
MONTEREY COUNTY WATER RESOURCES AGENCY
1947

TODAY'S ACTION

Consider receiving a report *"Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update"*; and provide direction to staff with respect to the recommendations, and/or other guidance in order to implement measures intended to slow or halt the further expansion of seawater intrusion.

Financial Impact

- There is no financial impact in receiving this report. The Agency's proposed budget for FY 2020-21 has no identified funding to implement these recommendations. Should the Agency enter into a funding agreement with the SWRCB to receive Proposition 1 grant funding for coastal well destruction, a report recommendation, there is a potential financial impact of approximately $2.66 million.

BOD/BOS Action

- July 11, 2017 Joint Boards received the 2015 SWI and GWL contours identifying a new pathway for SWI. Joint Boards request staff provide recommendations for actions.

- October 16, 2017 the Agency released to the BOD *"Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin"*

BOD/BOS Action (cont.)

- November 14, 2017 BOS receive the 2017 Recommendations report from Agency; direct Agency and EHB staff, in coordination with the SVBGSA, to:
  - convene a 90-Day Working Group to develop recommended actions for implementation of an interim urgency ordinance to address the issues presented in the report.

BOD/BOS Action (cont.)

- November 20, 2017, Agency BOD receive an update on the BOS's Nov. 14th direction.

- April 24, 2018 Joint Boards receive the 90-Day Working Group's prioritized list of recommended actions and accompanying timeline for implementation of an interim urgency ordinance.

BOD/BOS Action (cont.)

- May 22, 2018 the Monterey County BOS approve County Ordinance 5302; based on the recommendations of the 90-Day Working Group. The interim urgency measure would expire on July 5, 2018 unless extended.

- June 26, 2018 the Monterey County BOS extend the provisions of Ord. 5302, under Ord. 5303, set to expire on May 21, 2020.

BOD/BOS Action (cont.)

- May 18, 2020 the Monterey County Water Resources Agency's BOD receive report: *"Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update"*
  - Provide the following recommendations to BOS:
    - Allow additional time for stakeholder involvement prior to any BOS action
    - Implement a 90 day working group
    - Support well destruction grant funding
    - Earmark funding for Deep Aquifers Investigation as part of any BOS action
    - Place a moratorium on accepting any new "deep aquifers" well applications during 90 day working group process

Discussion

- In the preparation of this updated report staff has performed an in-depth investigation of new data and information that:
  - Revisits the previous recommendations from the 2017 report.
  - Provides a discussion of the current knowledge and related background information surrounding seawater intrusion pathways.
  - Evaluates the implementation of County interim urgency Ordinance 5302.
  - Serves as a body of evidence to catalogue the findings used to support the recommendations.

Discussion (cont.)

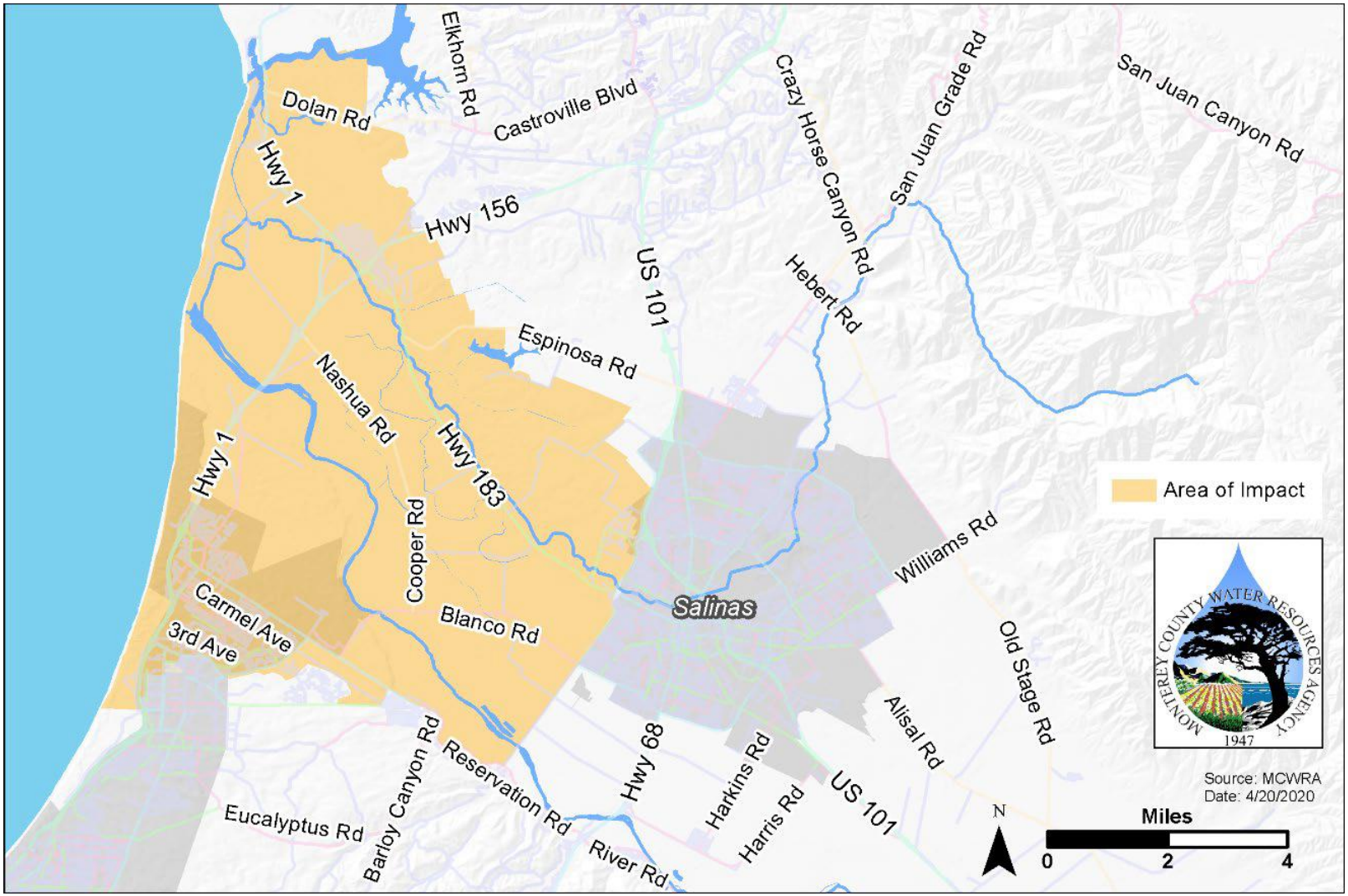
- *"Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update"* propose nine new or revised recommendations:

1. An immediate prohibition of groundwater extractions from new wells in the 180-Foot and 400-Foot Aquifers within an identified "Area of Impact", with exemptions*.

Discussion (cont.)

- **Exemptions: Where noted throughout this presentation, exemptions include the following categories:*
  - *Domestic Wells*
  - *Wells supplying public water systems*
  - *Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,*
  - *Monitoring wells owned and operated by the Agency or other water management agencies.*

Discussion (cont.)

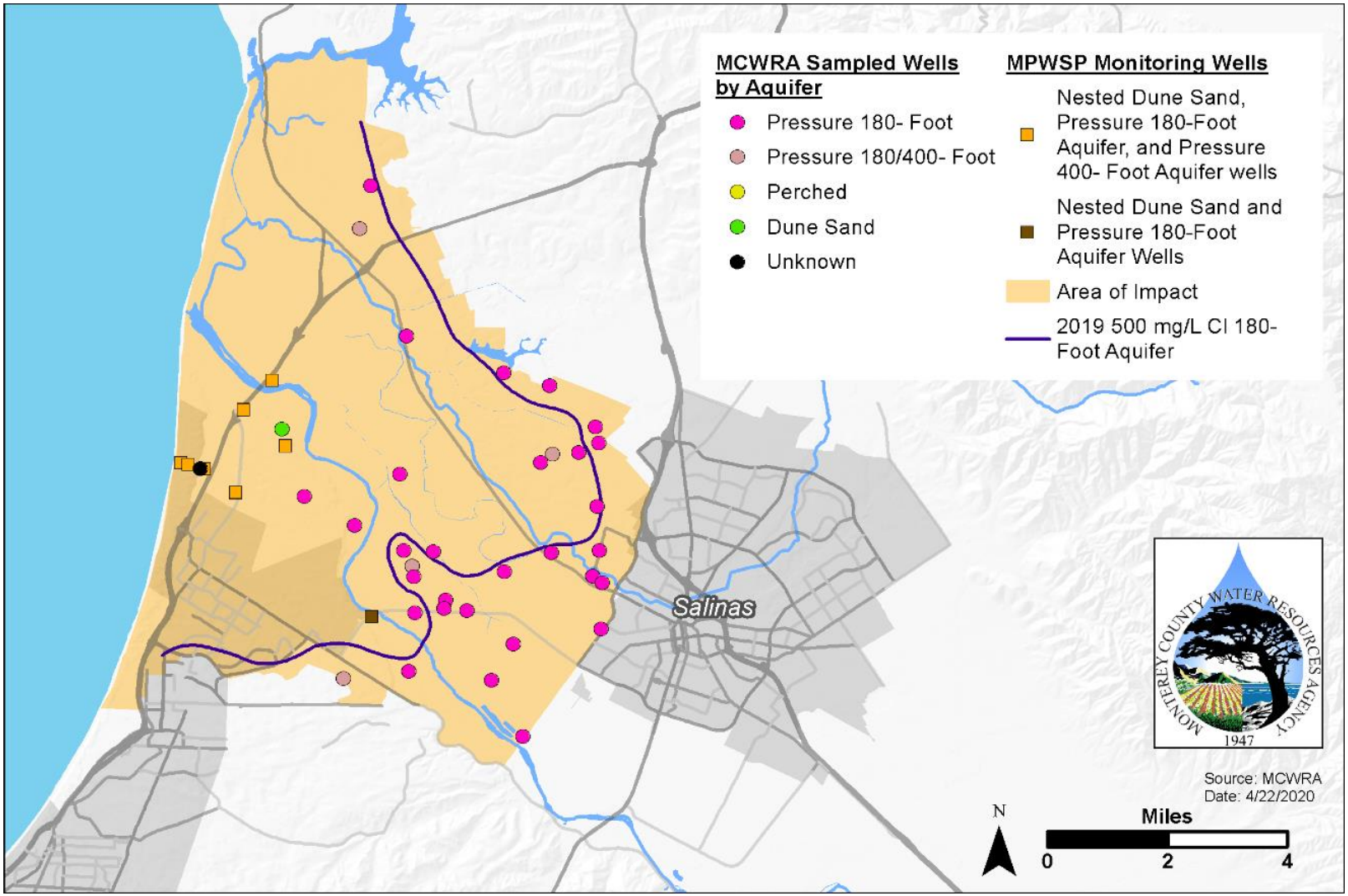


Discussion (cont.)

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

3. After installation or acquisition of additional monitoring locations, implement new methodologies for groundwater level and groundwater quality characterization such as:
   - Geophysical tools for aquifer analysis and mapping
   - Chloride transport modeling in SWI area

Discussion (cont.)

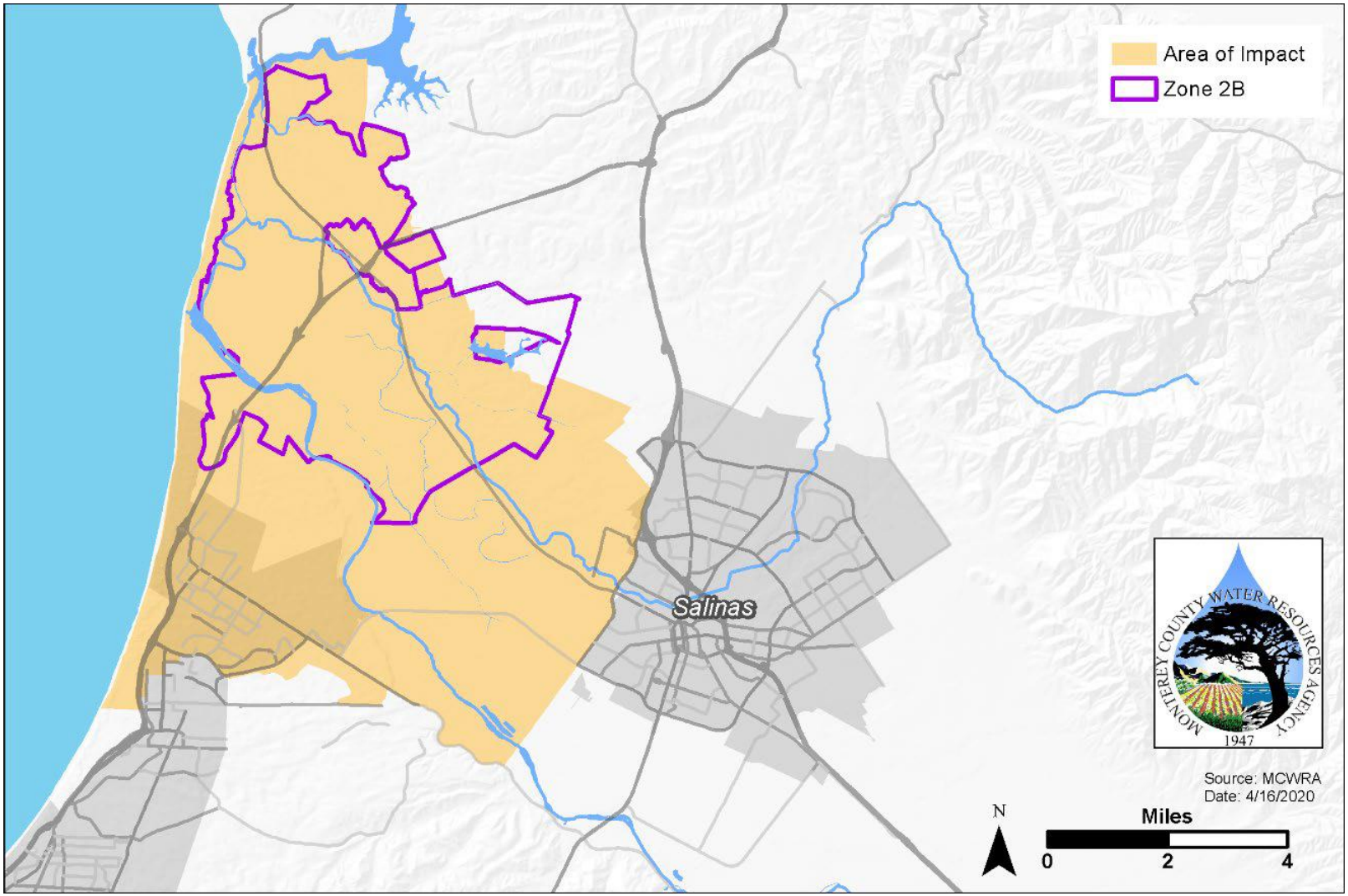


Discussion (cont.)

4. Enhancement and expansion of the Castroville Seawater Intrusion Project (CSIP) service area. This expansion should include, at a minimum, lands served by wells currently extracting groundwater from the defined “Area of Impact”.

5. Following expansion of the CSIP service area, termination of all pumping from existing wells within the defined “Area of Impact”, with exemptions*.

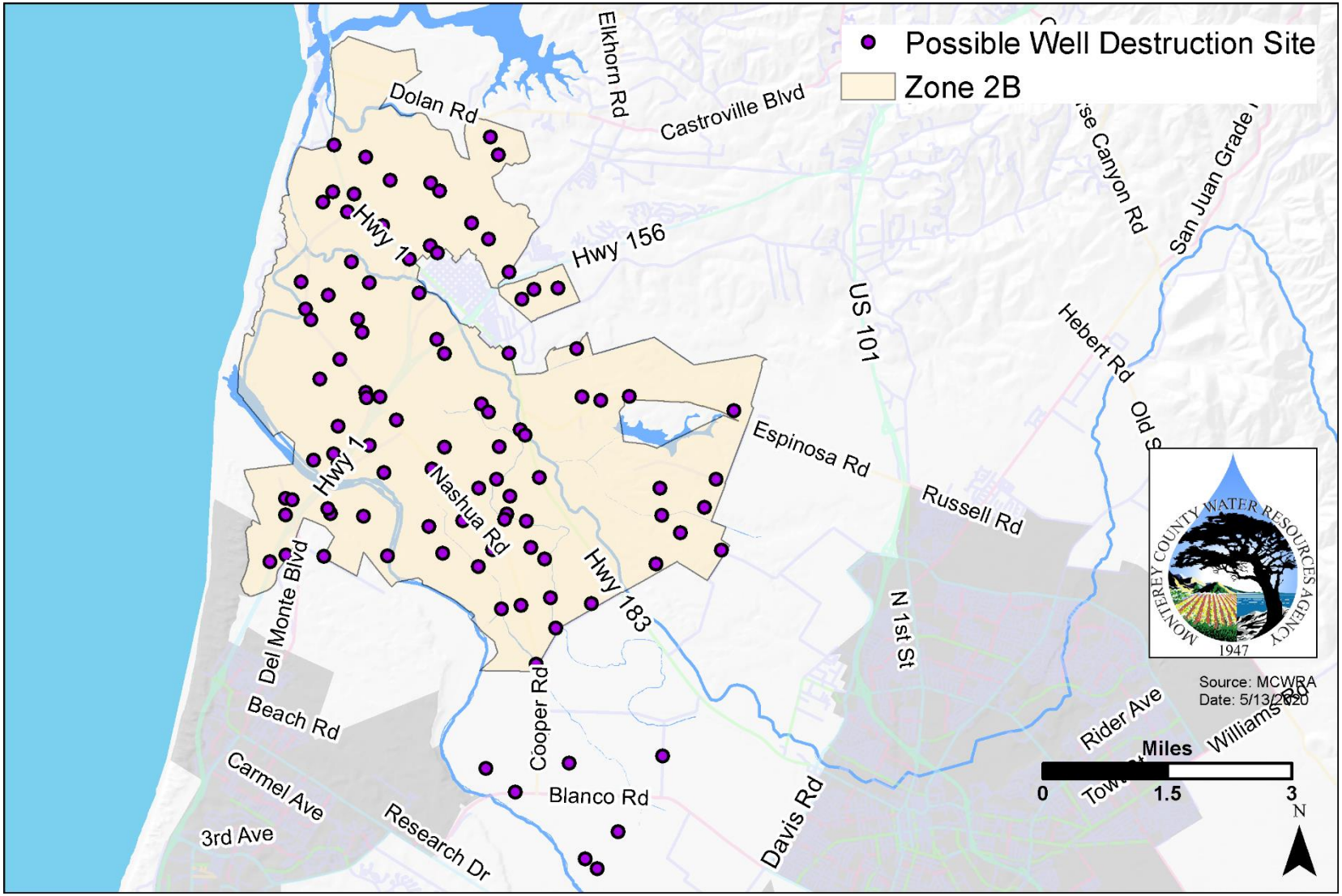
Discussion (cont.)



Discussion (cont.)

6. Initiate and diligently proceed with destruction of wells in Agency Zone 2B, in accordance with Agency Ordinance No. 3790, supported through a SWRCB Proposition 1 Grant.

Discussion (cont.)



Discussion (cont.)

7. An immediate prohibition of groundwater extractions from new wells within the entirety of the Deep Aquifers of the 180/400 Foot and Monterey Subbasins of the Salinas Valley Groundwater Basin, with exemptions*:
   - Until such a 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.

Discussion (cont.)

7. Recommendation 7 (cont.)
   - This prohibition should include replacement wells as defined in Ord. 5302.
   - Also prohibited are 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 within or into the Deep Aquifers.

Discussion (cont.)

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

Discussion (cont.)

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.

Discussion (cont.)

- **Exemptions: Where noted throughout this presentation, exemptions include the following categories:*
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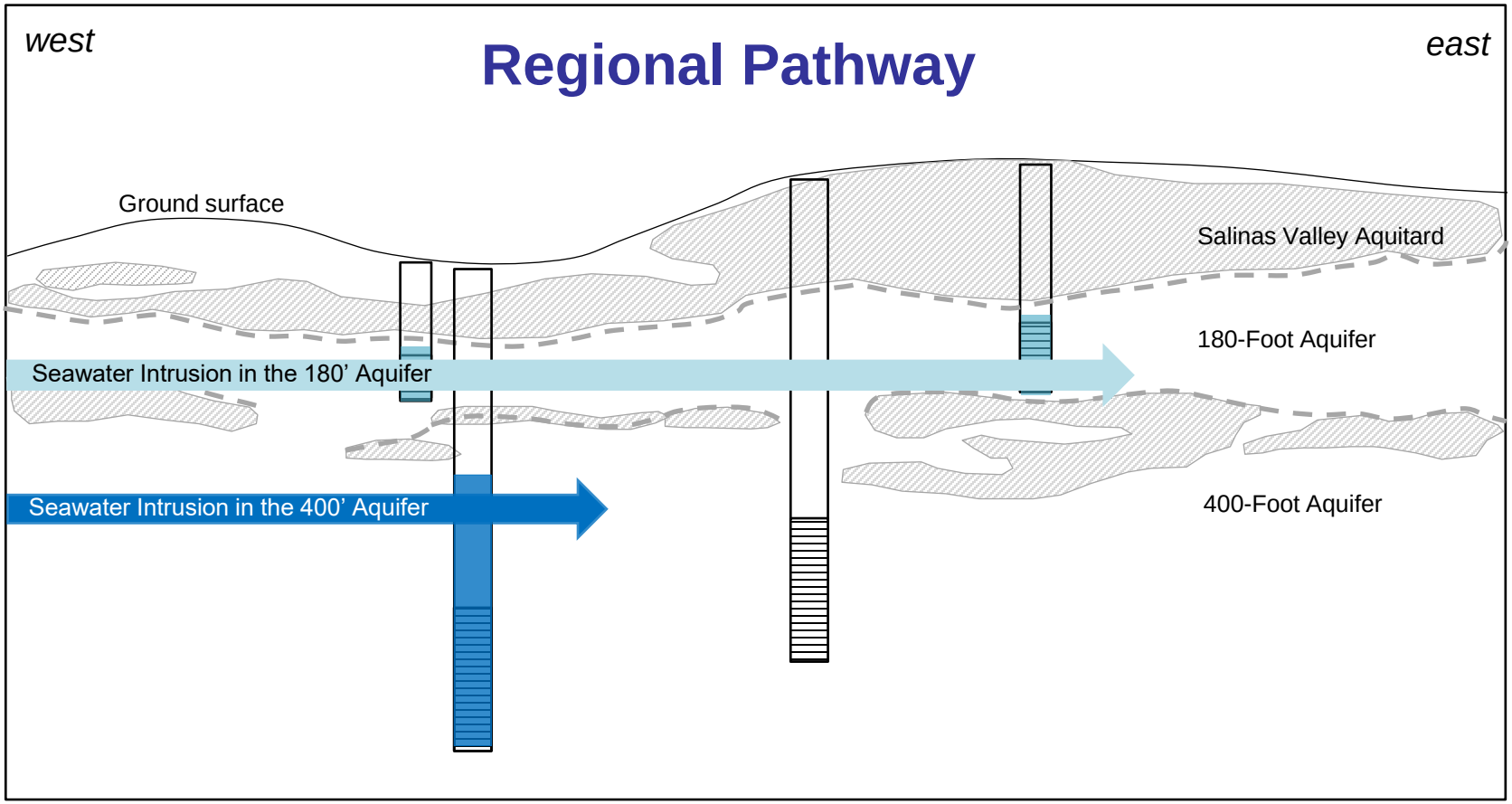
  - *Wells supplying public water systems*
  - *Wells operating under the auspices of the Castroville Seawater Intrusion Project; and,*
  - *Monitoring wells owned and operated by the Agency or other water management agencies.*

Discussion (cont.)

- Seawater Intrusion Pathways
  - 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.
  - 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.

Seawater Intrusion – Pathways

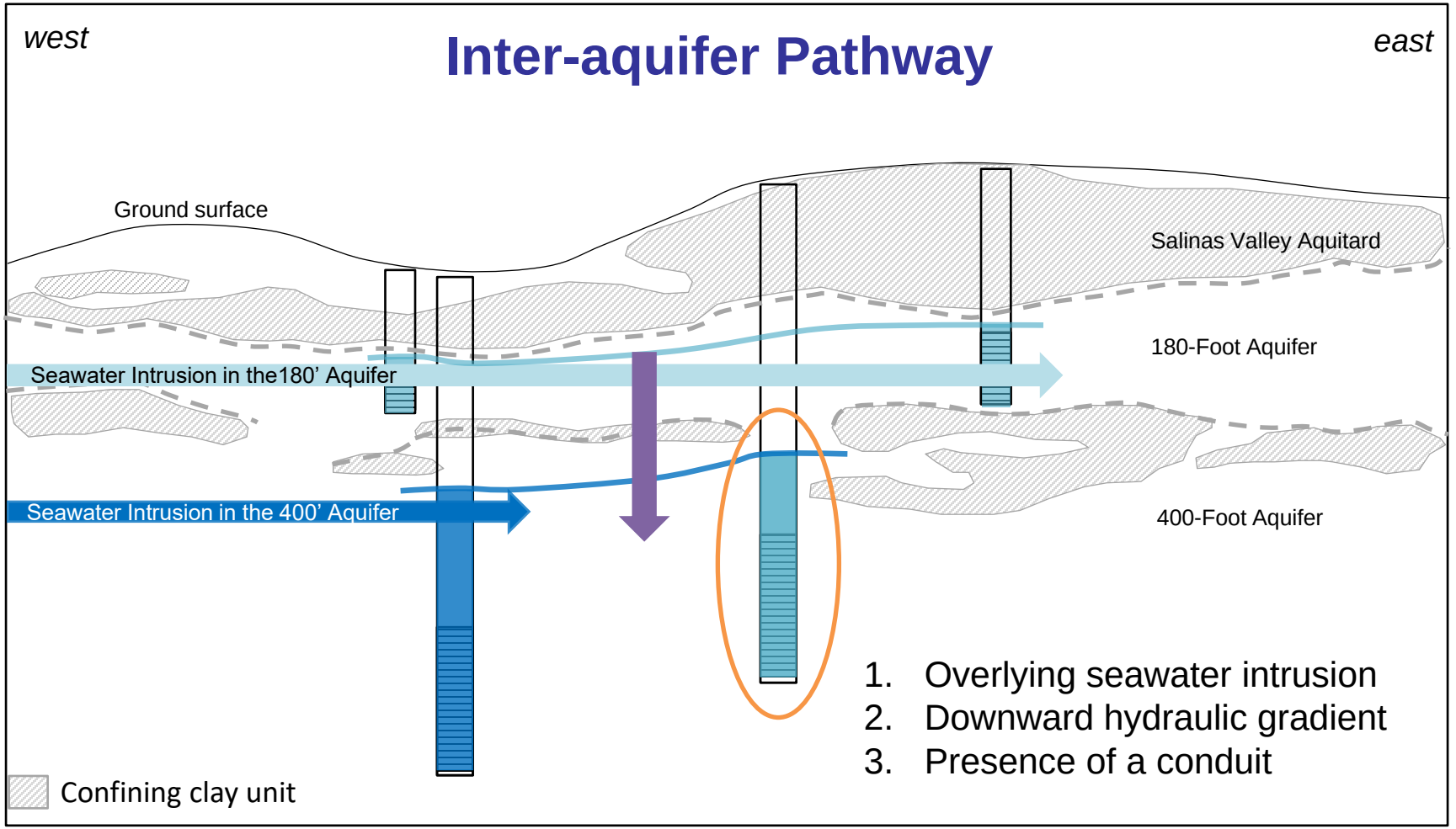


Confining clay unit

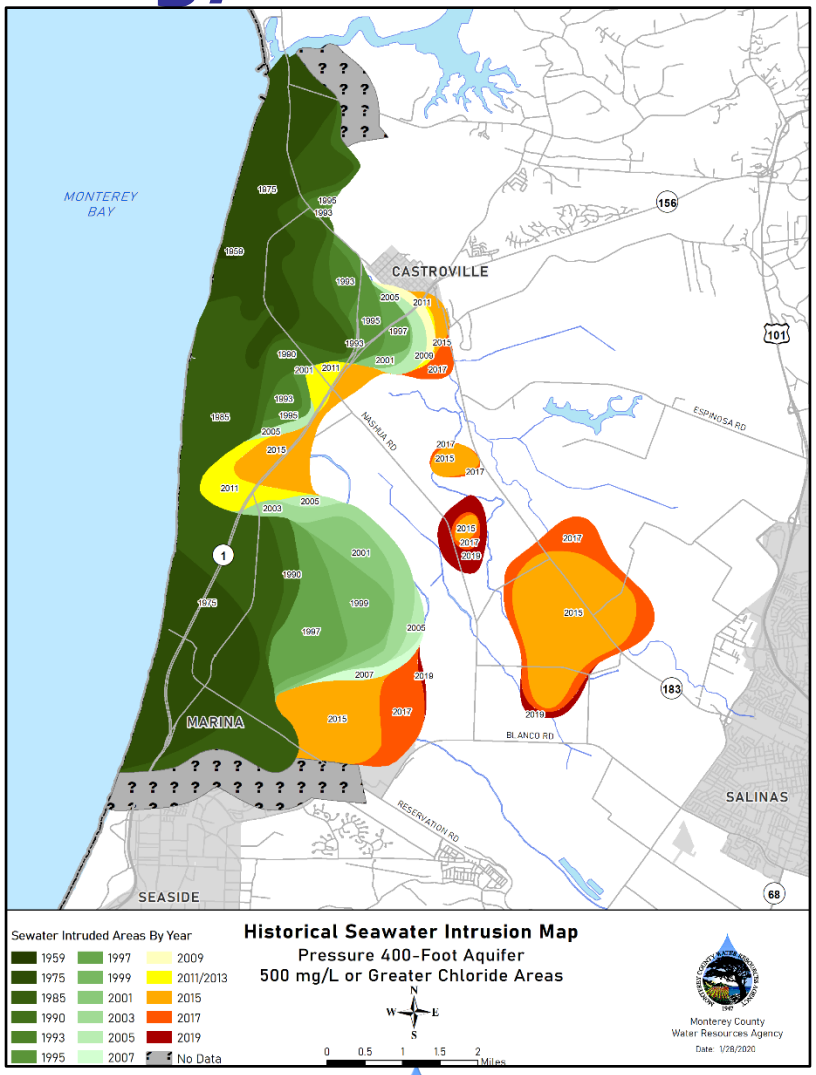
Water Level in 180-Foot Aquifer

Water Level in 400-Foot Aquifer

Seawater Intrusion – Pathways



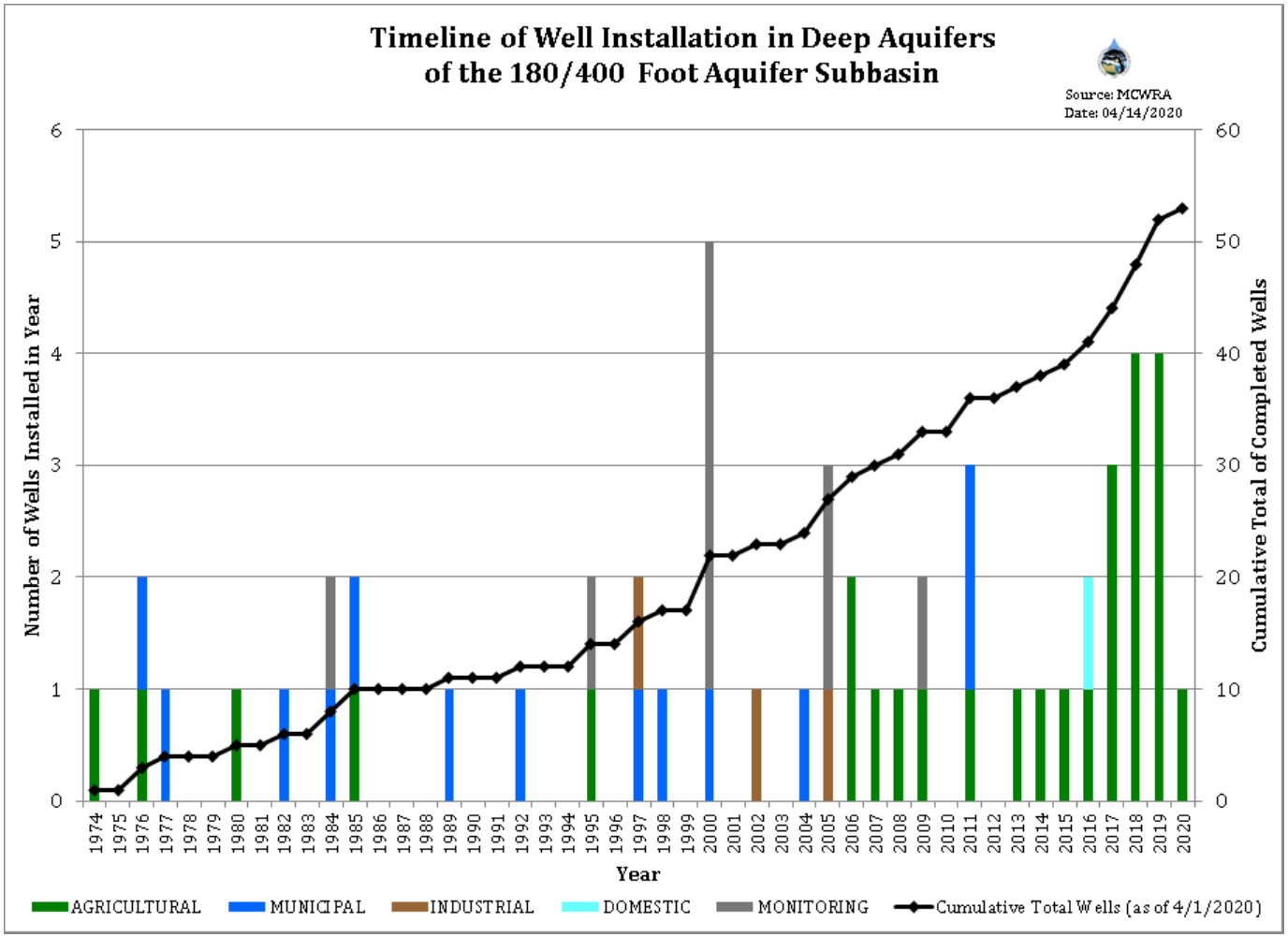
2019 Pressure 400-Foot Aquifer 500 mg/L Chloride Areas



Discussion (cont.)

- Wells in the Deep Aquifers
  - As of May 2020, a total of 54 wells have been installed in the Deep Aquifers (52 remain)
    - 45 production (two were destroyed in 2004)
    - 9 monitoring
  - Under exemptions in Ord. 5302, 11 applications have been submitted for replacement ag. production wells in the Deep Aquifers. Eight have been constructed and the remaining three have been issued construction permits…

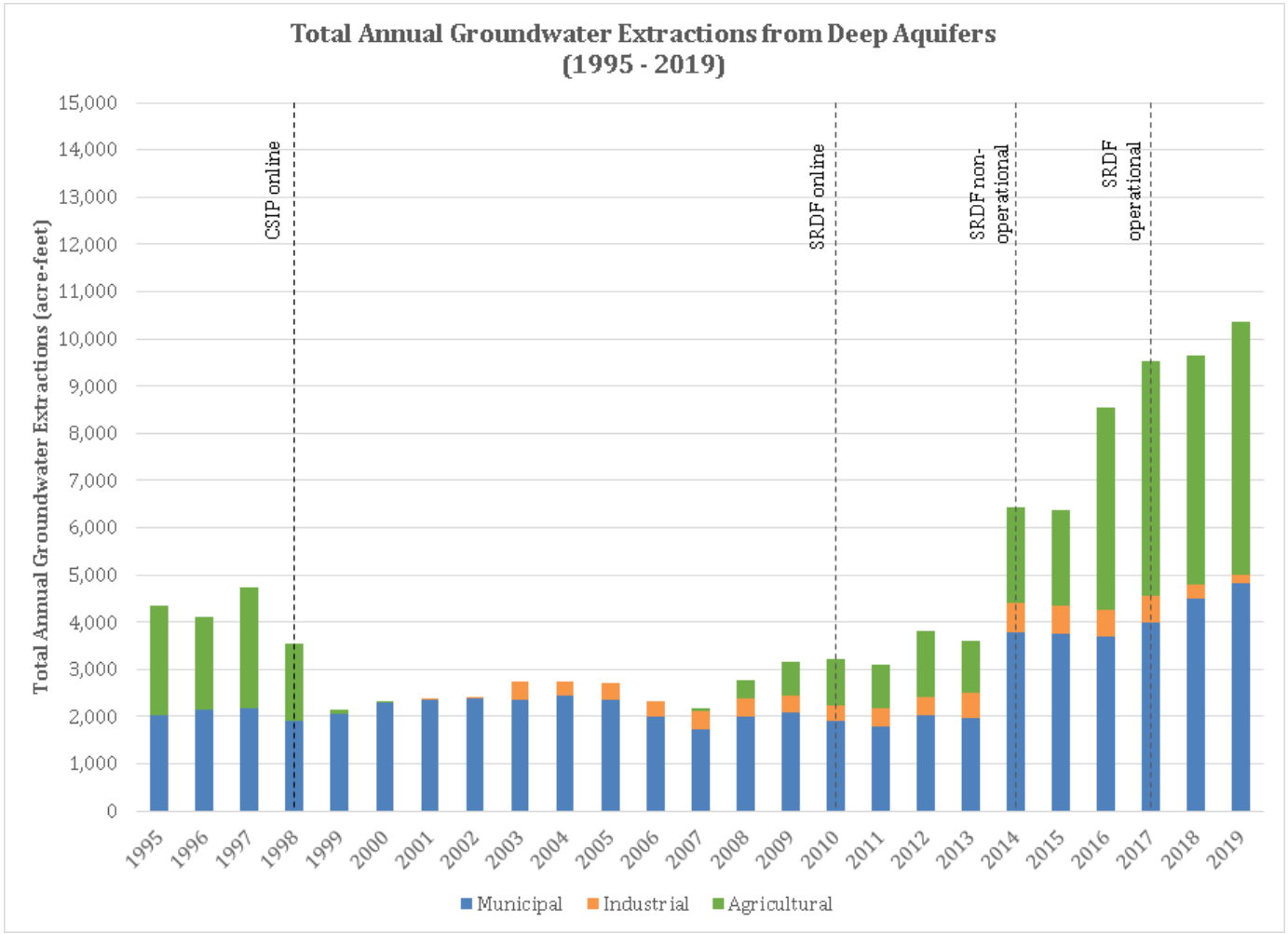
Discussion (cont.)



Discussion (cont.)

- Wells in the Deep Aquifers (cont.)
  - Groundwater extraction (pumping) in the Deep Aquifers is increasing…

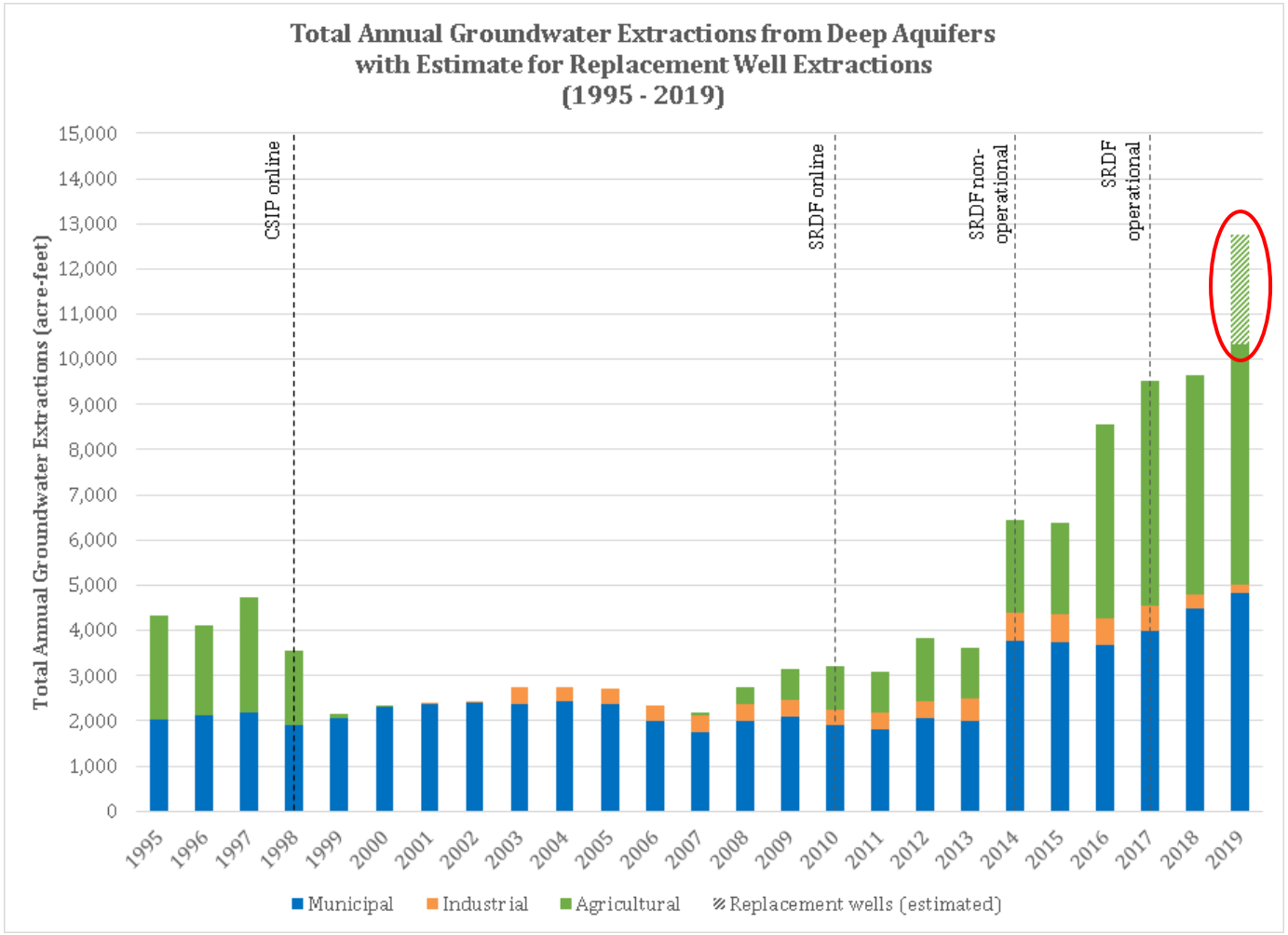
Discussion (cont.)



Discussion (cont.)

- Wells in the Deep Aquifers (cont.)
  - Groundwater extraction (pumping) in the Deep Aquifers is forecasted to continue to increase
    - At a minimum, as estimated from recently constructed, or permitted for construction replacement wells, by approximately 23% (2,400 afy)

Discussion (cont.)



Discussion (cont.)

- To better understand the Deep Aquifers
  - March 9, 2018 the Agency convened a group of 15 groundwater professionals with expertise in geology, hydrogeology, or related fields and with specific experience studying the Deep Aquifers
    - Provided a scientifically-oriented forum
    - Outcome used to develop SOW and costs of a comprehensive investigation of the Deep Aquifers
      - Identify the geographic extent and hydrologic properties
      - Determine quantity and quality of available water
      - Provide recommendations for sustainable management
      - Estimated cost of $1.2 - $1.5 million

Discussion (cont.)

- SWI has not yet 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 currently working with the well owner on destruction of this well

Questions

TODAY'S ACTION

Receive a report *"Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update"*; and provide direction to staff with respect to the recommendations, and/or other guidance in order to implement measures intended to slow or halt the further expansion of seawater intrusion.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