RECOMMENDATIONS TO ADDRESS THE EXPANSION OF SEAWATER INTRUSION IN THE SALINAS VALLEY GROUNDWATER BASIN: 2020 UPDATE

Monterey County Water Resources Agency

Special Reports Series 20-01

May 2020

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Monterey County Water Resources Agency

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Monterey County Water Resources Agency

Mission Statement

The Water Resources Agency manages, protects, stores, and conserves water resources in Monterey County for beneficial and environmental use, while minimizing damage from flooding to create a safe and sustainable water supply for present and future generations.

Vision Statement

To become a recognized and respected leader in the community we serve through demonstrated knowledge, integrity, and the quality of our actions.

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1 INTRODUCTION

1.1 BACKGROUND

Every two years, the Monterey County Water Resources Agency (Agency) releases maps defining the extent of seawater intrusion in the Salinas Valley Groundwater Basin.[1] In July 2017, the Agency released maps showing seawater intrusion based on groundwater quality data from 2015 and, for the first time, the maps depicted "islands" of impaired groundwater in the 400-Foot Aquifer that were not contiguous with the historical seawater intrusion front.

At that time, Agency staff conducted an in-depth investigation of the data and concluded that this previously unseen phenomenon was the result of seawater intruded groundwater leaking from the overlying 180-Foot Aquifer into the 400-Foot Aquifer. This pathway of seawater intrusion results when three factors are present: overlying seawater intrusion; a downward hydraulic gradient; and, the presence of a conduit (e.g. thin or absent aquitard, damaged well casing, or an abandoned or improperly destroyed well). The "vertical pathway" mechanism differs from the more common mechanism of regional seawater intrusion, which is enabled by hydraulic connectivity to the ocean and a landward hydraulic gradient.

1.2 2017 *RECOMMENDATIONS* REPORT

In response to the Board of Supervisors of the County of Monterey, Board of Supervisors of the Monterey County Water Resources Agency, and Water Resources Agency Board of Directors (Joint Boards), the Agency published a report titled *Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin* in October 2017 (2017 *Recommendations* report) with six recommendations that could, if implemented, slow or halt further advancement of seawater intrusion.

1.3 THE 90-DAY WORKING GROUP

After release of the 2017 *Recommendations* report, the Joint Boards directed staff to convene a 90-Day Working Group (Working Group) with the purpose of developing an interim urgency ordinance to address the issues presented in the report. The Working Group met from January to April 2018 and was comprised of staff from the Monterey County Health Department, Monterey County Water

[1] Per Monterey County Water Resources Agency Ordinance No. 3790 "seawater intruded" means: An aquifer is "seawater intruded" at any particular location of measurement when, at the location of measurement, the chloride ion concentration in the aquifer exceeds 500 mg/liter, and the General Manager determines that the contamination is not a localized contamination.

Resources Agency, Monterey One Water, Salinas Valley Basin Groundwater Sustainability Agency, and members of the public representing the agricultural industry.

At its last meeting on April 5, 2018 the Working Group finalized a prioritized list of recommended actions and accompanying timeline (Appendix A). This set of recommendations was presented to the Joint Boards on April 24, 2018, at which time staff was directed to return to the Board of Supervisors with an ordinance for a temporary moratorium on drilling of new wells in the 180-Foot and 400-Foot Aquifers within a defined "Area of Impact" and a temporary moratorium on drilling of new wells in the Deep Aquifers, with exceptions for replacement wells, domestic wells, and municipal supply wells. The Joint Boards also endorsed the other recommendations from the Working Group.

1.4 ORDINANCES NO. 5302 AND NO. 5303

On May 22, 2018, the Monterey County Board of Supervisors (BOS) approved Ordinance No. 5302, an interim urgency measure that would expire on July 5, 2018 unless extended. On June 26, 2018, the BOS extended the provisions of Ordinance No. 5302, at which point it became known as Ordinance No. 5303 with an expiration date of May 21, 2020 (Appendix B).

In summary, Ordinance No. 5303 does the following, pending further study and development of regulations:

- Prohibits the construction of new wells in the 180-Foot and 400-Foot Aquifers within a defined Area of Impact, unless exempted by the ordinance;

- Defines the geographic extent of the Area of Impact, where the prohibition on new wells in the 180-Foot and 400-Foot Aquifers applies (Figure 1);

- Prohibits the construction of new wells in the Deep Aquifers of the 180/400 Foot Aquifer and Monterey Subbasins of the Salinas Valley Groundwater Basin, unless exempted by the ordinance;

- Exempts five categories of wells from the prohibitions, including: wells operating under the auspices of the Castroville Seawater Intrusion Project (CSIP); domestic wells; monitoring wells owned and maintained by the Agency or other water management agency; municipal water supply wells; and, replacement wells; and,

- Defines the criteria for determining a "replacement well".

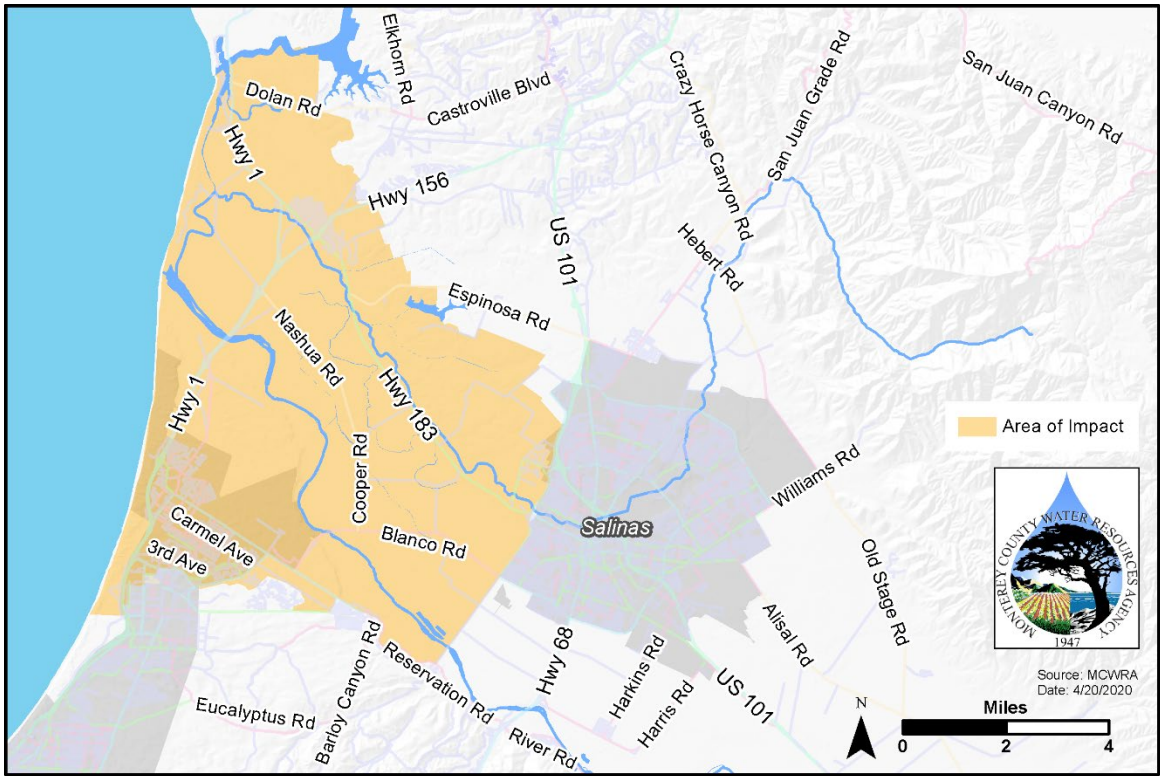


Figure 1: Area of Impact

1.5 OBJECTIVE OF THIS REPORT

The expiration of Ordinance No. 5303 is imminent, the mechanisms of seawater intrusion persist, and seawater intrusion continues to expand in the Salinas Valley Groundwater Basin as depicted in the 2019 historical seawater intrusion maps (Figure 2 and Figure 3). The Agency has developed this report to serve as an update to the 2017 *Recommendations* report.

This report presents current groundwater level and quality conditions in the coastal Salinas Valley Groundwater Basin and analyzes the impacts of implementing Ordinances No. 5302 and No. 5303. It also sets forth an updated set of nine recommendations to slow and halt seawater intrusion and address the Board of Supervisors finding that "…there is a current and immediate threat to the public health, safety, and welfare resulting from the drilling of new wells within the Area of Impact…" (Ord. No. 5302).

The recommendations are grouped by the primary aquifer or project area that will be influenced by the recommendation, rather than in an order of priority.

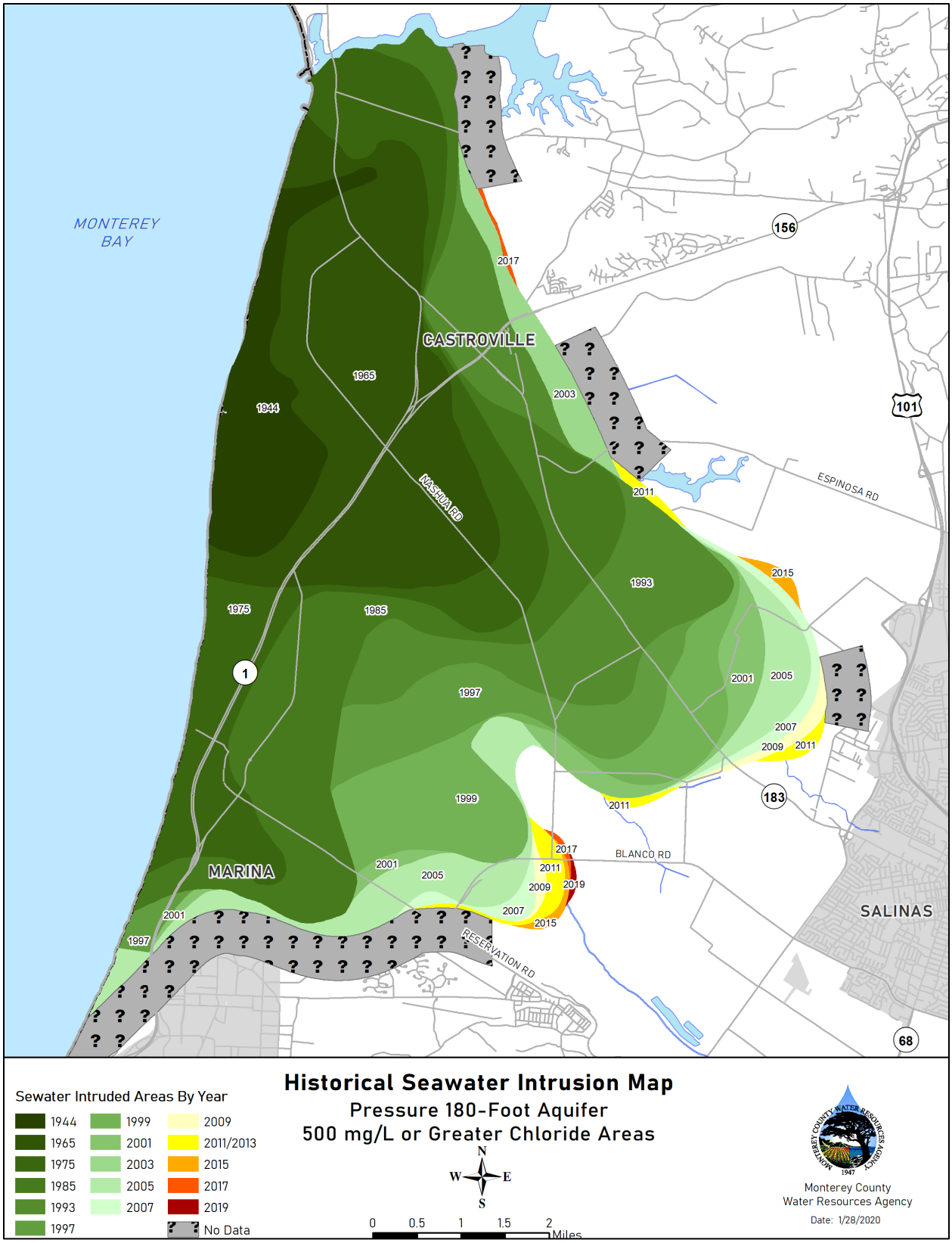


Figure 2: Historical Seawater Intrusion Map - Pressure 180-Foot Aquifer

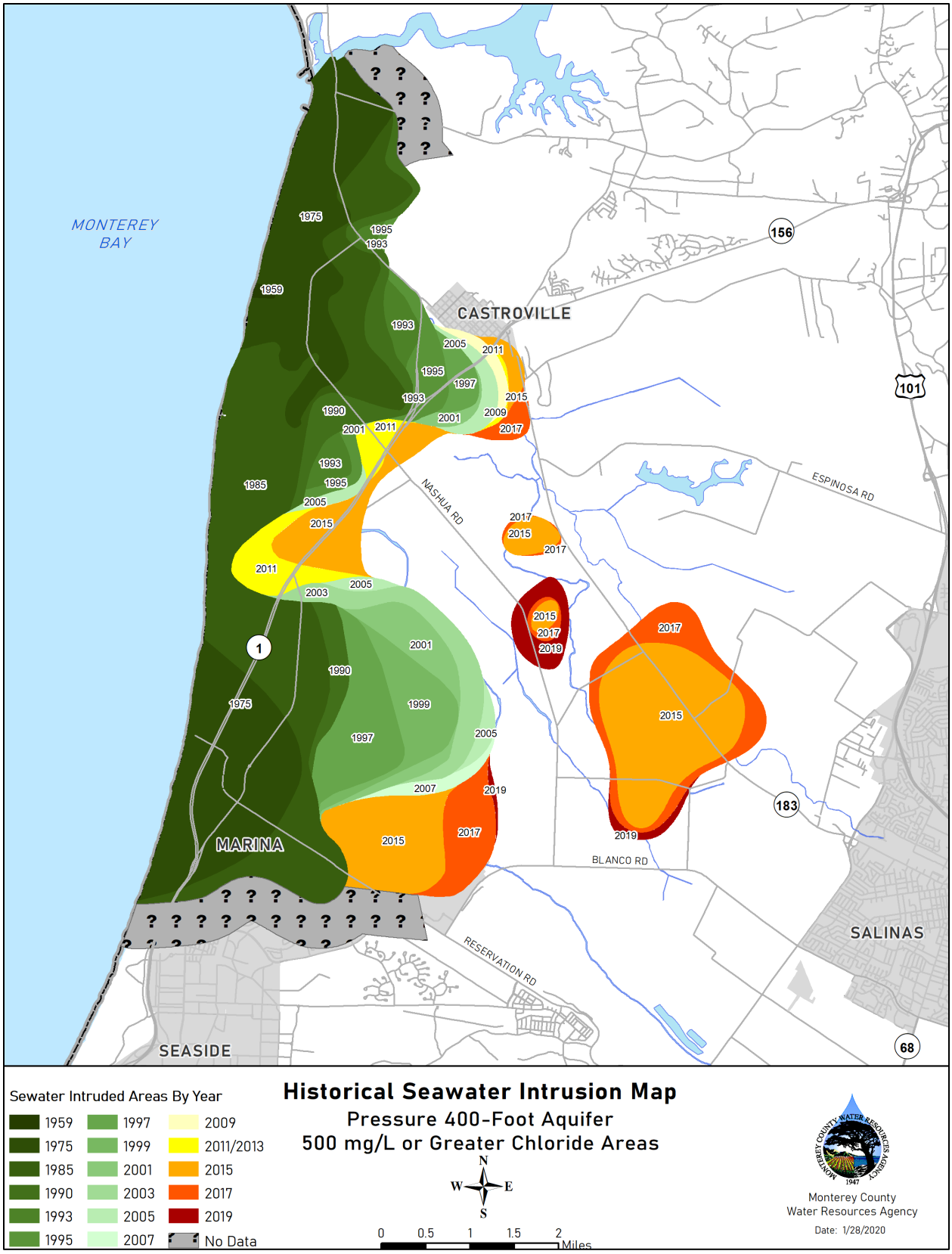


Figure 3: Historical Seawater Intrusion Map - Pressure 400-Foot Aquifer

1.6 RECOMMENDATIONS

Staff makes the following nine recommendations with the aim to slow or halt seawater intrusion, and impacts related thereto, in the Salinas Valley Groundwater Basin:

1. An immediate prohibition of groundwater extractions from new wells[2] in the 180-Foot Aquifer and 400-Foot Aquifer within the existing Area of Impact, except for the following use categories:
    a. Domestic wells;[3]
    b. Wells supplying public water systems; as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[4]
    c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,
    d. Monitoring wells owned and operated by the Agency or other water management agencies.

2. Initiate and diligently proceed with installation or acquisition of additional groundwater level and quality monitoring locations in the coastal region.

3. After installation or acquisition of additional groundwater level and monitoring locations, implement new methodologies for groundwater level and quality characterization, such as geophysical and modeling tools, in the coastal region.

4. Enhancement and expansion of the Castroville Seawater Intrusion Project (CSIP) Service Area. The expansion should include, at a minimum, lands served by wells currently extracting groundwater within the Area of Impact.

5. Following expansion of the CSIP Service Area, termination of all pumping from existing wells within the Area of Impact, except for the following use categories:
    a. Domestic wells;[3]
    b. Wells supplying public water systems; as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[4]
    c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,

[2] "New well" is not intended to include: (a) any well for which a construction permit has been issued by the Monterey County Health Department; or (b) any well for which drilling or construction activities have commenced in accordance with a well construction permit issued by the Monterey County Health Department.

[3] "Domestic well" is intended to mean a well that is used to supply water for the private use and consumption of an individual residence or a small water system with less than 15 connections.

[4] A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system. (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system. (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

d. Monitoring wells owned and maintained by the Agency or other water management agencies.

6. Initiate and diligently proceed with destruction of wells in Agency Zone 2B, in accordance with Agency Ordinance No. 3790 and the Proposition 1 Groundwater Grant Program Agreement, to protect the Salinas Valley Groundwater Basin against further seawater intrusion.

7. An immediate prohibition of groundwater extractions from new wells within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer Subbasin until such time as an investigation of the Deep Aquifers is completed and data pertaining to the hydraulic properties and long-term viability of the Deep Aquifers are available for knowledge-based water resource planning and decision making.
    a. The following should be considered for exemption from this recommendation:
        i. Domestic wells;[5]
        ii. Wells supplying public water systems, as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[6]
        iii. Monitoring wells owned and operated by the Agency or other water management agencies;
        iv. Wells for which a construction permit has already been issued; and,
        v. Well repairs.
    b. The prohibition should include:
        i. Replacement wells; and,
        ii. Deepening of wells from overlying aquifers into the Deep Aquifers, deepening of wells within the Deep Aquifers, and other activities that would expand the length, depth, or capacity of an existing well.

8. Initiate and diligently proceed with an investigation to determine the hydraulic properties and long-term viability of the Deep Aquifers, in conjunction with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency.
    a. Staff to identify funding source(s) for a comprehensive investigation of the Deep Aquifers.
    b. Once funding for the investigation is secured, complete the investigation within three years or the timeframe for which funding is available, whichever is less.

9. Actively participate in coordinated efforts with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency for beneficial management of aquifers in the coastal Salinas Valley Groundwater Basin.

[5] See Footnote 3 on Page 6.
[6] See Footnote 4 on Page 6.

2 THE 400-FOOT AQUIFER

The 2017 *Recommendations* report depicted groundwater levels, the extent of seawater intrusion, and groundwater extractions based on 2015 data. Since that report, groundwater level contour maps and historical seawater intrusion maps have been produced for the years 2017 and 2019. The following sections describe the updated data and changes that have been observed since the analysis of 2015 data and present recommendations germane to the 400-Foot Aquifer.

2.1 RECOMMENDATIONS

1. An immediate prohibition of groundwater extractions from new wells[7] in the 180-Foot Aquifer and 400-Foot Aquifer within the existing Area of Impact, except for the following use categories:
    a. Domestic wells;[8]
    b. Wells supplying public water systems, as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[9]
    c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,
    d. Monitoring wells owned and operated by the Agency or other water management agencies.

2. Initiate and diligently proceed with installation or acquisition of additional groundwater level and quality monitoring locations in the coastal region.

3. After installation or acquisition of additional groundwater level and monitoring locations, implement new methodologies for groundwater level and quality characterization, such as geophysical and modeling tools, in the coastal region.

[7] "New well" is not intended to include: (a) any well for which a construction permit has been issued by the Monterey County Health Department; or (b) any well for which drilling or construction activities have commenced in accordance with a well construction permit issued by the Monterey County Health Department.

[8] "Domestic well" is intended to mean a well that is used to supply water for the private use and consumption of an individual residence or a small water system with less than 15 connections.

[9] A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system. (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system. (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

2.2 GROUNDWATER LEVELS

The Agency measures groundwater levels on a monthly basis at approximately 122 wells and on an annual basis during the fall (November and December) at approximately 400 wells, a time coinciding with the end of the irrigation season and before seasonal recharge by winter rains has begun. An additional survey is conducted each August at approximately 150 wells, with the intent of capturing conditions during the period of seasonal maximum pumping.

The Agency produces maps of groundwater elevation contour lines depicting conditions in August in: (1) the Pressure 180-Foot and Eastside Shallow Aquifers; and (2) the Pressure 400-Foot and Eastside Deep Aquifers (Figure 4 and Figure 5, respectively). A second set of maps is produced depicting Fall conditions in: (1) the Pressure 180-Foot, Eastside Shallow, Forebay, and Upper Valley Aquifers; and (2) the Pressure 400-Foot and Eastside Deep Aquifers (Figure 6 and Figure 7, respectively).[10]

Groundwater level data provides insight on how an aquifer or subarea responds to hydrologic conditions, such as precipitation and pumping, over time. Each subarea or aquifer will respond differently to these hydrologic conditions. For example, groundwater levels in shallower subareas may respond quicker to a wet season while subareas that are deeper or more depleted may take longer for groundwater levels to respond and recover.

2.2.1 August Groundwater Levels

At present, groundwater levels in the coastal area[11] during August are below sea level at most locations in the 180-Foot, 400-Foot, Eastside Shallow, and Eastside Deep Aquifers. Between 2017 and 2019, groundwater levels immediately adjacent to the coast rose to above sea level at three well locations in the 180-Foot Aquifer, resulting in a "0" contour that was not mapped in 2017 (Figure 4). Groundwater levels in the 400-Foot Aquifer are below sea level.

Further south in the 180/400-Foot Aquifer Subbasin, groundwater levels in the vicinity of Chualar have increased since 2017 between 5 and 10 feet in the 180-Foot Aquifer, and between 10 and 20 feet in the 400-Foot Aquifer.

Groundwater levels in the Eastside Shallow and Eastside Deep Aquifers remain below sea level, and the Eastside Trough persists in both aquifers. The "bottom" of the pumping trough in the Eastside

[10] The term "Pressure" refers to one of the hydrologic subareas recognized by the Agency and used historically to refer to a geographic area defined on the basis of groundwater recharge and the nature of the hydrostratigraphy. The "Pressure Area" is approximately coincident with the geographic boundaries of the 180/400 Foot Aquifer Subbasin defined by the California Department of Water Resources in Bulletin 118. Within the "Pressure Area" there are three distinct water-bearing units or aquifers: the 180-Foot Aquifer, 400-Foot Aquifer, and Deep Aquifers; these same aquifers underlie the 180/400 Foot Aquifer Subbasin. Use of the term "Pressure" in this report is limited to instances where it was incorporated into previously published figures or reports.

[11] The "coastal area" refers generally to the area between Salinas and the Monterey Bay, and between Reservation Road and Elkhorn Slough on the south and north, respectively.

Shallow Aquifer remained unchanged since 2017, while the pumping trough in the Eastside Deep Aquifer deepened between 2017 and 2019 (Table 1).

Table 1: Lowest depth of Groundwater Levels in the Eastside Aquifer Trough in August Measurement Series (2015-2019)

Year	Eastside Shallow Aquifer	Eastside Deep Aquifer
2015	-120 feet	-130 feet
2017	-100 feet	-100 feet
2019	-100 feet	-120 feet

Groundwater level measurements are in feet relative to mean sea level.

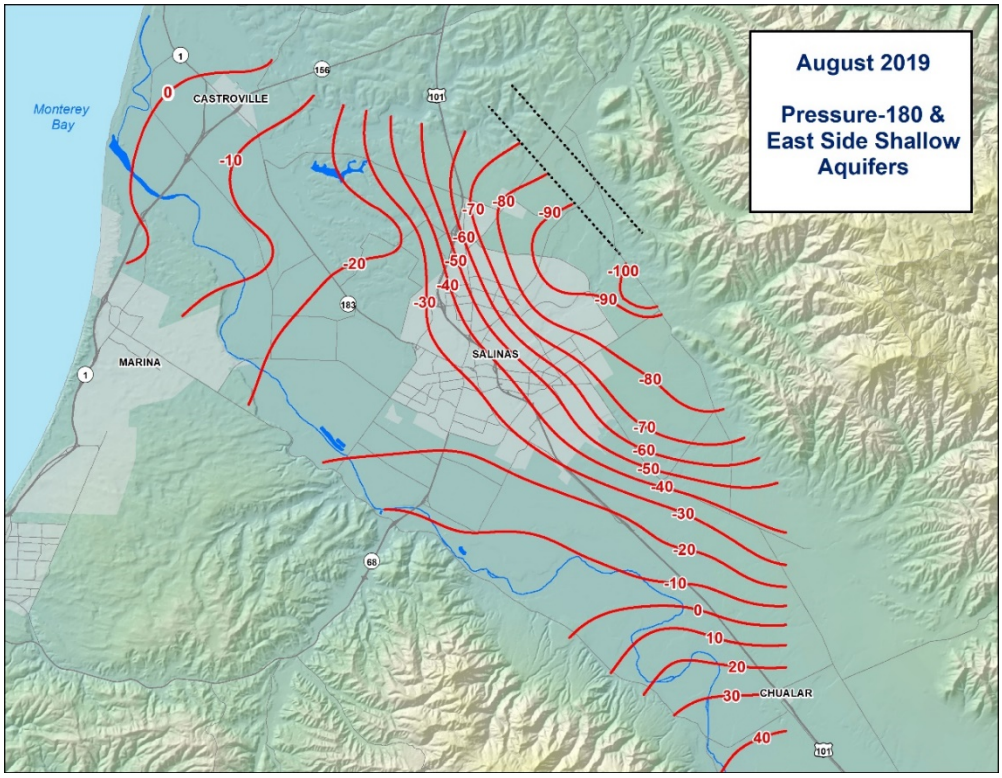


Figure 4: August 2019 Groundwater Level Contours for Pressure 180-Foot and Eastside Shallow Aquifers

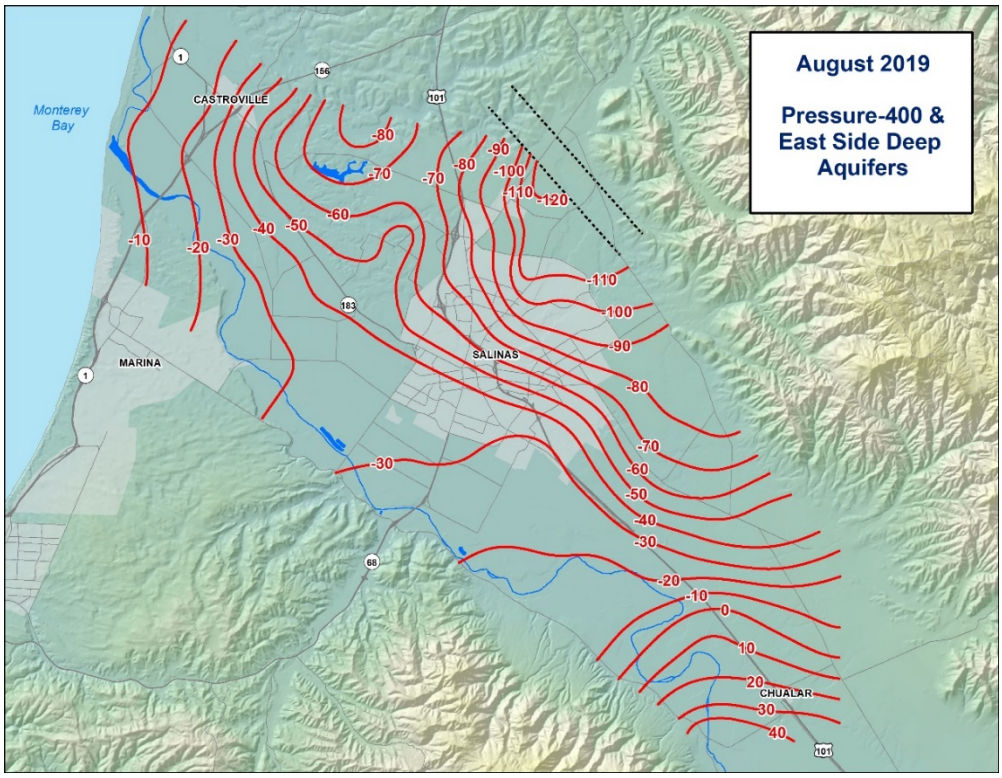


Figure 5: August 2019 Groundwater Level Contours for Pressure 400-Foot and Eastside Deep Aquifers

2.2.2 Fall Groundwater Levels

Groundwater levels from the fall measurement series in the shallow aquifers (180-Foot, Eastside Shallow, Forebay, and Upper Valley Aquifers) show a modest recovery since 2017. In the area immediately adjacent to the coast, groundwater levels are at or above sea level in the shallow aquifers.

The fall data for the 400-Foot and Eastside Deep Aquifers indicate that groundwater levels remain below sea level in the coastal area. The area south of Salinas, where groundwater levels rise above sea level, showed a modest recovery in groundwater levels in 2019.

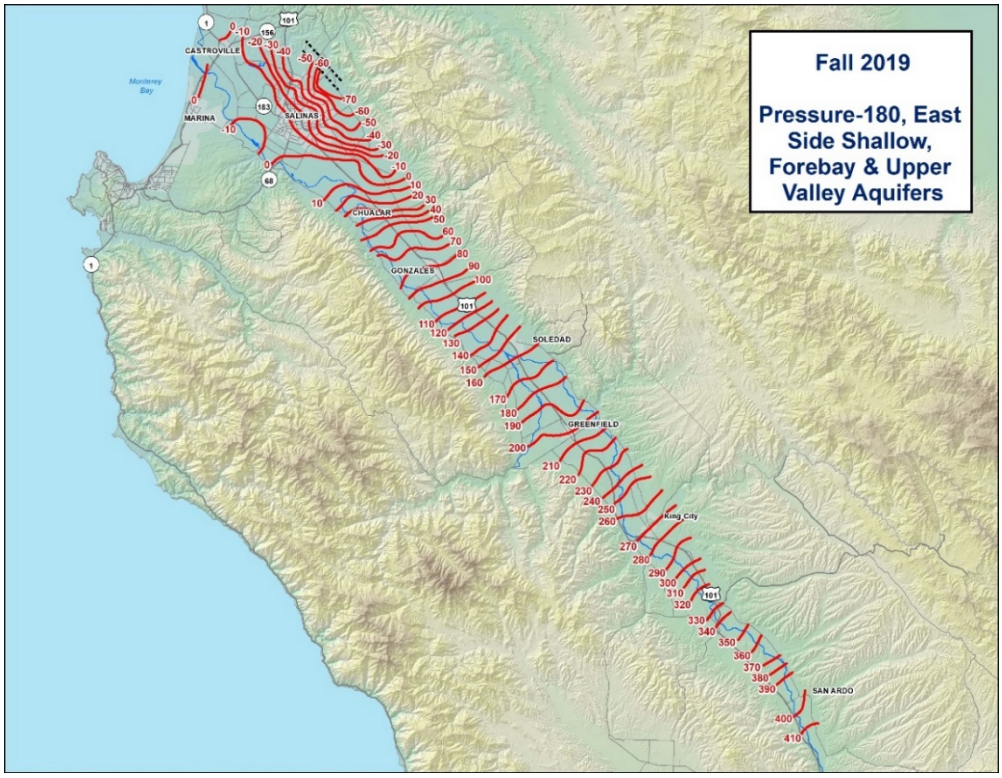


Figure 6: Fall 2019 Groundwater Level Contours for 180-Foot, Eastside Shallow, Forebay, and Upper Valley Aquifers

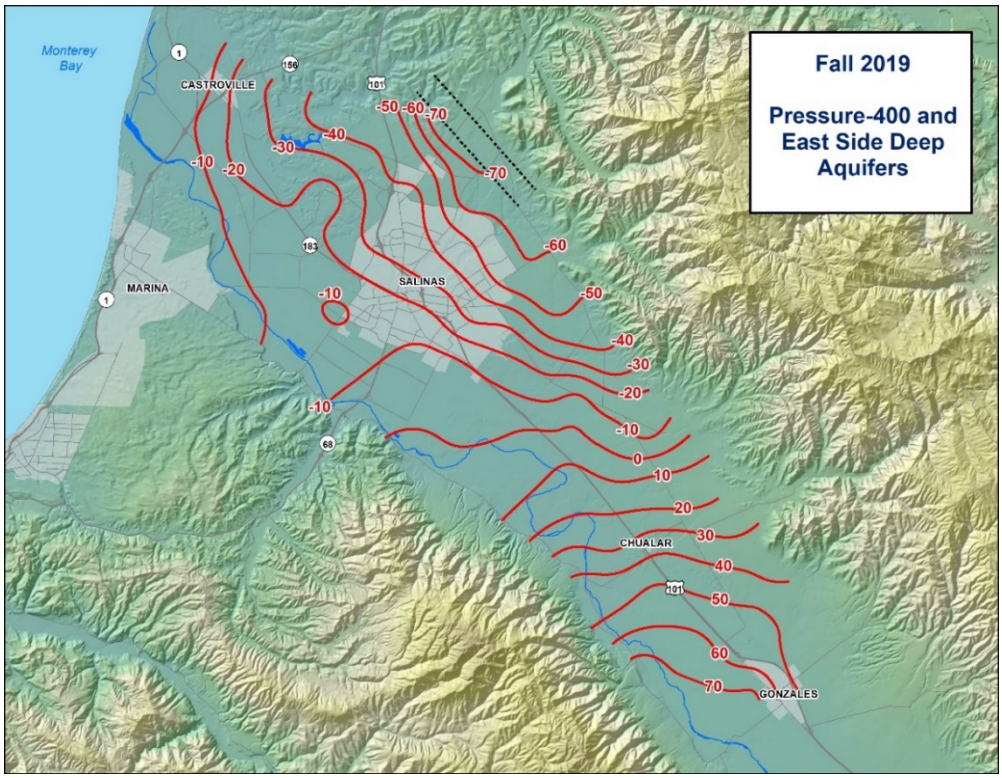


Figure 7: Fall 2019 400-Foot and Eastside Deep Aquifers

2.3 GROUNDWATER EXTRACTIONS IN THE AREA OF IMPACT

Groundwater extraction (pumping) data has been reported to the Agency from well owners in Zones 2, 2A, and 2B since 1993 through the Groundwater Extraction Management System (GEMS) program (Figure 8). Groundwater extraction data is available for 182 wells within the Area of Impact (Figure 1), with varying periods of record for each well. Well construction details are unavailable for some wells which report extraction data, so it is not possible to associate all pumping with a specific aquifer unit (Table 2).

Table 2: Wells in Area of Impact that Report Groundwater Extractions, by Aquifer

Aquifer Unit	Number of Wells in Area of Impact Reporting Groundwater Extractions
180-Foot Aquifer	21
Both 180-Foot and 400-Foot Aquifers	7
400-Foot Aquifer	84
Deep Aquifers	18
Eastside Aquifer	4
Unknown	48
TOTAL	**182**

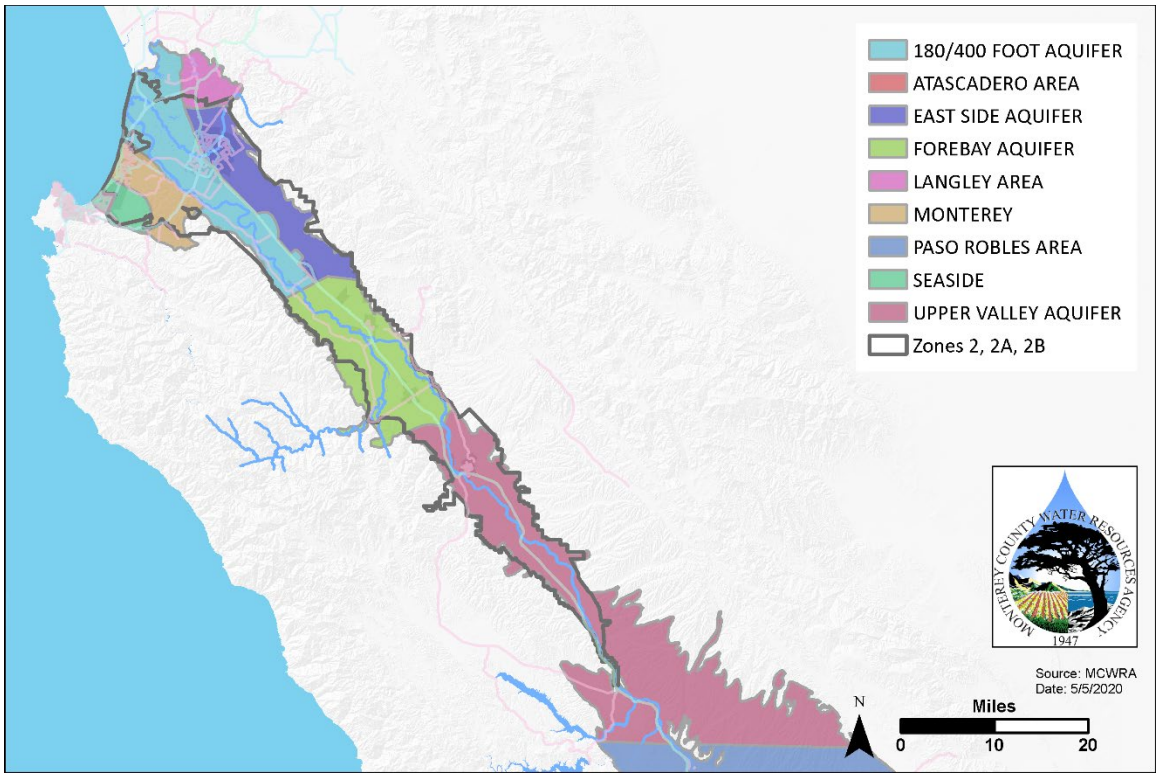


Figure 8: Zones 2, 2A, 2B and Salinas Valley Groundwater Basin

Annual average reported pumping from the 400-Foot Aquifer in the Area of Impact for the period 1995 to 1998 was 18,005 acre-feet; this annual average decreases to 13,917 acre-feet for the period 1999 to 2018 when CSIP has been operational (Figure 9).

Extractions from CSIP supplemental wells in the 400-Foot Aquifer account for an average of 31% of the annual pumping from the 400-Foot Aquifer in the Area of Impact (1998-2018). Groundwater from CSIP supplemental wells in the 400-Foot Aquifer is blended with recycled water for distribution to subscribing water users within the CSIP area as a means of alleviating groundwater pumping near the coast. During the operational period of the Salinas River Diversion Facility (SRDF), 2010-2013 and 2017-2018, CSIP deliveries also included treated water from the Salinas River.

During years when the SRDF was operated, pumping from CSIP supplemental wells averaged 2,378 acre-feet annually (20% of the overall pumping from the 400-Foot Aquifer in the Area of Impact) which represents an average annual decrease in pumping of 2,865 acre-feet compared to years when the SRDF was either non-operational (2014-2016) or prior to when the SRDF began operating in 2010.

The decrease in groundwater extractions in the Area of Impact is due, at least in part, to the operation of CSIP and the Salinas River Diversion Facility (SRDF) and delivery of water in lieu of pumping from the 400-Foot Aquifer.

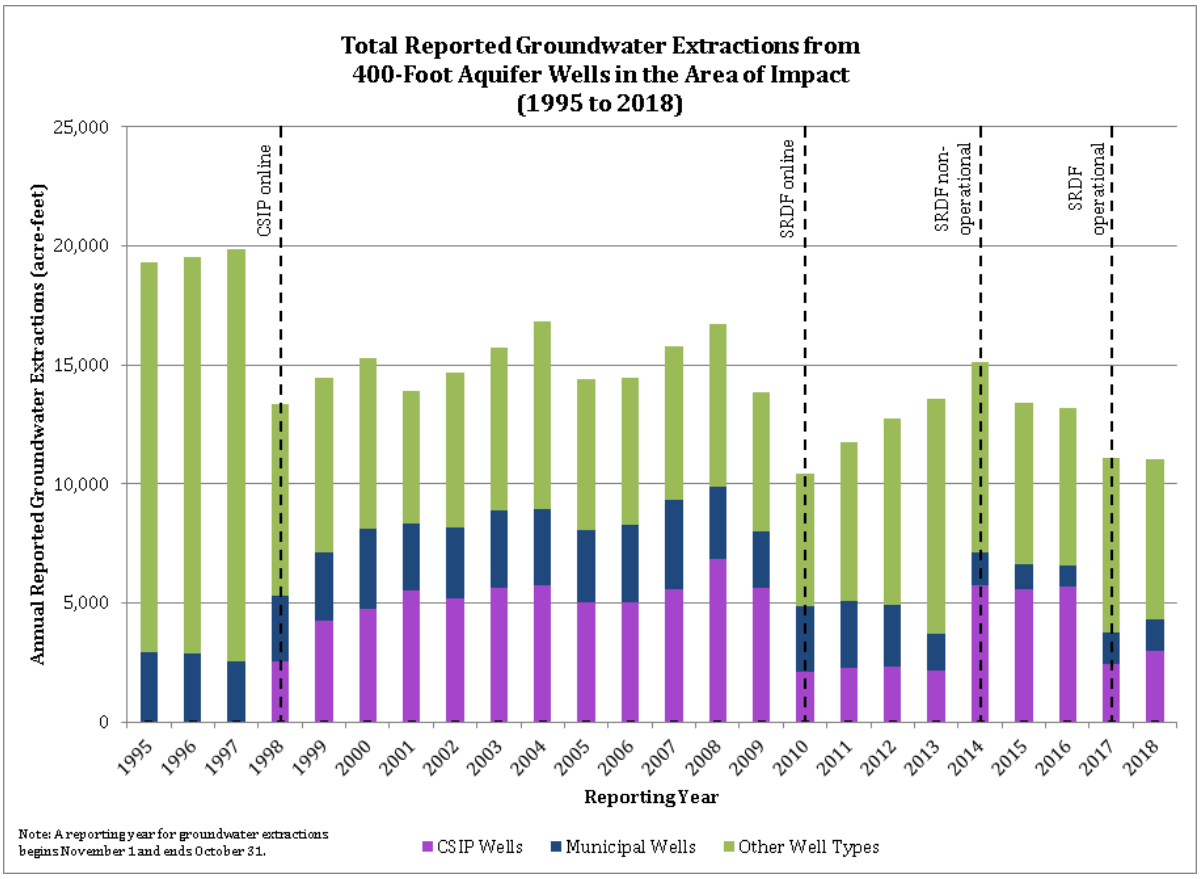


Figure 9: Total Reported Groundwater Extractions from 400-Foot Aquifer Wells in the Area of Impact (1995-2018)

2.4 SEAWATER INTRUSION

The Agency monitors the movement and extent of seawater intrusion[12] using data collected during two groundwater sampling events, typically conducted annually in June and August. Groundwater samples are collected from 121 wells (116 agricultural and 25 monitoring wells) during each event and analyzed for general minerals, TDS, conductivity, and pH.

2.4.1 Seawater Intrusion Pathways

As discussed in Section 2.2 of the 2017 *Recommendations* report, two pathways for seawater intrusion have been identified in the Salinas Valley Groundwater Basin: regional and inter-aquifer seawater intrusion. Regional seawater intrusion results from a combination of direct hydraulic communication of the 180-Foot and 400-Foot Aquifers with the Pacific Ocean and a persistent reversal of the seaward hydraulic gradient driven by inland groundwater levels that are below sea level (Kennedy/Jenks, 2004).

Inter-aquifer seawater intrusion occurs when impacted groundwater migrates vertically between aquifers. This pathway for seawater intrusion occurs when three factors are present: overlying seawater intrusion, a downward hydraulic gradient, and the presence of a conduit.

2.4.2 Seawater Intrusion in the 180-Foot Aquifer

The 2019 Historical Seawater Intrusion Map for the 180-Foot Aquifer (Figure 2) shows advancement of the seawater intrusion front on the southern lobe, in the vicinity of Blanco Road. As of 2019, the acreage overlying the 500 mg/L chloride contour reached 28,325 acres; an increase of 68 acres (0.24%) since 2015. The rate of seawater intrusion in the 180-Foot Aquifer continues to decrease, due to decreased pumping of the 180-Foot Aquifer in this area.

2.4.3 Seawater Intrusion in the 400-Foot Aquifer

The 2019 Historical Seawater Intrusion Map for the 400-Foot Aquifer shows a limited amount of advancement of the contiguous front, expansion of the middle "island" and expansion of the southern tip of the big "island" (Figure 3).

The upper island formed around a collapsed CSIP supplemental well which was destroyed in November 2019; no other data points exist around the upper island to characterize the extent of seawater intrusion at this location. A data point was also lost at the center of the middle island, which was also formed around a CSIP supplemental well, though other remaining data points around the edges of the middle island were used to define its expansion in 2019. As of 2019, the acreage overlying the 500 mg/L chloride contour in the 400-Foot Aquifer reached 18,184 acres, an increase of 1,545 acres (9.3%) since 2015.

[12] "Seawater intruded" is defined in MCWRA Ordinance 3790 as follows: "An aquifer is seawater intruded at any particular location of measurement when, at the location of measurement, the chloride ion concentration in the aquifer exceeds 500 mg/liter, and the General Manager determines that the contamination is not a localized contamination."

2.5 SEAWATER INTRUSION MONITORING PROGRAM CONSTRAINTS

The future of the Agency's seawater intrusion monitoring program faces some limitations that will impact data collection and analysis. A majority (79%) of the wells sampled for the coastal water quality monitoring are privately-owned agricultural wells which are often abandoned once the water quality deteriorates to a point where it can no longer be used for irrigation.

As a result, the Agency has a very limited number of data points behind the seawater intrusion front, i.e., in the area where chloride concentrations exceed 500 mg/L (Figure 10 and Figure 11). Data points in this part of the groundwater basin are essential to understanding the composition of the impaired mass of groundwater between the coastline and the 500 mg/L seawater intrusion front; they are also used in the development of seawater intrusion contours. The chloride concentration of the groundwater behind the seawater intrusion front continues to increase, but there is sparse data to help understand either the current chemistry of that groundwater mass or the rate of chloride concentration increases in this area.

The Agency needs to replace lost data points behind the seawater intrusion front and fill any data gaps in the current monitoring program with additional monitoring wells. Furthermore, the Agency needs to implement new methodologies, such as geophysical and modeling tools, for groundwater level and quality characterization. Use of airborne geophysics and induction logging for model enhancement[13], for example, could be coupled with data collected from monitoring wells to augment data analysis and interpretation. Improving the Agency's understanding of the degree of impairment of the water mass in the coastal region is important because this is the impaired groundwater that migrates vertically into the 400-Foot or Deep Aquifers.

Finally, an accurate characterization of the impaired water in the Area of Impact is integral to future management of the groundwater resources in the Salinas Valley Groundwater Basin. For example, even if all groundwater pumping were to cease immediately in the coastal area, the impaired groundwater will continue to diffuse from the impaired mass into the surrounding groundwater until it reaches chemical equilibrium. Understanding these conditions will be essential to groundwater resource management and planning, both now and into the future.

[13] Additional data sources and data points will contribute to refinement of the Salinas Valley Integrated Hydrologic Model (SVIHM) and further increase its utility for analysis of current and future conditions.

2.6 FINDINGS IN SUPPORT OF RECOMMENDATIONS

- Current groundwater level data indicates the continued presence of an inland groundwater gradient in the 400-Foot Aquifer and downward groundwater gradient between the 180-Foot, 400-Foot, and Deep Aquifers.

- Regional seawater intrusion continues to expand in the 400-Foot Aquifer due to continued pumping from this aquifer in the presence of a persistent landward hydraulic gradient.

- Evidence of communication between the 180-Foot Aquifer and the 400-Foot Aquifer was documented in the 2017 *Recommendations* report. The conditions documented therein still remain and include: areas of discontinuous aquitards, wells screened in multiple aquifers, and improperly constructed or abandoned wells.

- Islands of groundwater with chloride concentrations greater than 500 mg/L in the 400-Foot Aquifer have continued to expand since first documented in 2015.

- The Agency's coastal groundwater monitoring program needs additional data points and data collection methods to continue monitoring the advancement of seawater intrusion and understanding the nature and extent of the impaired groundwater mass and the effects it will have on the coastal region.

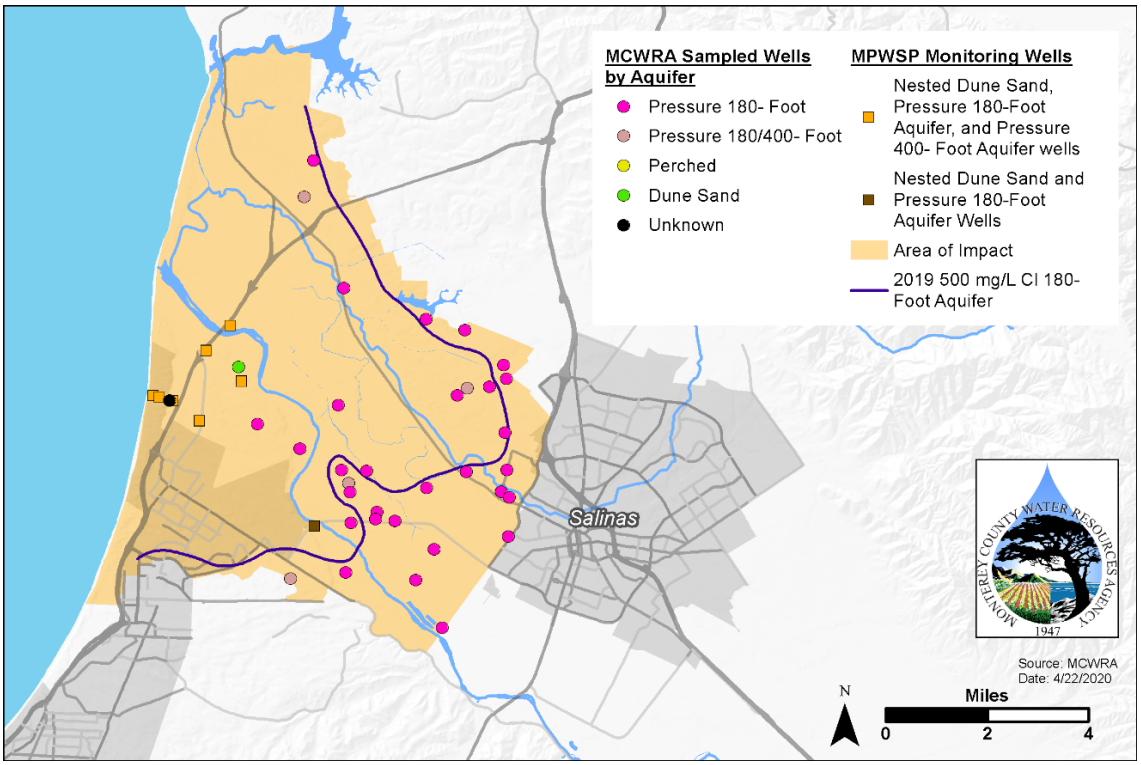


Figure 10: Wells Sampled to Define Seawater Intrusion in the 180-Foot Aquifer

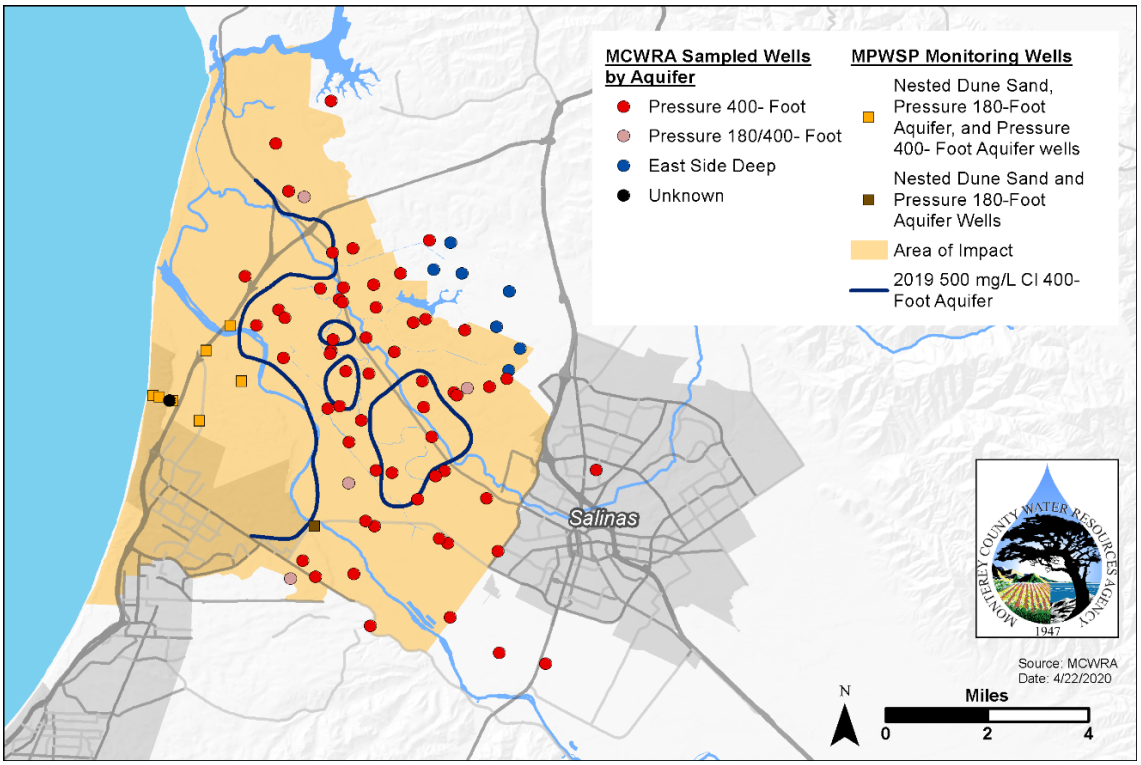


Figure 11: Wells Sampled to Define Seawater Intrusion in the 400-Foot Aquifer

3 CSIP AND WELLS IN ZONE 2B

The Castroville Seawater Intrusion Project (CSIP) delivers recycled water from the Salinas Valley Reclamation Project (SVRP), treated Salinas River water from the Salinas River Diversion Facility (SRDF), and groundwater from ten supplemental wells to 12,000 acres of irrigated land in the Castroville area – referred to as Zone 2B – in order to reduce groundwater pumping near the coast (Figure 12). All three sources of water – recycled water, diverted river water, and groundwater – are essential for reliable operation of CSIP.

CSIP delivered 18,808 acre-feet of water in fiscal year 2018-2019; of that total, 3,398 acre-feet (18% percent) was groundwater pumped using ten CSIP supplemental wells.

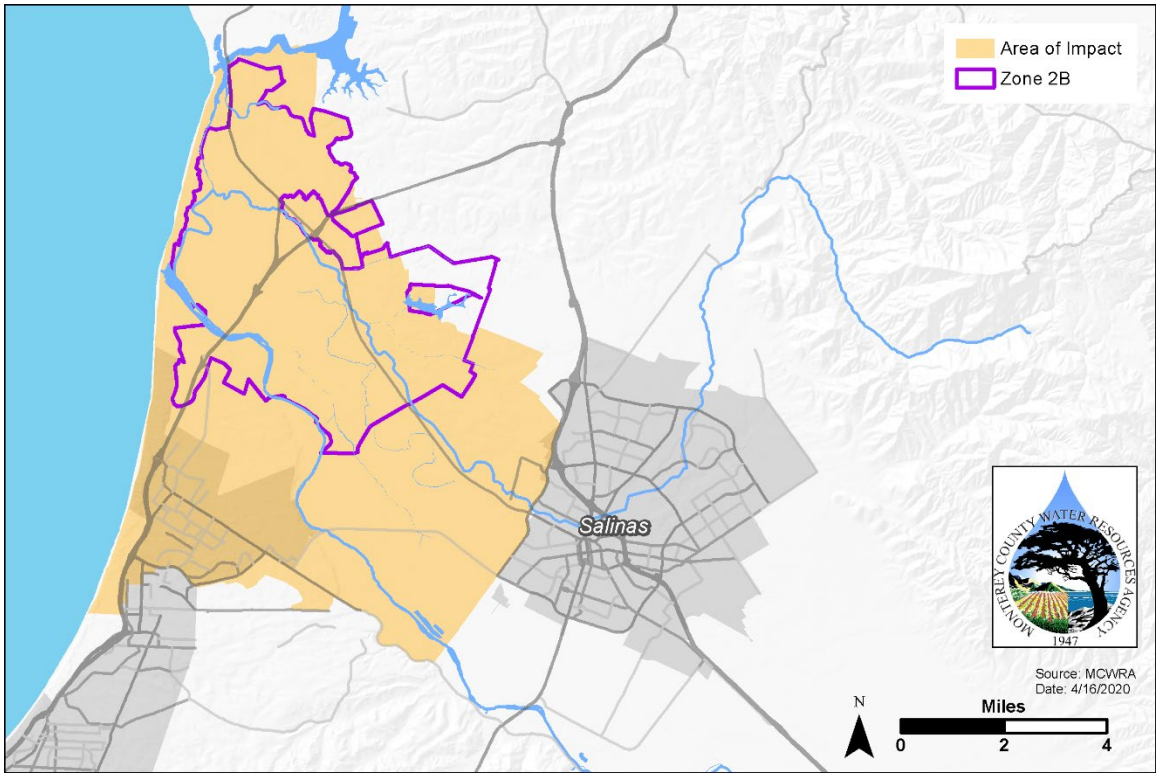


Figure 12: Zone 2B and the Area of Impact

3.1 RECOMMENDATIONS

4. Enhancement and expansion of the Castroville Seawater Intrusion Project (CSIP) Service Area. The expansion should include, at a minimum, lands served by wells currently extracting groundwater within the Area of Impact.

5. Following expansion of the CSIP Service Area, termination of all pumping from existing wells within the Area of Impact, except for the following use categories:
    a. Domestic wells;[14]
    b. Wells supplying public water systems; as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[15]
    c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,
    d. Monitoring wells owned and maintained by the Agency or other water management agencies.

6. Initiate and diligently proceed with destruction of wells in Agency Zone 2B, in accordance with Agency Ordinance No. 3790 and the Proposition 1 Groundwater Grant Program Agreement, to protect the Salinas Valley Groundwater Basin against further seawater intrusion.

3.2 ENHANCEMENT AND EXPANSION OF CSIP

As discussed in Section 3.4 of the 2017 *Recommendations* report, both enhancement and expansion of CSIP are being considered. Enhancement could involve installation of storage tanks to optimize operation of the SRDF and assist with maintaining pressure in the CSIP delivery system. A robust water scheduling system and real-time monitoring of water usage (e.g. timing and rates) are also needed enhancements being explored.

Expansion of CSIP is necessary to ensure a reliable source of supplemental groundwater. Existing CSIP supplemental wells located within the Area of Impact are being recharged from impaired sources of groundwater and are becoming unusable. CSIP initially had twenty-one supplemental wells; ten are presently online and operational. To date, six CSIP supplemental wells have been destroyed, three are out of service due to poor regional water quality, one is non-operational and scheduled for destruction, and one is non-operational due to low production. Failures at two CSIP supplemental wells have contributed to formation of the northern and middle islands of seawater

[14] "Domestic well" is intended to mean a well that is used to supply water for the private use and consumption of an individual residence or a small water system with less than 15 connections.

[15] A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system. (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system. (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

intrusion in the 400-Foot Aquifer. New CSIP supplemental wells could be installed outside the current Zone 2B boundary in the desired direction of expansion and, when conditions allowed, these wells could be operated to fill the storage tanks as has been proposed.

In addition to installing new wells, a reliable groundwater supply for CSIP could be secured by expansion of the CSIP delivery area and acquisition of wells servicing that area.

Collaboration with area Groundwater Sustainability Agencies (GSAs) on CSIP enhancement and expansion strategies is already underway and is expected to continue. CSIP is a foundational element to achieving sustainability in the coastal region and future coordination with GSAs is expected to improve implementation timelines (see further discussion in Section 5).

3.3 NON-CSIP SUPPLEMENTAL WELL PUMPING IN ZONE 2B

Agency Ordinance No. 3790 "…provides for the management of all groundwater wells within the Castroville Seawater Intrusion Project area, known as Zone 2B, following completion and start-up of the Castroville Seawater Intrusion Project. It prohibits and otherwise restricts pumping from groundwater wells in Zone 2B, and it provides for the classification of the various wells…" among other actions.

Ordinance No. 3790 specifies classification categories for wells in Zone 2B, a process by which wells were originally classified, and a process for reclassifying wells. Classification of a well as a "standby well" allows for well owners to maintain their wells following start-up of CSIP and operate these wells under certain circumstances "…as an additional assurance that an adequate water supply will be available at all times." (Ord. No. 3790).

Ordinance No. 3790 outlines both the purposes for operation of standby wells (Section 1.05.05) and describes the circumstances considered to be an emergency that justifies operation of a standby well (Section 1.05.06).

1.05.05 Authorized purposes for operation of standby wells

Standby wells may be operated only for the following purposes:

A. To perform routine maintenance on the standby well;

B. To provide an irrigation water supply for property in Zone 2B in an emergency as described in section 1.05.06;

C. To provide potable water when the standby well is used as a domestic well.

D. To provide a water supply for the irrigation of any crop or crops for which irrigation with water supplied by the project is prohibited by law, rule, or regulation established by any entity or agency with authority over the irrigation of such crops.

1.05.06 Emergency justifying operation of standby well

An emergency exists and justifies use of standby wells when all of the following circumstances occur:

A. The grower has given notice of his or her need for project water and a schedule for delivery of water to the grower's property has been set, in conformity with procedures established by the MCWRA; and

B. The MCWRA fails to deliver project water on schedule; and

C. The grower then makes contact with the MCWRA by telephone and the MCWRA confirms that the water will not be delivered on the day scheduled for delivery.

In addition to the ten CSIP supplemental wells, groundwater extractions have been reported from as many as 46 other wells in Zone 2B since CSIP began operation in 1998. However, analysis of the shorter and more recent period of the last ten years indicates that the number of non-CSIP supplemental wells reporting groundwater extractions from Zone 2B has decreased to twenty wells, with total annual extractions averaging 1,794 acre-feet (Table 3, Figure 13).

Pumping from non-CSIP supplemental wells averaged 2,358 acre-feet (29%) of all Zone 2B pumping for the period 1998 to 2018, and 1,794 acre-feet (28%) of all Zone 2B pumping for the most recent ten-year period of available data (2009 to 2018). For the 1998-2018 period, pumping from non-CSIP supplemental wells ranged from 1,013 AF in 2018 (13% of the total Zone 2B pumping) to 8,138 AF in 1998 (71% of the total Zone 2B pumping).

Of the twenty wells that reported pumping groundwater within Zone 2B in the last decade, sixteen are pumping from the 400-Foot Aquifer and three from the Deep Aquifers; one well is lacking sufficient data to associate it with a specific aquifer unit.

Throughout the period of CSIP operations, sufficient project water has been available to support agricultural operations in Zone 2B. The reported pumping from non-CSIP supplemental wells in Zone

2B may be the result of timing of water availability. Through proposed project efficiencies, such as water delivery scheduling, groundwater extractions from non-CSIP supplemental wells in Zone 2B could be replaced.

Table 3: Non-CSIP Supplemental Wells Extracting Groundwater in Zone 2B

Well Classification	Number of Wells in Category	Number of Wells Reporting Pumping (1998 to 2018)	Number of Wells Reporting Pumping (2009 to 2018)
Active Standby Well[(a)] in CSIP Area	20	17	16
Commercial/industrial well in CSIP area	1	1	1
Domestic Well in CSIP Area	17	6	1
Inactive Standby Well in CSIP Area	54	15	1
Abandoned well in CSIP Area	28	7	1
TOTAL	**120**	**46**	**20**

(a) Per Ordinance No. 3790, "standby well" means a well not routinely operated but maintained by the well owner for purposes of providing a water supply to the well owner's property under emergency conditions.

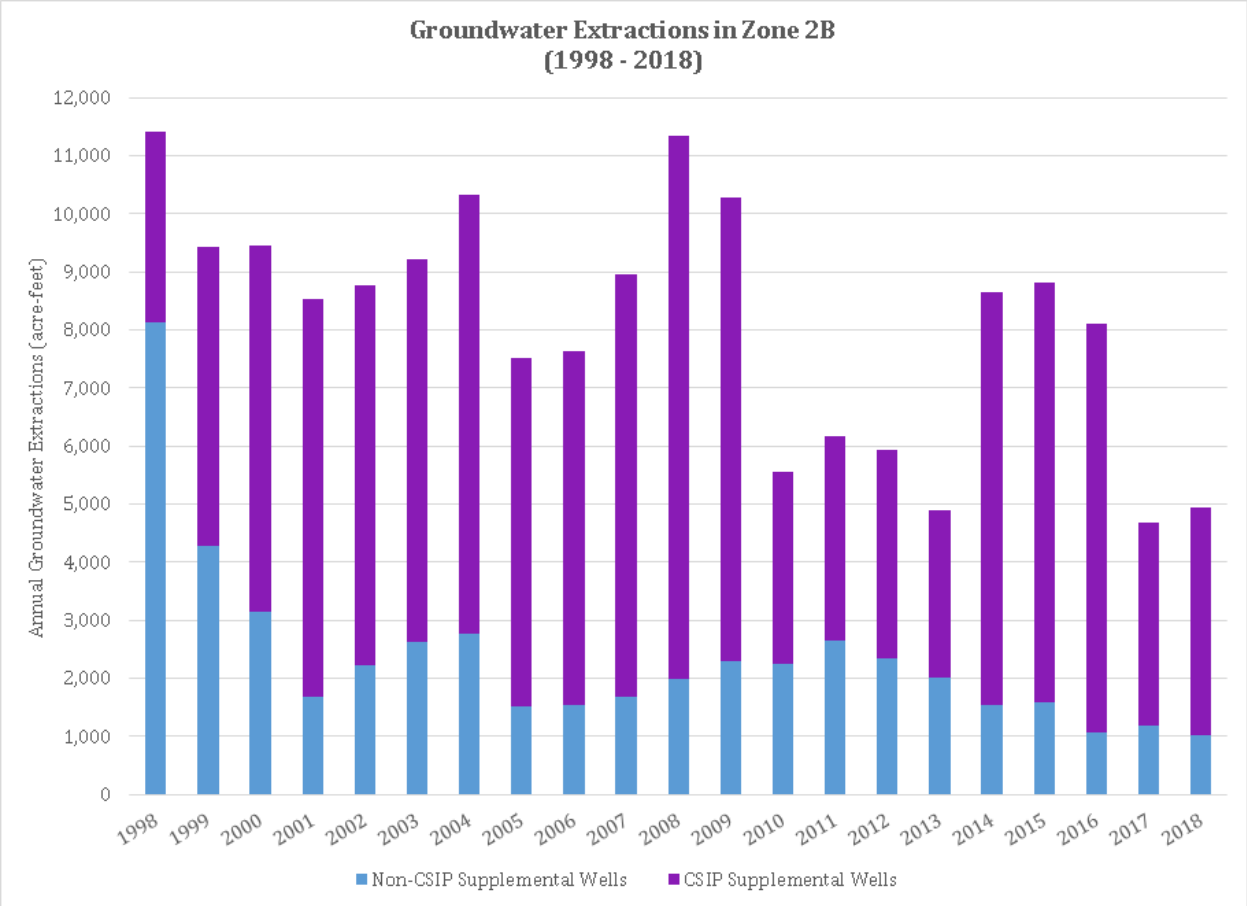


Figure 13: Groundwater Extractions in Zone 2B (1998-2018)

3.4 STATE WATER RESOURCES CONTROL BOARD PROPOSITION 1 GRANT FOR WELL DESTRUCTION

As discussed in detail in Section 4 of the 2017 *Recommendations* report, Agency Ordinance No. 3790 established a procedure for the destruction of wells in Zone 2B following startup of CSIP. The persistence of wells in poor condition, wells screened in multiple aquifers, and improperly constructed or abandoned wells in an area with a downward hydraulic gradient serve as conduits for movement of impaired groundwater to the lower aquifers. Destruction of wells in Zone 2B, as specified in Ordinance No. 3790, and the surrounding coastal region will eliminate some of the anthropogenic [16] pathways for inter-aquifer seawater intrusion that are contributing to the expansion of islands of impaired groundwater in the 400-Foot Aquifer.

In March 2019, the Agency applied to the State Water Resources Control Board (SWRCB) for a Proposition 1 grant to destroy approximately 105 wells in the coastal region of the Salinas Valley Groundwater Basin, primarily within Zone 2B. In October 2019, the Agency received notice from the

[16] Meaning "originating in human activity".

SWRCB of a preliminary grant award for the well destruction project. Following receipt of that notice, the Agency and SWRCB have been working to revise the project budget and identify eligible items for the required cost share match. The Draft Final Agreement, which was presented to the Agency's Board of Directors on April 20, 2020, includes $1,534,495 of "in-kind" work with an additional $2,663,300 in outside funds that the Agency must acquire to satisfy the match requirement of 46%, for a total project cost of $9,125,524.

The Agency has not yet finalized an agreement with the SWRCB for the Proposition 1 grant. However, assuming that the project moves forward, the work will occur over the course of three years. Most of the wells that will likely be destroyed as part of the grant implementation are in Zone 2B, including many of the wells currently extracting groundwater within Zone 2B, but other wells may be destroyed as well if they are identified as potential conduits for the vertical migration of impaired groundwater.

3.5 FINDINGS IN SUPPORT OF RECOMMENDATIONS

- Successful operation of CSIP depends upon three reliable sources of water, one of which is groundwater from supplemental wells. Many of the existing CSIP supplemental wells are in portions of the 400-Foot Aquifer with increasing chloride concentrations.

- Enhancement and expansion of CSIP will improve the resiliency of the existing CSIP delivery system and allow for continued decreases in groundwater pumping near the coast.

- Groundwater pumping in Zone 2B directly impacts the intensity of the inland groundwater gradient which facilitates lateral and regional seawater intrusion and groundwater pumping should be limited to the extent possible when water deliveries from CSIP are available.

- A constant downward groundwater gradient between the 180-Foot Aquifer and 400-Foot Aquifer exists in the Area of Impact, where the 400-Foot Aquifer is overlain by the intruded 180-Foot Aquifer. This downward gradient acts as a driving force for vertical migration or inter-aquifer seawater intrusion.

- Destroying wells in and immediately around Zone 2B will eliminate conduits for inter-aquifer seawater intrusion.

4 THE DEEP AQUIFERS

4.1 RECOMMENDATIONS

The following recommendations are intended to cease activities that have a strong likelihood of increasing vertical migration of impaired groundwater into the Deep Aquifers of the 180/400 Foot Aquifer and Monterey Subbasins:

7. An immediate prohibition of groundwater extractions from new wells[17] within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer Subbasin until such time as an investigation of the Deep Aquifers is completed and data pertaining to the hydraulic properties and long-term viability of the Deep Aquifers are available for knowledge-based water resource planning and decision making.
    a. The following should be considered for exemption from this recommendation:
        i. Domestic wells;[18]
        ii. Wells supplying public water systems; as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[19]
        iii. Monitoring wells owned and operated by the Agency or other water management agencies;
        iv. Wells for which a construction permit has already been issued; and,
        v. Well repairs.
    a. The prohibition should include:
        i. Replacement wells; and,
        ii. Deepening of wells from overlying aquifers into the Deep Aquifers, deepening of wells within the Deep Aquifers, and other activities that would expand the length, depth, or capacity of an existing well.

8. Initiate and diligently proceed with an investigation to determine the hydraulic properties and long-term viability of the Deep Aquifers, in cooperation with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency.

[17] "New well" is not intended to include: (a) any well for which a construction permit has been issued by the Monterey County Health Department; or (b) any well for which drilling or construction activities have commenced in accordance with a well construction permit issued by the Monterey County Health Department.

[18] "Domestic well" is intended to mean a well that is used to supply water for the private use and consumption of an individual residence or a small water system with less than 15 connections.

[19] A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system. (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system. (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

4.2 WELLS IN THE DEEP AQUIFERS

The first production well in the Deep Aquifers was installed in 1974. As of April 2020, a total of 53 wells have been installed in the Deep Aquifers: 44 production wells and 9 monitoring wells. Two of the production wells were destroyed in 2004, so 51 wells remain in the Deep Aquifers at present. Of the 42 existing production wells, 27 are agricultural wells, 11 are municipal wells, 3 are industrial wells, and one is a domestic well (Figure 14 and Figure 15).

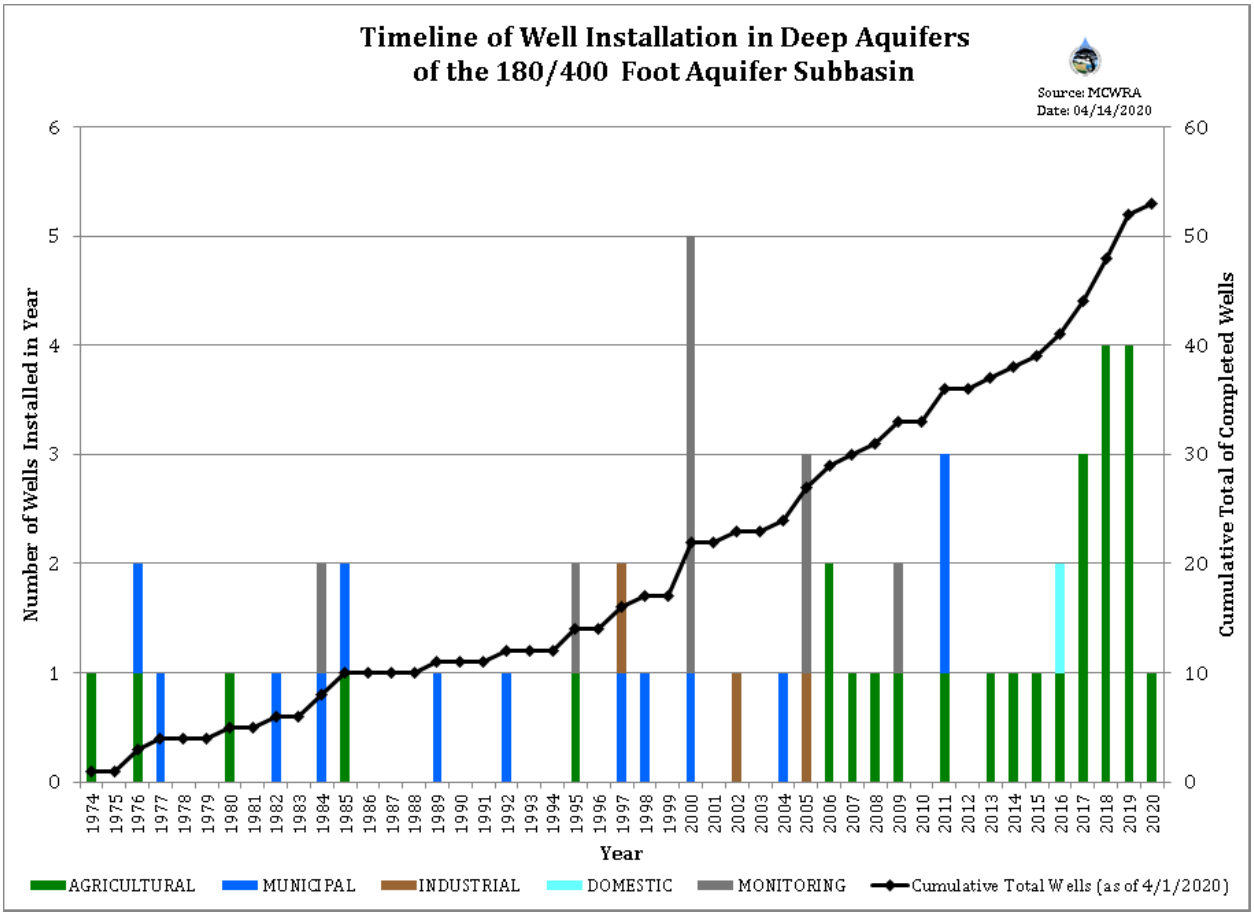


Figure 14: Timeline of Well Installation in Deep Aquifers of the 180/400 Foot Aquifer Subbasin

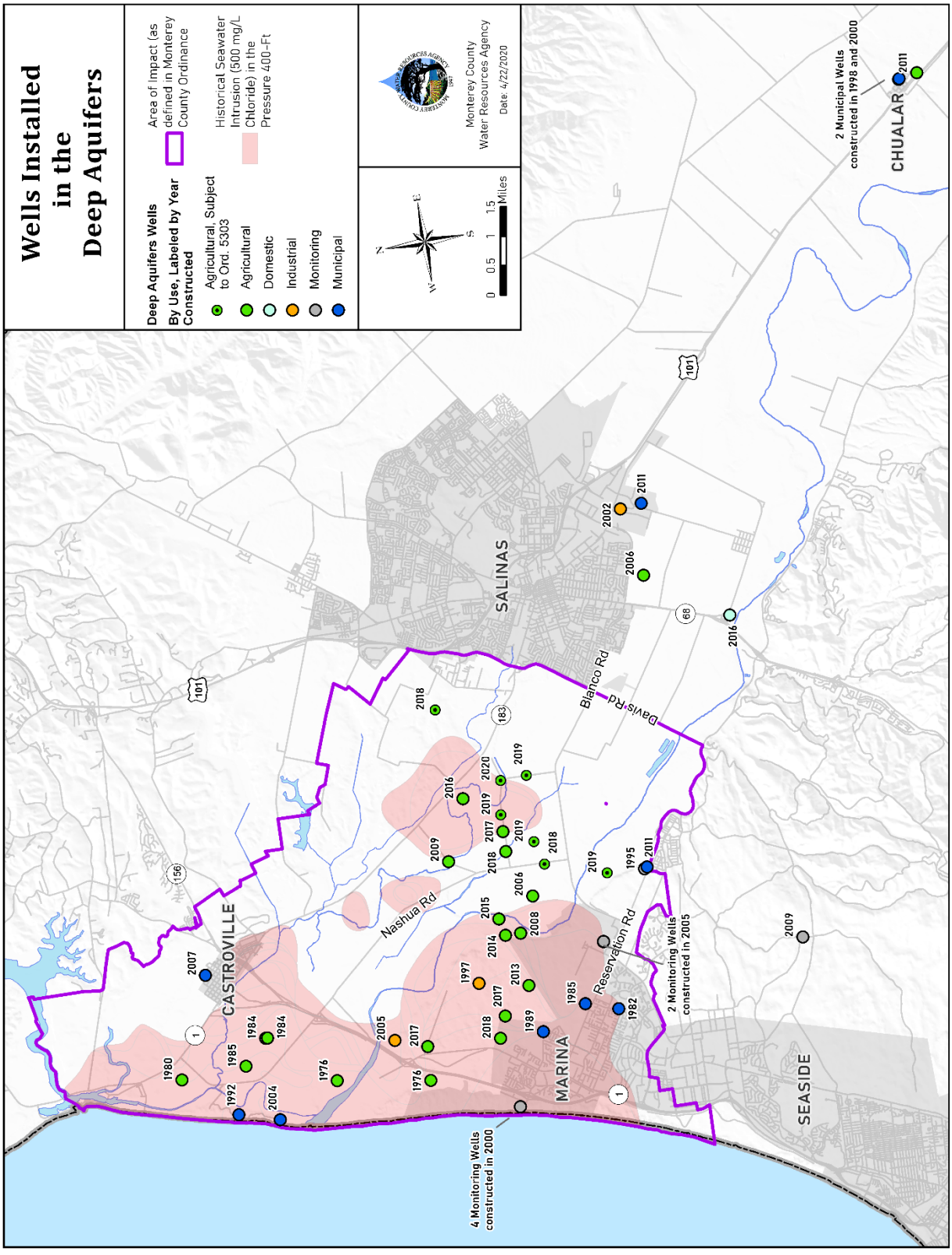


Figure 15: Wells Installed in the Deep Aquifers

4.3 REPLACEMENT WELLS / ORDINANCES 5302 AND 5303

Ordinances No. 5302 and No. 5303 included exemptions to certain parts of the regulations, including the prohibition of new wells in the Deep Aquifers, for wells that met the definition of a "replacement well":

> *"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 in the determination of the Monterey County Health Department upon the advice of the Monterey County Water Resources Agency; to qualify as a "replacement well", the new well must be constructed to provide water for the same purpose as the existing water well, and if the purpose is for irrigation, it must deliver water to the same amount of irrigated acreage (or less acreage) as served by the existing water well. "Replacement well" does not include deepening of an existing well.*

Replacement wells are required to meet other criteria related to location of the replacement well relative to the existing well that is being replaced, monitoring and metering of the replacement well, and destruction of the well that is being replaced.

4.3.1 Replacement Well Exemption

Since the approval of Ordinance No. 5302 on May 22, 2018, eleven applications have been submitted for "replacement" agricultural production wells in the Deep Aquifers. As of the writing of this report in April 2020, seven of the eleven wells have been drilled and constructed. Construction permits have been issued for the remaining four proposed wells.

The exemption for replacement wells has brought about an increase in the number of wells installed in the Deep Aquifers on an annual basis. Prior to approval of Ordinance No. 5302, typically one or two wells were installed in the Deep Aquifers in a given year. Prior to 2006, many years had no new Deep Aquifers wells being drilled. In comparison, four new wells were installed in the Deep Aquifers in 2018: two replacement wells and two wells that were permitted prior to approval of Ordinance No. 5302. In 2019, four replacement wells were drilled in the Deep Aquifers (Figure 14) and so far in 2020, one replacement well has been drilled in the Deep Aquifers.

4.3.2 Well Destructions and Replacement Wells

Section 5.A.5.c of Ordinance No. 5302 requires that:

> *The replacement well shall replace an existing water well that has not been destroyed but that will not be used after construction of the replacement well. The existing well shall be destroyed within one hundred eighty (180) days after the replacement well is operational. "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.*

As part of the review process for a replacement well construction permit, a corresponding well destruction permit is processed and the well proposed for destruction is confirmed to meet the criteria in Ordinance No. 5302. Of the eleven replacement well construction permits that have been received, ten wells are slated to replace wells that were pumping from the 400-Foot Aquifer in the Area of Impact and one will replace a well that was pumping from the 180-Foot Aquifer in the Area of Impact.

To date, three of the wells that were replaced by a new well in the Deep Aquifers have been destroyed. The remaining eight wells that have been, or will be, destroyed in exchange for a replacement well still have active permits. In four of these eight cases, the replacement well has not yet been drilled; in the remaining four cases, the replacement wells were actively being drilled or constructed as of February 2020.

4.3.3 Monitoring and Metering of Replacement Wells

Section 5.A.5.f of Ordinance No. 5302 requires that the owner of a replacement well meter groundwater extractions, monitor groundwater levels and quality, and submit all data to the Agency and any GSAs with jurisdiction. As of the 2019 reporting period for the Agency's Groundwater Extraction Management System (GEMS), none of the replacement wells were operational and reporting groundwater extractions.

The Agency has not yet collected groundwater level or quality data from any of the replacement wells. Agency staff continues to coordinate with the Environmental Health Bureau and well owners to install transducers in replacement wells that will continuously monitor groundwater levels and conductivity, per ordinance requirements.

4.4 GROUNDWATER LEVELS IN THE DEEP AQUIFERS

The Agency monitors groundwater levels in twenty-nine (29) wells and water quality at nineteen (19) wells in the Deep Aquifers. Seven of the groundwater level data collection points are equipped with continuously-recording pressure transducers, which log water levels on an hourly-basis.

While the groundwater level data set is not yet spatially or temporally extensive enough to support generating groundwater contours for the Deep Aquifers, Agency staff continues to collect and analyze data from the Deep Aquifers to assess conditions and trends to the extent possible.

As is the case with the 180-Foot and 400-Foot Aquifers, groundwater levels in the Deep Aquifers are predominantly below sea level. Beginning around 2014, groundwater levels in the Deep Aquifers began declining and are presently at a deeper elevation than groundwater levels in the overlying 400-Foot Aquifer based on comparisons of multiple well sets at selected locations, meaning that there is a downward hydraulic gradient between the impaired 400-Foot Aquifer and the Deep Aquifers (Figure 16 and Figure 17). This decrease in groundwater levels coincides with a noticeable increase in groundwater extractions from the Deep Aquifers (Figure 16 and Figure 17). The potential for inducing additional leakage from overlying impaired aquifers is a legitimate concern documented by previous studies and is something that would be facilitated by the downward hydraulic gradient that has been observed between the 400-Foot Aquifer and Deep Aquifers.

Seawater intrusion has not been observed in the Deep Aquifers. However, the Agency has documented the case of one well, screened in the Deep Aquifers, that is enabling vertical migration of impaired groundwater into the Deep Aquifers. The Agency is working with the well owner on destruction of this well.

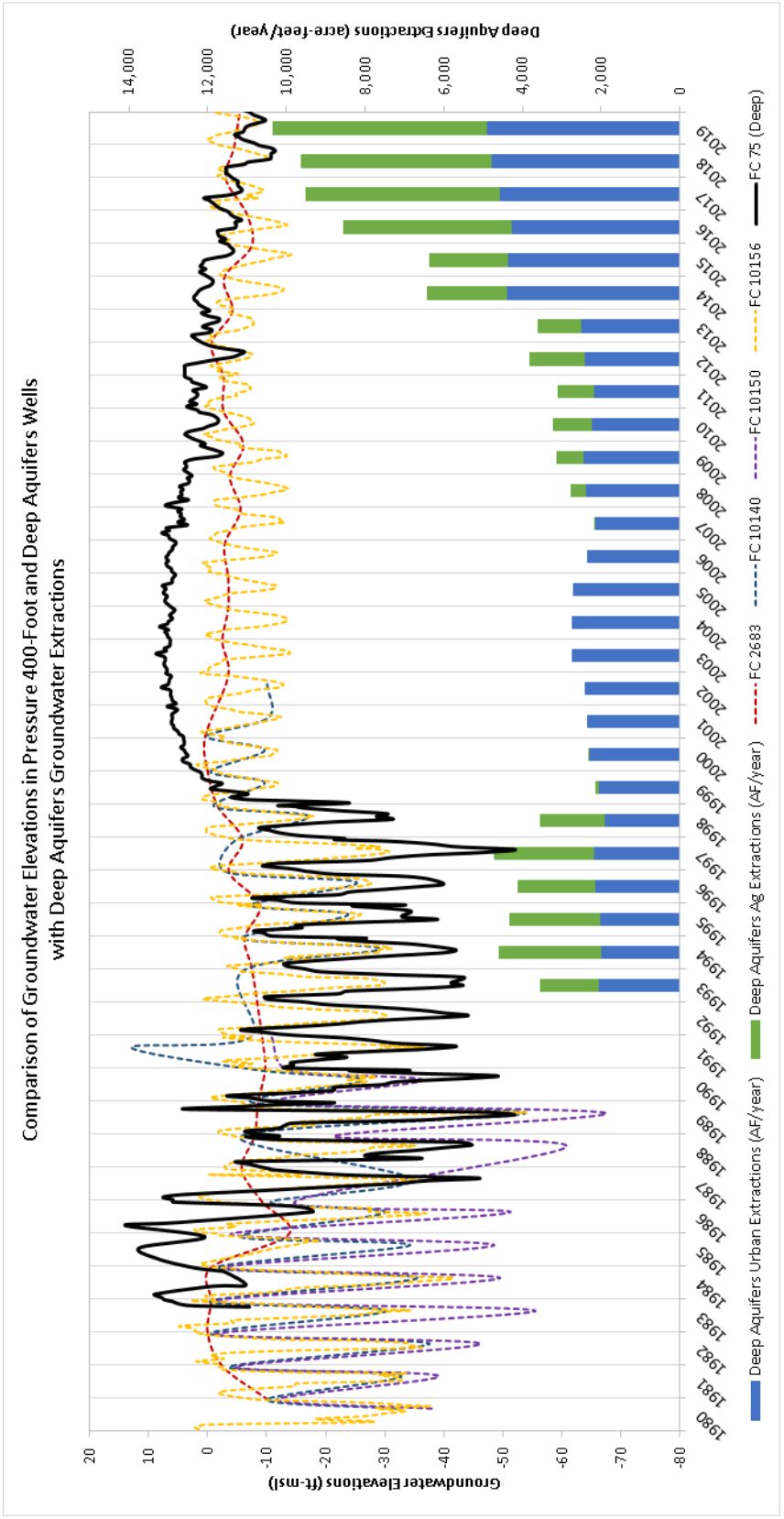


Figure 16: Comparison of Groundwater Levels in the 400-Foot and Deep Aquifers, Location A

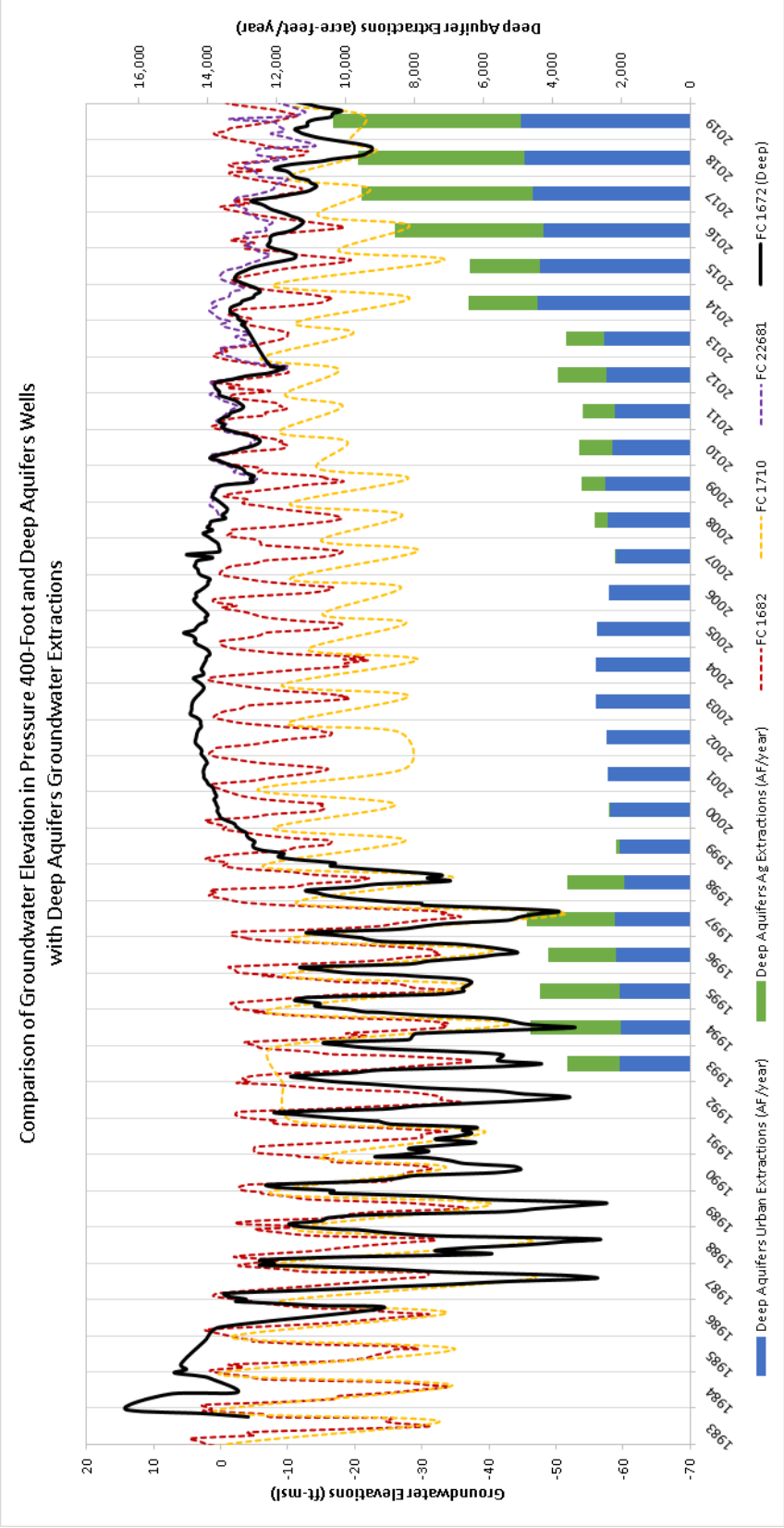


Figure 17: Comparison of Groundwater Elevations in 400-Foot and Deep Aquifers, Location B

4.5 GROUNDWATER PUMPING IN THE DEEP AQUIFERS

Groundwater extraction data reported to the Agency through the GEMS program indicate that groundwater extractions from the Deep Aquifers have generally increased since 1999 (Figure 18). Total annual extractions from the Deep Aquifers, for the period 1995 through 2019, range from 2,151 acre-feet (in 1999) to 10,347 acre-feet (in 2019, based on provisional data).

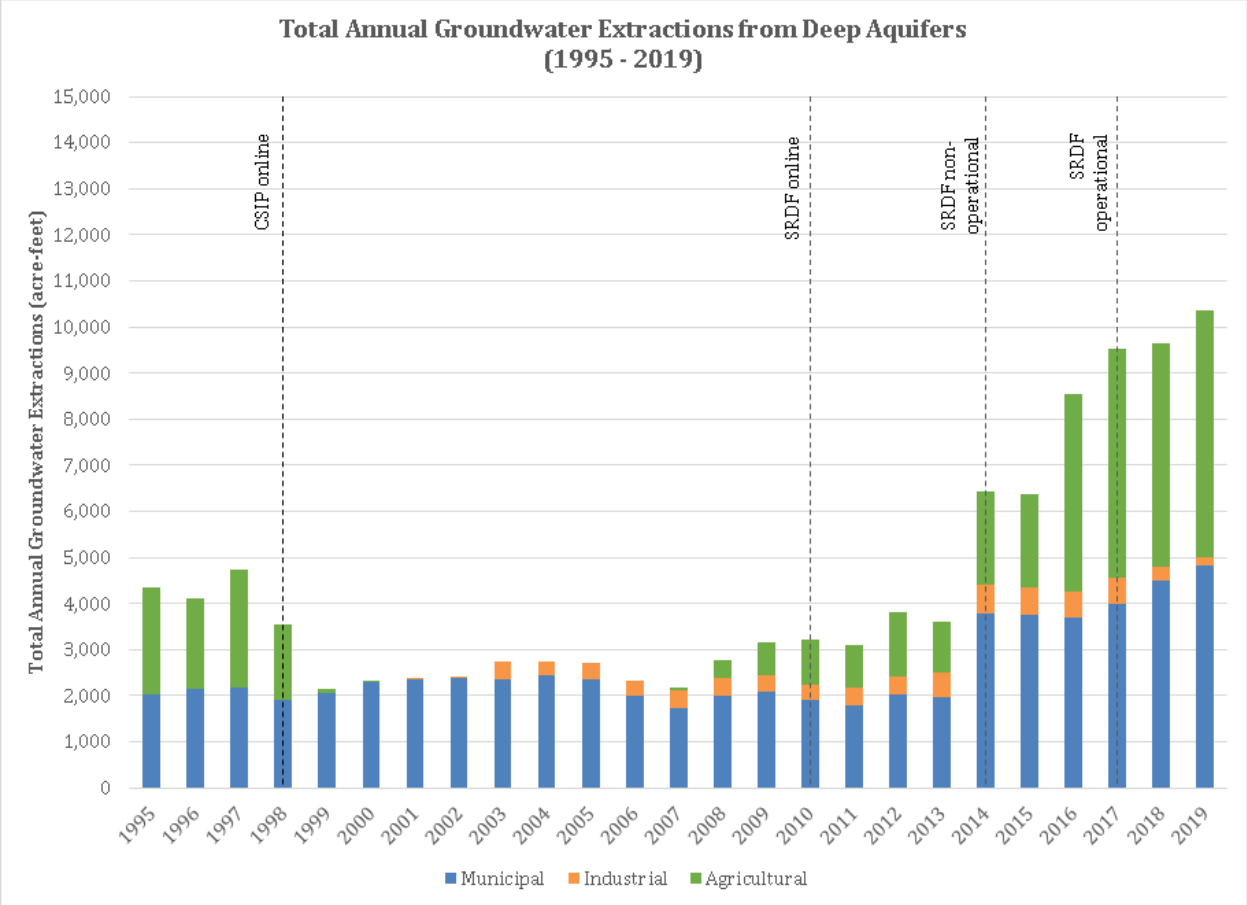


Figure 18: Total Annual Groundwater Extractions from Deep Aquifers (1995-2019)

4.5.1 Pumping from Replacement Wells

As discussed in Section 4.3, eleven replacement wells have been permitted for installation in the Deep Aquifers; seven of these have been constructed as of April 2020. All eleven replacement wells are proposed for agricultural irrigation use. However, none of these seven replacement wells have yet reported groundwater extraction data through the GEMS program.

If all eleven replacement wells were to pump an equivalent annual volume of groundwater from the Deep Aquifers as the wells they are replacing in the 400-Foot Aquifer, as most applicants have indicated is their intention, an additional 2,400 acre-feet per year of groundwater would be extracted from the Deep Aquifers (Figure 19). This added pumping would be an increase of 23% over the 2019 annual extractions from the Deep Aquifers. Additionally, there are two wells in the Deep Aquifers

that were permitted prior to passage of Ordinance No. 5302 that are also not yet operational, but which will also contribute to increasing future groundwater extractions from the Deep Aquifers once they are brought into production.

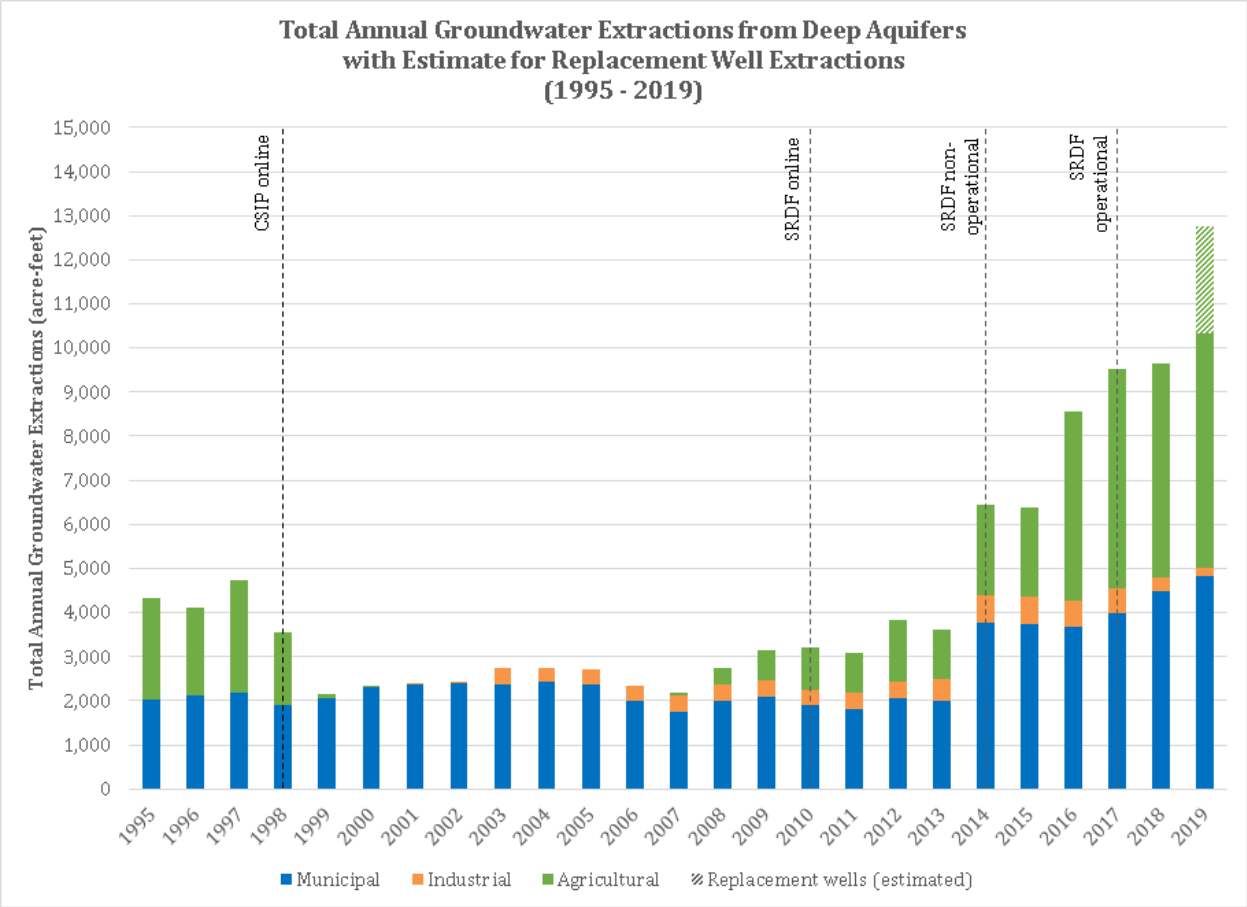


Figure 19: Total Annual Groundwater Extractions from Deep Aquifers with Estimate for Replacement Well Extractions (1995-2019)

As discussed in Section 5.2.9 of the 2017 *Recommendations* report, groundwater obtained through pumping of wells in the Deep Aquifers is thought to be recharged primarily by leakage from the overlying 180-Foot and 400-Foot Aquifers (Feeney and Rosenberg, 2003). Increasing groundwater pumping in the Deep Aquifers will likely result in increased leakage from overlying aquifers with impaired groundwater.

4.6 BETTER UNDERSTANDING THE DEEP AQUIFERS

In the 2017 *Recommendations* report, the Agency recommended pursuing an in-depth study of the Deep Aquifers in order to better understand the mechanisms of recharge, amount of available storage, hydrogeologic properties, and spatial extent of the Deep Aquifers. Preliminary steps have been taken toward defining the scope and purpose of a study but no funding has yet been identified to proceed with a comprehensive investigation.

4.6.1 Activity since 2017 *Recommendations* Report

Following a presentation about the 2017 *Recommendations* report on October 16, 2017, 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.

On March 9, 2018, the Agency convened a group of fifteen (15) individuals for the Deep Aquifers Roundtable Meeting (Roundtable Meeting). The Roundtable 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 Roundtable Meeting provided 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.

Agency staff relied on outcomes from the meeting to develop a recommended scope and costs for a Deep Aquifers investigation and determined that the intent of a comprehensive investigation of the Deep Aquifers would be threefold:

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

Agency staff anticipated that some new geologic or geophysical exploration would be included in a comprehensive investigation, which could include installation of monitoring wells or work using airborne or seismic geophysics, in addition to aquifer testing and water quality sampling. The cost of such an investigation was estimated to range from $1,200,000 to $1,500,000.

On April 24, 2018, Agency staff returned to a joint meeting of 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 with a report on the Roundtable Meeting and scope of a possible investigation. At that time, staff was directed to pursue alternative funding sources for the study.

4.6.2 Looking to the Future

The Agency continues to collect groundwater level and quality data from the Deep Aquifers to enhance understanding of the aquifer to the extent possible. The additional data expected to become available through required monitoring and reporting of the new replacement wells will contribute to the dataset.

The Salinas Valley Integrated Hydrologic Model (SVIHM) that is being developed under a partnership between Monterey County and the U.S. Geological Survey (USGS) includes the Deep Aquifers. Following public release of the SVIHM, which is expected to happen in late 2020, this model can be updated with available data and utilized for simulating conditions in the Deep Aquifers. However, as the SVIHM is bound by the extent of available data, further investigation will be necessary to refine the model's representation of the Deep Aquifers.

The Deep Aquifers underlie the 180/400 Foot Aquifer and Monterey Subbasins of the Salinas Valley Groundwater Basin and are within the jurisdiction of the Marina Coast Water District Groundwater Sustainability Agency (MCWDGSA) and Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA). The SVBGSA's Groundwater Sustainability Plan (GSP) for the 180/400 Foot Aquifer Subbasin includes a Priority Management Action to "support and strengthen Monterey County restrictions on additional wells in the Deep Aquifers" (SVBGSA, 2020). Coordination with area GSAs is recommended to initiate and diligently proceed with a comprehensive investigation of the Deep Aquifers.

4.6.3 Findings in Support of Recommendations

- Wells are being installed in the Deep Aquifers at an increasing rate through use of the exemption for replacement wells allowed by Ordinances No. 5302 and No. 5303.

- Groundwater extractions from the Deep Aquifers have increased 21% since the 2017 *Recommendations* report was released.

- Extractions from the Deep Aquifers are expected to increase an additional 23% over 2019 extractions once all replacement wells that have been permitted thus far become operational.

- Isotope analysis of water from the Deep Aquifers indicates that it is not derived from recent recharge (Hanson et al., 2002). Though stored groundwater may not be the primary source of current extractions in the Deep Aquifers, continued pumping of this old water represents mining of a groundwater resource.

- There continues to be a scant amount of data on many facets of the Deep Aquifers geologic, hydrologic, and geographic properties. With the addition of new agencies that will be managing aspects of the Deep Aquifers, a comprehensive understanding of the Deep Aquifers is essential for near-term decision making and long-term water resources planning.

5 RELATED ACTIVITIES

5.1 RECOMMENDATION

9. Actively participate in coordinated efforts with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency for beneficial management of aquifers in the coastal Salinas Valley Groundwater Basin.

5.1.1 Zone 2C Five-Year Study

The County of Monterey is engaged in the Salinas Valley Groundwater Basin Investigation (Basin Investigation), which includes development of the Salinas Valley Integrated Hydrologic Model (SVIHM) with the U.S. Geological Survey. Agency staff is involved as project manager for the Basin Investigation and provides technical support to the project.

With the SVIHM nearing completion, the remaining phase of the Basin Investigation includes a final report that will assess and provide conclusions regarding total water demands with consideration for land use assumption and changes to future water demands; evaluate and provide conclusions regarding future trends and expected changes in groundwater elevations and the extent of seawater intrusion; and, make recommendations on measures that could be taken if the study indicates the likelihood of exceeding future water demands, declining groundwater levels, or advancement of seawater intrusion. The SVIHM will be utilized for completion of the final report.

Results from the SVIHM and findings of the Basin Investigation final report may influence groundwater usage and management throughout the Salinas Valley Groundwater Basin. It is likely that the GSAs with jurisdiction over the Area of Impact will utilize the SVIHM for developing and implementing their Groundwater Sustainability Plans (GSPs).

5.1.2 GSP for 180/400 Foot Aquifer Subbasin from SVBGSA

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) adopted a GSP for the 180/400 Foot Aquifer Subbasin in January 2020 that contains three Priority Management Actions relevant to the recommendations in this report.

- **Priority Management Action #4: Restrict Pumping in CSIP Area**

    - The GSP includes a number of projects "designed to ensure a reliable, year-round supply of water to growers in the CSIP area. These projects will remove any need for groundwater pumping in the CSIP area. To promote use of CSIP water, the SVBGSA will pass an ordinance preventing any pumping for irrigating agricultural lands served by CSIP. To ensure adequate water supplies for CSIP, the CSIP supplementary wells will be exempt from the restrictions in this ordinance." (SVBGSA, 2020)

- **Priority Management Action #5: Support and Strengthen Monterey County Restrictions on Additional Wells in the Deep Aquifers**

    - "Monterey County Ordinance 5302 temporarily restricts drilling new wells in the Deep Aquifers in portions of the 180/400 Foot Aquifer Subbasin…Exceptions are made for replacement wells, domestic wells, and municipal supply wells. […] SVBGSA will work with Monterey County to extend this ordinance to prevent any new wells from being drilled into the Deep Aquifers until more information is known about the Deep Aquifers' sustainable yield. MCWRA plans to complete this study of the Deep Aquifers over the next three years, when funding becomes available. SVBGSA will comment on the MCWRA study of the Deep Aquifers to ensure that the study and the resulting permanent regulations will promote groundwater sustainability as defined in this GSP." (SVBGSA, 2020)

- **Priority Management Action #6: Seawater Intrusion Working Group**

    - "SVBGSA will develop and coordinate a working group to address the issues associated with seawater intrusion. The working group will develop consensus on the current understanding of seawater intrusion in the Subbasin and adjacent subbasins subject to seawater intrusion, identify data gaps, and develop a broad-based plan for controlling seawater intrusion. The working group will include local agencies, landowners, stakeholders, and technical experts. The preliminary goal of the working group will be to develop consensus on the science of seawater intrusion in the Salinas Valley Groundwater Basin. The ultimate goal of the working group is to develop a comprehensive set of projects and management actions that control seawater intrusion while providing cost effective water supplies for the region."

The ongoing implementation of Groundwater Sustainability Plans in the Salinas Valley Groundwater Basin does not relieve the Agency of its responsibility to manage the groundwater basin as described in the Agency Act. The Agency should capitalize upon this opportunity to coordinate with the GSAs for optimal management of groundwater using all available tools and resources.

6 SUMMARY

Staff makes the following nine recommendations with the aim to slow or halt seawater intrusion, and impacts related thereto, in the Salinas Valley Groundwater Basin:

1. An immediate prohibition of groundwater extractions from new wells[20] in the 180-Foot Aquifer and 400-Foot Aquifer within the existing Area of Impact, except for the following use categories:
    a. Domestic wells;[21]
    b. Wells supplying public water systems, as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[22]
    c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,
    d. Monitoring wells owned and operated by the Agency or other water management agencies.

2. Initiate and diligently proceed with installation or acquisition of additional groundwater level and quality monitoring locations in the coastal region.

3. After installation or acquisition of additional groundwater level and monitoring locations, implement new methodologies for groundwater level and quality characterization, such as geophysical and modeling tools, in the coastal region.

4. Enhancement and expansion of the Castroville Seawater Intrusion Project (CSIP) Service Area. The expansion should include, at a minimum, lands served by wells currently extracting groundwater within the Area of Impact.

5. Following expansion of the CSIP Service Area, termination of all pumping from existing wells within the Area of Impact, except for the following use categories:
    a. Domestic wells;[21]

[20] "New well" is not intended to include: (a) any well for which a construction permit has been issued by the Monterey County Health Department; or (b) any well for which drilling or construction activities have commenced in accordance with a well construction permit issued by the Monterey County Health Department.

[21] "Domestic well" is intended to mean a well that is used to supply water for the private use and consumption of an individual residence or a small water system with less than 15 connections.

[22] A system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system. (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system. (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

   b. Wells supplying public water systems, as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[22]
   c. Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,
   d. Monitoring wells owned and maintained by the Agency or other water management agencies.

6. Initiate and diligently proceed with destruction of wells in Agency Zone 2B, in accordance with Agency Ordinance No. 3790 and the Proposition 1 Groundwater Grant Program Agreement, to protect the Salinas Valley Groundwater Basin against further seawater intrusion.

7. An immediate prohibition of groundwater extractions from new wells[23] within the entirety of the Deep Aquifers of the 180/400 Foot Aquifer Subbasin until such time as an investigation of the Deep Aquifers is completed and data pertaining to the hydraulic properties and long-term viability of the Deep Aquifers are available for knowledge-based water resource planning and decision making.
   a. The following should be considered for exemption from this recommendation:
      i. Domestic wells;[24]
      ii. Wells supplying public water systems; as defined by California Health and Safety Code, Division 104, Part 12, Chapter 4, Article 1, Section 116275(h);[25]
      iii. Monitoring wells owned and operated by the Agency or other water management agencies;
      iv. Wells for which a construction permit has already been issued; and,
      v. Well repairs.
   b. The prohibition should include:
      i. Replacement wells; and,
      ii. Deepening of wells from overlying aquifers into the Deep Aquifers, deepening of wells within the Deep Aquifers, and other activities that would expand the length, depth, or capacity of an existing well.

8. Initiate and diligently proceed with an investigation to determine the hydraulic properties and long-term viability of the Deep Aquifers, in conjunction with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency.

9. Actively participate in coordinated efforts with the County of Monterey Groundwater Sustainability Agency, Marina Coast Water District Groundwater Sustainability Agency, and Salinas Valley Basin Groundwater Sustainability Agency for beneficial management of aquifers in the coastal Salinas Valley Groundwater Basin.

[23] See Footnote 20 on page 40.
[24] See Footnote 21 on page 40.
[25] See Footnote 22 on page 40.

The timeframe and financial resources needed to implement each of these recommendations is variable. It is expected that coordination with other County departments and external entities, such as local GSAs, will be integral to a timely and effective implementation of the recommendations.

While these recommendations can be implemented individually or in any combination, they will most effectively prevent irreversible negative impacts to the Salinas Valley Groundwater Basin if implemented conjunctively. As was the case when the 2017 *Recommendations* report was written, current groundwater level and chloride concentration trends continue to indicate that without proactive steps, the continued viability of the 400-Foot Aquifer and Deep Aquifers in and around the Area of Impact is in peril.

7 REFERENCES

California Department of Water Resources. 2003. *Bulletin 118 – Update 2003.*

Feeney, M.B. and L.I. Rosenberg. 2003. *Technical Memorandum – Deep Aquifer Investigation – Hydrogeologic Data Inventory, Review, Interpretation, and Implications.* 40 pp.

Kennedy/Jenks Consultants. May 2004. *Final Report – Hydrostratigraphic Analysis of the Northern Salinas Valley.*

Monterey County. 2018. *Ordinance No. 5302: An Interim Ordinance of the County of Monterey, State of California, Adopted Pursuant to Government Code Section 65858, Temporarily Prohibiting New Wells in Seawater Intruded Aquifers, with Specified Exemptions, Pending the County's Study and Consideration of Regulations.*

Monterey County Water Resources Agency. 1994. *Ordinance No. 3790: An Ordinance of the Monterey County Water Resources Agency Establishing Regulations for the Classification, Operation, Maintenance and Destruction of Groundwater Wells in MCWRA Zone 2B, to Protect the Salinas Valley Groundwater Basin Against Further Seawater Intrusion.*

Monterey County Water Resources Agency. 2017. *Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin.*

Salinas Valley Basin Groundwater Sustainability Agency. 2020. *Salinas Valley Groundwater Basin 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan.*

Appendix A

Working Group List of Recommended Actions

April 4, 2018

	Short Term	Mid-Range	Long Term
Action (Set by Priority)	April -Sep 2018	Oct 2018-March 2020	2020-2040
1. Destroy worst eight wells causing vertical migration 90 to 180 days			
2. Expand Area of Impact			
3. Update reports on the migration of seawater into the aquifer			
4. Moratorium on groundwater extractions from new wells in 180 and 400 Foot Aquifer within the identified Area of Impact.			
5. Moratorium on groundwater extractions from new wells within the entire Deep Aquifers *			
6. Initiate an investigation to determine the long – term viability of the Deep Aquifers			
7. Develop program to incentivize destruction of abandon wells			
8. Rigorously pursue destruction of wells defined in Ordinance 3790			
9. Enhancement (optimization) of Castroville Seawater Intrusion Project (CSIP)			
10. Expansion of the WRA groundwater level and water quality monitoring network to include all wells in the Deep Aquifers.			
11. Expand CSIP			

* Excepting replacement wells as defined in report

Appendix B

Ordinances No. 5302 and No. 5303

Monterey County
Board of Supervisors

168 West Alisal Street,
1st Floor
Salinas, CA 93901
831.755.5066

Board Order

Upon motion of Supervisor Salinas, seconded by Supervisor Phillips and carried by those members present, the Board of Supervisors hereby:

a. Introduced, waived reading, and conduct a public hearing to consider adoption of an interim urgency ordinance to prohibit, on a temporary basis and pending the development of new regulations, new wells in a defined "Area of Impact" where seawater intrusion is evident and in the Deep Aquifers in the Salinas Valley Groundwater Basin, with specified exemptions;
b. Found the ordinance statutorily exempt from the California Environmental Quality Act (CEQA);
c. Adopted the interim urgency ordinance 5302 to prohibit, on a temporary basis and pending development of new regulations, new wells in a defined "Area of Impact" where seawater intrusion is evident and in the Deep Aquifers in the Salinas Valley Groundwater Basin, with specified exemptions; and
d. Directed staff to return within 45 days with an extension of the ordinance for the Board's consideration.

PASSED AND ADOPTED on this 22nd day of May 2018, by the following vote, to wit:

AYES: Supervisors Alejo, Salinas, Phillips and Adams
NOES: Supervisor Parker
ABSENT: None

I, Nicholas E. Chiulos, Acting Clerk of the Board of Supervisors of the County of Monterey, State of California, hereby certify that the foregoing is a true copy of an original order of said Board of Supervisors duly made and entered in the minutes thereof of Minute Book 81 for the meeting May 22, 2018.

Dated: May 25, 2018
File ID: ORD 18-006

Nicholas E. Chiulos, Acting Clerk of the Board of Supervisors
County of Monterey, State of California

By Denise Hancock
Deputy

ORDINANCE 5302

AN INTERIM ORDINANCE OF THE COUNTY OF MONTEREY, STATE OF CALIFORNIA, ADOPTED PURSUANT TO GOVERNMENT CODE SECTION 65858, TEMPORARILY PROHIBITING NEW WELLS IN SEAWATER INTRUDED AQUIFERS, WITH SPECIFIED EXEMPTIONS, PENDING THE COUNTY'S STUDY AND CONSIDERATION OF REGULATIONS.

County Counsel Summary

This interim ordinance is an urgency measure to prohibit, on a temporary basis and pending the development of new regulations, approval of new wells in a defined "Area of Impact" and in the Deep Aquifers of the Salinas Valley Groundwater Basin in the unincorporated area of Monterey County, due to the immediate threat to the public health, safety and welfare posed by new wells in these areas. The Area of Impact is that area where the Pressure 180-Foot and Pressure 400-Foot Aquifers have already been impacted by seawater intrusion or where seawater intrusion is actively advancing in the Salinas Valley Groundwater Basin, according to Monterey County Water Resources Agency data. The prohibition on drilling new wells in the Deep Aquifers applies in the portions of the 180/400-Foot Aquifer Subbasin and the Monterey Subbasin within the Area of Impact; additionally, testing is required of new wells in those subbasins outside of the Area of Impact to prevent extraction of water from the Deep Aquifers. The following types of new wells are exempt from this ordinance: wells operating under the auspices of the Castroville Seawater Intrusion Project (CSIP); domestic wells; monitoring wells owned and maintained by the Monterey County Water Resources Agency or other water management agencies; municipal water supply wells; and replacement wells that meet specified criteria. This ordinance is an interim urgency ordinance pursuant to Government Code section 65858 and requires a four-fifths vote of the Board of Supervisors for adoption. The ordinance would take effect immediately upon adoption and would expire 45 days after its adoption unless extended by subsequent action of the Board of Supervisors.

The Board of Supervisors of the County of Monterey ordains as follows:

SECTION 1. FINDINGS AND DECLARATIONS

A. Pursuant to Article XI, section 7 of the California Constitution, the County of Monterey ("County") may adopt and enforce ordinances and regulations not in conflict with general laws to protect and promote the public health, safety, and welfare of its citizens.

B. Pursuant to Government Code section 65858, to protect the public safety, health, and welfare, the County may, as an urgency measure, adopt an interim ordinance temporarily prohibiting land uses that may be in conflict with contemplated land use regulations that the County is studying or considering or intends to study within a reasonable time.

C. The Board of Supervisors finds that there is a current and immediate threat to the public health, safety, and welfare resulting from the drilling of new wells within the Area of Impact, defined as that certain area shown on the map attached hereto as Exhibit A and incorporated herein by reference, and from the drilling of new wells within the Deep Aquifers of the 180/400 Foot Aquifer Subbasin and Monterey Subbasin of the Salinas Valley Groundwater Basin. The Board of Supervisors further finds that the approval of additional new wells within these areas will result in that threat to the public health, safety and welfare, pending further study and development of regulations, based on all the following facts:

1. The California Department of Water Resources (DWR) has designated the 180/400-Foot Aquifer Subbasin (Subbasin No. 3-004.01) as a subbasin subject to critical conditions of overdraft. (DWR, Bulletin 118, Interim Update 2016.) "Subject to critical conditions of overdraft" is defined to mean that "continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts." (DWR Bulletin 118-80.) The 180/400-Foot Aquifer contains multiple water bearing units (aquifers), including – in terms used by the Monterey County Water Resources Agency – the Pressure 180-Foot Aquifer, the Pressure-400 Foot Aquifer, and the Deep Aquifers. The Pressure 180-Foot Aquifer, the Pressure-400 Foot Aquifer, and the Deep Aquifers also underlie the adjacent Monterey Subbasin designated by DWR (Subbasin No. 3-004.10). Both the 180/400 Foot Aquifer Subbasin and Monterey Subbasin are part of the Salinas Valley Groundwater Basin.

2. In October 2017, the Monterey County Water Resources Agency issued a report with recommendations to slow or halt further seawater intrusion in the Salinas Valley Groundwater Basin. (Monterey County Water Resources Agency, *Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin* (Special Reports Series 17-01, October 2017) (hereafter "*Basin Report*")). Seawater intrusion poses a threat to the public health, safety and welfare because it degrades and impairs water quality, making the water unusable for drinking or agricultural production. Immediate steps are necessary "to ensure the viability of current and future water supplies." (*Basin Report*, at p. 6.)

3. To slow or halt seawater intrusion, the report recommended an immediate moratorium on groundwater extractions from new wells, with some exceptions, in the Pressure 400-Foot Aquifer within an identified "Area of Impact," which encompasses a portion of the 180/400 Foot Aquifer Subbasin and a portion of the Monterey Subbasin. The Monterey County Water Resources Agency has documented seawater intrusion into the Pressure 180-Foot and Pressure 400-Foot Aquifers, with the seawater intrusion front generally advancing over several decades. The 2015 and 2017 data indicate the continued advance of seawater intrusion in those aquifers, including the presence of isolated "islands" of intruded groundwater beyond the contiguous seawater intrusion front in the Pressure 400-Foot Aquifer. (*Basin Report*, at p. 33.)

4. The Monterey County Water Resources Agency also recommended an immediate moratorium on groundwater extractions from new wells, with some exceptions, in the Deep Aquifers of the 180/400 Foot Aquifer Subbasin, pending further

study of the hydraulic properties and long-term viability of the Deep Aquifers. The "Deep Aquifers" are those water-bearing zones in the 180/400 Foot Aquifer Subbasin and Monterey Subbasin that underlie the Pressure 400-Foot Aquifer. (See *Basin Report* at pp.45-47.) The number of wells and amount of pumping in the Deep Aquifers has increased in response to seawater intrusion in the Pressure 180-Foot and Pressure 400-Foot Aquifers. Increased pumping in the Deep Aquifers has the potential to induce additional leakage from the impaired overlying Pressure 180-Foot and Pressure 400-Foot aquifers, potentially impairing the water quality of the Deep Aquifers. (*Basin Report*, sec. 5.4.) Increased drilling of wells and pumping of groundwater in the Deep Aquifers also puts the Deep Aquifers at risk of potential depletion. (*Basin Report*, section 5.)

5. The Board of Supervisors, sitting as the Board of the County and the Board of the Monterey County Water Resources Agency, considered the Agency's *Basin Report* and directed County and Agency staff to work with staff of the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) to formulate recommendations in response to the Agency recommendations, resulting in the formation of the "Ninety-Day Working Group" of staff from these agencies.

6. The Ninety-Day Working Group held numerous meetings, met with stakeholders, and, on April 24, 2018, presented a set of recommendations to a joint meeting of the Board of Supervisors of the County, the Board of Supervisors of the Monterey County Water Resources Agency, and the Monterey County Water Resources Agency Board of Directors. Following consideration of the Working Group's recommendations and public testimony, the Board of Supervisors of the County, among other actions, directed staff to return as soon as possible to the Board of Supervisors with an ordinance for a temporary moratorium on drilling of new wells in the Pressure 180-Foot Aquifer and Pressure 400-Foot Aquifer within a defined "Area of Impact" and a temporary moratorium on drilling of new wells in the Deep Aquifers, with exceptions for replacement wells, domestic wells, and municipal supply wells. The Board also endorsed other recommendations of the Ninety-Day Working Group to stop or halt seawater intrusion.

7. The Area of Impact, where the prohibition on the drilling of new wells in the Pressure 180-Foot Aquifer and Pressure 400-Foot Aquifer applies, is shown on Exhibit A. A closer view of the Area of Impact is shown on the map attached hereto as Exhibit B and incorporated herein by reference. The Area of Impact is where the Pressure 180-Foot and Pressure 400-Foot Aquifers have already been impacted by seawater intrusion or where seawater intrusion is actively advancing in the Salinas Valley Groundwater Basin in Monterey County, according to Monterey County Water Resources Agency data. This Area of Impact includes a portion of the 180/400-Foot Aquifer Subbasin, which the state has designated as critically overdrafted, and a portion of the Monterey Subbasin as denoted by the DWR. The Deep Aquifers new well prohibition applies in the portions of the 180/400-Foot Aquifer Subbasin and the Monterey Subbasin within the Area of Impact; in the portions of those Subbasins outside

of the Area of Impact, it is the intent and purpose of this ordinance to require testing to ensure no extraction of water from the Deep Aquifers.

8. This ordinance's temporary prohibition on drilling of new wells in the identified areas is necessary due to the current and immediate threat to the public health, safety, and welfare that would result from new wells in the Area of Impact and Deep Aquifers, pending the development of a plan for the sustainable management of the 180/400 Foot Aquifer Subbasin and the study and implementation of other steps to address seawater intrusion in the Pressure 180-Foot and Pressure 400-Foot Aquifers. It is the intent and purpose of this interim ordinance to enact a ban that is only temporary in order to provide time for the County to study and develop appropriate regulations. The areas where this ordinance applies will be the subject of study and development of further regulations, within two years of adoption of this ordinance, to address the sustainability of the groundwater supply. Pursuant to the Sustainable Groundwater Management Act (SGMA), the Salinas Valley Basin Groundwater Sustainability Agency and the Marina Coast Water District Groundwater Sustainability Agency must adopt Groundwater Sustainability Plans (GSPs) for sustainable management of the critically overdrafted 180/400 Foot Aquifer by January 31, 2020. Additionally, pursuant to Policy PS 3.1 of the 2010 Monterey County General Plan, the County is conducting a five-year comprehensive study of the Zone 2C assessment area of the Salinas Valley Groundwater Basin, including development of an integrated comprehensive hydrogeologic model to assess the ability of the Salinas Valley Groundwater Basin to provide a sustainable supply of water for land use activities projected to year 2030 under the General Plan and to 2040 for the GSP planning horizon. Additionally, on April 24, 2018, the Board of Supervisors endorsed a number of other measures recommended by the Ninety-Day Working Group for addressing seawater intrusion, such as destruction of certain identified wells. A temporary halt on drilling of new wells in the denoted areas under this ordinance will enable the County to study and develop policies and regulations in connection with the Groundwater Sustainability Plans and results of the General Plan study and to implement other recommended actions. Absent this ordinance, applicants could continue to obtain well permits that could exacerbate seawater intrusion without the guidance of regulations to be developed for the sustainable management of the Salinas Valley Groundwater Basin.

9. This ordinance has due regard for exigencies that may arise in respect to domestic water supply, agricultural production, and public agency needs by exempting certain classes of wells from the prohibitions of this ordinance under the terms specified in this ordinance.

D. This ordinance was adopted following a public hearing duly noticed under Government Code section 65090. Pursuant to Government Code section 65858, this urgency interim ordinance may have duration of no more than 45 days and may be extended, following notice and public hearing, for 22 months and 15 days. It is the County's intent that this interim ordinance shall be of no further force and effect after 45 days, unless the Board of Supervisors, following a noticed public hearing, elects to extend the Interim Ordinance pursuant to law.

E. The adoption of this interim ordinance is statutorily exempt from the California Environmental Quality Act because it is an urgency measure necessary to protect the County from a current and immediate threat to the public health, safety and welfare.

SECTION 2. APPLICABILITY

This interim ordinance applies in the unincorporated area of the County of Monterey in the Area of Impact and 180/400-Foot Aquifer and Monterey Subbasins as shown on the map attached hereto as Exhibit A and as more fully described in this ordinance.

SECTION 3. DEFINITIONS

For purposes of this interim ordinance, the following terms have the definitions set forth below:

A. "180/400 Foot Aquifer Subbasin" means Subbasin No. 3-004.01 as designated by the California Department of Water Resources, shown on the map attached hereto as Exhibit A.

B. "Area of Impact" means that area depicted on the maps attached hereto as Exhibits A and B.

C. "Deep Aquifers" means the water-bearing zones in the 180/400 Foot Aquifer Subbasin and Monterey Subbasin underlying the Pressure 400-Foot Aquifer.

D. "Effective date" means the date that this interim ordinance was adopted by the Board of Supervisors.

E. "Domestic well" means a water well used to supply water for the domestic needs of an individual residence or local or state small water system permitted under Monterey County Code Chapter 15.04 which serves fourteen or fewer connections and no more than an average of twenty-five individuals daily for more than sixty days out of the year.

F. "Monterey Subbasin" means Subbasin No. 3-004.10 as designated by the California Department of Water Resources, shown on the map attached hereto as Exhibit A.

G. "Municipal water supply well" means a water well that supplies potable water for the domestic needs of a permitted public water system.

H. "Public water system" means a water system for the provision of water for human consumption through pipes or other constructed conveyances that has fifteen or more service connections or regularly serves at least twenty-five individuals daily

at least sixty days out of the year. (California Health and Safety Code section 116275).

I. "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 in the determination of the Monterey County Health Department upon the advice of the Monterey County Water Resources Agency; to qualify as a "replacement well," the new well must be constructed to provide water for the same purpose as the existing water well, and if the purpose is for irrigation, it must deliver water to the same amount of irrigated acreage (or less acreage) as served by the existing water well. "Replacement well" does not include deepening of an existing well.

J. "Well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into, the underground. This definition shall not include: (a) oil and gas wells, or geothermal wells constructed under the jurisdiction of the Department of Conservation, except those wells converted to use as water wells; or (b) wells used for the purpose of (1) dewatering excavation during construction, or (2) stabilizing hillsides or earth embankments.

SECTION 4. REGULATIONS

A. Prohibition on new wells in the Pressure 180-Foot and Pressure 400-Foot Aquifers:

1. The County shall not accept for processing, process, or approve any application to construct a new well in the Pressure 180-Foot Aquifer or the Pressure 400-Foot Aquifer in the Area of Impact depicted in Exhibits A and B in the unincorporated area of the County, unless exempted under the terms of this ordinance.

2. To the extent that the 2010 General Plan or County's certified Local Coastal Program requires a discretionary entitlement for a new well, the County shall not accept for processing, process, or approve any application for a discretionary entitlement for a new well in the Pressure 180-Foot Aquifer or the Pressure 400-Foot Aquifer in the Area of Impact depicted in Exhibits A and B, unless exempted under the terms of this ordinance.

B. Prohibition on new wells in the Deep Aquifers:

1. The County shall not accept for processing, process, or approve any application to construct a new well in the Deep Aquifers in that portion of the 180/400 Aquifer Subbasin and Monterey Subbasin within the Area of Impact depicted in Exhibits A and B in the unincorporated area of the County, unless exempted under the terms of this ordinance.

2. To the extent that the 2010 General Plan or County's certified Local Coastal Program requires a discretionary entitlement for a new well, the County shall not accept for processing, process, or approve any application for a discretionary entitlement for a new well in the Deep Aquifers in that portion of the 180/400 Aquifer Subbasin or Monterey Subbasin that lies within the Area of Impact depicted in Exhibits A and B, unless exempted under the terms of this ordinance.

3. If the proposed well is in a portion of the 180/400 Aquifer Subbasin or Monterey Subbasin that is outside of the Area of Impact depicted in Exhibits A and B and within the unincorporated area of the County, the County may process an application to construct a new well, but any approval of the application shall be contingent on the applicant demonstrating, based on evidence of the depositional environment to be evaluated by the Monterey County Health Department upon the advice of the Monterey County Water Resources Agency, that the well would not be constructed with screened or perforated intervals in the Deep Aquifers. To the extent that construction of the well must be started in order to obtain the necessary information about the depositional environment, the permit to construct the well shall be conditioned to require, prior to completion of the well, prompt destruction of the well or modification of the design to prevent the well from extracting water from the Deep Aquifers if the evidence shows that the well would extract water from the Deep Aquifers.

C. These regulations shall take effect on the Effective Date of this interim ordinance.

D. The term "new well" as used in these regulations does not include (1) any well for which a construction permit has been issued by the Monterey County Health Department prior to the Effective Date of this ordinance; and (2) any well for which drilling or construction activities have commenced prior to the Effective Date of this ordinance in accordance with a well construction permit issued by the Monterey County Health Department.

E. These regulations apply during the term of this interim ordinance and any duly adopted extension of this interim ordinance, unless a specific exemption under this ordinance is applicable.

SECTION 5. EXEMPTIONS

A. The following categories of new wells are exempt from the regulations set forth in Section 4 of this ordinance:

1. Wells operating under the auspices of the Castroville Seawater Intrusion Project (CSIP);

2. Domestic wells;

3. Monitoring wells owned and maintained by the Monterey County Water Resources Agency or other water management agencies;

4. Municipal water supply wells, provided that the entity owning or operating a new municipal water supply well in the Deep Aquifers shall meter groundwater extractions, monitor groundwater levels and quality, and submit all such data to the Monterey County Water Resources Agency, the Groundwater Sustainability Agency with jurisdiction, and/or other identified public agency upon request; and

5. Replacement wells, provided that all of the following criteria are met and the well permit is conditioned as needed to ensure compliance with these criteria:
   a. The replacement well meets all of the criteria in this ordinance's definition of replacement well;
   b. The replacement well is located on the same or adjacent parcel as the existing well;
   c. The replacement well shall replace an existing water well that has not been destroyed but that will not be used after construction of the replacement well. The existing well shall be destroyed within one hundred eighty (180) days after the replacement well is operational. "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.
   d. Applicants for a replacement well proposed in a different aquifer than the existing well shall, as part of the permit application process, provide at least five (5) years of annual historical 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.
   e. Applications for replacement wells shall be subject to an assessment of potential significant impacts to existing domestic or municipal water supply wells. The assessment methodology and thresholds for determining potential significant adverse impact shall be the same as used by the Monterey County Water Resources Agency in the application of General Plan Policies PS-3.3 and 3.4.
   f. The owner of a replacement well in the Deep Aquifers shall meter groundwater extractions, monitor groundwater levels and quality, and submit all such data to the Monterey County Water Resources Agency, the Groundwater Sustainability Agency with jurisdiction, and/or other identified public agency upon request.

B. Exemption under this ordinance does not guarantee approval of the well. Wells exempt under this ordinance are subject to all other applicable federal, state, and County policies and regulation.

SECTION 6. ENFORCEMENT

Any violation of this interim ordinance is unlawful and a public nuisance. In the event of a violation of this ordinance, the County may, in its discretion, in addition to all other remedies, take such enforcement action as is authorized under the Monterey County Code and such other enforcement action as is authorized by law.

SECTION 7. NO TAKING OF PROPERTY INTENDED

Nothing in this ordinance shall be interpreted to effect an unconstitutional taking of property of any person. If the Board of Supervisors determines, based on specific evidence in the administrative record, that the application of one or more of the provisions of this ordinance to a proposed use of land would effect an unconstitutional taking of private property, the Board shall disregard such provisions to the extent necessary to avoid such unconstitutional taking.

SECTION 8. SEVERABILITY

If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The Board of Supervisors hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, and phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

SECTION 9. EFFECTIVE DATE

In light of the recitals in this ordinance, the Board declares that this interim ordinance is necessary as an urgency measure for preserving the public health, safety, and welfare. This interim ordinance shall take effect immediately upon adoption for the reasons set forth herein and shall expire 45 days thereafter unless extended pursuant to law.

PASSED AND ADOPTED this 22nd day of May, 2018, by the following vote:

AYES: Supervisors Alejo, Phillips, Salinas and Adams
NOES: Supervisor Parker
ABSTAIN: None
ABSENT: None

Luis A. Alejo
Chair, Monterey County Board of Supervisors

ATTEST:

NICHOLAS CHIULOS
Interim Clerk of the Board of Supervisors

By: Denise Hancock
Deputy

APPROVED AS TO FORM

WENDY S. STRIMLING
Senior Deputy County Counsel

EXHIBIT A

Interim Ordinance Basin Boundaries And Area Of Impact

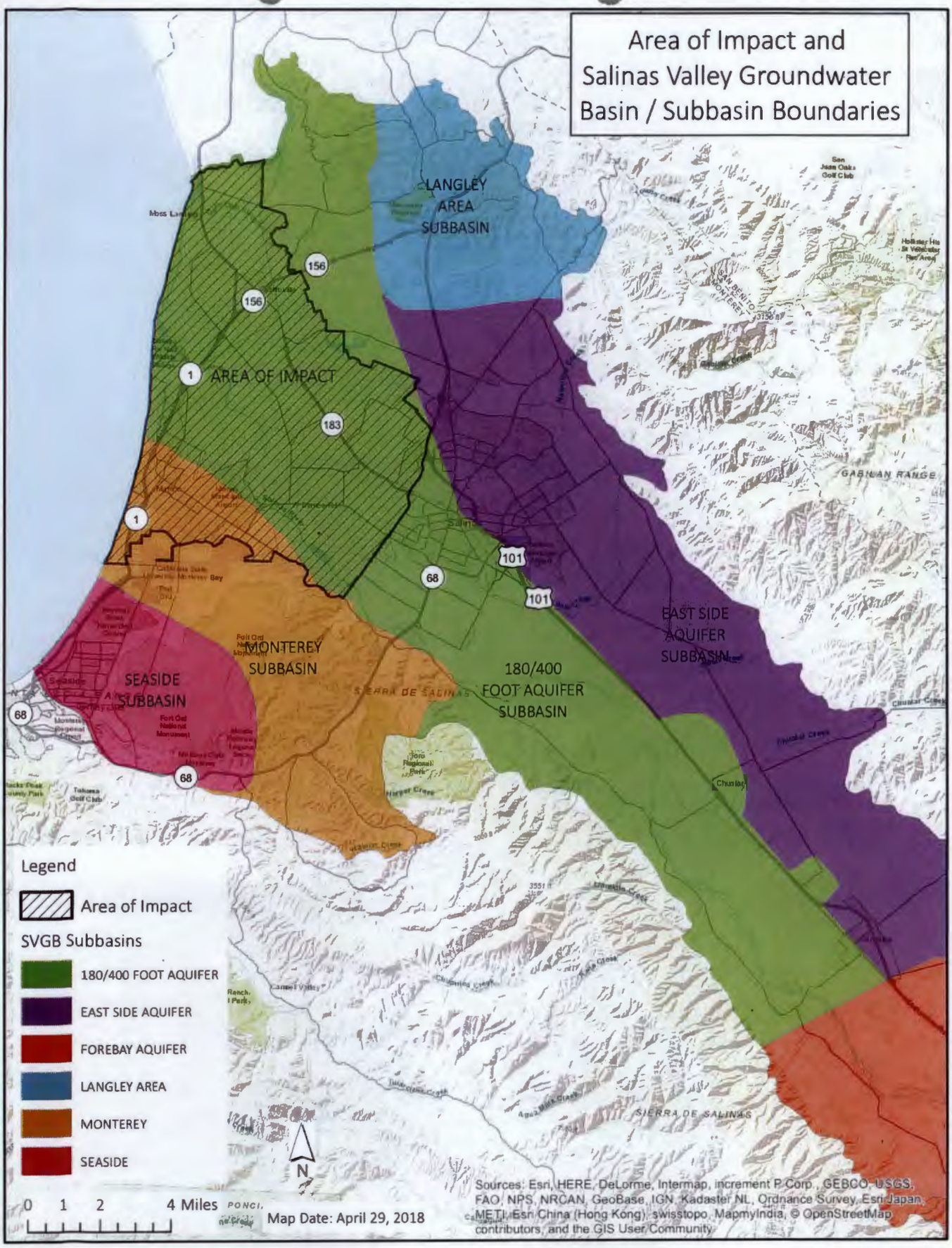
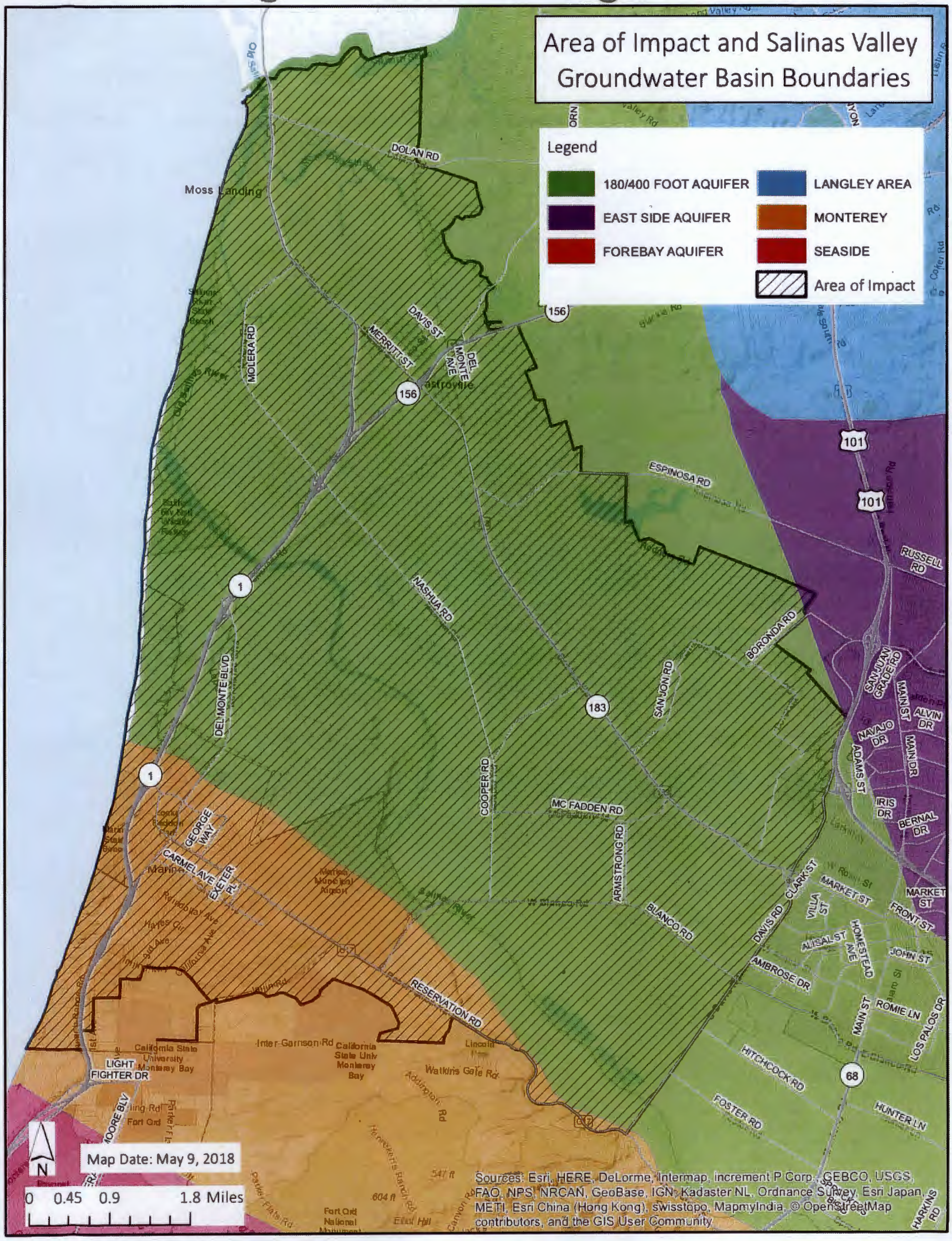

Area of Impact and
Salinas Valley Groundwater
Basin / Subbasin Boundaries
LANGLEY
AREA
SUBBASIN
AREA OF IMPACT
MONTEREY
SUBBASIN
SEASIDE
SUBBASIN
180/400
FOOT AQUIFER
SUBBASIN
EAST SIDE
AQUIFER
SUBBASIN
GABILAN RANGE
SIERRA DE SALINAS
Legend
Area of Impact
SVGB Subbasins
180/400 FOOT AQUIFER
EAST SIDE AQUIFER
FOREBAY AQUIFER
LANGLEY AREA
MONTEREY
SEASIDE
N
0 1 2 4 Miles
Map Date: April 29, 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

EXHIBIT B

AREA OF IMPACT (CLOSE VIEW)


Area of Impact and Salinas Valley Groundwater Basin Boundaries
Legend
180/400 FOOT AQUIFER
EAST SIDE AQUIFER
FOREBAY AQUIFER
LANGLEY AREA
MONTEREY
SEASIDE
Area of Impact
Moss Landing
DOLAN RD
MOLERA RD
MERRITT ST
DAVIS ST
DEL MONTE AVE
156
Castroville
101
ESPINOSA RD
RUSSELL RD
1
NASHUA RD
BORONDA RD
SAN JUAN GRADE RD
DEL MONTE BLVD
SAN JON RD
183
MAIN ST
ALVIN DR
NAVAJO DR
ADAMS ST
MAIN DR
IRIS DR
BERNAL DR
COOPER RD
MC FADDEN RD
GEORGE WAY
CARMEL AVE
EXETER PL
ARMSTRONG RD
CLARK ST
MARKET ST
VILLA ST
BLANCO RD
DAVIS RD
FRONT ST
ALISAL ST
HOMESTEAD AVE
JOHN ST
AMBROSE DR
RESERVATION RD
MAIN ST
ROMIE LN
LOS PALOS DR
Inter-Garrison Rd
California State Univ Monterey Bay
LIGHT FIGHTER DR
Watkins Gate Rd
HITCHCOCK RD
68
FOSTER RD
HUNTER LN
MOORE BLV
Map Date: May 9, 2018
N
0 0.45 0.9 1.8 Miles
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
HARKINS RD

ORDINANCE NO. 5303

AN ORDINANCE OF THE COUNTY OF MONTEREY, STATE OF CALIFORNIA, ADOPTED PURSUANT TO GOVERNMENT CODE SECTION 65858, TO EXTEND INTERIM ORDINANCE NO. 5302 TEMPORARILY PROHIBITING NEW WELLS IN SEAWATER INTRUDED AQUIFERS, WITH SPECIFIED EXEMPTIONS, PENDING THE COUNTY'S STUDY AND CONSIDERATION OF REGULATIONS.

County Counsel Summary

This ordinance extends Interim Ordinance No. 5302 through May 21, 2020. Ordinance No. 5302 is an urgency measure adopted by the Board of Supervisors on May 22, 2018 to prohibit, on a temporary basis and pending the development of new regulations, approval of new wells in a defined "Area of Impact" and in the Deep Aquifers of the Salinas Valley Groundwater Basin in the unincorporated area of Monterey County, due to the immediate threat to the public health, safety and welfare posed by new wells in these areas. The Area of Impact is that area where the Pressure 180-Foot and Pressure 400-Foot Aquifers have already been impacted by seawater intrusion or where seawater intrusion is actively advancing in the Salinas Valley Groundwater Basin, according to Monterey County Water Resources Agency data. The prohibition on drilling new wells in the Deep Aquifers applies in the portions of the 180/400-Foot Aquifer Subbasin and the Monterey Subbasin within the Area of Impact; additionally, testing is required of new wells in those subbasins outside of the Area of Impact to prevent extraction of water from the Deep Aquifers. The following types of new wells are exempt from the ordinance: wells operating under the auspices of the Castroville Seawater Intrusion Project (CSIP); domestic wells; monitoring wells owned and maintained by the Monterey County Water Resources Agency or other water management agencies; municipal water supply wells; and replacement wells that meet specified criteria. Ordinance No. 5302, an interim urgency ordinance adopted pursuant to Government Code section 65858, will expire on July 5, 2018 unless extended. With adoption of this extension ordinance, Ordinance No. 5302 will remain in full force and effect for an additional 22 months and 15 days unless sooner terminated by the Board of Supervisors. Adoption of this ordinance requires a four-fifths vote of the Board of Supervisors.

The Board of Supervisors of the County of Monterey ordains as follows:

SECTION 1. FINDINGS AND DECLARATIONS

A. Pursuant to Article XI, section 7 of the California Constitution, the County of Monterey ("County") may adopt and enforce ordinances and regulations not in conflict with general laws to protect and promote the public health, safety, and welfare of its citizens.

B. Pursuant to Government Code section 65858, to protect the public safety, health, and welfare, the County may, as an urgency measure, adopt an interim ordinance temporarily prohibiting land uses that may be in conflict with contemplated land use regulations that the County is studying or considering or intends to study within a reasonable time. An interim ordinance adopted pursuant to Government Code section 65858 expires after 45 days, unless the Board extends the ordinance following notice and public hearing. Where, as here, the initial ordinance was adopted following notice and public hearing, the Board may extend the ordinance for up to an additional 22 months and 15 days, if the extension is warranted based on findings that there is a current and immediate threat to the public health, safety, or welfare, and that the approval of the additional land use entitlements which are the subject of the ordinance would result in that threat to the public health, safety, or welfare.

C. On May 22, 2018, following a noticed public hearing, the Board of Supervisors adopted Ordinance No. 5302, an interim urgency ordinance of 45 day duration, to prohibit, on a temporary basis and pending the development of new regulations, approval of new wells in a defined "Area of Impact" and in the Deep Aquifers of the Salinas Valley Groundwater Basin in the unincorporated area of Monterey County, due to the immediate threat to the public health, safety, and welfare posed by new wells in these areas. The ordinance has specified exemptions. Ordinance No. 5302 will expire on July 5, 2018 unless extended. Ordinance No. 5302 is attached hereto as Attachment 1 and incorporated herein by reference.

D. The Board of Supervisors hereby incorporates and reaffirms all of the findings of Ordinance No. 5302.

E. In addition to the findings in Ordinance No. 5302, the Board finds that there is a continuing current and immediate threat to the public health, safety, or welfare from drilling of new wells in the defined Area of Impact and Deep Aquifers and that the approval of new wells would result in that threat to the public health, safety, or welfare, pending the development of a plan for the sustainable management of the 180/400 Foot Aquifer Subbasin and the study and implementation of other steps to address seawater intrusion in the Pressure 180-Foot and Pressure 400-Foot Aquifers. An extension of Ordinance No. 5302 for an additional 22 months and 15 days beyond the July 5, 2018 original expiration date is warranted to enable the study and development of regulations. As set forth in the Ordinance No. 5302's findings, pursuant to the Monterey County General Plan and/or the Sustainable Groundwater Management Act, additional regulations to address seawater intrusion in the Salinas Valley Groundwater Basin and to address groundwater sustainability are expected to be developed by 2020.

F. On June 19, 2018, the Board of Supervisors issued a report on the measures taken to alleviate the conditions which led to the adoption of the interim ordinance, which measures include posting a copy of Ordinance No. 5302 and its Exhibits A and B on the County's Health Department website and notification to well drillers of Ordinance 5302. The Environmental Health Bureau has implemented Ordinance No. 5302 since May 22, 2018.

G. The Board of Supervisors conducted a noticed public hearing on June 26, 2018 to consider extending Ordinance No. 5302 until May 21, 2020, which is 22 months and 15 days from the date the ordinance would otherwise expire. Notice of the public hearing was published

in the *Monterey County Weekly* on June 14, 2018 in accordance with Government Code section 65090.

H. The adoption of this ordinance extending Interim Ordinance No. 5302 is statutorily exempt from the California Environmental Quality Act because it is an urgency measure necessary to protect the County from a current and immediate threat to the public health, safety and welfare. The extension of the ordinance also protects natural resources and the environment and therefore would also be categorically exempt pursuant to CEQA Guidelines sections 15307 and 15308.

SECTION 2. EXTENSION OF ORDINANCE NO. 5302

Ordinance No. 5302 is hereby extended in its entirety through May 21, 2020, unless sooner terminated by the Board of Supervisors. Except for the change in expiration date, all other terms of Ordinance No. 5302 are and shall remain in full force and effect.

SECTION 3. EFFECTIVE DATE

This ordinance is an urgency measure adopted pursuant to Government Code section 65858 and shall take effect immediately upon adoption.

PASSED AND ADOPTED this 26th day of June 2018, by the following vote:

AYES: Supervisors, Alejo, Phillips, Salinas and Adams
NOES: Supervisor Parker
ABSTAIN: None
ABSENT: None

___/s/ Luis Alejo_____
Luis A. Alejo
Chair, Monterey County Board of Supervisors

A T T E S T:

Valerie Ralph
Clerk of the Board of Supervisors

By: _/s/ Valerie Ralph_____
Deputy

APPROVED AS TO FORM

/s/ Wendy S. Strimling

WENDY S. STRIMLING
Senior Deputy County Counsel

Appendix C

Ordinance No. 3790

COPY

Monterey County
Water Resources Agency

Ordinance No. 03790

AN ORDINANCE OF
THE MONTEREY COUNTY WATER RESOURCES AGENCY
ESTABLISHING REGULATIONS FOR THE CLASSIFICATION,
OPERATION, MAINTENANCE AND DESTRUCTION OF
GROUNDWATER WELLS IN MCWRA ZONE 2B,
TO PROTECT THE SALINAS VALLEY GROUNDWATER BASIN
AGAINST FURTHER SEAWATER INTRUSION

COUNTY COUNSEL SUMMARY

This ordinance provides for the management of all groundwater wells within the Castroville Seawater Intrusion Project area, known as Zone 2B, following completion and start-up of the Castroville Seawater Intrusion Project. It prohibits and otherwise restricts pumping from groundwater wells in Zone 2B, and it provides for the classification of the various wells, for the maintenance and limited operation of standby wells, and for the destruction of abandoned wells, contaminated wells, wells that allow cross-contamination of aquifers in intruded areas, and other wells. The ordinance establishes a procedure for the destruction of wells, a variance procedure, an appeals procedure, and penalties for violations of the ordinance.

The Board of Supervisors of the Monterey County Water Resources Agency makes the following findings:

A. Appropriate studies have been conducted by the Monterey County Water Resources Agency (MCWRA), and based upon those studies, the Board of Supervisors determines that the portion of the Salinas Valley Groundwater Basin that underlies MCWRA Zone 2B is threatened with the loss of a usable water supply as a result of seawater intrusion into that portion of the groundwater basin, in each of the aquifers at all depths underlying Zone 2B.

B. Pursuant to the MCWRA Act, West's Water Code Appendix, Chapter 52, section 52-22, the Board determines that it is necessary to take steps prohibiting and otherwise restricting the withdrawal of water from the portion of the Salinas Valley Groundwater Basin underlying Zone 2B, in order to deter the further intrusion of underground seawater in Zone 2B, by establishing and defining the area and depth from which the further extraction of groundwater is prohibited.

C. The Board has conducted a public hearing upon the proposed determination, with notice of the hearing given in the manner prescribed in Government Code Sec. 6065. At the hearing, the Board accepted evidence showing the nature and extent of the threat of seawater intrusion and the facilities proposed in order to provide to the area threatened a substitute supply of surface water.

D. Said hearing having been concluded, the Board determines that a threat of seawater intrusion exists which will be aggravated by continued groundwater extraction in the 180-foot aquifer, the 400-foot aquifer, and the deep aquifer, at all depths therein underlying Zone 2B, and that the prohibitions and restrictions on the pumping of groundwater in these aquifers are necessary in order to alleviate the seawater intrusion problem. The Board further determines that the Castroville Seawater Intrusion Project (CSIP) will provide a substitute water supply that will be adequate to replace the water supply previously available from the wells that will be affected by the prohibition against pumping.

E. The CSIP is designed to supply all of the agricultural water needs in Zone 2B. This water will be obtained from the Salinas Valley Reclamation Project (SVRP) and from the supplemental wells that will be maintained and operated by the MCWRA as part of the CSIP. Water from the SVRP will provide the basic water supply for the CSIP, and water from the supplemental wells will be used to meet peak demands during the heavy irrigation season and to provide a backup water supply when the SVRP does not produce its full quota of water.

F. Property owners and growers in Zone 2B have requested that additional wells be maintained as standby wells, as an additional assurance that an adequate water supply will be available at all times. The ultimate success of the CSIP depends upon the reduction of groundwater pumping from Zone 2B. However, the maintenance of standby wells at the expense of owners is an appropriate action and will not compromise the success of the CSIP if such standby wells are maintained and operated under the limitations set forth in this ordinance.

G. The CSIP and the regulations set forth in this ordinance are designed as measures to protect the groundwater supply in the northern part of the Salinas Valley Groundwater Basin. They are not intended to effect any diminution in the basic groundwater rights held by overlying owners in the area subject to regulation but are put into effect in furtherance of the MCWRA's duty to manage the Salinas Valley Groundwater Basin and to protect the water supplies therein. By complying with these regulations and by participating in the CSIP, the overlying owners do not waive or prejudice any water rights held by them, now or in the future. If at some time in

the future, these regulations or any successor regulations are no longer necessary to protect the groundwater basin and are then modified or removed, then the groundwater rights of the overlying owners in Zone 2B will be exercisable in conformity with such laws as may then be in effect, and the overlying owners will suffer no prejudice in that regard because of the CSIP, these regulations, or any successor regulations.

H. On April 7, 1992, in Resolution No. 92-126, the Board of Supervisors described and approved the Castroville Irrigation System (now known as the Castroville Seawater Intrusion Project or CSIP), as a separate project within the Salinas Valley Seawater Intrusion Program, and certified that the Final EIR for the project (CSIP EIR) was complete and was prepared in compliance with the California Environmental Quality Act. As so described and approved, the project included the proposed enactment of an ordinance to prohibit or restrict the further pumping of groundwater from within Zone 2B. The present ordinance is consistent with the ordinance described and approved in Resolution No. 92-126 and in the CSIP EIR certified therein; it is proposed as part of the CSIP and is within the scope of the project described in the CSIP EIR; it will cause no new environmental effects beyond those considered in the CSIP EIR and no new mitigation measures need be considered for this ordinance; and it does not require further environmental review.

NOW, THEREFORE, the Board of Supervisors of the Monterey County Water Resources Agency ordains as follows:

SECTION 1. The following provisions are adopted:

PART I -- DEFINITIONS

1.01.01. GENERAL APPLICATION

As used in this ordinance, the following words shall have the meaning provided in this part.

1.01.02 ABANDONED WELL

"Abandoned Well" means any well whose original purpose and use have been permanently discontinued or which is in such a state of disrepair that it cannot be used for its original purpose. A well is deemed to be an abandoned well when it has not been used for a period of one year, unless the owner demonstrates his or her intent to use the well again for supplying water or other associated purposes. A well classified under this ordinance as a standby well shall not be deemed to be an abandoned well for as long as such classification remains in effect, despite any period of non-use of such well.

1.01.03 AQUIFER STORAGE AND RECOVERY (ASR) WELL

An "aquifer storage and recovery (ASR) well" is a well proposed, maintained, or operated by the MCWRA or by the Monterey Regional Water Pollution Control Agency as part of an aquifer storage and recovery project.

1.01.04 CATHODIC PROTECTION WELL

"Cathodic Protection Well" means any artificial excavation in excess of fifty feet in depth constructed by any method for the purpose of installing equipment or facilities for the protection electronically of metallic equipment in contact with the ground, commonly referred to as cathodic protection.

1.01.05 COMMERCIAL OR INDUSTRIAL WELL

"Commercial or industrial well" means any well used to supply water for commercial or industrial purposes, excluding any well that is used in whole or in part to supply water for agricultural irrigation. A commercial or industrial well may also be classified as a domestic well, provided that it shall not also be classified as a standby well.

1.01.06 DOMESTIC WELL

"Domestic well" means a well used for the supply of groundwater for potable uses. A domestic well may also be classified as a standby well for agricultural use.

1.01.07 GENERAL MANAGER

"General Manager" means the MCWRA General Manager or his or her designee.

1.01.08 GENDER, NUMBER, AND TENSE

Words used in any gender include any other gender. The singular number includes the plural, and the plural the singular. Words used in the present tense include the future as well as the present.

1.01.09 MONITORING WELL

"Monitoring Well" means any artificial excavation constructed by any method for the purpose of monitoring fluctuations in groundwater levels, quality of underground waters, or the concentration of contaminants in underground waters.

1.01.10 PERSON

"Person" means any individual, organization, partnership, business, association, corporation or governmental agency.

1.01.11 PROJECT START-UP

"Start-up of the Castroville Seawater Intrusion Project" or "project start-up" means the date on which the General Manager declares that the project known as the Castroville Seawater Intrusion Project is operational after reclaimed water is first delivered or deliverable through the project pipeline to all customers in MCWRA Zone 2B for agricultural irrigation.

1.01.12 PROJECT WATER

"Project water" means water supplied to property in Zone 2B by the Castroville Seawater Intrusion Project for use in the irrigation of crops.

1.01.13 SEAWATER INTRUDED

An aquifer is "seawater intruded" at any particular location of measurement when, at the location of measurement, the chloride ion concentration in the aquifer exceeds 500 mg/liter, and the General Manager determines that the contamination is not a localized contamination.

1.01.14 SECTION HEADINGS

Section headings used in this ordinance shall not be deemed to govern, limit, modify, or in any manner affect the scope, meaning, or intent of the provisions of any section.

1.01.15 STANDBY WELL

"Standby Well" means a well not routinely operated but maintained by the well-owner for purposes of providing a water supply to the well-owner's property under emergency conditions.

1.01.16 SUPPLEMENTAL WELL

"Supplemental Well" means any well maintained or operated by the MCWRA as a part of the Castroville Seawater Intrusion Project.

1.01.17 TEST WELL

"Test Well" means any artificial excavation used for water quality testing, electric logging, water quantity testing and/or

other tests to determine aquifer quality and quantity characteristics.

1.01.18 WELL

"Well" or "water well" means any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into, the underground. "Well" or "water well" does not include wells used for the purpose of dewatering excavation during construction or for the purpose of stabilizing hillsides or earth embankments.

1.01.19 ZONE 2B

"MCWRA Zone 2B" or "Zone 2B" means the zone of benefit identified as Zone 2B and established by the MCWRA Board of Supervisors for the Castroville Irrigation System, now known as the Castroville Seawater Intrusion Project, in MCWRA Ordinance No. 3635, Section 4. The initial boundaries of Zone 2B are described in MCWRA Board of Supervisors Resolution No. 92-363 and may be amended from time to time.

PART II -- BASIC RULES.

1.02.01 COMPLIANCE WITH ORDINANCE

No person shall construct, own, operate, or maintain any water well located within the boundaries of MCWRA Zone 2B, as those boundaries may exist from time to time, except in compliance with this ordinance.

1.02.02 OPERATION OF WELLS IN ZONE 2B

After the expiration of 30 days following the date on which project water becomes available to any particular property within Zone 2B, no person shall operate any well within Zone 2B to provide water to such property for agricultural irrigation except when:

A. the well is a supplemental well operated by the MCWRA, or

B. the well is a standby well operated in conformity with this ordinance.

1.02.03 IMPORTING GROUNDWATER INTO ZONE 2B

After the start-up of the Castroville Seawater Intrusion Project, no well located anywhere in the Salinas Valley Groundwater Basin shall be used to supply water for use in the irrigation of

agricultural lands located within Zone 2B, and no person shall cause, suffer, or permit such use of such water, unless:

A. the well from which such water is obtained is a supplemental well operated by the MCWRA as part of the Castroville Seawater Intrusion Project or the well is operated by the MCWRA as part of another water supply project, or

B. the well from which such water is obtained is a standby well operated in conformity with this ordinance.

1.02.04 EXPORTING GROUNDWATER FROM ZONE 2B

After the start-up of the Castroville Seawater Intrusion Project, no well located anywhere within the external boundaries of Zone 2B (including wells that are located within Zone 2B and wells that are located within island exclusions from Zone 2B that are surrounded by Zone 2B) shall be used to supply water for use outside of the external boundaries of Zone 2B, and no person shall cause, suffer, or permit such use of such water, except that water from wells within the external boundaries of Zone 2B may be used outside the external boundaries of Zone 2B under the following circumstances:

A. The water is used for domestic purposes on parcels that are immediately adjacent to the external boundaries of Zone 2B; or

B. The water is used for domestic purposes on other parcels where the use has been established and water delivery pipelines are in place for such delivery on or before the effective date of this ordinance.

1.02.05 DESTRUCTION OF WELLS

After the start-up of the Castroville Seawater Intrusion Project, no person shall own, operate, or maintain a well in Zone 2B if such well is required to be destroyed, in violation of such destruction requirement, and no person shall interfere with actions taken by the MCWRA to accomplish the destruction of such a well in conformity with this ordinance.

1.02.06 COMPLIANCE WITH CHAPTER 15.08 STANDARDS

Except as otherwise expressly provided herein, all wells located in Zone 2B shall conform with all of the provisions of Chapter 15.08 of the Monterey County Code.

1.02.07 CONSTRUCTION OF WELLS

No person may construct a well in Zone 2B without first obtaining a permit from the General Manager. The General Manager shall not issue a permit for construction of a well unless he or she finds that the construction will be consistent with the purposes of this ordinance and that the proposed well will be of a type specified in section 1.02.08.C, subsections 1-8.

1.02.08 CLASSIFICATION OF WELLS

A. Prior to the start-up of the Castroville Seawater Intrusion Project, the General Manager shall classify all wells located in Zone 2B and notify all well owners of the classification of their well.

B. At any time, the owner of a well may apply to the General Manager for a change in classification, pursuant to this ordinance. Upon receipt of new information or upon evidence of changed conditions, the General Manager may, on his or her own initiative, change the classification of a well, upon giving 30 days' advance notice in writing to the owner thereof. Before making any reclassification, the General Manager must find that the well no longer qualifies for its existing classification, or that the existing classification was made in error. The General Manager may, and at the request of the well owner, shall hold a public hearing to determine the appropriate classification or reclassification of any well.

C. The well classifications are as follows:

1. Supplemental well.
2. Aquifer storage and recovery (ASR) well.
3. Domestic well.
4. Commercial or industrial well.
5. Monitoring well.
6. Test well.
7. Cathodic protection well.
8. Standby well.
9. Abandoned well.
10. Other well.

D. When a well is classified or reclassified as a domestic well or as a commercial or industrial well, the General Manager shall identify by parcel number and/or street address the place where water from such well may be used, and may restrict the use of such water to a portion of the identified parcel.

PART III -- WELL DESTRUCTION

1.03.01 GENERAL RULE GOVERNING DESTRUCTION OF WELLS

Except as otherwise provided herein, all wells which are located in Zone 2B shall be destroyed in conformity with the provisions of this ordinance. The destruction of any well located in MCWRA Zone 2B shall be governed by this ordinance, and Chapter 15.08 of the Monterey County Code shall not be construed to require the destruction of any well located in Zone 2B. Chapter 15.08 of the Monterey County Code shall apply to the destruction of wells in Zone 2B only to the extent that reference is made herein to such Chapter 15.08.

1.03.02 WELLS EXEMPT FROM DESTRUCTION

The following wells which have not been abandoned and which do not fit within the description in Section 1.03.04.B are exempt from destruction, for as long as they are so classified:

A. Supplemental wells.

B. ASR wells.

C. Domestic wells.

D. Commercial or industrial wells.

E. Monitoring wells.

F. Test wells.

G. Cathodic protection wells.

H. Standby wells.

I. A well for which an application is pending for a classification that would exempt the well from destruction, provided that the applicant makes every reasonable effort to have the application determined promptly.

1.03.03 PREVIOUSLY ABANDONED WELLS

A. Each well abandoned prior to the start-up of the Castroville Seawater Intrusion Project shall be destroyed by the owner thereof in accordance with the methods prescribed or referenced in Monterey County Code Chapter 15.08. All costs associated with destruction of such wells shall be borne by the well owner.

B. If any well required to be destroyed by its owner pursuant to this section is not destroyed before the expiration of two years after project start-up, then the General Manager may cause the well to be destroyed, pursuant to the procedures specified below, in section 1.03.06, except that the cost of such destruction shall be charged to the property owner. The MCWRA may file a civil action against the owner to collect such cost, or the amount may be collected in any criminal proceeding against the owner for failure to destroy the well.

1.03.04 CONTAMINATED AND CROSS-CONTAMINATING WELLS

Each well meeting any of the criteria set forth below, other than wells which are required to be destroyed pursuant to Section 1.03.03, shall be destroyed by the MCWRA within two years after start-up of the Castroville Seawater Intrusion Project. All costs for destruction of such wells shall be borne by the MCWRA. The General Manager may extend the time for destruction of such wells when funds are not available or budgeted for such purpose. The criteria for such wells are as follows:

A. Any well that is found by the General Manager to be perforated in both the 180-foot aquifer and any underlying aquifer.

B. Any well that is found by the General Manager to have perforations in two aquifers, improper seals, or other improper construction or condition of the well, such that the well provides an actual or potential conduit for water in a seawater intruded area of an aquifer to enter a non-intruded area of a separate aquifer.

1.03.05 DESTRUCTION OF NON-EXEMPT WELLS

Each well that is not exempt from destruction, and that is not required to be destroyed pursuant to section 1.03.03 or 1.03.04, shall be destroyed pursuant to this section in conformity with a schedule adopted by the MCWRA Board of Directors. Said schedule shall provide that the destruction of such wells shall not begin (a) until the Castroville Seawater Intrusion Project has established a satisfactory record of water deliveries, as determined by the Board of Directors, or (b) until at least one year after the start-up of the Castroville Seawater Intrusion Project, whichever occurs later.

Said schedule may provide for destruction to be completed within three years after project start-up. The Board of Directors may delegate authority to the General Manager to amend the schedule from time to time. Said wells shall be destroyed by the MCWRA in accordance with the methods prescribed or referenced in Monterey County Code Chapter 15.08. The MCWRA shall bear the cost of such destruction.

1.03.06 PROCEDURE FOR DESTRUCTION OF WELLS

At least 90 days before the MCWRA destroys any particular well, the General Manager shall give written notice to the owner of the well that the well will be destroyed. Notice shall be deemed sufficient if sent by registered or certified U.S. mail, return receipt requested, to the name and address shown as that of the owner of the real property on which the well is located, in the latest available official records of the Monterey County Assessor. The notice shall identify the well in question and the property on which it is located and shall advise the owner of the proposed action to be taken, the proposed timing of the action, and his or her right of appeal as provided herein. The notice shall further state that if the property on which the well is located is leased, the owner must provide a copy of the notice to the tenant, and tenant on the property will also have a right of appeal.

PART IV -- STANDBY WELL CLASSIFICATION.

1.04.01 CRITERIA FOR CLASSIFICATION AS STANDBY WELL

The General Manager shall classify a well as a standby well, whether on the initial classification or on a change in classification, if he or she makes both of the following findings:

A. The well does not meet any of the criteria for destruction described in Section 1.03.04 of this ordinance.

B. The owner of the well will comply with all of the requirements of this ordinance applicable to standby wells.

1.04.03 INSPECTIONS

The MCWRA may at any time inspect any standby well and any well for which the owner submits an application for classification as a standby well, to ensure that the well and its appurtenant facilities do or will comply with this ordinance. Access to the well site shall be maintained by the well owner, and the MCWRA shall have the right of access to inspect the well at all times.

PART V -- STANDBY WELL REGULATIONS.

1.05.01 GENERAL RULE

A well that has been classified as a standby well shall immediately thereupon be subject to the regulations set forth below.

1.05.02 FLOWMETER

A flowmeter shall be installed on all of the standby wells at the expense of the well owner and shall be fully maintained by the owner in accordance with MCWRA requirements.

1.05.03 ACCESS

Access to the standby well site shall be maintained by the well owner, and the MCWRA shall have the right of access to inspect the well at all times.

1.05.04 USE OF STANDBY WELLS DURING FIRST TWO YEARS AFTER PROJECT START-UP

During the first 24 months after project start-up, standby wells may be used intermittently to supply irrigation water to lands within Zone 2B, without regard to whether an emergency exists. The purpose of this section is to enable growers and the Agency to make the transition from reliance on well water to reliance on project water with a minimum of interruption in the grower's water supply.

1.05.05 AUTHORIZED PURPOSES FOR OPERATION OF STANDBY WELLS

Standby wells may be operated only for the following purposes:

A. To perform routine maintenance on the standby well;

B. To provide an irrigation water supply for property in Zone 2B in an emergency as described in section 1.05.06;

C. To provide potable water when the standby well is used as a domestic well.

D. To provide a water supply for the irrigation of any crop or crops for which irrigation with water supplied by the project is prohibited by any law, rule or regulation established by any entity or agency with authority over the irrigation of such crops.

1.05.06 EMERGENCY JUSTIFYING OPERATION OF STANDBY WELL

An emergency exists and justifies use of standby wells when all of the following circumstances occur:

A. The grower has given advance notice of his or her need for project water and a schedule for delivery of water to the grower's property has been set, in conformity with procedures established by the MCWRA; and

B. The MCWRA fails to deliver project water on schedule; and

C. The grower then makes contact with the MCWRA by telephone and the MCWRA confirms that the water will not be delivered on the day scheduled for delivery.

1.05.07 COMPLIANCE WITH HEALTH DEPARTMENT REGULATIONS

No standby well shall be used as a domestic well unless such use is in compliance with applicable health regulations, and unless the well is maintained in compliance with such health regulations.

1.05.08 OWNERSHIP

Standby wells shall remain under private ownership, and are not the property of the MCWRA.

1.05.09 COSTS OF MAINTENANCE AND OPERATION

All costs associated with maintenance and operation of standby wells shall be borne by the owner or operator of said well, or by such other person as may agree to assume such costs.

PART VI -- VARIANCES.

1.06.01 APPLICATION

Any person may, at any time, apply in writing for a variance from the strict application of this ordinance. The application for the variance shall be filed with the MCWRA. The General Manager may dispense with the requirement of a written application upon finding that an emergency condition requires immediate action on the variance request.

1.06.02 PLAN FOR COMPLIANCE

The applicant shall, as part of the variance application, submit a plan describing how and when the applicant will comply with this ordinance without the need for a variance. Compliance with

this plan, as presented by the applicant or as modified by the General Manager, shall be a condition of granting the variance. The General Manager may waive the requirement for such a plan if he or she finds that compliance would not be feasible.

1.06.03 FINDINGS FOR GRANT OF VARIANCE

The General Manager may grant a variance from the terms of this ordinance upon making the finding that the strict application of the ordinance would create an undue hardship, or that an emergency condition requires that the variance be granted.

1.06.04 CONDITIONS ON GRANT OF VARIANCE

In granting a variance, the General Manager may impose any conditions in order to ensure that the variance is consistent with the overall goals of this ordinance. Variances may be granted for a limited period of time. The variance and all time limits and other conditions attached to the variance shall be set forth in writing, and a copy of the written variance shall be provided to the applicant.

1.06.06 COMPLIANCE WITH TERMS OF VARIANCE

No person shall operate or maintain a groundwater well for which a variance has been granted hereunder, or use water therefrom, in violation of any of the terms or conditions of the variance.

PART VII -- APPEALS

1.07.01 PUBLIC HEARING RIGHTS OF APPLICANTS AND INTERESTED PARTIES

Applicants may attend all public meetings and public hearings held by the General Manager on their applications and may submit such written and documentary evidence as may be relevant to the consideration of an application, whether or not a public meeting or hearing is held. Any interested person, other than an applicant, may also attend the public meetings or public hearings at which the General Manager considers an appealable decision and may submit such written and documentary evidence as may be relevant to the consideration of an application, whether or not a public meeting or hearing is held, provided that such party shall simultaneously submit copies of all such information to the applicant and shall show proof of such submittal to the General Manager along with the written information provided to the General Manager. Any such interested person may then, in writing, request a copy of the General Manager's written decision.

1.07.02 RIGHT OF APPEAL

Any applicant or interested party may appeal any decision by which the General Manager (a) orders the destruction of any privately owned well under this ordinance, (b) grants or denies a variance, permit, classification, or reclassification under this ordinance; (c) gives or withholds any consent when such consent is established by this ordinance as a prerequisite to further action; or (d) imposes conditions on any such variance, permit, classification, reclassification, or consent. No person may file an appeal of a decision made after a public meeting or hearing on the issue unless that person attended the meeting or hearing upon which the appealable decision was based and expressed his or her concerns orally or in writing at that meeting or hearing, or unless such person filed papers with the general manager setting forth such person's concerns prior to such meeting or hearing.

1.07.03 PROCEDURE ON APPEAL

A. Any appeal authorized by this ordinance shall be filed and processed as provided in the section of Ordinance No. 3539, as now in effect or as subsequently amended or superseded, pertaining to appeals, and as further supplemented in this ordinance. Any appeal must be in writing and must state the grounds upon which the appeal is made.

B. Any appeal must be filed with the general manager no later than ten days after the date the general manager issues an appealable decision, except that an appeal from a decision ordering the destruction of a privately owned well must be made no later than 60 days after the date the general manager issues the decision. A decision is issued when the decision is set forth in writing and personally delivered to the applicant, or on the fifth day after mailing said decision to the applicant, to the address provided by the applicant for such mailing. As to an interested person (other than an applicant) who has requested a copy of the written decision, the General Manager's written decision is issued when it is personally delivered to such person or on the fifth day after mailing said decision to such person, to the address provided by such person for such mailing.

C. The appeal of any decision made by the General Manager following a public meeting or public hearing shall be limited to the issues raised at the public meeting or hearing and thereafter specified in the written appeal. The appeal of any decision made by the General Manager without a public meeting or public hearing may consider any issue that might have been raised at a public hearing or meeting, provided that such issue must be specified in the written appeal.

D. At the hearing on appeal, the hearing board will consider de novo the issues that are before the board on the appeal.

PART VIII -- PENALTIES.

1.08.01 INFRACTION

Any person who violates any provision of this ordinance is guilty of an infraction.

1.08.02 PUBLIC NUISANCE

Any violation of this ordinance is hereby declared to be a public nuisance.

1.08.03 CONTINUING VIOLATIONS

Any violation which occurs or continues to occur from one day to the next shall be deemed a separate violation for each day during which such violation occurs or continues to occur.

1.08.04 FINE

A. Any person who violates any provision of this ordinance which prohibits or restricts the pumping of groundwater shall be assessed a fine of $100 for each acre-foot (or portion thereof) of water pumped in violation of this ordinance.

B. Any person who violates any other provision of this ordinance shall be assessed a fine of $100 for each violation.

1.08.05 LIABILITY FOR COSTS OF ENFORCEMENT

Any person who violates this ordinance shall be liable for the cost of enforcement, which may include but need not be limited to the following:

A. Cost of investigation

B. Court costs

C. Attorney fees

D. Cost of monitoring compliance

PART IX -- CONCLUDING PROVISIONS

1.09.01 SEVERABILITY

If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance is for any reason held to be invalid or unconstitutional by a decision of a court of competent jurisdiction, it shall not affect the validity of the remaining portions of this ordinance, including any other section, subsection, sentence, clause, or phrase therein.

SECTION 2. EFFECTIVE DATE. This ordinance shall take effect 30 days after its final adoption by the Board of Supervisors.

PASSED AND ADOPTED this 8th day of November, 1994, by the following vote:

AYES: Supervisors Salinas, Shipnuck, Perkins, Johnsen & Karas.
NOES: None.
ABSENT: None.

BARBARA SHIPNUCK, Chairwoman
Board of Supervisors

ATTEST:

ERNEST K. MORISHITA
Clerk of the Board

By _____
Deputy Clerk