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Proposition 63: Money for Mental Health

Are We Getting It Right in Santa Cruz?

2013-2014 Santa Cruz County Grand Jury

June 2014

Summary

In 2013, a State audit of four California counties, not including Santa Cruz County, questioned whether funds from the Mental Health Services Act, Proposition 63 (Prop 63), were being used appropriately. Prop 63, commonly known as the Millionaire Tax, was passed in 2004. The Santa Cruz County Grand Jury, interested in how our county uses its Prop 63 funds, decided to investigate our county's Health Services Agency (HSA) programs funded by that law. We found that the major criticisms raised by the state audit were not significant in our county. In this report, we examine other oversight and accountability issues, and make recommendations to address them.

Background

In 1957, California began to transfer the treatment of mental illness from the state level to the local level. Funds from federal, state, and local governments were pooled to provide for community level services. This funding has never been sufficient to meet the needs of communities now dealing with severe mental health issues.^[1]^[2]

In 2004, California voters approved Prop 63 in an effort to give communities the financial help they needed. The law established a 1% tax on personal incomes over one million dollars a year, and defined how the money should be used by providing broad goals and processes for developing mental health programs. A timetable was established for each component to be implemented. Approval and oversight were, at that time, held at the state level. However, various changes to the law have subsequently been enacted resulting in the transfer of oversight to the county level for some components.^[3]

In August 2013, the California State Auditor criticized the oversight of Prop 63 programs based on data from four counties.^[4] Excerpts and analysis of the audit appeared in the Santa Cruz Sentinel:

“State Auditor Elaine Howle reported last week that she could offer ‘little assurance’ counties have ‘effectively and appropriately’ spent the nearly \$7.4 billion raised and disbursed since between 2006-07 and 2011-12... In fact, according to news reports, counties have spent the money on programs such as acupuncture, art and drama classes, horseback riding, gardening and yoga, with only tenuous links to treatment for mentally ill patients.”^[5]

The Grand Jury decided to investigate the use of Prop 63 funds in Santa Cruz County. We sought to find the following:

- Do these criticisms apply to our county?
- Are our Prop 63 funded programs effective in meeting the mental health treatment needs of people here?
- Can Prop 63 funded programs be improved, and if so, how?

Scope

The Grand Jury interviewed HSA personnel, attended public meetings related to mental health and substance abuse programs, and reviewed related documents at the state and county levels. We also reviewed relevant published literature. We examined the law, its provisions, and the implementation of programs funded through the law in Santa Cruz County.

Prop 63 has five mental health components:^[3]

1. Community Services and Supports (CSS) provides funds for direct services to individuals with severe mental illness. Full Service Partnerships (FSPs) are in this category. FSPs provide wrap-around services, or “whatever it takes” services, to clients. Housing is also included in this category.
2. Capital Facilities and Technological Needs (CFTN) provides funding for building projects and for increasing technological capacity to improve mental illness service delivery.
3. Workforce, Education and Training (WET) provides funding to improve and build the capacity of the mental health workforce.
4. Prevention and Early Intervention (PEI) provides funding to recognize early signs of mental illness, as well as to improve early access to services and programs, including the reduction of stigma and discrimination.
5. Innovation (INN) funds and evaluates new approaches to increase access to the unserved and underserved communities, promotes interagency collaboration, and increases the quality of services.

In Santa Cruz County there are over 54 specific programs within the five categories. We limited our focus to Community Services and Supports (CSS), which receives most of the funding, and to Prevention and Early Intervention (PEI), which is most often criticized. See Appendices A and B for a sample of expected client numbers and costs.

CSS and PEI provide services directly to clients. In Santa Cruz County, CSS has eight programs intended to expand services available to support clients. This includes many levels of care, from locked residential treatment to support while living at home. CSS programs use level of care assessment tools to provide treatment in the least restrictive setting appropriate for the client. PEI programs include early screening of children, culturally focused and at-risk youth programs, parenting programs, programs to educate about substance use disorders, programs for older adults, and veterans outreach. Often these services are provided by contractors under supervision of the county Health Services Agency.

Each county prepares and submits a three-year plan for all five categories’ programs and expenditures, and updates the plan annually. The Grand Jury reviewed the three-year plan Annual Update for 2013-14^[6] and Draft Plan for 2014-15 through 2016-17.^[7] These describe service programs to be provided and report quarterly numbers of clients served. We also reviewed budgets, organization charts, program audits, financial and quality audit data, and additional online documents.

Investigation

Discussion of Program Criticisms

Two criticisms given in the 2013 State audit were applicable here in Santa Cruz County. Yet, as discussed below, we found them to be of minor concern.

One criticism was that programs were being funded such as horseback riding, yoga classes, gardening, and outdoor adventure tours that are not valid treatment for mental illness.^[6] However, we found little evidence of these activities in MHSAS Prop 63 programs.

Through an online search, we did find one residential treatment program for youth that has been used by clients of HSA, which incorporates horses as part of its therapy. Santa Cruz County youth in mental health crisis sometimes had to be placed in that program, even though it is located outside Santa Cruz County, because HSA had no crisis residential placement for children or youth within this county. The crisis center at Dominican Hospital, known as the Behavioral Health Unit (BHU), was limited to adults for residential care. However, the BHU has been replaced by the new Psychiatric Health Facility (PHF) as of December 2013. According to the PHF web page, crisis care at the PHF does serve children up to age 18, who are admitted involuntarily.^[8] This means that crisis residential treatment for youth is now available in our county. None of the Prop 63 funded programs described in the most recent Annual Update and the current Three Year Draft Plan mention horseback riding or equine therapy.

The Grand Jury also found a Workforce Education and Training (WET) program that included Mindfulness training. Mindfulness is a meditation practice used to relieve stress and focus attention for clearer thinking. Mindfulness training, however, has become an accepted mental health practice as reported in published literature.^{[9] [10]}

The second criticism, that of social programs being used as mental health treatment, also was not viewed as a concern in this county. Several Santa Cruz PEI programs include promotion of cultural pride for at-risk youth, programs for improved parenting presented in a culturally relevant way, and a program focused on sexual orientation diversity. The California Mental Health Services Oversight and Accountability Commission (MHSOAC) has encouraged programs like these with published fact sheets discussing values and goals for them.^{[11] [12]} Successes of the Santa Cruz County PEI programs were proudly presented by MHSAS and program clients at a recent public meeting.

Another successful program, the Mental Health Client Action Network (MHCAN), is a peer-run respite center funded partly by Prop 63, and it provides:

“...a range of supports and social amenities including coffee, phone access, and a place to socialize or get information about community and mental health resources. MHCAN also offers art, writing, guitar classes, peer support groups and hospital visiting. A computer lab offers Internet access and homework assistance. MHCAN will provide rides to MHCAN,

River Street Shelter, doctors, therapists, and the Emeline Campus.^[13]

These are peer-run, peer-requested services. The county contract for MHCAN in 2013 is less than \$15,000. Clients of this program praise the center and the benefits derived from its services. Some clients have, in fact, volunteered to teach classes to keep them available at MHCAN.

Oversight and Community Involvement

In 2012, California moved responsibility for approval of CSS and PEI from the state to the county. The Santa Cruz Board of Supervisors now approves these direct service plans.^[14]^[15] However, audit and oversight remain at the state level.

The Annual Update to the three-year plan process requires Mental Health and Substance Abuse Services (MHSAS) to hold public meetings to introduce the planned services and expenditures. Ideally, these public meetings include those who receive the services (clients and family members), those who provide the services (service providers, local law enforcement, county mental health staff), and the general public. These are called stakeholder meetings. There is a 30-day public comment period, after which HSA incorporates substantive recommendations into the plan.

Prop 63 also provides for community and mental health consumer involvement through participation on the local Mental Health Advisory Board. The Advisory Board has eleven members. One member is a Supervisor, and the other ten are appointed by the Board of Supervisors. The ten appointed members must include clients of mental health services as well as family members of clients. Other than the single Supervisor, the Advisory Board does not include county employees.

According to the Advisory Board web page:

*“The Santa Cruz County Mental Health Advisory Board provides advice to the governing body (Board of Supervisors) and the local mental health director. They provide oversight and monitoring of the local mental health system as well as advocate for persons with mental illness.**

A primary responsibility of the Local Mental Health Board (LMHB) is to review and evaluate the community’s mental health needs, services, facilities, and special problems. The regular LMHB meetings provide a means for Board action to fulfill its purpose. The LMHB chair presides over meetings and prepares the agenda in collaboration with mental health staff. LMHB members may provide items for the agenda to the secretary of the LMHB at least two weeks in advance of the meeting. These meetings are open to the public.^[16]

Goals and mission statement of the Advisory Board:

- 1) Advise the Mental Health Department on current and ongoing issues as they relate to the quality and effectiveness of mental health services for the County
- 2) Develop skills and procedures to maximize the effectiveness of the

SCCMHB

3) Increase community awareness on issues related to mental health to ensure inclusion and dissemination of accurate information

*Note: LMHB is our Advisory Board

Grand Jurors attended several meetings of the Advisory Board. HSA personnel attend Advisory Board meetings when invited to do so, but did not attend some of the meetings jurors observed. We regularly heard family members plead for help from HSA for their loved ones. In the absence of an HSA representative to directly respond to these requests, we did not observe any action on the part of the Board to indicate that they were going to help the families with their problems. The Advisory Board, in these instances, did not appear to be fulfilling its role of advocating for persons with mental illness to the HSA, or advising HSA.

On more than one occasion, the Advisory Board did not have a quorum and could not act on proposals or approve meeting minutes. Lack of quorum caused the Board to be unable to approve any actions, leaving it ineffective. Grand Jurors found that there were five vacant seats on the eleven member board. The high number of vacancies meant that just a few absences would keep the Advisory Board from having a quorum. Vacant positions on the Advisory Board were left unfilled for months.

The Advisory Board lacked a quorum at their April 2014 meeting and therefore could not act on the Prop 63 Three Year Draft Plan presented to them. In May 2014, three of five Advisory Board vacancies were filled by appointment of the Board of Supervisors.

Board of Supervisors Participation

The Board of Supervisors has responsibility for approving Prop 63 program plans and appointing Advisory Board members. A single Supervisor represents the Board at the Advisory Board meetings. When that Supervisor could not attend there was no direct interaction between the two Boards. Additionally, when quorum was not met, the Advisory Board minutes could not be approved or posted. This hampered even indirect written communication between the Advisory Board and County Supervisors.

Public Participation

Jurors attended several 2014-15 Draft Plan stakeholder meetings. ^[7] Prop 63 requires stakeholder meetings to formalize community input to HSA concerning the program plans. These meetings educate the community and allow clients, providers, and community members to give their feedback. These meetings were mentioned in local papers, but few members of the public were present. If County residents do not attend, they miss the opportunity to learn about and help steer the future of HSA services. HSA has not publicized these Prop 63 stakeholder and Advisory Board meetings sufficiently for the public to use them as opportunities to learn about and influence Prop 63 funded program direction.

Evaluations of Prop 63 Programs

The Grand Jury was concerned by the use of narratives in the Annual Update and Three Year plan. Client success anecdotes and testimonials from program participants were used to prove effectiveness of programs rather than quantitative data. While nice to have, the testimonials do not serve to evaluate program effectiveness. A more rigorous evaluation with measurable, relevant criteria would provide better data.

Several County PEI programs were intended for people who are underserved or at risk. One study was done to evaluate two programs which reach underserved areas of the county, designed for specific cultural needs (using mentoring, cultural appreciation, and education). The study assessed whether the programs improved mental health behaviors and attitudes.^[17] According to this study, many but not all of the program goals were met. The report includes positive narratives from clients about benefits of the programs. The Grand Jury was told that additional evaluation is being done.

An external audit by the California External Quality Review Organization (CAEQRO) was performed in 2012-13 on mental health services provided by Santa Cruz County.^[18] Two performance improvement projects were studied, and overall mental health services results were reported. The audit noted that implementation of an electronic health record (EHR) system was not complete.

The CAEQRO audit also included comments from focus groups of clients and family members. Participants felt that there had been a decrease in available staff on duty and that they were waiting longer for appointments with counselors or therapists. Several of the focus group participants added that they no longer had a case manager or a service coordinator, and reported other cuts to services in Santa Cruz County.

The CAEQRO report recommended:

- Quality improvement work plans with measurable goals, action item tracking including meeting minutes, and expanded participation by staff and clients (in performance improvement programs)
- Full implementation of the level of care assessment tool to aid decisions about appropriate services for clients
- Information technology long-term planning
- Measurement of wait times for services
- Stronger roles for employees who are former or current clients in the mental health care system

The new Psychiatric Health Facility uses an EHR. An EHR is intended to be used by the medical or psychiatric care provider to assess the patient, develop an appropriate care plan, and accurately report the care provided. EHR systems facilitate measurement of outcomes and evaluation of programs, including Prop 63 programs. Storing patient information in digital format makes it efficient and easy to find information and to track patient care across time and different treatment locations. Better availability of patient information reduces medical errors and unnecessary tests and can also reduce the chance that one provider will not know about relevant conditions being managed by another

provider. Coordination of care can lead to better quality and improved outcomes.^{[19] [20]}

Even though the CAEQRO commented on incomplete implementation of EHR two years ago, HSA is still not using the EHR for all its services. EHR implementation is in progress. The 2013-14 Annual Update states that:

“...After reviewing our EHR options we anticipate that this will be implemented (and we will begin using electronic health records) in fiscal year 2013-2014. We plan on being able to connect to primary care services, following “meaningful use” guidelines to allow for coordinated care (such as medications and prescriptions). By the end of fiscal year 2013-14 our staff will be entering progress notes, service plans, prescriptions and labs into the electronic health record.”

Effective and timely coordination of treatment is not possible without county-wide compatible EHR for all medical and mental health services. Careful planning will be needed to use the EHR system both to improve individual client care and also to evaluate and improve program effectiveness.

Access to Care

HSA staff told the Grand Jury that mental health clients at the Emeline Street HSA facility face long delays, sometimes weeks, in obtaining psychiatric care appointments. Medical patients who are referred for separate mental health counseling may not get mental health screening and treatment if a psychiatric appointment is delayed. HSA staff pointed out that same day appointments should be made available for better mental health treatment, rather than requiring patients to return at a later time. Many clients have difficulty with transportation even for a single visit.

Findings

- F1.** Counselors and psychiatrists are not readily available for existing and potential mental health clients.
- F2.** The lack of implementation of electronic health records (EHR) hampers mental health service to clients.
- F3.** Quantitative evaluation of the success of Prop 63 programs is extremely challenging without the implementation of an EHR.
- F4.** The apparent lapses of direct communication between the Advisory Board, HSA, and the Board of Supervisors impedes the Advisory Board’s goals of effective advocacy for clients and advising HSA concerning Prop 63 funded mental health programs.
- F5.** The mandated stakeholder meetings are not successfully attracting participation by county residents.
- F6.** Five vacancies on the 11-member Advisory Board left it ineffective for months during our investigation.

Recommendations

R1. HSA should improve client access to mental health services by increasing available counseling hours for psychologists and psychiatrists at the Emeline facility. (F1)

R2. HSA should use Electronic Health Records (EHR) for all mental and medical health services. (F2)

R3. HSA should use EHR to perform quantitative evaluations of program effectiveness. (F2, F3)

R4. HSA should regularly attend the Mental Health Advisory Board meetings and should respond directly to the concerns raised. (F4)

R5. The Mental Health Advisory Board should quickly and clearly communicate to HSA all issues that come before the Board. (F4)

R6. HSA should publicize mental health programs and promote them in a way that will educate and engage the larger community. (F5)

R7. The Board of Supervisors should fill all Advisory Board vacancies in a timely manner. (F6)

Commendations

C1. The Grand Jury commends HSA for working to provide services in the face of changing requirements, multi-year budget cuts, and evolving mental health treatment and prevention practices.

C2. The Grand Jury commends the MHCAN peer-led respite center for its success in helping clients avoid crises and support each other to help maintain good mental health.

Responses Required

<i>Respondent</i>	<i>Findings</i>	<i>Recommendations</i>	<i>Respond Within/ Respond By</i>
Santa Cruz County Board of Supervisors	F6	R7	90 Days 09/15/2014
Santa Cruz County Health Services Agency	F1-F5	R1-4, R6	90 Days 09/15/2014

Responses Requested

<i>Respondent</i>	<i>Findings</i>	<i>Recommendations</i>	<i>Respond Within/ Respond By</i>
Santa Cruz County Mental Health Advisory Board	F4	R5	90 Days 09/15/2014

Definitions

- *CAEQRO*: California External Quality Review Organization. It began its work in July 2004. An EQRO evaluates programs, particularly within governments, and can either be a contracted company or part of the government.
- *Consumer employee*: An employee who has lived through mental illness, received successful treatment, is maintaining mental health, and now works in a paid capacity helping others.
- *EHR*: Electronic health record.
- *FSP*: Full Service Partnership. “Full Service Partnership (FSP) is a community-based program that provides intensive mental health services. By providing a parent advocate, therapist, psychiatrist and case manager to work with the child, the entire family is offered hope. Through this process, successful outcomes are achieved, and family strengths are celebrated. The opportunities for change are provided in the home and community settings with the goals of increasing family involvement, family empowerment and improved mental health.”^[21]
- *FY*: Fiscal Year. 12-month reporting cycle, e.g. year is noted as 2014-15 in this report.
- *Level of Care*: An assessment tool used to determine the appropriate treatment for the mental health client.
- *MHCAN*: Mental Health Client Action Network. A peer-run respite center.
- *Mental Health Plan*: The County level mental health system of services.
- *MHSA*: Mental Health Services Act, also known as Proposition 63, 2004. In this

document we refer to it as Prop 63 to avoid confusion.

- *MHSAS*: Mental Health and Substance Abuse Services. The Santa Cruz County Health Services Agency department which provides mental health treatment and utilizes Prop 63 funding.
- *MHSOAC*: Mental Health Services Oversight and Accountability Commission. State level oversight body for Prop 63-funded programs.
- *SCCMHB*: Santa Cruz County Mental Health Advisory Board
- *Stakeholder process*: Under Prop 63, this is the inclusion in the Annual Update of those who participate in mental health services as clients, as family members of clients, as providers, or as county employees who deal with mental illness clients in their work. Public meetings, presentations, a comment period, and required response to public comments are part of the stakeholder process.
- *Wrap-around services*: A situation where a client is provided with all available services including treatment, housing supports, transportation, job training, or education to help in recovery, while allowing the client to live as independently as possible.

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Appendix A

Mental Health Services Penetration: Meeting the Need

Santa Cruz County Interagency System of Care for Children and Youth - Measuring Outcomes of Collaboration Twenty - three Year Report July 1, 1989 - June 30, 2012. page 32. <http://www.santacruzhealth.org/pdf/23%20Yr%20Online%20Report.pdf>

This report provides the following:

“Measuring ACCESS to Appropriate Levels of Service

Various national studies have estimated the approximate percentage of children/youth in the general population (“penetration rate”) that would need the following levels of mental health services:

- *Up to 8% requiring intensive/coordinated services for serious emotional disturbances*
- *8-12% requiring moderate service intensity for mental health conditions*
- *12-20% requiring basic access to services to ameliorate developmental and emotional issues*
- *In addition, estimates range from 60-80% (some would say 100%) of children and youth in the Child Welfare and Juvenile Probation systems given exposure to a wide range of neglect, trauma, crime, and substance abuse issues.*

Previous sections of this report outline the specialized access that children and youth in Child Welfare and Juvenile Probation receive into System of Care services. For the general Medi-Cal population, we can examine the annual APS Healthcare information that details Medi-Cal Approved Claims for the Santa Cruz Mental Health Plan.

Penetration rates for System of Care in Santa Cruz County, 2011

AGE GROUP	Avg Monthly Eligibles	# of Beneficiaries Served per Yr	Santa Cruz Penetration Rate	Medium County Penetration Rate	Statewide Penetration Rate
0-5 yr	9,152	192	2.10%	1.43%	1.72%
6-17	11,388	1,216	10.68%	6.57%	7.38%
18-21	2,835	259	9.14%	5.48%	6.07%
Foster care	310	291	93.87%	55.23%	54.96%

As you can see, Santa Cruz tends to serve a higher percentage of children/youth with Medi-Cal than both similar medium size counties, and statewide averages.”

Appendix B

Mental Health and Substance Abuse Services Expenditures

For the 2012-13 fiscal year, Prop 63 expenditures were 24.5% of the MHSAS budget. However, Medi-Cal and Prop 63 funding reduces the cost of MHSAS to the county budget. According to requested budget figures, MHSAS total expenditures of \$51,632,125 in 2012-13 cost the County Budget \$873,301.

For 2013-14 the Prop 63 expenditures recommendation was \$9.2 million.

2013-14 Community Services & Supports expenditures by Type of Service

Full Service Partnerships	\$3,324,970
General System Development	\$2,369,839
Outreach and Engagement	\$450,241
Administration	\$819,591

Prevention & Early Intervention Expenditures by Program

Early Intervention Services for Children	\$684,411
Culture Specific Parent Education & Support	\$112,155
Early Onset Intervention Services for Transition Age Youth & Adults	\$835,348
Early Intervention Services for Older Adults	\$171,953
Administration	\$374,248

<http://www.santacruzhealth.org/prop63/PDFs/2013-2014%20MHSAS%20ANNUAL%20UPDATE%20FINI.pdf>

Note: These budget numbers were provided to the Grand Jury by HSA staff. We thank them for their help in obtaining documentation of MHSAS budgets, services, Three Year Plan Annual Updates and more.

San Lorenzo Valley Water District

Time to Restore Trust between Voters and District

2013-2014 Santa Cruz County Grand Jury

June 2014

Summary

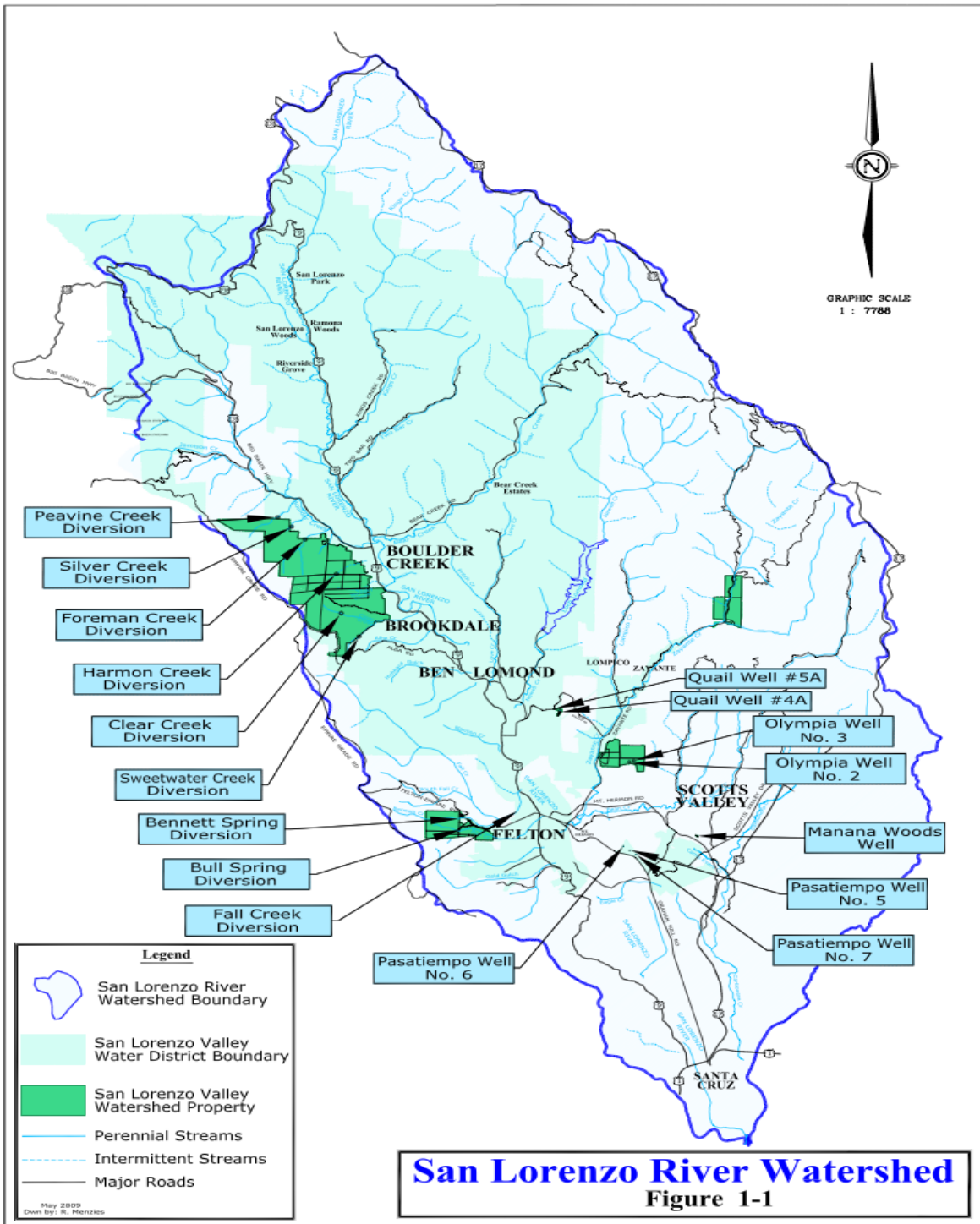
With the ongoing drought in Santa Cruz County, the public has become extremely interested in local water districts and their operations. This year's Grand Jury decided to analyze San Lorenzo Valley Water District (SLVWD). While this District has engaged in several worthwhile endeavors, its lack of transparency has eroded the trust of its ratepayers. In this time of severe drought, and with SLVWD considering a merger with Lompico County Water District (LCWD), active participation with and oversight of the District is essential.

Background

Special districts are governed by their own elected boards of directors. They contract for independent yearly audits and annually report their financial statements to the County Auditor-Controller. The boards must ensure financial solvency and maintenance of the infrastructure of their special districts. SLVWD's management oversight is heavily reliant upon the interaction between the District Manager and Board of Directors.

Management of water resources requires a board that is engaged, a district that is transparent, and an informed public with confidence that the board is looking out for its best interests. In a well-functioning water district, the district manager keeps the board fully apprised of water quality, infrastructure, financial health, and customer concerns. The district manager presents annual budgets, capital improvement plans, and equipment replacement plans to the board for its approval. The board relies on management to provide it with the specifics in all these areas, because the board has responsibility for overseeing all aspects of the district operations.

San Lorenzo Valley Water District was established in 1941.^[1] The District's office is located in Boulder Creek. Its water system includes 150 miles of water mains, most of which are more than 70 years old. As a result, it has aging infrastructure (pipes, pumps, wells, and redwood water tanks). The District has unique infrastructure challenges, including the storage and delivery of water on steep terrain while maintaining adequate water pressure for fire protection.



The District supplies water to 7,300 customers in the communities of Boulder Creek, Brookdale, Ben Lomond, Zayante, Highlands Park Senior Center, Mañana Woods, and Felton. SLVWD also provides water to part of the southwestern portion of the City of Scotts Valley and adjacent areas to the west. SLVWD operates four independent water systems, each of which has its own source of water.

SLVWD water comes from both deep wells and surface water. Surface water comes from the San Lorenzo River and is pumped to water treatment plants. In the last ten years, there have been three mergers of water systems into SLVWD: the Mañana Woods Mutual Water company, the Felton Service Area of the California-American Water Company, and the Olympia Water District. Currently, there is a proposed merger of SLVWD and Lompico County Water District (LCWD). Members from both boards created a list of terms and conditions of the merger on 2/14/14. The merger would provide LCWD with added water sources and improved infrastructure.

When the Board of Directors proposed a 65% water rate increase in 2013, ratepayers, some of whom were already questioning the conduct of SLVWD's senior management and Board, became even more critical of the District's actions.

SLVWD customers are also concerned by the LCWD proposal to merge with SLVWD due to LCWD's serious water and financial problems. The Grand Jury investigated LCWD in 2009-2010, and the Grand Jury's findings and recommendations from that report led to an investigation by the Santa Cruz County District Attorney.^[2] The current Grand Jury wanted to evaluate whether SLVWD senior management and its Board of Directors were taking prudent measures to ensure this merger would not jeopardize SLVWD's operational viability.

Scope

The Grand Jury wanted to know whether SLVWD senior management and Board are operating their District appropriately with respect to the following:

1. Are the finances of the District managed appropriately?
2. Are the operations well-managed?
3. Did the Board violate the Brown Act?
4. Are the operations of the District transparent to the public?

Our work entailed gathering data surrounding SLVWD operations and finances from 2008 through 2013. We also reviewed LCWD merger data. The Grand Jury interviewed SLVWD staff and Board members, attended SLVWD public meetings, and gathered information from newspaper articles, meeting minutes, ordinances, policies and procedures, and audited financial reports.

Investigation

Investment Activity

The District did not have much money to invest until it sold a property in the Santa Cruz Mountains in 2000 for \$10.3 million.^[3] A portion of the proceeds went to buy another property within the District's watershed. The remaining portion was put into an investment portfolio with the principal reserved for land purchases only.

The SLVWD Board delegated authority for management of the investment program to the District Manager pursuant to Resolution 79, adopted 2/1/88. This resolution directed the District Manager to establish written procedures for the operation of the investment program and report investment decisions to the Board. This is contrary to common practice for a board of directors. Normally, a board of directors oversees the investment activities of a company or organization. A board's activities are determined by the powers, duties, and responsibilities delegated to it by an authority outside itself, in this case the voters. These matters are typically detailed in the organization's policies and procedures.

Resolution 79 is still in effect, yet it is contradicted by the SLVWD Board of Director's Policy Manual 2014, which states "The primary duties of the Board of Directors are as follows: ... 3. Be responsible for all District finances."^[4]

The Local Agency Investment Fund (LAIF) is a California State Agency under the State Treasurer's Office that was created as an investment alternative for California's local governments and special districts. The District Manager of SLVWD has placed some District investments in LAIF for short-term purposes, but long-term investments are made with Morgan Stanley. A Morgan Stanley broker consults with the District Manager and provides a range of available investments at the time of a transaction, based on market value. The District Manager then makes the investment choices.

The Grand Jury was told that, in the past, SLVWD's total return on investments exceeded that of LAIF, which is why it had more investments outside of LAIF than most districts. However, some investments were sold prior to their maturity date in order to pay for the District's budget shortfalls, emergencies, and its share of infrastructure projects, resulting in losses. For example, recently there was a loss of about 8% on one \$800,000 investment.

Currently the District's investment portfolio is approximately \$6 million. California Proposition 50 (Prop 50), passed in November 2002, allows for construction of permanent interties between the various parts of the SLVWD.^[5] Once the Prop 50 interties are completed, it is estimated that \$2.5 million will remain in the portfolio.

Government Code Section 53635.8, effective January 2008, limits CDs to 30% of a local agency's investment portfolio. Since 2008, audits had revealed that the District was in non-compliance and held approximately 45% of its portfolio in CDs. At multiple board

meetings, a ratepayer brought the District's non-compliance with state law to public attention.^[9] The District's investment portfolio remained in non-compliance for years.

The District acknowledged that it was not in compliance, but pointed out that some of the CDs were acquired prior to Section 53635.8 and that it was coming into compliance by letting the CDs expire. The District indicated that it had more investments than allowed in CDs because they were paying better rates than bonds. As of the last fiscal audit conducted by the District (2011-2012), it was still out of compliance. The Board indicated that it had modified its own ordinances to comply with state regulations and was close to bringing its portfolio into compliance. The District has repeatedly said that the 2012-13 fiscal audit will be completed soon.

The Grand Jury found that the SLVWD District Manager, because of Resolution 79, could engage in investment activity without first consulting the Board. The Board told the Grand Jury that Board oversight had been minimal and that the District Manager made the decisions on investments. In the course of its investigation the Grand Jury was told there were doubts that the Board knew much about the District's investments.

Budget

The Board allowed the District to operate without an adopted budget for 2013-2014 until 3/6/14, when the fiscal year was nearing completion. The Grand Jury was advised that the prolonged absence of the Finance Manager was the reason the budget was not ready on time. The Finance Manager went on medical leave in May 2013, and the District was unable to fill the position until she resigned in early December 2013. We were told that in the absence of a current budget, the District was operating on the prior fiscal year's (2012-2013) budget, with a few exceptions, and termed it a "continuing authorization budget." The Grand Jury was told there was no money in the continuing authorization budget to hire a consultant who could assist in the 2013-2014 budget preparation. The budget was eventually developed primarily by the District Manager.

Infrastructure

Fifteen years ago, the District began a controversial facilities consolidation project called the District Administrative Campus Project. Development started with a \$2.2 million land purchase and called for a \$6 million building plan. The current administration building poses a number of safety concerns, including seismic safety, lack of structural integrity, and non-compliance with building codes and the Americans with Disabilities Act (no wheelchair access). After the land purchase a portion of the property was given a wetlands designation. These issues have led to an increase of projected capital costs to between \$9 and \$12 million. The Grand Jury was told that questions about the facilities consolidation project were dismissed by the majority of the Board.

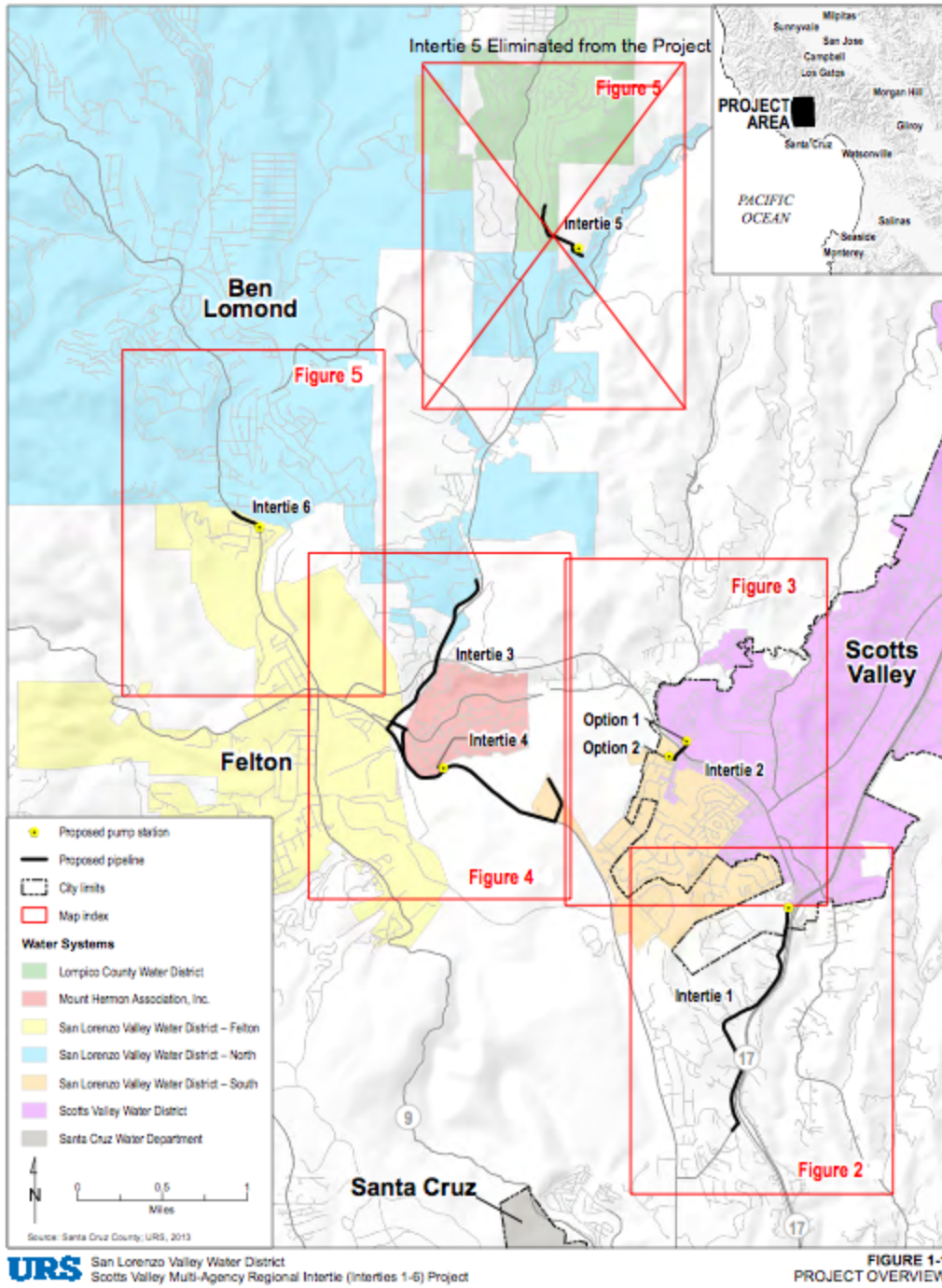
Additionally, SLVWD is upgrading District infrastructure based on its 2010 Capital Improvement Project. This project identifies Category A (essential) projects, Category B (desirable) projects, and Category C (deferrable) projects (see Appendix B).

SLVWD requires that before the proposed annexation of LCWD takes place, LCWD must pay for a permanent, non-emergency, Prop 50 intertie which SLVWD will build. SLVWD is still in the process of awarding construction contracts for this and other Prop 50 interties, so no actual construction has begun. Prop 50 projects require an Environmental Impact Review (EIR). New and upgraded interties will allow SLVWD to move water between systems during emergencies. The other interties will connect the following systems: 1) North and South; 2) South and Scotts Valley; 3) South and the Mount Hermon Association; and 4) Felton and North. Approximately half of the funding for these interties comes from the State and half from SLVWD. (See Appendix A for more detail.)

The District has 47 water tanks, the largest of which has a holding capacity of 3.2 million gallons. The majority hold 100,000 gallons or less. There are at least eight redwood tanks, all of which leak. Ratepayers regularly complain to the Board about ongoing leaks in the District's redwood tanks. They have provided the Board with pictures of the leaking tanks along with other relevant information and have drawn particular attention to one of the worst, the Probation Water Tank. That tank is located in a protected June beetle habitat in Felton near Santa Cruz County Juvenile Hall. At SLVWD Board meetings Grand Jurors attended, Board members and staff chose not to respond to these ratepayers.

The District acknowledged to Grand Jurors that it has received many complaints about the leaking redwood tanks and the slow replacement process. The District pointed out that many problems arise when replacing these redwood tanks. Most of the tanks are located on steep hillsides. A majority of the tanks are elevated, so once the timbers underneath begin to give way the tanks lean. Surveys show that some tanks are not even on District-owned property. Furthermore, geotechnical reviews are required when installing new tanks. The material and labor alone to build a new tank runs about \$300,000-\$500,000.

The District told the Grand Jury that it has plans to replace the Probation tank and said it was on the essential list but the Prop 84 emergency intertie and environmental problems are delaying this \$1.1 million project. A 500,000 gallon steel tank must replace the existing 100,000 gallon redwood tank to meet the needs of its service area. The District will have to find another location to install a temporary tank while a new tank is being built. It also will have to employ an environmental specialist for the eighteen month permitting process. The District said it had replaced the tanks that were easiest to do and now it is left with the most difficult ones. Eventually it will replace all the redwood tanks with steel tanks.



Lompico County Water District Merger

San Lorenzo Valley Water District constructed a temporary \$132,000 emergency pipeline as an intertie between SLVWD and LCWD.^[6] These funds came from a grant fund program established under Proposition 84 (Prop 84), passed in 2006.^[7] The temporary pipeline was completed at the end of April 2014. This pipeline will allow LCWD to turn off wells in order to perform maintenance. SLVWD will determine how much water to send

through the pipeline, and LCWD customers will pay for the water they receive. The creation of the emergency pipeline is separate from the proposed merger.

In the proposed merger of SLVWD and LCWD, a \$750,000 permanent pipeline between them is planned. The merger plan involves a \$2.75 million bond paid for and overseen by LCWD customers. The merger also includes a prior loan from SLVWD to LCWD to pay money owed to the California Public Employees' Retirement System (CalPERS).^[8] LCWD must repay the loan to SLVWD before the merger moves forward. There will be a monthly surcharge to LCWD customers for up to five years, at a maximum of \$144,000 (approximately \$24 a month per customer) to repay this loan. This will avoid transferring LCWD debt to SLVWD.

District Manager Performance Evaluation

The Board did not conduct a performance evaluation of its District Manager for fiscal year 2012-2013, despite its own policy which requires annual reviews. When the Grand Jury asked SLVWD for documented metrics used to evaluate the performance of their District Manager, they said written guidelines do not exist. Current practice is for the President of the Board to create his or her own guidelines each year.

An annual performance evaluation of its District Manager should be standard practice for a board of directors. An example of a District Manager Performance Evaluation Review list with metrics and guidelines is available from the Paradise Irrigation District.^[9]

The Brown Act

The Brown Act (California Code Section 54950) governs meetings of local governmental bodies. The Act establishes rules designed to ensure that actions and deliberations of boards and other public bodies are done openly and with public access and input (see Appendix C).^[10]

In order for the SLVWD Board of Directors to hold a regular public Board of Directors meeting, it must have a quorum present. Three or more members of the five member Board constitute a quorum. Most importantly, when three Board members are present at a meeting, it is a "Board" meeting pursuant to the Brown Act, subsection 54952.2(a). The Board is then required to give proper public notice of the meeting and an agenda at least 72 hours in advance.

On 3/4/04, the SLVWD Board of Directors adopted three standing committees: Environmental, Planning, and Finance. For many years the Finance and Planning committees consisted of the same three Board members.

Providing notice of "committee" meetings led members of the public to believe they did not need to attend. Since these were not noticed as Board meetings, the public would not expect final decisions to be made. However, since these meetings had a quorum of the Board, they were in fact Board meetings. Any decisions made in these committees were in essence Board decisions.

When asked about this issue, the Board told the Grand Jury it relied on advice from its District Counsel that it was appropriate to allow three Board members to participate in committee meetings. The Board claimed that District Counsel approved of providing public notice of these meetings simply as “committee” meetings.

The Board told this Grand Jury that prior to 2012, when its policy changed, three Board members and the District Manager regularly attended these standing committee meetings. A ratepayer wrote to the District Counsel about Brown Act violations on 5/1/11, but did not receive a response. He then filed a lawsuit against three of the Board members alleging failure to meet requirements of the Brown Act by referring to their meetings as “committee” meetings.^[11]

The Board subsequently changed the number of Board members on each standing committee from three to two. The change went into effect in December 2012, immediately after the lawsuit against the District ended in October 2012. When the Grand Jury asked the Board why the change was made, we were given a variety of answers, none of which mentioned compliance with the Brown Act as the primary motivation for the change.

Transparency

Since government agencies are publicly-owned, they should make all information about operations available and understandable for the public. The Grand Jury found that none of the resolutions amending District Ordinances have ever been posted on the District’s website. When the Grand Jury asked to receive a copy of a policy and procedures manual, no copy was available electronically. In order to obtain the manual, ratepayers must go to the District Office, get permission from the District Manager, and pay for copy costs.

Two resolutions were adopted at the Board’s 2/20/14 meeting: Resolution 23 (2013-14), the San Lorenzo Valley Water District Investment Policy 2014; and Resolution 22 (2013-14), the Lompico County Water District Emergency Intertie Agreement. Neither of these documents had been posted on the District’s website as of 5/14/14. The Grand Jury contacted the District office for copies of these Resolutions but staff was unaware whether they were available.

Although the 2013-2014 budget was approved on 3/6/14, the budget was not posted on the District’s website. When inquiries were made on 5/5/14 about obtaining a hard copy of the budget, staff members were not aware that a budget had been passed and said that no copy of the budget was available. Later the Grand Jury was told that staff had a copy of a draft budget but not the approved budget. Only the District Manager had access to a hard copy of that budget. The budget was finally posted more than two months after it was adopted.

Three ratepayers addressed the Board on 1/16/14 requesting that minutes for the special meeting, held 10/24/13 to consider an increase in water rates, be provided to ratepayers. Rather than simply provide the requested minutes, the Board, with the assistance of District Counsel, refused to do so. As of 5/15/14, the minutes had not been posted. In addition, no minutes have been posted for the five Board meetings since the 2/6/14

meeting and no meeting “action summaries” have been posted since 2/20/14.

The District makes audio recordings of Board meetings. The recordings are low quality, not digital or available online, and not a suitable replacement for published minutes. Community members involved with the group San Lorenzo Valley Watchdogs have been recording the Board meetings and posting them to their own website. [\[12\]\[13\]](#)

In summary, the Grand Jury has determined that SLVWD lacks proper oversight and transparency with regard to its finances and operations.

Findings

F1. By assigning responsibility for district investments to the District Manager, the SLVWD Board of Directors improperly relinquished one of its major responsibilities.

F2. SLVWD took no action to correct its imbalance of investment assets despite multiple years of external audit reports.

F3. Contrary to accepted practice, SLVWD was operating on a prior year’s budget eight months into its fiscal year.

F4. Despite numerous complaints from ratepayers, SLVWD has failed to prioritize the replacement of leaking redwood tanks.

F5. For many years Board committees consisted of a quorum of Board members without being publicly announced as Board meetings.

F6. The Board has violated its policy to conduct annual reviews of the District Manager.

F7. The Board lacks consistent standards to evaluate the performance of the District Manager.

F8. SLVWD consistently fails to provide timely meeting minutes or post important information on the District’s website.

F9. SLVWD makes it difficult for ratepayers to obtain public records from the District Office by requiring prior approval from the District Manager.

Recommendations

R1. The SLVWD Board should reclaim its financial oversight responsibility by rescinding Resolution 79 (1987-88). (F1, F2)

R2. The Board should require that the District Manager provide a budget prior to the start of each fiscal year. (F3)

R3. SLVWD should provide ratepayers with a specific plan and schedule for replacing its remaining redwood tanks. (F4)

R4. The Board should create standard criteria and follow its own requirement for annual evaluation of the District Manager. (F6, F7)

R5. The Board should publicly notice committee meetings as Board meetings when a quorum is present. (F5)

R6. SLVWD should post online all ordinances, resolutions, and minutes within a month of approval. It also should post online all current ordinances, resolutions referenced in current ordinances, and minutes for the last five years. (F8, F9)

Responses Required

<i>Respondent</i>	<i>Findings</i>	<i>Recommendations</i>	<i>Respond Within/ Respond By</i>
Board of Directors, San Lorenzo Valley Water District	F1 - F9	R1-6	90 Days 9/15/14
District Manager, San Lorenzo Valley Water District	F3-4, F8-9	R2-3, 6	90 Days 9/15/14

Definitions

- *Audit:* Review of an organization's finances. Audits are performed to ascertain the validity and reliability of information. The goal is to express an opinion that the financial statements are accurate and complete and free from material error.
- *Board of Directors' Policy Manual 2014:* Document used to govern actions of the board of directors of the San Lorenzo Valley Water District adopted Dec. 5, 2013, Resolution No. 15 (13-14)
- *Brown Act:* Enacted in 1953, this law guarantees the public's right to attend and participate in meetings of local legislative bodies. The Act promotes the transparency of government by requiring that the people's business be conducted in public. It applies to the governing boards of all local governments in California.
- *Budget:* A list of all estimated and planned revenues and expenses, including a strategy for the coming financial period. A prudent budget would include income, expenditures, cash flow, infrastructure maintenance, a capital improvement plan, and reserves for economic uncertainty. Typically a budget is created on an annual basis and compared against the actual financial performance frequently to ascertain the viability of the financial operations.
- *California Water Code:* Laws governing water usage in the state of California. Special districts such as SLVWD are subject to Water Code section 30000 *et seq.*

- *California Public Employees' Retirement System (CalPERS)*: is an agency in the California executive branch that manages pension and health benefits for more than 1.6 million California public employees, retirees, and their families.
- *Environmental Impact Report (EIR)*: An EIR describes the positive and negative environmental effects of a proposed action, and it usually also lists one or more alternative actions that may be chosen instead of the action described in the EIR.
- *Interties*: Connections between public water systems permitting exchange or delivery of water between those systems.
- *Local Agency Investment Fund (LAIF)*: A California State Agency under the State Treasurer's Office created as an investment alternative for California's local governments and special districts.
- *Lompico County Water District (LCWD)*: A special district in Santa Cruz county designed to provide potable water to approximately 1,500 residents in the Lompico Canyon of the San Lorenzo Valley
- *Proposition 50 (Prop 50)*: 'The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002.' Passed by California voters in the November 2002 general election.
- *Proposition 84 (Prop 84)*: A \$5.4 billion 'Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006' (Safe Drinking Water Bond). Passed by voters on 11/7/2006. It included an Emergency Grant Fund Program to establish an immediate water supply connection between SLVWD and LCWD.
- *Quorum*: The number of members required to legally transact business. In the case of SLVWD this is three members.
- *Scotts Valley Water District (SVWD)*: A special district in the City of Scotts Valley that provides water resource management to deliver a safe and reliable supply of high quality water to its ratepayers.
- *San Lorenzo Valley Water District (SLVWD)*: A special district in Santa Cruz County designed to provide potable water to more than 7300 connections in the San Lorenzo Valley and adjacent areas.
- *San Lorenzo Valley Water District Board*: Five citizens residing within the geographical boundaries of SLVWD elected by the community to govern the water district.
- *Special District*: An agency established under California state law for the performance of a local government function (fire, water, roads, etc.) within specific boundaries in order to serve a common community interest.
- *Service Area*: The area designated in a water system plan or a coordinated water system plan.
- *Transparency*: Operating in such a way that it is easy for others to see what actions are performed.
- *Watchdogs*: A group of outside individuals who monitor the activities of an organization.

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Appendix A

Infrastructure

The four water systems of SLVWD are:

1. North System (North Boulder Creek, Boulder Creek, Ben Lomond, Quail Hollow, Glen Arbor, and Zayante)
2. South System (Whispering Pines Drive, Lockewood Lane, Hidden Glen, Estrella Drive, Twin Pines Drive, Oak Tree Villa, Spring Lakes and Vista Del Lago Mobile Home Parks)
3. Felton System (the town of Felton, Highway 9 south to Big Trees, San Lorenzo Avenue, Felton Empire Grade, Felton Grove, and El Solyo Heights)
4. Mañana Woods Systems (Cuesta Drive, El Sereño Drive, Miraflores Drive, and Canepa Drive)

SLVWD owns approximately 2,000 acres of land in the San Lorenzo River Watershed, which supplies surface and groundwater to the District's customers. Its watershed land is in four separate acreages: Olympia Watershed, Fall Creek, Zayante Creek, and Ben Lomond Mountain. The Olympia Watershed Management Plan has been completed. Management plans are planned for the Fall Creek, the Zayante Creek, and the Ben Lomond Mountain properties.^[1] The primary purpose of a watershed management plan is to guide watershed coordinators, resource managers, policy makers, and community organizations to restore and protect the quality of lakes, rivers, streams, and wetlands in a given watershed. The plan is intended to be a practical tool with specific recommendations on practices to improve and sustain water quality.

With an intertie between SLVWD and the Scotts Valley Water District (SVWD), water can be moved between districts as needed. The water is not given away but is sold. In addition, with a North-South intertie the District can transfer water between the two systems without relying on additional water from the SVWD.^[1]

Appendix B

SLVWD Capital Improvement Program Category A Projects⁽¹⁾

<i>Project Title</i>	<i>Estimated Cost</i>
New Probation Groundwater Well	\$350,000
Nina Water Storage Tank	\$275,000
Quail Hollow Groundwater Well	\$325,000
North System-South System Intertie	\$2,800,000
Loch Lomond Water Supply	\$1,950,000
Administrative Campus	\$5,500,000
Probation Water Storage Tank	\$1,100,000
Bull Spring Intake Transmission Line	\$500,000
Lyon Zone Water Distribution System	\$750,000
Quail Hollow Water Distribution System	\$2,400,000
Felton System Intertie	\$325,000
Riverside Grove Water Storage Tank	\$285,000
Brookdale Water Storage Tank	\$400,000
Bear Creek Estates Water Storage Tank	\$125,000
SUBTOTAL CATEGORY A	\$17,085,000

SLVWD Capital Improvement Program Category B Projects

<i>Project Title</i>	<i>Estimated Cost</i>
Bar King Road Water Distribution System	\$200,000
Swim Water Storage Tank	\$250,000
Sequoia Ave. Water Distribution System	\$100,000
Hillside Drive Water Distribution System	\$300,000
Hihn Road Water Distribution System	\$140,000
Irwin Booster Pump Station	\$50,000
Echo Water Storage Tanks	\$250,000
Fall Creek Diversion Facility	\$150,000
Buena Vista Water Distribution System	\$210,000
Firehouse Booster Pump Station	\$50,000
Lockwood Ln Water Distribution System	\$70,000
Felton Acres Water Storage Tank and Booster Pump	\$150,000
Pine Water Storage Tank	\$250,000
El Solyo Water Storage tank	\$250,000
El Solyo Booster Pump Station	\$75,000
McCloud Water Storage Tank	\$250,000
Blair Water Storage Tank	\$250,000
SUBTOTAL CATEGORY B	\$2,995,000

SLVWD Capital Improvement Program Category C Projects

<i>Project Title</i>	<i>Estimated Cost</i>
Fairview Booster Pump Station	\$150,000
Whitter/Manzanita Water Distribution System	\$300,000
El Solyo Avenue Water Distribution	\$160,000
Riverside Grove Booster Pump Station	\$75,000
King's Creek Rd Water Distribution System	\$365,000
Two Bar Road Water Distribution System	\$525,000
Larita/Elena Dr Water Distribution System	\$400,000
Band Road Water Distribution System	\$225,000
Riverside Ave Water Distribution System	\$625,000
Scene Road Water Distribution System	\$365,000
Ridge Drive Water Distribution System	\$175,000
Eckely Booster Pump Station	\$75,000
Bear Creek Estates Booster Pump Station	\$75,000
Riverview Drive Water Distribution System	\$210,000
Juanita Woods Water Distribution System	\$420,000
West Park Water Distribution System	\$385,000
Railroad Ave. Water Distribution System	\$370,000
Lorenzo Ave. Water Distribution System	\$385,000
Kipling Ave. Water Distribution System	\$140,000
Sunnycroft Rd Water Distribution System	\$150,000
Brackney Road Water Distribution System	\$215,000
Upper Big Basin Way Water Distribution System	\$975,000
Arden Avenue Water Distribution System	\$260,000

Blue Ridge Dr Water Distribution System	\$350,000
SUBTOTAL CATEGORY C	\$7,375,000

Appendix C

The Brown Act

Public bodies covered under the Brown Act include:

- “Legislative bodies” include governing bodies and their subsidiary bodies, e.g., board commissions, committees, or other bodies of a local agency that are created by charter, ordinance, resolution or “formal action” of a legislative body. This applies regardless of “temporary v. permanent”, and “advisory v. decision making.” There is a specific exception for “non-standing” advisory committees that are composed of less than a quorum of the legislative body. Standing committees are those whose meeting schedule is fixed by resolution or action of the body that created the committee.
- “Local agencies” include cities, counties, school districts, special districts, and municipal corporations.
- A meeting is defined as any congregation of a majority of the members of legislative body at the same place to hear, discuss or deliberate on any matter within its jurisdiction. This can include lunches, social gatherings, or board retreats. If a legislative body designates less than a quorum of its members to meet with another body to exchange information, a separate body is not formed. However, if less than a quorum meets with another agency to perform a task, e.g., make a recommendation, a separate legislative body is formed.

Notice and Agenda requirements of the Brown Act stipulate regular meetings are those whose time and place is set by ordinance, bylaw or resolution (policy and procedure) at least 72 hours prior to the meeting. The agency must post an agenda containing a brief general description (generally no longer than 20 words) of each action or discussion item to be considered, including items to be considered at closed sessions. The purpose is to notify members of the public of items in which they may wish to participate. Special meetings require 24 hours’ notice. No business may be considered except that for which the meeting was called. Emergency meetings (crippling disasters, strikes, public health and/or safety threats) may be called on one hour notice, determined by a majority of the body; no closed session is permitted. Closed sessions require three types of notice: 1) a listing in the agenda; 2) a pre-closed session announcement; and 3) a post-closed session report of action taken. [\[11\]](#)

Desalination and Alternatives

Water for a Thirsty County

2013-2014 Santa Cruz County Grand Jury

June 2014

Summary

Water is one of the most important resources for life. Much of Santa Cruz County receives its drinking water from groundwater sources (underground aquifers). Wells pump water from the aquifers to be treated and sent to our homes and businesses. In the coastal areas from Live Oak to the Pajaro Valley, many of the aquifers are already contaminated or in danger of contamination due to saltwater intrusion caused by over-pumping. There are many different ways to protect our aquifers from this environmental disaster. One way is to work with local agencies to come up with a regional plan to halt the intrusion where it has already occurred and to protect those aquifers yet to be tainted.

The City of Santa Cruz Water Department (SCWD) and Soquel Creek Water District (SqCWD) entered into a plan to do this through the construction of a regional seawater desalination plant. However, after several years of planning and studies, the Santa Cruz City Council put a halt to the project just a year before public vote due to strong and vocal opposition from a number of residents. This decision left SqCWD without a supplemental water supply and the City of Santa Cruz more vulnerable to future droughts. Additionally, the tabling of the desalination plant forces a restart of the process, since both agencies must now spend more than a year reevaluating projects either related to the desalination or that were originally eliminated from consideration seven years ago.

SqCWD is currently finishing work on its preliminary study of alternatives, while the City of Santa Cruz is only beginning the process of re-examining its alternatives. When time for project planning, environmental studies, and construction are factored in, there could be three to ten years or more of damage to the aquifer before a supplemental supply is in place. This leaves residents of the county both vulnerable to drought and in danger of having their underground water sources contaminated by seawater. It could take three to ten years to work out a reliable water source plan and get it up and running.

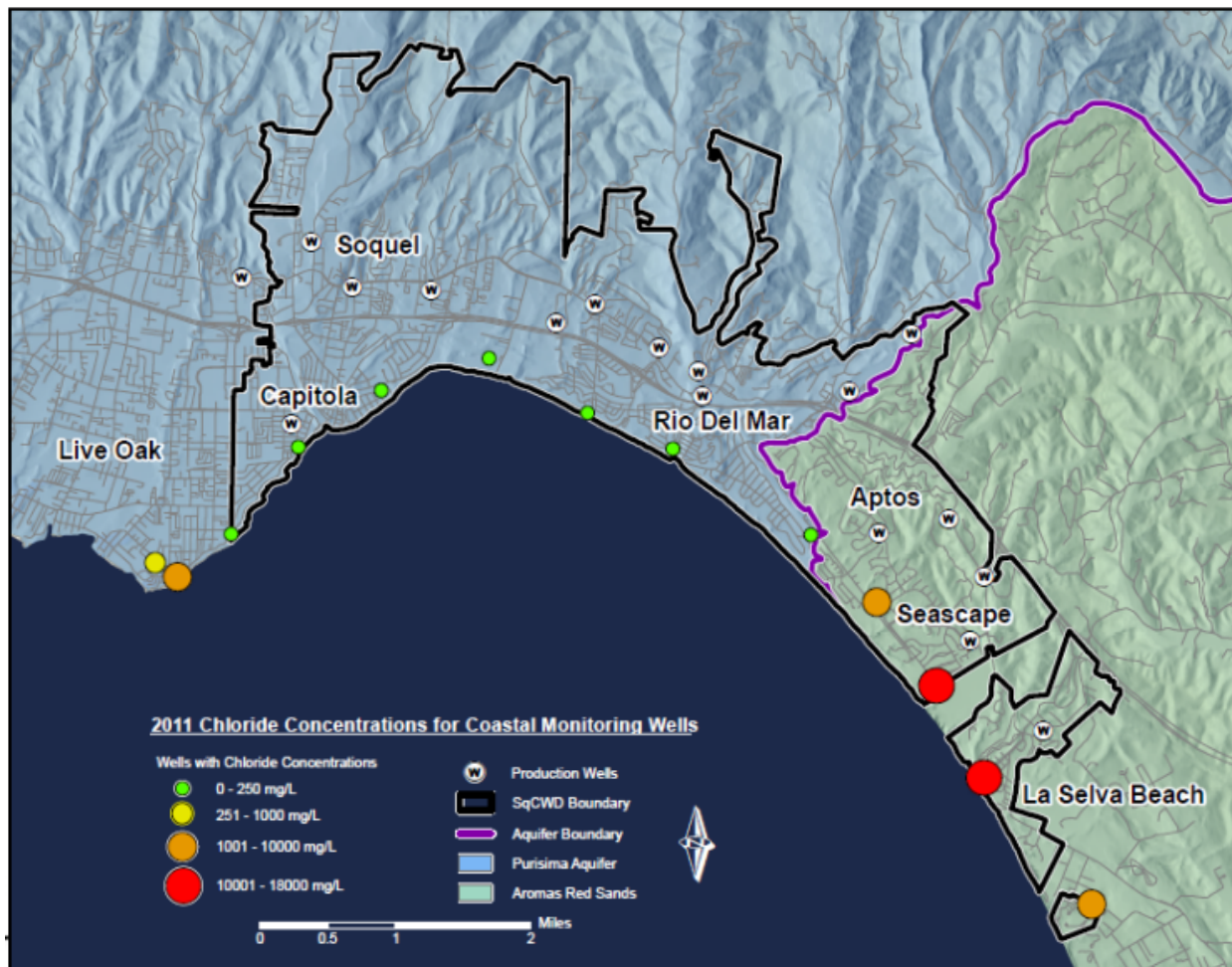
The Grand Jury examined the issues facing both SCWD and SqCWD as they attempt to manage their local water supply problems. Additionally, we examined the prospective plans for the regional desalination project as well as other alternatives being considered.

Background

Soquel Creek Water District

Soquel Creek Water District supplies water to the City of Capitola and the unincorporated areas of Aptos, Soquel, Rio del Mar, Opal Cliffs, Seascape, La Selva Beach, and portions of Live Oak. SqCWD obtains all of its water from groundwater sources in the Purisima and Aromas Red Sands aquifers. Portions of the Aromas Red Sands aquifer have been experiencing active saltwater intrusion for decades.

Soquel Creek Water District service area^[1]

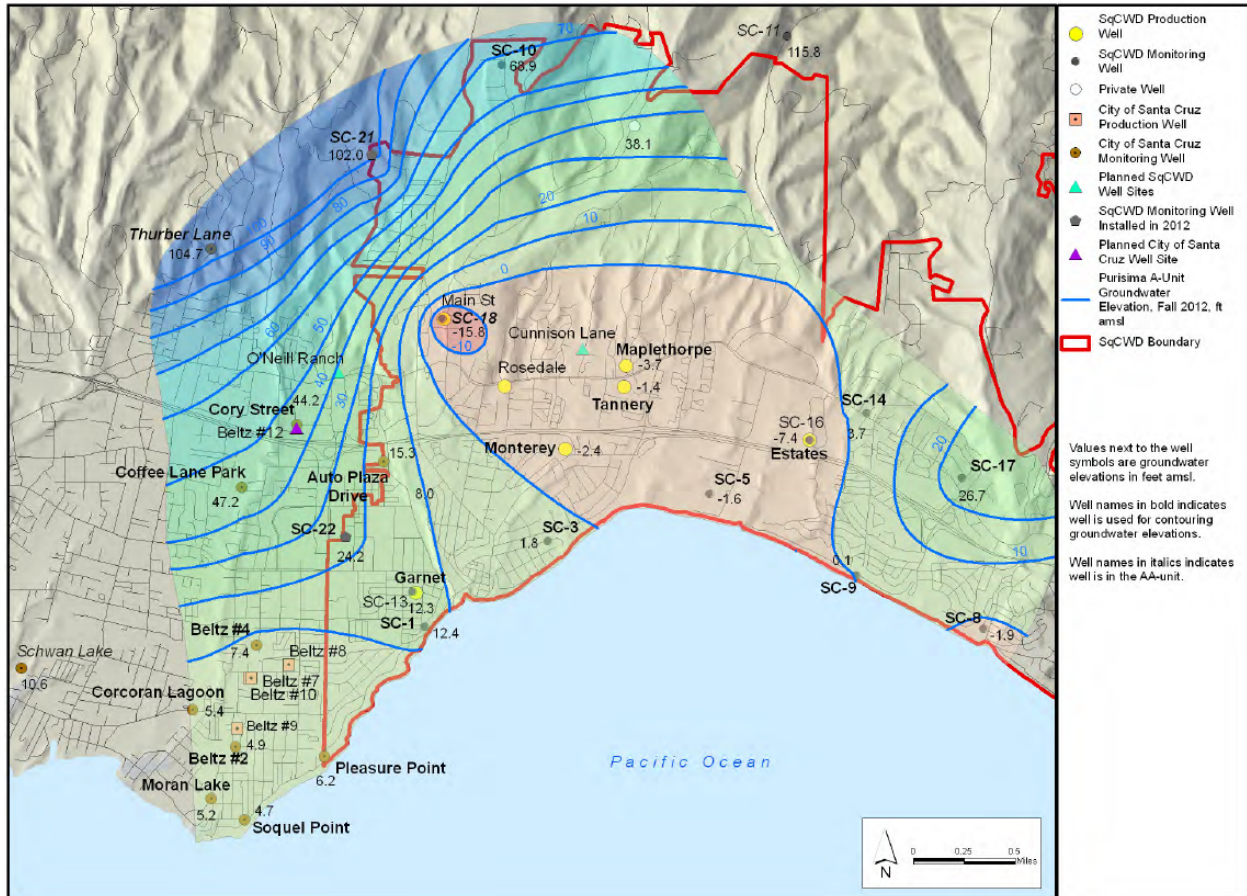


Due to overuse, the aquifers that supply water to the Soquel Creek Water District (SqCWD) are in imminent danger of saltwater intrusion. Maps from Basin Implementation Group (BIG) reports between 2007 and 2012 show wide fluctuations in aquifer levels in the Purisima basin. Purisima is one of the two aquifers from which SqCWD draws water. These fluctuations show low groundwater levels near major production wells, and especially near the coastline. These coastal groundwater levels need to be above sea level to prevent the seawater from pushing into the aquifer. In the fall of 2007, SqCWD production wells located less than half a mile north of Highway 1 reported water levels of 20 feet below sea level, with one portion in the 30 feet below sea level range. Water levels along the majority of the Purisima's coastline were also reported as being below sea level. Currently, the majority of SqCWD's portion of the Purisima aquifer is below the level needed to protect against saltwater intrusion.

SqCWD has moved its pumping further inland and is using the wells near the coast mainly for monitoring salinity. However, this relocation alone is not enough. Because the low groundwater levels are so close to our shoreline, once saltwater breaches the coastline it

will flood a major portion of the aquifer. And once saltwater has contaminated a well, it can no longer be used to produce drinking water. This issue is further compounded by climate change and the prediction of rising sea levels, which will require even higher groundwater levels to maintain adequate protection.

Groundwater Elevation Contours, Purisima Aquifer, Fall 2012^[1]



Note: Areas in red represent groundwater levels below sea level.

Santa Cruz

The City of Santa Cruz Water Department’s (SCWD) service area covers the coastline from 41st Avenue to Davenport. The majority of the water supplied by the City of Santa Cruz Water Department (SCWD) comes from surface water (streams and rivers), with a small number of wells servicing customers in portions of Live Oak. The City of Santa Cruz also stores water in Loch Lomond Reservoir. During drought years the City’s water supply is at risk due to high dependency upon flowing sources which dry up. The City’s monitoring wells near Pleasure Point have already begun to show signs of saltwater intrusion.

In 2007 SCWD and SqCWD entered into negotiations to form the Santa Cruz Water Department and Soquel Creek Water District Regional Seawater Desalination Project (scwd²). Its goal was to plan, construct, and operate a regional desalination plant located

within the City of Santa Cruz. This was done in an effort to decrease the amount of water drawn from wells, and to provide water to the City during drought years,

During the summer of 2013, the City of Santa Cruz tabled plans for building the desalination plant and finalizing the project's Environmental Impact Report (EIR), as a result of public outcry from a number of citizens. Without an added water source SCWD will be in jeopardy during drought years, and both SCWD and SqCWD risk contaminating their shared aquifer with saltwater.

The Grand Jury examined supplemental water sources for residents and businesses in SqCWD. It also examined options to supply water to the City of Santa Cruz during droughts.

Scope

In evaluating the issues facing SCWD and SqCWD, the Grand Jury gathered data on alternatives. We met with staff and representatives of SCWD, SqCWD, and the County of Santa Cruz. We also spoke with field experts and local opposition groups to hear what is currently being done to address the water issues. In addition, we sought to find relative time frames for solutions to be implemented, and when possible, the ability of proposed solutions to remedy the overall problem.

Our main questions were:

- What are the main threats to our water supplies?
- What are the options to protect and preserve our local water supply?
- What options are currently being pursued?
- When can the relevant parties begin work on these options?
- When will the solutions be in place?

Investigation

Soquel Creek Water District

Although the word "creek" appears in the name of the water district, SqCWD is entirely reliant upon groundwater sources from the Purisima and Aromas Red Sands aquifers. There is no surface water source supplying water to the District, and it does not have water rights to any streams, rivers, or lakes within its service area. SqCWD shares the Aromas Red Sands aquifer with the Pajaro Valley Water Management Agency (PVWMA), Central Water District, and with private pumpers throughout the district's boundaries. SqCWD shares the Purisima aquifer with Central Water District, SCWD, and private pumpers. SqCWD is responsible for roughly 50% of the well pumping that occurs within its boundaries. The rest of the pumping is beyond SqCWD's control.

For the past 30 years more water has been pumped from the aquifers supplying SqCWD than has been recharged back into the aquifer. As a consequence, water levels in portions of the Purisima aquifer are approaching 16 ft below sea level.^[1] Additionally, as of October 2013, SCWD monitoring wells on the coast have begun to show increased levels of chlorides, which indicates the start of saltwater intrusion.

SqCWD contracts with an outside firm, Hydrometrics Water Resources Inc. (Hydrometrics), to analyze and assess SqCWD's aquifers. Hydrometrics estimates that the total sustainable yield from SqCWD's portion of the aquifers is 4,200 acre feet per year. Prior to 2009, the district had exceeded this number, pumping between 4,800 and 6,000 acre feet per year, resulting in a substantial deficit in the aquifer. Currently SqCWD is pumping water from its aquifers at 4,000-4,400 acre feet per year. At current pumping rates it is impossible for groundwater to rise to a level that would prevent seawater intrusion. Hydrometrics estimates that SqCWD would need to reduce pumping to 2,900 acre feet per year (a decrease of 28-35%) for a period of 20 years to replenish the aquifer.

When the district became aware of the severity of the problem, it began to look for and evaluate supplemental water supplies. In an effort to mitigate impact from development, until a secondary water source was secured, SqCWD instituted a Water Demand Offset (WDO) program. This program required conservation measures to offset 120% of projected water use for new developments. In many cases, developers achieved the offset by funding the replacement of inefficient fixtures with high efficiency ones, or by replacing lawns with artificial turf. These offsets could be done anywhere within SqCWD's service area and were not limited to the projects being developed. In 2013, SqCWD increased the offset to 200%. During the last 10 years, 33,000 toilets have been replaced within the boundaries of SqCWD. Now, less than 10% of toilets in SqCWD are high flow. SqCWD ratepayers are in one of the top tiers of conservation in the state (9%), using 118 gallons per capita per day (0.132 acre feet per capita per year).

The purpose of the WDO program and conservation measures is to allow time to develop an adequate supplemental water supply. Due to the Santa Cruz City Council tabling the scwd² desalination plant, which had been projected to start service around 2016, the WDO program is under pressure. With no supplemental supply on the horizon there are questions about how long new development can be allowed to continue. This has led to portions of the community pressuring the Board of Directors to issue a moratorium on new hook-ups until there is a plan to replenish the aquifer.

Unfortunately, any reductions in use mandated by SqCWD do not apply to the private pumpers or other water agencies that share the aquifer. Additionally, private pumpers within the SqCWD's boundaries do not assist in the costs of research or development of a secondary supply. There are also no limits to how much water private pumpers can take from the aquifer.

In drought years, the rate at which the aquifer is recharged is reduced. Yet even during periods of intense storms much of the rainwater is not able to be absorbed into the ground and is lost as it flows to the ocean. Since current predictions are that climate change will increase the frequency of droughts and the intensity of winter storms groundwater recharge could be reduced even further over the next 50 to 100 years. SqCWD staff stated that climate change could slow recharge by as much as 30%.

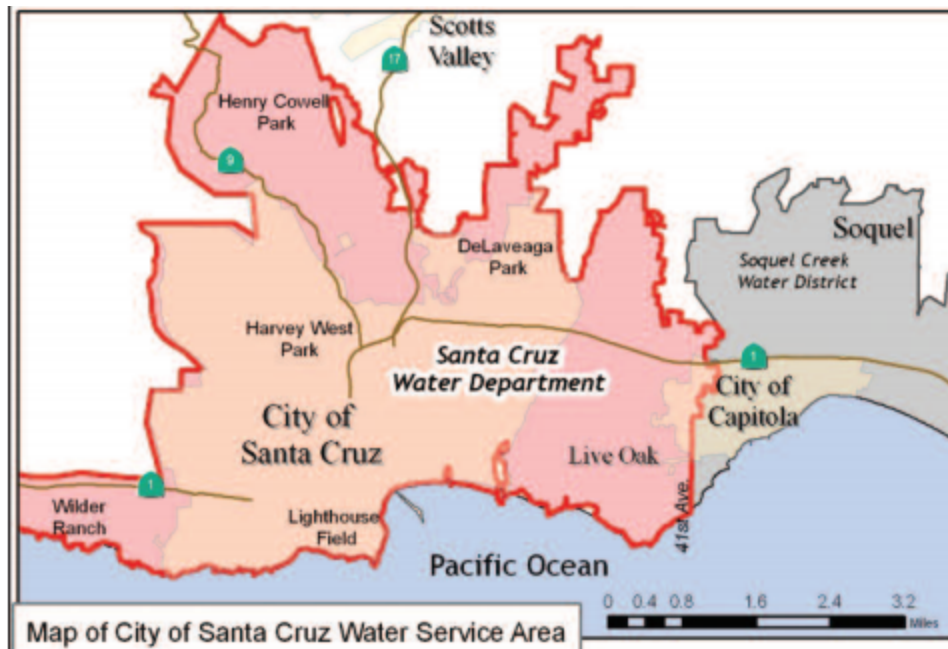
SqCWD is preparing to spend upwards of \$115 million on projects to prevent saltwater intrusion into its aquifers. These projects include the scwd² desalination plant, DeepWater Desalination (DWD), Waste Water Recycling (Recycling), District-only desalination,

Regional Water Transfers, forming a Replenishment District, and Mandatory Rationing.

During our investigation, SqCWD began to re-evaluate the various supplemental sources available. In an effort to increase public awareness of its dire situation, a series of Board meetings were recorded and broadcast on local television and the Internet. The results of the re-examination process were expected for the June 2014 Board meeting.

City of Santa Cruz Water Department

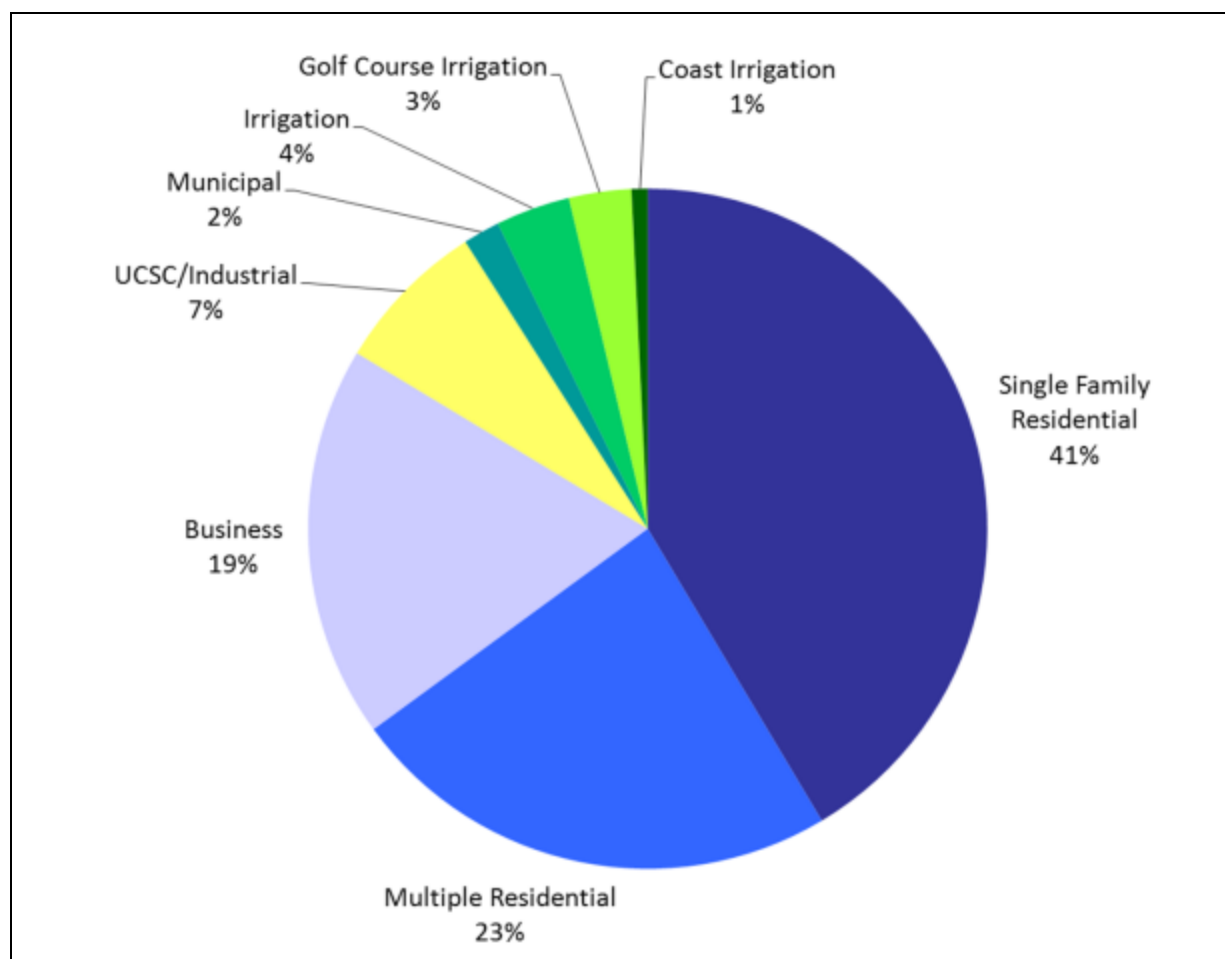
The City of Santa Cruz receives 95% of its water from flowing sources, such as the San Lorenzo River and north coast streams. An additional 5% comes from wells located largely in the western portion of Live Oak serviced by SCWD. Additionally, the City has up to 8,991 acre feet^[2] of water storage in Loch Lomond Reservoir to supplement supply when water cannot be drawn from the rivers.



During years with reduced rainfall, SCWD must pull water from Loch Lomond. When below average rainfall continues for multiple years, storage in Loch Lomond drops. At the end of 2013, Loch Lomond was only two-thirds full, its lowest point in 16 years.^[3] During drought years, SCWD cannot both meet water demand and simultaneously replenish its water storage. This places its water supply and storage in jeopardy.

In March of 2013, SCWD began updating its Water Conservation Master Plan. SCWD is analyzing its current conservation achievements and evaluating future water conservation options. On 3/4/14, SCWD presented results of this analysis to the Santa Cruz City Water Commission, a body that advises the City Council on water issues. Water use in the City of Santa Cruz is 113 gallons per capita per day (0.126 acre feet per capita per year), placing it in the top 7% of conservation among California urban water agencies.

SCWD Use by Customer Category^[4]



One of the concerns voiced by residents is the increase in enrollment at UCSC. The above chart lists University of California Santa Cruz (UCSC)/Industrial accounting for 7% of water use. Through interviews with officials, we were informed that after the company Texas Instruments left Santa Cruz, UCSC became the single largest water use customer in the city, using 5% of the City's water supply. While UCSC enrollment has doubled over the last 14 years, its daily average water use per student has decreased, going from 210 gallons (0.235 acre feet per student per year) in 1997 to 164 (0.183 acre feet per student per year) in 2012. Current plans for University growth include water negotiations with the City.

With the desalination project on hold, SCWD does not currently have a long term solution to address its water shortfall in drought years. To help look into long term options, the Santa Cruz City Council created a fourteen member Water Supply Advisory Committee in October 2013. The committee will be counseled by Public Policy Collaboration, which will be paid an estimated \$280,000 from the money set aside for the scwd² desalination project.^[5]

Desalination

The process of converting seawater to drinking water is used successfully in many parts of the world, including California.^{[6][7][8]} The desalination process examined by scwd² planned to use reverse osmosis technology for the creation of a local supplemental water supply. In the scwd² draft Environmental Impact Report (dEIR), alternatives to desalination were also studied. However, criteria used for the selection of supplemental water sources^[9] led to community as well as State and Federal agency criticism that many alternatives were not recommended or not adequately addressed.

The dEIR looked at several potential desalination plant and pumping station locations on Santa Cruz's Westside near the present Waste Water Treatment Facility. This would allow for mixing of the brine from the desalination plant with the outflow from the Treatment Facility, making the water expelled into Monterey Bay closer to the salinity of seawater and saving the cost of building a separate outflow. Several different intake and pumping station location studies were also completed. The Grand Jury noted that while 18 of the 331 written comments on the dEIR were made by Federal, State, and local agencies, the majority came from residents in the vicinity of the proposed plant and pumping station locations.^[10]

The desalination plant is designed to be modular, which gives it the ability to be expanded as needed due to population growth or increases in demand due to changes in climate, streamflow requirements, or groundwater needs. Since desalination and direct-to-potable (drinkable) treatment of waste water both use reverse osmosis, the dEIR discussed the potential for changing the desalination plant to a direct-to-potable recycling facility once it becomes feasible. The consultants on the dEIR even considered having a small demonstration of this recycling on the plant grounds to educate the public.

The proposed desalination plan calls for SqCWD to manage the plant for most of the year at less than full capacity. During this time the plant would send desalinated water into the SCWD distribution system, mainly going to the residents in the vicinity of the plant. SqCWD would receive an equal amount of treated surface water from SCWD via a proposed intertie at the boundary between the two agencies near 41st Avenue in Capitola. During summer months, or whenever a decreased stream flow necessitated a reduction in pumping from the river, SCWD would operate the desalination plant at mid to maximum capacity to meet its water need, and SqCWD would draw from its well system.

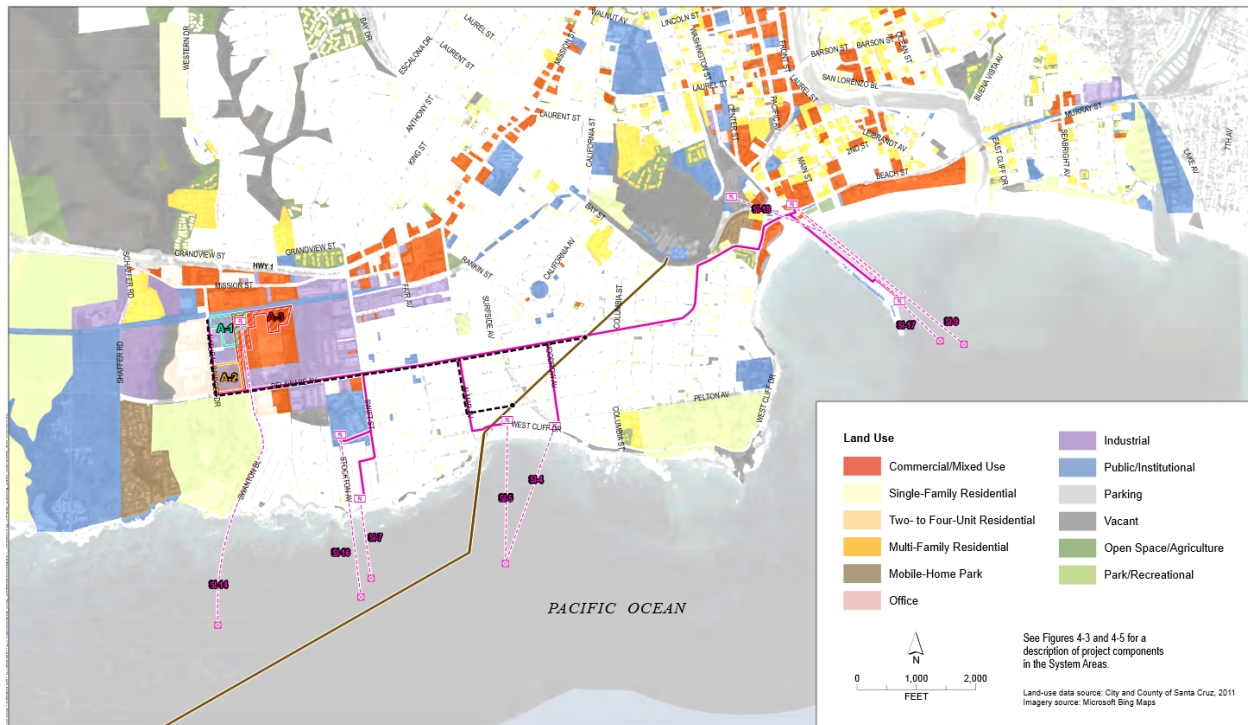
Opposition to scwd² Desalination

Opponents to the desalination plan cited several concerns during the development of the project.^[11] One of the major concerns brought up by the community dealt with the large amounts of electricity needed to push seawater through filters and the cost of that electricity, in both dollars and carbon emissions. There were also misgivings regarding the impact on the life of aquatic invertebrates and fish larvae since any intake, no matter how well it is designed, leads to impingement and entrapment to some degree. Some residents expressed apprehension about safety of the desalinated water for drinking if chemicals or pollutants were not completely removed from the ocean-sourced water.

Portions of the community also felt that the project was being pushed forward despite opposition primarily to support growth in the County and that little attention was given to

alternatives that do not yield a secondary supply of water, such as conservation. Additionally, there were concerns by local residents regarding the location of pumping stations in their neighborhoods. Each of the eight proposed intake locations included a different route through pumping stations. The inclusion of all the potential intake and pumping station locations in maps led to confusion since some residents thought that because a location was being studied the station would be built there. The Grand Jury was told by multiple officials that the large number of intake and pumping station locations that were presented led to opposition by neighbors of each location, multiplying opposition to the overall project.

Map of Proposed Intake, Pumping Station and Desalination Plant Locations⁹



Officials from Santa Cruz City, County, and SqCWD mentioned that the failure of the desalination plan was partly due to an inadequate public information outreach to residents. The City did not address the various concerns of the citizens most directly affected by the proposed system. Multiple officials told the Grand Jury that the need for the project was not properly conveyed to the public. Additionally, one official noted, “Public outreach has not been done well. We butt heads behind the scenes. We need to reach out and talk to people, but the City [of Santa Cruz] says we need to be quiet and let it pass.”

In November of 2012, Measure P was passed by the citizens of the City of Santa Cruz. Measure P requires voter approval prior to the construction of a desalination plant within City limits. Such approval must occur during a general election year and only residents of the City of Santa Cruz may vote. The measure passed with a yes vote of 72%. This, combined with the number of negative public comments on the dEIR, led the City Council to

table discussions on finalizing the dEIR and pull the desalination plant proposal from the 2014 ballot. This has left the dEIR in an unfinalized state and leaves SqCWD ratepayers powerless to continue the cooperative scwd² Desalination plan.

The dEIR is based on older versions of SCWD and SqCWD resource plans, which predated recent information on climate change. Because of this, the dEIR does not account for recent climate change data and the projected impact on streamflow and groundwater recharge. Since desalination pulls water from the ocean it is not affected by drought or climate change. All other secondary supply options are susceptible to drought and/or climate change.

Every official we talked with recommended finalizing the EIR. SCWD and SqCWD are not bound by the recommendations of the EIR; they can choose or reject any or all options of the projects listed. Also, some of the projects and studies in the dEIR cannot be implemented or used until the EIR is finalized and approved. If the EIR is finalized, portions of it can be used in the construction of an independent desalination plant. This would allow for some savings in the development and planning process.

Of all the options explored in the dEIR and presented to SCWD and SqCWD, the scwd² desalination plan is the only option that by itself can meet the criteria to provide water to SCWD during a drought as well as allow SqCWD to rest its wells to recharge the aquifers.

DeepWater Desalination

DeepWater Desalination (DWD) is a project to run a regional desalination plant in Moss Landing. The proposed intake would be located 1.5 miles offshore. This project relies on the success of the Central Coast Regional Water Project (CCRWP) in establishing multiple private business ventures to use its cold seawater in their commercial plans. The warmed seawater will then be sent to the desalination plant. CCRWP will own both the intake and outflow that will service the proposed desalination plant.

Positive aspects of an intake/outflow in deep water include the fact that fewer organisms live in the deeper water, leading to a smaller impact on aquatic life. Preliminary studies conducted by Tenera Environmental^[12] suggest an insignificant impact on larval fish. Additional studies by Monterey Bay Aquarium Research Institute and Moss Landing Marine Laboratories show low turbidity in the water due to its depth and distance from shore. The depth of the outflow produces a positively buoyant plume, resulting in less impact on aquatic life at that depth.

While CCRWP will own the intake and outflow and operate a heat exchange unit in the vicinity of the desalination plant, the plant will not be run by CCRWP. Instead, a Joint Powers Authority (JPA) will be formed to operate the desalination plant. This JPA will be comprised of the agencies being supplied with water from the plant. One key criticism of DWD is that it relies on a business venture with the ownership of the intake/outflow in the hands of CCRWP. If CCRWP should become insolvent there are no measures currently in place to ensure that the JPA retains affordable access to the intake/outflow and gets electricity at an affordable rate. These concerns were brought up by SqCWD staff during a public board meeting on 10/15/13.

The largest cost of desalination is electricity. Through a deal with the City of Salinas, which

will establish a municipal electric utility, the JPA will get power at a reduced rate for the proposed desalination plant. The Salinas Municipal Utility will also work with CCRWP to supply power to a proposed data center that will be constructed near the DWD site. Parts of this plan are modeled on the City of Santa Clara's Municipal Utility agreement to supply power to Silicon Valley data centers. By pumping in very cold seawater from the deeper portions of the Monterey Bay, CCWRP can dramatically cut power costs for the data centers. Normal data centers use two to three times the power for cooling than a deep water cooled data center. As an example, in Finland Google uses deep water to cool its European data center. Salinas will buy power wholesale and sell it to both the desalination plant and the data center. Reduced power costs from Salinas and the use of a heat exchanger for cooling result in cheap energy and warmed seawater, lowering DWD's water production cost.

A major problem is that there is currently no pipeline between SqCWD and Moss Landing. One proposal would be to build the pipeline along existing rail lines at an estimated cost of \$1 million per mile, not including easements. When discussing the pipeline, representatives of SqCWD mentioned that they could design the pipeline so it could be used by other agencies, such as SCWD and Scotts Valley Water Department (SVWD).

A second problem for the proposed DWD plan is as follows. Phase 1 of development would produce 10,000 acre feet of water per year, while phase 2 would produce 25,000 acre feet per year. DWD predicts that Salinas will need at least 10,000 acre feet per year in order to get a reasonable return for contributing the electricity to the project. This is the total amount of water produced in phase 1. It is unlikely that all of phase 1 output would be allocated to Salinas. With expansion to 25,000 acre feet per year in phase 2, if Salinas receives the full 10,000 they expect, only 15,000 acre feet per year would be available for the remaining agencies. There are several agencies from Monterey, Santa Cruz and San Benito Counties evaluating this water source.

Project developers believe they can start producing water by 2016. However, there is little evidence that this schedule can be reached, as the project's EIR has not yet been completed, nor has the Joint Powers Authority (JPA) been formed to run the desalination plant.

Regional Water Transfers

Santa Cruz County has been updating the Integrated Regional Water Management (IRWM) program, a framework for local stakeholders to manage the region's water-related resources. IRWM is evaluating regional water transfers. This plan would take excess water from the Tait Street diversion of the San Lorenzo River between November and April. The water would be treated and distributed to nearby groundwater agencies, allowing them to rest their wells for a portion of the year. In return, Scotts Valley Water District (SVWD) and SqCWD would increase pumping during drought periods and send the water to SCWD. The amount of water returned to SCWD would require negotiations between the agencies to insure that aquifers are properly recharged in order to hold off saltwater intrusion and other effects of overdraft.

Currently, during periods of high water flow from winter storms, turbidity in the water forces

SCWD to halt water production at Tait Street and pull water from other sources. To overcome this problem, the County has discussed upgrades to the intake and pre-treatment facilities at Tait Street, allowing the more turbid water to be used (Diversion). Additionally, the County has looked into upgrading the Graham Hill Water Treatment Plant (GHWTP). These improvements are expensive, but would increase the amount of water available to SVWD and SqCWD from SCWD during periods of high turbidity. The following information covers water delivery from SCWD to SqCWD and SVWD.

Infrastructure Upgrades and Costs^[13]

- Intertie to SLVWD/SVWD (1-2 mgd) \$5.8 M
- Intertie to SqCWD (1.5-3.5 mgd) \$18.5 M
- Tait Division Works Upgrades (7.8 mgd) \$2.8 M
- Tait Expansion (to 14 mgd) \$5.9 M
- Treatment Plant Upgrades (to 16 mgd) \$55.7 M
- Diversion of Increased Turbidity Water \$1.1 M
- Operating Costs: \$147-715 K/yr

Note: The cost of pump stations and additional wells to deliver water back to SCWD during drought years has yet to be presented. M = Million, K = Thousand, mgd = million gallons per day.

Regional Water Transfer Project Phases^[13]

	Project (deliveries to SVWD and returns to SCWD not shown)	SqCWD Yield (af/y)	Total Potential Yield	Capital Cost
1	New Interties (Existing Rights)	120	445	\$27 M
2	Increase GHWTP capacity from 10 mgd to 16 mgd	292	623	\$78 M
3	Increase GHWTP capacity and Tait capacity from 7.8 to 14 mgd	1,022	1,495	\$91 M
4	Increase GHWTP capacity and turbidity treatment from 15 to 200 NTU (7.8 mgd)	417	798	\$86 M
5	Increase GHWTP capacity, increase Tait Street capacity, increase turbidity treatment	1,178	1,712	\$92 M

* Acre feet per year (af/y), Nephelometric Turbidity Units (NTU), million gallons per day (mgd).

To complete one of these projects, both SVWD and SqCWD must request water rights on the San Lorenzo River. This is a complicated process involving the California Environmental Quality Act (CEQA), California Department of Fish and Wildlife (CDFW), and the National Oceanographic and Atmospheric Administration (NOAA). Depending on the environmental studies, and on satisfaction of the requirements of the agencies dealing with streamflow and fisheries, granting of new water rights can take upwards of 10-20 years. Some County officials hope that previous studies of the Tait Street diversion could expedite the approval process. The state will not approve new water rights without compliance with CEQA, and the consent of CDFW and NOAA. The outcome of the above water rights approval process is unknown at this time. In the meantime, SVWD and SqCWD could apply for short term or emergency water rights to allow for some access to the water. All this would have to be done without jeopardizing SCWD's existing water rights.

Recycled Water

The City of Santa Cruz Waste Water Treatment Facility (SCWT) discharges more than twice as much water as SqCWD uses each year. All sewage within SqCWD and SCWD service areas is handled by onsite septic systems or processed at the SCWT. SCWT treats the water to secondary levels (not safe for reuse), then discharges it into the ocean. The facility currently discharges 9,415 acre feet per year.^[14]

In order to recycle water for use in agriculture, extra treatment is required. Currently state law does not allow for recycled water, regardless of treatment level, to be used as drinking water. Also, due to another state law, any application of recycled water requires separate pipes to transport the water to locations where it will be used. The cities of Scotts Valley

and Watsonville both use recycled water for irrigation.

SCWD uses over 8% of its drinking water for irrigation. SqCWD uses 11%-12% of its drinking water for irrigation. When the Grand Jury asked officials from SCWD and SqCWD about using recycled water exclusively for irrigation, they said they did not feel that the cost of building a plant to treat water to irrigation levels, and adding infrastructure to deliver the water for landscaping use, would be a wise fiscal choice. Additionally, since the largest irrigation users in SqCWD are private pumpers, there is no financial incentive for them to switch to recycled water for irrigation, only the incentive to do the right thing.

Construction of a reverse osmosis treatment facility would allow for expanded uses of recycled water. This more highly treated water can be used in natural recharge areas to form percolation ponds where the water filters into the aquifer. It can also be injected into the aquifer along the coast to help raise groundwater levels and create a barrier against saltwater intrusion. This would provide some direct recharge to the basin, but due to the close proximity to the ocean, only a portion of the injected water would be retained in the aquifer. Much of the injected water would diffuse toward the ocean. Another option is to inject the recycled water farther inland in an effort to recharge the aquifer.

Desalination typically uses twice as much electricity as recycled water uses for groundwater recharge because of the colder temperature of the seawater. This leads to production cost estimates of \$1,500-\$2,000 per acre foot for recycled water used in groundwater recharge versus \$2,500 per acre foot for desalination.

There are potential problems with all groundwater injection methods. The Department of Public Health sets “travel time” for recycled water injected into the ground. This is the time it takes for the injected water to travel through the aquifer to the closest production well. This can vary from 2 to 6 months^[15] and can only be done if there are no active or potential wells in the vicinity of the injection site. Given the large number of district and private wells currently in use, it is difficult to find a satisfactory location for injection. Since there is no current groundwater model of the Purisima basin there is no accurate way to project the impact of a given injection method.

Recycled water can also be used to augment streamflow or reservoir storage. However, due to high levels of nitrates from various sources present in the San Lorenzo watershed,^[16] this is unlikely to be useful for the San Lorenzo River or Loch Lomond Reservoir.

Potential changes in state law over the next two to eight years could open up the possibility of recycling water directly into drinkable water by using tertiary or higher level treatment. This would allow the over 9,000 acre feet of wastewater from the SCWT to be treated and used to augment the current water supply. The greatest barrier to potable reuse is perception, not technology. Public perception of “drinking toilet water” is a factor that would need to be overcome to move forward with direct-to-potable reuse.

In February of 2014, Kennedy/Jenks, a water engineering firm, presented a study of recycled water uses to the SqCWD Board. This study included plans for piping treated water from the SCWT to a recycled water treatment plant in mid-County. From there, it would be piped to irrigation sites and to injection wells. The Board elected to have options

2 and 3 (see below) researched and presented in June 2014. Additionally, the Board elected to continue examining direct-to-potable reuse.

Recycling Plans Presented to SqCWD Board on 2/4/14¹⁷

Alt	Description	Average Annual Recycled Water (AFY)	Potential Supplemental Supply (AFY)	Conceptual Capital Cost (mil \$)	Project Annualized Unit Cost (\$/AF)
1a	Centralized Recycled Water for Irrigation in SqCWD	510	510	\$68	\$8,600
1b	Decentralized Recycled Water for Irrigation in SqCWD	315	315	\$30	\$6,500
2	Recycled Water for Seawater Intrusion Barrier and Irrigation in SqCWD	4,000	1,030	\$154	\$9,700
3	Recycled Water for GW Replenishment and Irrigation in SqCWD	2,800	2,230	\$134	\$4,000
4	Recycled Water for GW Replenishment, Seawater Intrusion Barrier and Irrigation in SqCWD	6,200	2,750	\$190	\$4,600

* AFY = Acre feet per year, AF = Acre feet, GW = Groundwater

In the past, SqCWD studied the impact of a satellite recycling plant on Seascope Golf Course. In this scenario, the District could send recycled water to the golf course in exchange for Seascope reducing its pumping from the aquifer. However, since Seascope is not a part of SqCWD, there is no financial incentive for it to contribute to the cost of the project. Currently, SCWD, the Pasatiempo Golf Course, and the City of Scotts Valley are working on a deal to bring excess recycled water from Scotts Valley to the Pasatiempo course in exchange for SCWD sending drinking water to Scotts Valley.

With the SCWT being operated by the City of Santa Cruz, any plans that SqCWD might have for using recycled water depend on a partnership with the city. There is a limited amount of wastewater available, and if the city moves forward with recycling on its own, there could be little to no wastewater for SqCWD. During our investigation, no representatives from the City or SqCWD mentioned plans for a regional wastewater recycling plant.

Individualized Desalination (District-only Desalination)

While SCWD cannot construct a desalination plant of its own without a “yes” vote from the citizens of Santa Cruz, SqCWD is able to construct its own desalination plant. This issue is addressed in the scwd² EIR.^[18]

Due to the constraints of Measure P, a SqCWD desalination plant needs to be constructed on land outside the Santa Cruz City limits. Studies suggest that a District-only plant would require at least a two acre plot. Currently, SqCWD does not own a plot of land large enough to construct such a plant.

The scwd² intake studies had to contend with environmental issues from the sediments deposited by the San Lorenzo River. However, since SqCWD’s area of service is outside the sediment flow zone of the San Lorenzo River, it has several different options for intakes that were not possible with the scwd² plant. There are also potential amendments that could allow direct discharge of brine. Although legal in some situations, the direct discharge of brine can cause damage to aquatic life.

If secondary treated water is piped in from Santa Cruz there is the possibility for brine to be mixed with treated water and discharged at a normal salinity level. This would address some of the concerns regarding aquatic life. This would also allow the plant to be converted to a direct-to-potable recycling plant at a later date. Once again, SqCWD would depend on the availability of treated water from SCWT. If the City of Santa Cruz chose to create its own recycling or desalination plant this could limit the amount of treated water available to SqCWD.

The Integrated Resource Plan (IRP) projects that a district-only desalination plant is ten years from completion, if no studies carry over from the scwd² dEIR. Some issues from the scwd² dEIR require additional research, but consultants advise that no major faults exist. Finalization of the dEIR would require meeting with regulators, renegotiating the contract with URS Corporation (an engineering firm that was involved in the process), and addressing public comments to incorporate them into the EIR. The City’s original date to address public comments was 11/12/13, but due to the City Council’s decision to table the project and the EIR, it has been postponed indefinitely. Since the finalization process was placed on hold, there is nothing that SqCWD or SCWD can do to formally address the EIR. SqCWD is researching which portions of the dEIR can be applied to its District-only project.^[19] The results of this research will have an impact on any cost projections and time table of the project. Current projections list the cost of the project between \$86.2 million and \$114 million. The low number is greater than SqCWD’s portion of the scwd² project; the high number is the full cost of the scwd² plant. These cost estimates are similar to SqCWD’s expenses for mandatory rationing.

Mandatory Rationing

In the absence of a supplemental supply, SqCWD will be forced to enact its mandatory rationing plan. This entails mandating a drastic cut in water usage to all its ratepayers for over 20 years. Residential customers in the District use approximately 74 gallons per day per person (0.083 af/y per person). If mandatory rationing is in effect, water use would be reduced to 53 gallons per day per person (0.059 af/y per person), a reduction of 30%.

Currently, one third of the ratepayers in SqCWD use 53 gallons per day or less.

Mandatory rationing would be combined with a moratorium on new hookups. This would require SqCWD to cease granting “conditional will serve” letters for new development or remodels. This would hamper growth within the district’s boundaries and limit future County tax revenue.

Mandatory rationing will cost the district \$110 million to implement, taking away funds needed for a supplemental supply. Much of the cost of mandatory rationing is due to increases in conservation measures that the district will have to fund and install for the businesses in their jurisdiction, such as replacing all toilets and commercial fixtures with lower flow models. Also, additional staff hours will be needed to deal with these installations and the enforcement of water budgets, as well as likely litigation secondary to the higher rates. Water sale reductions of 30% will reduce SqCWD’s income by as much or more. This will force the district to almost double water rates, with sharp penalties for those exceeding rationing guidelines. This increase will have drastic effects on small businesses within the district. Commercial use accounts for approximately 5% of the District’s use.^[20] In addition, mandatory rationing in SqCWD will likely have a negative impact on tourism throughout the County due to the effect increased water rates will have on vacation rental prices in SqCWD.

Replenishment District

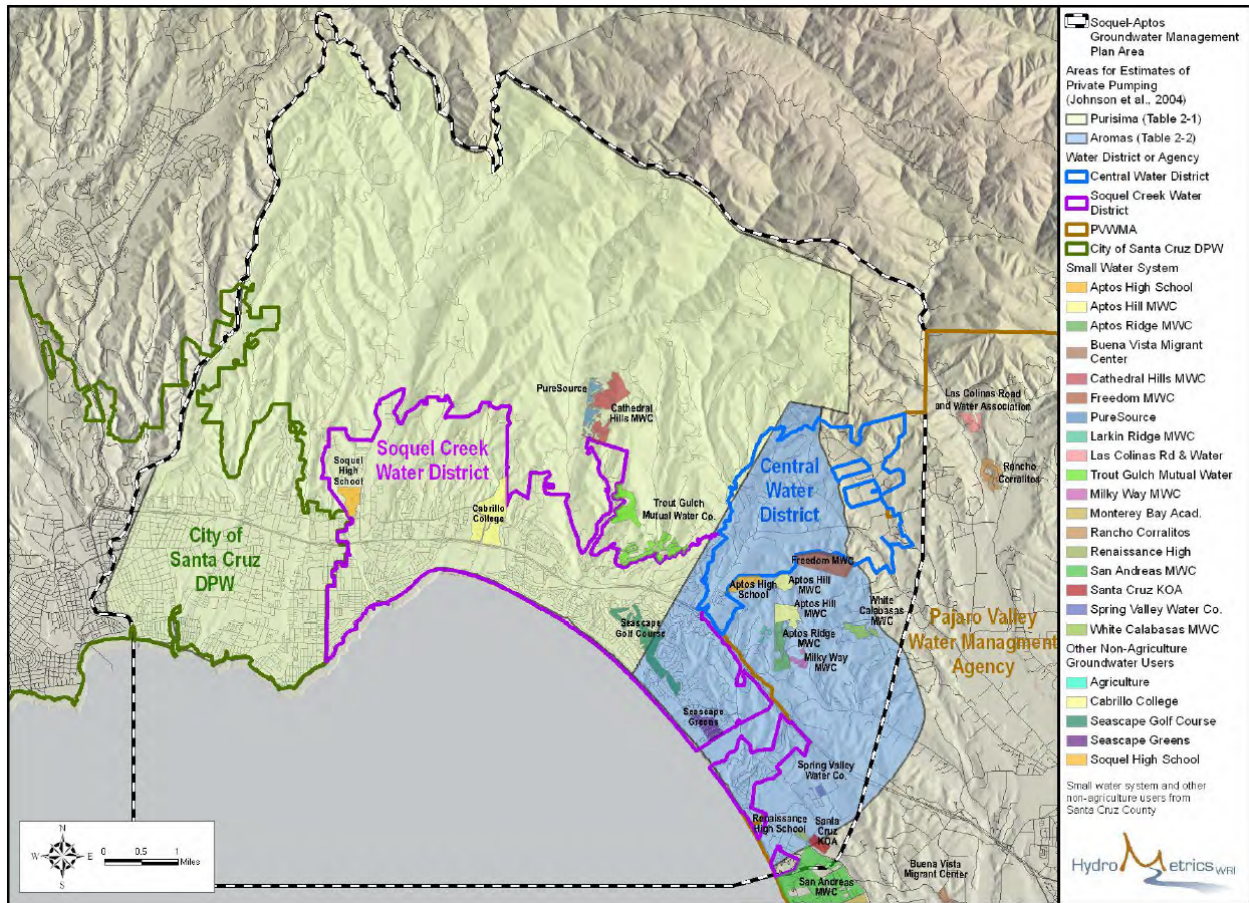
SqCWD is responsible for just over half of the water pumping in the Purisima basin, yet it is paying for more than half of the cost to research and develop methods to protect the aquifer from saltwater intrusion. Other County water districts and the City of Santa Cruz also assist in the research process designed to keep the shared groundwater source safe for all. Private pumpers and small water systems account for approximately 3,000 acre feet per year or 35% of the overall groundwater extractions within SqCWD’s boundaries. Private pumpers in the Purisima basin are not limited in the amount of water that they can pump, nor do they pay to assist in the development of any solution designed to protect the aquifer.

In 1996 SqCWD and Central Water District (CWD) formed the Basin Implementation Group (BIG) to manage the Purisima aquifer. This group is composed of representatives from the water agencies involved, and includes an at-large member who is typically associated with a smaller water system, such as a private pumper. During the course of the Grand Jury’s investigation, both CWD and SqCWD voted to invite SCWD and the County of Santa Cruz to join BIG.

A Replenishment District would allow for private pumpers to contribute to the protection of the aquifer. Under AB 3030^[21] one of the powers provided to BIG with an approved and adopted groundwater management plan, is the establishment of a Replenishment District to raise revenue and pay for facilities to manage the basin. This could allow BIG to charge a groundwater management fee to private pumpers within its boundaries to help pay for the research and implementation of any plans to save the aquifer. Any fees assessed in this manner are obligated to go to basin-specific research and projects. Revenue obtained from the Replenishment District could be used on projects such as injecting recycled water

into the basin for a barrier or recharge.

Map of Potential Groundwater Replenishment District Boundaries^[22]



Due to the inclusion of the County in BIG, any replenishment district established over the Purisima aquifer is able to extend to the full dimensions of the basin, not just the portions represented by SqCWD, CWD, and SCWD. Areas can only be included if the mapping of the groundwater basin demonstrates that the area contributes to the danger at hand and will be protected by actions taken. Currently there is no in-depth mapping of the Purisima basin.

Findings

- F1.** Both SCWD and SqCWD urgently need a supplemental water source.
- F2.** The longer SqCWD and SCWD wait to secure a viable alternative to the overdraft problem, the greater the danger of degradation and possible permanent loss of aquifers.
- F3.** The decision by the City of Santa Cruz to suspend participation in the scwd² desalination project forced SqCWD to re-start the planning process without a regional partner.
- F4.** The City of Santa Cruz did not adequately communicate the urgent need for a

supplemental water source to its ratepayers.

F5. The scwd² desalination plant is the only available single alternative that can address in a timely manner all of the supplemental water needs of SCWD and SqCWD, while at the same time being immune to climate change.

F6. The draft EIR must be finalized before the environmental studies and alternative projects included in it can be implemented.

F7. DeepWater and District-only desalination projects will face many obstacles, including completion of EIRs and securing local approval.

F8. The private company Central Coast Regional Water Project will have inordinate control over the water rates of the DeepWater Desalination project since it will control the intake pipe.

F9. Agencies that wait to buy into the DeepWater plant may be excluded because the limited amount of water produced may already be allocated.

F10. State water rights evaluations will delay the prospective start date of the Regional Water Transfer Project.

F11. Without modification, the SCWD Tait Street treatment facility is not large enough to accommodate the needs of the Regional Water Transfer Project.

F12. Officials in SCWD and SqCWD have not given sufficient consideration to a regional recycling plant.

F13. A water recycling facility would allow for injection wells to either help recharge the aquifer or to build a barrier against seawater intrusion.

F14. Because there is no detailed groundwater model of the Purisima basin, it is difficult to do the studies and research needed to protect the aquifer.

F15. Private pumpers have unregulated access to water and do not contribute financially to aquifer protection efforts.

Recommendations

R1. City of Santa Cruz Water Department should secure a supplemental water supply. (F1, F2)

R2. Soquel Creek Water District should secure a supplemental water supply. (F1, F2)

R3. The City of Santa Cruz should ensure that the scwd² draft EIR be finalized by the end of calendar year 2014. (F5-7)

R4. The City of Santa Cruz should immediately convey to its citizens the urgency of the long term regional water situation. (F1-4)

R5. The City of Santa Cruz should strongly consider reviving the scwd² desalination plan prior to the next available General Election. (F1-7)

R6. City of Santa Cruz Water Department and Soquel Creek Water District should continue to pursue a regional solution such as Desalination or Regional Water Transfers

with Recycling. (F7-13)

R7. Members of the Basin Implementation Group should complete work on a groundwater model of the Purisima basin as soon as possible. (F14)

R8. The Basin Implementation Group should establish a Replenishment District for the Purisima aquifer. (F15)

Commendations

C1. We commend SqCWD for holding board meetings at Capitola City Hall to address supplemental supply and mandatory rationing. This allows for greater public participation and awareness of the discussions via local access television and the internet.

Responses Required

<i>Respondent</i>	<i>Findings</i>	<i>Recommendations</i>	<i>Respond Within/ Respond By</i>
Board of Directors, Soquel Creek Water District	F1-15	R2, R3, R6	90 Days 9/15/14
City of Santa Cruz Water Commission	F1-6, F10-15	R1, R3, R6	90 Days 9/15/14
Santa Cruz City Council	F1-6	R1, R3-6	90 Days 9/15/14
Basin Implementation Group, Purisima Groundwater Basin	F14, F15	R7, R8	90 Days 9/15/14

Definitions

- *Acre-foot*: Unit of volume often used in reference to groundwater sources and reservoirs. It is the volume of one acre of surface area with a depth of one foot, exactly 43,560 cubic feet. It contains 325,853 gallons.
- *af/y*: Acre feet per year.
- *BIG*: Basin Implementation Group
- *CDFW*: California Department of Fish and Wildlife
- *CCRWP*: Central Coast Regional Water Project
- *CEQA*: California Environmental Quality Act
- *CWD*: Central Water District
- *dEIR*: Draft Environmental Impact Report
- *DWD*: Deep Water Desalination
- *EIR*: Environmental Impact Report
- *HCP*: Habitat Conservation Plan

- *IRWMP*: Integrated Regional Water Management Plan
- *IWRP*: Integrated Water Resources Program
- *mgd*: Million gallons per day
- *NOAA*: National Oceanic and Atmospheric Administration
- *NTU*: Nephelometric Turbidity Units. A measure of particulates in water.
- *Public Policy Collaboration*: Agency hired to mediate the Santa Cruz Water Alternatives Advisory Committee.
- *SCWD*: City of Santa Cruz Water Department
- *scwd²*: Santa Cruz Water Department and Soquel Creek Water District Regional Seawater Desalination Project
- *SqCWD*: Soquel Creek Water District
- *SVWD*: Scotts Valley Water District
- *Turbidity*: The measure of clarity in water. Particles carried in water make the water cloudy or opaque and can cause difficulty in treatment. In local streams and rivers this is often due to storm runoff carrying soil into the surface water sources.
- *UWMP*: Urban Water Management Plan
- *WDO*: Water Demand Offsets. A program to compensate for new demand by implementing conservation measures elsewhere.

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