02 covering his providing general hydrogeologic consulting services.
- Todd Groundwater RFS No. 2018-01 covering their providing general hydrogeologic consulting services.

These consultants have reviewed the cost and scope details of these proposed contracts and their input has been included in the attached versions of the contracts.

I anticipate developing additional RFSs for HydroMetrics during 2018 to update the groundwater model, and to update the BMAP. I also anticipate developing an additional RFS for MPWMD during 2018 to have their consultant develop a Seaside Basin geochemical model. Funds for each of these additional RFSs have been included in the Board-approved M&MP Operations Budget for 2018. When drafted, those RFSs will come to the TAC for approval before going to the Board.

These contracts are on today's agenda to provide the TAC with the opportunity to raise questions or make suggestions for changes to the scopes-of-work or costs, before they are presented to the Board for approval at the Board's December 6, 2017 meeting, to ensure the contacts can be in effect at the start of 2018.

ATTACHMENTS:	7 - Proposed Consultant Contracts for FY 2017 (2 RFSs – HydroMetrics, 2 RFSs – MPWMD, 2 RFSs – Martin Feeney, 1 RFS – Todd Groundwater)
RECOMMENDED ACTION:	Discuss and either modify or approve the proposed contracts

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-01
(To be filled in by WATERMASTER)

TO: Derrik Williams **FROM**: Robert Jaques
HydroMetrics WRI WATERMASTER
PROFESSIONAL

Services Needed and Purpose: General hydrogeologic consulting and document preparation services. See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2018, and shall be performed in accordance with the Schedule contained in Attachment 2.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 12,900.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

SCOPE OF WORK

On an ongoing and as-requested basis, PROFESSIONAL will provide general hydrogeologic consulting services to WATERMASTER on a variety of topics. These may include, but not be limited to interpretation of water level and water quality data collected by WATERMASTER, BMAP and SIRP implementation issues, and preparation of documents for WATERMASTER's use in fulfilling its Sustainable Groundwater Management Act reporting requirements.

Providing these services will likely involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, most of which will be attended telephonically. These TAC meetings do not include special TAC or other meetings which may be required as part of performing other work which may be authorized under other RFSs issued to PROFESSIONAL by WATERMASTER. Any such other scope and cost proposals will incorporate costs for those meetings.

The Tasks in WATERMASTER's 2018 Monitoring and Management Program (M&MP) to which this RFS No. 2018-01 pertains are:

M. 1. c - Preparation and Attendance of Meetings
M. 1. e - Peer Review of Documents and Reports
M.1.g – Sustainable Groundwater Management Act Documentation Preparation

ESTIMATED COSTS

Tasks M.1.c, M.1.d, and M.1.e: General Consulting Services will consist of working on these Tasks and attending some TAC and other meetings either via telephone or in-person in Seaside, as requested by WATERMASTER.

$10,000 in labor costs of this RFS No. 2018-01 are allocated to performing work on these Tasks. In addition to hourly labor costs, an allowance of $1,000.00 is included in for this Task to cover travel and other incidental costs associated with the performance of this work.

Task M.1.g: 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, information regarding changes in basin storage is not currently generated. PROFESSIONAL will provide an estimate of the change in basin storage under this RFS No. 2018-01.

$1,900 in labor costs of this RFS No. 2018-01 are allocated to performing work for Task M.1.g.

All work under this RFS No. 2018-01 will be billed at the following hourly rates, including all markups and other direct costs:

Derrik Williams = $220.00/hour Georgina King = $195.00/hour

The total cost authorized by this RFS No. 2017-01 is $12,900.00.

ATTACHMENT 2
SCHEDULE

HydroMetrics RFS No. 2018-01
Work Schedule

ID	Task Name	2017																
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	A
1	**M. 1. c - Preparation and Attendance of Meetings**																		
2	**M. 1. e - Peer Review of Documents and Reports**																		
3	**M.1.g - SGMA Document Preparation**																		

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: 1/1/2018 **RFS NO**. 2018-02
(To be filled in by WATERMASTER)

TO: Derrik Williams **FROM**: Robert Jaques
HydroMetrics WRI WATERMASTER
PROFESSIONAL

Services Needed and Purpose: Prepare the Seawater Intrusion Analysis Report for 2018. See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2018, and shall be performed in accordance with the Schedule contained in Attachment 2.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 20,890.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 3 for Detailed Breakdown of Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

SCOPE OF WORK

The scope consists of providing professional consulting services to WATERMASTER for preparation of the 2018 Seawater Intrusion Analysis Report (SIAR).

To promote efficiency, much of the text and graphics from the 2017 SIAR will be incorporated directly into the 2018 SIAR.

Preparing the 2018 SIAR will involve analyzing all water quality data at the end of Water Year 2018 (October 1, 2017 to September 30, 2018) and producing semi-annual (2^{nd} and 4^{th} quarters 2017) chloride concentration maps for each aquifer in the Basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. Second and fourth quarter groundwater elevation maps will also be produced. The annual EM logs will be analyzed to identify changes in seawater wedge locations. A determination of whether there is any evidence of seawater intrusion will be made, and recommendations will be included as warranted.

A Draft 2018 SIAR will be provided to WATERMASTER in electronic (not printed) form for review. WATERMASTER will provide its review comments and those of its TAC members through direct discussions with PROFESSIONAL at a TAC meeting. In addition to these oral comments, some TAC members may also provide recommended editorial changes electronically directly to PROFESSIONAL. These comments will be addressed in a Final 2018 SIAR. A CD containing an electronic version of the entire Final 2018 SIAR in MS Word and up to 15 printed and bound copies of the Final 2018 SIAR (quantity to be determined by WATERMASTER) will be provided to WATERMASTER.

ATTACHMENT 2

HydroMetrics RFS No. 2018-02
Work Schedule

ID	Task Name	2018												2019					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Ju
1	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**																		
2	HydroMetrics Provides Draft SIAR to Watermaster											◆ 11/13							
3	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)											◆ 11/21							
4	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)												◆ 12/5						

ATTACHMENT 3

DETAILED BREAKDOWN OF ESTIMATED COSTS

Note: Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page 1 of this RFS is binding and limiting as defined in Section V of the Agreement.

Task	**Hours**		**Costs**			
2017 Seawater Intrusion Analysis Report	**Georgina King ($195 per hr)**	**Nick Byler ($120 per hr)**	**Georgina King**	**Nick Byler**	**Expenses**	**Total Costs**
Produce 2017 SIAR	32	100	$ 6,240	$ 12,000	$ 500	$ 18,740
Attend One TAC Meeting in Monterey	10	0	$ 1,950	$ -	$ 200	$ 2,150
TOTALS	**42**	**100**	**$ 8,190**	**$ 12,000**	**$ 1,200**	**$ 20,890**

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-01 .
(To be filled in by WATERMASTER)

TO: Jonathan Lear **FROM**: Robert Jaques .
Monterey Peninsula Water Management District WATERMASTER
PROFESSIONAL

Services Needed and Purpose:
Perform certain Tasks contained within the Watermaster's Monitoring and Management Plan for 2018 (See detailed Scope of Work in Attachment 1).

Completion Date: The work of this RFS No. 2018-01 shall be completed in accordance with the schedule contained in Attachment 2.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 50,024.00 (See Attachment 3 for a Breakdown of this Total Price. Cost is authorized only when evidenced by signature below.)

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

Detailed Scope of Work for RFS No. 2018-01

Background:

The Watermaster Board approved the Budget for the 2018 Management and Monitoring Program Work Plan (hereinafter referred to as the "2018 M&MP Work Plan") at its meeting of October 4, 2017.

This RFS No. 2018-01 authorizes PROFESSIONAL to perform certain work on certain of the Tasks described in the 2018 M&MP Work Plan. The Task numbers listed in Table 1 of this Detailed Scope of Work for RFS No. 2018-01 correspond to the Task numbers in the 2018 M&MP Work Plan.

Table 1

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. a.1	Conduct ongoing data entry/ database maintenance	PROFESSIONAL will perform water production, water level, and water quality data entry into WATERMASTER's database, and data editing as necessary, and will provide appropriate quality control and quality assurance for this data. Upon request from WATERMASTER, PROFESSIONAL will also enter other data into the database, such as updated information pertaining to well records. WATERMASTER will provide PROFESSIONAL with water production data. PROFESSIONAL will review the water production data provided by WATERMASTER for quality assurance and quality control purposes, and will notify WATERMASTER of any discrepancies PROFESSIONAL observes in this data. WATERMASTER will follow-up as appropriate with the water producers to resolve any such discrepancies. PROFESSIONAL will also host and maintain the Watermaster's Database. Any changes to WATERMASTER's database will be authorized under a separate agreement for performing such work for WATERMASTER. That agreement will either be with PROFESSIONAL or with another consultant. PROFESSIONAL will prepare quarterly water production, water level, and water quality tabulations in Excel format and will provide those tabulations to another WATERMASTER Consultant who will post them to the WATERMASTER's website, so it will be accessible to the public and other interested parties.
I. 2. b. 2	Collect Monthly Water Levels	The monitoring wells from which water level data is to be collected by PROFESSIONAL are listed under the heading "MONITORING TO BE PERFORMED BY PROFESSIONAL" in the column titled "Level" in Table 2. PROFESSIONAL will visit each of the indicated wells at the frequencies shown in Table 2 in order to obtain the water level data. At these visits PROFESSIONAL will measure and record water levels 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 already been equipped with dataloggers. This Task includes the purchase of one datalogger @ $700 to keep in inventory as a spare if needed, plus $50 in parts for the datalogger. All of the other wells will be manually measured.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. b. 3	Collect Quarterly Water Quality Samples	The monitoring wells from which water quality data is to be collected by PROFESSIONAL are listed under the heading "MONITORING TO BE PERFORMED BY PROFESSIONAL" in the column titled "Quality" in Table 2. PROFESSIONAL will visit each of the indicated wells at the frequencies shown in Table 2 in order to obtain the water quality samples, and will perform water quality analyses on these samples. The water quality constituents that will be measured in these analyses are: Specific Conductance (micromhos/cm), Total Alkalinity (as $CaCO_3$), Bicarbonate (as HCO_{3-}), pH, Chloride, Sulfate, Ammonia Nitrogen (as NH_3), Nitrate Nitrogen (as NO_3), Total Organic Carbon, Calcium, Sodium, Magnesium, Potassium, Iron, Manganese, Orthophosphate, Total Dissolved Solids, Hardness (as $CaC0_3$), Boron, Bromide, and Fluoride. For the following wells listed in Table 2, Barium and Iodide will also be measured quarterly: MSC Shallow, MSC Deep, PCA-W Shallow, PCA-W Deep, MPWMD #FO-09 Shallow, and MPWMD #FO-09 Deep. The data may either come from water quality samples that are collected by the airlift method, by the positive displacement method during induction logging of these wells and/or other data gathering techniques, or combinations of these methods, at the discretion of PROFESSIONAL, and will be submitted to a State-certified analytical laboratory for analysis. Retrofitting to use the low-flow purge approach for getting water quality samples has already been completed on all of the wells that are sampled on a quarterly basis. Retrofitting of the wells that are sampled on an annual basis is not warranted. This sampling equipment sits in the water column and may periodically need to be replaced or repaired. Accordingly, an allowance of $1,000 to perform maintenance on previously installed equipment has been included in this Task. Also, in the event a sampling pump is found to be no longer adequate due to declining groundwater levels, or if a sampling pump needs to be installed on a Sentinel Well, an allowance of $2,000 to purchase a sampling pump has been included in this Task.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. b. 6	Reports	PROFESSIONAL will prepare and submit reports to WATERMASTER according to the following schedule: 1. PROFESSIONAL will review the water quality and water level data at the end of each quarter of the Water Year and will provide tabularized data summaries of the WQ/WL data twice per year, once for the Q1 and Q2 period and once for the Q3 and Q4 period, so this data can be posted to WATERMASTER's website. No reporting on a quarterly basis is required but PROFESSIONAL will promptly notify WATERMASTER of any missing data or data collection irregularities that were encountered during the quarterly reporting period. 2. PROFESSIONAL will prepare one annual report summarizing the water quality and water level data for the Water Year, and containing tables of this data for the complete Water Year. The report will include a brief cover letter describing any missing data or data collection irregularities that were encountered during the reporting period, and any recommendations for changes to be made to the data collection program.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I.2.b.7	CASGEM Data Submittal	PROFESSIONAL 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.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I.4.c	Review Seawater Intrusion Analyses	WATERMASTER will have another consultant perform analyses and prepare mapping and other documents pertaining to seawater intrusion detection. PROFESSIONAL may participate in meetings with that consultant during the course of its work, and may provide review comments and recommendations to WATERMASTER regarding this work as it is being carried out by that consultant.

Table 2. Monitoring Wells

WELL NAME AND SUBAREA LOCATION[8]	MONITORING NETWORK[1]		MONITORING REQUIRED BY DECISION[2]		MONITORING CURRENTLY BEING PERFORMED BY PROFESSIONAL NOT SUBJECT TO THIS RFS[3]		MONITORING TO BE PERFORMED BY PROFESSIONAL UNDER THIS RFS[4]			
					Level Frequency		Level Frequency		Quality Frequency	
	Professional's	Watermaster's	Level (Monthly)	Quality (Annually)	Monthly	Quarterly	Monthly	Quarterly	Annually	Quarterly
Northern Coastal Subarea (and vicinity)										
MSC-Shallow		X					X			X
MSC-Deep		X					X			X
PCA-W Shallow		X						X		X
PCA-W Deep		X						X		X
PCA-E (Multiple) Shallow	X				X				X	
PCA-E (Multiple) Deep	X				X				X	
Ord Grove Test-Shallow /Deep	X				X					
Paralta Test-Shallow /Deep	X				X					
Ord Terrace-Shallow	X				X				X	
Ord Terrace-Deep	X				X				X	
MPWMD #FO-09-Shallow	X				X					X
MPWMD #FO-09-Deep	X				X					X
MPWMD #FO-10-Shallow		X					X		X	
MPWMD #FO-10-Deep		X					X		X	
Fort Ord Monitor MW-B-23-180-Dune/Aromas		X					X		X	
CDM MW-1-Dune/Aromas		X					X			
CDM MW-2-Dune/Aromas		X					X			
CAW Del Monte Observation-Shallow		X							X	
SBWM MW-1-Deep (Purisima)[6]		X						X		
SBWM MW-2-Deep (Purisima)[6]		X						X		
SBWM MW-3-Deep (Purisima)[6]		X						X		
SBWM MW-4-Deep (Purisima/Santa Margarita)[6]		X						X		
Northern Inland Subarea (and vicinity)										
MPWMD #FO-01-Shallow	X					X				
MPWMD #FO-01-Deep	X					X				
MPWMD #FO-07-Shallow	X					X				
MPWMD #FO-07-Deep	X					X				
MPWMD #FO-08-Shallow	X					X				
MPWMD #FO-08-Deep	X					X				
MPWMD #FO-11-Shallow	X					X				
MPWMD #FO-11-Deep	X					X				
SBWM MW-5-Shallow (Paso Robles)[6]		X						X	X	
SBWM MW-5-Deep (Santa Margarita)[6]		X						X	X	

Table 2 (Continued)

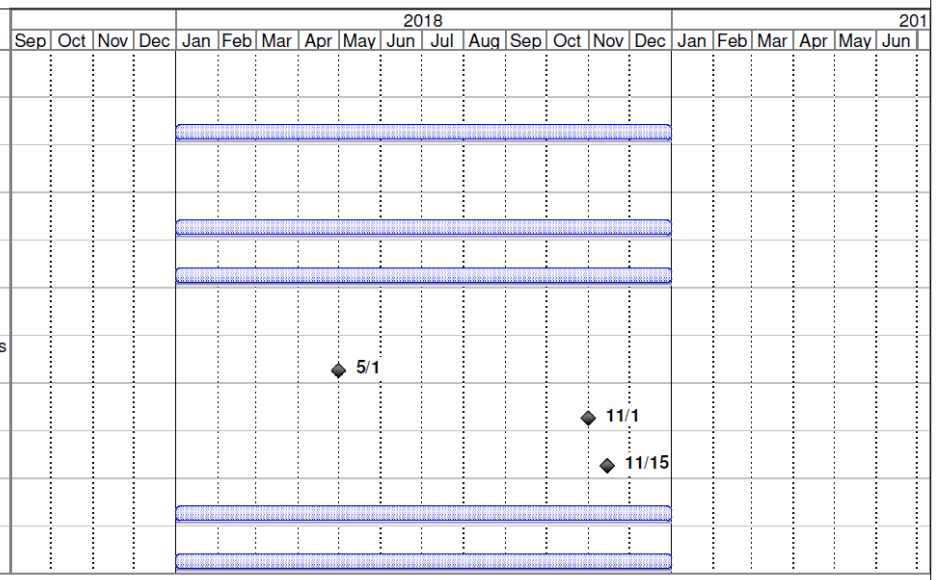
Southern Coastal Subarea (and vicinity)										
Plumas '90 Test-Deep		X					X			
K-Mart-Dune/Aromas		X					X			
CDM MW-3-Dune/Aromas		X					X			
CDM MW-4-Dune/Aromas		X					X			
MW-BW-08A-Dune/Aromas		X					X			
MW-BW-09-180-Shallow		X					X			
Shea		X						X		
Sand City Public Works Well		X					X		X	
Laguna Seca Subarea (and vicinity)										
MPWMD #FO-03-Shallow	X					X				
MPWMD #FO-03-Deep	X					X				
MPWMD #FO-04-Shallow (E)	X					X				
MPWMD #FO-04-Deep (W)	X					X				
MPWMD #FO-05-Shallow	X					X				
MPWMD #FO-05-Deep	X					X				
MPWMD #FO-06-Shallow	X					X				
MPWMD #FO-06-Deep	X					X				
Justin Court (RR M2S)-Shallow	X					X				
LS Pistol Range (Mo Co TH-1)-Deep	X					X				
York Rd-West (Mo Co MW-1 D)-Deep	X					X				
Seca Place (Mo Co MW-2)-Deep	X					X				
Robley Shallow (North) (Mo Co MW-3S)-Shallow	X					X				
Robley Deep (South) (Mo Co MW-3D)-Deep	X					X				
LS No. 1 Subdivision-Deep	X					X				
Blue Larkspur-East End-Believed to be Deep	X					X				
York School-Shallow		X	X						X	
Laguna Seca Driving Range (SCS-Deep)-Shallow		X						X	X	
Laguna Seca County Park #2-Shallow		X	X						X	
CAW Granite Construction-Deep		X					X			
CAW Ryan Ranch (RR) #7-Deep		X	X						X	
Laguna Seca Golf New #12-Deep[9]		X							X	
Pasadera Main Gate-Deep		X	X						X	
No. of Wells in Each Network[5]=	32	31	4	0	8	24	15	10	17	6

Notes:
(1) The wells within the Professional's Monitoring Well Network are the wells that PROFESSIONAL monitors as part of PROFESSIONAL's own monitoring program. The wells within the Watermaster's Monitoring Well Network are the wells to be monitored under this RFS.
(2) Monitoring required by the Decision is the monitoring described in the Monitoring and Management Program which was incorporated by reference in the Decision of the Court dated February 9, 2007.
(3) Monitoring currently being performed by PROFESSIONAL not subject to this RFS is monitoring work PROFESSIONAL is performing under other monitoring programs. This monitoring is not a part of this RFS.
(4) Monitoring to be performed by PROFESSIONAL is the monitoring to be performed under this RFS.
(5) The Watermaster's Monitoring Well Network includes the wells recommended in the Enhanced Monitoring Well Network report prepared by PROFESSIONAL, dated October 23, 2007, plus the 4 new Sentinel Wells installed in 2007 and the BLM well installed in 2011.
(6) The Seaside Basin Watermaster (SBWM) wells are all equipped with dataloggers that obtain measurements at least daily, but will be manually sounded for water level on a quarterly basis for calibration purposes.
(7) Not used.
(8) Shallow=Paso Robles; Deep=Santa Margarita or Purisima.
(9) This well is so close to the Laguna Seca Old No. 12 well that no water level monitoring is necessary.
(10) CAW East Fence Shallow well can no longer be sampled and was therefore dropped from this list.

ATTACHMENT 2

MPWMD RFS No. 2018-01 Work Schedule

ID	Task Name
1	**I.2.a DATABASE MANAGEMENT**
2	**I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance**
3	**I.2.b DATA COLLECTION PROGRAM**
4	**I.2.b.2 Collect Monthly Water Levels (MPWMD)**
5	**I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)**
6	**I.2.b.6 Reports (from MPWMD)**
7	Water Level and Water Quality Data Summaries for 1st & 2nd Quarters
8	Water Level and Water Quality Data Summaries for 2nd & 3rd Quarters
9	Annual Water Production, Water Level, and Water Quality Report for 2017
10	**I.2.b.7 CASGEM Data Submittal**
11	**I.4.c MPWMD Provides Assistance in Seawater Intrusion Detection**



Work Schedule for MPWMD RFS No 2018-01 Draft 8-10-17.mpp

Page 1

ATTACHMENT 3 SUMMARY OF ESTIMATED COSTS

M&MP TASK NO.	LABOR HOURS		HOURLY	SUPPLIES AND MATERIALS		TOTAL
	BREAKDOWN	TOTAL	RATE	BREAKDOWN	TOTAL	
I. 2. a. 1	12 mo. @ 8 hrs/mo.	96	$149	Other services needed to host and maintain Watermaster's Database, estimate $300 for the year.	$300	$14,604
I. 2. b. 2.	12 mo. @ 4 hrs/mo.	48	$62	Purchase one datalogger @ $700 plus $50 in parts to keep in inventory as a spare if needed.	$750	$3,726
I. 2. b. 3.	Quarterly WQ wells (Table 2): MPWMD Coastal wells (6 wells - shallow and deep aquifers @ 3 sites: MSC, PCA-W, FO-09), plus one additional verification WQ sample at Ord Terrace Shallow Well. Labor: 4 events @ 16 hrs/event	64	$62	Fuel: 4 events @ $10/site x 3 sites = $120; Lab costs: 4 events @ $225/well x 7 wells = $6,300; plus one verification sample lab cost = $225.	$6,645	$10,613
	Annual WQ wells (Table 2): 1 event @ 28 hrs/event = 28 hrs	28	$62	BLM site: Eductor setup (use MPWMD portable unit): $0 x 1 site = $0; Airlift equip.: $100 x 1 site x 1 event = $100; Fuel: $20 x 1 site x 1 event = $20. Lab cost (annual WQ wells): $175 x 15 wells x 1 event = $2,625; maintenance on previously installed sample collection equipment = $1,000. One-time cost, if necessary for replacing a well sampling pump if the existing pump is found to be inadequate due to dropping groundwater levels, or if a sampling pump needs to be installed on a Sentinel Well = $2,000.	$5,745	$7,481
	WM Sentinel and Northern Inland wells: download/store dataloggers, 4 events @ 2 hrs/event	8	$62	N/A	$0	$496
	Compile data: 4 events @ 24 hours/event	96	$62	N/A	$0	$5,952
I. 2. b. 6	Data summaries and 1-annual report	24	$149	N/A	$0	$3,576
I.2.b.7	CASGEM Data Submittal for Watermaster's Voluntary Wells	16	$149	N/A	$0	$2,384
I. 4. c	Provide SWI supplemental data and review.	8	$149	N/A	$0	$1,192
				TOTAL ESTIMATED COST =		**$50,024**

Notes:

1. Vehicle mileage is included in the labor costs above.

2. Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page A-1 of this RFS is binding and limiting as defined in Section V of the Agreement.

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-02 .
(To be filled in by WATERMASTER)

TO: Jonathan Lear **FROM**: Robert Jaques .
Monterey Peninsula Water Management District WATERMASTER
PROFESSIONAL

Services Needed and Purpose:
Perform water level and water quality data collection for specified wells within the Seaside Basin in accordance with the Scope of Work contained in Attachment 1.

Completion Date: The work of this RFS No. 2018-02 shall be completed on an as-directed basis from the Watermaster during 2018. All work under this RFS will be completed not later than December 31, 2018.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $3,915.00 (See Attachment 1 for details regarding this Total Price, and how costs will be authorized on an as-directed basis. Cost is authorized only when evidenced by signature below.)

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1
Scope of Work for RFS No. 2018-02

Background:

The WATERMASTER Board authorized its staff to contract with the PROFESSIONAL to collect water level and water quality data from certain wells located within the Seaside Basin, if the owners/operators of those wells expressed this desire to the WATERMASTER. The procedures for this data collection are described in the January 17, 2008 "Notice to Well Owners" that was sent out by the Watermaster to well owners in the Seaside Groundwater Basin.

This RFS No. 2018-02 authorizes PROFESSIONAL to perform this data collection work on an as-directed basis, with formal authorization from the WATERMASTER to the PROFESSIONAL being required prior to the PROFESSIONAL performing such work on any specified well. This will provide the WATERMASTER with full control over which wells are provided this service, as well as over the costs for having this work performed.

The wells to which these services may be provided are listed in Table 1.

The estimated costs, per well, to perform these services are as follows:

Monthly Water Levels - It is estimated that it will take approximately 0.5 hour/well to perform a water level measurement. This time estimate is based on the assumption that the water level measurements will be performed at the time that a field person is already out and about collecting data from other wells, and the fact that the distance between wells located within the Basin is not that great. This labor would be billed at the field rate of $62/hr, so the estimated cost per water level measurement would be $31.00.

The total estimated cost would be $372 per year per well for 12 monthly measurements.

Annual Water Quality Sampling - Assuming that annual water sample collection would coincide with water level collection at a well, it is estimated that it will take approximately 0.5 hr to collect the water quality sample, including sampling time, bottle labeling, custody forms, delivery to laboratory, etc. There will also be an estimated 0.5 hr for receipt, review and computer entry of laboratory data, and an estimated $175 per sample for the laboratory analysis. The sampling work would be billed at the field rate of $62/hr, and the review and computer data entry work would be billed at the rate of $149/hr, so the estimated cost per annual water quality sample would be $105.50 for labor, and $175 for laboratory services, for a total cost per sample of $280.50. Only one sample per well per year will need to be collected and analyzed. This sample will be collected in the fall.

The total estimated cost for collecting and analyzing the sample per well is $280.50.

Combined Water Level Measurements and Water Quality Sampling: For combined water level and water quality monitoring, the total estimated cost, per well, for the 12-month period is $652.50.

Of the wells listed in Table 1 it is assumed that not more that 6 will ask to have data collected for them by the WATERMASTER, the total estimated cost would be:

Potential No. of Wells Needing Water Level Data Collected	= 6 @ $372 =	$2,232
Potential No. of Wells Needing Water Quality Data Collected	= 6 @ $280.50 =	$1,683
	TOTAL =	$3,915

Table 1

APN	DETAILS	COMPANY	Watermaster "Producer" Well?	MPWMD Assigned Well #	Monthly Water Levels Required	Monthly Water Levels Being Collected?	Annual Water Quality Analyses Required?	Annual Water Quality Data Being Collected?
Within MPWMD Boundaries								
012-432-004	CAW - Plumas #4	California American Water Co.	Y	T15S/R1E-27Jg	Y	Y	Y	N
012-843-013	CAW - Darwin	California American Water Co.	Y	T15S/R1E-23Ea	Y	Y	Y	N
011-041-018	CAW - Military	California American Water Co.	Y	T15S/R1E-14Nd	Y	Y	Y	N
011-061-004	CAW - Ord Grove #2	California American Water Co.	Y	T15S/R1E-23Bc	Y	Y	Y	N
011-071-018	CAW - New Luzern	California American Water Co.	Y	T15S/R1E-23De	Y	Y	Y	N
011-091-017	CAW - Playa #3	California American Water Co.	Y	T15S/R1E-22Bc	Y	Y	Y	N
011-091-017	CAW - Playa #4	California American Water Co.	Y	T15S/R1E-22Bf	Y	Y	N	
011-493-028	CAW - Paralta	California American Water Co.	Y	T15S/R1E-14Ra	Y	Y	Y	N
031-151-010	Reservoir Well	City of Seaside	Y	T15S/R1E-13Na	Y	?	Y	N
031-231-062	Coe Avenue Well	City of Seaside	Y	T15S/R1E-14Ma	Y	?	Y	N
011-181-014	Public Works Corp. Yard	City of Sand City	Y	T15S/R1E-22Ed	Y	?	Y	N
011-011-020	Cypress Pacific	Monterey Peninsula Engineering	Y	T15S/R1E-22Dd	Y	N	Y	N
011-236-010	Robinette -Design Ctr.	City of Sand City	Y	T15S/R1E-22Mc	Y	?	Y	N
011-041-043	(in front of Target)	DBO Development	Y	T15S/R1E-22Ce	Y	N	N	
011-061-022	MMP prod well	Mission Memorial Park	Y	T15S/R1E-23Ab	Y	Y	N	
011-061-022	PRTW -operated by MMP	Mission Memorial Park	Y	T15S/R1E-23Ac	Y	N	Y	N
011-501-014-500		Security National Guaranty, Inc.	Y	T15S/R1E-15K1	Y	N	Y	N
011-532-005		Granite Rock Company	Y	T15S/R1E-22Eb	Y	?	N	
012-511-005	Shea Well	City of Del Rey Oaks	Y	T15S/R1E-26Mc	Y	N	N	
012-115-017	City #4	Seaside Municipal Water System	Y	T15S/R1E-23Gc	Y	?	Y	?
012-653-003	City #2	Seaside Municipal Water System	Y	T15S/R1E-23Pb	Y	?	N	
012-664-017	City #1	Seaside Municipal Water System	Y	T15S/R1E-23Lb	Y	?	N	
012-115-017	City #3	Seaside Municipal Water System	Y	T15S/R1E-23Ga	Y	?	Y	?
173-071-052	East Well (Lot #9)	CAW - Bishop Unit	Y	T16S/R2E-05Fa	Y	N	N	
173-072-034	well lot Bishop #1 (west)	CAW - Bishop Unit	Y	T16S/R2E-05Ea	Y	Y	N	
173-072-041	well lot Bishop #2 (east)	CAW - Bishop Unit	Y	T16S/R2E-05Fb	Y	Y	N	
416-111-002	Mutual	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cb	Y	N	N	
416-111-004	Standex	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cc	Y	N	N	
416-111-004	Bay Ridge	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cd	Y	Y	N	
259-031-011	RP#7	CAW - Ryan Ranch #7	Y	T15S/R1E-36Nb	Y	Y	N	
259-031-012	RP#8	CAW - Ryan Ranch #8	Y	T16S/R1E-01Cb	Y	Y	N	
259-031-012	RP#11	CAW - Ryan Ranch #11	Y	T16S/R1E-01Cd	Y	Y	N	
173-071-056	Old Main Gate (Lot #12)	Pasadera - New Cities Developme	Y	T16S/R2E-05Mg	Y	Y	N	
173-071-051	Paddock #1(Lot #11)	Pasadera - New Cities Developme	Y	T16S/R2E-05Mf	Y	N	N	
203-031-034	01-349	York School	Y	T15S/R1E-36Qa	Y	?	N	
173-071-048	(new #12)	Laguna Seca Golf Resort	Y	T16S/R2E-06Hb	Y	Y	N	
173-071-048	(racetrack)	Laguna Seca Golf Resort	Y	T16S/R2E-06Ga	Y	Y	N	
Outside MPWMD Boundaries								
173-011-025, -026	LS Cnty Park #3	MPRPD	Y	T16S/R2E-05Gd	Y	?	N	
173-011-025, -026	LS Cnty Park #4	MPRPD	Y	T16S/R2E-05Ge	Y	?	N	
					Y = 38	**N or ? = 21**	**Y = 16**	**N or ? = 16**

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-01 .
(To be filled in by WATERMASTER)

TO: Martin Feeney **FROM**: Robert Jaques .
Martin Feeney WATERMASTER
PROFESSIONAL

Services Needed and Purpose:
Perform certain Tasks contained within the Watermaster's Monitoring and Management Plan for 2018 (See detailed Scope of Work in Attachment 1).

Completion Date: The work of this RFS No. 2018-01 shall be completed in accordance with the schedule described in Attachment 1.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 26,585.56 (See Attachment 2 for a Breakdown of this Total Price. Cost is authorized only when evidenced by signature below.)

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Authorized by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

Detailed Scope of Work for RFS No. 2018-01

Background:
The Watermaster Board approved the Budget for the 2018 Management and Monitoring Program Work Plan (hereinafter referred to as the "2017 M&MP Work Plan") at its meeting of October 4, 2018.

Scope of Work
This RFS No. 2018-01 authorizes PROFESSIONAL to perform the work described in PROFESSIONAL's Proposal for Hydrogeologic Services, dated August 24, 2017 and contained in Attachment 2, with the following clarifications and/or additions:

PROFESSIONAL will collect water quality and water level data from the wells identified as SBWM-1, SBWM-2, SBWM-3, and SBWM-4. PROFESSIONAL will also perform induction logging on each of these wells. These wells are commonly referred to as WATERMASTER's Sentinel Wells. Water level data collection, water quality analyses, and induction logging will be performed on each of these wells as described below and according to the schedule described below:

Induction Logging
Induction logging will be performed on each of the four Sentinel Wells semi-annually.

Water Level
Water levels in each of the four Sentinel Wells will be continuously measured by data loggers and will be downloaded semi-annually when induction logging is being performed.

Water Quality Sampling Schedule
Wells SBWM-1, SBWM-2, and SBWM-4 will be sampled for water quality twice during the year (nominally in March and September). Well SBWM-3 will be sampled for water quality annually (nominally in September). Each well will be sampled at two discrete depths. This will constitute a total of 14 water quality samples taken during the year (two samples from each well during each sampling event).

Water Quality Analyses
The water quality constituents that will be measured in these analyses are: Specific Conductance (micromhos/cm), Bicarbonate (as HCO_{3-}), pH, Chloride, Sulfate, Nitrate Nitrogen (as NO_3), Calcium, Sodium, Magnesium, Potassium, Iron, Manganese, Orthophosphate, Total Dissolved Solids, Boron, Bromide, Barium, Iodide, and Fluoride. The samples collected for analysis will be submitted to a State-certified analytical laboratory for analysis.

PROFESSIONAL will transmit the digital water level and water quality data to the Monterey Peninsula Water Management District (MPWMD), HydroMetrics WRI, and to the WATERMASTER promptly after the data is acquired, so that (1) MPWMD can use that data in preparing its reports to the WATERMASTER and (2) HydroMetrics WRI and the WATERMASTER will be made promptly aware of the data. Digital induction data will also be provided to MPWMD, HydroMetrics WRI, and to the Watermaster as soon as it becomes available to PROFESSIONAL. Digital induction data will also be reduced and presented graphically and provided to HydroMetrics WRI for use by HydroMetrics WRI in preparing reports for the WATERMATER.

ATTACHMENT 2

Martin B. Feeney
Consulting Hydrogeologist

P.G. 4634
C.E.G. 1454
C.Hg 145

August 31, 2017

Seaside Basin Watermaster
PO Box 51502
Pacific Grove CA.
93950

Attention: Bob Jaques, PE

Subject: Sentinel Well Data Collection Program 2018 – Proposal for Hydrogeologic Services

Dear Bob:

Following up on our discussions, I'm pleased to provide this proposal to assist the Seaside Basin Watermaster (Watermaster) with data collection from the Sentinel Wells for the upcoming year. Presented in this proposal are an outline of the data collection plan and an estimate of associated costs.

The data collection program for the Sentinel Wells will continue as it has been performed in 2016. The data collection program currently includes semi-annual induction logging and continuous water level data collection. This basic program is supplemented with the periodic collection of depth-specific downhole water quality sampling. The subcontractors for the induction logging/downhole sampling and laboratory services remain unchanged.

The components of this program are as follows:

Data collection from each well:

- Semi-Annual down-loading of water level data logger.
- Semi-Annual induction logging
- Semi-annual depth-specific sample at two depths in wells SBWM#1, SBWM#2 and SWBWM #4. Annual depth-specific sample collection in well SBWMW#3. 14 samples total. In addition, budget includes 1 field blank and 1 split-sample for each sampling event for a total of 18 samples.
- Water quality analysis (MPWMD "Sentinel Well Suite" – General Mineral plus Barium and Iodide) of collected water quality samples.

It is understood that, as in the past, the Monterey Peninsula Water Management District (District) will share some of the data collection and analysis tasks of the overall data collection program. The District will collect water level data from the array of data loggers on the alternate quarters. Water level data from the data loggers will be collected as part of this scope of services only when induction logging is performed. Collected water level data will be transmitted to the District for compilation and processing. Induction logging data will continue to be compiled and processed by this author.

Annual costs for the data collection program are estimated at $ 26,585.56 inclusive of outside services. A breakdown of costs is presented in the table below.

P.O. Box 23240, Ventura, CA 93002 ♦ **Phone: 805/643-7710** ♦ e-mail mfeeney@ix.netcom.com

SENTINEL WELLS LOGGING/SAMPLING WL DATA COLLECTION PROGRAM

2018

	Unit Cost	Number	Semi-Annual Cost	# per annum	Annual Cost
Pacific Surveys					
Service Charge	1085	1	1085	2	$ 2,170.00
Induction Logging	0.75	5310	3982.5	2	$ 7,965.00
Rinse Only Depth Specific Samples	275	14	3850	1	$ 3,850.00
E-file generation/transmittal	115	1	115	2	$ 230.00
mileage	0.99	422	417.78	2	$ 835.56
per diem	175	3	525	1	$ 525.00
					$ 15,575.56
Lab Costs					
General Mineral Analysis plus Ba and I	225	14	3150	1	$ 3,150.00
Field Blanks/Duplicates	225	4	900	1	$ 900.00
Professional Services					
Supervise Logging/Download Data Loggers	165	14	2310	2	$ 4,620.00
Process Induction Data	195	4	780	2	$ 1,560.00
Transmit Water Level Data	195	2	390	2	$ 780.00
					$ 6,960.00
				Total	$ 26,585.56

The opportunity to present this proposal is appreciated. Please call if you have any questions.

Sincerely,

Martin B. Feeney

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-02
(To be filled in by WATERMASTER)

TO: Martin Feeney **FROM**: Robert Jaques
Martin Feeney WATERMASTER
PROFESSIONAL

Services Needed and Purpose: See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2018.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 4,000.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

Scope of Work

On an ongoing and as-requested basis, PROFESSIONAL will provide general hydrogeologic consulting services to WATERMASTER on a variety of topics. These may include, but not be limited to interpretation of water level and water quality data collected by WATERMASTER, assisting in the interpretation of modeling results, and other related activities.

Providing these services may involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, some of which may be attended telephonically.

Estimated Costs

Consulting services provided under this RFS No. 2018-01, including attending meetings either via telephone or in-person as requested by WATERMASTER, will be billed at PROFESSIONAL's standard hourly rates for calendar year 2018, including all markups and other direct costs.

In addition to hourly labor costs, an allowance of $500.00 is included in the estimated cost of this RFS to cover travel and other incidental costs associated with the performance of this work.

The total cost authorized by this RFS No. 2018-01 is $4,000.00.

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2018 **RFS NO**. 2018-01
(To be filled in by WATERMASTER)

TO: Gus Yates
Todd Groundwater
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

Services Needed and Purpose: See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2018.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $4,000.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

Scope of Work

On an ongoing and as-requested basis PROFESSIONAL will provide hydrogeologic consulting services to WATERMASTER on groundwater modeling and related topics. These may include, but not be limited to, responding to questions regarding the Seaside Basin Model that HydroMetrics WRI has prepared for WATERMASTER, assisting in the interpretation of modeling results, and other related activities.

Providing these services may involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, some of which may be attended telephonically.

Estimated Costs

Consulting services provided under this RFS No. 2018-01, including attending meetings either via telephone or in-person as requested by WATERMASTER, will be billed at PROFESSIONAL's standard hourly rates for calendar year 2018, including all markups and other direct costs.

In addition to hourly labor costs, an allowance of $500.00 is included in the estimated cost of this RFS to cover travel and other incidental costs associated with the performance of this work.

The total cost authorized by this RFS No. 2018-01 is $4,000.00.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	5
AGENDA TITLE:	Discuss and Provide Input on the 2017 Seawater Intrusion Analysis Report (SIAR)
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

HydroMetrics has completed preparing the Draft Seawater Intrusion Analysis Report (SIAR) for Water Year 2016-2017 and the Executive Summary, which contains conclusions and recommendations, is attached. The complete Draft SIAR is lengthy, so rather than including it in this agenda packet it was posted on the Watermaster's website on November 10 so TAC members wishing to review the entire document could do so.

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. In spite of these factors, the previous SIARs stated that neither the Piper nor the Stiff Diagrams nor any of the other parameters indicated the presence of seawater intrusion in the existing monitoring wells. The 2017 SIAR notes that although changes in chloride concentrations were found at some depths in some of the Sentinel Wells, the evaluation of the data from the sampling and monitoring program continues to indicate that seawater intrusion is <u>not</u> occurring

A representative from HydroMetrics will participate in today's TAC meeting via telephone to provide an oral summary of the report and to respond to questions by TAC members.

ATTACHMENTS:	Executive Summary from the Draft 2017 SIAR
RECOMMENDED ACTION:	Discuss and either modify or approve the Draft SIAR and forward the document to the Board with the TAC's recommendation for approval

Executive Summary

This annual report addresses the potential for, and extent of, seawater intrusion in the Seaside Groundwater Basin. Continued pumping in excess of recharge and fresh water inflows, coastal groundwater levels well below sea level, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin.

No seawater intrusion has historically been or is currently observed in existing monitoring and production wells in the Seaside Groundwater Basin, as demonstrated by the different analyses that are used to investigate evidence of seawater intrusion. It should be noted that although seawater intrusion has not been observed in the hydrogeologic data collected, there have been some chloride anomalies observed over the past two water years in some of the Sentinel Wells. Notably, there have been some elevated chlorides above baseline concentrations in the two northernmost Sentinel Wells, located just north of the adjudicated Seaside Basin. In September 2017, Sentinel Well SBWM-2's deep sample at 1,470 feet had a chloride concentration of 292 mg/L, which is the highest chloride measured in any of the wells in the basin and it is the second well, after Sentinel Well SBWM-4 (900 ft) to exceed the basin's chloride groundwater water quality objective of 250 mg/L. Verification sampling is not required as the concentration was verified using downhole electrical conductivity profiling. The September 2017 chloride concentration is a 226 mg/L increase from the December 2016 concentration of 66 mg/L. The previous 4th quarter sample was also elevated at 178 mg/L. These past three results indicate that chloride concentrations are fluctuating over 100 mg/L within each of the past two water years in Sentinel Well SBWM-2 (1,470 ft).

Furthermore, with the exception of Sentinel Well SBWM-3's deep sample, the other shallower and deep samples from Sentinel Well SBWM-1, SBWM-2 and SBWM-4, and shallower sample from SBWM-3 show an overall increasing chloride trend since their construction in 2007. The source of salinity contributing to these observed increases is not yet understood, but could include natural groundwater quality variations, upwelling or upconing of underlying saline formation water from the Monterey Formation in response to declining groundwater levels, or very early seawater intrusion.

Data which indicate that seawater intrusion is <u>not</u> occurring are described in the bulleted items below:

- Maps of chloride concentrations for the shallow aquifer do not show chlorides increasing towards the coast.
- Induction logging data at the coastal Sentinel Wells do not show large changes over time that are indicative of seawater intrusion.
- None of the Stiff diagrams for monitoring and production wells show the characteristic chloride spike that typically indicates seawater intrusion in Stiff diagrams.
- None of the Piper diagrams for monitoring and production wells show the typical evolution of water chemistry from freshwater to seawater.

The following groundwater level and production data suggest that conditions in the basin continue to provide a <u>potential</u> for seawater intrusion:

- Even though Water Year 2017 was an above average rainfall year and basin pumping was very slightly above the current safe yield of 3,000 acre-feet per year, Northern Coastal subarea groundwater levels in the deep aquifer remain below sea level (**Error! Reference source not found.** and **Error! Reference source not found.**). The 4th quarter deep aquifer groundwater levels along the coast, in most locations, are at elevations greater than 20 feet below sea level.

- Groundwater levels remain below protective elevations in all deep target monitoring wells (MSC deep, PCA-W deep, and Sentinel Well SBWM-3). Two of the three shallow wells' groundwater levels are above protective elevations: PCA-W shallow and CDM-MW4. The MSC shallow well remains below protective elevations.

Due to its far distance from the coast, seawater intrusion is not an issue of concern in the Laguna Seca subarea. However, groundwater levels in the eastern Laguna Seca subarea have historically been declining at rates of 0.6 feet per year in the shallow aquifers, and between two and three feet per year in the deep aquifers. These declines have occurred since 2001, despite triennial reductions in allowable pumping. The cause of this decline is due in part to the safe yield of the subarea being incorrect and in part due to the influence of wells to the east of the groundwater basin. The rate of decline in groundwater levels in the western portion of the subarea is between one and two feet per year. There is an indication, however, from 2016 and 2017 groundwater levels that the rate in decline has stabilized over the past couple years.

Based on the findings of this report, the following recommendations should be implemented to monitor and track potential seawater intrusion.

1. Continue to Analyze and Report on Water Quality Annually

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

2. Continue with 2nd and 4th Quarter Water Quality Sampling and Analysis for Sentinel Wells SBWM-1, SBWM-2 and SBWM-4

Due to the salinity abnormalities observed in Sentinel Wells SBWM-1, SBWM-2 and SBWM-4 over the past two years, these wells should continue to be sampled twice a year, in the 2nd and 4th quarters. If the 2nd quarter (March 2018) chloride concentration for Sentinel Well SBWM-2 (1,470 ft) returns to its baseline concentration of around 66 mg/L, this is confirmation of seasonal fluctuations. If the chloride concentration at this depth increases and the sodium/chloride molar ratio continues to decline then more frequent monitoring of this well is required.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	6
AGENDA TITLE:	Discuss and Provide Input on the Preliminary Draft Watermaster 2017 Annual Report
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Watermaster submits an Annual Report to the Court after the end of each Water Year to fulfill one of its obligations under the Court Decision that created the Watermaster.

A Preliminary Draft Annual Report for 2017 is being presented to the TAC for its review and input, in as complete a form as it can be as of today's TAC meeting. Due to its large file size, a complete copy of the Preliminary Draft 2017 Annual Report cannot be included with the agenda packet. However, a copy of the body of the Preliminary Draft is attached. A copy of the complete Preliminary Draft Annual Report was posted on the Watermaster's website on November 10, 2017 for anyone that would like to examine the entire document.

At today's meeting I will review with the TAC the principle components of the Preliminary Draft and provide an opportunity for the TAC to raise questions, provide input, and provide suggested edits to the document. A few items highlighted in yellow will be completed as soon as the data has been prepared, or after the Board's December meeting.

ATTACHMENTS:	Preliminary Draft 2017 Annual Report (Body only)
RECOMMENDED ACTION:	Provide input to the Technical Program Manager regarding any edits to the Preliminary Draft Annual Report that the TAC wishes to propose

SEASIDE BASIN WATERMASTER

PRELIMINARY DRAFT

ANNUAL REPORT – 2017

December 8, 2017

Note: In this Preliminary Draft version of the 2017 Annual Report some of the data was still being prepared, so it could not be included. Where this is the case, rather than showing the values, a placeholder of "XXX" is shown, highlighted in yellow. These values will be included in the next version as soon as they become available.

Contents

SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2017

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 2017 Annual Report is being filed on or before December 15, 2017, consistent with the provisions of the Decision, as amended by the Annual Report Review and Order dated January 7, 2011. 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 a section pertaining to Water Quality Monitoring and Basin Management.

A. Groundwater Extractions

The schedule summarizing the Water Year 2017 (WY 2017) 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 2017." For the purposes of this Annual Report Water Year 2017 is defined as beginning October 1, 2016 and ending on September 30, 2017.

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 2017, 2,345 AF was diverted and stored in the Seaside Basin under the ASR program. Rainfall in the area was about 152% of normal, Carmel River flow was 292% of normal. WY 2017 was classified as "Extremely Wet" by MPWMD.

Based upon production reported for WY 2017, the following Standard Producers are entitled to Free and Not-Free Carryover Credits to 2018 in accordance with the Decision, Section III. H. 5:

Producer	Free Carryover Credit (Acre-feet)	Not-Free Carryover Credit (Acre-feet)
Granite Rock	166.32	86.45
DBO Development	317.77	161.66
	(2.31assigned to CAW against Free Carryover)	
Calabrese (Cypress)	10.87	1.85
CAW	00.00	2.31 (assigned from DBO)
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 2017 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 2017 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

On April 7, 2017, D.B.O Development No. 30 transferred/assigned 0.16 acre-feet (AF) of its Standard Production Allocation within the Seaside Groundwater Basin to California American Water Company for the Water Year ending 2017 applied to Water Year 2017. This transfer of water allocation was the first assignment of water pursuant to MPWMD Ordinance No. 166 and the Front-Loading Agreement between D.B.O and California American Water Company. A copy of this document is contained in Attachment 10.

On June 15, 2017, D.B.O Development No. 30 transferred/assigned 2.15 acre-feet (AF) of its Standard Production Allocation within the Seaside Groundwater Basin to California American Water Company for the Water Year ending 2017 applied to Water Year 2017. This transfer of water allocation was the second assignment of water pursuant to MPWMD Ordinance No. 166 and the Front-Loading Agreement between D.B.O and California American Water Company. A copy of this document is contained in Attachment 10.

A Status Conference with the Court was held on March 17, 2017. The transcript of the Status Conference Hearing is available for viewing on the Watermaster web site at http://www.seasidebasinwatermaster.org/ under Postings and Records on the March 17, 2017 date line in the Court Docs column.

During WY 2017 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 2017 the Watermaster Board was comprised of the following Members and Alternates:

MEMBER	ALTERNATE	REPRESENTING
Director Paul Bruno	N/A	Coastal Subarea Landowner
Eric Sabolsice	Nina Miller	California American Water
Director Bob Costa	N/A	Laguna Seca Subarea Landowner
Director Jeanne Byrne	Andrew Clarke	MPWMD
Mayor Maryann 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 2017 and accordingly 2,345.19 acre-feet of water was injected into the Basin as Stored Water Credits and 1,501.33 acre-feet was extracted.

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.

The Watermaster made a declaration regarding the availability of Artificial Replenishment for WY 2018 at its Board meeting of December 6, 2017. A copy of this declaration is contained in Attachment 2. In WY 2017 the Watermaster continued the previously implemented 10% water production reductions required under Section III.B.2 of the Decision. No additional water production reductions were implemented in WY 2017.

Total pumping for WY 2017 exceeded the Operating Yield (OY) and the Natural Safe Yield (NSY) of the Basin.

California American Water reported annual pumping quantities that exceeded their Standard Production NSY allocation by XXXX acre-feet, and reported annual pumping quantities that exceeded Operating Yield allocation by XXXX acre-feet. The Watermaster will assess California American Water a Replenishment Assessment for these over productions, as further described in Section H, below.

The City of Seaside reported annual pumping quantities that exceeded their Standard Production NSY allocation by XXXX acre-feet, and reported annual pumping quantities that exceeded Operating Yield allocation by XXXX 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 2017 amounted to $82,000 including a $25,000 dedicated reserve. Costs include the Administrative Officer salary and legal counsel fees. The “Fiscal Year 2017 Administrative Fund Report” is provided as Attachment 3.

H. Replenishment Assessments

At its meeting of October 4, 2017 the Watermaster Board determined that the Replenishment Assessment unit cost of $2,872 per acre-foot should remain the same as the previous year for WY 2018

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 2017, California American Water's Replenishment Assessment for Overproduction in excess of its share of the Natural Safe Yield is $XXXX, and for overproduction in excess of its share of the Operating Yield is $XXXX.

The City of Seaside's Replenishment Assessment for its Municipal System for Overproduction in excess of its share of the Natural Safe Yield is $XXXX, and for overproduction in excess of its share of the Operating Yield is $XXXX. 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 2017 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 Fiscal Year 2018 Monitoring & Management Plan Operations Budget contained in Attachment 6 reflects budget revisions approved at the December 6, 2017 Board meeting associated with correcting the amount for Task I.4.c (preparation of the 2018 Seawater Intrusion Analysis Report) from $27,302 to $22,082, lowering the Operations Budget by $5,220.

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

J. Water Quality Monitoring and Basin Management

Water Quality Analytical Results

Groundwater quality data continued to be collected and analyzed on a quarterly basis during WY 2017 from the enhanced network of monitoring wells. The low-flow sampling method implemented in 2009 continued to be used in 2017 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 2017.

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. Water samples from these wells continue to be collected on an annual basis.

The expanded water quality analyses begun in WY 2012 were continued in WY 2017, and will be continued in WY 2018, for the four coastal Watermaster Sentinel wells (SBWM-1, SBWM-2, SBWM-3, and SBWM-4), and also 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.

Management and Monitoring Program Work Plan

The Monitoring and Management Program (M&MP) 2018 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 4, 2017 meeting.

The major changes from the 2017 M&MP Work Plan are:

Tasks M.1.c, d, and e (Preparation for and Attendance at Meetings and Peer Review of Documents and Reports): Portions of the Requests for Service (RFSs) for general hydrogeologic consulting services have been allocated between these three tasks in the amounts anticipated to potentially be requested of HydroMetrics, Todd Groundwater (Gus Yates) and Martin Feeney for assistance. It is anticipated, with Technical Advisory Committee (TAC) and Board approval, to issue RFSs to each of these firms for general on-call/as-needed hydrogeologic consulting services in 2018 as follows:

HydroMetrics: $11,000
Todd Groundwater: $4,000
Martin Feeney: $4,000
Total: $19,000

These amounts are based on prior experience with these firms and what is believed likely to be a growing need for these types of services, especially as interface with the Groundwater Sustainability Agency for the Salinas Valley Basin begins.

In 2017 the amount budgeted for these three tasks was $14,376. For 2018 the proposed amount is $19,000. Mr. Yates and/or Mr. Feeney would only be called upon when an issue arises that the TAC or Board feels would benefit from their review or input.

Task I.2.a.1 (Conduct Ongoing Data Entry/ Database Maintenance/Enhancement): In 2017 the amount budgeted for this Task was $13,452. The proposed scope of work for this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing their portion of this task has risen from $112/hour to $149/hour, so the amount proposed for 2018 is increased by $3,552 to $17,004. There was no increase in cost for the outside consultant that manages the Watermaster's website (where data from this task is posted), and that cost remained at $200/month.

Task I.2.b.2 (Collect Monthly Water Levels): In 2017 the amount budgeted for this Task was $7,192. The proposed scope of work for this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing this task has dropped from $89/hour to $62/hour, so the amount proposed for 2018 is reduced by $3,466 to $3,726.

Task I.2.b.3 (Collect Quarterly Water Quality Samples): In 2017 the total amount budgeted for this Task was $55,520, comprised of $29,834 for MPWMD and $25,686 for Martin Feeney. The proposed scope of work for this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing their portion of this task has dropped from $89/hour to $62/hour, so the amount proposed for their portion of this work for 2018 is reduced by $5,292 to $24,542. The amount proposed for Martin Feeney's portion of this work in 2018 is increased by the $900 additional lab cost of adding field blanks and duplicates to the Sentinel Well water quality sampling program, so the amount proposed for his portion of this work for 2018 is increased by $900 to $26,586. Therefore, the amount proposed for 2018 is reduced by $4,392 to $51,128.

Task I.2.b.6 (Reports): In 2017 the amount budgeted for this Task was $2,688. The proposed scope of work for this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing their portion of this task has risen from $112/hour to $149/hour, so the amount proposed for 2018 is increased by $888 to $3,576.

Task I.2.b.7 (CASGEM Data Submittal for Watermaster's Voluntary Wells): In 2017 the amount budgeted for this Task was $1,792. The proposed scope of work for this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing their portion of this task has risen from $112/hour to $149/hour, so the amount proposed for 2018 is increased by $592 to $2,384.

Task I.3.a.1 (Update the Existing Model): HydroMetrics proposed cost to update the existing Seaside Basin groundwater model is $54,370, and this is the amount budgeted for this task in 2018. This amount reflects an increase in cost to address the items recommended in Gus Yate's peer review of HydroMetrics' proposal. Copies of documents with detailed background information on this Task were included in the agenda packet for the Budget and Finance Committee's September 19, 2017 meeting which is posted on the Watermaster's website at this link:

http://www.seasidebasinwatermaster.org/Agenda.pdf/17%200919%20WM%20Budget%20&%20Finance%20Com%20mtg%20Agenda%20pkt.pdf.

It is anticipated that the Watermaster will be reimbursed for 50% of the costs to perform this Task by MPWMD and Monterey One Water (formerly MRWPCA) whose projects intend to inject new sources of water into the Basin. Therefore, the net cost to the Watermaster for the work of this Task should only be $27,185. No amount for this task was budgeted in 2017.

Task I.3.a.3 (Evaluate Replenishment Scenarios & Develop Answers to Basin Management Questions): In 2017 the amount budgeted for this Task was $40,000. That was a placeholder amount in case the Board decided it wished to perform work of this type. Since the Model and BMAP will be updated under Tasks I.3.a.1 and I.3.c respectively, this Task would only be used if there were other issues the Board wished to evaluate and which were not covered in the updated BMAP. For this reason in 2018 it is proposed that this amount be reduced by $20,000 to $20,000.

Task I.3.c (Refine and/or Update the Basin Management Action Plan): In 2017 the amount budgeted for this Task was $25,000. That was a placeholder amount in case the Board decided to perform this work. HydroMetrics' proposed cost to update the existing Basin Management Action Plan is $45,260, and this is the amount proposed for this task in 2018. This amount includes the cost to address the items recommended in Gus Yate's peer review of HydroMetrics' groundwater model updating proposal referred to in Task I.3.a.1. This is an increase of $20,260 over the 2017 budget amount.

Task I.3.e (Seaside Basin Geochemical Model): This is a proposed new Task for 2018. There was no such task in the 2017 Work Plan. The Task would be performed by MPWMD's Consultant, Pueblo Water Resource, Inc. If necessary, HydroMetrics may also work on this task after the initial modeling results have been prepared and analyzed. A preliminary estimate of Pueblo Water Resource's cost for their portion of the work is $50,000. A preliminary estimate of HydroMetrics' cost for their portion of the work, if that work is found to be necessary, is $20,000 to $40,000 depending on how many scenarios need to be run. The proposed budget amount to perform this Task is $50,000, based on only performing the Pueblo Water Resources portion of the work. If the Board determines that the HydroMetrics portion of the work is necessary, the Board could fund that work from the Contingency line-item or in some other manner. It is anticipated that the Watermaster will be reimbursed for all of the costs to perform this Task 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). Therefore, there should be no net cost to the Watermaster for the work of this Task.

Task I.4.c (Annual Report- Seawater Intrusion Analysis): In 2017 the total amount budgeted for this Task was $21,786, comprised of $896 for MPWMD and $20,890 for HydroMetrics. The proposed scope of MPWMD's portion of this task is unchanged from 2017, but the hourly rate for the MPWMD staff involved in performing their portion of this task has risen from $112/hour to $149/hour, so the amount

proposed for 2018 is increased by $296 to $1,192. HydroMetrics' proposed cost to perform their portion of this Task is $20,890. This does not include a new task proposed by HydroMetrics, which would be to perform statistical trend analyses of data from certain of the wells. If that task were included HydroMetrics' cost would be $26,110. The TAC felt that a decision on whether or not to perform trend analyses should be made only if monitoring anomalies are encountered in 2018. If a decision was made to perform that work, it could be funded from the Contingency line-item. Therefore, the proposed budget shows no change in the cost for performing HydroMetrics' portion of this Task. Thus, overall there is an increase of only $296 for this Task in 2018.

The proposed amount for the line-item titled "Contingency (not including Technical Program Manager)" is 10%, the same percentage that has been used in preceding years. The line item for the Technical Program Manager has been reduced by $10,000, based on actual expenditures for this line-item in recent years.

The adopted Budget is $113,636 higher than the 2017 Budget. It should be noted that the Watermaster's actual expenditures will be considerably less if there is cost-sharing with other entities for the work of Tasks I.3.a.1 and I.3.e.

No new monitoring wells are planned for installation in 2018. Consequently, no monies are budgeted in the M&MP Capital Budget for 2018.

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 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. The complete document may be viewed and downloaded from the Watermaster's website at: http://www.seasidebasinwatermaster.org/.

Considerable additional data (8 years' worth) on groundwater quality and groundwater levels throughout the Basin have been collected since the BMAP was prepared. Drought conditions have also been experienced over the past four years, which has impacted aquifer recharge more than anticipated in 2009. Also, even though pumping in recent years has been below the required amounts required under the Decision, groundwater levels have continued to fall. This suggests that the Natural Safe Yield of 3,000 AFY in the Decision may be too high.

Integrating this new information into an updated BMAP will be beneficial and will provide a more complete understanding of the state of the basin. This information could also be used to refine the earlier findings, conclusions, and recommendations contained in the 2009 BMAP. An updated BMAP will provide improved knowledge of:

- The useable quantities of groundwater stored in the basin.
- The annual loss of storage in the basin due to overpumping. (The BMAP estimated this to be between 1,300 and 1,430 AFY).
- The Natural Safe Yield of the basin. (This is the quantity of water than can be extracted through pumping while achieving the first of the two objectives listed above. The Decision set this at an assumed value of 3,000 AFY).

Therefore, updating of the BMAP will be performed in FY 2018, as described above under Task I.3.c of the M&MP.

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 are planned 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. However, as reported in the 2016 Annual Report, in 2016 for the first time there was conflicting data from two of the Watermaster's Sentinel Wells. Some of the data were suggestive of the possible initial onset of seawater intrusion, while other data indicated seawater intrusion was not occurring. At the time of submittal of the 2016 Annual Report, because of the conflicting data no conclusions with regard to the initial onset of seawater intrusion could be drawn.

Verification resampling, one of the recommendations contained in the 2016 SIAR, was undertaken in order to reach a conclusion. Specifically the recommendation was to perform verification water quality sampling and analysis for Sentinel Well SBWM-2, Sentinel Well SBWM-4, and the Ord Terrace Shallow Monitoring Well. This work was performed in December 2016. A Technical Memorandum prepared by HydroMetrics describing the work and containing an analysis of the data is contained in Attachment 11. The principle conclusion from the analysis was that none of the samples definitively indicated incipient seawater intrusion. However, variations in groundwater quality from samples collected during 2016 from wells SBWM-1 and SBWM-4 necessitate continued vigilance regarding

potential changes to the Basin's groundwater quality. The Technical Memorandum contained seven recommendations, all of which were carried out in 2017.

One of these recommendations was to prepare a Work Plan to try to identify the source of fluctuating chloride concentrations. A proposed Work Plan was prepared by HydroMetrics, and is contained in Attachment 12. After due consideration the Technical Advisory Committee and the Board of Directors determined that it would be appropriate to wait until the data from the late-2017 Sentinel Well induction logging, water quality sampling, and fluid resistivity logging events had been analyzed before making a decision on whether to proceed with the activities described in the Work Plan.

A Technical Memorandum prepared by Martin Feeney, one of the Watermaster's hydrogeologic consultants, describes the late-2017 Sentinel Well fluid resistivity logging event and is contained in Attachment 13. None of the data obtained from this logging indicated that seawater intrusion was occurring. The logging confirmed that the depth-specific water quality samples that are routinely collected during the sampling events are representative of the water in the casing at the specified depth.

The Watermaster retained HydroMetrics LLC to prepare the WY 2017 Seawater Intrusion Analysis Report (SIAR) required by the M&MP. The WY 2017 SIAR provides an analysis of data collected during this Water Year.

The 2017 SIAR notes that although changes in chloride concentrations were found at some depths in some of the Sentinel Wells, the evaluation of the data from the sampling and monitoring program continues to indicate that seawater intrusion is 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 described in Attachment 12. However, should future data warrant it, the Watermaster may reconsider undertaking the initial phase of the Work Plan.

Groundwater Modeling

During FY 2009 the previous Groundwater Model of the Basin was updated and a separate Groundwater Model was developed to determine protective water levels within the Basin. The modeling work was performed by HydroMetrics LLC. This Model development work was described in the 2009 Annual Report.

Updating and Evaluating the Accuracy of the Groundwater Model

Evaluating the accuracy of the Groundwater Model was performed in 2015 and is reported on in the 2015 Annual Report. The Model was updated by incorporating more recent data several years ago, but at that time it was not recalibrated because it was felt that the groundwater levels predicted by the Model satisfactorily corresponded to field measured groundwater levels. However, in some parts of the Basin it was found that he Model results were beginning to diverge from the field measured results, and therefore recalibration would be desirable. Further, even though pumping in recent years has been close to or even below the Natural Safe Yield (NSY) amount of 3,000 AFY authorized in the Decision, groundwater

levels have continued to fall. This suggests that the NSY in the Decision may be too high. An updated value for NSY is needed in order to make proper Basin management decisions to prevent seawater intrusion and continued declines in water levels from occurring. An updated Model would be needed to develop an updated NSY value.

Also, in late 2017 the Watermaster began interacting with the new Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) by being selected for membership on its Advisory Committee. Once the SVBGSA has advanced to the point of hiring their consultants to start developing their Groundwater Sustainability Plan (GSP), the Watermaster will need to have up-to-date documents in order to work with the SVBGSA to jointly resolve the problem of declining water levels in the Laguna Seca and Corral de Tierra subareas.

Therefore, updating of the model will be performed in 2018, as described above under Task I.3.a.1 of the M&MP.

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

As reported in the 2015 Annual Report, in May 2015 the Monterey County Resource Management Agency convened a Technical Advisory Committee (TAC) to develop a new Salinas River Basin model, and asked the Watermaster to join their TAC for this work. The County asked for information regarding the Watermaster's model of the Seaside Basin to ensure that the Salinas River Basin model coordinates properly with the Watermaster's model, and the Watermaster provided its model to the County.

During 2017 Monterey County Water Resources performed the following activities on development of the new Salinas River Basin model, termed the Salinas Valley Integrated Hydraulic Model (SVIHM):

- Refined the approach for representing land use and crop rotational patterns within the model. This included discussion with stakeholders and agricultural experts in March. Efforts at refinement and review of possible supplemental land use data sources are ongoing.
- The Technical Advisory Committee met on March 14, 2017. Further meetings of the TAC have not been specified but may coincide with future SVIHM updates.
- Calibration of the historical SVIHM (SVIHM-2014), which covers the time period 1967 to 2014, was finalized in 2017. Initial results from the calibrated model were presented to the public at a joint meeting of the Board of Supervisors of Monterey County; Board of Supervisors of the Monterey County Water Resources Agency; and Board of Directors of the Monterey County Water Resources Agency on July 11, 2017.
- Began with initial steps for completing the 2015 and 2016 updates to the SVIHM.
- The USGS initiated, and is continuing, refinements to the Surface Water Operations module of MODFLOW-OWHM which – upon completion – will be incorporated into the SVIHM to allow for an operational version of the model. The operational, as opposed to historical, version of the SVIHM will be used to complete the future trends analysis that will be part of the final Basin Investigation report (estimated release in late 2019).

The Watermaster will continue to participate in the Technical Advisory Committee meetings for the development of the SVIHM in order to ensure that the SVIHM coordinates well with the Watermaster's Seaside Basin model.

<u>Sustainable Groundwater Management Act</u>

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. Of the 54 requests for changes to basin boundaries, DWR approved 39, denied 12, and three were deemed incomplete. Most of the modifications were made to basins in the Central Valley and included refinements reflecting waterways, county lines and geologic information. 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).

At the Monterey County level:

The County met the June 2017 DWR deadline for the establishment of GSAs by filing its Notification with DWR to become the GSA for all of the portions of the Salinas Valley Basin that do not lie within the Adjudicated Seaside Basin. However, Marina Coast Water District (MCWD) also filed a Notification with DWR that it wished to serve as the GSA for the portion of the Salinas Valley Groundwater Basin that lies within their service area, and which does not lie within the Adjudicated Seaside Basin. Two other agencies in southern Monterey County also filed Notifications seeking to be the GSA for their portions of the Salinas Valley Basin. As of the date of preparation of this 2017 Annual Report those entities were still discussing how to resolve these conflicts. However, in spite of these as-yet unresolved conflicts, the County created the SVBGSA and is moving ahead with development of a GSP.

As noted above the SVBGSA approved the Watermaster's application for membership on its Advisory Committee. This will ensure that there is close coordination between that agency and the Watermaster on matters of mutual interest.

K. Conclusions and Recommendations

The Seaside Basin Watermaster Board has worked diligently to meet all of the Court's established deadline dates. All of the Phase 1 Scope of Work activities, which are described in the "Implementation Plan for the Seaside Basin Monitoring and Management Program" dated March 7, 2007, have been completed. At the Watermaster Board meeting held on October 4, 2017 the Board adopted the FY 2018 budgets contained in Attachment 6, which support carrying out all elements of the "Seaside Groundwater Basin Monitoring and Management Program 2018 Work Plan." That Work Plan describes the M&MP activities that will be conducted during Fiscal Year 2018. 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.

The Watermaster has scheduled another status conference with the Court on March 30, 2018 to provide an update on certain of the Watermaster's activities.

LISTING OF ACRONYMS USED IN THIS ANNUAL REPORT

AF - acre-feet
ASR - Seaside Basin Aquifer Storage and Recovery program
BLM - Bureau of Land Management
BMAP - Basin Management Action Plan
CASGEM - California Statewide Groundwater Elevation Monitoring
CAW - California American Water
Decision - Superior Court Decision rendered by Judge Roger D. Randall on March 27, 2006
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
SVBGSA - Salinas Valley Basin Groundwater Sustainability Agency
TAC - Technical Advisory Committee
USGS - United States Geological Survey
WY - Water Year

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	7
AGENDA TITLE:	Set Next Meeting Date
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
There is no TAC meeting business that needs to be conducted in December, so there will be no need for a December TAC meeting.

I recommend that the next TAC meeting be held on Wednesday January 10, 2018.

ATTACHMENTS:	None
RECOMMENDED ACTION:	Approve skipping having a TAC meeting in December and holding the next TAC meeting on January 10, 2018

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	8
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.

Attached is the most recent update of the Work Schedule for FY 2017.

There are a few things to note in this update:

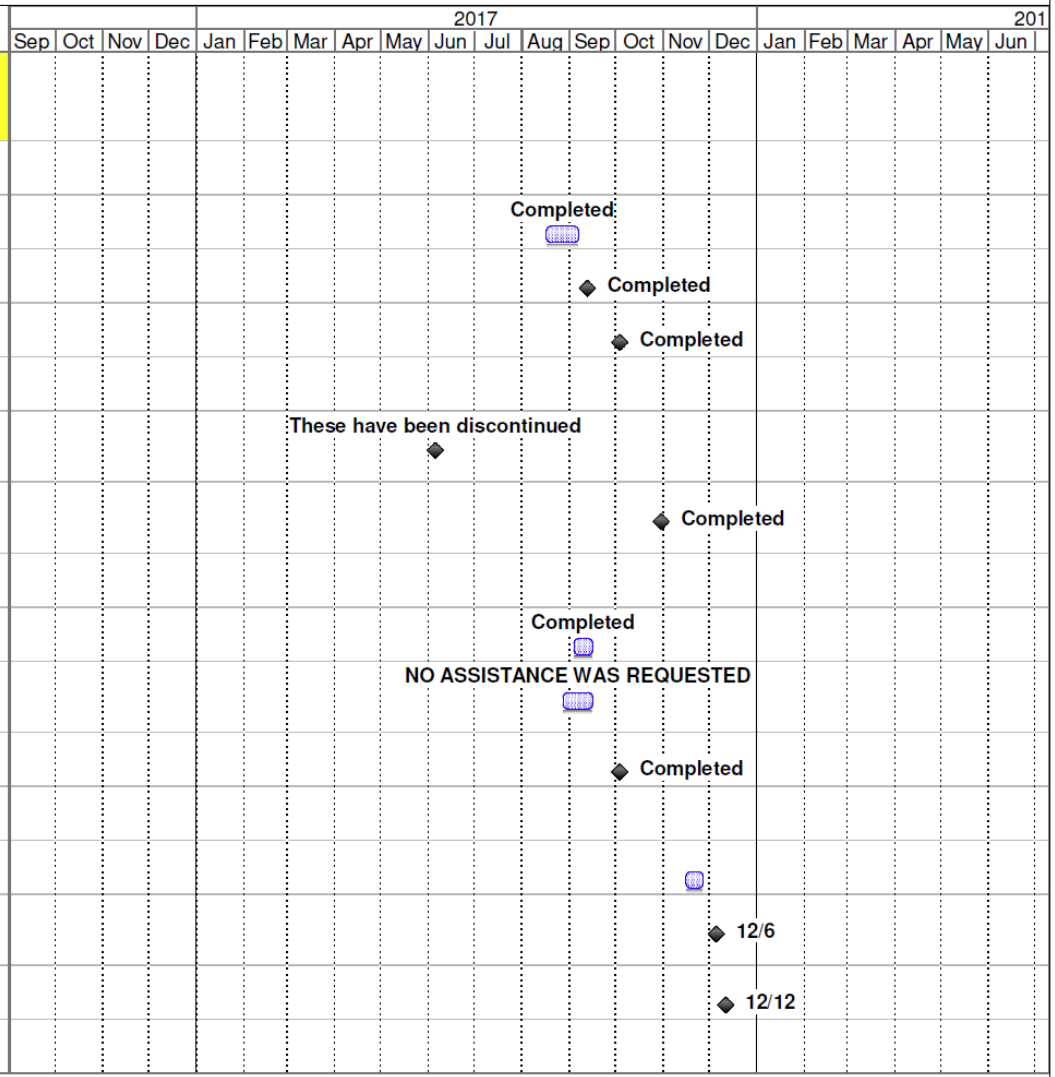
1. There will be no December 2017 TAC meeting as there will be no TAC business that needs to be conducted at that time. The next TAC meeting will be the 2nd Wednesday in January, January 10, 2018.
2. The Board will meet on its normal meeting date of December 6 (1st Wednesday in December) to approve a number of things including the Annual Report and the Initial Consultant Contracts for 2018.

The January TAC meeting agenda will contain the proposed Work Schedule for FY 2018.

ATTACHMENTS:	Schedule of Work Activities for FY 2017
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

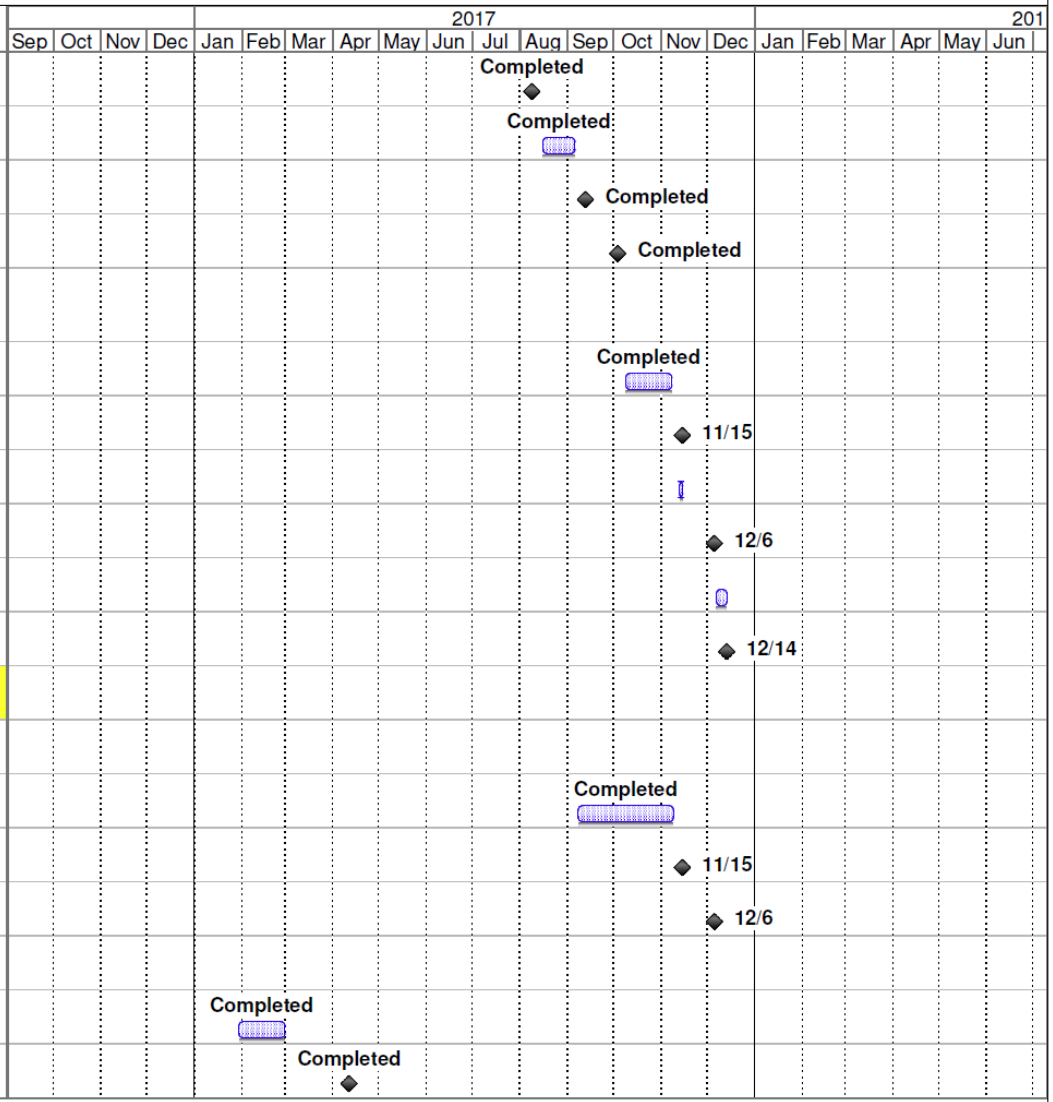
Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule

ID	Task Name
1	***CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK***
2	**2018 Administration, Operations and Replenishment Budgets**
3	Prepare M&MP Draft Budgets (Same as Task 19)
4	TAC Approves M&MP Budgets (Same as Task 20)
5	Board Approves M&MP Budgets (Same as Task 21)
6	**Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports**
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 46)
8	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016 (Same as Task 42)
9	**Replenishment Assessment Unit Costs for Water Year 2018**
10	B&F Committee Develops Replenishment Assessment Unit Cost for Water Year 2018
11	If Requested, TAC Provides Assistance to B&F Committee in Development of 2018 Water Year Replenishment Assessment Unit Cost
12	Board Adopts and Declares 2018 Water Year Replenishment Assessment Unit Cost
13	**Replenishment Assessments for Water Year 2017**
14	Watermaster Prepares Replenishment Assessments for Water Year 2017
15	Watermaster Board Approves Replenishment Assessments for Water Year 2017 (At December Meeting)
16	Watermaster Levies Replenishment Assessment for 2017
17	**Monitoring & Management Program (M&MP) Budgets for 2018 and 2019**

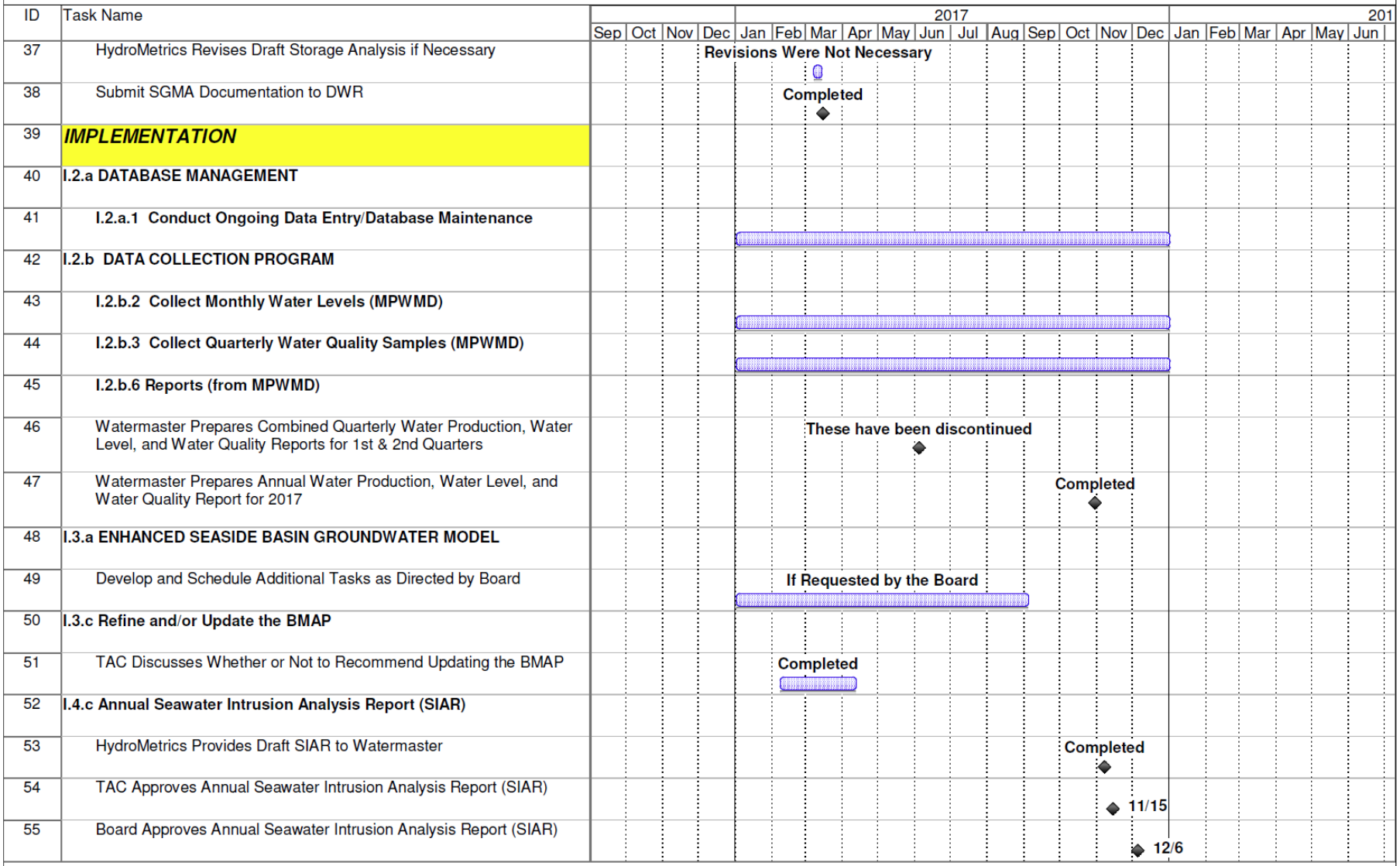


Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule

ID	Task Name
18	Preliminary Discussion of Potential Scope of Work for 2018 M&MP
19	Prepare Draft 2018 M&MP Work Plan and 2018 and 2019 O&M and Capital Budgets
20	TAC approves Draft 2018 M&MP Work Plan and 2018 and 2019 O&M and Capital Budgets
21	Board approves 2018 M&MP Work Plan and 2018 and 2019 O&M and Capital Budgets
22	**2017 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)**
23	Prepare Preliminary Draft 2017 Annual Report
24	TAC Provides Input on Preliminary Draft 2017 Annual Report
25	Prepare Draft 2017 Annual Report (Incorporating TAC Input)
26	Board Provides Input on Draft 2017 Annual Report (At December Board Meeting)
27	Prepare Final 2017 Annual Report (Incorporating Board Input)
28	Watermaster Submits Final 2017 Annual Report to Judge
29	***MANAGEMENT***
30	**M.1 PROGRAM ADMINISTRATION**
31	Prepare Initial Consultant Contracts for 2018
32	TAC Approval of Initial Consultant Contracts for 2018
33	Board Approval of Initial Consultant Contracts for 2018
34	**M.1.g – Sustainable Groundwater Management Act Reporting Requirements**
35	HydroMetrics Prepares Draft Groundwater Storage Analysis
36	TAC Reviews HydroMetrics Draft Storage Analysis



Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule



Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule

ID	Task Name	2017																201					
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
56	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**	**WORK COMPLETED - NO FURTHER WORK PLANNED IN 2017**																					
57	**I.4.e Refine and/or Update the SIRP**	**ONLY IF FOUND TO BE NECESSARY**																					

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 15, 2017
AGENDA ITEM:	9
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
The "Other Business" agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only