

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 8-9, 2018

Prepared on January 8, 2018

ITEM NUMBER: 19

SUBJECT: Sustainable Water Resource Management: Discussion Regarding the Scope of a Potential Basin Plan Amendment

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THIS ACTION: Informational Discussion

SUMMARY

At the December 2017 Central Coast Water Board meeting, the Board approved a list of priority concepts for potential Basin Plan Amendments. The Water Board determined that the highest priority for a potential Basin Plan amendment is *Sustainable Water Resource Management*¹. The discussion today is an initial conversation with the Water Board regarding the possible scope of the project. We emphasize that this is an initial discussion only and is not a Board action item. Staff will schedule additional scoping discussions with the Water Board and stakeholders during 2018, where the Water Board will determine the scope in greater detail and provide further direction.

Also, as the Executive Officer noted in December, the Central Coast Water Board office is currently undergoing significant changes in terms of new staff and restructuring. By mid-2018, we should be better able to determine the staff resources available and an estimated timeline to develop this Basin Plan amendment for Board consideration.

DISCUSSION

The Basin Plan

The Central Coast Water Board's Basin Plan is a critically important and powerful legal document that forms the foundation of the Water Board's authority. As required by law, the purpose of the Basin Plan is to describe and legally establish the following:

1. Water bodies in the Central Coast Region.
2. Beneficial uses associated with those water bodies.

¹ Formerly referred to as *Watershed and Integrated Water Resource Protection*. The name change reflects the Water Board's stated interest over the past few years.

3. Water quality objectives necessary to protect beneficial uses.
4. Water Board programs and activities that the Board will implement to protect and restore water quality objectives and beneficial uses.
5. Special requirements or prohibitions that are directly enforceable.

The Water Board and the Executive Officer implement the Basin Plan via requirements in orders and permits. The Basin Plan also includes requirements and prohibitions that the Water Board and Executive Officer can enforce directly, regardless of whether an order or a permit has been issued (such as prohibitions against certain discharges). The Basin Plan must be current in terms of the factors affecting water resources in order for the Board's orders, permits, and actions to be effective.

Stressors on Water Resources

The three main stressors on water resources are climate change, demand (as per population), and pollution. We briefly discuss each stressor below.

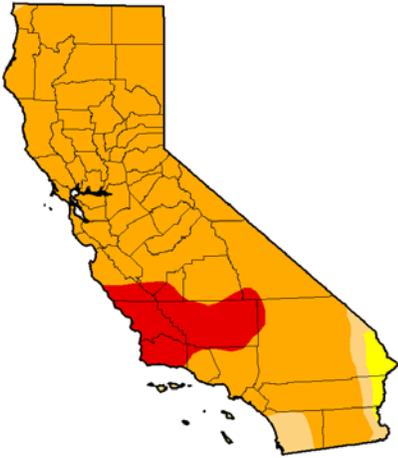
Climate Change: Climate change affects all aspects of water management and underscores the critical need for agencies to develop and implement sustainable water management policy. Many communities on the Central Coast, including Santa Barbara, Los Osos, Paso Robles, Morro Bay, Cambria, and others have experienced increasingly severe conditions due to drought cycles, surface water depletions, and lowering groundwater tables.

The recent multi-year, severe drought underscores the need to manage water resources sustainably. The recent drought began in late 2011/early 2012, and is still ongoing in the southern portions of the region. The images below show how the worst drought conditions started in the Central Coast area, spread to other areas of the state, and subsequently lingered here the longest. *Extreme drought* conditions first appeared in California in the Central Coast Region in August 2013, as shown in the image below (source: United State Drought Monitor). The *extreme drought* conditions then spread to other parts of the state. Likewise, *exceptional drought* conditions (the worst condition) first appeared in California in the Central Coast Region in January 2014 and subsequently spread to other parts of the state. As drought conditions receded in other parts of the state, the Central Coast remained in *extreme* and *exceptional* drought.

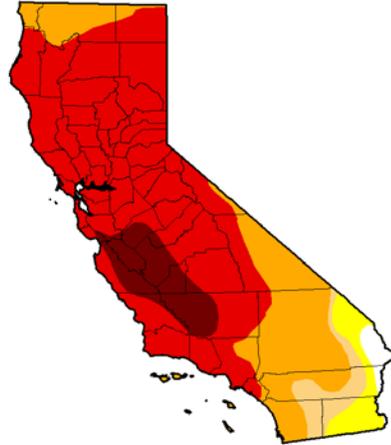
Drought Map Legend

- None: No Drought
-  D0: Abnormally Dry
-  D1: Moderate Drought
-  D2: Severe Drought
-  D3: Extreme Drought
-  D4: Exceptional Drought

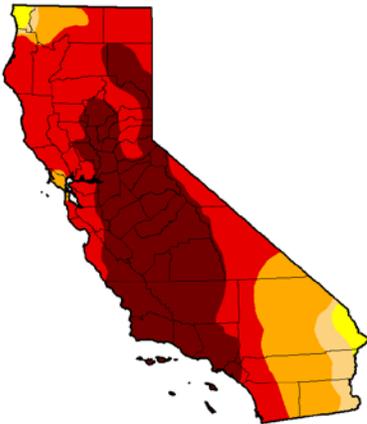
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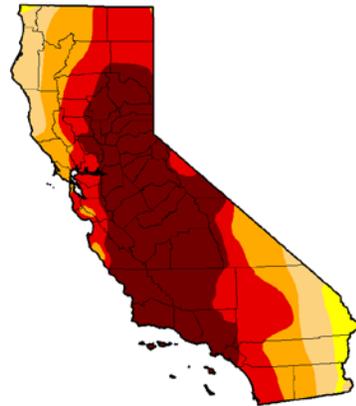
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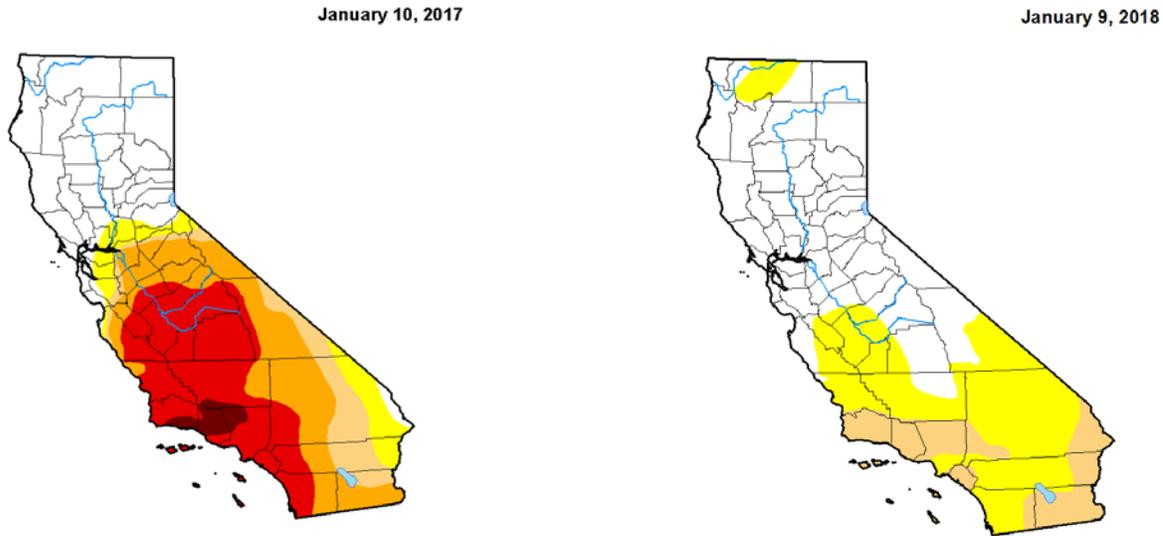


January 20, 2015



January 19, 2016





Today, much of the Central Coast and Southern California remain in *abnormally dry to moderate drought* conditions. Scientists and most resource planning agencies expect climate change to cause increasingly frequent and severe weather, including droughts. At the most recent Water Quality Coordinating Committee meeting in October 2017, the climate change expert panel indicated that California should anticipate extended drought cycles like portions of the Central Coast continue to experience, combined with extreme precipitation events (high intensity rainfall).

Coupling with drought, large-scale fire events will also continue to be part of these changing climatic conditions, and these fires have immense water quality impacts, as we have seen. Fifteen of the twenty [largest California wildfires](#) since 1932 have occurred in the last twenty years, and seven of those twenty fires are wholly or partially within the Central Coast Region, including the largest.

The State Water Board recognized the need to take comprehensive action regarding climate change in their Resolution 2017-0012, *Comprehensive Response to Climate Change*, adopted in March 2017, which directs the Regional Boards to consider climate change in all planning and permitting activities. The State Water Board Resolution is available here: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/rs2017_0012.pdf

Population Growth: Another stressor on California's water resources is population and consequent demand. The California Department of Finance predicts California's population will increase from 39 million in 2016 to 51 million in 2060. The Central Coast population is predicted to increase from 1.5 million in 2016 to 1.8 million in 2060, or twenty percent growth. Water supply will likely to be a major limiting factor on the Central Coast. The statewide population affects the Central Coast water supply because the State Water Project delivers water to several Central Coast communities. The greater the demand for water statewide, the more stress on the statewide system and its ability to serve to the Central Coast. Combined with prolonged drought conditions, water deliveries from the State Water Project will be potentially smaller or less dependable in the future.

Pollution: Another water resource stressor is pollution. As sole source drinking water supplies are degraded, the cost to treat water or find new sources (new wells) skyrockets, which affects all aspects of the economy and places the greatest proportional cost burden on those with lower incomes, as in disadvantaged communities. In some areas of California, groundwater is so contaminated the local communities must import groundwater from miles away. Eventually, these more remote groundwater sources may also become too contaminated to treat if waste discharges are not controlled.

Drought and decreasing groundwater levels exacerbate water quality degradation in real time. In many areas of the Central Coast Region, contaminant concentrations in relatively shallow supply wells fluctuate above and below drinking water standards in sync with rainfall, causing these wells to be 'unreliable' drinking water systems per County Health and State Water Board Division of Drinking Water requirements.

The major sources of large-scale water quality degradation on the Central Coast are industrial manufacturing (perchlorate), irrigated agriculture (salts and nutrients), and saltwater intrusion along the coast due to over pumping. Statewide, naturally occurring compounds such as arsenic pose significant impacts to drinking water supplies in some areas.

Sustainable Water Resource Management

Sustainable Water Resource Management includes basic proactive principles, including:

1. Recycling wastewater (elimination of the concept of 'wastewater').
2. Defining groundwater recharges areas, including riparian and wetland areas, and related watershed functions.
3. Protecting groundwater recharge areas and related watershed functions from pollution.
4. Preventing overlay of groundwater recharge areas with impervious surfaces.
5. Capturing storm water for use or groundwater recharge, including creating enhanced and/or engineered groundwater infiltration features.
6. Compliance with the Sustainable Groundwater Management Act.
7. Managed aquifer recharge, storage, and use.
8. Pollution control.

All the above principles could be included in a local agency's long-term water sustainability plan. Implementing recycling and recharge principles like those listed above will also help mitigate large-scale existing pollution in aquifers. These principles are discussed briefly below.

Recycling

Many communities are recycling or partially recycling wastewater. For example, *Monterey One Water* serves Del Rey Oaks, Monterey, Pacific Grove, Salinas, Sand City, Seaside, Boronda, Castroville, Moss Landing, Fort Ord, Monterey County, and Marina. *Monterey One Water* provides wastewater treatment services to over 250,000 people; processes over 18.5 million gallons of wastewater each day; recycles approximately 4 billion gallons of water annually for crop irrigation and groundwater recharge. *Monterey One Water* is implementing a new \$100 million recycling project to recycle wastewater, storm water, impaired surface waters including agricultural return flows, and food industry processing water, to recharge groundwater and provide additional water supply to homes, agriculture, and other businesses.

Other cities on the Central Coast such as Morro Bay and San Luis Obispo are upgrading their wastewater treatment plant facilities and are considering recycling capacity. These are large-

scale projects with significant costs, but are critical to long-term sustainability, providing water supply portfolio diversification as a counterstrategy to climate change.

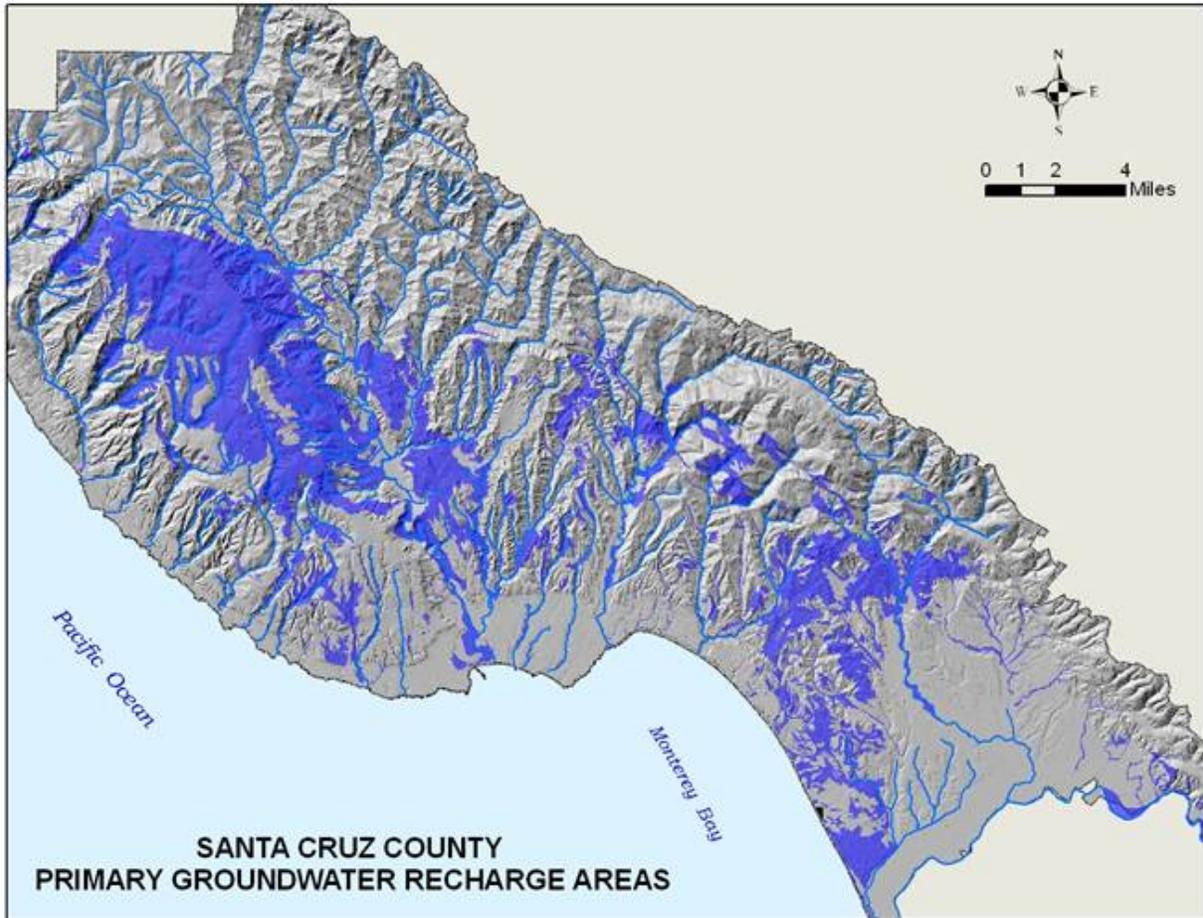
The Water Board could require or consider recycling as a condition of issuing permits.

Groundwater Recharge

Local agencies can define groundwater recharge areas and adopt protections to maintain the recharge function. For example, the following is from the County of Santa Cruz (Source: County of Santa Cruz, Environmental Health):

The County of Santa Cruz designates the areas where an aquifer is exposed at the ground surface and allows water to move downward into the aquifer as Primary Groundwater Recharge (PGR) zones. As such, these areas are given special consideration and protection from development. This protection allows the aquifers to maintain an adequate quantity and quality of groundwater recharge. A map of County designated primary groundwater recharge areas is presented below.

Parcels outside the urban services line and within mapped PGR can not be subdivided smaller than 10-acres. The rationale for this is to 1) minimize the blockage of the aquifer recharge areas inherent to development and 2) reduce the amount of impacts to the recharge water quality from septic systems and other site activities. An indirect benefit of the lower development density is that it reduces the amount of potential groundwater extraction from those areas.



The Water Board could require local agencies to include groundwater recharge protection, along with all its associated benefits, as part of their sustainable water management efforts.

Storm Water Capture or Recharge

The Central Coast Water Board and the State Water Board adopted advanced requirements for municipalities to retain and recharge storm water. These requirements and 'lessons learned' could help inform a Basin Plan amendment to further implement storm water capture and recharge.

Sustainable Groundwater Management Act and Managed Aquifer Recharge

The Sustainable Groundwater Management Act (SGMA) is critical to developing and implementing sustainable water resource management. The Water Board could consider requiring compliance with SGMA when applicable as part of a permitting process (i.e., permittees must be in compliance with relevant laws) and as applicable to recycling efforts. Managed Aquifer Recharge (MAR) is increasingly implemented in California, the United States, and other countries to increase local water supplies and resiliency to climate change. MAR can facilitate recycling efforts, and will play an important role in complying with SGMA. The Central Coast Water Board can encourage the use of MAR, provide permit streamlining, and support funding for these efforts.

Pollution Control

Water supply and water quality are intricately linked. The greatest large-scale threats to water quality on the Central Coast are salts and nutrients (nitrate) from irrigated agriculture and saltwater intrusion. The State Water Board's Recycled Water Policy recognizes the threat from salts and nutrients and states the following:

California is facing an unprecedented water crisis.

The collapse of the Bay-Delta ecosystem, climate change, and continuing population growth have combined with a severe drought on the Colorado River and failing levees in the Delta to create a new reality that challenges California's ability to provide the clean water needed for a healthy environment, a healthy population and a healthy economy, both now and in the future...

These challenges also present an unparalleled opportunity for California to move aggressively towards a sustainable water future. The State Water Resources Control Board (State Water Board) declares that we will achieve our mission to "preserve, enhance and restore the quality of California's water resources to the benefit of present and future generations." To achieve that mission, we support and encourage every region in California to develop a salt/nutrient management plan by 2014 that is sustainable on a long-term basis and that provides California with clean, abundant water...

Mandate for the Use of Recycled Water

a. The State Water Board and Regional Water Boards will exercise the authority granted to them by the Legislature to the fullest extent possible to encourage the use of recycled water, consistent with state and federal water quality laws...

The State Water Board recognizes that, pursuant to the letter dated December 19, 2008 and attached to the Resolution adopting this Policy, the local water and wastewater entities, together with local salt/nutrient contributing stakeholders, will fund locally driven and controlled, collaborative processes open to all stakeholders that will prepare salt and nutrient management plans for each basin/sub-basin in California, including compliance with CEQA and participation by Regional Water Board staff...

It is the intent of this Policy for every groundwater basin/sub-basin in California to have a consistent salt/nutrient management plan. The degree of specificity within these plans and the length of these plans will be dependent on a variety of site-specific factors, including but not limited to size and complexity of a basin, source water quality, stormwater recharge, hydrogeology, and aquifer water quality...

Salt and nutrient plans shall be tailored to address the water quality concerns in each basin/sub-basin and may include constituents other than salt and nutrients that impact water quality in the basin/sub-basin. Such plans shall address and implement provisions, as appropriate, for all sources of salt and/or nutrients to groundwater basins, including recycled water irrigation projects and groundwater recharge reuse projects...

Salt and nutrient plans shall be completed and proposed to the Regional Water Board within five years from the date of this Policy unless a Regional Water Board finds that

the stakeholders are making substantial progress towards completion of a plan. In no case shall the period for the completion of a plan exceed seven years...

The Central Coast Water Board's Basin Plan amendment for Sustainable Water Resource Management could address this issue by requiring salt and nutrient management plans for specific basins on a defined schedule as envisioned by the State Water Board's Recycled Water Policy.

Implementation

The Central Coast Water Board could direct staff to develop a Basin Plan amendment requiring that local agencies implement the types of principles and actions noted above. For example, the Basin Plan language could include requirements that permittees establish and implement long-term sustainability plans, with supporting ordinances and zoning, by a certain date. The long-term sustainability plans could include maximum recycling of wastewater, protection and maintenance of groundwater recharge areas and related watershed functions, storm water capture and recharge, and compliance with the Sustainable Groundwater Management Act. The language could also require salt and nutrient management plans for specific groundwater basins on a defined schedule. The Water Board could implement the requirements in three ways: direct authority, indirect authority, and influence.

Direct Authority: The Water Board's 'direct authority' includes requirements language in the Basin Plan, and implementation via permits and orders issued by the Water Board and the Executive Officer. All applicable permits and orders would include the same requirements language as the Basin Plan, and would be enforceable. The Basin Plan requirements could also be designed to be enforceable on their own where applicable, such as prohibitions against certain discharges or activities, regardless of whether a permit or order has been issued.

Indirect Authority: The Water Board's 'indirect authority' includes the Water Board's discretion to not issue permits to entities that are not meeting the Water Board's Basin Plan requirements, State Board policies or directives, or other agency requirements. The discharge of waste is a privilege, not a right, and the Water Board has broad discretion in deciding whether to issue a permit.

Influence: The Water Board's 'influence' includes the Water Board's ability to facilitate grants and financing. The State Water Board consults with the Regional Boards regarding grants and loans on major water projects, and bases its decision in part on a project's consistency with Regional Water Board priorities. If the Central Coast Water Board establishes requirements and principles regarding sustainable water resource management in the Basin Plan, those requirements and principles would become the basis of our recommendations to the State Water Board regarding funding. The Central Coast Water Board could prioritize requests for grants and loans based on compliance with the Basin Plan, help local agencies get funding when they are complying with the Basin Plan, and recommend against funding for non-compliant projects.

Additionally, the Regional Boards exert influence over the shape of policy, with respect to precedential general orders and statewide policy development. The Central Coast Water Board staff already have been participating with State Board staff to influence revisions to the Recycled Water Policy to support or encourage regions to pursue sustainable water resource management strategies and tool development.

Conclusion

Sustainable water resource management is increasingly critical on the Central Coast, given demand, impacts, and changing conditions. This item is an initial discussion regarding the potential scope of a Basin Plan amendment. The Executive Officer will schedule additional discussions with the Water Board in 2018 following our internal restructuring and assignment of staff to the project.

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