CHAPTER 3. IDENTIFYING DRINKING WATER AND WASTEWATER PROBLEMS

Once the disadvantaged and suspected disadvantaged communities with likely drinking water or wastewater problems were identified, the next step was to identify the specific problems in each of those communities. Before describing that process, however, it might be helpful to understand how drinking water and wastewater systems are regulated in the state of California and in Monterey County.

3.1 Regulatory Context

3.1.1 How Drinking Water Systems are Regulated

The federal Safe Drinking Water Act was originally passed by Congress in 1974 and amended in 1986 and 1996, to protect public health by regulating the nation's public drinking water supply.[1] The Safe Drinking Water Act affects every "public water system" in the United States. The key provisions of the Safe Drinking Water Act are the National Primary Drinking Water Regulations, which are national standards for drinking water to protect against both naturally occurring and man-made contaminants that may be found in drinking water. California drinking water regulations specify primary standards and secondary standards for water contaminants.

The primary standard maximum contaminant levels (MCLs) are health-based standards. These standards are considered necessary for the immediate and long-term protection of human health. The primary standards cover five general categories of contamination: 1) bacteriological – problems associated with microorganisms such as fecal coliform or E. coli; 2) nutrients – problems associated with nitrate or other nutrients such as phosphorus; 3) inorganics – problems associated with constituents such as arsenic, copper, chromium-6 or perchlorate; 4) organics – problems associated with constituents such as 1,2,3-TCP, DBCP, and pesticides; and 5) general water quality – problems associated with constituents not specifically categorized.[2] Secondary MCLs relate to the aesthetics of the water and include such parameters as turbidity, color, odor and total dissolved solids (TDS).

Early on, the Safe Drinking Water Act primarily focused on treatment as a means of protecting drinking water, but in 1996 the Act was amended to include source water protection, operator training, funding for water system improvements, and public information as important components of protection. Compliance with the Safe Drinking Water Act at the federal and state levels 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.[3]

The federal Environmental Protection Agency (EPA) designated the California Department of Public Health (CDPH) as the Primacy Agency responsible for the administration and enforcement of the Safe Drinking

[1] United States Environmental Protection Agency. 2004. "Understanding the Safe Drinking Water Act." Available at: https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf

[2] Summarized from: County of Tulare. 2014. Final Report: Disadvantaged Community Water Study for the Tulare Lake Basin. Book 5: Individual Households Pilot Study, dated August 2014, p. 2-2.

[3] Excerpted from Tulare Lake Basin study (Final Report), pp. 30-31.

Water Act. As of July 1, 2014, the drinking water division of CDPH is operated under the State Water Resources Control Board. Water systems are regulated differently according to their size. The California Safe Drinking Water Act defines the following categories of water systems:

- **Public water system** means 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.
- **Community water system** means a public water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents.
- **Small community water system** means a community water system that serves no more than 3,300 service connections or a yearlong population of no more than 10,000 persons.
- **State small water system** means a system for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service 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.
- **Small public water system** means a system with 200 connections or less, and is one of the following: (1) A community water system that serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents. (2) A state small water system. (3) A noncommunity water system such as a school, labor camp, institution, or place of employment, as designated by the department.

In addition, Monterey County defines **local small water system** as a system having 2-4 service connections. A **private domestic well** is defined, simply, as an individual well serving a single residential connection.

The State Water Board Division of Drinking Water regulates **public drinking water systems**. The State has the authority to delegate primary responsibility for the administration and enforcement of the California Safe Drinking Water Act with regard to community water systems less than 200 connections to county health departments, by means of a local primacy delegation agreement. Drinking water program regulatory authority for **small public water systems** has been delegated to 31 counties in California. Each county sets its own regulations regarding state small systems, and the regulations vary by county.

Monterey County has been delegated local primacy responsibility since 1993. Monterey County Health Department Drinking Water Protection Services regulates state small and local small water systems through their Small Water System Program. There are currently 694 local small and 276 state small water systems in Monterey County, which serve about 4,232 connections.[4]

State small water systems are regulated by Monterey County Code (Chapter 15.04) and California Code of Regulations (Section 64211). Regulations currently require state small water systems to conduct quarterly bacteriological sampling within the distribution system and one time sampling at the point of initial water system/well permitting, prior to any treatment, for various minerals (fluoride, iron, manganese, chlorides and total dissolved solids) and inorganic chemicals, including nitrate. Local small water systems in Monterey

[4] See Monterey County Health Department website (http://www.mtyhd.org/index.php/services/environmental-health/small-water-system-program/) and Central Coast Regional Water Quality Control Board website (http://www.swrcb.ca.gov/centralcoast/water_issues/programs/gap/index.shtml).

County are regulated by Monterey County Code (Chapter 15.04). Monterey County requires repeat testing for local small systems once every three years at a minimum with increased sampling frequencies based on nitrate concentration levels. For private domestic wells (one connection), the County requires one-time nitrate testing of newly installed private domestic wells, and the Central Coast Regional Water Board requires ongoing testing of private domestic located on some farms or dairies.

3.1.2 How Wastewater Systems are Regulated

The federal Water Pollution Control Act was enacted by Congress in 1948, and significantly expanded in 1972. With the amendments in 1972 it became known as the "Clean Water Act." The Clean Water Act establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. 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 federal EPA the authority to set effluent limits to ensure protection of receiving waters.[5]

Under the Clean Water Act, the US EPA has implemented pollution control programs such as setting wastewater standards for industry and water quality standards for all contaminants in surface waters. The Clean Water Act made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. 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.[6]

The EPA has authorized the State Water Resources Control Board together with the nine Regional Water Quality Control Boards to implement the Clean Water Act in the state of California. The Regional Boards develop "Basin Plans" for their hydrologic areas, issue waste discharge permits for wastewater treatment facilities, take enforcement action against violators, and monitor water quality.

Most unincorporated parts of Monterey County are served by individual onsite septic systems. In 1979, the County of Monterey entered into an agreement with the Central Coast Regional Board, authorizing the County Health Department to manage and implement individual sewage disposal regulations in the county.[7] The County requires the issuance of a septic tank system permit upon initial installation or upon the re-construction or repair of a septic system. No ongoing monitoring or testing of septic systems is required; therefore, a failing septic system in Monterey County may go unnoticed by County health authorities, and unrecorded in public datasets.

3.1.3 The Situation of Private Domestic Wells

As noted above, private domestic wells are not regulated by the state. The County requires one-time nitrate testing of newly installed private domestic wells, but there are no additional requirements.

[5] Parts of this paragraph excerpted from Tulare Lake Basin study (2014), p. 32.

[6] Source: EPA website: https://www.epa.gov/laws-regulations/summary-clean-water-act

[7] See Monterey County Code of Ordinances, Title 15 Chapter 15.20.005.

The State Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Domestic Well Project was developed in order to address the lack of domestic well water quality data. The Central Coast Regional Board also collects domestic well data per Agricultural Order groundwater monitoring requirements. Data collected by the Central Coast Regional Board between April 2010 and April 2014 per Agricultural Order monitoring requirements showed that 45 percent of on-farm domestic wells in Monterey County exceeded the drinking water standard. In the East Side Aquifer subbasin, 64 percent of on-farm domestic wells sampled exceeded the drinking water standard. The highest measured nitrate concentration for the sampled on-farm wells was 137.2 mg/L NO3-N (almost 14 times the drinking water standard), also detected in the East Side Aquifer subbasin.[8]

Between October 2013 and August 2014, the Central Coast Groundwater Coalition (CCGC), a third-party cooperative groundwater monitoring program that was established for agricultural landowners and operators in the Central Coast region, collected a total of 229 samples from domestic and irrigation wells in the Salinas Valley. CCGC used GeoTracker GAMA data[9] (which includes data from the California Department of Public Health, GAMA-SWRCB data collection efforts and Regulated Sites), USGS National Water Information System data,[10] and data extracted from the GAMA special study carried out by Lawrence Livermore National Laboratory.[11] In its Groundwater Characterization Report[12] dated June 2015, CCGC made the following conclusions regarding nitrate in the Salinas Valley:

- 41% of wells with nitrate concentrations (or 309 of 758 total wells sampled) had maximum concentrations over the MCL.
- 34% of the land area within the Salinas Valley has nitrate concentrations over the MCL.
- 55% of domestic wells or 121 of 221 total sampled on CCGC-member properties had concentrations exceeding the MCL.

Based on results such as these, a 2014 Regional Water Board staff report concluded, "The data clearly show that groundwater pollution due to nitrate is severe and widespread in the Central Coast Region, affecting public water supply systems, domestic wells, and small unregulated water systems... Of particular concern are the high percentages of domestic wells that are polluted with nitrate at concentrations far exceeding the drinking water standard in many Central Coast counties and groundwater basins. This presents a major health risk to domestic well users and small communities because their drinking water is unregulated and many of these residents do not know that their drinking water is polluted. Tens of thousands of Central Coast residents are at risk. "[13]

[8] Central Coast Regional Water Quality Control Board. 2017. Staff Report for Meeting of July 31 - August 1, 2014. Prepared July 11, 2014. Subject: CCAMP-Groundwater Assessment and Protection (GAP) Update and Summary of Groundwater Basin Data with Respect to Nitrate, p. 1.

[9] http://geotracker.waterboards.ca.gov/gama/, accessed by Central Coast Groundwater Coalition on February 6, 2014.

[10] http://waterdata.usgs.gov/nwis, accessed by Central Coast Groundwater Coalition on April 4, 2013.

[11] Moran J.E., B.K. Esser, D. Hillegonds, M. Holtz, S.K. Roberts, M.J. Singleton, A. Visser. 2011. California GAMA Special Study, Nitrate Fate and Transport in the Salinas Valley. Final Report for the California State Water Resources Control Board. GAMA Special Studies Task 10.5: Surface water- groundwater interaction and nitrate in Central Coast streams. LLNL- TR- 484186.

[12] Central Coast Groundwater Coalition. 2015. Northern Counties Groundwater Characterization: Salinas Valley, Pajaro Valley and Gilroy-Hollister Valley. Submitted to the Central Coast Regional Water Quality Control Board on June 1, 2015. Salinas, CA. Also see: Central Coast Groundwater Coalition. 2015. Characterization Summary Report: Characterizing Nitrates in Central Coast Groundwater. Both documents are available at: http://www.centralcoastgc.org/coalition-reports/

[13] Ibid.

Domestic wells and wells associated with local small and state small water systems are generally more susceptible to nitrate contamination since they are typically shallow and are more likely to be located in rural areas within or adjacent to agricultural areas. They are also more susceptible to potential nitrate contamination from nearby septic systems. Public water systems, on the other hand, tend to access deeper groundwater and are more likely to be located in areas to avoid pollution. Public water system operators implement regular water quality testing and treatment as necessary, and wells are usually taken out of service once they become polluted. Funding programs are often available for public water systems, and costs are spread out over a large number of ratepayers over time. When contamination is detected in private domestic wells, treatment options are limited and the individual homeowner will typically have to bear the full cost of addressing the problem.[14]

To date only a very small percentage of domestic wells in Monterey County have been tested through the Central Coast Regional Board's groundwater monitoring programs. Monterey County Environmental Health Bureau has recently adopted a policy to begin requiring well testing when an application for repair or replacement of a septic system is proposed, which will provide new additional data. Generally, however, there are few monitoring programs and very little public funding available for well testing for private domestic well owners. A recent exception is the Salinas Valley Interim Replacement Water Settlement Agreement (see *Chapter 5, Other Related Efforts and Considerations*, Section 5.1.1), which provides for testing for some domestic and small water system wells in the Salinas Valley for one to two years (potentially to 2019). Additionally, SB 623 (also discussed in Section 5.1.1) proposes the establishment of a Safe and Affordable Drinking Water Fund that would provide funds for testing individual domestic wells serving low-income households.

Some assistance providers have reported that even when free water testing is made available, homeowners may not take advantage of it.[15] A 2013 State Water Board report recommended that the legislature require property owners with private domestic wells or other unregulated groundwater systems (2 to 14 service connections) to sample their well as part of a point of sale inspection before property title transfer or purchase.[16] Also, there will likely be increased groundwater monitoring throughout the basin with the upcoming development of a Groundwater Sustainability Plan for the Salinas Valley Groundwater Basin (per the Sustainable Groundwater Management Act). All of this falls short, however, of regular required monitoring for private domestic wells.

3.2 Common Problems of Small Disadvantaged Communities

The Kings Basin and Tulare Lake Basin studies highlighted several problems related to drinking water and wastewater that are commonly experienced by disadvantaged communities, particularly small disadvantaged communities, in Central California. Many of the problems discussed in those studies apply equally well to small disadvantaged communities in the Greater Monterey County IRWM region. These problems can be generally described as follows.

[14] Ibid, p. 6 and p. 8.

[15] See, for example: http://kvpr.org/post/private-domestic-well-owners-left-behind-californias-water-quality-push

[16] California State Water Resources Control Board. 2013. *Recommendations Addressing Nitrate in Groundwater*. Report to the Legislature, dated February 20, 2013.

3.2.1 Poor Water Quality or Insufficient Water Supply

All of the disadvantaged communities in the Greater Monterey County IRWM region rely entirely on groundwater for their drinking water supply, except for those who rely on bottled water due to unsafe or poor water quality conditions.

Insufficient water quantity is generally less of a problem in the Greater Monterey County region than poor or unsafe water quality (which effectively results in insufficient water supply). During the recent prolonged drought, while Monterey County was classified as experiencing "exceptional" drought, very few water users in the Greater Monterey County IRWM region actually suffered from a lack of water per se. While the drought had immediate impact on surface water supplies throughout the state, it tended to have a more gradual impact on groundwater supplies. Since groundwater quality, rather than quantity, is of primary concern in the Greater Monterey County IRWM region, the following describes the water quality issues that pose the greatest threat for the region's drinking water supplies.

3.2.1.1 Nitrate Contamination

Nitrate contamination is particularly problematic in the Salinas Valley, where agriculture dominates the landscape. The 2012 UC Davis report, *Addressing Nitrate in California's Drinking Water*, identified irrigated agriculture as the single largest source of nitrate to groundwater, accounting for 96 percent of the 207 gigagrams (Gg) (equivalent to 220,000 tons) of nitrate delivered to groundwater in the Tulare Lake Basin and Salinas Valley study areas each year. Nitrogen is applied to cropland in the form of synthetic fertilizers or as animal manure. The nitrogen transforms to nitrate and is carried to groundwater by the percolation of water through the soil column (vadose zone). Other sources of nitrate loading to groundwater noted in the UC Davis report include municipal wastewater treatment facilities and food processors (3.2 Gg NO_3/yr), lagoons and ponds associated with confined animal operations (lagoons 0.2 and corrals 0.5 Gg NO_3/yr, respectively), septic tanks (2.3 Gg NO_3/yr), and urban sources (0.9 Gg NO_3/yr).[17]

The US EPA established the current drinking water standard and health advisory level of 10 mg/L nitrate as nitrogen (NO_3-N). The State of California Maximum Contaminant Level (MCL) for nitrate is also established at 10 mg/L NO_3-N. (Note, prior to July 2015 the MCL for California was reported as 45 mg/L as nitrate (NO_3); the State changed it to 10 mg/L as N to be consistent with the US EPA standard. (This is not a change in the regulatory limit, but rather a change in notation.) Levels of nitrate in groundwater that exceed this level pose a threat to human health and to other biological organisms that depend on groundwater. High nitrate in drinking water can cause methemoglobinemia, or blue baby syndrome, a potentially fatal blood disorder that reduces the blood's capacity to carry oxygen. Nitrate can also interact with organic compounds, including some pesticides, to form N-nitrosamines, which are known to cause cancer.[18] This is potentially significant because wells with high nitrate levels are also sometimes associated with high pesticide levels.

The State Water Board has singled out nitrate as the most frequently detected anthropogenic chemical above an MCL in drinking water sources in the state of California.[19] Nitrate may occur naturally in groundwater due to biologic activity or decomposition of geologic deposits, but rarely do natural

[17] Excerpted in part from: California State Water Resources Control Board. 2013. Recommendations Addressing Nitrate in Groundwater. Report to the Legislature, dated February 20, 2013, p. 14.

[18] Mahler, R.L, A. Colter, and R. Hirnyck. 2007. *Quality Water for Idaho: Nitrate and Groundwater.* University of Idaho Extension. http://www.cals.uidaho.edu/edcomm/pdf/CIS/CIS0872.pdf

[19] Ibid., p. 4.

concentrations exceed the primary drinking water standard of 10 mg/L NO_3-N.

Nitrate contamination in the Salinas Valley was first documented in a report published by the Association of Monterey Bay Area Governments (AMBAG) in 1978. In 1988, a report by the State Water Board documented that nitrate levels in the Salinas Valley groundwater had impaired its beneficial use as a drinking water supply. In a July 1995 staff report, the State Water Board ranked the Salinas Valley as their number one water quality concern due to the severity of nitrate contamination. All of the Salinas Valley cities have had to replace domestic water wells due to high nitrate levels that exceed the drinking water standard.

In its February 2013 Report to the Legislature entitled, *Recommendations Addressing Nitrate in Groundwater*, the State Water Board wrote, "Nitrate contaminated groundwater is a particularly significant problem in the Tulare Lake Basin and Salinas Valley areas – where about 2.6 million people, including many of the poorest communities in California, rely on groundwater for their drinking water."[20] SBX2 1 (Chapter 1 of the Second Extraordinary Session of 2008) required the State Water Board to develop nitrate contamination pilot projects in the Tulare Lake Basin and Salinas Valley to "improve understanding of the causes of groundwater contamination, identify potential remediation solutions and funding sources to recover costs expended by the state for the purposes of this section to clean up or treat groundwater, and ensure the provision of safe drinking water to all communities." As noted previously, that mandate was the impetus for this planning effort.

3.2.1.2 Seawater Intrusion

Another major water quality concern, primarily impacting coastal communities in the northern part of the Greater Monterey County IRWM region, is seawater intrusion. Seawater intrusion was first observed in a few wells in the Castroville area in 1932, and was documented in Bulletin 52 (DWR 1946). By the 1940s, many agricultural wells in the Castroville area had become so salty that they had to be abandoned. Seawater is high in chlorides. Chloride, according to the California Safe Drinking Water Act, has a secondary drinking water standard upper limit of 500 mg/L. Seawater intrusion is the primary threat to drinking water supplies for many disadvantaged communities located in the northern coastal portion of the region.

The Monterey County Water Resources Agency (MCWRA) has reported the extent of seawater intrusion from 1944 to 2016, noting recent areas of advancement occurring to the south in the Salinas Valley.[21] The East Side and Pressure Subareas of the Salinas Valley Groundwater Basin are the most impacted by lack of recharge. According to the 2015 Urban Water Management Plan for the Salinas District (California Water Service Company), the annual non-drought overdraft of the Salinas Valley Groundwater Basin is estimated to be approximately 45,300 AF per year. Because of the hydrologic continuity between the ocean and the 180-Foot and 400-Foot Aquifers of the Pressure Subarea, seawater has been intruding into these aquifers at a rate of approximately 28,800 AF per year. During droughts, the annual overdraft can escalate to between 150,000 to 300,000 AF per year.[22]

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[20] Ibid.

[21] See: Monterey County Water Resources Agency. 2010. Technical Memorandum – SEAWATER INTRUSION Tasks 2.01, 2.02, 2.04.2a EPA Grant XP-96995301 – Ground Water Sampling, Reporting, and Storage, Ground Water Sampling, Data QA/QC, Data Reduction and Representation. Dated July 30, 2010. Salinas, CA. See also http://www.co.monterey.ca.us/home/showdocument?id=31294

[22] California Water Service Company (Cal Water). 2016. *2015 Urban Water Management Plan, Salinas District.* Adopted June 2016. p. 55.

Seawater has intruded approximately 7.5 miles inland in the 180-Foot Aquifer and over 4.5 miles inland in the 400-Foot Aquifer. Figures 3.1 and 3.2 illustrate the extent of seawater intrusion in the Salinas Valley through the year 2015.

Despite best efforts on the part of water managers and water users in the region to reverse the trend of seawater intrusion, the problem is expected to worsen in future years on account of climate change. One of the most serious anticipated consequences of climate change for the Monterey Bay region is sea level rise. Sea level rose approximately seven inches (18 cm) over the past century (1900–2005) along most of the California coast.[23] Projections currently being used by the State of California suggest a possible sea level rise of approximately 14 inches (36 cm) by 2050 and up to approximately 55 inches (140 cm) by 2100.[24] Sea level rise will significantly increase the pressure of saltwater on the coastal Salinas Valley Groundwater Basin aquifers, causing increased seawater intrusion in critical groundwater supplies.

There are no simple or inexpensive fixes when it comes to salt water intrusion. Treatment options for removing sodium and chloride include reverse osmosis and distillation. A seawater-intruded well that exceeds the secondary drinking water standard limit of 500 mg/L will typically be abandoned rather than treated, due to the extremely high costs of desalination. For that reason, seawater intrusion might be considered not only a serious water quality problem but a serious water supply problem as well.

3.2.1.3 Other Contaminants of Concern

With the recent passage of Assembly Bill (AB) 1249 (Salas, Chapter 717, Statutes of 2014), the State has recognized the prevalence – and urgency to address – the contamination of drinking water supplies in California by not only nitrate, but specifically by arsenic, perchlorate, and hexavalent chromium (chromium-6). The USGS study noted previously found that about 5.5 percent of the household tap samples in the Pajaro and Salinas Valleys exceeded the drinking water standard for arsenic of 10 mg/L. Contaminants such as arsenic and uranium tend to be naturally occurring. Much of the low level chromium-6 found in drinking water is also naturally occurring; however, there are areas of chromium-6 contamination in California that result from historic industrial use, such as the manufacturing of textile dyes, wood preservation, leather tanning, and anti-corrosion coatings.[25] Perchlorate contamination in groundwater is the result of anthropogenic sources (perchlorate is used in solid propellant for rockets, missiles, fireworks, and in the production of matches and explosives).

Greater Monterey County IRWM Regional Water Management Group is currently working with a Technical Advisory Committee, which includes Monterey County Environmental Health and the Central Coast Regional Board, to identify the extent of nitrate, arsenic, perchlorate, and chromium-6 contamination in communities throughout the region and develop a plan to address the contamination.

[23] Cayan, D., P. Bromirski, K. Hayhoe, M. Tyree, M. Dettinger, and R. Flick. 2008. Climate change projections of sea level extremes along the California coast. *Climatic Change, 87*(0), 57-73. DOI 10.1007/s10584-007-9377-6.

[24] Projections are based on estimates by Cayan et al. (ibid.) and Rahmstorf, S. 2007. A semi-empirical approach to projecting future sea-level rise. *Science, 315*(5810), 368-370. doi: 10.1126/science.1135456.

[25] California State Water Resources Control Board. 2015. Fact Sheet: "Frequently Asked Questions about Hexavalent Chromium in Drinking Water," dated September 25, 2015.

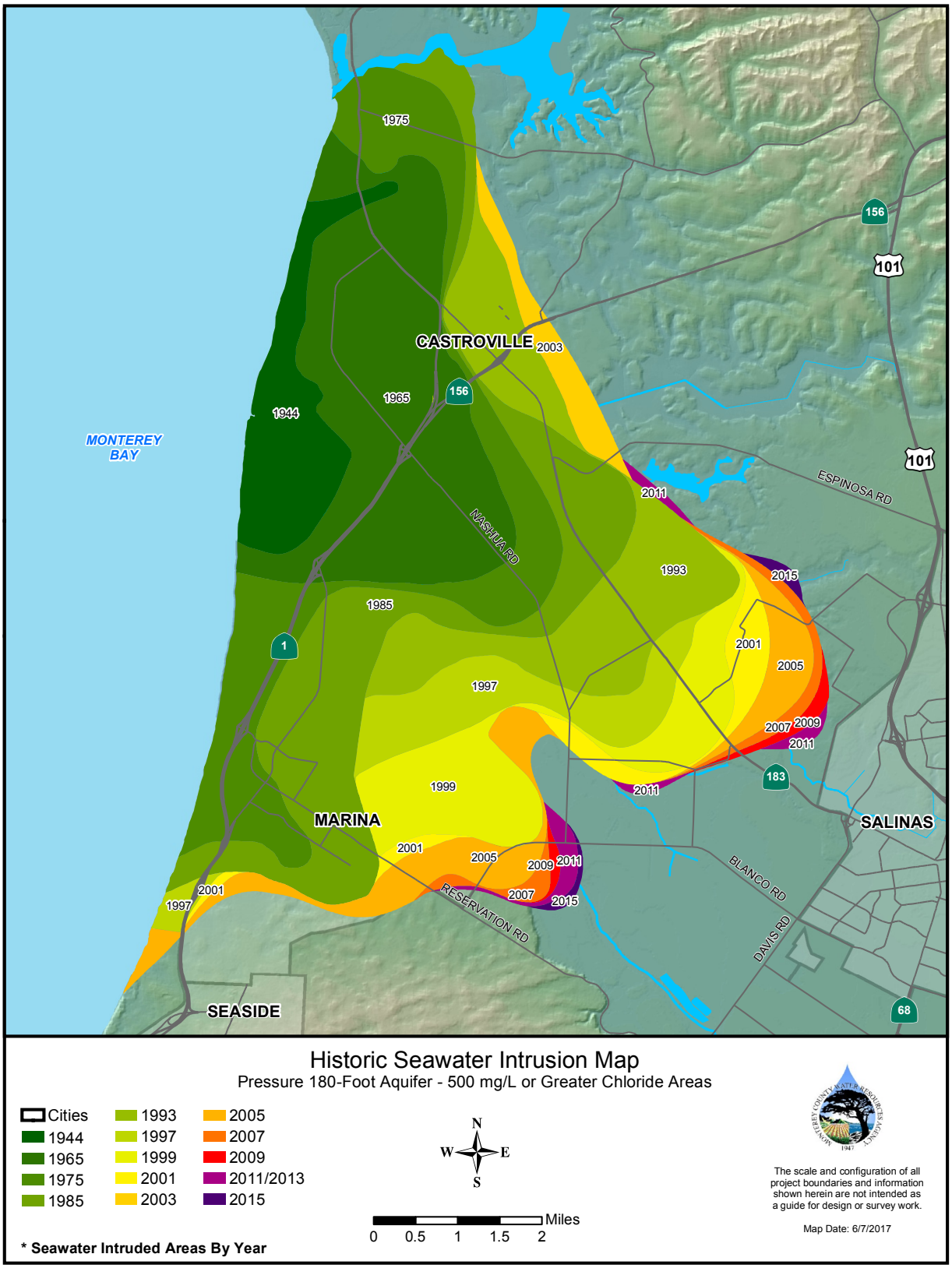

Figure 3.1 Seawater Intrusion in the Salinas Valley Pressure 180-Foot Aquifer

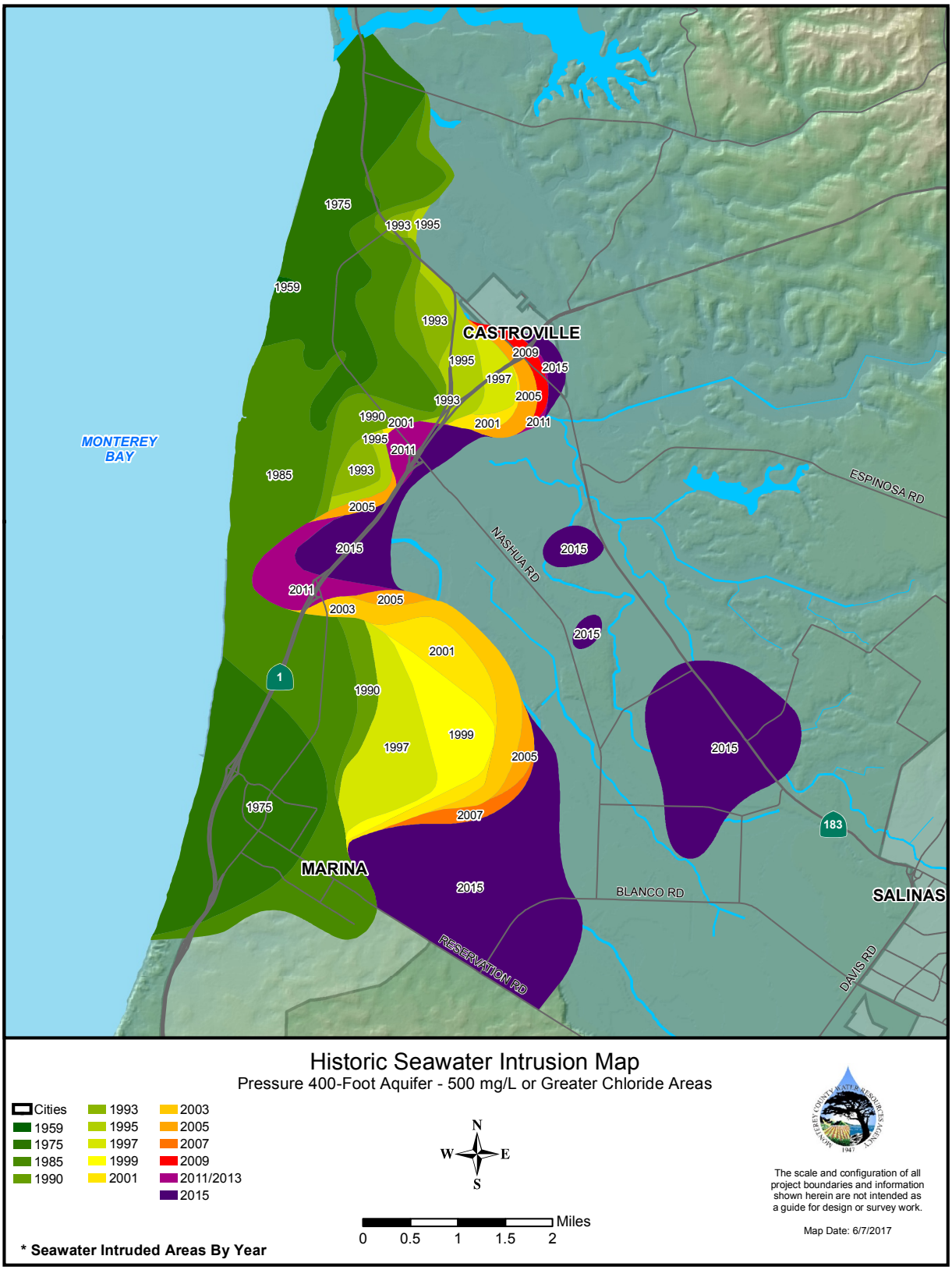

Figure 3.2 Seawater Intrusion in the Salinas Valley Pressure 400-Foot Aquifer

3.2.2 Lack of Technical, Managerial, and Financial Capacity

The Governor's Drinking Water Stakeholder Group 2012 Report to the Governor's Office states that, according to the communities and organizations that advocate on their behalf, and according to the *State Water Plan Update 2009*, two of the most pervasive problems affecting small disadvantaged communities are lack of funds to cover the cost of operations and maintenance, and organizational challenges.[26] The Governor's Drinking Water Stakeholder Group Report and the King's Basin study provide good discussions regarding technical, managerial, and financial (TMF) capacity issues for small disadvantaged communities. The following is excerpted from those reports.

TMF capacity refers to the ability of a community to have board leadership and personnel with the necessary technical and managerial skills to run the facilities as well as the financial wherewithal of the community to afford safe drinking water, provide sewer service, or prevent flooding. Many disadvantaged communities face TMF challenges due to their small economies of scale. A small public water system must meet the same requirements as a larger utility, and must shoulder similar operations and maintenance costs (including staffing, equipment maintenance, permitting, etc.), but with a smaller, poorer customer base over which to spread the cost.[27] The result is often higher water rates for customers who are least able to afford them, and inadequate financial resources for those responsible for managing and operating the system.

TMF capacity is an ongoing challenge for disadvantaged communities. Small disadvantaged communities can rarely afford to hire a system manager, so system management often falls by default to volunteer board members or to an administrative employee who lacks proper technical training or experience. While it is often difficult, if not impossible, for a disadvantaged community to offer the competitive salaries required to maintain skilled staff, water purveyors are at the same time restricted in their ability to raise rates in order to provide for higher salaries, due to the low income status of their customers. The result is a self-perpetuating cycle where the disadvantaged community residents continue to pay for services that can be substandard or virtually non-existent, and the water purveyor struggles to meet basic expenses.[28] Compounding the problem, if a community cannot demonstrate that they can afford operations and maintenance on a proposed system project, they are not eligible to receive most of the available grant dollars from state or federal government programs.[29]

A related problem is that, if individuals are accustomed to not paying for drinking water or for wastewater treatment on account of having their own well or being on septic, it is often difficult to convince them that they are better off paying a rate for water or wastewater service, in order to ensure safe and reliable drinking water and wastewater treatment. For that reason it is not uncommon for community members to protest against local entity formation or the imposition of water rates from a water or wastewater treatment provider. Proposition 218 requires that no rates can be set if a simple majority (50 + 1) of community members votes against it.

[26] Governor's Drinking Water Stakeholder Group, op. cit., p. 1.
[27] Kings Basin Water Authority, op. cit., p. 18.
[28] Ibid.
[29] Governor's Drinking Water Stakeholder Group, op. cit., p. 1.

3.2.3 Summary of Issues

The Kings Basin Pilot Project Study and Tulare Lake Basin Final Report[30] summarize the many challenges that small disadvantaged communities typically face in regard to drinking water and wastewater systems:

- Dependence on a single source of water
- Unreliable or inadequate drinking water or wastewater infrastructure
- Lack of redundancy of system or system components
- Geographic isolation, making consolidation challenging
- Inability to achieve economies of scale
- Low revenues and high delinquency rates
- Small or nonexistent reserve funds
- Lack of affordable interim solutions
- Lack of equipment
- Lack of funding for O&M
- Lack of technical skill to operate and maintain the system
- Lack of managerial skills
- Limited ability to hire paid staff or consultants
- Lack of office space and a secure location for board meetings, records storage and computer equipment
- Lack of access to technology in an increasingly technological world
- Limited understanding of regional or state dialogue concerning water policy
- Lack of informed, empowered, or engaged residents
- Inability to address the source of pollution
- Affordability

With an awareness of these general issues, the Project Team set out to understand the specific drinking water and wastewater problems that disadvantaged communities in the Greater Monterey County IRWM region were experiencing. EJCW staff conducted an extensive outreach effort to the small disadvantaged and suspected disadvantaged communities in unincorporated areas of the region (as determined by the Project Team's preliminary work described in Chapter 2). Once again, "small" for the purposes of this planning effort was defined generally as a communities relying on a combination of state small water systems, local small water systems and private domestic wells (i.e., water systems having less than 15 connections or regularly serving no more than 25 individuals on a daily basis at least 60 days/year). Small communities identified as "disadvantaged" according to their census block group, but served by municipal water, water district, or other large utility, were placed in the category of "larger systems" for the purposes of this study.

Rural Community Assistance Corporation (RCAC) staff took the lead in conducting outreach to the US Census "places" identified by ACS data as being disadvantaged, as well as to several large water utilities that were located in proximity to small disadvantaged communities. The purpose of this outreach was twofold: 1) to assess the general status and any drinking water or wastewater needs of the larger disadvantaged communities and to offer assistance in identifying funding resources if needed; and 2) to assess the capacity of the larger water and wastewater systems for potential extension of service to nearby small communities.

The following sections describe these separate outreach efforts.

[30] List compiled from Kings Basin study (op. cit.), pp. 8-9 and p. 17, and from Tulare Lake Basin Final Report (op. cit.), p. 8.

3.3 Outreach to Small Disadvantaged Communities

3.3.1 Outreach Process and Results

EJCW staff conducted extensive, door-to-door community outreach over a two-month period in the Salinas Valley and North County from June – July 2015. A questionnaire survey approach was used, modeled after prior disadvantaged community outreach efforts including the Coachella Valley Disadvantaged Community Outreach program conducted by Loma Linda University. The questionnaire included questions related to demographic information, including ethnicity, income, occupation, language spoken at home, homeownership, and type of dwelling, as well as questions related to the occupants' drinking water and wastewater system. The questionnaire is attached to this plan as Appendix 3.1, and a summary of results is attached as Appendix 3.2.

Those administering the questionnaire were fluent in both English and Spanish. Over the course of the two-month outreach, EJCW staff surveyed a total of 153 individual households, comprising an estimated 399 adults and 212 children. The geographic area surveyed included 19 census block groups, six of which were identified as disadvantaged communities based on ACS data at that time, and 13 of which were identified as suspected disadvantaged communities. These block groups comprised a total of 11 areas including: Moss Landing/Pajaro, Las Lomas, Prunedale, Bolsa Knolls, Boronda, Spreckels, Salinas, Gonzales, Soledad, Greenfield, and King City. Of these 11 areas, a total of 25 communities and/or neighborhoods were assessed.

Demographic information collected from the survey revealed that 84 percent of respondents were Hispanic or Latino, 12 percent were white or Caucasian, and two percent were Asian or Pacific Islander; 69 percent said they spoke primarily Spanish at home while 28 percent said they spoke mainly English at home. In addition, 17 percent of respondents were homeowners and 68 percent were renters/tenants.

The predominant use of bottled water is an indication of the general quality – or at least, the perceived quality – of drinking water in these communities: 91 percent of respondents reported using bottled water for drinking, and 70 percent used bottled water for cooking. Of those who used bottled water for drinking, 23 percent said they would drink water straight from the tap if they ran out of bottled water. For brushing teeth, 78 percent reported using water straight from the tap, and nearly everyone used water from the tap for bathing. Fifty-seven percent reported experiencing no wastewater problems, though 21 percent reported smelling sewage in the morning, at night, or when others were taking showers. Thirty percent of respondents did not know where the water in their sink came from (e.g., from well or municipal source).

Signs posted in the community of Alpine Court, near the City of Gonzales.

Table 3.1 lists the communities interviewed and briefly summarizes the results of the survey for each community. The disadvantaged communities listed in the table refer to the actual neighborhoods or households that are the target of this planning effort, rather than to the entire US Census block group; the block group (or tract) numbers are provided, however, for reference. The disadvantaged status of these communities is based either on ACS data or median household income (MHI) survey. *Note, the original table that resulted from EJCW's outreach effort has been updated to reflect 2015 ACS data, MHI survey results subsequent to the outreach effort, and any other notable changes.*

Table 3.1 Preliminary outreach to Small Disadvantaged and Suspected Disadvantaged Communities: Summary of Drinking Water and Wastewater Issues

Region and Area	CommunityName	Community Description	# Homes Surveyed	Tract or Block Group	DAC Status	Drinking Water System / Issues	Wastewater System / Issues
North County: Moss Landing/ Pajaro	Struve Rd	Est. homes: 37	13	60530101012	DAC	Homes on shared water well that is contaminated by nitrate. Residents are on short-term bottled water provided by Pajaro Sunny Mesa. Most residents know not to drink their tap water due to nitrate.	Sewer system served by Castroville Community Services District. Wastewater treated by Marina treatment facility.
	Springfield Rd, Bluff Rd, Jensen Rd	Est. homes: 40	9	60530101012	DAC	Properties on individual wells. High nitrate levels in this general area. (Highest Nitrate as NO_3 level recorded: 338mg/L - water test by EJCW)	Homes on individual septic systems.
North County: Las Lomas	Hudson Landing Rd	Est. homes: 80	3	60530146012	Suspected DAC	Residents have reported receiving "Do not drink water" notices from County. Very high nitrate levels in this area. (Highest nitrate level recorded: 40.5 mg/L NO_3-N -water test by Monterey County)	Homes on individual septic systems.
	Johnson Rd, Live Oak Rd, McGinnis Rd	Est. homes: 85	11	60530102012	Suspected DAC	Properties on individual domestic wells that are contaminated by nitrate. (Highest Nitrate as NO_3 level recorded: 212 mg/L - water test by EJCW)	Homes on individual septic systems.
North County: Prunedale	Echo Valley Rd	Est. homes: unknown. High density neighborhood.	1	60530102022	Suspected DAC	Echo Valley Elementary has occasional water treatment failures (arsenic).	Possible septic issues.
North County: Bolsa Knolls	Sterling Rd, Middlefield Rd.	Est. homes: 200+. "Middlefield Road" area	13	60530001012	DAC [MHI Survey by EJCW, 2016/ 2017]	3-4 water systems in area including Gabilan Water Co., Lagunitas Water System, Livingston Water Mutual. Livingston and Lagunitas out of compliance (nitrate).	Homes on individual septic systems.
	Hebert Rd, San Juan Grade Rd			60530105012	Suspected DAC		
	580 San Juan Grade Rd	Est. homes: 4. Community in the middle of	3	60530001012	Suspected DAC	Residents reported potential water quality issues; 7.6 mg/L NO_3-N reported by Monterey County in	Residents reported potential wastewater issues.

		agricultural fields; includes 3 mobile home and 1 house.				2016.	
	White Rd, Martines Rd, Schoch Rd	Est. homes: 44. Individual and multiple homes mixed neighborhood.	5	60530105011	Suspected DAC	Multiple water systems in area: individual wells and shared wells. Multiple home property on Schoch Rd. is on shared well contaminated by nitrate.	Homes on individual septic systems.
North County: Boronda	Boronda Rd, San Jon Rd, Rogers Rd, Espinosa Rd, Pinski Lane	Est. homes: Unknown. Low density area with mostly individual homes.	5	60530105041	DAC	Homes on individual domestic wells. Monterey County data shows several small water systems out of compliance for nitrate.	Homes on individual septic systems.
	Blue Rock Apts: 1200 West Market Circle	Est. homes: 11. Apt complex with apartments and duplexes.	5	60530018011	SDAC	Well water contaminated by nitrate. UCLA pilot project site.	Apartment complex on shared septic system.
North County: Spreckels	Hunter Rd	Est. homes: Unknown. Very low density, individual homes spread out between large ag fields.	1	60530145001	DAC	None reported.	Homes on individual septic systems.
	Toro Camp: 252, 262, 266 Hitchcock Rd	Est. homes: 8 houses and camp with 100-200 farmworkers.	7	60530106061	SDAC	Residents reported discolored water from shower/tap and sediment in tap water.	Monterey County Health Dept. identified Toro Camp as having potential septic failure. Farmworkers share bathroom/restroom. Homes and camp on shared septic system. Resident reported frequent septic pumping.
North County: Salinas	Chinatown area/ Dorothy's Place: Soledad St	Homeless camp: 100-300 homeless individuals	7	60530018022	SDAC	One public spigot that needs fixing regularly. Other public sources of water are very limited in Salinas.	No public restrooms after 7PM. One porta potty serving 100+ individuals after 7PM. No place to discard waste. [Update: 24-hr public toilet and

							shower facility completed in Oct. 2016]
South County: Salinas	San Jerardo Cooperative: 24500 Calle El Rosario	Est. homes: 60	5	60530106061	Suspected DAC	Residents continue to drink bottled water despite water system upgrade. Residents reported water affordability being an issue.	No reported wastewater issues.
South County: Gonzales	Alpine Court: 52 River Rd	Est. homes: 20	10	60530108042	SDAC MHI Survey by CRLA, 2013	Water contaminated by nitrate. Residents on bottled water provided by landlord. "Do not drink water" notices on site.	Community on shared septic system. Possible septic system failure, frequent pumping reported by residents.
South County: Soledad	Santa Teresa Village: 32300 San Vicente Rd	Est. homes: 10 mobile homes and house structures.	7	60530111023	DAC	Water contaminated by nitrate. "Do not drink water" notice on site. Residents on bottled water. Landlord concerned about water quantity. UCLA pilot project site.	Monterey County Health Dept. stated septic system will eventually need upgrade.
	Campo Jimenez	Estimated homes: 30+	8	60530109001	Suspected DAC	Residents reported potential water quality issues and water pressure issues; needs to be confirmed.	Residents reported potential wastewater issues; need to confirm.
	Pryor Farms: 31805 Silliman Rd	Est. homes: 8: 1 duplex house and 6 mobile homes.	5	60530108042	DAC	Nitrate. Water tank with potable water on site provided by landlord. UCLA pilot project site.	Recent septic system upgrade.
South County: Greenfield	Mercado Labor Camp: 39780 Apple Ave	Est. homes: 18: 5 apartments and 13 mobile homes.	8	60530112042	DAC	EJCW took water sample for nitrate testing: nitrate not detected. Monterey County reported that repeated bacteria detection is a problem.	Monterey County Health Dept. stated the need for an additional leach field.
	El Camino Real	Est. homes: 3. Cluster of houses with landlord and two tenants on site.	3	60530112041	Suspected DAC	Owner reported that he's told everyone not to drink the water (owner is confident that nitrate contamination is present, has not tested well).	One home is on city sewer, two homes on septic systems.
	40020 Pine Ave	Est. homes: 10. Landlord living on site.	2	60530112022	Suspected DAC	Mutual water company that serves 10 units. Spoke to owner, reported no drinking water or wastewater issues.	No reported wastewater issues.
	Carrillo Farms: 39568 Walnut Ave, Greenfield	Est. homes: 6. 1 house and 5 mobile homes.	5	60530112042	SDAC [MHI Survey by EJCW,	County records indicate nitrate contamination.	Residents reported severe wastewater issues (e.g., overflowing septic tank).

		Landlord lives on site.			2016]		
	Apple Ave #3 (Rocha Camp): 41841 13th St, Greenfield	Est. homes: 20. 10 houses and men's camp with 10 rooms.	10	60530112042	SDAC [MHI Survey by RCAC, 2016]	"Do not drink water" (nitrate) sign on site.	Monterey County Health Dept stated that septic system is failing. Residents have mixed responses.
	12th St. in Greenfield	Estimated homes: 2-3	1	630994	DAC	No reported drinking water issues.	No reported wastewater issues.
South County: King City	Collegeville camp: 48449 Lonoak Rd	Est. homes: 30+: 4-5 houses and 25+ camp rooms.	6	60530113041	Suspected DAC	Water quality issues previously. Currently on water tank filled with city water. Residents continue to buy bottled water.	Labor camp-style homes have shared restroom and shower facility. Currently only one working toilet for women's restroom.

Chinatown. A single faucet and porta potty plus two additional bathrooms located at the drop-in center next door served the entire Chinatown homeless encampment (estimated population of 100 – 200 individuals) in downtown Salinas. In October 2016, a 24-hour public toilet and shower facility was completed for the Chinatown homeless encampment. Photo credit: Vicente Lara. Used with permission.

Middlefield Road. Roughly two miles outside the City of Salinas, the Middlefield Road neighborhood currently has at least three small mutual water companies providing drinking water to 26 houses. Two of these water systems are out of compliance due to high nitrate levels and the third has had repeated bacteria detections.

Alpine Court Labor Camp, located behind a fertilizer plant in Gonzales.

Struve Road. The community of Struve Road, located north of Moss Landing is currently receiving bottled water provided by the Pajaro Sunny Mesa Community Services District due to nitrate contamination of their drinking water well.

3.3.2 Prioritizing Need

In order to be able to identify solutions for the small disadvantaged communities, a great deal of additional information must be collected and evaluated – for example, details regarding the water or wastewater system infrastructure, additional water quality data, the community's general TMF capacity, proximity of

nearby water systems, and potential engineering solutions. Given limited funding, it was clear to the Project Team that identifying specific solutions for every small disadvantaged community on the list would not be possible. The Project Team therefore decided to prioritize the small disadvantaged communities according to need, and to select seven of the "high priority" communities for further in-depth analysis (which is described in *Chapter 4, Identifying Solutions*). Input throughout the process was obtained from the Salinas Valley Disadvantaged Community Water and Wastewater Plan TAC, from disadvantaged community stakeholders, and from the Greater Monterey County IRWM Regional Water Management Group. The prioritization process occurred as follows.

A prioritization matrix tool was developed to help the Project Team and the TAC prioritize communities based on the regional needs identified. The tool describes characteristics that constitute a "high," "medium," or "low" priority community in need, as shown in the table below.

Table 3.2 Prioritization Matrix Tool

High	Medium	Low
DAC Status (based on census data [ACS], other available data, e.g., MHI survey, or EJCW drinking water survey data)	DAC Status (based on census data [ACS], other available data, e.g., MHI survey, or EJCW drinking water survey data)	DAC Status (based on census data [ACS], other available data, e.g., MHI survey, or EJCW drinking water survey data)
Communities/areas that have **known** drinking water or wastewater issues (e.g., "do not drink" orders or signs, interim drinking water, County records, owner confirmation)	Communities/areas that have **reported but not confirmed** drinking water or wastewater issues (e.g., discolored tap water, bad taste, reports by tenant of daily septic systems pumping)	**No known or reported problems**
Communities that face an **immediate** public health threat, for example: • Nitrate or arsenic over the MCL • Overflowing septic tanks • No safe method of disposing human waste	Communities that face a **potential** public health threat, for example: • Need to upgrade septic system • Need to install additional leach fields • Reports of water quality issues • Flooding	Communities that face **no immediate or potential** public health threat

Communities were then tiered into high, medium, or low priority according to their assessed needs, as shown in Tables 3.3 – 3.5. Communities are listed within each table in no particular order. Red shading indicates high priority need, orange indicates medium priority need, and no shading indicates low priority or no reported need. Figure 3.3 shows locations of the high, medium, and low priority disadvantaged and suspected disadvantaged communities in the Greater Monterey County Region.

The communities were prioritized according to a perceived health threat in regard to drinking water and/or wastewater, based on the available data, input from the TAC and other stakeholders, survey responses from community members, and in some instances, water quality testing conducted by EJCW during outreach efforts. Given that the available data via public records was limited and not entirely up-to-date (at the time this data was collected), the prioritization might be considered a "first cut." The Project Team recognizes that there are many other serious water quality contaminants of concern that any of these communities might be experiencing (such as arsenic, perchlorate, chromium-6, E. coli), and wastewater problems that might not be obvious. The priority lists do not take these other factors into account, nor do they take into account factors such as affordability. The communities on the high priority list were considered *most likely* to have the most serious drinking water and/or wastewater problems based on the information available, and therefore were

placed first in line for more immediate action. The intention is for the communities in the medium and low priority categories to "move up the line" as the communities in the high priority category are addressed.

Also, it should be noted once again that ACS data changes from year to year, consequently the "disadvantaged community" list is ever evolving. The prioritization described above should be considered a working list that will continue to evolve.

Table 3.3 High Priority Communities

Community	Block Group	DAC Status	Drinking Water	Wastewater
Struve Road	60530101012	Identified DAC	Nitrate above MCL	No known problems
Springfield, Bluff, Jensen Road	60530101012	Identified DAC	Nitrate above MCL	No known problems
Alpine Court	60530108042	Identified DAC	Nitrate above MCL	Failing septic systems
Walnut Avenue	60530112042	Identified DAC	Nitrate above MCL	Failing septic systems
Apple Avenue	60530112042	Identified DAC	Nitrate above MCL	Reported septic system upgrade needed
Chinatown	60530018022	Identified DAC	No access after 7pm	No known problems
Santa Teresa	60530111023	Identified DAC	Nitrate above MCL	Reported septic system upgrade needed
Johnson Road	60530102012	Suspected DAC	Nitrate above MCL	No known problems
Middlefield Road	60530001012 60530105012	Identified DAC	Nitrate above MCL	No known problems
Schoch Road	60530105011	Suspected DAC	Nitrate above MCL	No known problems
Blue Rock Apartments	60530018011	Identified SDAC	Nitrate above MCL	No known problems
Pryor Farms	60530108042	Identified DAC	Nitrate above MCL	No known problems
Hudson Landing Road	60530146012	Suspected DAC	Nitrate above MCL	No known problems
Campo Jimenez	60530109001	Suspected DAC	Nitrate above MCL	Reported excess septic pumping

Table 3.4 Medium Priority Communities

Community	Block Group	DAC Status	Drinking Water	Wastewater
Collegeville	60530113041	Suspected DAC	No known problems	Reported wastewater issues
Toro Camp	60530106061	SDAC	Reported quality concerns	Reported wastewater issues
San Juan Grade Road	60530001012	Suspected DAC	Reported quality concerns	Reported wastewater issues
El Camino Real	60530112041	Suspected DAC	Reported quality concerns	No known problems
Mercado Camp	60530112042	Identified DAC	Reported quality concerns	Reported wastewater issues

Table 3.5 Low Priority Communities

Community	Block Group	DAC Status	Drinking Water	Wastewater
San Jerardo	60530106061	Suspected DAC	Affordability problems	No known problems
Boronda, San Jon, Rogers, Espinosa Road, Pinski Lane	60530105041	SDAC	No reported problems	No known problems

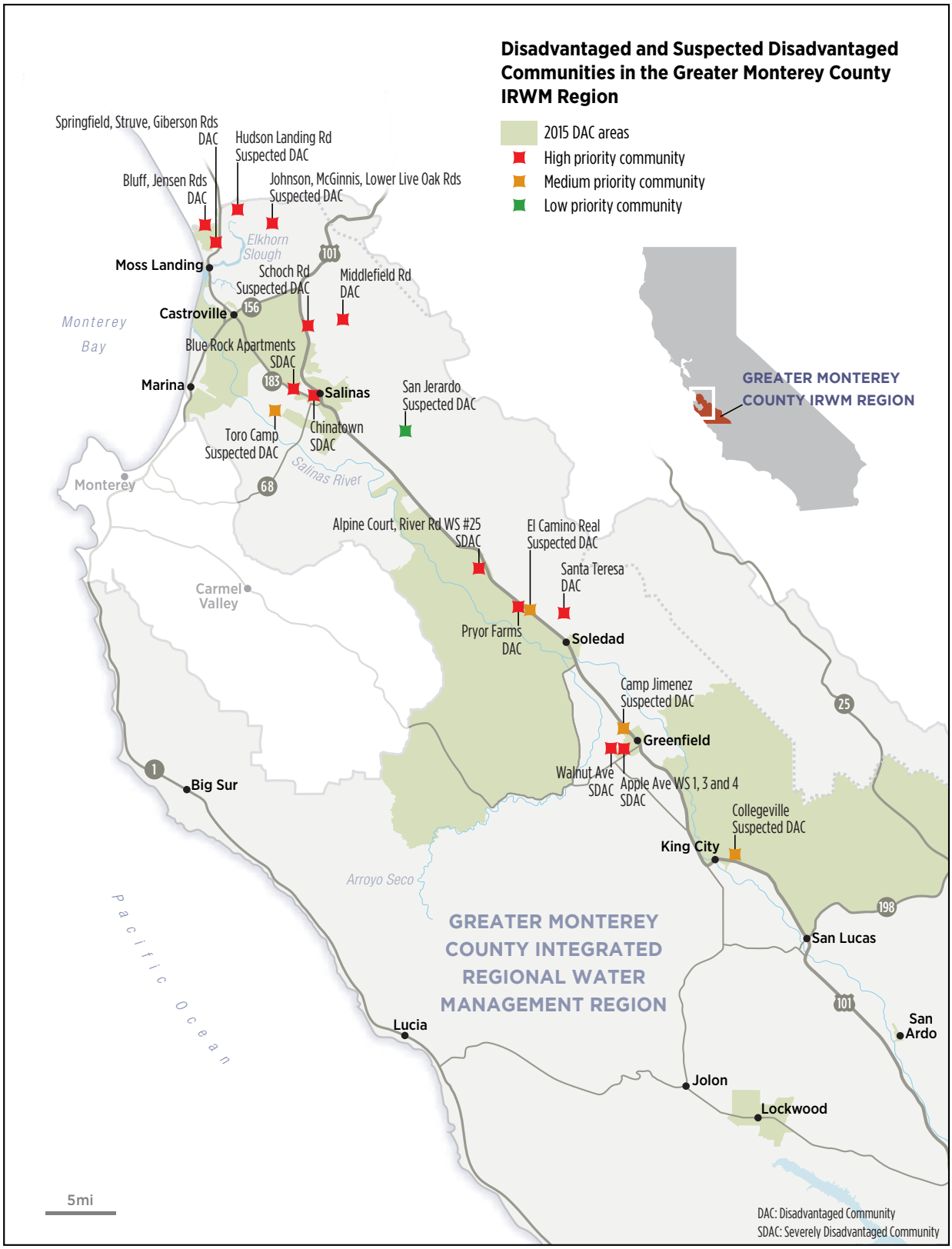

Figure 3.3 High, medium, and low priority disadvantaged and suspected disadvantaged communities

3.3.3 Water Quality Data for High Priority Communities

With the list of high priority communities in hand, the Project Team was able to gather more specific – and by that time, more up-to-date – water quality data from the Monterey County Health Department for state and local small systems that serve those specific communities (note, these data do not include private domestic wells). Table 3.6 below lists water quality data collected by Monterey County Health Department between March 2014 and November 2016 for small water systems in the high priority communities.

Table 3.6 Water Quality Data for Small Water Systems in Disadvantaged and Suspected Disadvantaged Communities (Monterey County Health Department)

Community	Water System Name	Number of Connections	NO_3-N (mg/L) MCL=10	Sample Date	Chrom-6 (ug/L) MCL= 10	Sample Date
Middlefield Rd						
	Middlefield Rd WS #4	5	13.3	3/9/2016		
	Middlefield Rd WS #2	14	11.7	3/9/2016		
	Middlefield Rd WS #3	7	7.5	3/9/2016		
Hudson Landing						
	Hudson Landing WS #03	2	40.4	9/24/2015		
	Hudson Landing WS #01	4	1.4	1/5/2016		
	Hudson Landing WS #04	2	17.6	9/25/2013		
	Hudson Landing WS #08	13	0.5	6/22/2016	20	3/31/2016
	Hudson Landing WS #10	4	4.1	3/31/2016	5.3	3/31/2016
	Hudson Landing WS #11	2	7.0	9/24/2015		
	Hudson Landing WS #12	2	1.1	10/5/2015		
	Hudson Landing WS #13	2	0.7	10/5/2015		
	Spring Rd WS #03	2	14.0	3/13/2014		
Johnson Rd						
	Live Oak WS #2	2	8.6	6/29/2016	14	7/21/2016
	Live Oak WS #7	3	5.2	6/28/2016	5.1	6/28/2016
	Live Oak WS #15	2	0.9	6/29/2016	19	6/29/2016
	Johnson Rd WS #1	2	13.8	6/28/2016	9.1	6/28/2016
	Johnson Rd WS #3	3	45.4	3/12/2014	5.9	6/28/2016
	McGinnis Rd WS #1	4	16.5	6/28/2016	13	6/28/2016
Santa Teresa						
	San Vicente Rd WS #1	10	10.2	6/28/2016		
Schoch Rd						
	El Camino Real WS #34	5	14.0	5/27/2014		
	El Camino Real WS #35	5	0.5	11/13/2015		
	El Camino Real WS #33	4	8.4	3/1/2016		
	El Camino Real WS #37	4	22.4	11/12/2015		
	El Camino Real WS #43	2	24.4	12/9/2015		
	White Rd WS #1	14	0.7	8/9/2015		
Apple Ave						
	Apple Ave WS #1	4	34.6	9/16/2015		
	Apple Ave WS #3	20	35.2	12/2/2015		
	Apple Ave WS #4	2	23.3	6/8/2016		
Walnut Ave						
	Walnut Ave WS #2	6	36.1	5/4/2016	1	5/9/2016
Bluff Rd						
	Bluff Rd WS #02	3	21.9	3/13/2014	ND	3/24/2016

	Bluff Rd WS #03	6	ND	3/24/2016		
	Bluff Rd WS #04	3	53.3	3/13/2014	0.9	3/24/2016
Jensen Rd						
	Jensen Rd WS #2	4	75.9	7/28/2016		
Springfield Rd						
	Springfield Rd WS #01	2	1.6	3/24/2016	1.6	3/24/2016
	Springfield Rd WS #02	2	49.5	9/24/2015		
	Springfield Rd WS #04	3	56.7	3/13/2014	2.2	3/24/2016
Pryor Farms						
	Pryor Farms Inc. WS	8	24.4	12/7/2015		
Blue Rock View Apts						
	Bluerock View Apts WS	11	13.6	6/9/2016		
Alpine Court						
	River Road WS #25		62.8	12/7/2016	6.2	5/13/15

3.3.4 Communities Targeted for Further Analysis

From the high priority community list, the Project Team selected seven small disadvantaged communities with the goal of identifying specific solutions for each of those communities. These seven communities were chosen mainly for "practical" reasons (e.g., interest, or lack of interest, expressed on the part of community members to participate; or other solutions in progress, such as the UCLA pilot project).

The seven communities selected for the next phase of the planning process were:

1. Johnson Road
2. Walnut Avenue
3. Apple Avenue
4. Santa Teresa
5. Hudson Landing Road
6. Middlefield Road
7. Schoch Road

The next chapter of this plan, *Chapter 4, Identifying Solutions*, describes the in-depth analysis conducted for each of these seven communities, the outcomes of that analysis, recommendations and next steps.

3.4 Outreach to Disadvantaged Community "Places" and Large Water Systems

Over the course of the project, the Project Team conducted outreach to the larger disadvantaged communities – that is, US Census "places" identified as being disadvantaged – and to the large water purveyors located in proximity to small rural disadvantaged communities in order to determine any issues or needs they may have, and/or their capacity to provide service to nearby smaller communities.

3.4.1 Outreach to Disadvantaged Community Places

Outreach to the following disadvantaged community "places" was conducted using a Needs Assessment tool developed by the California Department of Water Resources:

- Boronda CDP
- King City
- Moss Landing CDP
- San Ardo CDP
- San Lucas CDP

Note that the cities of Greenfield and Gonzales and the community of Lockwood were not designated as disadvantaged according to 2014 ACS data when RCAC began the outreach effort, and therefore were not included in this effort. These places are designated as disadvantaged communities according to 2015 ACS data. See Table 2.2 in Chapter 2 for specific median household income data for CDPs (2013-2015).

Needs Assessment surveys for all of the communities were conducted on-site, with the exception of King City. RCAC staff was unsuccessful in scheduling a meeting with King City staff, however, based on previous communications, RCAC reported that King City has expressed willingness to act as a resource for surrounding smaller communities (including the community of Pine Canyon). In order to be in a position to offer extension of service for water and sewer, however, it is apparent that the City will need to upgrade its plant infrastructure. RCAC is continuing to pursue communications with King City.

Table 3.7 below summarizes the drinking water and wastewater issues of the disadvantaged community places along with recommendations and next steps.

Table 3.7 Summary of Drinking Water and Wastewater Issues and Recommendations for Disadvantaged Community "Places"

Community	Community Characteristics	Drinking Water	Wastewater	Other Issues / Needs	Recommendations and Next Steps
Boronda	MHI = $34,009 300 connections Population 1,271	Service provided by Cal Water (Public Water System # 2710010). No issues identified.	Collection provided by Monterey County Public Works, treatment by Monterey One Water. Problems consist of aging infrastructure (lift stations and piping).		A recent rate study was completed by RCAC and a rate increase is under board review. Recommend submitting request to State Water Resources Control Board (SWRCB) for California Rural Water Association to perform a leak audit. Request planning funds to conduct a feasibility study, then request construction funds. Funding source: Proposition 1 Technical Assistance (Prop 1 TA) grant. Lead: Monterey County Public Works
Moss Landing	MHI = $31,500 248 connections Population 153	Service provided by Pajaro Sunny Mesa Community Services District (PSMCSD). No issues identified.	Collection provided by Castroville Community Services District (CCSD), treatment by Monterey One Water. Problems with aging infrastructure: need replacement or installation of various mechanical equipment, lift stations, manholes; and transmission line suffers from inflow and infiltration (I&I) problems.	The community has no storm drains; significant flooding occurs with heavy rains.	Apply for Prop 1 TA funds for Planning through SWRCB. (The scope of the work cost has been identified by CCSD Engineer.)
San Ardo	MHI = $40,375 162 connections Population 746	Service provided by San Ardo Water District. Water quality and quantity are good. Problems with aging infrastructure: need replacement of galvanized water distribution system, water storage, old water	Service provided by San Ardo Water District. Sewer system recently constructed and reportedly functions well. Need to protect wastewater ponds from flood water damage.	General needs include succession planning, development of a budget and rate structure to fund utility district's administration, O&M costs, and development of as built water system maps.	A review of either contract operators, shared operators from nearby communities or extension of service from a nearby community such as San Lucas should be evaluated. Conduct rate study or financial review.

		meters. Need increased water storage capacity.			
San Lucas	MHI = $43,750 97 connections Population 315	Service provided by San Lucas Water District. District well and state-designated interim well subject to nitrate and TDS exceedences. Residents currently on bottled water order. Also, need to replace oldest meters, and to protect District well from flood waters.	Service provided by San Lucas Water District. Sewer system is relatively free of problems. Need to provide additional wastewater pond aeration.	General needs include review and revision of water rates to cover O&M costs and provide reserve funds, and gaining ownership or legal control of the Interim well site. Possible connection to King City is under study by Monterey County.	1) Detailed study of wellhead treatment is currently under study; requested by State Water Board. 2) Apply for Prop 1 TA or other legal assistance funding source if the community would like to take ownership of current water supply.

3.4.2 Outreach to Water Districts and Utilities

The Project Team contacted the following water districts and water utilities to assess available resources for water and wastewater, in order to understand their potential capacity for providing extension of services to nearby communities that may be in need. This list does not include all water and wastewater districts and utilities in the planning region, but only those located in proximity to small disadvantaged communities identified as part of this planning process.

- City of Soledad
- Pajaro Sunny Mesa Community Services District (PSMCSD)
- Castroville Community Services District (CCSD)
- City of Gonzales
- California American Water (CalAm)
- Alco Water Service
- California Water Service (Cal Water)

In surveying the larger systems, the Project Team noted that some expressed reluctance to offer extension of service. This may have been due in part to drought conditions, where there was heightened concern about ensuring adequate water supply for existing customers. Some utilities also expressed concern over new state regulations for chromium-6 and arsenic, noting the potential financial burden involved with installing new treatment systems to stay in compliance.

It should be noted that the recent passage of California SB 88 may result in some water utilities being "forced" to extend service to nearby disadvantaged communities. This bill authorizes the State Water Resources Control Board to order consolidation with a receiving water system where a public water system (15+ connections or serving 25 or more individuals daily at least 60 days/year), or a state small water system (5-14 connections, and not serving more than 25 individuals daily at least 60 days/year) within a disadvantaged community, consistently fails to provide an adequate supply of safe drinking water. The bill also authorizes the State Board to order the extension of service to an area that does not have access to an adequate supply of safe drinking water so long as the extension of service is an interim extension of service in preparation for consolidation.

Below briefly summarizes the results of the outreach effort to these larger water systems.

California Water Service: Cal Water is an investor-owned public utility regulated by the California Public Utilities Commission (CPUC). In Monterey County, Cal Water serves 70 percent of the urban users in the City of Salinas and some of the surrounding areas, including the unincorporated communities of Boronda, Bolsa Knolls, Las Lomas, Oak Hills, Country Meadows, Salinas Hills, and Buena Vista in northern Monterey County; Cal Water also supplies water to King City. The drinking water delivered to customers in the Salinas District meets all federal and state regulations. Cal Water has ample capacity and is considered a potentially good resource for nearby small communities in need. EJCW has had several discussions over the course of this study with Cal Water staff regarding potential extension of service from both the Cal Water–Salinas system and also Cal Water–Las Lomas to three high priority disadvantaged communities (Johnson Road, Middlefield Road, and Schoch Road – see *Chapter 4, Identifying Solutions*).

City of Soledad: The City of Soledad was designated a disadvantaged community according to 2014 ACS data but not according to the latest (2015) data; its MHI is $51,161 whereas the disadvantaged community "threshold" is $49,454. Three out of the six census block groups that comprise the city boundaries are

disadvantaged. The City provides drinking water and wastewater treatment services for its residents (including wastewater collection for the State Prison, but the Prison has its own drinking water supply), and has ample capacity to extend services to nearby communities in need. The City expressed a willingness to consider an extension of service to the small disadvantaged community of Santa Teresa (discussed below and in Chapter 4), which is located approximately 0.8 miles from the nearest connection point for the city's water system.

Pajaro Sunny Mesa Community Services District: PSMCSD provides potable water services, fire flows, parks, and streetlights services to many residents of North Monterey County. The District provides these services from the Pajaro River in the north, to Moss Landing in the west, to the Highway 101 corridor in the south.[31] PSMCSD owns and operates nine separate water systems in the North Monterey County region including Pajaro, Sunny Mesa, and Springfield. The Pajaro Water System generally has a good supply of water as well as good quality. The Springfield Road water system suffers from high nitrate and the Sunny Mesa System has high chromium-6 and limited source water capacity. Moreover, the District is reluctant to take on any new customers due to limited staff and financial resources. The District's current efforts are focused on implementing a project to address the nitrate in their Springfield Water System.

Castroville Community Services District (CCSD): According to 2015 ACS data, the MHI of Castroville is $49,654, just slightly above the "disadvantaged community" threshold of $49,454. In 2017 RCAC conducted an income survey that showed the MHI to be $35,000, qualifying the community as a severely disadvantaged community. Castroville's water supply is threatened by encroaching seawater intrusion, and the district recently installed an arsenic treatment system. They are in compliance with state water quality standards. Infrastructure improvements are needed, including increased water storage, a tie-in to a desalination line, additional pipeline to relieve surcharging the main gravity line, and improved pretreatment. Nonetheless, CCSD could be a resource to nearby communities, if the need should arise. The community of Castroville is considered by the Project Team to be a good candidate for State Water Board Proposition 1 grant funds. So far a need of $2.8 million has been identified for the desal tie-in.

City of Gonzales: The City of Gonzales provides both water and wastewater treatment services for city residents. The City is in the process of extending service to the nearby farm worker community of Alpine Court (currently served by River Road WS #25) located just outside city limits. Alpine Court currently relies on bottled water due to extremely high nitrate contamination and suffers from failed septic systems. The City will be applying on behalf of Alpine Court for Proposition 1 TA funding through the State Water Board to determine costs for extension of sewer and water.

California American Water Company: CalAm is a CPUC-regulated utility serving approximately 50 communities throughout the state with high quality water and wastewater services. Communities served within this area include Toro, Ambler Park, Las Palmas and Spreckels, which are all located between the Monterey Peninsula and Salinas Valley. Also included are the communities of Ralph Lane and Indian Springs near Salinas, Oak Hills in northern Monterey County, and Chualar in southern Monterey County. All of these systems are independent of each other. The Monterey/Salinas district of CalAm covers Chualar and Ralph Lane. The staff reported that both water quantity and quality meet state drinking water standards. CalAm is potentially a resource for small disadvantaged communities in need.

[31] A list of water systems operated by PSMCSD can be found at: http://pajarosunnymesa.com/index.php?page=water

Alco Water Service: Alco provides water to the northern and eastern areas of the city of Salinas (the areas not covered by Cal Water), including neighborhoods that are considered disadvantaged. Alco's rates and service quality are regulated by the CPUC and its water quality is regulated by both the CPUC and the State Water Board Drinking Water Program. The potential for Alco to extend service to surrounding communities is presently unknown.

The following chapter focuses primarily on identifying solutions to drinking water problems in the seven targeted high priority small disadvantaged communities: Johnson Road, Walnut Avenue, Apple Avenue, Santa Teresa, Middlefield Road, Schoch Road, and Hudson Landing Road. The chapter also lays out a general "roadmap" for future work for remaining high priority disadvantaged communities in the region.