CHAPTER 1. INTRODUCTION

1.1 Project Background

In October 2014, the Regional Water Management Group for the Greater Monterey County Integrated Regional Water Management (IRWM) Region received grant funds from the State Water Resources Control Board (State Water Board) to develop an integrated plan to address drinking water and wastewater needs of disadvantaged communities in the Salinas Valley. The funds were appropriated by the California Legislature through Assembly Bill (AB) 1630 (Alejo), from fines and penalties from the Waste Discharge Permit Fund. Appendix 1.1 includes The original grant agreement (Agreement No. 14-651-550, signed October 31, 2014) is attached as Appendix 1.1. The grant extension agreement (Agreement No. D1611302, signed June 29, 2017) is attached as Appendix 1.2. To read the text of AB 1630, see Appendix 1.3.

The Salinas Valley on California's Central Coast is one of the most productive agricultural regions in the world. However, intensive fertilizer use over several decades has led to nitrate pollution in the region's groundwater basins. Nitrate pollution in groundwater can pose serious health risks to pregnant women and infants if consumed at concentrations above the maximum contaminant level (MCL) of 10 milligrams per liter (mg/L) nitrate as nitrogen (NO_3-N). Nitrate groundwater contamination not only poses health risks but also results in major costs for small rural communities, which is particularly challenging for those that are economically disadvantaged, as many communities in the Salinas Valley are.

While nitrate contaminated groundwater can be found in many parts of California, the State Water Board has singled out the Salinas Valley and Tulare Lake Basin areas as being of particularly significant concern.[1] In response to nitrate concerns, the Legislature enacted Chapter 1 of the Second Extraordinary Session of 2008 (SBX2 1, Perata). SBX2 1 required the State Water Board, in consultation with other agencies, to prepare a report to the Legislature to better understand the sources of nitrate contamination and to identify solutions for nitrate-contaminated groundwater used for drinking. In 2010, the State Water Board contracted with the University of California, Davis (UC Davis) to conduct an independent study focusing on nitrate in the groundwater of the Salinas Valley and Tulare Lake Basin. The UC Davis report, "Addressing Nitrate in California's Drinking Water" (March 2012), found that 10 percent of the 2.6 million people in the Salinas Valley and Tulare Lake Basin rely on drinking water that may contain levels of nitrate that are above the State drinking water standards set by the State Water Board (see brief synopsis of the UC Davis study at the end of this Chapter).

In June of 2012, in response to the UC Davis report, the Governor's office convened a Drinking Water Stakeholder Group with members from the agricultural sector, state and local agencies, water organizations, and environmental justice groups. The Governor's Drinking Water Stakeholder Group was tasked with developing an understanding of the challenges faced by small communities impacted by nitrate-contaminated groundwater, and with identifying promising solutions. Emphasizing the special needs associated with small disadvantaged communities in unincorporated areas, the Drinking Water Stakeholder Group made several recommendations, including:

[1] State Water Resources Control Board website (accessed April 2016): http://www.swrcb.ca.gov/water_issues/programs/nitrate_project/

1. It is important to comprehensively and uniformly identify drinking water needs of disadvantaged communities and small systems between 2-14 connections in unincorporated areas to improve data collection and management. *Recommended Action:* Continue to establish, maintain, integrate, and improve data collection tools to help inform planning, prioritization and implementation of interim and long-term solutions.

2. There is a need to incentivize and promote sustainable safe drinking water solutions within unincorporated disadvantaged communities. *Recommended Actions:* A) Identify water supply needs and potential opportunities for promoting and incentivizing sustainable local drinking water solutions for disadvantaged communities in unincorporated areas. B) Directly target funding for IRWMs (or other entity where appropriate) to develop an inventory of need and a plan for local solutions (including shared solutions) for disadvantaged communities in unincorporated areas in each hydrologic region of the state…. Begin with the Salinas Valley.[2]

AB 1630, appropriating funds to the Greater Monterey County IRWM Regional Water Management Group to develop this plan, was the direct result of those recommendations. The goal of AB 1630, and of this planning effort, has been to identify affordable and sustainable safe drinking water solutions for disadvantaged communities in unincorporated areas of the Salinas Valley. The geographic boundaries of this planning effort have been extended to include the entire Greater Monterey County IRWM region, with a focus on the Salinas Valley and North County areas. Since wastewater system malfunctions can contribute nitrate and other contaminants to drinking water supplies and potentially cause other serious health risks, this planning effort has also considered wastewater issues in evaluating solutions for disadvantaged communities in the planning region.

This plan was formally approved by vote of the Regional Water Management Group at a regularly scheduled Regional Water Management Group meeting, open to the public, on November 8, 2017.

1.2 Objectives of the Plan

The purpose of this planning effort is to identify strategies to provide disadvantaged communities with a safe, clean and affordable potable water supply, and effective and affordable wastewater treatment and disposal. The Project Team was tasked to develop a plan that would include recommendations for planning, infrastructure, and other water management actions, as well as specific recommendations for regional drinking water treatment facilities, regional wastewater treatment facilities, related infrastructure, project sustainability, and cost-sharing mechanisms. The ultimate goal of the plan was to identify projects and programs that would create long-term reliability, while optimizing the ongoing operation and maintenance (O&M) and management costs for small water and wastewater systems.

Following the lead of the Governor's Drinking Water Stakeholder Group, this planning effort has focused on *small communities* in *rural and unincorporated areas* of the Greater Monterey County IRWM region that meet (or otherwise show indications of meeting) the definition of a disadvantaged community. Furthermore, this effort has focused specifically on the problem of nitrate-

What is a "Disadvantaged Community"?

A community with an annual median household income that is less than 80 percent of the statewide annual median household income.

[2] Governor's Drinking Water Stakeholder Group. 2012. *Final Report to the Governor's Office*. Dated August 20, 2012, p. 4.

contaminated groundwater. The planning effort included community water systems, wastewater systems, and rural communities with a high density of contaminated private wells and septic systems.

The following objectives, and associated tasks, were identified for the planning effort:

1. Identify disadvantaged communities within the planning region, with a specific focus on small disadvantaged communities in unincorporated areas.
2. Identify drinking water and wastewater problems.
3. Develop a comprehensive inventory and database of the disadvantaged communities with water and wastewater problems and create maps to illustrate the location of each community in relation to each other and to larger utilities.
4. Prioritize the communities in terms of water resource need.
5. Identify potential solutions for (at minimum) each "high priority" community.
6. Work with each community to determine preferred solution(s).
7. Develop conceptual project descriptions and cost estimates for the "high priority" communities to include in the Greater Monterey County IRWM Plan project list.
8. Identify potential funding sources for the proposed projects and for broader regional solutions.

1.3 About the Greater Monterey County IRWM Region

AB 1630 appropriated State grant funds to the Greater Monterey County IRWM Regional Water Management Group to enable the Group to develop solutions for disadvantaged communities that could be integrated into the broader IRWM planning effort. The Regional Water Management Group was chosen as an appropriate recipient of the State funds on account of its ongoing water resource planning activities in the Salinas Valley and broader Monterey County region, its extensive stakeholder outreach capabilities, and its existing ties to disadvantaged communities in the region due to the work of three of its Regional Water Management Group members – namely, the Environmental Justice Coalition for Water, Rural Community Assistance Corporation, and San Jerardo Cooperative, Inc. (a farmworker community located in the Salinas Valley). This section briefly describes the Greater Monterey County IRWM Region and the Regional Water Management Group. For more information, visit the Greater Monterey County IRWM Region website at http://www.greatermontereyirwmp.org/.

What is Integrated Regional Water Management?

Integrated Regional Water Management (IRWM) is a voluntary, collaborative effort to identify and implement water management solutions on a regional scale to increase regional self-reliance, reduce conflict, and manage water resources. The IRWM planning process brings together water and natural resource managers along with other community stakeholders to collaboratively plan for and ensure the region's continued water supply reliability, improved water quality, flood management, and healthy functioning ecosystems.

1.3.1 IRWM Regional Boundaries

The Greater Monterey County IRWM region is one of six IRWM regions within the Central Coast Funding Area. The regional boundary includes the entirety of Monterey County exclusive of the areas that are included in the Pajaro River Watershed and the Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWM regions. Generally, the Greater Monterey County IRWM region includes the entire Salinas River watershed north of the San Luis Obispo County line, all of the Gabilan and Bolsa Nueva watersheds in the northern part of the county, and all of the coastal watersheds of the Big Sur coastal region within Monterey County (see map on the following page). Areas within Monterey County that are not included within the IRWM region consist of: the Pajaro River watershed, Carmel River watershed, San Jose Creek watershed, areas overlying the Seaside Groundwater Basin, and all areas within the jurisdiction of the Monterey Peninsula Water Management District (including the Monterey Peninsula cities of Carmel-by-the-Sea, Del Rey Oaks, Pacific Grove, Monterey, Sand City, and Seaside). Figure 1.1 illustrates the geographic boundaries of the Greater Monterey County IRWM Region, including jurisdictional boundaries of the major water management districts.

1.3.2 Regional Water Management Group

The Regional Water Management Group is the group that is responsible for developing and implementing the region's IRWM Plan. The Greater Monterey County Regional Water Management Group consists of 18 entities, including government agencies, nonprofit organizations, educational organizations, water service districts, private water companies, and organizations representing agricultural, environmental, and community interests. These agencies and organizations were invited to join the Regional Water Management Group based on the intention to create a diverse and inclusive decision-making body with adequate and balanced representation of water resource management issues and geographic areas within the region.

Greater Monterey County IRWM Regional Water Management Group

- Big Sur Land Trust
- California State University Monterey Bay
- California Water Service Company
- Castroville Community Services District
- Central Coast Wetlands Group at Moss Landing Marine Laboratories
- City of Salinas
- City of Soledad
- Elkhorn Slough National Estuarine Research Reserve
- Environmental Justice Coalition for Water
- Marina Coast Water District
- Monterey Bay National Marine Sanctuary
- Monterey County Agricultural Commissioner's Office
- Monterey County Resource Management Agency
- Monterey County Water Resources Agency
- Monterey One Water
- Resource Conservation District of Monterey County
- Rural Community Assistance Corporation
- San Jerardo Cooperative, Inc.

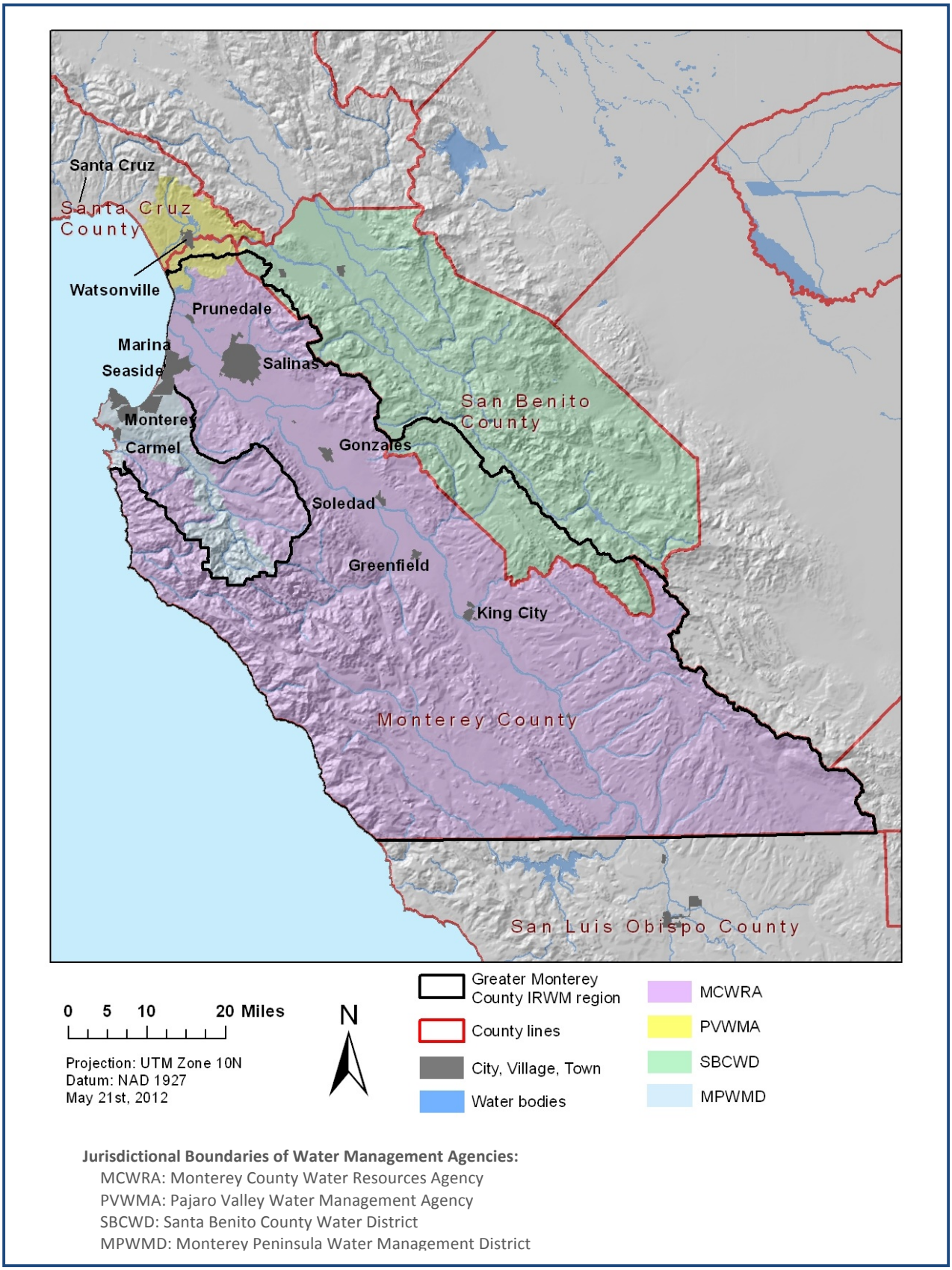


Figure 1.1 Greater Monterey County IRWM Region Boundaries

1.4 Salinas Valley Disadvantaged Community Plan Project Team

The core project team for this planning effort consisted of the Greater Monterey County IRWM Program Director and members of the Regional Water Management Group – specifically, Environmental Justice Coalition for Water, Rural Community Assistance Corporation, and San Jerardo Cooperative, Inc. – plus the consulting group Nilsen and Associates, which has acted as an advocate for disadvantaged communities in other IRWM water-related projects. From here on, this group of individuals will be referred to as the "Project Team."

The Project Team

- Environmental Justice Coalition for Water
- Greater Monterey County IRWM Program Director
- Nilsen and Associates
- Rural Community Assistance Corporation
- San Jerardo Cooperative, Inc.

The Project Team was assisted by a Technical Advisory Committee (TAC) consisting of representatives from the State and Regional Water Boards, local agencies, environmental justice organizations, engineers, water utilities, academic institutions, and individual community representatives. The role of the TAC was to provide advice and expertise, as needed, to the Project Team and to help prioritize the disadvantaged communities in terms of drinking water and/or wastewater need.

Technical Advisory Committee

- California Department of Public Health
- State Water Resources Control Board
- Central Coast Regional Water Quality Control Board
- Monterey County Department of Environmental Health
- Monterey County Local Agency Formation Commission (LAFCO)
- Monterey County Water Resources Agency
- City of Soledad
- San Vicente Mutual Water Company
- San Jerardo Cooperative, Inc.
- Building Healthy Communities East Salinas
- Community Engineering Corps
- Harder+Company Community Research
- The Participatory Budgeting Project
- UC Davis
- UC Santa Cruz
- Individual community members

The Project Team was also assisted directly by involvement of the Community Engineering Corps (CECorps) in the project evaluation phase. CECorps is a volunteer organization that allows members from its three founding organizations – the American Society of Civil Engineers, the American Water Works Association and Engineers Without Borders USA – to volunteer their time and expertise to assist communities that do not have the resources to access engineering services. CECorps, supported in part through a US Department of Agriculture Technical Assistance and Training grant, provided volunteer engineering teams to assess the drinking water and wastewater infrastructure and managerial capacity for each "high priority" community, and to recommend possible solutions. Other organizations that contributed significantly to the planning effort were UC Davis Center for Regional Change and GreenInfo Network, both of which provided assistance with database development and mapping.

1.5 Legislative and Regulatory Context

1.5.1 Safe Drinking Water Act

The Safe Drinking Water Act was passed by Congress in 1974, and amended in 1986 and 1996, to protect public health by regulating the nation's public drinking water supply.[3] The Safe Drinking Water Act authorizes the United States Environmental Protection Agency (US EPA) to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The National Primary Drinking Water Regulations set "maximum contaminant levels" (MCLs) for particular contaminants in drinking water. Public water systems are responsible for ensuring that contaminants in tap water do not exceed these standards. The national drinking water standards are legally enforceable, which means that both US EPA and states can take enforcement actions against water systems not meeting safety standards.

The Safe Drinking Water Act applies to every public water system in the United States. A "public water system" is a system with at least 15 service connections, or serving at least 25 people daily for 60 days of the year. The Act does not regulate private wells or small water systems that serve fewer than 15 connections or 25 individuals.

Originally, the Safe Drinking Water Act focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. Compliance with the Safe Drinking Water Act requires public water systems, regardless of size, to have (1) adequate and reliable sources of water that either are or can be made safe for human consumption; and (2) the financial resources and technical ability to provide services effectively, reliably, and safely for workers, customers, and the environment.

Up until 2014, the California Department of Public Health (CDPH) had been the EPA-designated "Primacy Agency" responsible for the administration and enforcement of the Safe Drinking Water Act requirements in California. On July 1, 2014, these responsibilities were transferred to the State Water Resources Control Board, which now administers the state's Drinking Water Program. As the federally designated Primacy Agency, the State Water Board has overall responsibility for implementation of the California Safe Drinking Water Act as defined in the California Health and Safety Code and Titles 17 and 22, California Code of Regulations (CCR). The CDPH continues to maintain the State's Drinking Water and Radiation Laboratory, which serves as the state's principal laboratory as required for primacy under the federal Safe Drinking Water Act.

The State Water Board is responsible for the regulatory oversight of more than 7,600 public water systems throughout the state. The State Water Board may, pursuant to state law, delegate oversight responsibility of public water systems with less than 200 service connections to local county health departments. These counties are known as "Local Primacy Agency" (LPA) counties. Of the 58 counties in the state of California, 30 are currently designated as LPA counties, including Monterey County. The Monterey County Department of Environmental Health (MCDEH) Drinking Water Protection Services regulates domestic water systems in the county that serve 2-199 connections. This includes:

[3] Information about the Safe Drinking Water Act is from the US EPA brochure entitled, "Understanding the Safe Drinking Water Act" (2015). Available at: https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf

- *Local Small Water Systems:* Serves drinking water to 2-4 connections.
- *State Small Water Systems:* Serves drinking water to 5-14 connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year.
- *Public Water Systems:* Serves drinking water to 15-199 connections, or regularly serves at least 25 individuals daily at least 60 days out of the year.

MCDEH Drinking Water Protection Services also regulates all well construction in Monterey County.

Other agencies responsible for regulating or otherwise ensuring, directly or indirectly, the functioning of the state's drinking water systems include the following[4] (this list is not exhaustive):

- The Department of Water Resources (DWR) is responsible for managing water resource supplies in California. DWR is responsible for the development of the *California Water Plan*, which serves as a guide to the development and management of the State's water resources. The Draft *2013 Update of the California Water Plan* includes a Report entitled "Californians without Safe Drinking Water and Sanitation." DWR has directly funded drinking water related projects under Propositions 50 and 84, and is doing so currently through Proposition 1, primarily through Integrated Regional Water Management (IRWM) funds.
- The State Water Board and the Regional Water Quality Control Boards are responsible for protecting the waters of the state, including drinking water sources, both surface water and groundwater supplies (discussed below).
- The Department of Pesticide Regulation is responsible for ensuring that pesticides do not pollute groundwater.
- The Office of Environmental Health Hazard Assessment is responsible for providing the State Water Board with health-based risk assessments for contaminants. These assessments are used to develop primary drinking water standards.
- The California Public Utilities Commission (CPUC) is responsible for ensuring that California's investor-owned water utilities deliver clean, safe, and reliable water to their customers at reasonable rates. The Water Division regulates over 100 investor-owned water and sewer utilities under the CPUC's jurisdiction providing water service to about 16 percent of California's residents. Approximately 95 percent of that total is served by nine large water utilities each serving more than 10,000 connections.[5]
- Local Agency Formation Commissions (LAFCOs) oversee the expansion of service areas of public agencies including cities that are or operate public water systems, and can review to determine if an agency is providing municipal services in a satisfactory manner, including the delivery of safe drinking water.

[4] California State Water Resources Control Board. 2015. Safe Drinking Water Plan for California. Report to the Legislature in Compliance with Health & Safety Code Section 116365. Dated June 2015.

[5] For more information about CPUC, visit their website: http://www.cpuc.ca.gov/water/.

1.5.2 Human Right to Water

In 2012, California became the first state to legally recognize the human right to water. AB 685, known as the Human Right to Water Bill, became effective on January 1, 2013. Now Water Code Section 106.3, the Human Right to Water law statutorily recognizes that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." The law creates an ongoing obligation for State agencies, including DWR, the State Water Board, and the State Department of Public Health, to consider the human right to water — specifically the factors of safety, affordability, and accessibility — in all relevant policy, programming, and budgetary activities.

On February 16, 2016, the State Water Board adopted a resolution that identified the human right to water as a top priority and core value of the state and Regional Water Quality Control Boards, and affirmed the State Water Board's commitment to consider how its activities impact and advance the human right to safe, affordable and clean water to support basic human needs (Resolution No. 2016-0010). In January 2017, the Central Coast Regional Water Quality Control Board adopted the human right to water as a core value and the realization of the human right to water and protecting human health as top priorities (Resolution No. Order No. R3-2017-0004). Among other things, the Regional Board resolved to: promote achievement of the human right to water through effective prioritization, implementation, outreach and participation, performance monitoring and reporting, and partnership; and promote policies that advance the human right to water and discourage actions that delay or impede opportunities for communities to secure safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.

1.5.3 Clean Water Act

The Federal Water Pollution Control Act of 1948 was the first major U.S. law to address water pollution.[6] Amended in 1972, the law became commonly known as the Clean Water Act. The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of the nation's waters by preventing point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. The Clean Water Act gives the US EPA the authority to set effluent limits to ensure protection of receiving waters. Under the Clean Water Act, the US EPA has implemented pollution control programs including setting water quality standards for all contaminants in surface waters.

The Clean Water Act made it unlawful to discharge any pollutant from a point source to waters of the United States unless a permit is obtained (point sources are discrete conveyances such as pipes or man-made ditches). US EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges from point sources. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. There is a broad exemption from NPDES permit requirements for agricultural return flows.

The California State Water Board is the state water pollution control agency for all purposes under the Clean Water Act (CWC §13160), and establishes state policy on water quality control. The nine Regional Water Quality Control Boards (Regional Boards) are responsible for the day-to-day implementation of the

[6] Information about the Clean Water Act is from the US EPA website: https://www.epa.gov/laws-regulations/summary-clean-water-act (accessed June 2017).

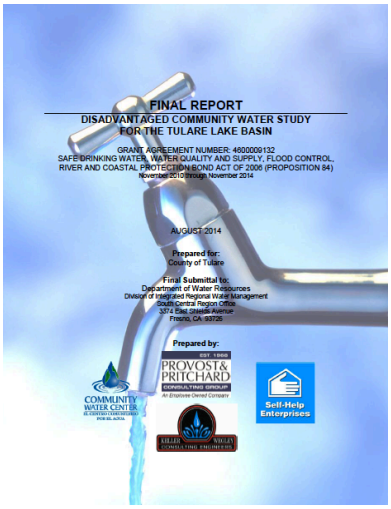
federal Clean Water Act and California's Porter-Cologne Water Quality Control Act. Together, the State Water Board and Regional Boards are responsible for the protection of the quality of ambient surface and groundwater up to the point where the water enters a drinking water well or surface water intake.

The Regional Boards are responsible for developing and enforcing water quality objectives and implementation plans to protect the beneficial uses of the State's waters. Each Regional Board is directed to formulate a water quality control plan, called a Basin Plan, for all areas within its region. The Basin Plan requirements serve as water quality standards under the Clean Water Act. The Regional Board implements the Basin Plan, in part, by issuing and enforcing waste discharge requirements (WDRs) to individuals, communities, or businesses whose waste discharges can affect water quality, including surface water, groundwater, or wetlands. WDRs for discharges to waters of the United States also serve as NPDES permits.

The State Water Board and the Central Coast Regional Board regulate discharges from wastewater treatment and disposal systems under general WDRs. Small, domestic wastewater treatment systems having a maximum daily flow of 100,000 gallons per day (gpd) or less that discharge to land are covered under a statewide general WDR permit for small systems (Order WQ 2014-0153-DWQ). In June 2012, the State Water Board adopted its Onsite Wastewater Treatment Systems Policy that established requirements for siting, design, operation, and maintenance of onsite wastewater treatment and disposal systems (i.e., individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal). WDRs are waived for onsite wastewater treatment systems that are in compliance with the policy. The State and Regional Boards are also responsible for plans and permits related to other uses, such as farming, septic tanks and larger scale sewage treatment that can also impact the quality of surface and ground waters.

1.6 Related Studies and Reports

1.6.1 Disadvantaged Community Water Study for the Tulare Lake Basin



The Final Recommendations of the Governor's Drinking Water Stakeholder Group included a recommendation to target funding to IRWM groups (or other appropriate entities) to develop a plan for disadvantaged communities in unincorporated areas of the state "as is being used in the Tulare Lake Basin Disadvantaged Community Water Study." The *Disadvantaged Community Water Study for the Tulare Lake Basin* was appropriated by Senate Bill SBX2 1 (Perata, 2008) and was completed in August 2014. The Salinas Valley plan is directly modeled after the Tulare Lake Basin water study, and incorporates many aspects of that plan.

The objectives of the Tulare Lake Basin study were essentially the same as those identified for the Salinas Valley plan, as defined in the grant agreement:

- Develop a plan that provides rural, disadvantaged communities with a safe, clean and affordable potable water supply and effective and affordable wastewater treatment and disposal.
- The plan will include recommendations for planning, infrastructure, and other water

management actions, as well as specific recommendations for regional drinking water facilities, regional wastewater treatment facilities, conjunctive use sites and groundwater recharge, groundwater for surface water exchanges, related infrastructure, project sustainability, and cost sharing mechanisms.

- Identify projects and programs that will create long-term reliability, while optimizing the ongoing operation and maintenance and management costs for small water and wastewater systems.

The Tulare Lake Basin study area encompassed most of the four-county area, including Fresno, Kern, Kings, and Tulare counties. Approximately 353 of the 530 communities identified within the Tulare Lake Basin Study Area were identified as being disadvantaged or severely disadvantaged. Approximately 196 of the 353 disadvantaged communities had water quality data available. Of those disadvantaged communities with water quality data available, approximately 89 were considered to have a water quality issue, based on an exceedance of a drinking water MCL of a primary constituent more than one time between 2008 and 2010. The study also investigated potential wastewater issues. Of the 38 disadvantaged communities that had their own wastewater treatment facility (WWTF), 25 were listed as having a violation of their waste discharge requirements.

The Tulare Lake Basin project team worked with community stakeholders to identify common problems associated with providing safe, reliable water and wastewater services to disadvantaged communities. From the list of common problems, they identified five priority issues:

- Lack of funding to offset increasingly expensive operations and maintenance costs in large part due to lack of economies of scale;
- Lack of technical, managerial, and financial (TMF) capacity by water and wastewater providers;
- Poor water quality;
- Inadequate or unaffordable funding or funding constraints to make improvements; and
- Lack of informed, empowered, or engaged residents.

The Project Team developed a list of potential solution sets to address each of the priority issues, and then conducted four pilot projects to address the following:

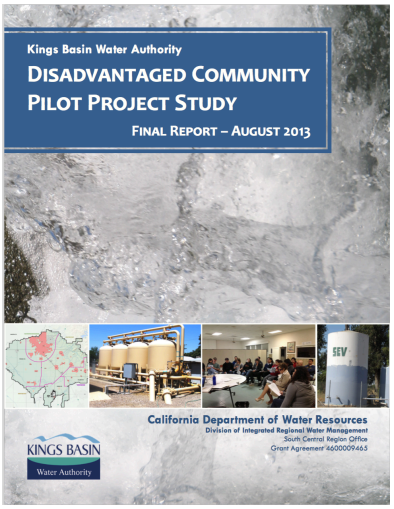
1. Management and Non-infrastructure
2. Technical Solutions
3. New Source Development
4. Individual Households

Each of the four pilot studies was developed into a full report with recommendations. Decision trees were developed for each pilot study, intended to be used as a tool or roadmap for community leaders (or private well owners) to assist them in developing appropriate solutions for their water or wastewater challenges.

A major difference between the Tulare Lake Basin study and the Salinas Valley plan is that the Salinas Valley has many fewer disadvantaged communities. Therefore, while the Tulare Lake Basin Study focused on providing common tools that could function as a roadmap or guidelines for multiple audiences (including decision trees), the Salinas Valley plan has focused more on developing targeted solutions for several of the identified “high” priority communities within the planning region, and developing project

proposals to prepare each community, to the extent possible, for grant funds and/or loans to help implement those projects.

1.6.2 Kings Basin Disadvantaged Community Pilot Project Study

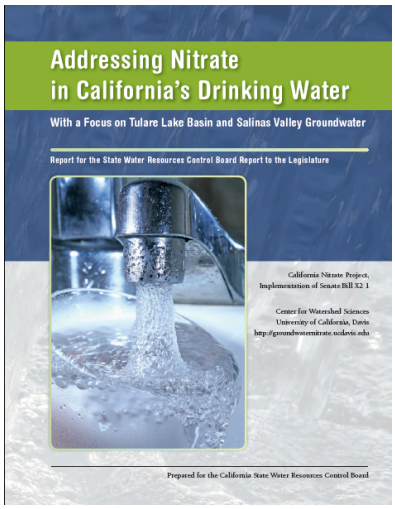


The Kings Basin study was conducted primarily to develop an inventory of disadvantaged communities within the Kings Basin region, and to determine how to better integrate and engage disadvantaged communities in the IRWM planning process. An additional objective of the study was to develop conceptual project descriptions and cost estimates to include in the Kings Basin IRWM Plan master project list. The study was completed in August 2013.

Over 100 disadvantaged communities were identified within the Kings Basin study area, which includes portions of Fresno, Tulare, and Kings counties. The Kings Basin project team divided the study area into five sub-regions and conducted extensive community outreach within each sub-region. The project team categorized the main water-related problems and needs of the disadvantaged communities into five main categories: wastewater, drinking water, stormwater, infrastructure, and TMF capacity. The main wastewater issues included septic system failures, permitted flow exceedances, and wastewater effluent violations. The drinking water issues were found to include MCL violations of nitrate, arsenic, uranium, dibromochloropropane (DBCP), and other contaminants, and lack of source redundancy for emergency or daily demands. Infrastructure needs included old, poorly maintained systems or inadequate infrastructure.

The Kings Basin project team worked with community representatives to determine the highest priority issues for each sub-region, and then selected one pilot project for each sub-region to evaluate potential solutions. The Final Report includes results of the five pilot projects.

1.6.3 UC Davis Report: Addressing Nitrate in California's Drinking Water with a Focus on Tulare Lake Basin and Salinas Valley Groundwater



As described earlier in this Chapter, SBX2 1 required the State Water Resources Control Board to prepare a report to the Legislature to better understand the sources of nitrate contamination in the Salinas Valley and Tulare Lake Basin and to identify solutions for nitrate-contaminated groundwater used for drinking. In 2010, the State Water Board contracted with UC Davis to conduct an independent study focusing on nitrate in the groundwater of those two regions.

The report found that 10 percent of the 2.6 million people in the Salinas Valley and Tulare Lake Basin, primarily those in small systems and self-supplied households, rely on drinking water that may contain levels of

nitrate that are above the State drinking water standards.[7] The human-generated sources of nitrate pollution in the groundwater basins were found to include:

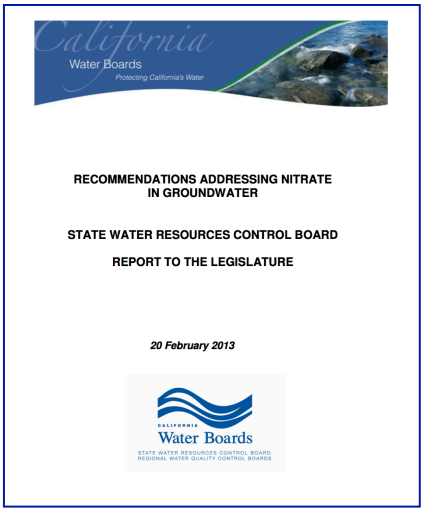
- Cropland, where nitrogen applied to crops, but not removed by harvest, air emission, or runoff, is leached from the root zone to groundwater: 96% of total
- Percolation of wastewater treatment plant and food processing wastes: 1.5% of total
- Leachate from septic system drainfields: 1% of total
- Urban parks, lawns, golf courses, and leaky sewer systems: less than 1% of total
- Recharge from animal corrals and manure storage lagoons: less than 1% of total
- Downward migration of nitrate-contaminated water via wells: less than 1% of total

The UC Davis report made eight major findings:

1. Nitrate problems will likely worsen for decades. Most nitrate detected in drinking water wells today was originally applied to the surface decades ago.
2. Agricultural fertilizers and animal wastes applied to cropland are by far the largest regional sources of nitrate in groundwater. Other sources can be locally important.
3. Nitrate loading reductions are possible, some at modest cost. Large reductions of nitrate loads to groundwater can have substantial economic cost.
4. Traditional pump and treat remediation to remove nitrate from large groundwater basins is extremely costly and not technically feasible. Instead, "pump-and-fertilize" and improved groundwater recharge management are less costly long-term alternatives.
5. Drinking water supply actions such as blending, treatment, and alternative water supplies are most cost-effective. Blending will become less available in many cases as nitrate pollution continues to spread.
6. Many small communities cannot afford safe drinking water treatment and supply actions. High fixed costs affect small systems disproportionately.
7. The most promising revenue source is a fee on nitrogen fertilizer use in these basins. A nitrogen fertilizer fee could compensate affected small communities for mitigation expenses and effects of nitrate pollution.
8. Inconsistency and inaccessibility of data prevent effective and continuous assessment of California's groundwater quality. A statewide effort is needed to integrate diverse water-related data collection activities by many state and local agencies.

[7] University of California Davis Center for Watershed Sciences. 2012. *Addressing Nitrate in California's Drinking Water with a Focus on Tulare Lake Basin and Salinas Valley Groundwater.* Principal Investigators: Thomas Harter and Jay R. Lund. Prepared for California State Water Resources Control Board, January 2012, p. 5.

1.6.4 State Water Board Report: Recommendations Addressing Nitrate in Groundwater

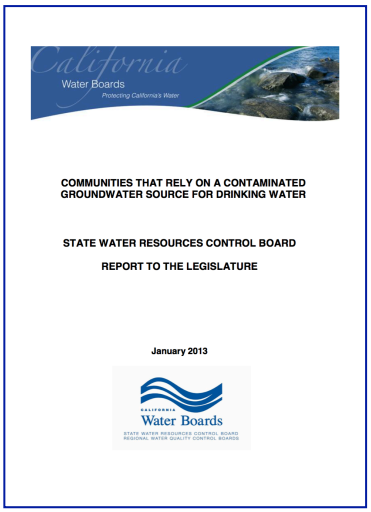


Based largely on the conclusions of the UC Davis report, the State Water Board submitted its recommendations to the Legislature in February 2013. The report included 15 recommendations, addressing the general categories of: providing safe drinking water; monitoring, assessment, and notification; nitrogen tracking and reporting; and protecting groundwater. Because the UC Davis report concluded that traditional groundwater remediation for nitrate was not feasible in the pilot project areas (i.e., the Salinas Valley and the Tulare Lake Basin), the State Water Board recommendations in this report focused on the provision of safe drinking water and prevention of further nitrate groundwater contamination.

The first and "most critical" recommendation (according to the report) is that "a new funding source be established to ensure that all Californians, including those in disadvantaged communities, have access to safe drinking water... The Legislature should provide a stable, long-term funding source for provision of safe drinking water for small disadvantaged communities. Funding sources include a point-of-sale fee on agricultural commodities, a fee on nitrogen fertilizing materials, or a water use fee."[8] The State Water Board notes that the recommendations included in the report are contingent upon a secure and stable source of funding and that, "[w]ithout an additional funding source(s), ensuring safe drinking water for all Californians as defined in AB 685 will not be achievable."[9]

1.6.5 State Water Board Report: Communities that Rely on a Contaminated Groundwater Source for Drinking Water

AB 2222 (Caballero, Chapter 670, Statutes of 2008) required the State Water Board to submit a report to the Legislature that identified: 1) communities in California that rely on contaminated groundwater as a primary source of drinking water; 2) the principal contaminants and other constituents of concern; and 3) potential solutions and funding sources to clean up or treat groundwater or provide alternative water supplies. The report was submitted to the Legislature by the State Water Board in January 2013. A "community," for the purposes of the report, is defined as a community public water system, not including private domestic wells or other types of water systems.



The report identifies 680 community water systems that, prior to any treatment, relied on a contaminated groundwater source during the CDPH compliance cycle of 2002-2010. Of the 680 community water systems relying on a contaminated groundwater source, 265 (39 percent) were found to have served water that exceeded a public drinking water standard. The report found that the largest number of MCL violations

[8] California State Water Resources Control Board. 2013. *Recommendations Addressing Nitrate in Groundwater*. Report to the Legislature, dated February 20, 2013, p. 7.
[9] Ibid., p. 44.

involved three contaminants: arsenic, nitrate, and uranium; and that the violations were overwhelmingly associated with small community water systems (of which about 81 percent served less than 1,000 service connections). The report notes that "small community water systems typically lack the infrastructure and economies of scale of larger water systems, and in some cases cannot afford to treat or find alternative supplies for a contaminated drinking water source. As a result, small community water systems may be more vulnerable to serving contaminated groundwater to their customers than larger water systems."

The report also points out the lack of data and funding for the approximately 2 million Californians that rely on groundwater from either private domestic wells or other groundwater-reliant systems not regulated by the state, concluding: "Many of these well owners are unaware of the quality of their well water, because the state does not require them to test their water quality."

The report includes information on principal contaminants, constituents of concern, contamination levels, potential solutions, and funding sources to clean up, treat, or provide alternative water supplies to ensure the provision of safe drinking water.

1.7 Layout of the Plan

The layout of this *Integrated Plan to Address Drinking Water and Wastewater Needs of Disadvantaged Communities in the Salinas Valley and Greater Monterey County IRWM Region* follows the basic tasks of the planning effort, as defined in the grant agreement. Subsequent chapters are arranged accordingly:

Chapter 2: Identifying Disadvantaged Communities
Chapter 3: Identifying Drinking Water and Wastewater Problems
Chapter 4: Identifying Solutions
Chapter 5: Other Related Efforts and Considerations
Chapter 6: Recommendations