

**MEETING NOTICE AND AGENDA**  
**TECHNICAL ADVISORY COMMITTEE**  
**OF THE**  
**SEASIDE BASIN WATER MASTER**

**DATE: Wednesday, January 13, 2016**

**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: Roger Hulbert, California American Water Company**

**Vice-Chairperson: Joe Oliver, 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 Peninsula Water Management District	Monterey County Water Resources Agency

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The next regular meeting will be held on Wednesday February 10, 2016 at 1:30 p.m. at the MRWPCA Board Room.	

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	November 18, 2015
<b>AGENDA ITEM:</b>	2.A
<b>AGENDA TITLE:</b>	Approve Minutes from the September 9, 2015 Meeting
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.</p>
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee Meeting  
November 18, 2015**

**Attendees: TAC Members**

City of Seaside – Rick Riedl (via telephone)  
California American Water – Roger Hulbert  
City of Monterey – Norm Green (via telephone)  
Laguna Seca Property Owners – Bob Costa  
MPWMD – Joe Oliver  
MCWRA – Howard Franklin  
City of Del Rey Oaks – No Representative  
City of Sand City – Leon Gomez (via telephone)  
Coastal Subarea Landowners – No Representative

**Watermaster**

Technical Program Manager - Robert Jaques

**Consultants**

HydroMetrics –Georgina King (via telephone)  
Todd Groundwater – Gus Yates (via telephone - for Agenda Item No. 7 only)

**Others**

None

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The meeting was convened at 1:37 p.m.

**1. Public Comments**

There were no public comments.

**2. Administrative Matters:**

**A. Approve Minutes from the September 9, 2015 Meeting**

On a motion by Mr. Franklin, seconded by Mr. Oliver the minutes from this meeting were unanimously approved as presented.

**B. Notes From October 13, 2015 Salinas River Groundwater Basin Investigation Model  
TAC Meeting**

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

Mr. Franklin reported that the next TAC meeting will probably be held in January 2016.

**C. Responses to Comments Made on Draft EIR for the Groundwater Replenishment  
Project**

Mr. Jaques summarized the agenda packet materials for this item. There was no further discussion of this item.

**D. Sustainable Groundwater Management Act (SGMA) Update**

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

Under the item pertaining to “Change in groundwater storage reporting requirements” under this item, Ms. King said she felt that while calculating the recharge amounts could be feasible, this approach might be more difficult than preparing groundwater contours,. Mr. Oliver asked if using the recharge approach would be more of a "basin budget" approach. Ms. King responded no, that it would be possible to estimate the amount of rainfall that recharges the basin, but that doing the groundwater contour approach would be more accurate and a potentially easier approach to take. Mr. Oliver said he felt the groundwater contour approach would be preferable, and Mr. Costa concurred.

Based on this discussion there was consensus to use the groundwater contour approach (Approach #2 as described on page 19 in the agenda packet).

### **3. Approve Initial RFSs for MPWMD and HydroMetrics for 2016**

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

Mr. Riedl asked if Derrik Williams would be involved in HydroMetrics work under these RFSs, and Ms. King responded “yes” that he would be involved in RFS No. 2016-01, but would not be involved in RFS No. 2016-02.

On a motion by Mr. Costa, seconded by Mr. Franklin, these four RFSs were unanimously approved and will be forwarded to the Board for Board approval.

### **4. Discuss and Provide Input on the 2015 Seawater Intrusion Analysis Report (SIAR)**

Ms. King presented and summarized the SIAR using the attached PowerPoint slides.

She said the overall conclusion is that none of the parameters that were evaluated were indicative of the presence of seawater intrusion. It was found that follow-up sampling of well No. SBWM-1 showed that the sodium to chloride molar ratio has dropped back down from its 2014 data, so there does not appear to be any seawater intrusion problem at that location.

In the induction logs and the Northern Coastal groundwater elevations there is some fluctuation in data from year-to-year. This is normal. The data does not indicate the presence of seawater intrusion. However, the groundwater elevations show a continuing decline in the deep aquifer, while the shallow aquifer is relatively stable. The Southern Coastal Subarea groundwater elevations are also relatively stable. Mr. Oliver commented that there may be some communication between groundwater and surface water in the Southern Coastal Subarea, e.g. Roberts Lake.

A new chart has been added this year showing the eastern Laguna Seca Subarea groundwater elevations to highlight the continuing decline of water levels there in spite of the 10 percent pumping cutbacks. Mr. Oliver asked if this graphic would be included in future SIARs. Ms. King responded that this is not really a seawater intrusion issue and, following further discussion, it was agreed that Mr. Oliver would include a graphic of this type, through collaboration with HydroMetrics, in his future annual Water Quality/Water Level Reports to the Watermaster.

There are two pumping depressions, one in the Northern Coastal Subarea and one in the Laguna Seca Subarea.

Pumping in 2015 is the lowest since SIARs started being prepared in 2006, and is below the Decision-allowable Operating Safe Yield for the Basin as a whole.

On a motion by Mr. Franklin, seconded by Mr. Costa, the 2015 SIAR was unanimously approved.

### **5. Discuss and Provide Input on the Preliminary Draft Watermaster 2015 Annual Report**

Mr. Jaques responded to questions regarding the Preliminary Draft 2015 Annual Report and highlighted several of the issues covered in this document. Following discussion there was agreement to make two revisions, one on page 79 and one on page 81, both to indicate that a stay will be requested of the 2015 and 2018 operating yield reductions.

Following some discussion on a motion by Mr. Costa, seconded by Mr. Franklin, the TAC unanimously recommended sending the Preliminary Draft 2015 Annual Report to the Board for its approval with these two revisions included.

## **7. Report on Analysis by HydroMetrics on Groundwater Flow Divides within and East of the Laguna Seca Subarea**

[Note: At the request of the Chair this item was taken out of order]

Using the attached PowerPoint slides Ms. King presented and summarized the work that had been performed pertaining to flow divide issues.

Mr. Jaques commented that Figure 1 in the earlier draft version of the report had shown somewhat different groundwater flow paths than the figure shown in the PowerPoint slides. Following some discussion Mr. Oliver and Ms. King expressed the feeling that the PowerPoint figure more correctly showed the flow paths than the earlier draft version of that figure.

Groundwater levels along the eastern boundary of the Laguna Seca Subarea were found to drop about 15 feet between 2010 and 2018.

There was much discussion on how the figures depict the flows and whether they support the hypothesis that pumping outside of the Laguna Seca Subarea is contributing to declining water levels within the eastern portion of the Laguna Seca Subarea.

Mr. Yates noted that flow divides can stay in the same locations, even though groundwater levels may go up or down at those same locations. He recommended (1) modeling further into the future and (2) simulating no Laguna Seca Subarea pumping at all, to see what those scenarios show in terms of flow paths and flow divide locations.

Mr. Jaques recommended continuing work on this with these suggestions being addressed and not including the draft flow divide report in the 2015 Annual Report. On a motion by Mr. Franklin, seconded by Mr. Oliver, the TAC unanimously agreed that it would be premature to include the draft report in the 2015 Annual Report. Mr. Jaques will remove it from the 2015 Annual Report and edit the text to indicate that the Watermaster is still evaluating this issue and will report on it in the 2016 Annual Report.

## **6. Set Next Meeting Date**

The TAC concurred with the Program Manager's recommendation that there be no TAC meeting in December, and that the next TAC meeting will be on January 13, 2016.

## **8. Schedule**

Mr. Jaques briefly summarized this agenda item and highlighted several scheduled activities. There was no other discussion of this item.

## **9. Other Business**

There was no Other Business to discuss.

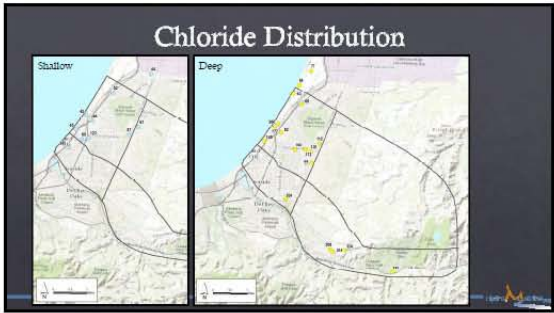
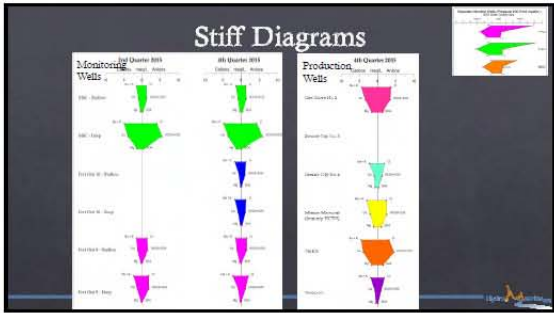
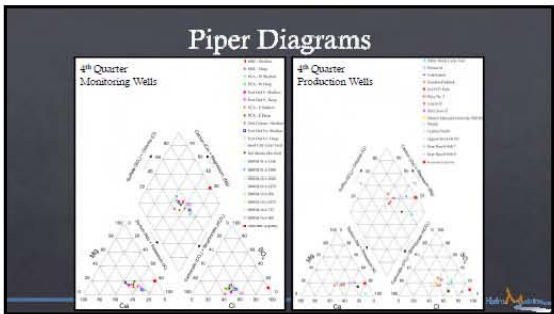
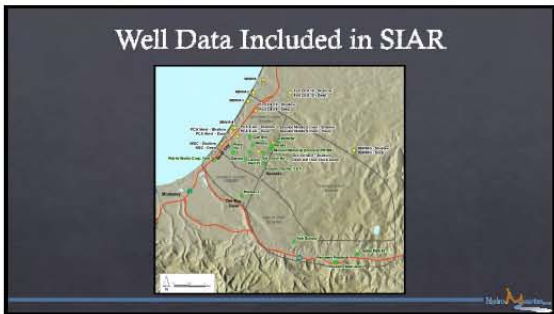
The meeting adjourned at 3:29 p.m.

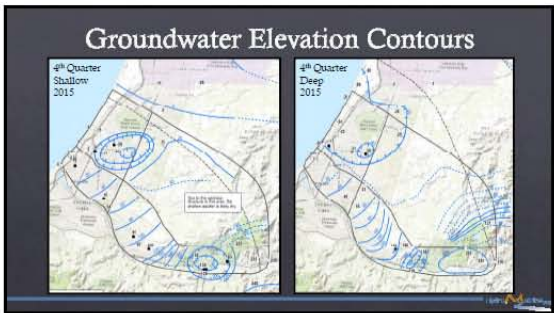
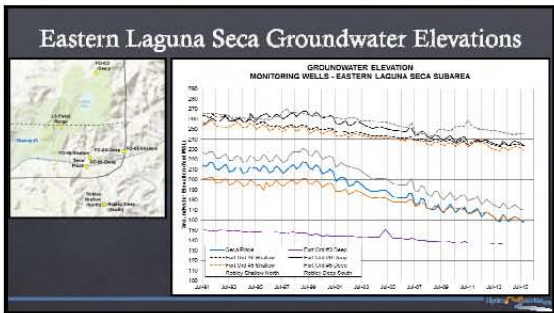
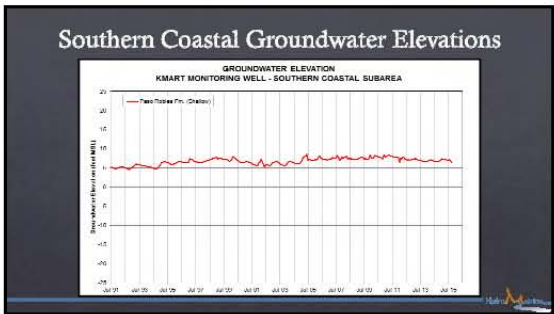
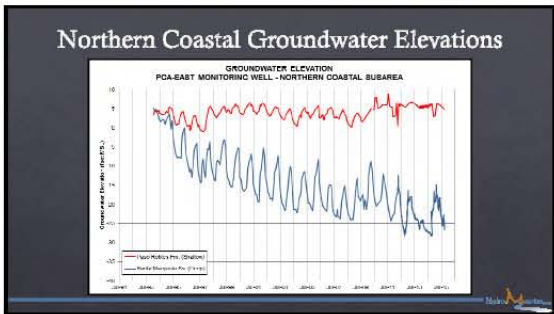
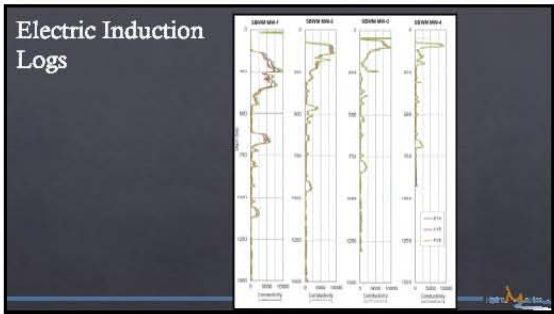
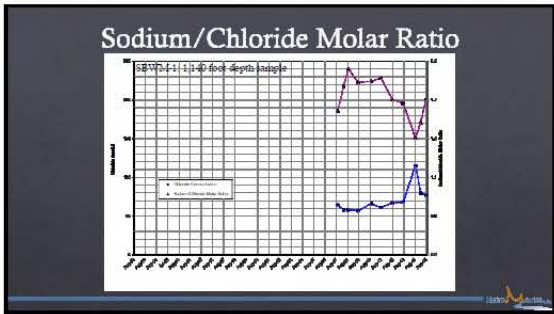
**Attachments:** PowerPoint slides used during presentations of Agenda Items No. 4 & 6

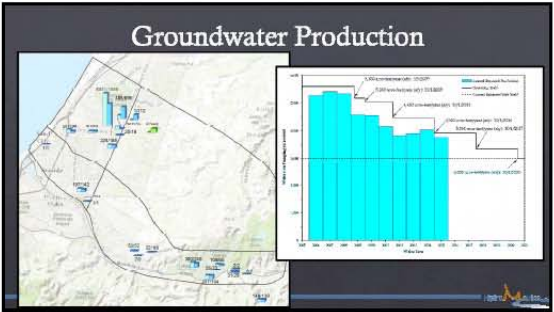
# Seaside Groundwater Basin 2015 Seawater Intrusion Analysis Report

Presented to the Seaside Basin Technical Advisory Committee  
November 18, 2015

- ## Analysis
- ◆ Cation/Anions – Piper and Stiff Diagrams
  - ◆ Chloride Distribution and Na/Cl Molar Ratio
  - ◆ Electric Induction Logs
  - ◆ Groundwater Elevations
  - ◆ Protective Levels
  - ◆ Groundwater Production







- ### Recommendations
1. Continue to analyze and report on water quality annually
  2. Document declining groundwater levels in the Laguna Seca subarea

### Questions?

# Laguna Seca Subarea Groundwater Flow Divides

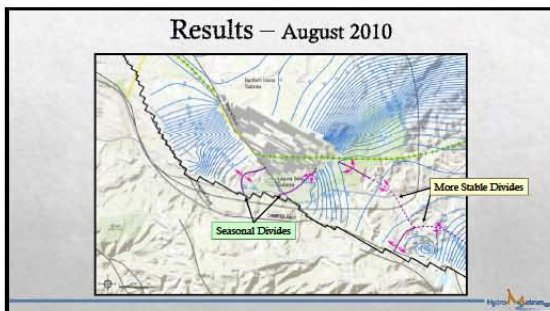
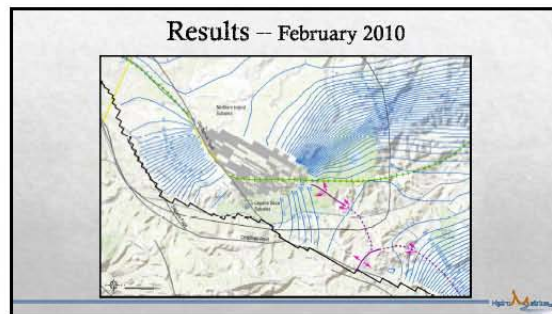
Presented to the Seaside Basin Technical Advisory Committee  
November 18, 2015

## Background & Purpose

- ◆ Declining groundwater levels in the LSSA
- ◆ Some areas of LSSA cannot be effectively managed by WM as wells outside of the Basin are causing the declining levels
- ◆ Map existing and future groundwater flow divides based the groundwater model

## Methods

- ◆ Four time periods selected
  - ◆ February and August 2010 (historic) – near end of calibration period
  - ◆ February and August 2018 (future) – CAW ceases pumping in LSSA
- ◆ Groundwater flow divides hand-delineated using 1 foot contours exported from the flow model
- ◆ Well-defined and less-defined divides based on qualitative inspection of the degree of divergence in the groundwater flow vectors



## Important to Note

- ◆ Flow divides are not static features or hard barriers to flow
- ◆ They will move in response to pumping stresses and changes in recharge

### Conclusions

- ◆ Flow divides do not move much in location between 2010 and 2018.
- ◆ The eastern divides should remain fairly stable under the current configuration of production wells and the scheduled triennial reduction to reach the basin's safe yield
- ◆ The eastern portion of the LSSA is in greater hydraulic connection with the area to the east of the subarea
- ◆ As such, it will not be possible for WM to implement management strategies to stop declining groundwater levels in the eastern portion of the LSSA



Questions?



**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	January 13, 2016
<b>AGENDA ITEM:</b>	2.B
<b>AGENDA TITLE:</b>	Progress Update on Salinas River Groundwater Basin Investigation Model TAC
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

There have not been any Salinas River Groundwater Basin Investigation Model TAC meetings since my last update to the TAC at our November 2015 meeting, but one is scheduled for January 12 (the day before our TAC meeting). I will provide a report from that meeting at our February 10<sup>th</sup> TAC meeting.

A Stakeholder meeting was held in early December, but I did not attend as it was not a TAC meeting so our representation was not needed.

<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	January 13, 2016
<b>AGENDA ITEM:</b>	2.C
<b>AGENDA TITLE:</b>	Sustainable Groundwater Management Act (SGMA) Update
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

This is an update on the planned submission of the basin modification request to recognize the adjudicated Seaside Basin per DWR Bulletin 118. The requested modifications are being developed by MPWMD with input from numerous stakeholders including the Watermaster. One of DWR's requirements is that stakeholders and other affected parties be informed of proposed modifications so they can provide their input prior to submittal of the request to DWR. Providing this update to the TAC and subsequently to the Watermaster Board will assist in complying with the intent of DWR's requirements.

One of the required elements of the basin boundary modification process set forth by DWR is for the requesting agency to adopt a resolution formally initiating the boundary modification request process. Accordingly, MPWMD plans to have such a resolution for the next MPWMD Board meeting on January 27, 2016. According to the DWR basin boundary regulations, within 15 days of this resolution adoption, the DWR must be provided with an "initial notification" of the proposed boundary modification. This initial notification is first required to be filed and posted by DWR prior to the filing of the actual request for boundary modification. The draft language that MPWMD will consider proposing to use for the resolution agenda item and for the required brief description to go with the DWR's initial notification is as follows:

*The proposed boundary modification is to recognize the adjudicated Seaside Groundwater Basin as a distinct basin boundary, per the adjudication decision ("decision") filed with the California Superior Court on March 27, 2006 (Case No. M66343). The adjudicated Seaside Groundwater Basin boundary as defined in the decision more accurately reflects the understanding of hydrogeologic conditions in the basin than that depicted in the existing Bulletin 118 and the decision sets forth the physical solution needed for the basin's sustainable groundwater management. It is proposed that a new Bulletin 118 basin ID number of 3.4-07 be used to recognize the adjudicated Seaside Basin as a distinct basin boundary. Recognition of the adjudicated Seaside Basin would include both internal and external boundary modifications to two existing Bulletin 118 basins: (1) 3-4.08, Salinas Valley, Seaside Area, and (2) 3-4.10, Salinas Valley, Corral de Tierra Area. The basis for these modifications will be further described in the boundary modification request to be submitted to DWR.*

To supplement the TAC's review, two maps are attached: (1) the existing Bulletin 118 map showing basin boundaries in the northern portion of the Salinas Valley and adjacent areas, and (2) the proposed basin boundary revision that recognizes the adjudicated Seaside Basin.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

**AGENDA ITEM:**

2.C (Continued)

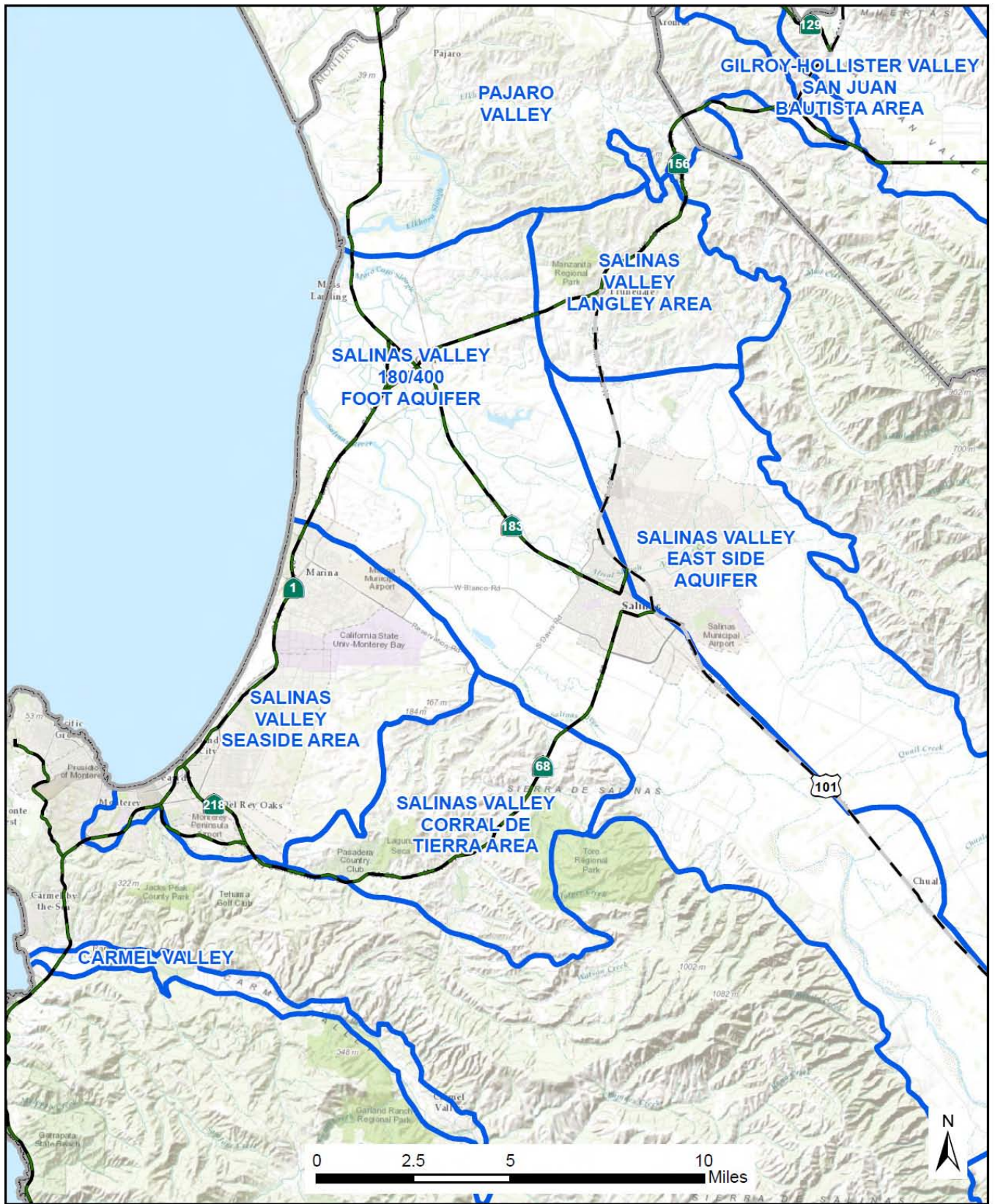
The TAC is requested to review this planned approach, to provide its comments and, if the planned approach is found satisfactory, to provide its recommendation of approval to the Watermaster Board.

**ATTACHMENTS:**

1. The existing Bulletin 118 map showing basin boundaries in the northern portion of the Salinas Valley and adjacent areas.
2. The proposed basin boundary revision that recognizes the adjudicated Seaside Basin (Plate1).

**RECOMMENDED  
ACTION:**

Accept the planned approach as-is, or request revisions, and to then recommend approval to the Board

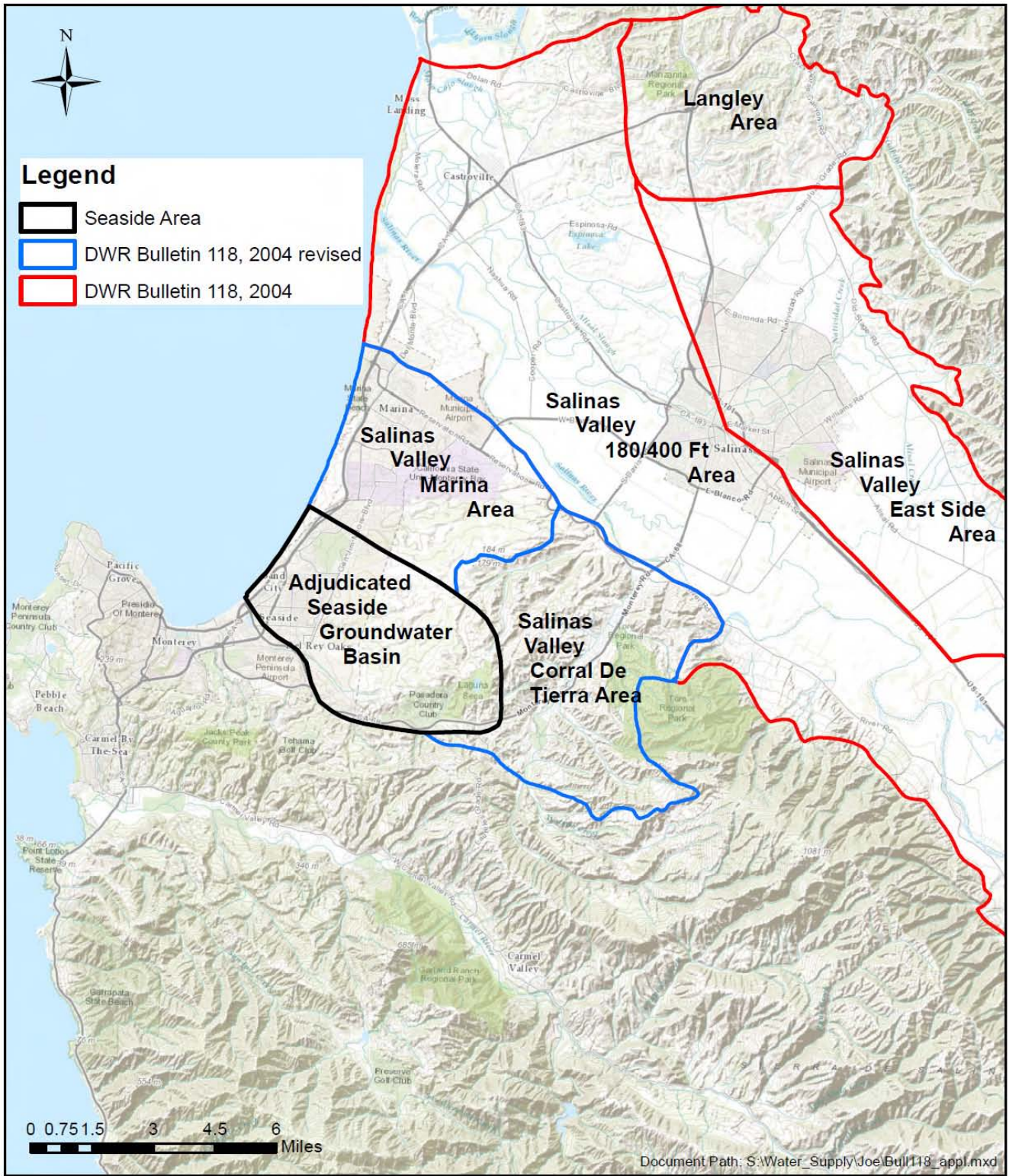


Seaside Area Sub Basin  
and Adjacent Salinas Valley Groundwater Basins

Source: DWR Bulletin 118, 2004



Date: 10/27/2015



**Plate 1: Regional Map showing location of Seaside Groundwater Basin Boundary**



**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	January 13, 2016
<b>AGENDA ITEM:</b>	3
<b>AGENDA TITLE:</b>	Report on Expanded Analysis by HydroMetrics on Groundwater Flow Divides within and East of the Laguna Seca Subarea
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

At its November 18, 2015 meeting the TAC received a presentation by HydroMetrics on their work under RFS No. 2015-04 to estimate the locations of flow divides within and to the east of the Laguna Seca Subarea. The Scope of Work of RFS No. 2015-04 was performed using estimated future pumping condition scenarios from previous modeling work to prepare projected flow divide locations in February and August of 2010 and 2018. The results of that work were shown on a set of four maps to provide an indication of whether the flow divides were moving or whether they were relatively stable. The maps were accompanied by a short Technical Memorandum explaining the methodology used and an outline of the results.

As discussed at the November 18 TAC meeting, preliminary findings of this work led to the conclusion that it would be beneficial to perform some additional work. The additional work would largely consist of modeling some additional scenarios going out further into the future and under different pumping assumptions in order to better understand the impacts on the Laguna Seca Subarea from pumping in the Corral de Tierra area. Some refinements to the draft report were also recommended to improve the reader's understanding of the groundwater flow paths under the various scenarios. It was felt that this additional work would provide a clearer and better understanding of the near-term and long-term impacts of that pumping on groundwater levels in the Laguna Seca Subarea.

An Amendment No. 1 to this RFS was approved by the Board at its December 2, 2015 meeting. The additional work authorized by Amendment No. 1 consisted of:

- Putting additional flow arrows on the maps to improve the reader's understanding of groundwater flow paths.
- Producing additional flow divide maps for the baseline pumping conditions scenario (no CAW pumping in the LSSA and only Alternative Producers pumping) at year 2041 (February and August).
- Producing additional flow divide maps for the scenario with all LSSA pumping halted for years 2010, 2018, and 2041 (February and August).
- Adding the locations of pumping wells on all maps.
- Producing a map showing the amount of pumping at each well near the boundary of the LSSA and the El Toro area. The amount of pumping will be shown by either a bar graph or a bubble map.
- Producing a cross-section of the LSSA/ El Toro area to demonstrate what aquifer thicknesses are included in the model.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

**AGENDA ITEM:**

3 (Continued)

- Updating the draft report by including information about the amount of pumping in each simulation, and addressing comments that were raised during the review of the draft report.

The results of this additional work were integrated with the original scope of work to develop the revised Technical Memorandum which is attached. The conclusions from that document are presented below.

- 1. The groundwater flow divides do not appear to move appreciably between 2010 of the Historic Scenario and 2041 of the Baseline Scenario. This indicates that flow divides will remain relatively stable under currently anticipated pumping conditions in the future.*
- 2. The groundwater flow divide located in the eastern portion of the LSSA is shown to migrate westward during the No Standard or Alternate Producer Pumping Scenario. This movement is caused by relative increases in groundwater elevations in the LSSA because pumping is reduced compared to east of the LSSA where pumping is not reduced. This migration highlights the fact that groundwater flow divides are not static physical features.*
- 3. For every month investigated in all scenarios, groundwater in the most northeasterly portion of the LSSA is on the same side of the flow divide as the Corral de Tierra subbasin of the Salinas Valley Basin (as defined in DWR Bulletin 118). This region of the LSSA was also shown by the safe yield analysis to be more influenced by pumping outside of the LSSA than by pumping within. The presence of a flow divide between this region and the rest of the LSSA further suggests that this region is in greater hydrogeological connection with the Corral de Tierra subbasin. As a result, it will not be possible for the Watermaster to implement effective groundwater management strategies preventing groundwater levels in that portion of the LSSA from continuing to decline due to pumping in the Corral de Tierra subbasin. The Watermaster is likely to have greater success implementing strategies aimed at stabilizing groundwater levels within the portion of the LSSA that is westerly of the flow divide between the LSSA and the Corral de Tierra subbasin. These may, however, be temporary strategies as any new well near the eastern edge of the LSSA could influence groundwater levels west of the current flow divide.*
- 4. There is little difference in the locations of the February and August flow divides that are external to the LSSA boundaries. However, during 2010 of the Historic Scenario and 2018 of the Baseline Scenario flow divides within the LSSA are present in August but are not present in February. These temporary flow divides emerge due to seasonal pumping depressions that form during the summer months and disappear when pumping rates are reduced.*
- 5. Previous modeling results (Hydrometrics WRI, 2013) suggest that pumping in the El Toro area may prevent the eastern portion of the LSSA from achieving stable groundwater elevations. However, these model results are based upon an uncertain understanding of the hydrogeologic conditions in the El Toro area. If management of the LSSA is to be better informed, it will be important to undertake additional investigations in the El Toro area to improve on the geologic and hydrogeologic understanding of this area.*

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

A representative of HydroMetrics will attend today's TAC meeting via our teleconference line to make a presentation on this Technical Memorandum and to respond to TAC questions.

Once the TAC is satisfied that the Technical Memorandum adequately describes the issues pertaining to this matter, it will be forwarded to the Board for their review and consideration.

<b>ATTACHMENTS:</b>	Expanded Technical Memorandum from HydroMetrics
<b>RECOMMENDED ACTION:</b>	Approve the Expanded Technical Memorandum or make revisions to it

## TECHNICAL MEMORANDUM

To: Bob Jaques, Technical Program Manager  
Seaside Basin Watermaster

From: Stephen Hundt and Georgina King

Date: January 7, 2016

Subject: Groundwater Flow Divides within and East of the Laguna Seca  
Subarea

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### INTRODUCTION

The Seaside Groundwater Basin Watermaster (Watermaster) has raised a number of questions and initiated various studies in response to declining groundwater elevations in the Laguna Seca subarea (LSSA). Recent studies by HydroMetrics WRI indicated that declining groundwater elevations at least partially result from pumping outside the LSSA. Because the Watermaster has no control or influence over pumping outside the Seaside Basin boundaries, it is effectively unable to prevent declining groundwater elevations in a portion of the LSSA.

To obtain a better understanding of its future groundwater management options, the Watermaster asked HydroMetrics WRI to prepare a map of existing and potential future groundwater divides based on groundwater model results. Although these groundwater divides are not a strong barrier to flow, they do indicate regions where pumping may influence groundwater elevations. Based on the locations of these divides, the Watermaster may opt to move the boundary of the LSSA, or define different groundwater management options for different portions of the LSSA.

This technical memorandum presents the results of a study to identify model-estimated groundwater flow divides within and to the east of the LSSA. This study was requested by the Seaside Groundwater Basin Watermaster.

## METHODS

The locations of flow divides in the LSSA were estimated from results of the existing groundwater flow model. Groundwater divide locations may move over time in response to changes in recharge and pumping. Therefore, the groundwater divide locations were mapped for a number of times from the historic scenario and two alternative future scenarios.

### *Scenarios and Time Periods*

Three model scenarios, representing different pumping conditions and model periods, were identified for which to delineate groundwater flow divides in the Santa Margarita Aquifer in the vicinity of the eastern LSSA:

- Historic scenario
- Baseline scenario(predictive)
- No Standard or Alternate Producer Pumping scenario (predictive)

The time periods of the three model scenarios are shown on Figure 1. The Historic scenario simulates observed pumping and groundwater elevation conditions for the period of 1987 through 2013. The two predictive scenarios are the same model scenarios used in a previous safe yield analysis of the LSSA (Hydrometrics WRI, 2013). The Baseline scenario represents anticipated pumping in where alternate producers continue to pump at 2011 levels and California-American Water Company (Cal-Am) pumping is reduced to zero by 2018, with required triennial reductions taking place. The No Standard or Alternate Producer Pumping scenario is a hypothetical case in which pumping is eliminated for all Standard and Alternate producers for the entire predictive simulation. Both predictive scenarios simulate groundwater conditions over a 33 year period, from 2009 to 2041.

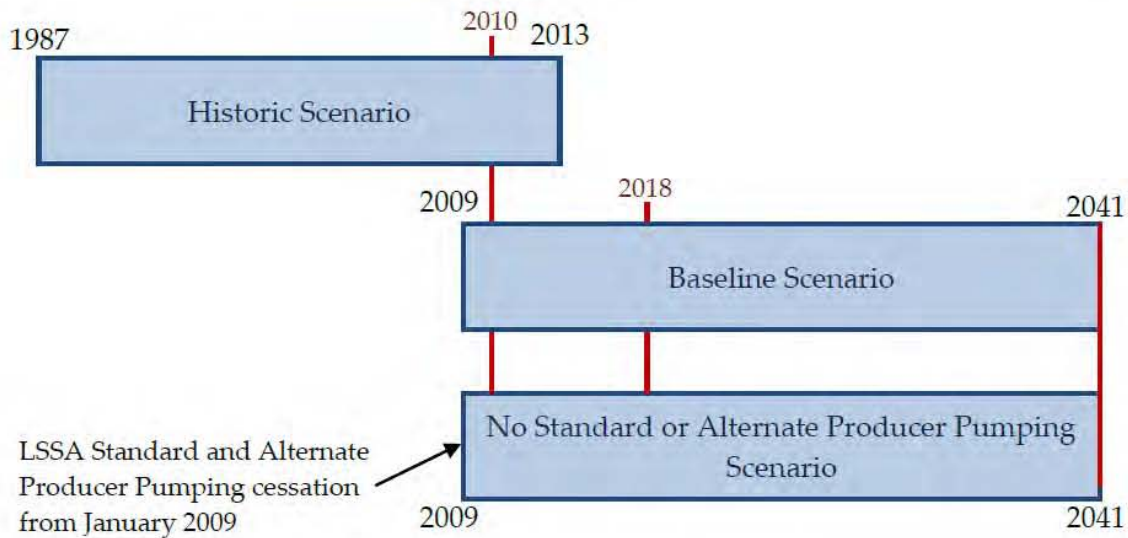


Figure 1: Model Scenario Time Periods

A summary of average annual pumping rates under these two predictive scenarios is shown in Table 1. The safe yield analysis found that even under the hypothetical extreme No Standard or Alternate Producer Pumping scenario groundwater levels continue to fall in the eastern portion of the LSSA, likely due to the presence of pumping from wells outside of the eastern boundary of the LSSA (Hydrometrics WRI, 2013). For this reason, the groundwater conditions under this scenario, and how they compare to those of the Baseline scenario, are of particular interest.

Table 1: LSSA Pumping Rates for Predictive Scenarios

	Average Annual Pumping (AF/year)	
	Baseline Scenario	No Standard or Alternative Pumping Scenario
Standard Producers	36	0
Alternative Producers	480	0
Private Producers**	8	8
Standard + Alternative	516	0
All Producers	524	8

\*\* Private producers are: Shoreline Community Church - Merrill Trust, SPCA, Stolich, and Wayland (formerly Fowler).

Three years were selected from which to extract results from the groundwater model: 2010, 2018, and 2041. The year 2010 was selected because it was near the end of the model calibration period, and had more strongly defined flow divides than water years 2011 or 2012. Results from the Historic and No Standard or Alternate Pumping scenarios were extracted for water year 2010.

The year 2018 is selected because this is the year when under the Baseline scenario, Cal-Am’s LSSA pumping is eliminated in accordance with the Adjudication Decision (HydroMetrics LLC, 2009, Table 15). The year 2041 was selected because it is the last year in the model simulations and provides for the longest outlook of how flow divides evolve under different pumping conditions. Results from the Baseline and No Standard or Alternate Pumping scenarios were extracted for model years 2018 and 2041.

For each of the three years selected, results from the months of February and August were examined in order to capture seasonal variations in groundwater conditions. These months tend to display the greatest difference in groundwater conditions for any six-month period. This resulted in a total of twelve different months for which groundwater flow divides were identified (Table 2).

*Table 2: Model Scenarios and Months*

<b>Model Scenario</b>	<b>Year</b>	<b>Month</b>	<b>Figure</b>
Historic	2010	February	Figure 2
		August	Figure 3
Baseline	2018	February	Figure 4
		August	Figure 5
	2041	February	Figure 6
		August	Figure 7
No Standard or Alternate Producer Pumping	2010	February	Figure 8
		August	Figure 9
	2018	February	Figure 10
		August	Figure 11
	2041	February	Figure 12
		August	Figure 13

Together, these 12 months provide snapshots of how groundwater flow divides vary from their present location under different pumping conditions over both a seasonal, decadal, and multi-decadal time period.

### *Flow Divide Delineation*

Model-simulated groundwater elevations and groundwater flow directions in the Santa Margarita Aquifer were extracted for each of the 12 months discussed above. The Santa Margarita Aquifer is represented by the bottom or fifth layer in the Seaside Groundwater Basin groundwater flow model and was selected as the unit for this analysis because it has the greatest thickness in the east LSSA area and likely to maintain the greatest saturated extent. It must be noted, however, that not every pumping and monitoring well discussed in the safe yield analysis report (HydroMetrics WRI, 2013) is screened in this aquifer.

Groundwater flow divides were delineated by identifying groundwater highs or ridges based on one foot groundwater elevation contour maps generated by the model, and locations where flow directions diverge. The flow divides were termed either "well-defined" or "less-defined" based upon a qualitative inspection of the degree of divergence in the groundwater flow vectors. Several well-defined flow divides were apparent where flow vectors were oriented at wide angles. Other less-defined divides were identified where flow vectors were almost parallel, with only slightly divergent orientations. Note that although the flow divides were located based upon a one foot contour interval to improve accuracy in defining the flow divide locations, the maps in this memorandum show a five foot contour interval in order to keep the maps uncluttered.

## RESULTS

Figure 2 through Figure 13 show groundwater contours, flow direction vectors, and flow divides that were generated from simulated groundwater elevations from the Seaside Basin groundwater flow model. Groundwater elevations are displayed at five foot intervals with blue contour lines and groundwater flow directions are shown in the background as small grey arrows. The relative rate of pumping from each production well that extracts from the Santa Margarita Aquifer is shown with light blue circles, with the size of the circle indicating the volume of groundwater pumped over the water year. Wells that have no pumping during the water year but that have historically pumped from the Santa Margarita are shown as black squares. Model cells that have no groundwater flow due to the presence of the Laguna Seca Anticline are shown as light grey rectangles. The Laguna Seca Anticline separates the northern and southern subbasins of the Seaside Groundwater Basin. This feature, including the segment of the Old Terrace Fault that offsets the anticline, forms a subsurface hydraulic partial barrier to flow (HydroMetrics WRI, 2009).

Groundwater flow divides are shown as purple dashed and solid lines. The groundwater flow divides were classified as more-defined and less-defined, as indicated by the solid or dashed line, respectively.

A map including the location and names of all production wells in the study area is provided on Figure 14.

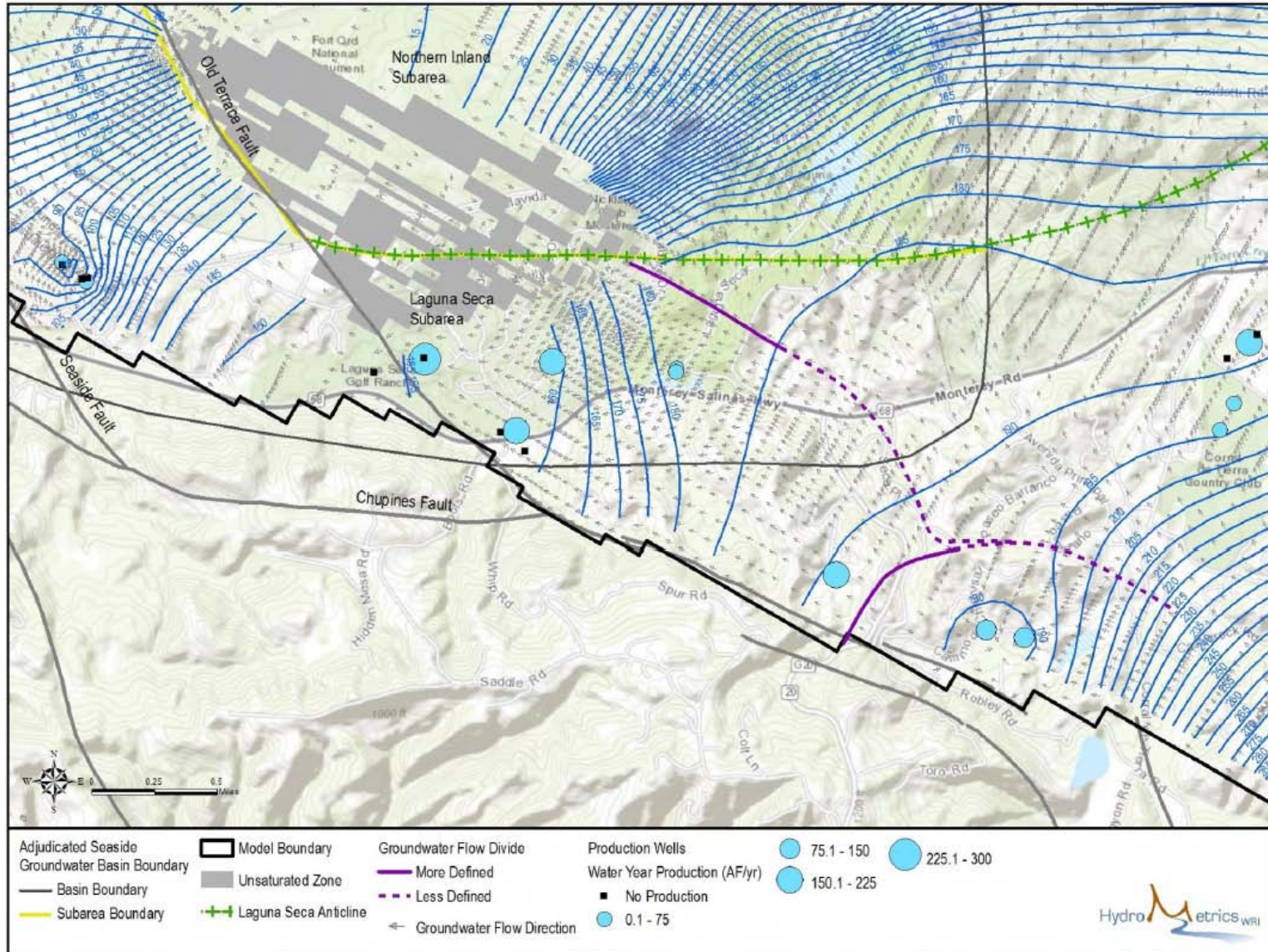


Figure 2: Groundwater Elevations and Flow Divides – Historic Scenario, February 2010

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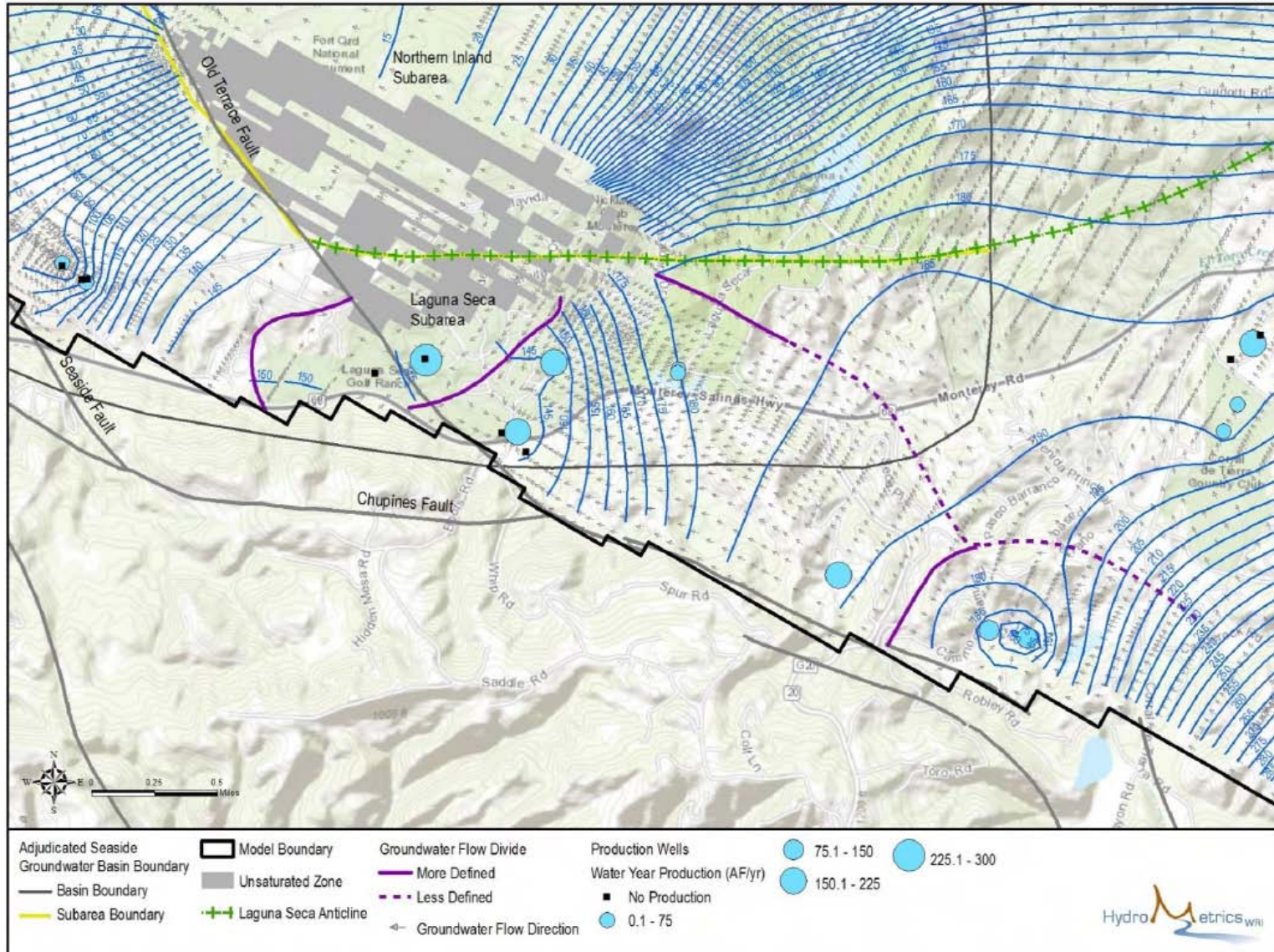


Figure 3: Groundwater Elevations and Flow Divides – Historic Scenario, August 2010

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 (510) 903-0458 • (510) 903-0468 (fax)

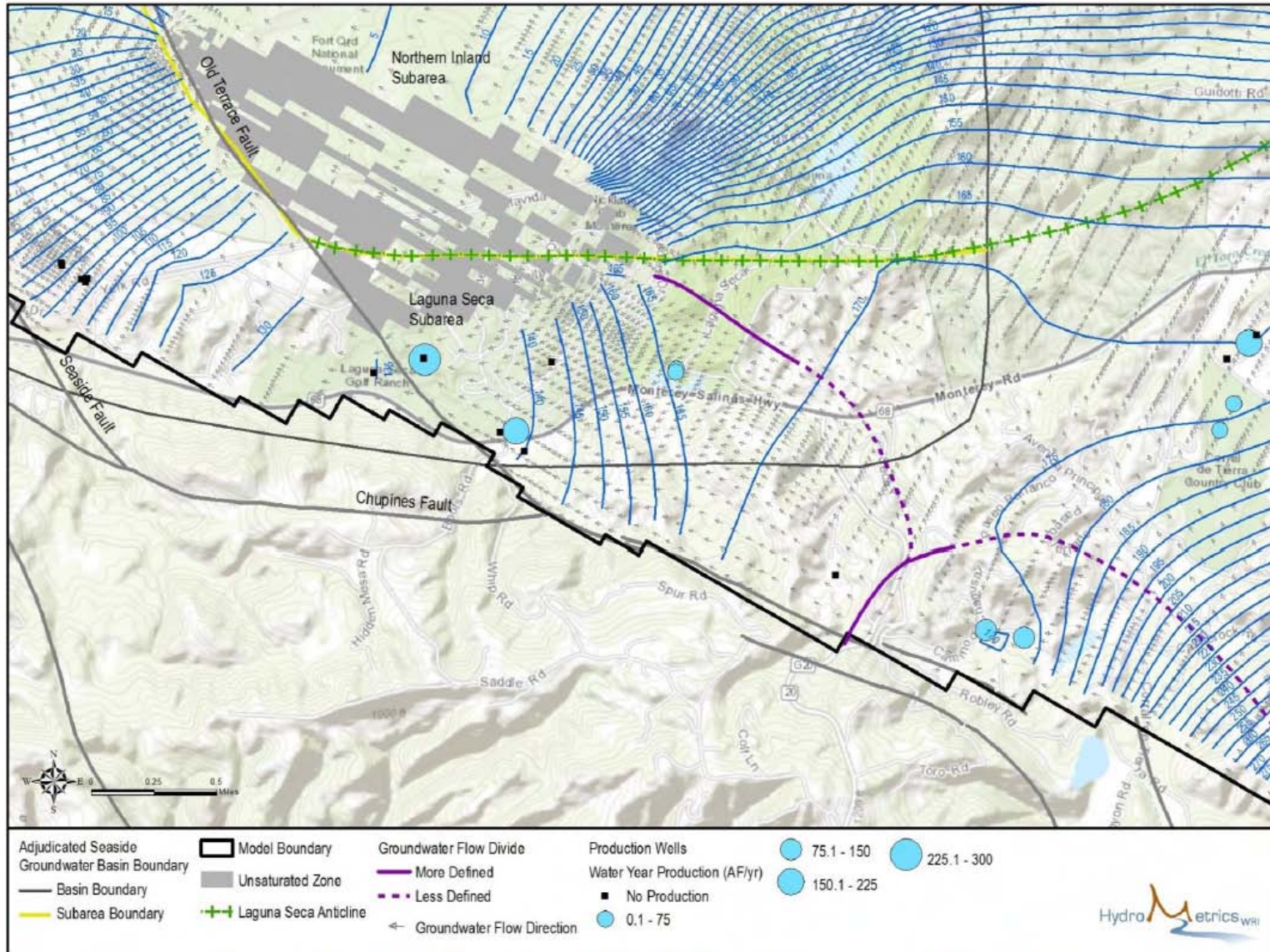


Figure 4: Groundwater Elevations and Flow Divides – Baseline Scenario, February 2018

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 (510) 903-0458 • (510) 903-0468 (fax)

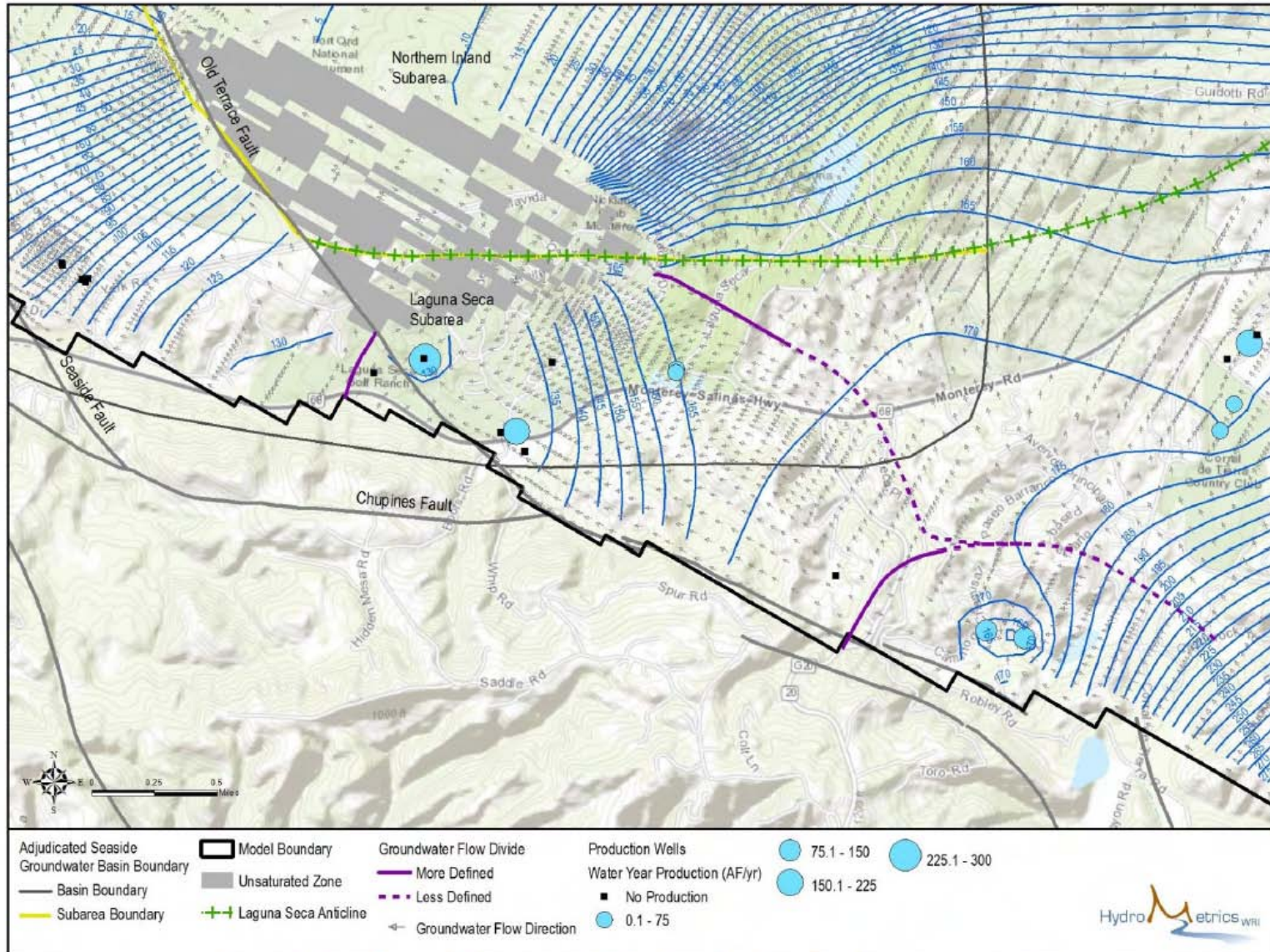


Figure 5: Groundwater Elevations and Flow Divides - Baseline Scenario, August 2018

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 (510) 903-0458 • (510) 903-0468 (fax)

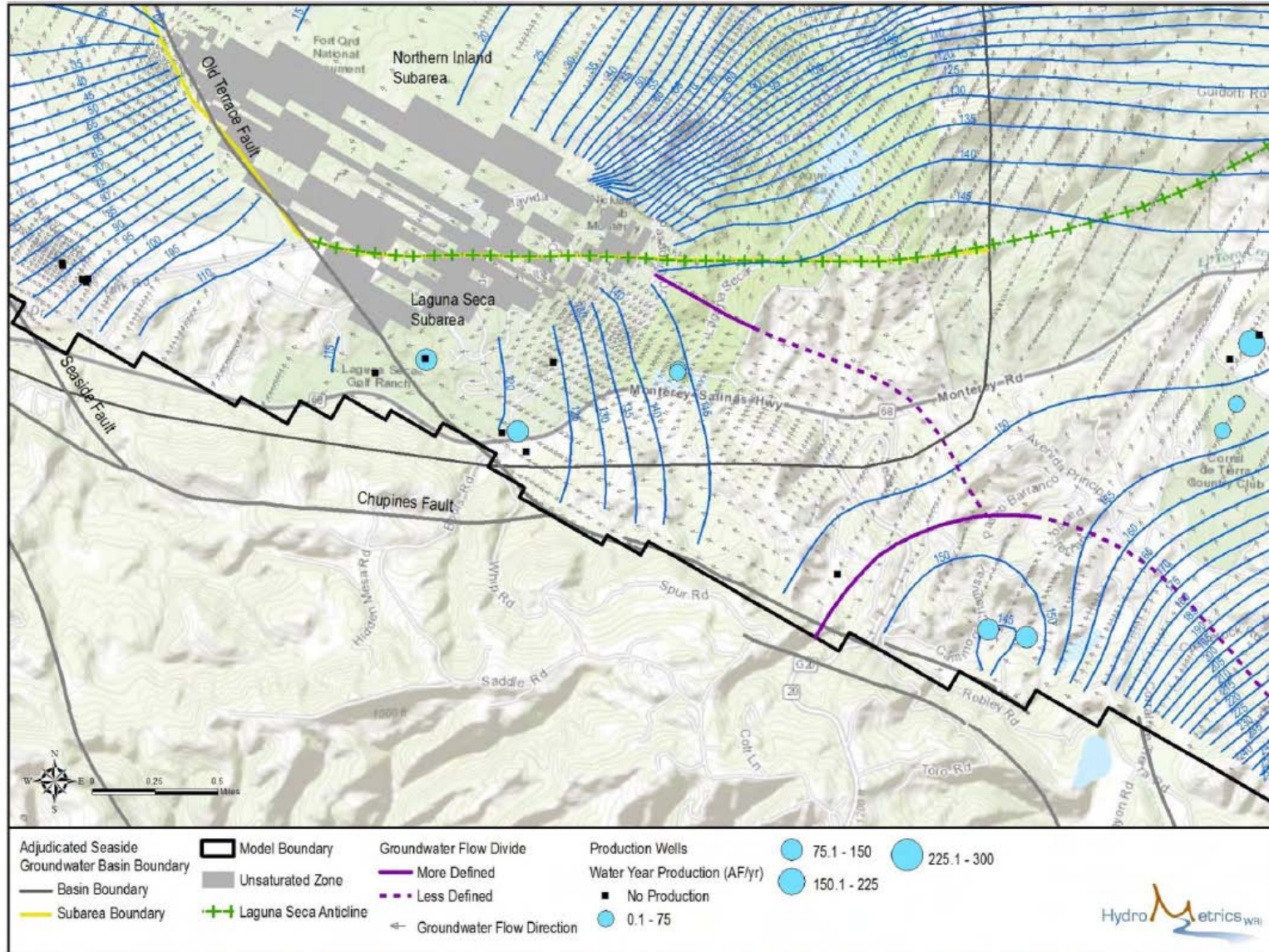


Figure 6: Groundwater Elevations and Flow Divides - Baseline Scenario, February 2041

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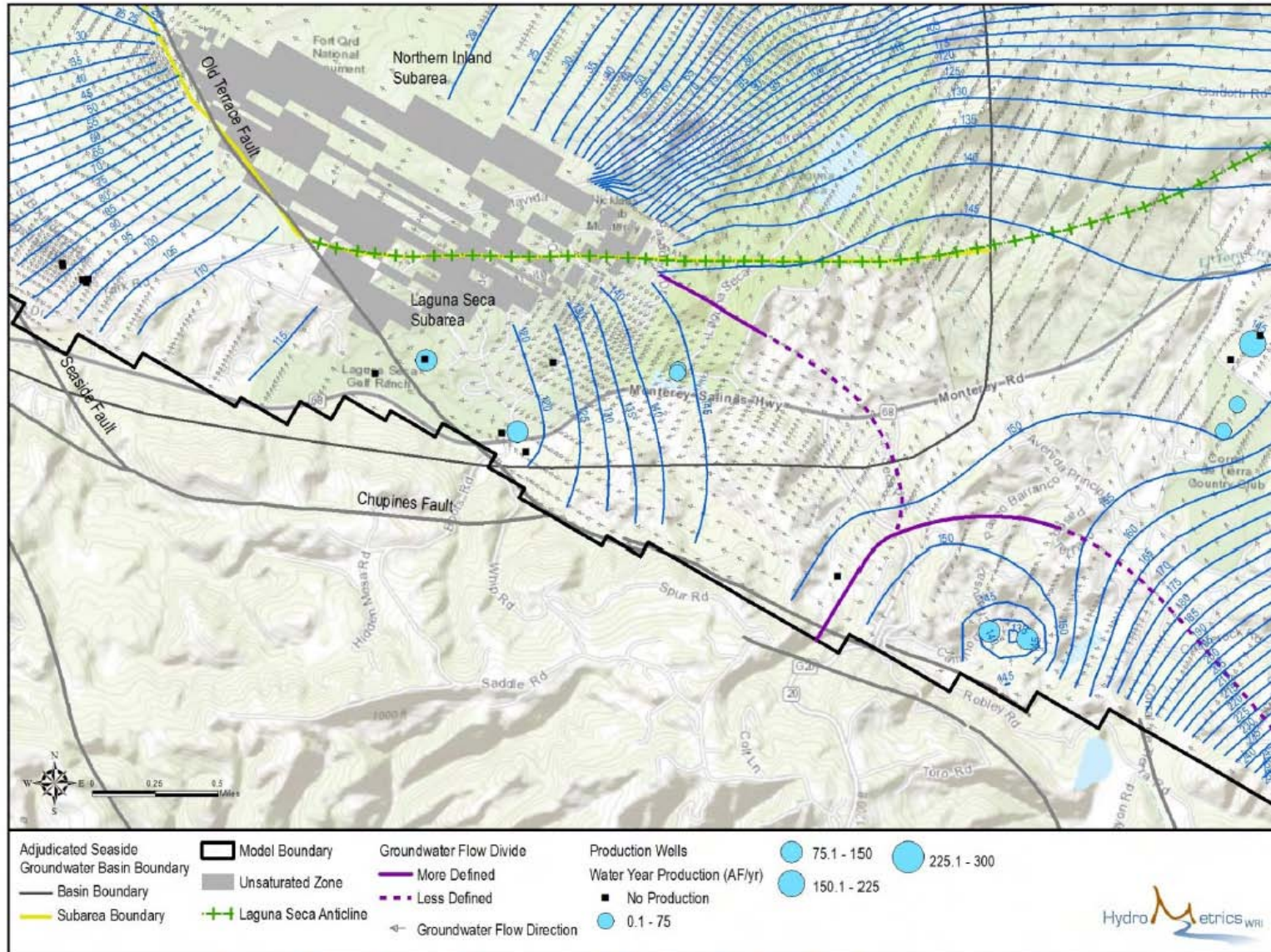


Figure 7: Groundwater Elevations and Flow Divides - Baseline Scenario, August 2041

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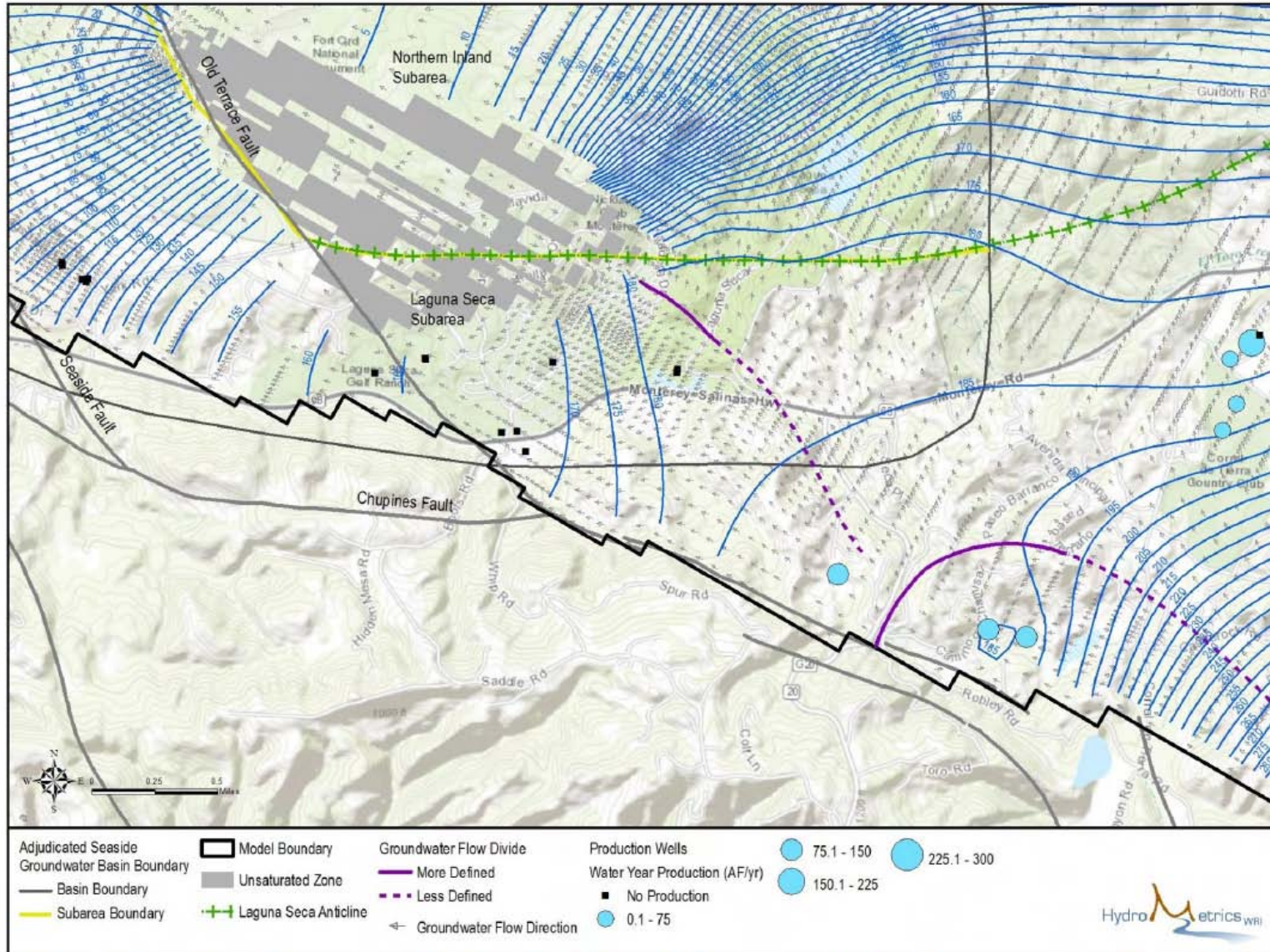


Figure 8: Groundwater Elevations and Flow Divides – No Standard or Alternate Producer Pumping Scenario, February 2010

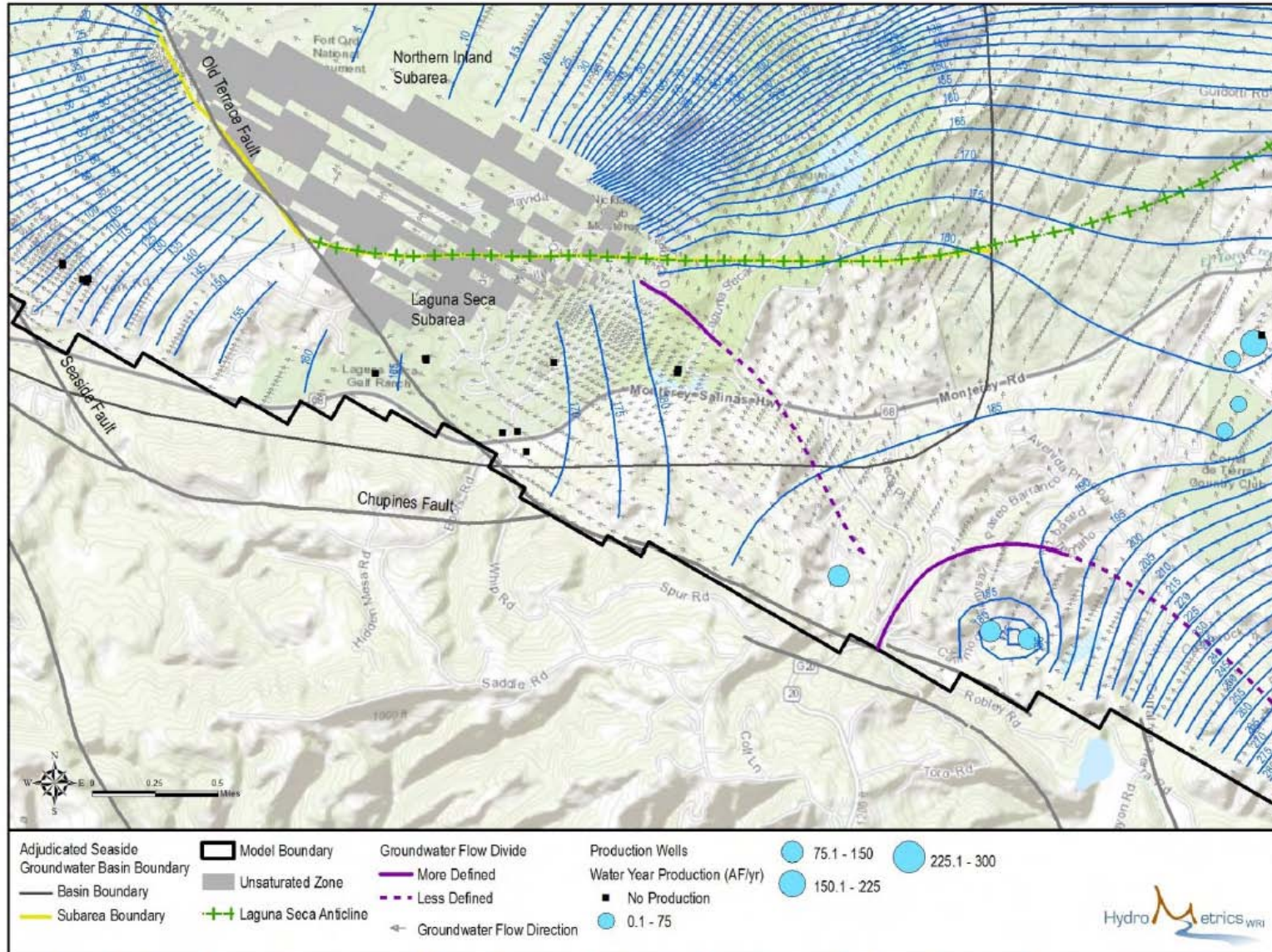


Figure 9: Groundwater Elevations and Flow Divides - No Standard or Alternate Producer Pumping Scenario, August 2010

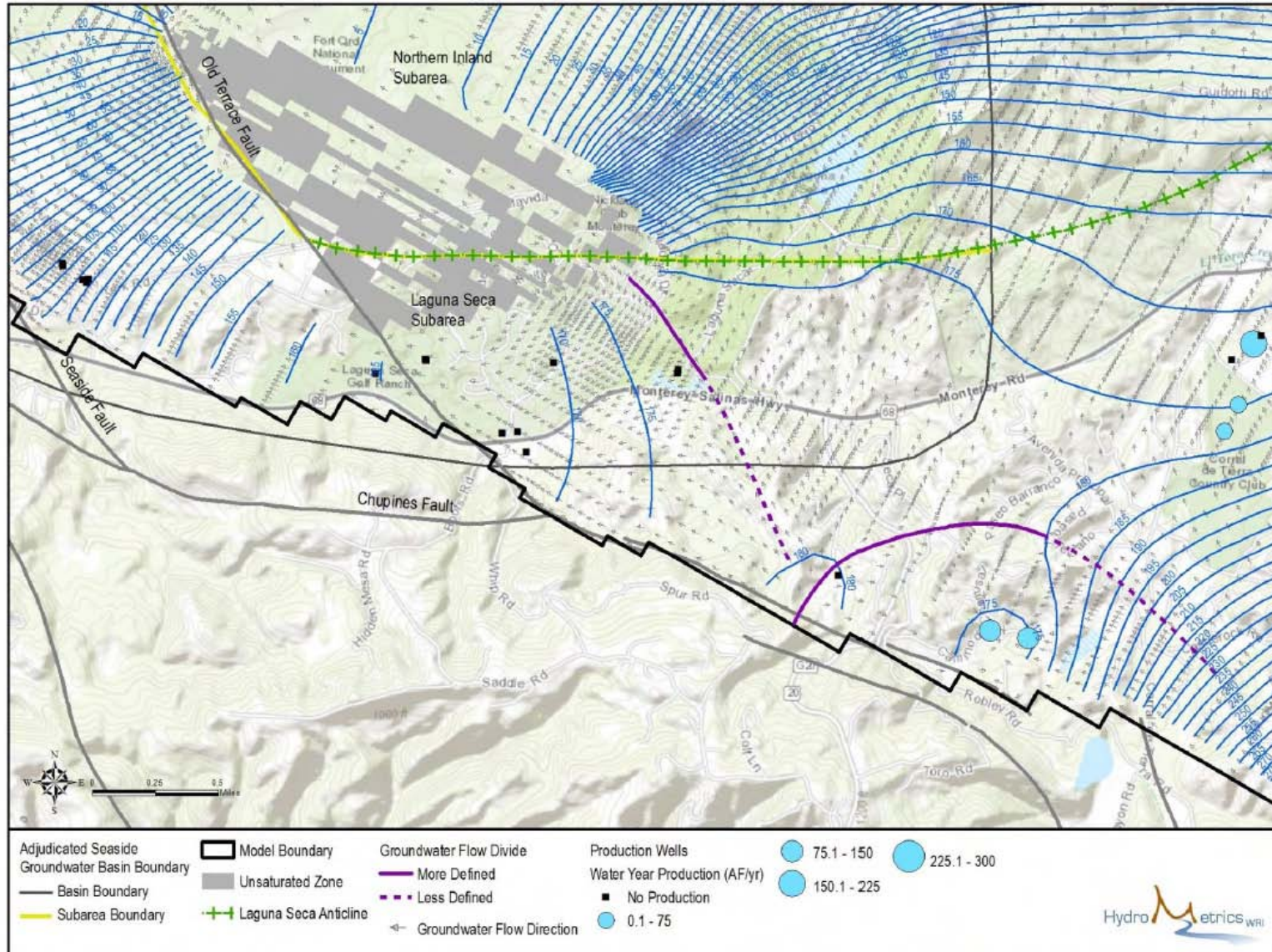


Figure 10: Groundwater Elevations and Flow Divides - No Standard or Alternate Producer Pumping Scenario, February 2018

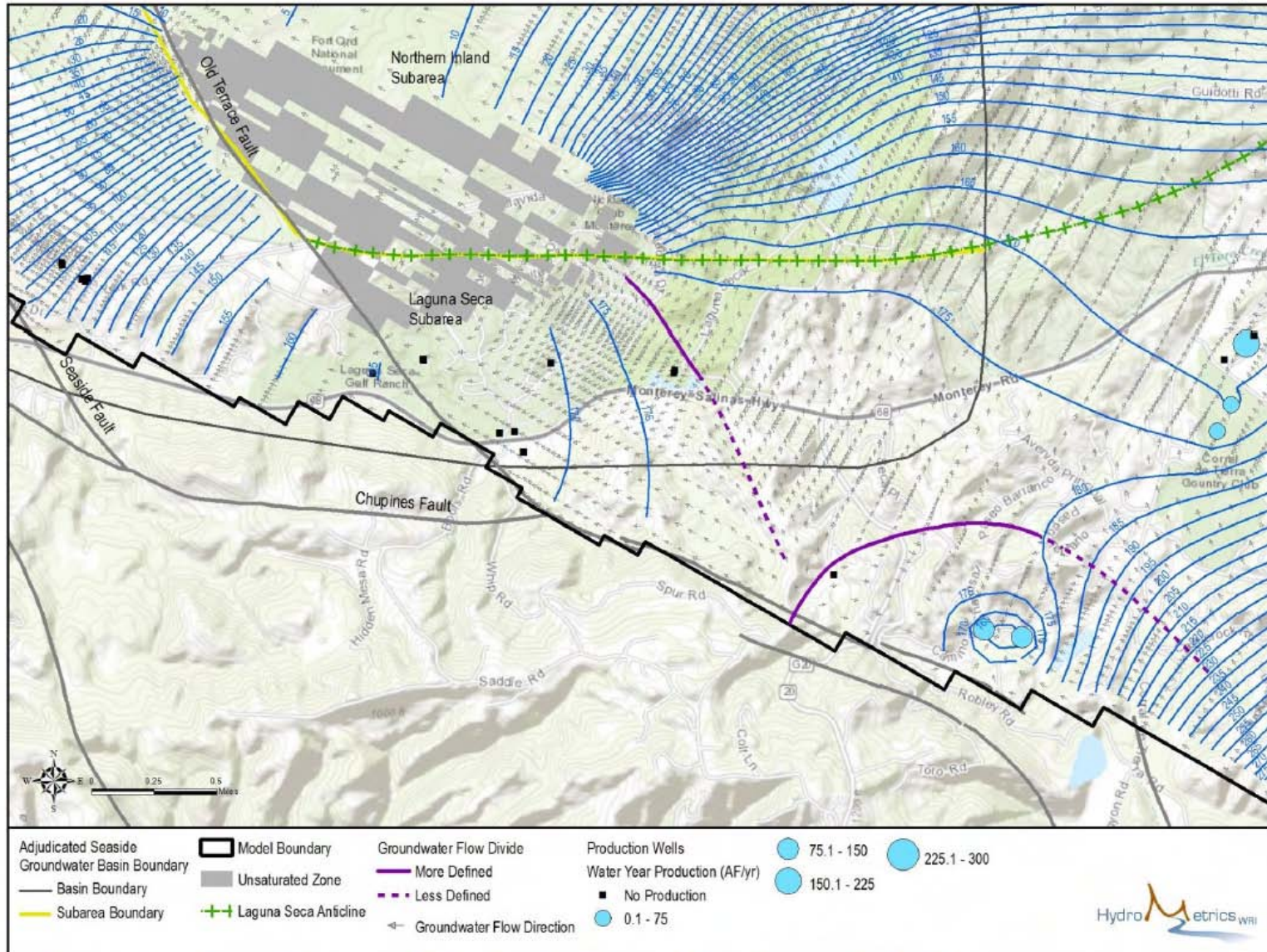


Figure 11: Groundwater Elevations and Flow Divides - No Standard or Alternate Producer Pumping Scenario, August 2018

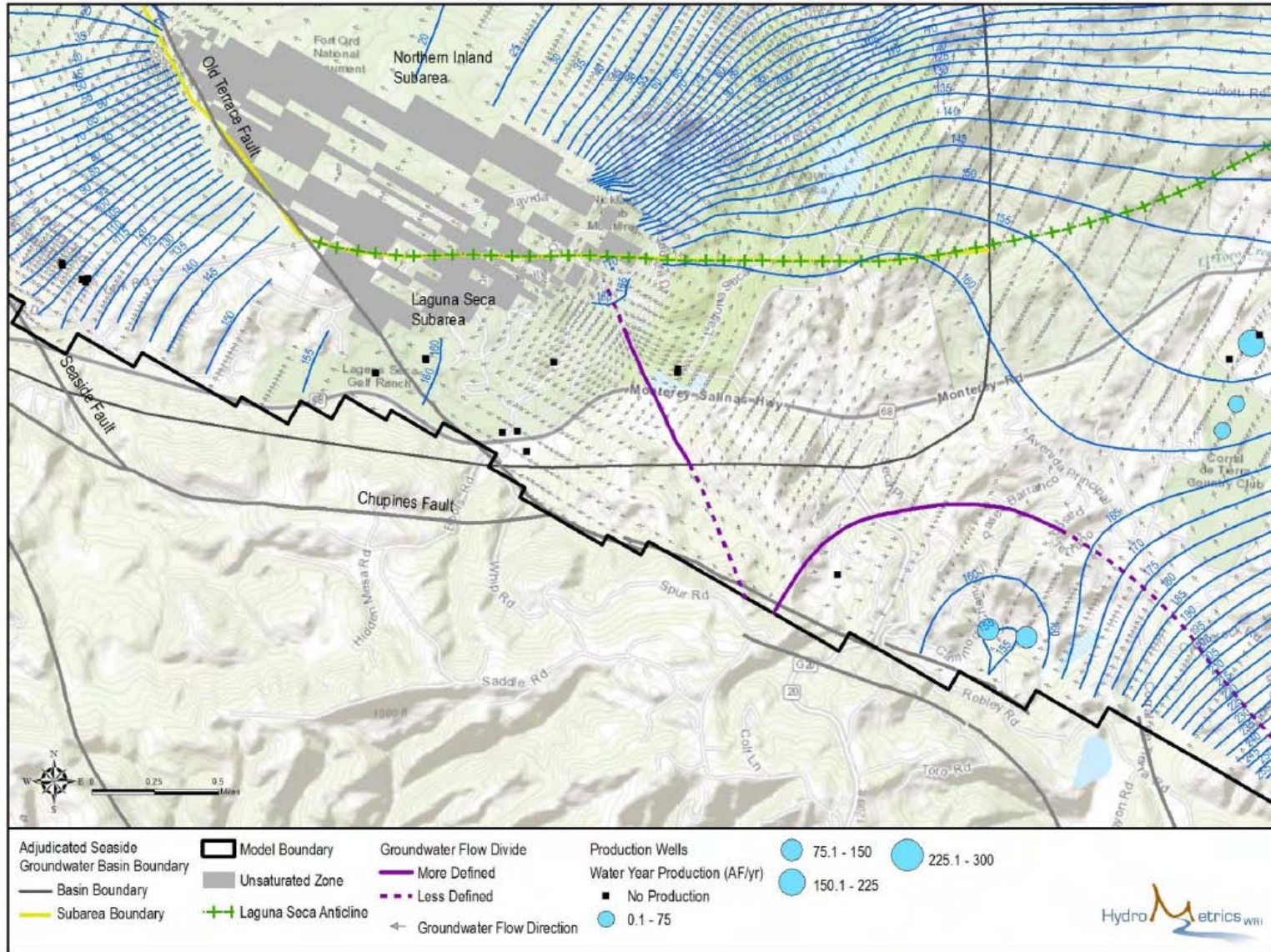


Figure 12: Groundwater Elevations and Flow Divides - No Standard or Alternate Producer Pumping Scenario, February 2041

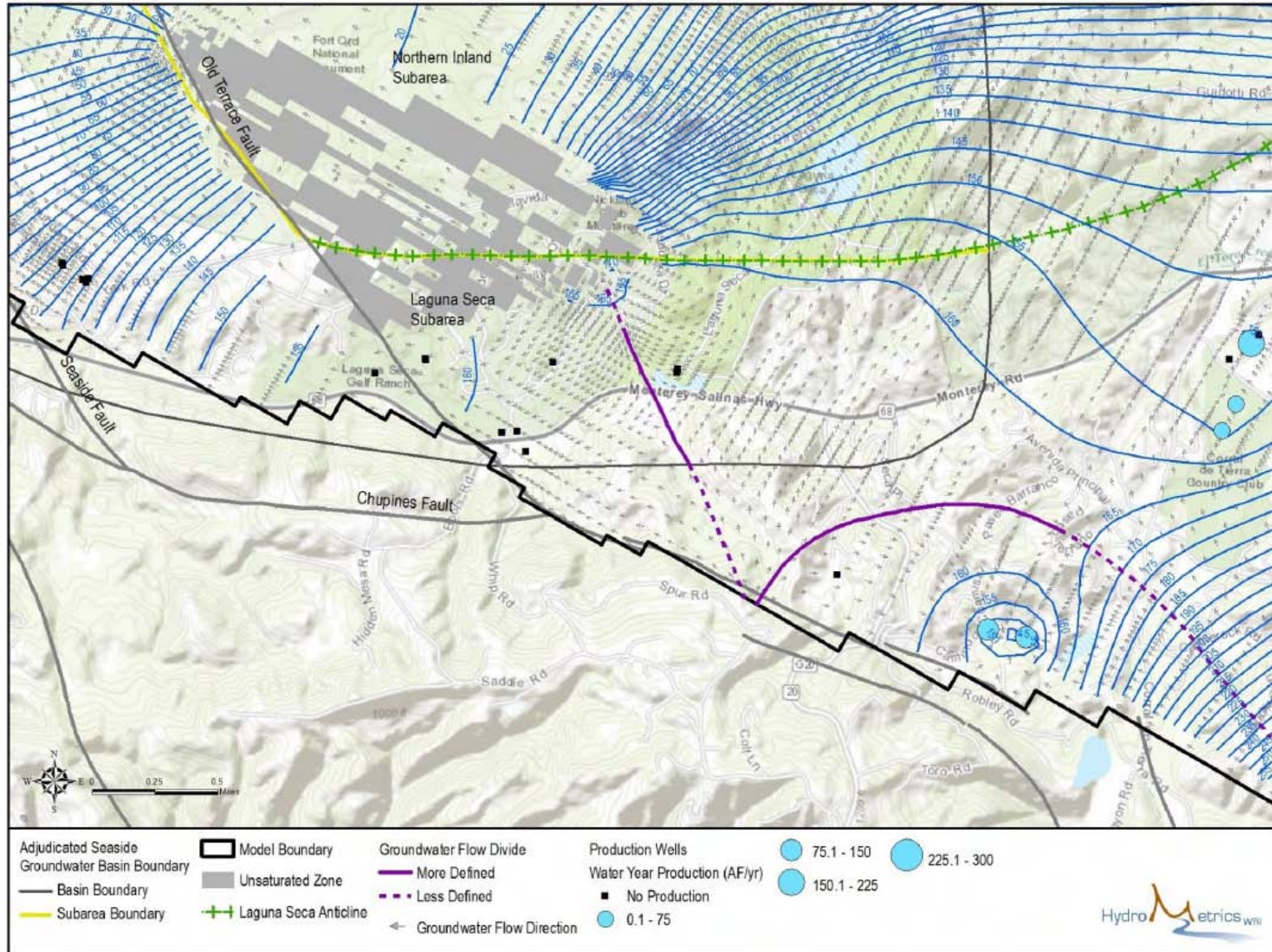


Figure 13: Groundwater Elevations and Flow Divides - No Standard or Alternate Producer Pumping Scenario, August 2041

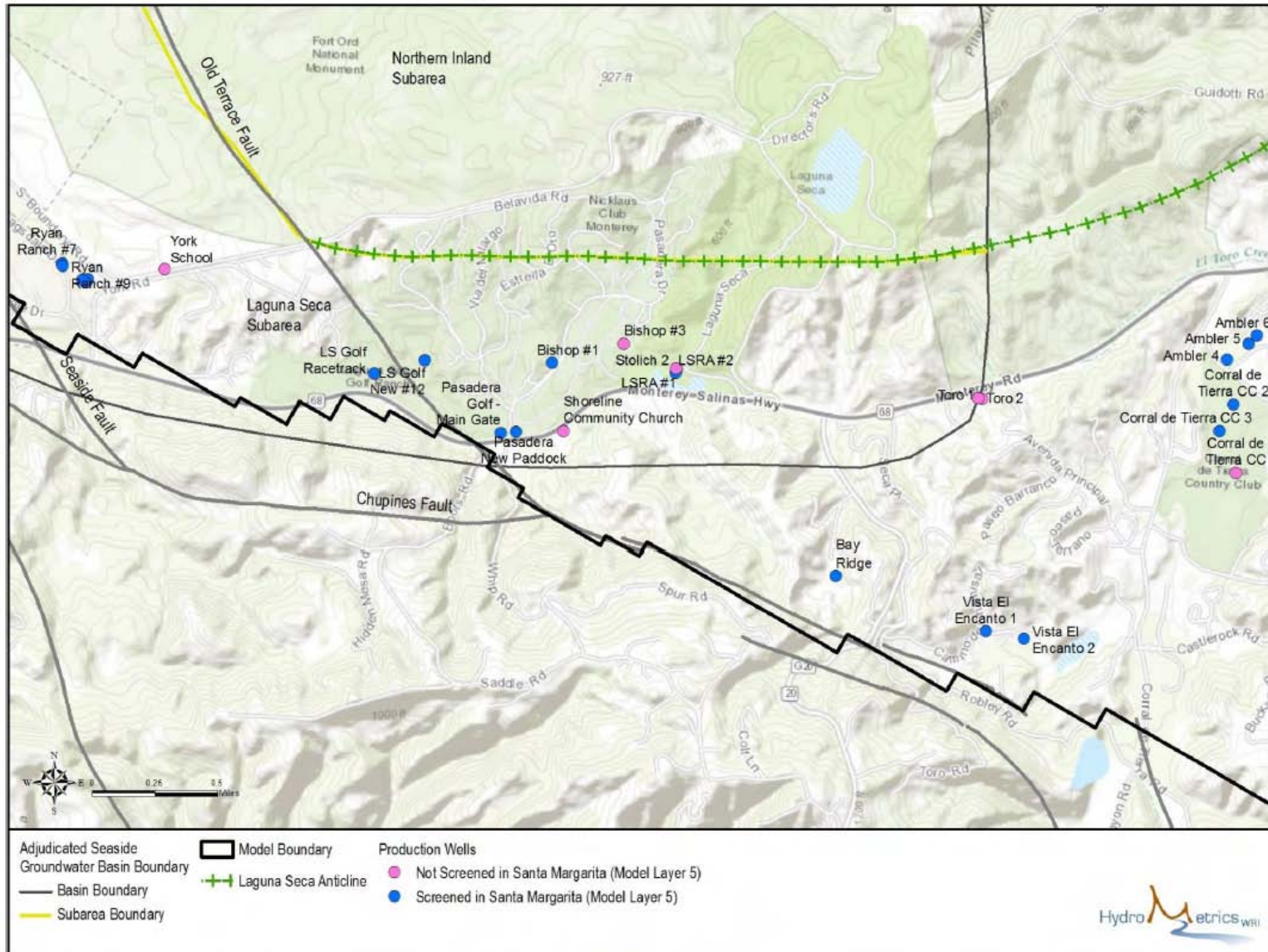


Figure 14: Production Wells

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### *General Results*

Groundwater elevation contours and flow direction vectors show that the regional flow direction is consistent for all months examined. Groundwater flows from the southeast of the model where the topographic high and aerial recharge are located, westwards toward the coast. As groundwater flows along this general path it approaches the Laguna Seca Anticline whose structure results in a thinner and shallower aquifer system between the LSSA and the Northern Inland Subarea that remains unsaturated and acts as a barrier to flow. Groundwater flow splits into two paths around this feature, one flowing west through the LSSA to the south of the barrier and one flowing northwest into the Northern Inland Subarea located north of the barrier. The impact of individual pumping wells are visible only locally and sometimes temporarily, and can be seen in groundwater contours and groundwater flow direction vectors that deviate from their regional patterns towards depressions caused around the wells.

There are two prominent groundwater flow divides present in each of the 12 months analyzed. One of these flow divides begins east of the Laguna Seca Anticline at the boundary of the LSSA and Northern Inland subareas. It runs east-southeast to just outside of the Seaside Basin where it connects with a second flow divide. The northern portion of this divide appears to be relatively well defined, but the southern portion of this divide is weakly defined. It is likely that the southern portion of this divide has less of an influence on flow directions. Groundwater on the southern side of the divide flows west into the LSSA and groundwater on the northern side of the divide flow northeast into the Northern Inland subarea. This flow divide exhibits notable variations in different periods that are explored further in the section below and will be referred to henceforth as the East LSSA Flow Divide. The second flow divide is located outside and southeast of the LSSA where a well-defined pumping depression has developed near the southern boundary of the groundwater model. The general shape of this flow divide remains relatively constant throughout each of the 12 months analyzed, although the western edge of the flow divide varies up to roughly three quarters of a mile.

Additional groundwater flow divides emerge within the LSSA during 2010 of the Historic Scenario and 2018 of the Baseline Scenario. These temporary and localized flow divides occur during the summer months around seasonal pumping depressions. Two such flow divides are present during the August 2010 of the Historic Scenario while only one remains in August 2018 of the Baseline Scenario.

These flow divides develop in a portion of the LSSA where groundwater flow takes place between, and generally parallel to, two structural features: the outcrop of the Monterey Formation which defines the southern edge of the groundwater model and basin, and the Laguna Seca Anticline located at the boundary of the LSSA and Northern Inland subareas. The proximity of these boundaries exacerbates the pumping depressions that drive the development of the flow divides. The origination of these divides by short term pumping depressions during peak pumping periods is evident by their absence during model periods with lower rates of pumping in the LSSA. These seasonal flow divides fade by the winter season and do not appear at all during 2041 of the Baseline Scenario or at any time during the No Standard or Alternate Producer Pumping Scenario.

### *Comparison of Findings of Safe Yield Investigation with Flow Divide Results*

The East LSSA Flow Divide behaves differently in the two predictive scenarios. Comparing Figure 3, Figure 5, and Figure 7, it can be seen that while groundwater elevations in general are decreasing over time, the position of the East LSSA Flow Divide shows little movement from the Historic Scenario through the end of the Baseline Scenario. Figure, Figure 11, and Figure 13, by contrast, show that the East LSSA Flow Divide migrates progressively westward into the LSSA in the No Standard or Alternate Produce Pumping Scenario.

This behavior can be explained by reviewing the conditions that will cause a groundwater flow divide to shift or maintain its position in general. A groundwater flow divide occurs where locally high groundwater elevations form a ridge-type feature. The position and elevation of the groundwater flow divide can change if groundwater elevations on one side of the divide change relative to the opposite side of the flow divide. Rising or falling groundwater elevations can both cause the position of a groundwater flow divide to shift, but the direction of the shift will depend upon which change takes place. Rising groundwater elevations on one side of a flow divide will shift it toward the side with rising groundwater elevations, while falling groundwater elevations will shift the divide away from the side with falling groundwater elevations. A relatively uniform fall or rise in groundwater elevations either side of the flow divide will maintain a stable flow divide.

What appears to be taking place as the groundwater levels in the region around the eastern LSSA decline from 2010 of the Historic Scenario through 2018 and 2041 of the Baseline Scenario is that declines on both sides of the East LSSA Flow Divide balance in a way that leaves it's position relatively stable throughout the 31 year

period. In the No Standard or Alternate Producer Pumping Scenario, however, groundwater elevations decline in a way that does not maintain a balance on either side of the divide. Instead, while groundwater elevations do decline on both sides of the East LSSA Flow Divide, the cessation of pumping within the LSSA slows the decline of groundwater elevations on the LSSA side of the flow divide relative to the other side. As a result, the flow divide migrates further into the LSSA.

The East LSSA Flow Divide is located within a portion of the eastern LSSA that was the primary subject of analysis in the safe yield investigation (HydroMetrics WRI, 2013), and as a result further discussion on the flow divide results in light of the safe yield study region are warranted.

In the safe yield study it was found that even the extreme pumping restrictions included in the No Standard or Alternate Producer Pumping Scenario failed to stabilize groundwater levels in the eastern portion of the LSSA. A comparison was made between the Baseline Scenario and No Standard or Alternate Producer Pumping Scenario in an attempt to reveal the dynamics that may be preventing successful management in that portion of the LSSA. One such comparison from that study is included in Figure 15 which shows the rate of groundwater flow across the eastern boundary and southeastern boundary of the LSSA for both future scenarios. This chart is referenced in the following paragraph.

In comparing the results from the LSSA safe yield study, it is important to note that although the East LSSA Flow Divide maintains a relatively stable position throughout the Baseline Scenario, as seen in Figure 4 through Figure 7, other aspects of groundwater flow in this region do change throughout this scenario. Groundwater elevations decline throughout the area as do hydraulic gradients and the rate of water flowing across the eastern boundary of the LSSA. This is consistent with the generally declining rates of flow that were observed across the Eastern boundary of the LSSA in the Baseline Scenario, as shown in Figure 15.

Also important to note is that the results presented in Figure 2 through Figure 13 are only for the bottom layer of the groundwater flow model (Layer 5), which represents the Santa Margarita Aquifer, while several of the results discussed in the safe yield analysis were aggregated across all layers. For example, the net flow rate across the eastern boundary of the LSSA for both future scenarios was shown to begin as a net inward flow and to decline until it became a net outward flow (Figure 15). This is not apparent when looking at Figure 2 through Figure 13, which show that the flow across the east LSSA boundary in the Santa Margarita Aquifer

may decrease over time, but does not appear to ever switch to a net outward flow. In addition, the presence of the Toro-1 and Toro-2 production wells directly across the boundary from the LSSA were cited as good examples of outside wells that may be strongly influencing groundwater elevations within the LSSA. These wells, however, do not penetrate the Santa Margarita Aquifer and therefore their affect will be difficult or impossible to distinguish in the results present in this memorandum.

Finally, neither the groundwater flow divide nor the flow directions presented in this memorandum provide specific answers of how to manage groundwater elevations in the LSSA when outside pumping wells may be impacting these groundwater levels. The flow divides are neither static features nor hard physical barriers to flow. Instead, they are local high points or ridges that appear in groundwater elevations in response to the specific stresses that are placed on the groundwater system. A change in these stresses can cause flow divides to move, appear, or disappear. The dynamic nature of these divides is highlighted by the seasonal flow divides within the LSSA that develop and dissipate with changes in pumping and by the migration of the flow divide that is observed to take place during the No Standard or Alternate Producer Pumping Scenario.

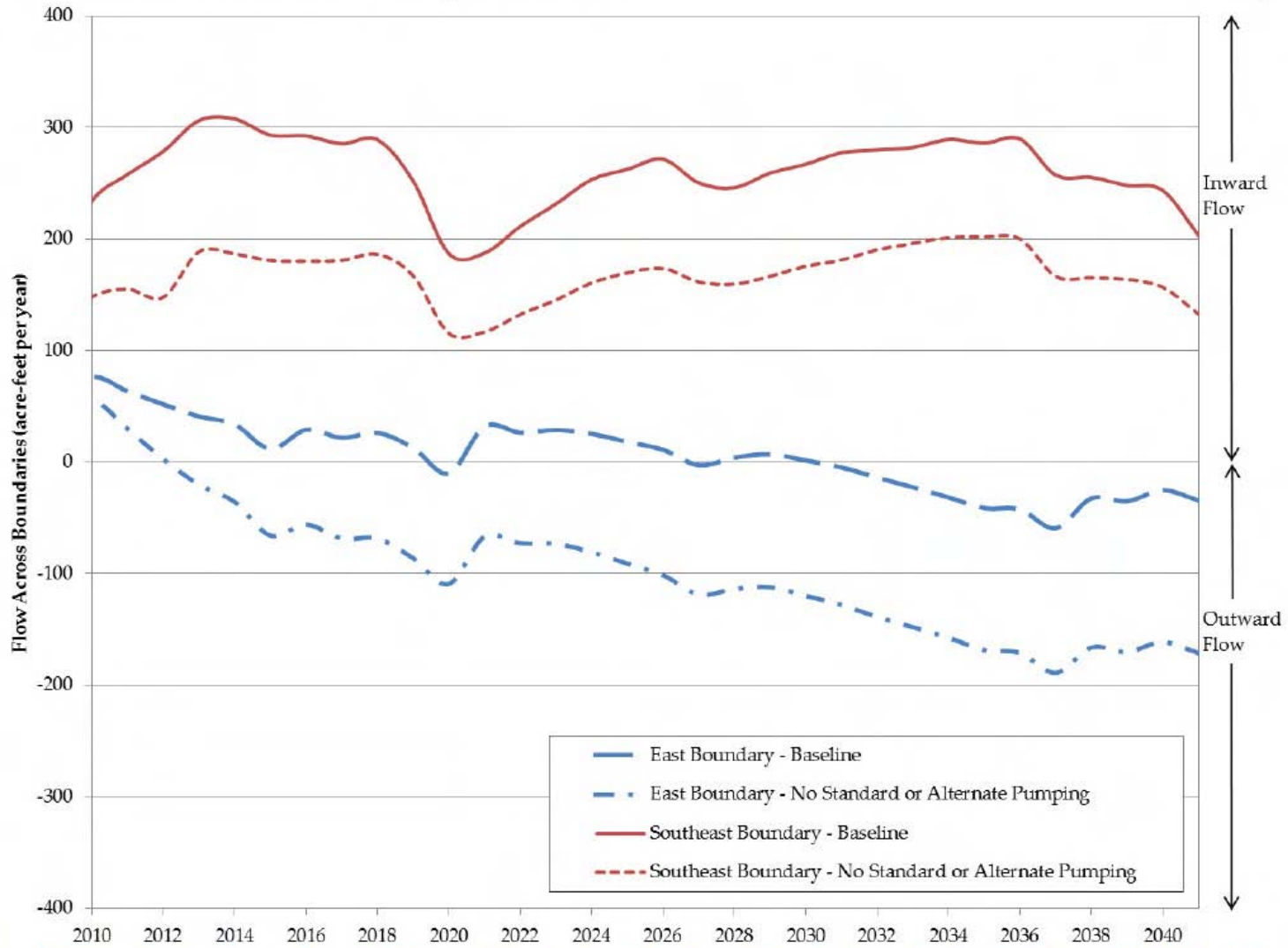


Figure 15: Groundwater Flows Across the Laguna Seca East and Southeast Boundaries under the Baseline and No Standard or Alternative Producer Pumping Scenarios

### *Saturated Aquifer Thickness in Layer 5*

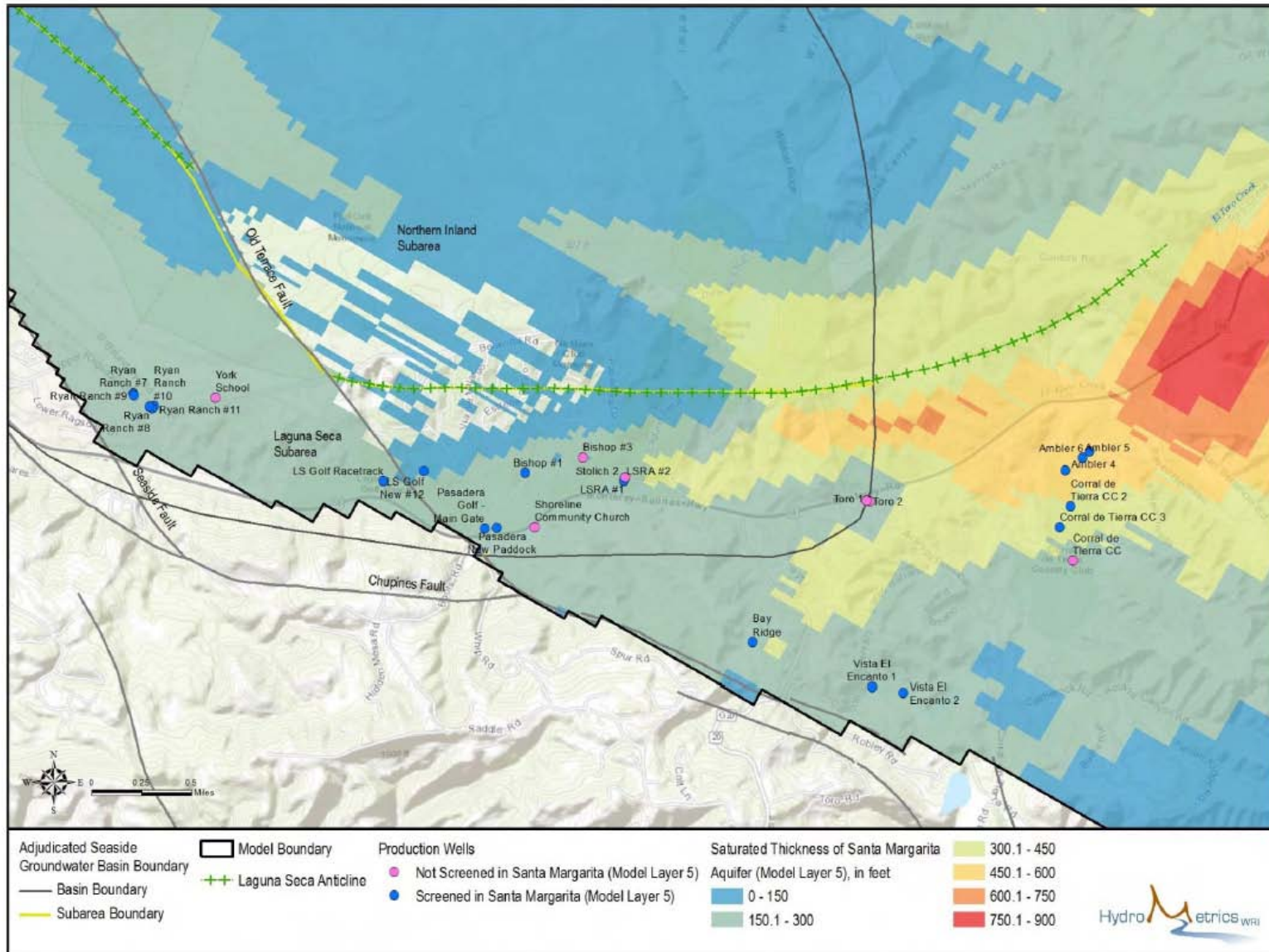
To address a concern of aquifer potential aquifer dewatering in LSSA, the saturated aquifer thickness of model layer 5 of for August 2041 based on the Baseline scenario (anticipated conditions) was extracted from the model ([Figure 16](#)).

Areas with the least saturated thickness are located in the Northern Inland Subarea, the southeastern portion of the model, and following the Laguna Seca Anticline along the northern border of the LSSA. A notable area of large saturated thickness is observed in the El Toro and Corral De Tierra areas to the east of the adjudicated basin. As discussed in the section below, this may partially be a result of an uncertain geologic interpretation in that area. It was found that, in general, the saturated thickness of this layer follows the aquifer layer thickness of the groundwater model.

### *Geologic Uncertainty*

The East LSSA Flow Divide discussed above lies between the majority of the LSSA to the west, and the Northern Inland and El Toro area to the east and north. Pumping in the El Toro area was implicated in the safe yield investigation as a factor impacting groundwater levels on the east of the LSSA. One conclusion was that this pumping may prevent the Watermaster from taking measures to stabilize groundwater elevations in the eastern LSSA. As a result, conditions in the El Toro area will be an important factor in LSSA groundwater management decisions. Unfortunately, there is hydrogeologic uncertainty in this area that may impact the results of the groundwater model that is being used to assist these decisions.

A cross-section of the groundwater model layers was developed along a line roughly parallel to highway 68 that passes through, and to the northeast of, the LSSA. The cross-section location is shown on Figure 17 and the cross-section shown on Figure 18. A vertical exaggeration of five was applied for clarity, and the point at which the cross section intersects the eastern boundary of the LSSA is highlighted with a red vertical line.



**Figure 16: Saturated Thickness of the Santa Margarita Aquifer (Model Layer 5) in August 2041 of the Baseline Scenario**

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The cross-section shows that the model layer representing the Santa Margarita Aquifer is very thick in the El Toro area. This thickness will have a large impact on the model's aquifer transmissivity and how pumping may impact groundwater elevations in the area. The hydrostratigraphy of this area was based upon a compilation of different sources. A map of the top of the Monterey formation (Rosenberg, 2001) was used to set the bottom of the Santa Margarita (layer 5). The bottom of the Paso Robles Formation was obtained from other sources. During model development, the contact between the Santa Margarita Aquifer and the Paso Robles Formation required adjustment to form reasonable geologic interpretations. Because the geologic data came from numerous sources, there is no assurance that the various geologic interpretations are consistent. During model development, we encountered geologic inconsistencies where the interpreted bottom of the Paso Robles formation dipped below the mapped bottom of the Santa Margarita aquifer. These inconsistencies demonstrate the amount of geologic uncertainty in the basin, particularly in areas such as the El Toro area which has not been extensively studied and was not a primary focus of our groundwater modeling. Reducing the geologic uncertainty in the El Toro area may impact our understanding of the interaction between El Toro pumping and LSSA groundwater elevations.

Two additional sources of information raise questions about the simulated hydrogeology in this area. First, the County of Monterey has declared the El Toro and Corral de Tierra area as having severe water constraints. This is contrary to the thickness and transmissivity that the groundwater model simulates in the area. Second, observations of groundwater elevations in the area show that despite the relatively high pumping in the area only limited drawdown has been experienced. This is more consistent with the representation included in the model, but is contrary to the County's assessment of the area.

The limited and conflicting data for the region, combined with the importance of this region in understanding how successful management of the LSSA may be achieved, led us to recommend that additional geologic and hydrogeologic investigations be undertaken in the area.

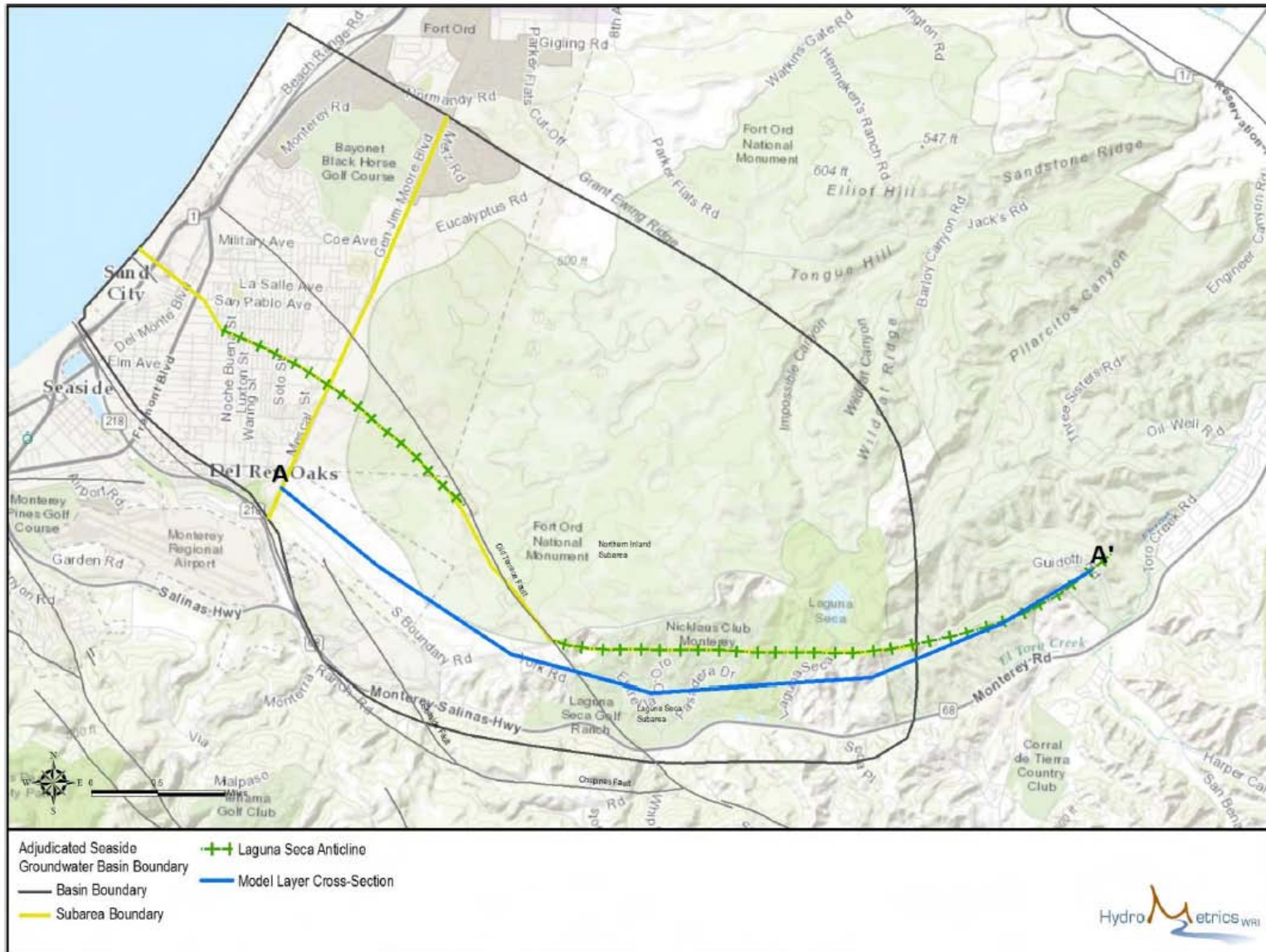


Figure 17: Location of Model Layer Cross-Section

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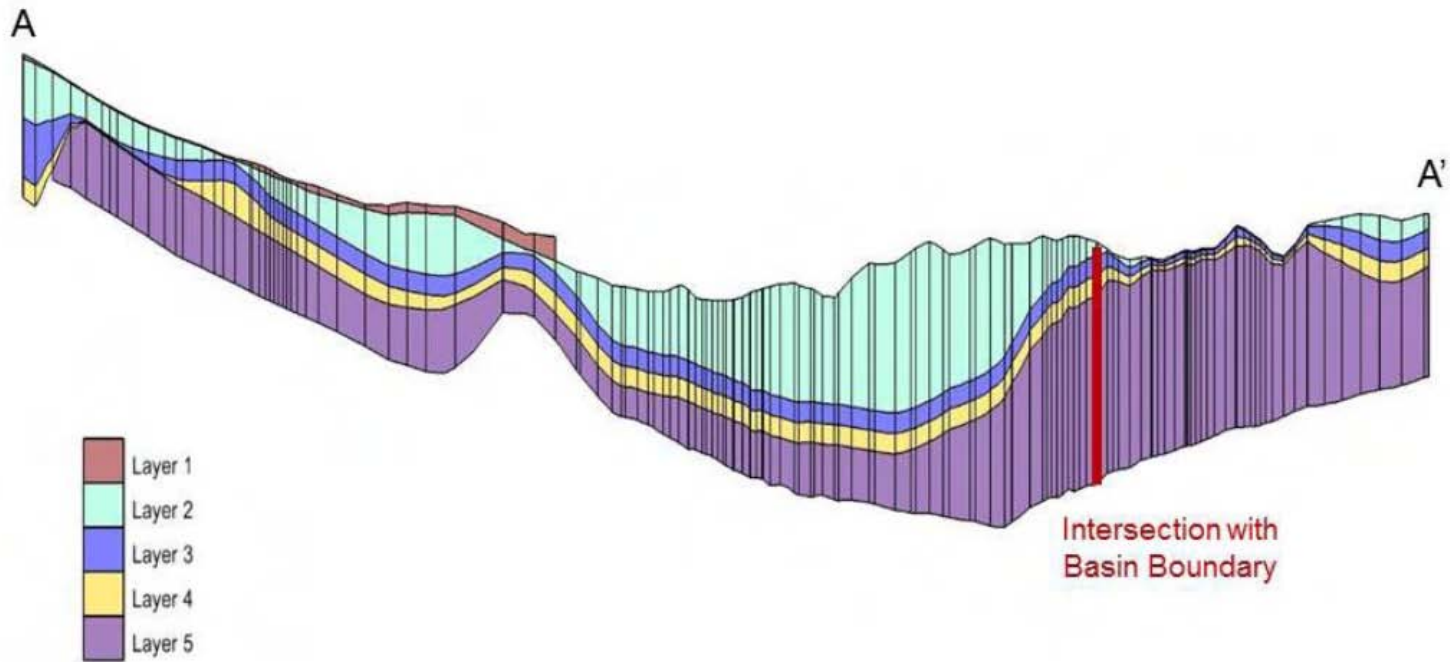


Figure 18: Model Layer Cross-Section with 5x Vertical Exaggeration

## CONCLUSIONS

1. The groundwater flow divides do not appear to move appreciably between 2010 of the Historic Scenario and the 2041 of the Baseline Scenario. This indicates that flow divides will remain relatively stable under currently anticipated pumping conditions in the future.
2. The groundwater flow divide located in the eastern portion of the LSSA is shown to migrate westward during the No Standard or Alternate Producer Pumping Scenario. This movement is caused by relative increases in groundwater elevations in the LSSA because pumping is reduced compared to east of the LSSA where pumping is not reduced. This migration highlights the fact that groundwater flow divides are not static physical features.
3. For every month investigated in all scenarios, groundwater in the most northeasterly portion of the LSSA is on the same side of the flow divide as the Corral de Tierra subbasin of the Salinas Valley Basin (as defined in DWR Bulletin 118). This region of the LSSA was also shown by the safe yield analysis to be more influenced by pumping outside of the LSSA than by pumping within. The presence of a flow divide between this region and the rest of the LSSA further suggests that this region is in greater hydrogeological connection with the Corral de Tierra subbasin. As a result, it will not be possible for the Watermaster to implement effective groundwater management strategies preventing groundwater levels in that portion of the LSSA from continuing to decline due to pumping in the Corral de Tierra subbasin. The Watermaster is likely to have greater success implementing strategies aimed at stabilizing groundwater levels within the portion of the LSSA that is westerly of the flow divide between the LSSA and the Corral de Tierra subbasin. These may, however, be temporary strategies as any new well near the eastern edge of the LSSA could influence groundwater levels west of the current flow divide.
4. There is little difference in the locations of the February and August flow divides that are external to the LSSA boundaries. However, during 2010 of the Historic Scenario and 2018 of the Baseline Scenario flow divides within the LSSA are present in August but that are not present in February. These

temporary flow divides emerge due to seasonal pumping depressions that form during the summer months and disappear when pumping rates are reduced.

5. Previous modeling results (HydroMetrics WRI, 2013) suggest that pumping in the El Toro area may prevent the eastern portion of the LSSA from achieving stable groundwater elevations. However, these model results are based upon an uncertain understanding of the hydrogeologic conditions in the El Toro area. If management of the LSSA is to be better informed, it will be important to undertake additional investigations in the El Toro area to improve on the geologic and hydrogeologic understanding of this area.

## REFERENCES

- HydroMetrics LLC. 2009. *Seaside groundwater basin modeling and protective groundwater elevations*. Prepared for Seaside Basin Watermaster, 151 pp.
- HydroMetrics WRI. 2013. *Technical memorandum: results of Laguna Seca safe yield analysis*. Prepared for Seaside Basin Watermaster, December 24, 2013.
- Rosenberg, L.I. 2001. *Geologic resources and constraints, Monterey County, California - a technical report for the Monterey County 21<sup>st</sup> century general plan update program*. Prepared for Monterey County.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	January 13, 2016
<b>AGENDA ITEM:</b>	4
<b>AGENDA TITLE:</b>	Schedule
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>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.</p> <p>Attached is the most recent update of the Work Schedule for FY 2016.</p>	
<b>ATTACHMENTS:</b>	Schedule of Work Activities for FY 2016
<b>RECOMMENDED ACTION:</b>	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

## Seaside Basin Watermaster Monitoring and Management Program 2016 Work Schedule

ID	Task Name	2016												2017									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	<b>CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK</b>																						
2	<b>2016 Administration, Operations and Replenishment Budgets</b>																						
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	<b>Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports</b>																						
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 41)																						
8	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016 (Same as Task 42)																						
9	<b>Replenishment Assessment Unit Costs for Water Year 2017</b>																						
10	B&F Committee Develops Replenishment Assessment Unit Cost for 2017 Water Year																						
11	If Requested, TAC Provides Assistance to B&F Committee in Development of 2017 Water Year Replenishment Assessment Unit Cost																						
12	Board Adopts and Declares 2017 Water Year Replenishment Assessment Unit Cost																						
13	<b>Replenishment Assessments for Water Year 2016</b>																						
14	Watermaster Prepares Replenishment Assessments for Water Year 2016																						
15	Watermaster Board Approves Replenishment Assessments for Water Year 2016 (At December Meeting)																						
16	Watermaster Levies Replenishment Assessment for 2016																						
17	<b>Monitoring &amp; Management Program (M&amp;MP) Budgets for 2017 and 2018</b>																						

## Seaside Basin Watermaster Monitoring and Management Program 2016 Work Schedule

ID	Task Name	2016												2017									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
18	Preliminary Discussion of Potential Scope of Work for 2017 M&MP												◆ 8/10										
19	Prepare Draft 2017 M&MP Work Plan and 2017 and 2018 O&M and Capital Budgets												■										
20	TAC approves Draft 2017 M&MP Work Plan and 2017 and 2018 O&M and Capital Budgets												◆ 9/14										
21	Board approves 2017 M&MP O&M and Capital Budgets													◆ 10/5									
22	2015 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)																						
23	Prepare Preliminary Draft 2016 Annual Report													■									
24	TAC Provides Input on Preliminary Draft 2016 Annual Report																						
25	Prepare Draft 2016 Annual Report (Incorporating TAC Input)																						
26	Board Provides Input on Draft 2016 Annual Report (At December Board Meeting)																						
27	Prepare Final 2016 Annual Report (Incorporating Board Input)																						
28	Watermaster Submits Final 2016 Annual Report to Judge																						
29	<b>MANAGEMENT</b>																						
30	<b>M.1 PROGRAM ADMINISTRATION</b>																						
31	Prepare Initial Consultant Contracts for 2017																						
32	TAC Approval of Initial Consultant Contracts for 2017																						
33	Board Approval of Initial Consultant Contracts for 2017																						
34	<b>M.1.g – Sustainable Groundwater Management Act Reporting Requirements</b>																						
35	HydroMetrics Prepares Draft Groundwater Storage Analysis																						
36	TAC Reviews HydroMetrics Draft Storage Analysis																						

## Seaside Basin Watermaster Monitoring and Management Program 2016 Work Schedule

ID	Task Name	2016												2017									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
37	HydroMetrics Revises Draft Storage Analysis if Necessary						I																
38	Submit SGMA Documentation to DWR							◆ 4/1															
39	<b>IMPLEMENTATION</b>																						
40	<b>I.2.a DATABASE MANAGEMENT</b>																						
41	I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance																						
42	<b>I.2.b DATA COLLECTION PROGRAM</b>																						
43	I.2.b.2 Collect Monthly Water Levels (MPWMD)																						
44	I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)																						
45	I.2.b.6 Reports (from MPWMD)																						
46	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters																						
47	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016																						
48	Watermaster Prepares Report Regarding Long-Term Trends in Water Levels in Monitoring Wells																						
49	<b>I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL</b>																						
50	TAC Assists Board in Developing Work Plan to Address LSSA Modeling Results																						
51	Develop and Schedule Additional Tasks as Directed by Board																						
52	<b>I.3.c Refine and/or Update the BMAP</b>	NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																					
53	<b>I.4.c Annual Seawater Intrusion Analysis Report (SIAR)</b>																						
54	HydroMetrics Provides Draft SIAR to Watermaster																						
55	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)																						

## Seaside Basin Watermaster Monitoring and Management Program 2016 Work Schedule

ID	Task Name	2016												2017									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
56	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																						
57	I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)																						
58	I.4.e Refine and/or Update the SIRP																						

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	January 13, 2016
<b>AGENDA ITEM:</b>	5
<b>AGENDA TITLE:</b>	Other Business
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<p>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.</p>
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only