Monterey County

Monterey County Government Center
Board Chamber
168 W. Alisal St.
Salinas, CA 93901

Meeting Agenda - Final

Tuesday, April 24, 2018

1:30 PM

Water Resources Agency Board of Directors

Chair, Mark Gonzalez
Vice-Chair, Deidre Sullivan
Glen Dupree
Ken Ekelund
Claude Hoover
Richard Ortiz
Mike Scattini
Mike LeBarre
Vacancy

Call to Order at 1:30 P.M.

Scheduled Items

1. Consider receiving the 2017 Groundwater Level Contours and Coastal Salinas Valley Seawater Intrusion Maps.

Attachments: Board Report
MCWRA Board Order

2. Consider receiving a report on recommendations for a comprehensive investigation of the Deep Aquifers in the Salinas Valley Groundwater Basin; and provide direction to Staff regarding implementation of the recommendations.

Attachments: Board Report
MCWRA Board Order

3. Receive a report on final recommendations from the Ninety-Day Working Group to address seawater intrusion in the coastal Salinas Valley Groundwater Basin; and, provide direction to Staff regarding implementation of the recommendations.

Attachments: Board Report
Attachment 1 Replacement Well Definition
Attachment 2 Prioritized Recommendations And Timeline
Attachment 3 Area Of Impact Map
MCWRA Board Order

Adjournment

Introduced: 4/17/2018
Version: 1

Current Status: Agenda Ready
Matter Type: WR General Agenda

Consider receiving 2017 Groundwater Level Contours and Coastal Salinas Valley Seawater Intrusion Maps

RECOMMENDATION:
It is recommended that the Monterey County Water Resources Agency Board of Directors, the Monterey County Water Resources Agency Board of Supervisors and the Monterey County Board of Supervisors:

Receive the 2017 Groundwater Level and Seawater Intrusion Maps

SUMMARY/DISCUSSION:

2017 Groundwater Level and Seawater Intrusion Maps

August Trough Groundwater Level Survey
Each summer, Agency staff conducts an intensive groundwater level survey of the northern Salinas Valley. Groundwater levels (GWLs) are sampled at 155 wells from Chualar to the coast, to obtain a "snapshot" survey of conditions within and beyond the Seawater Intrusion Front. This is done during a time of the year when aquifers are most stressed by pumping. One of the key purposes of the survey, is to monitor and assess the forces driving seawater intrusion, in particular groundwater level gradients sloping inland from the coast, which are most pronounced when pumping is at its seasonal peak.

Fall Groundwater Level Survey

In the latter part of each fall, from mid-November to mid-December, the Agency samples GWLs in approximately 480 wells throughout the Salinas Valley, from the San Ardo Oilfields to Moss Landing. The timing of this sampling survey allows us to capture conditions in the groundwater basin at a time when a relative lull in agricultural pumping causes groundwater level troughs to relax, prior to the influence of seasonal recharge in response to winter/spring precipitation. In this way, the annual Fall survey of groundwater level data is an assessment of the relative, year-to-year change in groundwater storage throughout the valley.

2017 Coastal Salinas Valley Seawater Intrusion Maps
Coastal groundwater quality monitoring occurs annually during the peak pumping season. Samples are collected twice per season at 96 agricultural wells and 25 dedicated monitoring wells and analyzed for general minerals. Chloride concentration is used as a proxy for indicating seawater intrusion with several other geochemical tools used for verification and validation. The 500 mg/L chloride

concentration contours are used to develop seawater intrusion maps in the odd years.

OTHER AGENCY INVOLVEMENT:
None

FINANCING:
There is no financial impact in receiving this report.

Prepared by: Howard Franklin, Senior Hydrologist, (831) 755-4860
Tamara Voss, Associate Hydrologist, (831) 755-4860
Peter Kwiek, Hydrologist, (831) 755-4860
Sean Noble, Water Resources Technician, (831) 755-4860

Approve by: David E. Chardavoyne
David E. Chardavoyne, General Manager, (831) 75504860

Attachments:
1. Board Order

Before the Board of Directors of the Monterey County Water Resources Agency

County of Monterey, State of California

BOARD ORDER No. _____

RECEIVE THE 2017 GROUNDWATER LEVEL AND SEAWATER INTRUSION MAPS)

Upon motion of Director _____, seconded by Director _____, and carried by those members present, the Board of Directors hereby:

Receives the 2017 Groundwater Level and Seawater Intrusion Maps

PASSED AND ADOPTED on this 24th day of April **2018**, by the following vote, to-wit:

AYES:

NOES:

ABSENT:

BY: Mark Gonzalez, Chair
Board of Directors

ATTEST: David E. Chardavoyne
General Manager

Introduced: 4/17/2018
Version: 1

Current Status: Agenda Ready
Matter Type: WR General Agenda

Consider receiving a report on recommendations for a comprehensive investigation of the Deep Aquifers in the Salinas Valley Groundwater Basin; and, provide direction to Staff regarding implementation of the recommendations.

RECOMMENDATION:
It is recommended that the Board of Supervisors of the County of Monterey, Board of Supervisors of the Monterey County Water Resources Agency, and Monterey County Water Resources Agency Board of Directors:

a. Receive a report on recommendations for a comprehensive investigation of the Deep Aquifers in the Salinas Valley Groundwater Basin; and
b. Provide direction to Staff regarding implementation of the recommendations.

SUMMARY:
In October 2017, the Monterey County Water Resources Agency (Agency) released a report titled *Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin* (Report). The Report included six recommendations, conceptualized as a comprehensive solution that - in conjunction with existing projects - would slow or halt seawater intrusion in the Salinas Valley Groundwater Basin.

Two of the recommendations in the Report pertain to the Deep Aquifers in the Salinas Valley Groundwater Basin (Deep Aquifers). At its October 16, 2017 meeting, the Monterey County Water Resources Agency Board of Directors directed staff to provide a scope and costs necessary to complete an investigation of the Deep Aquifers, as discussed in recommendation number six (#6) in the Report.

On March 9, 2018, the Agency convened a group of fifteen (15) individuals for the Deep Aquifers Roundtable Meeting. The meeting attendees consisted of professional colleagues with expertise in geology, hydrogeology, or related fields and with specific experience studying the Deep Aquifers in the Salinas Valley Groundwater Basin; the meeting also included Agency staff. The meeting objectives were to provide a scientifically-oriented forum in which to discuss available data on the Deep Aquifers; identify gaps in current understanding of the Deep Aquifers; and conceptualize the work necessary to address data gaps.

None of the meeting attendees, excepting Agency staff, contributed directly to the development of the recommended scope or costs for the investigation discussed herein.

DISCUSSION:

The intent of a comprehensive investigation of the Deep Aquifers would be threefold:

1. Identify the geographic extent and hydrologic properties of the Deep Aquifers;
2. Determine the quantity and quality of water resources in the Deep Aquifers; and,
3. Provide recommendations for sustainable management of the water resources in the Deep Aquifers.

To achieve these goals, the Agency recommends that a comprehensive investigation consider the following aspects of the Deep Aquifers: geology; hydrogeology; water quality; water balance; and resource management. The investigation should make use of all available data and, particularly with recommendations for any management actions, should maintain consistency with activities conducted or planned by the Groundwater Sustainability Agencies overlying the Deep Aquifers to the extent possible.

While there is existing data about the Deep Aquifers, Agency staff anticipates that some new geologic or geophysical exploration would be included the study. This could include the installation of monitoring wells or work using airborne or seismic geophysics. Staff also anticipates that new aquifer testing and water quality sampling would be conducted. Depending on the extent of new field activities that are necessary, a comprehensive investigation of the Deep Aquifers could take from eight to twelve months.

Upon completion of a comprehensive investigation, the Board of Supervisors of the County of Monterey, Board of Supervisors of the Monterey County Water Resources Agency, and Monterey County Water Resources Agency Board of Directors will have the necessary data to enable fact-based decision making about short- and long-term solutions to managing the water resources in the Deep Aquifers.

OTHER AGENCY INVOLVEMENT:
None, for the purposes developing these recommendations.

FINANCING:
There is no financial impact for receiving these recommendations. The financial impact of implementing the comprehensive investigation of the Deep Aquifers described in this report would be addressed in connection with the consideration of those actions directed by the Boards, but could be in the range of $1,200,000 to $1,500,000.

Prepared by: Amy Woodrow, Hydrologist, (831) 755-4860

Approved by: David E. Chardavoyne
David E. Chardavoyne, General Manager, (831) 755-4860

Attachments:
1. MCWRA Board Order

Before the Board of Directors of the Monterey County Water Resources Agency
County of Monterey, State of California

BOARD ORDER No. _____

RECEIVE A REPORT ON RECOMMENDATIONS FOR A	)
COMPREHENSIVE INVESTIGATION OF THE DEEP AQUIFERS	)
IN THE SALINAS VALLEY GROUNDWATER BASIN; AND	)
PROVIDE DIRECTION TO STAFF REGARDING	)
IMPLEMENTATION OF THE RECOMMENDATIONS.	)

Upon motion of Director _____, seconded by Director _____, and carried by those members present, the Board of Directors hereby:

1. Receives a report on recommendations for a comprehensive investigation of the Deep Aquifers in the Salinas Valley Groundwater Basin; and,

2. Directs staff to

PASSED AND ADOPTED on this **24th** day of **April 2018**, by the following vote, to-wit:

AYES:

NOES:

ABSENT:

BY: Mark Gonzalez, Chair
Board of Directors

ATTEST: David E. Chardavoyne
General Manager

Introduced: 4/17/2018
Version: 1

Current Status: Agenda Ready
Matter Type: WR General Agenda

Consider receiving a report on final recommendations from the Ninety-Day Working Group to address seawater intrusion in the coastal Salinas Valley Groundwater Basin; and, provide direction to Staff regarding implementation of the recommendations.

RECOMMENDATION:

It is recommended that the Board of Supervisors of the County of Monterey, Board of Supervisors of the Monterey County Water Resources Agency, and Monterey County Water Resources Agency Board of Directors:

a. Receive a report on final recommendations from the Ninety-Day Working Group to address seawater intrusion in the coastal Salinas Valley Groundwater Basin; and

b. Provide direction to Staff regarding implementation of the recommendations.

SUMMARY:

In October 2017, the Monterey County Water Resources Agency (Agency) released a report titled *Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin* (Report). On December 12, 2017, the Board of Supervisors of the County of Monterey and Board of Supervisors of the Monterey County Water Resources Agency (Board) directed County and Agency staff to coordinate with the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) and report back to the Board with a strategy for implementation of these, or other, recommendations at forty-five and ninety day intervals.

In response, the Ninety-Day Working Group (Working Group) was formed, a nine-member group which includes staff from the County (Health Department) and Agency, and staff and Board members from the SVBGSA. The Working Group also includes a facilitator from the Consensus Building Institute. The Working Group has met six times between January 11 and April 5, 2018 to consider the recommendations in the Report and formulate the recommendations presented herein.

The Working Group's preliminary recommendations were presented at a number of public meetings and to stakeholder groups during the development process, including the: Board of Supervisors of the County of Monterey; Board of Supervisors of the Monterey County Water Resources Agency; Salinas Valley Basin Groundwater Sustainability Agency Board of Directors; Advisory Committee to the SVBGSA; Water Quality and Operations Committee; Monterey County Planning Commission; Monterey County Farm Bureau Joint Water Committee; and Grower-Shipper Association of Central California.

Based on feedback received during public meetings and through discussion with stakeholders, the Working Group has continually refined its recommendations, resulting in those presented in this report.

The recommendations were conceptualized as a comprehensive solution intended to protect public health and drinking water quality; give consideration to and preserve agricultural production and economics; and act immediately to reduce the effects of and slow further advancement of seawater intrusion, bearing in mind the imminent development and implementation of a Groundwater Sustainability Plan (GSP).

The Working Group requests that the Board receive these final recommendations and provide direction as to implementation of the recommendations.

DISCUSSION:
The Working Group used the recommendations in the Report as a starting point and made refinements to content and to acknowledge that there are multiple time frames over which the recommendations may apply, including the short term (within the next two years), the mid-term (two to four years), and the long term (up to twenty years). Development of a Groundwater Sustainability Plan (GSP) by the SVBGSA will occur within two to four years.

Many of the recommendations reference the term "replacement well." This term is also used in multiple policies from the 2010 Monterey County General Plan, but a definition for "replacement well" is not included in the glossary of the 2010 General Plan. The Working Group is proposing a definition for "replacement well" that the Board could consider implementing along with the recommendations (Attachment 1).

Following are the recommendations from the Working Group, organized by prioritization and time frame for implementation. These are also summarized on Attachment 2.

- **Short Term** - intended to begin immediately

    1. Identify funding for and, within 90 to 180 days, initiate destruction of the eight (8) wells within Agency Zone 2B that are identified in the Report as "urgent" priority.

    2. Finalize the extent of the Area of Impact (Attachment 3).

- **Short to Mid-Term** - beginning immediately and continuing at least through 2020

    3. Prioritize data collection, processing, and analysis of water quality data so that timely reports on the extent of seawater intrusion are made available by the Water Resources Agency.

    4. An immediate moratorium on new wells within the 180-Foot and 400-Foot Aquifers of the 180/400 Foot Aquifer Subbasin within an identified Area of Impact. Consider allowing only for construction of replacement wells in these aquifers within the Area of Impact.
        a. Domestic and municipal water supply wells should be exempt from this replacement well requirement.

5. Until the completion of an investigation of the Deep Aquifers or implementation of the GSP, whichever occurs first, minimize the construction of wells in the entirety of Deep Aquifers. Consider allowing only for construction of replacement wells.
    a. The Deep Aquifers will be defined on the basis of depositional environment.
    b. Require the destruction of the existing well that is being replaced by a replacement well in the Deep Aquifers.
    c. Domestic and municipal water supply wells should be exempt from this replacement well requirement.

6. Require well owners to meter groundwater extractions and monitor groundwater levels and quality in all existing and replacement wells in the Deep Aquifers, and submit all data to the Agency, SVBGSA, and/or other identified agency.

7. Initiate and diligently proceed with an investigation to determine the long-term viability of the Deep Aquifers.

8. Develop a County program to incentivize the destruction of abandoned wells, especially within the Area of Impact.

9. Initiate and diligently proceed with optimization and enhancement of the Castroville Seawater Intrusion Project (CSIP) to minimize undesirable impacts to drinking water, while simultaneously developing an annexation plan for the expansion of the CSIP Service Area.
    a. The annexation plan should prioritize expansion into areas nearest the actively advancing seawater intrusion front, to the extent practicable.

- **Mid- to Long-Term** - beginning in late 2018 and potentially continuing past 2020

10. Rigorously pursue the destruction of the remaining 134 wells within Monterey County Water Resources Agency Zone 2B that are identified in the Report and are part of Ordinance 3790.

11. Expansion of the Castroville Seawater Intrusion Project (CSIP) Service Area in accordance with the annexation Plan.

12. Following expansion of the CSIP Service Area, termination of all pumping from existing wells in the 180- or 400-Foot Aquifers within the Area of Impact, with exemptions for domestic and municipal water supply wells, CSIP supplemental wells, and monitoring wells.

The Working Group discussed the application of these recommendations to all types of wells within the Area of Impact, but acknowledges that existing General Plans and land use policies will supersede any attempts to restrict new domestic or municipal water wells. Recognizing this, the Working Group suggests that land use policy changes be considered in the future, as well as near-term implementation

of incentives for all water users to reduce groundwater pumping and increase irrigation efficiencies.

OTHER AGENCY INVOLVEMENT:
Monterey County Health Department; Monterey County Water Resources Agency; Salinas Valley Basin Groundwater Sustainability Agency

FINANCING:
There is no financial impact for receiving this status report from the Working Group. The financial impacts of funding any actions directed by the Board as a result of the Working Group's recommendations would be addressed in connection with the consideration of those actions.

The Working Group recommends that the Board consider the use of $1,000,000 in emergency funds to enable the Monterey County Water Resources Agency to initiate destruction of the eight (8) wells within Agency Zone 2B that are identified in the Report as "urgent" priority, which will cost an estimated $400,000. The remainder of the emergency funds would be used to continue destruction of the remaining wells identified under Ordinance 3790 until Proposition 1 grant funding is received.

Prepared by: Amy Woodrow, Hydrologist, 831-755-4860

Approved by: David E. Chardavoyne
David E. Chardavoyne, General Manager, (831) 755-4860

Attachments:
1. Replacement well definition
2. Matrix of Recommendations by Timeline
3. Map of Area of Impact

Before the Board of Directors of the Monterey County Water Resources Agency
County of Monterey, State of California

BOARD ORDER No. _____

RECEIVE A REPORT ON FINAL RECOMMENDATIONS FROM	)
THE NINETY-DAY WORKING GROUP TO ADDRESS	)
SEAWATER INTRUSION IN THE COASTAL SALINAS VALLEY	)
GROUNDWATER BASIN	)

Upon motion of Director _____, seconded by Director _____, and carried by those members present, the Board of Directors hereby:

Receives a report on final recommendations from the Ninety-Day Working Group to address seawater intrusion in the coastal Salinas Valley Groundwater Basin

PASSED AND ADOPTED on this **24th** day of **April 2018**, by the following vote, to-wit:

AYES:

NOES:

ABSENT:

BY: Mark Gonzalez, Chair
Board of Directors

ATTEST: David E. Chardavoyne
General Manager

Attachment 1- Replacement Well Definition

"Replacement well" means a new well drilled for the sole purpose of replacing an existing well which is impaired or otherwise rendered ineffective due to structural difficulties or water quality; which is constructed to provide water for the same purpose as the existing water well; and, if the purpose is for irrigation, which delivers water to the same amount of irrigated acreage served by the existing well.

a. Replacement wells shall be located on the same or adjacent parcel as the existing well.
b. Replacement wells shall replace an existing water well that has not been destroyed but which will not be used after construction of the replacement well. The existing well will be destroyed within one hundred eighty (180) days after the replacement well is operational[1].
c. Replacement wells being constructed in a different aquifer than the existing well shall, as part of the permitting process, provide at least five (5) years of annual extraction data or otherwise quantify the volume of groundwater typically extracted from the existing well in order to allow for a reasonable estimate of the additional water likely to be extracted by the replacement well.
d. This definition is not intended to include the deepening of an existing well.
e. Domestic and municipal drinking water wells are exempt from policies that apply to replacement wells.
f. Replacement wells shall be subject to an assessment of potential significant impacts to existing domestic or municipal water supply wells.[2]

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[1] "Operational" means that the well has been fitted with a pump and connected to a source of power, or other means by which water can be extracted from the well on-demand by the well owner or operator.

[2] The assessment methodology and thresholds for determining potential significant adverse impact shall be the same as what is used by the Water Resources Agency in application of Monterey County 2010 General Plan policies PS-3.3 and PS-3.4.

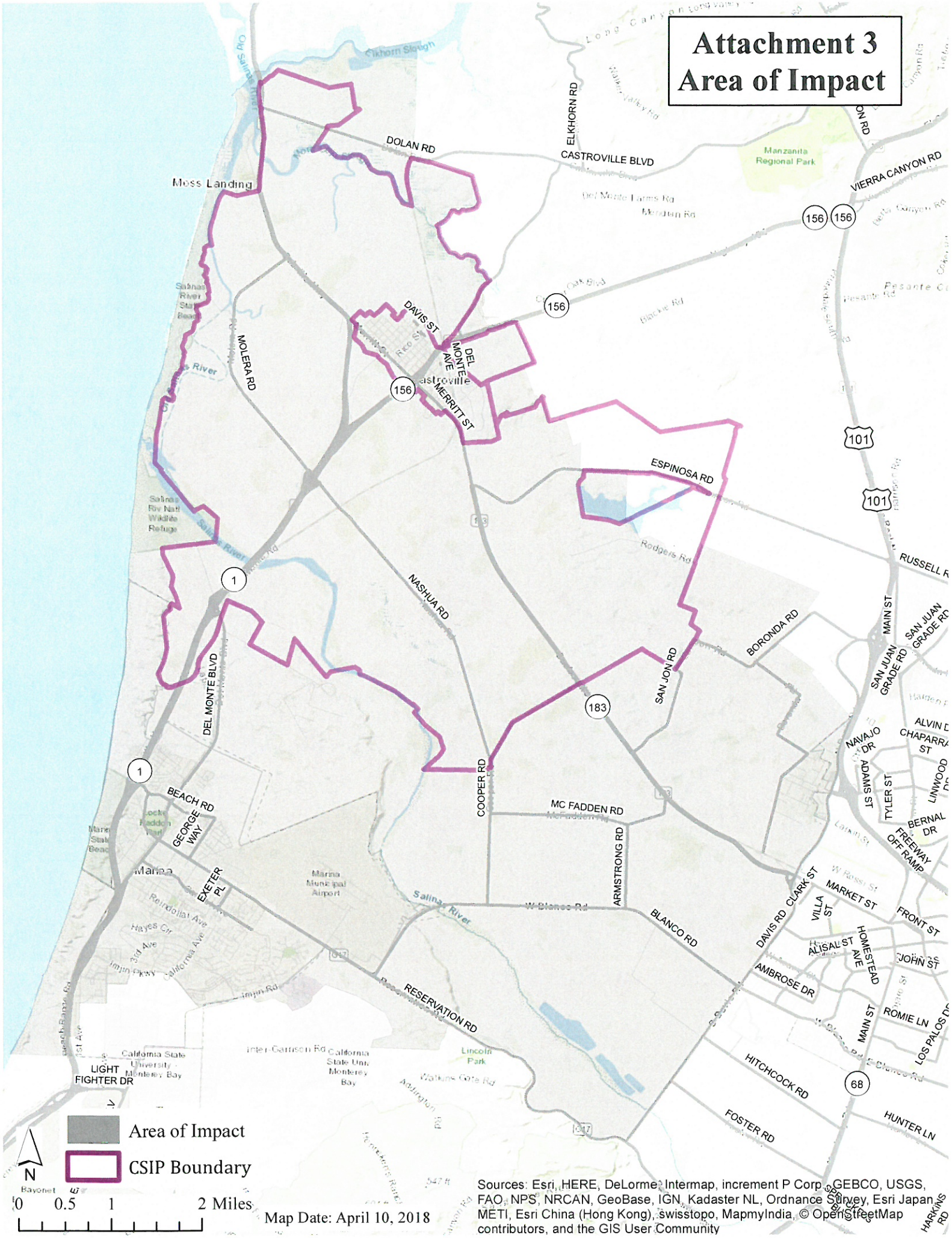
Attachment 2 – Final Recommendations from the Ninety Day Working Group by Priority and Time Frame for Implementation

Recommendations (in order of priority):	Short Term April – Sept. 2018	Mid-Term Oct. 2018 – Mar. 2020	Long Term 2020 - 2040
1. Identify funding for and, within 90 to 180 days, initiate destruction of the eight (8) wells within Agency Zone 2B that are identified in the Report as "urgent" priority.			
2. Finalize the extent of the Area of Impact.			
3. Prioritize data collection, processing, and analysis of water quality data so that timely reports on the extent of seawater intrusion are made available by the Water Resources Agency.			→
4. An immediate moratorium on new wells within the 180-Foot and 400-Foot Aquifers of the 180/400 Foot Aquifer Subbasin within an identified Area of Impact. Consider allowing only for construction of replacement wells in these aquifers within the Area of Impact. a. Domestic and municipal water supply wells should be exempt from this replacement well requirement.			
5. Until the completion of an investigation of the Deep Aquifers or implementation of the GSP, whichever occurs first, minimize the construction of wells in the entirety of Deep Aquifers. Consider allowing only for construction of replacement wells. a. The Deep Aquifers will be defined on the basis of depositional environment. b. Require the destruction of the existing well that is being replaced by a replacement well in the Deep Aquifers. c. Domestic and municipal water supply wells should be exempt from this replacement well requirement.			→
6. Require well owners to meter groundwater extractions and monitor groundwater levels and quality in all existing and replacement wells in the Deep Aquifers, and submit all data to the Agency, SVBGSA, and/or other identified agency.			
7. Initiate and diligently proceed with an investigation to determine the long-term viability of the Deep Aquifers.			
8. Develop a County program to incentivize the destruction of abandoned wells, especially within the Area of Impact.			→

Attachment 2 – Final Recommendations from the Ninety Day Working Group by Priority and Time Frame for Implementation

9. Initiate and diligently proceed with optimization and enhancement of the Castroville Seawater Intrusion Project (CSIP) to minimize undesirable impacts to drinking water, while simultaneously developing an annexation plan for the expansion of the CSIP Service Area. a. The annexation plan should prioritize expansion into areas nearest the actively advancing seawater intrusion front, to the extent practicable.			
10. Rigorously pursue the destruction of the remaining 134 wells within Monterey County Water Resources Agency Zone 2B that are identified in the Report and are part of Ordinance 3790.			
11. Expansion of the Castroville Seawater Intrusion Project (CSIP) Service Area in accordance with the annexation Plan.			
12. Following expansion of the CSIP Service Area, termination of all pumping from existing wells in the 180- or 400-Foot Aquifers within the Area of Impact, with exemptions for domestic and municipal water supply wells, CSIP supplemental wells, and monitoring wells.			

Attachment 3
Area of Impact



Map Date: April 10, 2018

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community