

Recycled (Reclaimed) Water Report

Synopsis

Water has long been a concern in the cities and county of Santa Cruz. Its use is controlled mainly by special districts. The Grand Jury studied the Scotts Valley Water District's (SVWD) experience using recycled water with the idea of helping future applications in the county, such as the new project planned in the Pajaro Valley. The Grand Jury also looked at other water districts in the county. This report concludes that the City and Water District of Scotts Valley should merge. A countywide water management agency or organization should also be considered so that water agencies can work together instead of individually.

Definitions

Acre-foot: 325,851 gallons, or enough water to cover an acre of land one foot deep with water. An average California household uses from one-half to one acre-foot of water per year. A million gallons per day (mgd) equals 1,120 acre-feet a year.

Aquifer: Underground water-holding rock layer.

Package septic systems: Pre-manufactured septic systems usually shared by several homes.

Potable water: "Water that is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the health authority having jurisdiction."¹

Recycled (reclaimed) water: Domestic wastewater which, through tertiary water treatment by a public agency, is suitable for "a direct beneficial use or a controlled use that would not otherwise occur."²

Tertiary water: Wastewater treated so that it is "adequately oxidized, clarified, coagulated, filtered and disinfected, so that at some location in the treatment process, the seven day median number of total coliform bacteria in the daily samples does not exceed 2.2 per 100 milliliters...the water shall be filtered so that the daily average turbidity (see turbidity) does not exceed 2 turbidity units upstream from the disinfection process."³

Title 16: Federal funding provided for water recycling projects.

¹ Uniform Plumbing Code, 2000 Edition, section 218.

² Uniform Plumbing Code, 2000 Edition, Appendix J, section J2.

³ Uniform Plumbing Code, 2000 Edition, Appendix J, section J2.

Turbidity: Cloudiness from solid particles suspended in water.

Background

All water districts in the county are autonomous. Their structure, tier revenue, connection/maintenance costs, “sphere of influence,” customers (residential/agricultural), all vary. Their “sphere of influence” may cross county borders. Most have serious problems, such as the depletion of water-supply aquifers or salt-water intrusion from the Monterey Bay into their wells. Many water districts are evaluating various approaches to solving those problems, such as building desalination plants, using recycled water treatment, damming rivers and importing water from other counties.

Sources

Interviewed:

California Department of Health Services representatives.
Local Agency Formation Commission representatives.
San Lorenzo Valley Water District officials.
Santa Cruz City Water Department officials.
Santa Cruz Wastewater Treatment Plant officials.
Scotts Valley Planning Department officials.
Scotts Valley Wastewater Treatment Plant officials.
Scotts Valley Water District officials.
Scotts Valley Water District Recycled Water employees.
Soquel Water District officials.
Watsonville Public Works officials.

Reviewed:

Annual Report October 2003, Reclaimed Water Supply Agreement Between City of
Scotts Valley and Scotts Valley Water District for Re-Use of Reclaimed Water.
Scotts Valley Banner, Multiple Issues.
Scotts Valley Water District Groundwater Management Program 2002-2003.
Scotts Valley Water District invoices.

Findings

1. Santa Cruz County has limited water resources.

Response: City of Santa Cruz Water Department PARTIALLY AGREES.

The City generally agrees with this finding if it means that the supplies that have been developed throughout the County are strained by current water demands. It is important to note, however, that there remain water resources that have yet to be developed in this County, i.e. desalination and reclaimed water.

Response: City of Watsonville Water Department AGREES.

Agree generally, especially if the finding is intended to highlight the contrast between existing water demand on the one hand, and useable or developed water resources on the other.

Response: Local Agency Formation Commission AGREES.

LAFCO's 2001 compilation of the county's water resources is posted on LAFCO's web site: <http://santacruzlafco.org/pages/reports/waterpolicies2001.pdf>.

Response: Pajaro Valley Water Management Agency AGREES.

Agree generally, especially if the finding is intended to highlight the contrast between existing water demand on the one hand, and useable or developed water resources on the other.

Response: San Lorenzo Valley Water District AGREES.

The District agrees with this finding, if it is intended to mean that water resources within Santa Cruz County have definable limits.

Response: Santa Cruz Board of Supervisors AGREES.

The County would add that the present use of groundwater resources is not sustainable for some groundwater basins. There is abundant surface water available in average and wet winters. Storage of surface water resources is inadequate at present and storage of surface water in groundwater basins for distribution to multiple stakeholders has not been adequately analyzed in the Santa Margarita groundwater basin.

Response: Scotts Valley Water District AGREES.

This finding would be better stated, "Santa Cruz County has limited fresh water resources."

Response: Soquel Creek Water District PARTIALLY AGREES.

While the District generally agrees with this finding, it would be better stated, "Santa Cruz County has limited fresh water resources."

2. Using recycled water can make fresh water available for other uses.

Response: City of Santa Cruz Water Department PARTIALLY AGREES.

The City generally agrees with this finding when there is an enough demand for irrigation water that substituting the reclaimed water for potable water is cost justified. The blanket statement made in this finding does oversimplify the matter without recognizing the differences in water uses that exist throughout the County. In the case of the Santa Cruz Wastewater Plant, it currently treats >200,000 gallons of effluent per day to a higher treatment standard and that water is used as process water within the plant for washdown and process. That amount of water savings directly offset the plant's previous use of potable water for those processes.

Response: City of Watsonville Water Department AGREES.

The more accurate statement might be: recycling can expand the useable water supply.

Response: Local Agency Formation Commission AGREES.

Response: Pajaro Valley Water Management Agency AGREES.

Agree generally, though the more accurate statement might be: recycling can expand the useable water supply.

Response: San Lorenzo Valley Water District AGREES.

The District agrees with this finding, if it is intended to mean that the use of recycled water pursuant to all applicable codes and regulations can augment existing water supply resources.

Response: Santa Cruz Board of Supervisors AGREES.

The County would add that more could be done by the various Special Water Districts and suppliers to promote the use of recycled water either regionally or within the jurisdictional boundary of those entities in charge of developing the recycled water.

Response: Scotts Valley Water District PARTIALLY AGREES.

This comment is simplistic and should be expanded. In fact, using recycled water can also be the foundation of an in-lieu groundwater recharge program (such as here at the District, where the program has been implemented to begin mitigating past overdraft of the groundwater basin).

Response: Soquel Creek Water District PARTIALLY AGREES.

This comment assumes that fresh water would thereby be available for other uses. Soquel Creek Water District has determined that our current groundwater supplies are limited. A current study to determine whether satellite reclamation plants would be a feasible and practical approach for large irrigation users within the District is being undertaken as part of the overall need to reduce groundwater use.

3. Special Water Districts are autonomous with their own elected boards.

Response: Local Agency Formation Commission AGREES.

Response: Pajaro Valley Water Management Agency AGREES.

The PVWMA is an autonomous special purpose district. Its board of directors consists of four elected members, plus three appointed members. These appointments are made by the Santa Cruz County Board of Supervisors, Monterey County Board of Supervisors, and the Watsonville City Council, respectively. Appointees must derive at least 51% of their income from agricultural production.

Response: San Lorenzo Valley Water District AGREES.

This finding would be better stated, “County Water Districts are autonomous with their own elected Board of Directors”.

Response: Santa Cruz Board of Supervisors AGREES.

Response: Scotts Valley Water District AGREES.

This finding would be better stated, “County Water Districts are autonomous with their own elected board of directors.”

Response: Soquel Creek Water District AGREES.

This finding would be better stated, “County Water Districts are autonomous with their own elected board of directors.”

4. The City of Santa Cruz has its own water department. It serves the citizens of Santa Cruz and those of the unincorporated area of Live Oak.

Response: City of Santa Cruz Water Department AGREES.

The City agrees with this finding with the correction that there are many more outside-city areas that are served by the City Water Department including Santa Cruz Gardens, parts of Capitola, Rollingwoods, Carbonera, Pasatiempo, etc. The

service area is roughly defined as serving from just below Davenport to just beyond 41st Avenue and from Henry Cowell Redwood State Park to the Monterey Bay.

Response: Local Agency Formation Commission AGREES.

Its service area also includes other unincorporated areas north and west of the city limits.

5. The City of Capitola's residents receive their water from an autonomous special district, the Soquel Creek Water District. This district also serves the unincorporated areas of Soquel and Aptos.

Response: Local Agency Formation Commission PARTIALLY AGREES.

We understand that the Soquel Creek Water District is providing a more detailed description of their service area.

Response: Soquel Creek Water District PARTIALLY AGREES.

The District's boundary is generally along the eastern side of 41st Ave. City of Capitola residents and businesses located outside of the District are served by the City of Santa Cruz Water Department. The District also does not serve all of Soquel and Aptos. There are private wells and mutual water companies within these communities and Central Water District serves a large portion of Aptos in the vicinity of Freedom Blvd. Soquel Creek Water District's service area extends to La Selva Beach and Cañon del Sol.

6. Two special districts serve the City of Scotts Valley: the Scotts Valley Water District and the San Lorenzo Valley Water District.

Response: Local Agency Formation Commission AGREES.

Response: San Lorenzo Valley Water District AGREES.

Response: Scotts Valley Water District AGREES.

This finding would be better stated, "Two special districts serve drinking water to the City of Scotts Valley: the Scotts Valley Water District and the San Lorenzo Valley Water District, both County Water Districts. In addition, there is a portion of the City served by the Mañana Woods Mutual Water Company and still other sections are on private wells. Several major non-potable demands are met with water pumped from private wells, including the industrial washing at Hanson Quarries (now being phased out), the landscaping at the local 9-hole golf course and landscaping and decorative impoundments at several mobile home parks."

7. Private water companies also serve parts of the San Lorenzo Valley.

Response: Local Agency Formation Commission AGREES.

Investor-owned and mutual water companies are located throughout the county, principally in suburban and rural areas. The San Lorenzo Valley has a concentration of these companies.

Response: San Lorenzo Valley Water District AGREES.

8. The City of Watsonville has its own water department, which buys its water from a special district, the Pajaro Valley Water Management Agency (PVWMA) to supply its residents. Watsonville-area residents outside the city limits are also supplied by the PVWMA. The agency crosses county boundaries and serves customers in neighboring counties.

Response: City of Watsonville Water Department PARTIALLY AGREES.

Overlying the Pajaro Valley groundwater basin, the PVWMA territory includes southern Santa Cruz County, northern Monterey County, and a small portion of San Benito County in the vicinity of Aromas. The agency “sells” water to a limited number of agricultural customers, but it does not “sell” or directly “supply” water to the City of Watsonville or to individuals outside the City for residential use. The City of Watsonville provides water to residents within city limits, as well as to numerous customers residing outside of the city limits.

The PVWMA is, however, developing regional water projects, which collectively will balance the groundwater basin, thereby indirectly supplying the City and all other Pajaro Valley groundwater users. To finance these projects, the agency collects an augmentation charge, a volume-based fee for pumping groundwater. The City, residents outside the City, farmers, and all other groundwater pumpers pay this augmentation charge.

Response: Local Agency Formation Commission PARTIALLY AGREES.

The PVWMA’s territory includes parts of Santa Cruz, Monterey, and San Benito counties from La Selva Beach to Elkhorn Slough to Aromas. This boundary is an approximation of the area that overlies the Pajaro Valley aquifer. The PVWMA’s primary duty is to manage the overdrafted aquifer. Their activities involve developing additional wholesale supplies via recharge and re-use within the area, as well as importing water from outside the area. The City of Watsonville produces its water from wells and stream diversions, and does not purchase its water from the PVWMA. Most other water users in the Pajaro Valley directly produce their

own water, typically through agricultural and domestic wells. They do not buy water from the PVWMA.

The PVWMA can explain their completed projects and plans for development of supplemental water in order to reduce the pumping of the aquifer.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

Overlying the Pajaro Valley groundwater basin, the PVWMA territory includes southern Santa Cruz County, northern Monterey County, and a small portion of San Benito County in the vicinity of Aromas. The agency “sells” water to a limited number of agricultural customers, but it does not “sell” or directly “supply” water to the City of Watsonville or to individuals outside the City for residential use. The agency is, however, developing regional water projects, which collectively will balance the groundwater basin, thereby indirectly supplying the City and all other Pajaro Valley groundwater users. To finance these projects, the agency collects an augmentation charge, a volume-based fee for pumping groundwater. The City, residents outside the City, farmers, and all other groundwater pumpers pay this augmentation charge.

9. Many county residents receive their water from private wells and small private water associations.

Response: City of Watsonville Water Department AGREES.

In the Pajaro Valley, residents outside public water service areas rely on private wells, shared wells, and a variety of private water associations and companies.

Response: Local Agency Formation Commission AGREES.

Response: Pajaro Valley Water Management Agency AGREES.

In the Pajaro Valley, residents outside public water service areas rely on private wells, shared wells and a variety of private water associations and companies.

Response: San Lorenzo Valley Water District PARTIALLY AGREES.

The District agrees with this finding with the following qualifications:

- a) *The District has no information regarding the specific number of county residents who receive their water from private wells and small private water associations.*
- b) *The term “private water associations” should be amended to read “mutual water companies”.*

Response: Santa Cruz Board of Supervisors AGREES.

The County adds that the majority of private wells and small water associations share use from regional groundwater basins commonly used by the Special Water Districts.

Response: Scotts Valley Water District AGREES.

This finding would be better stated, “Many county residents receive their water from private wells and small private water companies.” In fact, the number of private wells has a high cumulative impact on the current state of the Santa Margarita Groundwater Basin. The issue of granting well permits to individual homes within a water service area of a water district or water company circumvents existing conservation programs, encourages high pumping and adds to the current water crisis. This issue has been discussed in detail at several meetings of the Santa Margarita Groundwater Basin Advisory Committee, in which the City of Scotts Valley, the Scotts Valley Water District, the San Lorenzo Valley Water District and the County of Santa Cruz meet to discuss groundwater issues.

Response: Soquel Creek Water District AGREES.

This finding would be better stated, “Many county residents receive their water from private wells and small private water associations and/or companies.”

Aquifers

10. Scotts Valley and the San Lorenzo Valley water districts share a common aquifer.

Response: San Lorenzo Valley Water District AGREES.

Response: Scotts Valley Water District AGREES.

This finding is simplistic and should be expanded. First of all, there are many other users of the Santa Margarita Groundwater Basin, including the Lompico County Water District and numerous private pumpers. Moreover, the groundwater basin is made up of at least two major aquifer units, the Santa Margarita sandstone and the Lompico sandstone. Water is found in other geologic units (such as the Monterey shale and the Locatelli units) but generally these are lower-yield units.

In addition, while the aquifer basin is a common one, there are apparently many subareas that act nearly independently. Since the exact relationships between these subareas and different water-bearing units are little understood, the State of California has tentatively granted the District \$225,000 to revise, expand and upgrade its groundwater model. This project is being directed by a Technical

Advisory Committee made up of staff members from the County of Santa Cruz, San Lorenzo Valley Water District, and the Scotts Valley Water District. The City of Scotts Valley, Lompico County Water District and the Mañana Woods Mutual Water Company have open invitations to participate in the TAC and its meetings but have so far declined due to lack of staff with the appropriate hydrogeological or modeling background.

11. The Soquel Creek Water District's aquifer is used not only by the district, but also by the City of Santa Cruz, Cabrillo College and private homes.

Response: City of Santa Cruz Water Department PARTIALLY AGREES.

The City generally agrees with this finding if it is intended to state that Soquel Creek Water District, the City of Santa Cruz, Cabrillo College, and many private users draw water from the same Purisima Aquifer. If the intent of the statement is to imply that the aquifer is the property of the Soquel Creek Water District, the City disagrees.

Response: Soquel Creek Water District PARTIALLY AGREES.

The statement implies that the District utilizes a single aquifer and that it has some ownership over that resource. A more correct statement would read: "The Soquel Creek Water District receives its groundwater from two sources: The Purisima Formation underlies the western portion of the District; and the Aromas Red Sands is the primary water supply for the portion of the District's service area southeast of Aptos Creek. The City of Santa Cruz, Central Water District, Cabrillo College, Soquel High School and private pumpers also have wells in the Purisima Formation. The Aromas Red Sands aquifer extends through the Pajaro Valley and many agencies and private pumpers rely on this source of water, including Central Water District, the City of Watsonville, and mutual water companies as well as private agricultural and domestic wells."

Wastewater Treatment

12. The City of Santa Cruz's regional wastewater treatment plant treats the sewage of the City of Santa Cruz and much of the mid-county area. This secondarily treated water flows from the plant into the bay through an underwater pipe that dumps it one and one-half miles offshore.

Response: City of Santa Cruz Water Department AGREES.

The area served by this regional wastewater plant is greater than just the mid-county and City. Additionally, the water is not "dumped" into the bay. Rather, the secondary sewer effluent "flows" into the ocean, not the bay.

13. The sewage plant in the City of Santa Cruz was the second to the last in the state to go to secondary treatment and this was only after losing a court battle with the federal government.

Response: City of Santa Cruz Water Department DISAGREES.

The statement that the City of Santa Cruz was the second to last in the state to go to secondary treatment implies there are no advanced primary plants that still exist in the State of California which is incorrect. The statement that the City of Santa Cruz went to secondary treatment only after losing a court battle with the Federal Government is incorrect. The City Council at that time engaged in lengthy public process where it debated whether or not to concur with previous Council decisions to apply for a waiver from secondary treatment that would allow the City to continue to treat its sewage to an advanced primary standard. As a result of that public process, Council opted to apply for a waiver and at the same time raised sewer rates to fund the construction of a secondary treatment facility. Later the City dropped the waiver application and instead entered in to a consent decree with the state which set up a time line to complete construction of a secondary treatment facility.

14. About 250 tons per week of bio-solids, or sludge, are trucked to a large composting farm in the San Joaquin Valley to be processed and sold for use on non-food crops such as cotton.

Response: City of Santa Cruz Water Department AGREES.

15. Many county residents have private or package septic systems.

Response: City of Watsonville Water Department NEITHER AGREES NOR DISAGREES.

The City does not maintain information on the number or location of septic systems. Maps of sewer service areas do suggest, however, that there are likely many septic systems in the Pajaro Valley area.

Response: Pajaro Valley Water Management Agency NEITHER AGREES NOR DISAGREES.

The agency does not maintain or have access to information on the number or location of septic systems. Maps of sewer service areas do suggest, however, that there are likely many septic systems in the Pajaro Valley area.

Response: San Lorenzo Valley Water District AGREES.

Response: Santa Cruz Board of Supervisors AGREES.

Response: Scotts Valley Water District NEITHER AGREES NOR DISAGREES.

The District has no current information on such systems.

Response: Soquel Creek Water District NEITHER AGREES NOR DISAGREES.

The District has no current information on such systems. The source water assessments completed by the District did identify septic systems in proximity to District wells, as these can be a source of groundwater contamination.

Problems

16. Between the years of 1991 and 2003, the water levels in the San Lorenzo Valley Water District have fallen approximately 90 feet in the wells of the southern distribution area.

Response: San Lorenzo Valley Water District AGREES.

17. The City of Santa Cruz suffers from a lack of water supply capacity, particularly during drought years.

Response: City of Santa Cruz Water Department AGREES.

18. The water level in the Scotts Valley Water District's aquifers has been dropping for decades.

Response: Scotts Valley Water District PARTIALLY AGREES.

The District has some inherent conflicts with Finding 18 and would be more accurate to state, "Historical records of water levels (called 'hydrographs') in Scotts Valley Water District's production wells show that the water level has declined in each area since records were first documented in 1984. In some subareas, the water table appears to be stabilizing due to the District's groundwater management program but, to date, any actual improvements have been either relatively short in duration or, in the longer run, only temporary."

19. The Soquel Creek aquifer has been degrading since 1955. Water officials say the district's aquifer is consistently overdrawn. Currently, it has the worst saline level in the 20 years they have been keeping records.

Response: Soquel Creek Water District PARTIALLY AGREES.

The first sentence of the finding is ambiguous. As stated in the response to finding #11, there is no “Soquel Creek aquifer.” There is very limited information about groundwater conditions for the area underlying the Soquel Creek Water District prior to 1967 when the USGS completed a report titled Geohydrologic Reconnaissance of the Soquel-Aptos Area, Santa Cruz County, California (Hickey), and the District is not aware of evidence that local groundwater resources have been degrading since 1955.

Since no Soquel Creek Water District officials were interviewed for this report, the source and context of the statement that district officials say the aquifer is consistently overdrawn is unknown. Soquel Creek Water District initiated the first ongoing groundwater level and seawater intrusion monitoring program for the Soquel-Aptos Basin approximately 20 years ago. Groundwater conditions have fluctuated over the subsequent years, and in the mid-1990’s, the District determined that the cumulative pumping from the basin was exceeding sustainable yield. While numerous hydrogeological studies confirm the conclusion that sustainable yield is less than current pumping levels, water quality in the Purisima Formation has remained generally stable without showing evidence of currently having seawater intrusion at the coast (the cause of what the report refers to as “saline level”).

The District has long-monitored what is believed to be a naturally occurring seawater wedge in the Seascape/La Selva Beach area. The monitoring wells in this vicinity have generally shown an increasing trend in chloride concentrations as production from nearby wells (both public and private) has increased. Increasing chloride level is an indicator of seawater advancement. Based on recommendations in a report presented by Luhdorff & Scalmanini Consulting Engineers in April 2004, the District immediately reduced pumping from wells in this vicinity and is pursuing redistributing pumping to wells that are further inland and northwest. The District also contacted private well owners in the area and is working cooperatively with them to reduce their pumping.

In the Purisima-A aquifer, although chloride concentrations have not become problematic, evidence of a saltwater pathway, rising chloride concentrations at the District’s Garnet Well and water levels near sea level at the nearby coastal monitoring well, indicate a vulnerability to saltwater leakage under current conditions and rates of production.

It should be noted that none of the District's production wells have yet been contaminated by seawater.

The District is well underway with implementing an integrated resources plan that will both reduce demand through conservation and supplement groundwater with a new water supply source. A program level Environmental Impact Report is now being prepared, and it is anticipated that one of two regional projects being evaluated will be constructed by 2010. In the interim, the District has taken

numerous actions to limit water demand so as not to exacerbate the overdraft conditions prior to a solution being in place.

20. The Pajaro Valley Water Management Agency's wells are suffering from seawater intrusion.

Response: City of Watsonville Water Department PARTIALLY AGREES.

Many private wells in the coastal area are suffering from seawater intrusion. A number of PVWMA's monitoring wells in the coastal area indicate varying levels of seawater intrusion. None of PVWMA's production wells are affected by seawater intrusion. The City has one drinking water well in the coastal area. In an effort to reduce seawater intrusion, this well is now used only as an emergency backup supply well.

Response: Pajaro Valley Water Management Agency AGREES.

Agree generally, especially if the finding is intended to refer to the many private wells in the coastal PVWMA area that are suffering from seawater intrusion. PVWMA owns and maintains only a limited number of monitoring wells and production wells of its own. A number of these monitoring wells in the coastal area indicate varying levels of seawater intrusion. None of PVWMA's production wells are affected by seawater intrusion.

A Valuable Resource

21. The City of Santa Cruz's regional wastewater treatment plant discharges 10 million gallons of water per day, five million from the city and five million from the unincorporated area it serves.

Response: City of Santa Cruz Water Department AGREES.

Flows through this regional plant vary according to time of year, but average in the range of the stated flows.

Response: City of Watsonville Water Department NEITHER AGREES NOR DISAGREES.

Noting that the City of Santa Cruz is also required to respond to this finding, the agency defers to that City's response.

Response: Pajaro Valley Water Management Agency NEITHER AGREES NOR DISAGREES.

Noting that the City of Santa Cruz is also required to respond to this finding, the agency defers to the City's response.

22. Watsonville's wastewater treatment plant produces seven million gallons of water per day.

Response: City of Watsonville Water Department AGREES.

In addition, the City of Watsonville is currently working cooperatively with PVWMA to design and build a tertiary treatment facility, which will produce approximately 4,000 acre-feet of recycled water per year. This water will be used for agricultural irrigation.

Response: Pajaro Valley Water Management Agency NEITHER AGREES NOR DISAGREES.

Noting that the City of Watsonville is also required to respond to this finding, the agency defers to the City's response.

23. The City of Scotts Valley's tertiary water treatment agency has a capacity of one million gallons per day.

Response: Scotts Valley Water District AGREES.

This finding would be better stated, "The City of Scotts Valley's tertiary water treatment facility has a current capacity of 750,000 gallons per day with the ability to expand to one million gallons per day."

Tertiary Water Plants

24. Tertiary plant designs and uses vary widely. Each is designed and built based on the intended use.

Response: City of Santa Cruz Water Department AGREES.

Response: City of Watsonville Water Department AGREES.

The City has evaluated a number of options for the tertiary treatment plant currently under design.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and should be expanded. It would be more accurate if it stated, "Recycled water facility designs and uses vary widely. Each facility is designed and built based on the intended use. In Scotts Valley, due to the potential

for groundwater impacts to the sole source aquifer, a high level of treatment was required and a tertiary plant with nitrogen removal was selected for design and construction of the system.”

25. Several reasons make building tertiary water treatment plants desirable:

- By decreasing demand for fresh water, it relieves pressure on aquifers.
- The water can be used to recharge aquifers.
- It recycles and re-uses a valuable resource.

Response: City of Santa Cruz Water Department AGREES.

Tertiary water treatment must be shown to actually reduce demand for fresh water in order to make it cost justifiable; and only under some very controlled and difficult circumstances could it be used to recharge aquifers, most of which would not be feasible for the overstressed aquifer conditions in Santa Cruz County.

Response: City of Watsonville Water Department AGREES.

The City notes that recycling benefits are not necessarily limited to groundwater resources. There may also be benefits due to reduced reliance on surface, imported, or other water supplies. The City also notes that use of recycled water for direct aquifer recharge is highly regulated to the extent that, depending on the circumstances, it may not be feasible or affordable.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The agency notes that recycling benefits are not necessarily limited to groundwater resources. There may also be benefits due to reduced reliance on surface, imported, or other water supplies. The agency also notes that use of recycled water for direct aquifer recharge is highly regulated to the extent that, depending on the circumstances, it may not be feasible or affordable.

Response: Scotts Valley Water District PARTIALLY AGREES.

The District agrees with the first and third bullets in this finding. The District disagrees with the second bullet. It would be more correct to state, “Generally, recycled water from tertiary plants with nitrogen removal can be used to recharge aquifers, within certain constraints established by the state regulatory agencies. Recharge of aquifers is not on the current list of approved uses for Scotts Valley Water District. This list, enumerated in the Regional Water Quality Control Board’s (RWQCB) permit issued to the District, ‘Master Water Recycling Requirements (Distributor) Order No. 01-067,’ includes irrigation of landscape, irrigation of food crops, irrigation of pastures and supply for recreational and landscape impoundments. For Scotts Valley Water District to recharge aquifers

with recycled water would require a modification of the RWQCB permit and compliance with existing regulations for such use.”

26. Several obstacles exist to wider use:

- Some people are reluctant to use treated sewage water.
- The review period for projects is longer than with regular water installations.

Response: City of Santa Cruz Water Department AGREES.

These two listed obstacles certainly are not exclusive, but merely representative of some of the obstacles that exist. Finding adequate markets to justify the cost, building infrastructure to move it around, etc. are also obstacles to widespread use.

Response: City of Watsonville Water Department PARTIALLY AGREES.

Agree generally, though the two identified obstacles are not exhaustive of all such obstacles. For example, obstacles confronting the joint PVWMA-City of Watsonville recycling project include, among others: market concerns about the use of recycled water on edible food crops; high salt content of the treated effluent which, though not a health risk, is unacceptable for irrigation use; seasonality of irrigation demand, hampering cost-effective use of off-season effluent; and relatively high cost as compared with other possible water supply alternatives.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The two identified obstacles are not exhaustive of all such obstacles. For example, obstacles confronting the joint PVWMA-City of Watsonville recycling project include, among others: market concerns about the use of recycled water on edible food crops; high salt content of the treated effluent, which, though not a health risk, is unacceptable for irrigation use; seasonality of irrigation demand, hampering cost-effective use of off-season effluent; and relatively high cost as compared with other possible water supply alternatives.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and should be expanded. It would be more accurate if the following bullets were added:

- *Distribution of recycled water requires a separate, costly recycled water distribution pipe network that presently is designed to reach only key locations. Future expansion of the system may make recycled water available to more customers.*
- *State requirements are such that there are up-front costs and resources required for agency approval to hook up. These up-front costs can dissuade potential customers from taking on a retrofit project.*

Using Recycled Water

27. Recycled water can be used for non-residential (commercial) water closets, urinals, and trap primers for floor drains and floor sinks.⁴

Response: City of Watsonville Water Department PARTIALLY AGREES.

The finding neglects to cite commercial agriculture as a proven and effective market for recycled water.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The finding neglects to cite commercial agriculture as a proven and effective market for recycled water.

Response: Scotts Valley Water District PARTIALLY DISAGREES.

This finding is simplistic and should be expanded. It would be better if the finding were changed to, “Generally, recycled water from tertiary plants with nitrogen removal can be used for non-residential (commercial) water closets, urinals, and trap primers for floor drains and floor sinks, within certain constraints established by the state regulatory agencies. These uses are not on the current list of approved uses for Scotts Valley Water District. This list, enumerated in the Regional Water Quality Control Board’s (RWQCB) permit issued to the District, ‘Master Water Recycling Requirements (Distributor) Order No. 01-067,’ includes irrigation of landscape, irrigation of food crops, irrigation of pastures and supply for recreational and landscape impoundments. For Scotts Valley Water District to distribute recycled water for use in non-residential (commercial) water closets, urinals, and trap primers for floor drains and floor sinks, would require a modification of the RWQCB permit and compliance with existing regulations for such use.”

⁴ Uniform Plumbing Code, 2000 Edition, Appendix J.

28. Residential uses for recycled water are limited to front yard in-ground landscape irrigation. Outside hose connections cannot be connected to recycled water. Back yard use is restricted.

Response: City of Watsonville Water Department NEITHER AGREES NOR DISAGREES.

The City's recycling effort focuses on a commercial agricultural application and, therefore, the City has never thoroughly researched residential use requirements.

Response: Pajaro Valley Water Management Agency NEITHER AGREES NOR DISAGREES.

The agency's recycling effort focuses on a commercial agricultural application and, therefore, the agency has never thoroughly researched residential use requirements.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding would be more accurate if the finding were changed to, "The District's permit with the RWQCB requires the establishment of procedures and uses. The District's current procedures, approved by DHS and RWQCB, currently limit residential uses for recycled water to front yard in-ground landscape irrigation under the control of a homeowners association. Outside hose connections cannot be connected to recycled water. The potential for cross-connections is carefully avoided, for instance by prohibiting any hose connections on the fronts of houses. Backyard use of recycled water is prohibited. Notice and public education components are key requirements for such developments.

"The District is currently seeking approvals from DHS and RWQCB on the first of these single-family residential development sites and some modifications to the requirements and required documentation may be mandated by the agencies."

29. Recycled water use requires the property owner or manager to be educated in the maintenance of the system. This would entail the maintenance and visibility of signage, annual testing of the back flow protection device and the responsibility of not allowing any modifications to the recycled water plumbing.

Response: City of Watsonville Water Department AGREES.

Careful management for protection of health and safety is important both in urban/residential applications and in commercial agricultural applications.

Response: Pajaro Valley Water Management Agency AGREES.

Careful management for protection of health and safety is important both in urban/residential applications and in commercial agricultural applications.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, “Recycled water use requires an on-site recycled water coordinator (the property owner, manager or their designated representative) to be educated and certified in the operation and maintenance of recycled water systems. Operations and maintenance typically entail the hours of operation, assuring that there is no puddling or runoff from the site, maintaining signage, annual testing of the back flow protection device, annual reporting and the responsibility for not allowing any modifications to the recycled water plumbing.”

City of Santa Cruz

30. The Santa Cruz City water supply comes from North Coast wells and ground water taken from the San Lorenzo River during the rainy season and stored in the Loch Lomond reservoir. Environmental, geologic and political factors prevent the city from increasing its storage capacity.

Response: City of Santa Cruz Water Department PARTIALLY AGREES.

The City’s water supplies are: surface diversions from four north coast streams, a direct diversion from the San Lorenzo River in the City, several small wells in the Live Oak area, and the Newell Creek (Loch Lomond) Reservoir which is filled directly by inflow from Newell Creek or by pumping water up to the reservoir from a diversion facility on the San Lorenzo River at Felton. Regarding the factors that have prevented the City from increasing its storage capacity, the listing of these three factors is dramatically oversimplistic. In fact, the City has investigated many supply augmentation alternatives over the years and most of them have failed to progress for many reasons including some of the above, seismic considerations, cost, and others.

31. During drought years, the City of Santa Cruz must rely on conservation and occasional mandatory rationing to supply its customers.

Response: City of Santa Cruz Water Department AGREES.

In truth, the City’s water conservation efforts are not any more important to its water supply plan in drought than they are in non-drought conditions. Mandatory restrictions on water use, however, are reserved for drought emergencies.

32. The city is in the planning process for a desalination plant to convert seawater to fresh water for drought years.

Response: City of Santa Cruz Water Department AGREES.

The City is currently engaged in environmental review of a desalination facility and that a decision to proceed with the design of such a facility has not yet been made.

33. The City of Santa Cruz has explored the idea of tertiary sewage water treatment but has rejected it for several reasons:

- The current secondary treatment system doesn't use the correct process. It uses "trickling filters" rather than the necessary "nutrient removal" approach.
- The city doesn't have enough space.
- Odors could be a problem in a densely populated area.
- It would take more electrical power.
- It would affect rates.
- The City has no distribution system for the recycled water it would generate.

Response: City of Santa Cruz Water Department DISAGREES.

The City of Santa Cruz has not rejected the idea of tertiary sewage/treatment/reuse. It thus far has proven less feasible than the preferred alternative, desalination. Regarding the first point, it is correct that without modification to the current wastewater plant processes, (i.e. construct tertiary treatment processes for at least some of the influent) it does not "use the correct process." Regarding the second point, inadequate space has never been a deciding factor. Inadequate space would likely make it much more expensive as it would require moving some of the plant influent off-site, but that does not make such a project infeasible. Regarding the third point, odors in the densely populated area around the plant was never considered in the City's investigation of reclaim/reuse. Regarding the fourth point, all supply alternatives considered would impact rates. Reclaim/reuse would have had virtually the same impact on ratepayers as the preferred alternative, desalination. Finally, the point that the City has no distribution system for the recycled water was a cost factor in the decision to rank reclaim lower than the preferred alternative, desalination.

City of Scotts Valley

34. The Scotts Valley Water District built a tertiary wastewater treatment plant in 1997. It treats secondary sewage water that was previously being piped to the Santa Cruz City ocean outfall. The tertiary-treated water was to be used for irrigation water and would thereby lessen the demand on the aquifer.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, “The Scotts Valley Water District built a tertiary wastewater treatment plant beginning in 1997. The tertiary plant came on line in 2002. The tertiary plant provides additional, advanced treatment to secondary sewage water produced by the City’s wastewater treatment plant (otherwise piped to the Santa Cruz City ocean outfall). The tertiary-treated water is being used for irrigation water, thereby lessening the demand on the aquifer.”

35. The Scotts Valley Water District's tertiary water treatment plant was originally projected to cost \$4.9 million. It was financed with a Certificate of Participation for \$4.25 million along with surplus funds. The district did not understand the full extent of the California Department of Health Service’s requirements. With significant changes to the original design, the cost of the plant ultimately rose to nearly \$10 million.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, “The Scotts Valley Water District's tertiary water treatment plant was originally projected to cost \$4.9 million. The plant and recycled water distribution system were financed with a Certificate of Participation for \$4.25 million along with surplus funds. The district did not anticipate the full extent of the California Department of Health Service’s requirements for construction of the plant, in particular the requirements related to the UV system which is relatively new technology for such an application. With significant changes to the original design, the cost of the plant ultimately rose to nearly \$5.5 million, with the distribution system costing the District another \$2.9 million to date. Moreover, the additional requirements greatly increased projected operational costs for the tertiary treatment.”

36. The district planned for potential developments to use recycled water by installing connection points when Scotts Valley Drive was reconstructed.

Response: Scotts Valley Water District AGREES.

37. The tertiary treatment plant was built on land owned by the City of Scotts Valley. The water district paid for the building, then gave the plant to the city and agreed to pay for its maintenance and operations and to handle the distribution. A 1996 agreement stipulated how the city would pay for the treated water it needed. The city would pay a calculated reduced price to the SVWD based on the amount it used. The city has challenged the terms of the agreement and has been meeting with the district for months to agree on a new formula.

Response: Scotts Valley Water District PARTIALLY AGREES.

It would be more accurate to change the last sentence to read, “The City and the District disagreed on the interpretation of the terms of the agreement as it would be applied during the unexpectedly long start-up period. The two public agencies renegotiated these terms and reached agreement for a five-year amendment that satisfies both agencies.”

38. Under the present rate structure, recycled water is priced at 80% of the price of potable water.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, “Under the District’s present rate structure, recycled water is priced at 80% of the price of potable water for recycled water customers inside the District with the exception of the City. Rules and regulations for distribution of water to recycled water customers outside the District have yet to be developed.”

39. The tertiary plant has been operational for two years. It has a capacity of one million gallons per day but operates at much less because of a lack of customers. At the end of calendar year 2003, the district had one customer: the City of Scotts Valley. By mid-2004, it will have 10 connections. Seven of those are for the City of Scotts Valley. When the plant resumes operations for this irrigation season (the dry months of the year), a handful of new customers are expected.

Response: Scotts Valley Water District PARTIALLY AGREES.

It would be more accurate if, beginning with the second sentence it stated that, “The tertiary plant has an ultimate capacity of one million gallons per day but operates at a much lower flow rate because of a current lack of customers. At the end of calendar year 2003, the district had two customers, the City of Scotts Valley and Baymonte Christian Preschool. By mid-2004, the District anticipates at least 10 connections, including the Scotts Valley Unified School District’s high school playing fields, a major landscape user in the area. Seven connections are parks and/or median strips owned and operated by the City of Scotts Valley. The plant resumed operations early this irrigation season (the dry months of the year) due to the lack of rain starting March 1st.”

40. The system cost \$100,000 to operate during the July 2002-June 2003 season. The Grand Jury was unable to discover whether revenues cover expenses.

Response: Scotts Valley Water District PARTIALLY AGREES.

It would be more accurate if the finding stated that, “The operating costs for the recycled water system were about \$90,000 during the July 2002-June 2003 season. Although the end-of-year numbers are not yet available from the District, staff project that operating costs for FY 2003-2004 will be about \$110,000.

“There are also significant costs for the debt service incurred to pay for the construction of the recycled water plant and distribution system. These combined operating and debt service expenses can be compared to revenues of about \$9,000 and \$14,000, respectively, for the two fiscal years. As an in-lieu recharge project, this program’s shortfall is subsidized by the District’s potable water customers.”

41. A financial plan and rate study was prepared for the district in April 2002. It calls for a 33% rate increase over five years for all of the district's customers. The district had originally projected that recycled water users would use 200 acre-feet per year. Because of the lack of customers the rate study may have to be re-negotiated and rates increased.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if the last statement was expanded to read, “There were several factors that were not known at the time of the 2002 study. For instance, the annual operating costs of the tertiary plant were projected at a level of only about \$50,000 - \$70,000 and have already been much higher. The actual debt service was higher than anticipated due to the additional \$2.3 million dollars in unanticipated COP’s obtained in late 2002 to pay for the unanticipated final costs of construction of the recycled water plant and core recycled water distribution system. Similarly, the depreciation costs related to the higher-cost construction of the tertiary plant and recycled water distribution system was not considered.

“Because of these factors plus an initial lack of customers, the District is planning to have the financial management and rate study plan revised during FY 2004-05 and the consultant’s new study may include recommendations to adjust rates differently than originally suggested.”

42. Scotts Valley Water District officials said the delay in getting more customers online is caused by a bottleneck in the Monterey office of the California Department of Health Services, which approves all recycled water projects.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, “Scotts Valley Water District officials said the delay in getting more customers online is caused by a bottleneck in the Monterey office of the California Department of Health Services, (DHS) which currently pre-approves all recycled water projects.

Although DHS staff work hard to cooperate with the District's needs, once the District submits plans to DHS, the DHS response and turnaround has occasionally taken up to six months (e.g., plans for retrofitting landscaping at the Santa Cruz Medical Center were submitted on May 28, 2003 and the DHS's first response/comments were dated November 12, 2003, and these were for landscaping at a commercial site similar to those already reviewed and approved), often due to the limited staffing of the office according to statements made by DHS staff to the District.

"The District concurs that review and turnaround took longer for both the agencies and the District during start-up as templates and procedures needed to be established but now that the process is in place, the District is working with DHS and RWQCB to streamline approvals."

Again, it is important to emphasize that the distribution and use of tertiary-treated water is a new activity in this region, although well established elsewhere (such as in Southern California). SVWD has voluntarily assumed the position of pioneering new concepts as the first distributor of any recycled in the Monterey District of the Department of Health Services (DHS). The District has found staff members of other agencies, such as Monterey DHS, are often reviewing this type of application for the first time and understandably do not want to make mistakes. This hesitancy (which we hope will fade away in the near future as familiarity and routine are established) has led to time delays and much higher costs than anticipated – for both the District and the recycled water customers. In some cases, a great deal of cost and time has been added for "safety considerations" that would not be expected in areas where the use and distribution of recycled water has become routine. These issues would apply to any water district, agency, city, etc., that attempted to initiate such a program not yet common in local usage.

In fact, the District met with DHS and RWQCB on June 30, 2004 to discuss the ongoing need for pre-approvals. The result of the meeting will hopefully be more customers on-line quicker, assuming that potential customers work closely with the District to provide the required plans, revisions and on-site retrofit work in a timely manner.

43. The California Department of Health Services in Monterey said it welcomes more projects from Scotts Valley. It says there is no delay in processing them. Health officials said early drawings often did not meet standards and this caused the delays.

Response: Scotts Valley Water District NEITHER AGREES NOR DISAGREES.

The District has no information on what DHS may have told the Grand Jury committee, however, as presented, the finding conflicts with the District's understanding of DHS staffing issues (see response to Finding 42, above).

44. The SVWD currently allows recycled water to be used only for landscape irrigation.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, "The approved uses for recycled water distributed by the Scotts Valley Water District are established by regulations and by the state agencies during the permitting process. The list of approved uses, enumerated in the Regional Water Quality Control Board's (RWQCB) permit issued to the District, 'Master Water Recycling Requirements (Distributor) Order No. 01-067,' includes irrigation of landscape, irrigation of food crops, irrigation of pastures and supply for recreational and landscape impoundments. For Scotts Valley Water District to use recycled water for other uses would require a modification of the RWQCB permit and compliance with existing regulations for such use.

"Since landscaping is more common than food crops or pasture land within the extent of the existing recycled water distribution system, landscaping has been the focus of the program to date. Two pending projects involve impoundments but will require additional permitting to allow existing overflow structures to continue to operate."

45. The City of Scotts Valley's Planning Department said it is the Scotts Valley Water District's responsibility to take care of all water issues.

Response: Scotts Valley Water District NEITHER AGREES NOR DISAGREES.

The District has no information on what the City may have told the Grand Jury, however, the statement agrees with the District's understanding of the relationship.

46. Scotts Valley water officials said the present rate structure is not sufficient to encourage existing non-residential customers to convert to recycled water for landscaping.

Response: Scotts Valley Water District PARTIALLY AGREES.

This finding is simplistic and would be more accurate if it stated that, "Scotts Valley Water District officials said the present rate structure, alone, does not appear to be sufficient to encourage existing non-residential customers to convert to recycled water for landscaping. This could be because of the up-front costs and difficulties in preparing plans and specifications that meet DHS requirements and

to actually perform the required retrofit actions. However, in many cases there are other modes of encouragement available to the District. As time and staff resources allow, these other avenues are being pursued by District staff.”

Pajaro Valley

47. The City of Watsonville is a full service city with its own sewage, water, garbage, fire and police departments.

Response: City of Watsonville Water Department AGREES.

In addition, the City provides water and sewer services to a large population outside of the City limits.

Response: Pajaro Valley Water Management Agency NEITHER AGREES NOR DISAGREES.

Noting that the City of Watsonville is also required to respond to this finding, the agency defers to the City’s response.

48. In 1997 with the over-pumping of wells and seawater intrusion, the Pajaro Valley Basin Management Plan addressed the development of recycled water.

Response: City of Watsonville Water Department PARTIALLY AGREES.

The PVWMA’s original Basin Management Plan was adopted in 1993, and a Revised Basin Management Plan was adopted in 2002. The Revised Basin Management Plan includes a joint PVWMA-City of Watsonville recycling project as an integral part of the overall, long-term water supply solution for the Pajaro Valley groundwater basin.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The agency’s original Basin Management Plan was adopted in 1993, and a Revised Basin Management Plan was adopted in 2002. The Revised Basin Management Plan includes a joint PVWMA-City of Watsonville recycling project as an integral part of the overall, long-term water supply solution for the Pajaro Valley groundwater basin.

49. A pipeline project is in process to bring fresh water from the Central Valley to help solve the problem. This water will be mixed with recycled water to reduce the salinity to the level required for agricultural use.

Response: City of Watsonville Water Department PARTIALLY AGREES.

The PVWMA's Revised Basin Management Plan is a multi-faceted plan, which includes importation, recycling, development of local surface supplies, conservation, and watershed management programs. Blending with imported water is key to reducing the salinity of the recycled supply to an acceptable level, as noted in the finding.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The agency's Revised Basin Management Plan is a multi-faceted plan, which includes importation, recycling, development of local surface supplies, conservation, and watershed management programs. Blending with imported water is key to reducing the salinity of the recycled supply to an acceptable level, as noted in the finding.

50. U.S. Representative Sam Farr (D-Carmel Valley) wrote legislation at the federal level to get Bureau of Reclamation Title 16 grant funding. The PVWMA received Congressional authorization (not just an appropriation), for up to \$20 million in Bureau of Reclamation funding for the water-recycling project.

Response: City of Watsonville Water Department PARTIALLY AGREES.

The City of Watsonville has been authorized to receive up to \$20 million of Federal Title 16 grant funding through the Bureau of Reclamation for construction of the joint PVWMA-City recycling project. The City and the PVWMA are working collaboratively to assure that these appropriated funds are allocated by Congress for distribution to the City. Congressman Farr has been extremely supportive of the recycling project and Federal funding for it.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The City of Watsonville has been authorized to receive up to \$20 million of Federal Title 16 grant funding through the Bureau of Reclamation for construction of the joint PVWMA-City recycling project. The City and the PVWMA are working collaboratively to assure that these appropriated funds are allocated by Congress for distribution to the City. Congressman Farr has been extremely supportive of the recycling project and Federal funding for it.

51. The city and the water district will contribute 75% of the cost of the plant and distribution, with the remaining 25% coming from the federal government.

Response: City of Watsonville Water Department PARTIALLY AGREES.

The Title 16 program requires a 75% local funding match.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The Title 16 program requires a 75%-25% split between local and federal funding. Engineering estimates indicate that total project costs will exceed \$80 million; therefore, the federal contribution of \$20 million will pay for less than 25% of costs.

52. Feasibility studies have been completed and a formal design by Rivers and Mountains Conservancy (RMC) has been finished. Completion is scheduled for late 2007.

Response: City of Watsonville Water Department PARTIALLY AGREES.

A feasibility study has been completed and is awaiting formal approval from the Bureau of Reclamation. Formal design by Raines, Melton & Carella, Inc. (RMC) is underway. The exact start-up date for the recycling remains to be determined, but it is expected to be in the 2006-2008 timeframe.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

A feasibility study has been completed and is awaiting formal approval from the Bureau of Reclamation. Formal design by Raines, Melton & Carella, Inc. (RMC) is underway. The exact start-up date for the recycling project remains to be determined, but it is expected to be in the 2006-2008 timeframe.

53. This project is strictly for agricultural use, primarily for growing strawberries, and crosses county boundaries.

Response: City of Watsonville Water Department PARTIALLY AGREES.

The Revised Basin Management Plan calls for delivery of recycled water to the majority of the agricultural properties in the PVWMA territory west of Highway 1. Strawberries are the chief crop in this area, both in terms of acreage and economic value.

Response: Pajaro Valley Water Management Agency PARTIALLY AGREES.

The Revised Basin Management Plan calls for delivery of recycled water to the majority of the agricultural properties in the PVWMA territory west of Highway 1. Strawberries are the chief crop in this area, both in terms of acreage and economic value.

San Lorenzo Valley

54. The San Lorenzo Valley Water District (SLVWD) has two separate distribution systems. In the north, water is gathered from the surface and from wells, while in the south only wells are used.

Response: San Lorenzo Valley Water District PARTIALLY AGREES.

The District agrees with this finding with the following qualifications:

- a) *The term “surface” should be amended to read “surface water”, and the term “wells” should be amended to read “groundwater”.*
55. The district is always concerned about how federal agencies, for environmental reasons, allow the district to acquire surface water in the northern distribution system. Because of declining water levels in wells in the southern distribution system, SLVWD plans to link these two distribution systems.

Response: San Lorenzo Valley Water District AGREES.

56. San Lorenzo Valley Water District is currently working with Santa Cruz County staff to evaluate ground water recharge. The Hanson Aggregate and Lone Star quarries will be closing, and the county is funding requests for proposals to use these quarries to hold onsite water runoff for ground water percolation and retention.

Response: San Lorenzo Valley Water District AGREES.

Response: Santa Cruz Board of Supervisors PARTIALLY DISAGREES.

The County would clarify that the County has developed proposals to analyze this possible end use of the quarries but is soliciting grant funding for a feasibility level analysis. The County would add that San Lorenzo Valley Water District is cooperating with County staff but may view the effort as a lesser priority than County staff. The Scotts Valley Water District and the City of Santa Cruz Water Department are cooperating with County staff at a similar level to the San Lorenzo Valley Water District.

Soquel Creek

57. The flow rate of Soquel Creek and the ground water aquifer have a direct interaction. When the water district’s wells are turned off, the creek rises.

Response: Soquel Creek Water District PARTIALLY AGREES.

Surface and groundwater do directly interact, and it is true that pumping from deep wells (i.e. those operated by the District in the vicinity of Soquel Creek) almost certainly decreases the amount of flow in the creek. Thus, if District wells were turned off, the creek would rise; however, a recent comprehensive analysis of numerous studies that have been conducted over the years about stream-aquifer interaction concluded that the hydraulic connection between the stream and deep Purisima aquifers (from which District wells pump) is sufficiently slow and diffuse that pumping has only a small, attenuated effect on “baseflow.” Baseflow is the portion of total streamflow that originates from groundwater. In Soquel Creek, the relatively small impact of District pumping is masked by a number of other factors that collectively have a greater impact on baseflow, including logging and forest fires; grazing; rural and urban development; riparian evapotranspiration; streambed aggradation and degradation; the Loma Prieta earthquake; groundwater pumping from shallow wells; and precipitation. It is estimated that historical baseflow depletions caused by District pumping have been less than 0.5 cubic feet per second.

58. The district is considering joining with the City of Santa Cruz in building a desalination water plant.

Response: City of Santa Cruz Water Department AGREES.

The City’s Integrated Water Plan includes, as one of two preferred alternatives, a cooperative effort with the Soquel Creek Water District in the construction of a 2-1/2 million gallon per day desalination facility.

Response: Soquel Creek Water District AGREES

Both the City of Santa Cruz and Soquel Creek Water District’s Integrated Water Plan includes, as one of two preferred alternatives, a cooperative effort to construct a 2-1/2 million gallon per day ocean desalination facility. The District would have use of this source to supplement its groundwater supplies during all but seasonal drought periods, thereby allowing recovery of groundwater levels to provide a sufficient barrier against saltwater intrusion.

59. Soquel Creek Water District management believes the county should manage the county’s water resources.

Response: Soquel Creek Water District DISAGREES.

Neither the General Manager nor any other management employee of Soquel Creek Water District was interviewed by the 2003-2004 Grand Jury and did not make this statement. The District has a longstanding effort and commitment to managing the groundwater resources underlying its service area. There are both groundwater and surface water resources that are currently outside the jurisdiction

of any water agency, and therefore, any public management effort for these resources would need to come from the county.

Conclusions

1. Several types of agencies provide water and sewage disposal: private, special districts, city-owned and combinations of these.
2. Many separate districts are struggling with similar water problems.
3. Local water agencies sometimes compete instead of cooperate in using scarce water resources.
4. Building tertiary water treatment systems is expensive, complex and subject to many barriers to successful use and ongoing maintenance.
5. Building tertiary water treatment systems is also a worthwhile re-use of a valuable resource. It has the potential to be of great value in helping the county cope with its ongoing water needs.
6. Residential usage of recycled water for a single-family dwelling is difficult to maintain. The present rate structure does not motivate the property owner to implement it.
7. The present rate structure in Scotts Valley is not sufficient to encourage existing non-residential customers to convert to recycled water for landscaping.
8. A great potential water source is being wasted in Scotts Valley while various agencies argue about who is responsible for the problems. The city's expensive tertiary-treatment plant is under-used, customers are paying higher rates and hundreds of millions of gallons of water are still being sent to the ocean.

Recommendations

1. The Scotts Valley Water District should be commended for making use of an important new technology. It should also be commended for having the foresight to install water connection points for future development included in the reconstruction of Scotts Valley Drive.

Response: Scotts Valley Water District AGREES.

The District thanks the Grand Jury committee for the compliments.

2. The problems implementing the system show that one agency needs to have sole responsibility and control over it in the future. The City of Scotts Valley should

acquire the water distribution and maintenance systems that serve the citizens serviced by the SVWD. This responsibility should be controlled and maintained by the Department of Public Works.

Response: Local Agency Formation Commission NEITHER AGREES NOR DISAGREES.

In 1985, LAFCO studied the government organizational issues involving the City of Scotts Valley and the Scotts Valley Water District. One conclusion (LAFCO Resolution 647-D) was that LAFCO adopted an interim sphere of influence for the water district until such time as the water district was integrated into the city government. If the citizens, the water district board, and the city council wish to pursue this integration, LAFCO would be available to assist in any technical studies regarding the reorganization of services, and under state law LAFCO would be the hearing body for any proposal to reorganize the water district.

Response: Scotts Valley Water District DISAGREES.

This recommendation has no basis or foundation in the Grand Jury's findings as presented in the report. Furthermore, it directly conflicts with Recommendation 1. Moreover, it is unclear what, if anything, leads the Grand Jury to believe either that the problems would be resolved through oversight by the City of Scotts Valley (an agency with no DHS experience) or that the expertise to operate either a potable water system or a recycled water distribution system resides within the Department of Public Works or even how such a consolidation could conceivably benefit the District's potable or recycled water customers or the City's residents.

3. The distribution and usage of recycled water from the Scotts Valley plant should be aggressively pursued beyond the district's borders. (As suggested in Recommendation 4).

Response: City of Santa Cruz Water Department CANNOT RESPOND.

The City does not have a response to this recommendation as the operation the Scotts Valley Reclaim project is entirely within the purview of the Scotts Valley Water District.

Response: Local Agency Formation Commission AGREES.

LAFCO agrees that the use of the recycled water from the Scotts Valley plant should be increased as aggressively as possible. Current law allows nonpotable water to be marketed outside the water district boundaries without LAFCO review. Given the strain on the two aquifers in Scotts Valley, their recycled water should be used in a fashion that helps to relieve their aquifers. They should not seek customers outside their basin just for the purpose of selling water that the plant is

capable of producing. LAFCO would support changes in the state's administrative rules or laws that would facilitate the ability of the Scotts Valley Water District to sell recycled water while maintaining the public health. Changes in rules or law are beyond LAFCO's technical expertise to draft. LAFCO will consider supporting such rule or law changes within six months if the water district or statewide agencies with water re-use experience can identify the needed changes.

Response: San Lorenzo Valley Water District AGREES.

The District has implemented this recommendation. The District, in cooperation with Scotts Valley Water District, has agreed to allow the distribution of recycled water within the boundaries of the San Lorenzo Valley Water District.

Response: Scotts Valley Water District DISAGREES.

This recommendation has no basis or foundation in the Grand Jury's findings as presented in the report. Furthermore, the District is already aggressively pursuing distribution of recycled water beyond the District's boundaries (see District's Response to Conclusions 3 and 4, above), but such aggressive pursuit must be balanced against the ultimate demands within the District since District customers have invested in the facilities and have first rights to use thereof.

Response: Soquel Creek Water District DISAGREES.

Will not be implemented by Soquel Creek Water District because it is unreasonable. It would be impractical to develop a dedicated distribution system to transport recycled water from Scotts Valley to potential users within Soquel Creek Water District's service area. Soquel Creek Water District is interested in possibly augmenting fresh water supplies with recycled water for large irrigation users. Since no wastewater treatment facility exists within reasonable proximity of the District, the potential for satellite reclamation plants along sewer mains near Cabrillo College, Anna Jean Cummings Park and Seascape Golf Course to provide playing field and golf course irrigation is being evaluated.

4. Santa Cruz County and the major water providers, with the assistance of Local Agency Formation Commission (LAFCO), should consider a permanent countywide water management agency or organization to help oversee water problems jointly, instead of individually.

Response: City of Santa Cruz Water Department DISAGREES.

This recommendation has no basis in the findings listed elsewhere in this report. The Scotts Valley/ San Lorenzo Valley/ Lompico Santa Margarita Groundwater Basin Committee; the Soquel Creek/ Central Water District AB3030 Committee; the Santa Cruz/ Soquel Creek cooperative investigation of desalination; the Soquel

Creek/ Pajaro Valley Water Management District/ City of Watsonville investigation of a cooperative water supply project; the Interagency Water Resources Working Group composed of County Water Resources staff and the General Manager of every water agency mentioned in this report; an ad hoc committee of county staff and water general managers working on Prop 50 grants for water projects throughout the County; monthly meetings of every General Manager of every water district in the county, all are examples of cooperative efforts that would suggest the agencies mentioned in this report are working very well together for the benefit of all citizens affected by them.

Response: City of Watsonville Water Department DISAGREES.

This recommendation will not be implemented because it has no basis in the Grand Jury's findings and, more importantly, because it is neither sound nor practical. It is the City of Watsonville's position that, to the extent possible, water district boundaries should conform to watershed or other water resource boundaries, not political boundaries. The Pajaro Valley is divided roughly equally between Santa Cruz and Monterey Counties, and it was in part because of that split that the PVWMA was formed in the first place. The Revised Basin Management Plan sets forth an integrated approach to address water problems that cross county boundaries. To consolidate the Santa Cruz portion of the Pajaro Valley in a county-wide water agency would represent a rejection of the concept of watershed planning and serve to impede completing the water supply projects now underway in the Pajaro Valley.

Response: Local Agency Formation Commission PARTIALLY AGREES.

Currently, the water agency managers from around the county meet on a regular basis, and the water agency boards explore joint issues on an ad hoc basis—such as the Soquel Creek Water District's efforts to develop additional supplies jointly with either the Pajaro Valley Water Management Agency's import of water or the City of Santa Cruz's desalination project. LAFCO does not feel that its attempted mandate of a countywide organization would be an effective way to start such an organization. If the water district boards and the city councils that govern water systems wish to set up or explore setting up such an organization, LAFCO would participate in the discussion and provide staff for scheduling meetings or analyzing organizational alternatives. This could happen within or beyond the six-month time period that law specifies for responses to the Grand Jury's Final Report.

Response: Pajaro Valley Water Management Agency DISAGREES.

The recommendation has not been implemented, and it is not within the agency's power or authority to do so. Furthermore, the agency disagrees with this recommendation because it has no basis in the Grand Jury's findings and, more

importantly, because it is neither sound nor practical. It is PVWMA's position that, to the extent possible, water district boundaries should conform to watershed or other water resource boundaries, not political boundaries. The Pajaro Valley is divided roughly equally between Santa Cruz and Monterey Counties, and it was in part because of that split that the PVWMA was formed in the first place. The Revised Basin Management Plan sets forth an integrated approach to address water problems that cross county boundaries. To consolidate the Santa Cruz portion of the Pajaro Valley in a countywide water agency would represent a rejection of the concept of watershed planning and serve to impede completing the water supply projects now underway in the Pajaro Valley.

Response: San Lorenzo Valley Water District DISAGREES.

The District will not be implementing this recommendation because it is not warranted. This recommendation has no basis for support pursuant to the findings listed elsewhere in the report. Cooperation between water agencies in Santa Cruz County is already well established. The District is a member agency of the Santa Margarita Groundwater Basin Advisory Committee. Said committee was formed in June 1995 to make recommendations for cooperative groundwater management of the Santa Margarita Groundwater Basin. A Memorandum of Understanding regarding this matter was executed by San Lorenzo Valley Water District, Lompico County Water District, Scotts Valley Water District, City of Scotts Valley and the County of Santa Cruz. Further, the Interagency Water Resources Working Group composed of County Water Resources staff and the general manager of every water agency mentioned in this report; an ad hoc committee of county staff and water general managers working on Prop 50 grants for water projects throughout the County; monthly meetings of every general manager of every water district in the county, all are examples of cooperative efforts that would suggest the agencies mentioned in this report are working very well together for the benefit of the citizens. The San Lorenzo Valley Water District is fully committed to interagency cooperation, and the development and implementation of sustainable water resources. The Board of Directors of the San Lorenzo Valley Water District has every belief and firm confidence that constituents of the District express a desire to remain an autonomous County Water District.

Response: Santa Cruz Board of Supervisors PARTIALLY AGREES.

The recommendation requires further analysis. The Special Water Districts do not support the creation of such a water management agency. The County believes that the idea merits consideration but analysis would be limited by severe funding constraints and complex, requisite legal and legislative efforts would not likely be comprehensively developed within a six-month time frame.

Response: Scotts Valley Water District DISAGREES.

This recommendation has no basis or foundation in the Grand Jury's findings as presented in the report. As stated in the District Response to Conclusions 3 and 4, above, the District has seen cooperation in areas of mutual interest as beneficial and has been an active participant in such efforts. Such cooperation has been useful both in areas of recycled water distribution and groundwater management. Such inter-agency cooperation works best if developed voluntarily under an MOU rather than imposed by an outside agency that has little, if anything, to do with or experience in potable water treatment and distribution (such as the City or County). Finally, the cooperation between water agencies in this county is already well-established, with water agency managers getting together at least once a month to exchange information and work towards development of cooperative answers to complex water supply and distribution issues and LAFCO providing support for such actions when requested.

Response: Soquel Creek Water District DISAGREES.

Will not be implemented because such an organization is already in place in the form of the Integrated Water Resources Working Group comprised of all public water agency managers and county water resources staff. Furthermore, cooperation between water agencies in this county is already well established in a number of other ways. Examples include: The Soquel Creek/ Central Water District AB3030 Groundwater Management Joint Powers Agreement; the Santa Cruz/ Soquel Creek cooperative investigation of desalination and formation of the Integrated Water Plan pEIR Advisory Committee comprised of council members and water commissioners from the City of Santa Cruz and board members from the Soquel Creek Water District; the Soquel Creek/Pajaro Valley Water Management District Memorandum of Agreement to work together to develop potential water supply options; the Scotts Valley/ San Lorenzo Valley/ Lompico Santa Margarita Groundwater Basin Committee; the Interagency Water Resources Working Group composed of County Water Resources staff and the General Manager of every water agency mentioned in the Grand Jury's report; an ad hoc committee of county staff and water general managers working on Prop 50 grants for water projects throughout the County; and monthly meetings of every General Manager of every water district in the county.

Resolution of water supply issues from Santa Cruz to Pajaro Valley is well underway. Restructuring the existing governance by forming a new countywide water management agency at this time would not provide added value and would be a regressive step that would likely impede timely development of new water supplies.

Soquel Creek Water District has initiated discussions with other agencies having regulatory jurisdiction within the Soquel-Aptos Groundwater Basin about expanding and restructuring the existing AB 3030 Groundwater Management Plan Joint Powers Agreement. The objective would be to collaboratively prepare an

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updated and revised Soquel-Aptos Groundwater Basin Management Plan and to uniformly apply best groundwater management practices throughout the basin.

Responses Required

Entity	Findings	Recommendations	Respond Within
City of Santa Cruz Water Department	1, 2, 4, 11 - 14, 17, 21, 24 - 26, 30 - 33, 58	3, 4	60 days (August 30, 2004)
City of Watsonville Water Department	1, 2, 8, 9, 15, 20 - 22, 24 - 29, 47 - 53	4	60days (August 30, 2004)
Local Agency Formation Commission	1 - 9	2, 3, 4	60 days (August 30, 2004)
Pajaro Valley Water Management Agency	1 - 3, 8, 9, 15, 20 - 22, 25 - 29, 47 - 53	4	60 days (August 30, 2004)
San Lorenzo Valley Water District	1 - 3, 6, 7, 9, 10, 15, 16, 54 - 56	3, 4	60 days (August 30, 2004)
Santa Cruz County Board of Supervisors	1 - 3, 9, 15, 56	4	90 days (September 30, 2004)
Scotts Valley Water District	1 - 3, 6, 9, 10, 15, 18, 23 - 29, 34 - 46	1, 2, 3, 4	60 days (August 30, 2004)
Soquel Creek Water District	1 - 3, 5, 9, 11, 15, 19, 57 - 59	3, 4	60 days (August 30, 2004)