



County of Santa Cruz

HEALTH SERVICES AGENCY

POST OFFICE BOX 962, 1080 EMELINE AVE., SANTA CRUZ, CA 95060
TELEPHONE: (831) 454-4000 FAX: (831) 454-4770

GIANG T. NGUYEN
HEALTH SERVICES AGENCY DIRECTOR

APPROVED AND FILED
BOARD OF SUPERVISORS

DATE: 1-28-14
COUNTY OF SANTA CRUZ
SUSAN A. MAURIELLO
EX-OFFICIO CLERK OF THE BOARD
BY [Signature] DEPUTY

AGENDA: January 28, 2014

January 6, 2014

Board of Supervisors
County of Santa Cruz
701 Ocean Street
Santa Cruz, CA 95060

SUBJECT: County Water Resources Status Report

Members of the Board:

This letter presents the annual status report on County water resource management activities, with highlights on the major efforts being taken with regard to re-evaluation of water supply options, water transfers, oversight of non-municipal groundwater pumping, integrated regional water management, response to the current drought conditions, and support for the San Lorenzo River Alliance, a new effort to focus actions to revitalize the San Lorenzo River. Additional information attached to this letter provides a summary of all water resource management efforts related to water supply and water conservation, water quality protection, habitat restoration, and stormwater and flood management in the Santa Cruz and Pajaro regions (Attachment 1). The Health Services Agency also requests your approval of the attached resolution declaring a state of drought for Santa Cruz County.

Water Supply Challenges in Santa Cruz County

Santa Cruz County water agencies continue to experience major water supply challenges, a situation currently being exacerbated by record-low rainfall over the past year. Most of the groundwater basins are in a state of overdraft, meaning that more water is being pumped from the basins than is infiltrating into them. Most major water supply agencies do not have sufficient sustainable supplies to meet current and future demand. The Soquel Creek Water District has determined that it needs to reduce groundwater pumping by 35% for 20 years to allow the mid-county groundwater basin to recover to levels necessary to prevent seawater intrusion. The City of Santa Cruz has deficiencies during a drought and must further reduce its stream diversions to restore habitat for endangered salmon and steelhead. The desalination project that was being developed to provide a supplemental supply for both the Soquel Creek Water District and the City of Santa Cruz Water Department has been subject to significant community criticism and has been put on hold to allow for a community-driven evaluation of potential water supply alternatives. The groundwater basins supplying the Scotts Valley area and the Pajaro Valley continue to be in a state of overdraft. All of these current deficiencies are expected to be exacerbated by the impacts of climate change, which is projected to result in significantly increased irrigation demand and a

30% reduction in groundwater recharge. These deficiencies threaten the well-being of county residents and could significantly impact options for economic development.

County staff are assisting the water agencies in a number of efforts to address these deficiencies:

- Developing options for water exchange among the agencies to better utilize available resources while balancing environmental needs.
- Compiling information on non-municipal well usage and engaging small and private water users in basin water management efforts.
- Developing the updated Integrated Regional Water Management (IRWM) Plan, which will serve as the basis for coordinated efforts and future state funding assistance to help address regional needs.
- Providing technical assistance to evaluate underlying geology, hydrology, broad basin water budgets, fish habitat needs, and potential water management options.
- Promoting and implementing groundwater recharge projects through IRWM and stormwater management programs.
- Promoting water conservation, greywater reuse, and wastewater recycling.
- Meeting regularly with water managers and governing bodies to emphasize and promote a regional approach to addressing water supply deficiencies and restoration of fish habitat.

Water Exchange and Conjunctive Use

Northern Santa Cruz County has four major water agencies that are for the most part reliant upon one source of supply, either surface water or groundwater. This reliance upon a single source limits operational flexibility and the ability to better manage resources. There is an abundance of surface water during normal winter months, but flows are significantly reduced in summer months and droughts. Groundwater basins typically have significant volumes of water in storage, but long term pumping rates have exceeded the rates of recharge, resulting in depleted groundwater levels, seawater intrusion, loss of yield, and reduced flow of streams that are fed by the groundwater system. Conjunctive water use involves using multiple water sources, usually both surface and groundwater sources, in a way that maximizes water storage and availability under different climatic conditions. Within the county, this could involve exchanges among water agencies of winter streamflow, summer groundwater, recycled water, and water from desalination. Conjunctive use can provide for increased water supply reliability, increased groundwater storage, reduced summer stream diversions, and increased summer stream flows. In Santa Cruz County, conjunctive use would require connections between separate districts because each is dependent upon a single source of water (i.e. either surface or groundwater).

In 2007, the Santa Cruz Region began to assess the potential for conjunctive use under a Proposition 50 IRWM Implementation Grant from the State Water Resources Control Board. Eight technical analyses were conducted as part of that project that examined the potential for conjunctive use in the lower San Lorenzo River Watershed. Three preferred projects were identified, one of which involved the delivery of excess winter flow in the San Lorenzo River to the Scotts Valley area in order to reduce groundwater pumping and recharge the basin. County staff further evaluated the potential yields of this proposal and included the Soquel Creek Water District as one of the potential beneficiaries of excess winter flow. A report outlining the potential benefits of this project was presented to the Soquel Water District and your Board in May, 2011. Since that time, Proposition 84 funds have been utilized to provide more detailed technical analyses of yields, infrastructure needs and costs, potential fishery impacts, and water rights approaches for various scenarios.

The concept behind water exchange is to transfer excess, available surface water during the winter months from the City of Santa Cruz diversion and treatment facilities on the San Lorenzo River to the surrounding groundwater agencies to supply their demands. Such a supplemental supply would allow the groundwater agencies to reduce pumping from their overdrafted groundwater basins, helping those basins to begin to recover. As basin recovery occurs, increased groundwater levels will increase stream baseflow and available fish habitat. Conceptually, after sufficient basin recovery, during dry summers, water could be provided back to the City of Santa Cruz to help meet their demands while leaving more flow in the streams for fish. A future phase of the project could utilize excess winter flow for direct recharge into the groundwater basins.

In the current study, 73 years of streamflow records were used in a computer model of the City of Santa Cruz water supply operations to evaluate various water transfer scenarios. The model took into account the variation in demand, the availability of water from different City sources, the expected need to reduce other city diversions to restore fish habitat, and the capacity of infrastructure to pump and treat the water. Because winter flow in the San Lorenzo River is frequently subject to higher sediment load, higher turbidity, and increased organic and potential pathogen load, considerable process improvements to provide adequate treatment would be required. Pumping significantly more winter water from Tait Street, with treatment at the Santa Cruz Water Department's Graham Hill Treatment Plant, will require upgrade of diversion and treatment facilities and increased operation costs. Five water transfer scenarios were modeled, the results of which indicate a total potential yield for water transfer between 445 and 1,712 acre-feet per year (af/yr), depending on the level of infrastructure improvements. Capital costs for diversion and treatment upgrades ranged from \$27 to \$92 million, with increased operations costs of between \$2 and \$7 million per year. The various scenarios are summarized in Attachment 2.

A key issue to be resolved is the need to apply for new water rights or approvals of transfers. A variety of mechanisms were identified to accomplish this task, likely to include a combination of short term transfers under existing rights while a new water right is obtained from the State Water Resources Control Board. The City of Santa Cruz has generally been supportive of this concept, provided it can be done in a way that does not adversely affect their existing water rights, their treatment facilities, or the amount of water available to their customers. Current efforts are focusing on determining how soon and how much water could be sent back to Santa Cruz from the groundwater agencies to meet Santa Cruz needs during a drought period. Both Scotts Valley Water District and Soquel Water District are supportive of the concept, and Soquel has identified water exchange as a backup supplemental water source.

County Water Resources staff are working with water agencies to finalize the remaining technical analyses and prepare a final project report that is expected to be available by March 2014. Next steps will include further consultation with the fishery resource agencies, defining a critical path towards addressing water rights, and developing agreements and the institutional framework for moving a project forward.

Oversight of Non-Municipal Water Use in Mid-County

Small water systems and individual users account for an estimated 30% of the total water used in Santa Cruz County outside of the Pajaro Valley (Attachment 3). Cumulative water use by these pumpers has an impact on groundwater levels and streamflows. In the Purisima portion of the overdrafted Soquel-Aptos basin, 38% of the pumping is by non-municipal users. In the urban coastal area, which is the most overdrafted portion of the Purisima, 15% of the pumping is by non-

municipal pumpers, such as Cabrillo College, Seascope Golf Course, several small water systems, and agricultural users. The Soquel Creek Water District is concerned about potential impact of private users on the basin overdraft and a number of the District ratepayers have urged the District to look into formation of a groundwater replenishment district, whereby a fee on groundwater pumping could help fund basin recovery efforts. As the district considers a moratorium on new connections, they may also request that the County limit new well construction as was done back in 1981.

The County is currently the entity that has the greatest potential for oversight of non-municipal pumpers. The County has some tools to help minimize impacts of private pumping through its oversight of small public water systems, water conservation programs, water waste prohibitions, and regulation of new well construction. County staff are proposing to work with the Soquel Creek Water District to form a private well working group to engage with private well owners and encourage their participation in improved management of the Soquel-Aptos groundwater basin. Some potential future actions in this area could include:

- Education, outreach, and rebates to encourage reduced water use.
- Increased requirements for small water systems to monitor and reduce water use.
- Increased monitoring and/or groundwater modeling to better assess the impact of inland pumping on coastal groundwater levels.
- County participation in a Joint Powers Authority with Soquel Creek Water District, Central Water District and City of Santa Cruz for management of the Soquel-Aptos Basin.
- Formation of a groundwater replenishment district to help fund basin management and replenishment.
- Declaration of a groundwater emergency, with restrictions on new wells and possible restrictions on water use, in parallel with Water District restrictions.
- Development of a water impact fee paid by new development outside of the Water District boundaries, similar to the Water District's water demand offset program.

Staff will keep your Board apprised as further discussions occur.

Santa Cruz Integrated Regional Water Management

Given the small geographic area and reliance upon local resources, most of the diverse water resource management issues in the county are interrelated and can be addressed through comprehensive, collaborative programs. Since 2005, the State has identified "integrated regional water management" as a key approach to addressing state and regional water supply and water management needs. This program has helped to further bolster the County's long-standing watershed management approach, bringing together water agencies, resource protection agencies, and other stakeholders to address water supply, habitat protection, water quality protection, flooding, groundwater recharge, stormwater management, and wastewater management in an integrated and comprehensive manner. County staff have been actively engaged in integrated regional water management (IRWM) in northern Santa Cruz County, the Pajaro Watershed, the Central Coast Region, and at the state level.

The Santa Cruz IRWM Region includes all of Santa Cruz County outside of the Pajaro Watershed, plus the Watsonville Sloughs and the City of Watsonville for the purposes of water quality and habitat improvement. The County joined with eight other partner agencies in signing a 2008 Memorandum of Agreement for IRWM in the Santa Cruz Region. The Regional Water Management Foundation (RWMF), a subsidiary of the Community Foundation of Santa Cruz

County serves as the hub for Santa Cruz IRWM efforts and has administered the two IRWM grants received from the state. County Water Resources staff work closely with the RWMF and are currently leading the effort to update the Santa Cruz IRWM Plan, which is scheduled to be completed in 2014. Attachment 1 provides a listing of current IRWM efforts and water resource management activities in the Santa Cruz IRWM Region, organized under the four topic areas of the IRWM Program: water supply and water conservation, water quality protection, watershed and aquatic habitat restoration, and stormwater and flood management.

Pajaro Management Activities

County staff also participate actively in the Pajaro IRWM, which encompasses the entire 1300 square mile watershed. Pajaro IRWM includes water supply and flood management projects throughout the Pajaro Valley, as well as water quality and habitat restoration projects in the Pajaro Valley outside the Watsonville Slough system. In 2013, progress continued to be made to address the substantial water resource issues in the Pajaro Valley:

- An updated Basin Management Plan to reduce current groundwater extraction by 12,000 af/yr is expected to be adopted by the Pajaro Valley Water Management agency in 2014.
- The County has taken further steps to reduce flood hazard through bench excavation of accumulated sediment from the Salsipuedes Creek channel.
- The Community Water Dialogue, a community stakeholder group, has organized grower and community support for a variety of efforts to implement managed recharge projects, improved irrigation efficiency, and improved basin management.
- The Resource Conservation District has worked with the agricultural community to implement programs to reduce water use, promote groundwater recharge, and improve water quality.
- The City of Watsonville, County, and other entities have worked together to better characterize and address the causes of excessive harmful algae blooms at Pinto Lake.

The list of current water resource management activities within the Santa Cruz County portion of the Pajaro Watershed is included in Attachment 1.

Current Drought Conditions

California and Santa Cruz County have just completed the driest calendar year on record and are headed for the driest January. The San Lorenzo River, the largest single water supply source for much of the County, is experiencing the lowest January flow ever recorded in 77 years of historical record. Although groundwater supplies experience less immediate impact in a drought, the lack of recharge and increased demand accelerates overdraft conditions and seawater intrusion. Local water agencies have already taken a number of steps to encourage or require reduced water use by their customers (Attachment 4). County staff will work with water agency staff to encourage water saving measures and enforce the County Code prohibitions on water waste

On January 17, 2014, the Governor declared a state of drought emergency and directed a number of efforts to be taken by State departments to reduce water use, including a voluntary 20% reduction in water use by all users state-wide. Locally, County staff are working with our local water agencies to make a joint statement of drought severity and the need for all water users in the county to take action to reduce their water use. In addition to your Board meeting on January 28, a joint press conference is scheduled and drought management actions are being considered by the governing bodies of the City of Santa Cruz, City of Watsonville and Soquel Creek Water District. Similar actions are scheduled at a later date in Scotts Valley and Central Water Districts.

Consistent with those actions, County staff is recommending that your Board adopt the attached resolution declaring a state of drought throughout the county. Staff will continue to work with the water agencies, small water systems, and water users throughout the county and will report back to your Board if additional actions are needed.

San Lorenzo River Alliance

On January 7, 2014, the Coastal Watershed Council, a local non-profit group hosted a kick-off meeting of the San Lorenzo River Alliance (Alliance). The Alliance is intended to be a community coalition of agencies, businesses and community groups, which will help focus and coordinate efforts to revitalize the health of the San Lorenzo River (River) and transform the River corridor into a vibrant community asset. The following entities have been invited to participate in the Alliance: Coastal Watershed Council, City of Santa Cruz, County of Santa Cruz, Museum of Natural History, San Lorenzo Valley Women's Club, and the Resource Conservation District of Santa Cruz County. County staff are already participating in the River Oversight Committee and the Water Quality Working Group, working under the umbrella of the Alliance. The County has a major role in promoting water quality and overall health of the River and its watershed. Staff believes that it is important at this time for your Board to formally support and endorse active County participation in the San Lorenzo River Alliance.


Conclusion and Recommendation

County staff are working closely with other partner agencies to provide a comprehensive and integrated approach to water resources management in the County resulting in a substantial number of collaborative projects to address significant water resources issues. We anticipate further successful efforts in the coming year.

It is therefore RECOMMENDED that your Board:

1. Accept and file this report and direct the Water Resources Division Director to provide a follow up annual report on County water management activities in January 2015.
2. Adopt the attached resolution declaring a state of drought for Santa Cruz County.
3. Endorse the County's participation in the San Lorenzo River Alliance to revitalize the health of the San Lorenzo River.

Sincerely,



Giang T. Nguyen
Health Services Agency Director

RECOMMENDED:



SUSAN A. MAURIELLO
County Administrative Officer

- Attachments:
1. Status of Water Resource Management Efforts in Santa Cruz County, 2013
 2. Water Exchange Evaluation
 3. Water Use in Santa Cruz County - 2012
 4. Current Water Use Restrictions in Santa Cruz County, January 2014
 5. Resolution Declaring a State of Drought for Santa Cruz County

Cc: Public Works Department
Planning Department
Environmental Health
Water Advisory Commission
Water Agencies
LAFCO

*Replacement pg. 0171***Status of Water Resource Management Efforts in Santa Cruz County, 2013**

Santa Cruz County continues to address major water resource challenges. Most of the groundwater basins are being pumped in excess of sustainable yield and the major water supply agencies do not have sufficient sustainable supplies to meet current and future demand. Historic salmon and steelhead populations have been greatly diminished by reductions in streamflow, increased erosion and sedimentation, barriers to migration, and removal of large woody material from streams. Coastal water quality has been degraded by urban runoff and leaky sewer systems. The natural benefits of wetlands, floodplains, riparian corridors, and groundwater recharge areas have been significantly diminished by development and agricultural use. The County and its partner agencies are conducting a range of successful efforts to address these and other water resource challenges.

Following is a summary of 2013 water resource management efforts, organized by Integrated Regional Water Management (IRWM) Region and six topic areas:

- Santa Cruz Water Supply and Conservation
- Santa Cruz Water Quality
- Santa Cruz Watershed and Aquatic Habitat
- Santa Cruz Stormwater and Flood Management
- Santa Cruz (IRWM) Planning and Administration
- Pajaro IRWM and Water Resource Efforts

Water Supply and Conservation

1. The City of Santa Cruz and Soquel Creek Water District (scwd²) completed the Draft Environmental Impact report for the proposed joint desalination project. As a result of substantial public criticism over the cost and energy impacts of the project, the City Council has suspended further action on the desal project over the next 12 months in order to further re-evaluate the water supply deficiencies and potential options to address those deficiencies.
2. The Soquel Creek Water District continues to face the need to cut pumping by 35% and is conducting a series of public workshops to evaluate its options without a desal project, including use of water exchange, recycled water, water use curtailment, and augmented groundwater management.
3. The City of Santa Cruz completed a baseline water conservation study and will complete a new ten year water conservation plan to quantify the amount of additional conservation that can be reliably expected.
4. County staff continue to work with the water agencies to complete an evaluation of potential opportunities for water exchanges, including potential yield, infrastructure needs, costs, fish impacts, and water rights issues, as described above and in Attachment 2. An evaluation report will be completed in early 2014.
5. The City of Santa Cruz continues to negotiate its habitat conservation strategy with the fishery resource agencies. This work is anticipated to be substantially completed in 2014.

and will dictate how much of its current water supply the City will need to give up in order to support the recovery of Coho salmon and steelhead.

0172

6. The San Lorenzo Valley Water District has started to develop the information necessary to evaluate the impact of its stream diversions on fish habitat. It is expected that this process will take 5-10 years to reach an agreement on the amount of stream flow the District needs to release to adequately restore fish habitat.
7. The San Lorenzo Valley Water District and the Scotts Valley Water District secured a grant from the California Department of Public Health to construct emergency interties connecting the two districts and the four subareas of the San Lorenzo District. These interties can eventually be used of conjunctive management and water exchange, but not until a full evaluation of fishery and other environmental impacts is completed. There was inadequate grant funding to include Lompico, Santa Cruz, and Soquel in the intertie project.
8. County staff worked with staff from the Local Agency Formation Commission, San Lorenzo Valley Water District and Lompico County Water District to develop plans to make capital improvements and merge the two Districts to address substantial deficiencies in water quality and reliability. A public workshop was held in December 2013 and it is anticipated that efforts will be completed in 2014, if it is supported by the Lompico ratepayers.
9. County staff are working with the City of Santa Cruz and Soquel Creek Water District to jointly apply for a grant to evaluate recycled water options for the City and mid-county area.
10. Scotts Valley Water District continues to pursue a water exchange project with the City of Santa Cruz and Pasatiempo golf course to use recycled water from Scotts Valley on the golf course, and in return Scotts Valley would receive potable water from Santa Cruz.
11. Scotts Valley Water District will complete an update of the groundwater model for the Scotts Valley area in 2014 which will help determine groundwater management objectives and options, including the effects of water exchange.
12. Central Water District is conducting a study of options for moving pumping to the Purisima formation and reduce pumping from the Aromas Formation, which is overdrafted and subject to naturally elevated levels of hexavalent chromium.
13. County staff have provided technical assistance to the water agencies to better understand underlying geologic structure and groundwater movement in the Scotts Valley and Soquel-Aptos areas.
14. The County, City of Santa Cruz, and San Lorenzo Valley Water District are conducting a project to identify and better understand the occurrence of karst geology, which has the potential to store and transmit significant amounts of water, but which is very susceptible to adverse impacts from overlying land use. This work should be completed in 2014 and may result in recommendations to update county policies to provide more water resource protection in karst areas.
15. County staff continue to regulate the 130 small public water systems with 5-199 connections. The County recently received a one-time grant from the State Department of public Health to bolster that program.

16. The County, City of Santa Cruz, and Scotts Valley Water District recently received Proposition 84 stormwater grant to implement projects to reduce stormwater runoff and increase groundwater recharge by infiltrating runoff from impervious surfaces. This will be implemented in 2013 and 2014.
17. The County continues to coordinate submission of groundwater level data to the State's groundwater monitoring program (CASGEM). County staff also implement a cooperative program to monitor private well levels in the inland mid-county area.
18. The County Board of Supervisors adopted a new Water Efficient Landscape Ordinance and updated the County's water conservation ordinances. County staff continue to work with the water agencies and the real estate community to implement the water conservation programs, including promotion of greywater reuse.

Water Quality

1. County staff continue to work with the State, City of Santa Cruz, City of Capitola, and the Sanitation District to implement projects and conduct monitoring to assess public health threats, reduce bacterial contamination and improve beach water quality. The Water Resources Division Director continues to serve on the State Clean Beach Task Force and was invited to present to the Assembly Select Committee on Ocean Protection.
2. County staff maintain ongoing efforts for water quality protection through septic system management, monitoring and investigation, funded by CSA 12. In 2014 staff will work with the Onsite Sewage Disposal Technical Advisory Committee to update the County's onsite wastewater management program and sewage disposal ordinance to bring it into compliance with new state septic system requirements.
3. The County Water Resources laboratory continues to offer free nitrate testing to residents with individual wells. Several wells with nitrate above drinking water standards have been identified through this program.
4. Public Works staff have worked to allow sewer connections to some 260 properties in the Pasatiempo/Rolling Woods area. This will allow property owners to more easily address failing septic systems in that area.
5. Public Works staff has received tentative approval from the State Clean Beach Task Force for grant funds to upgrade the sewer system near Soquel Creek and Neary Lagoon, to eliminate potential sewer leaks and sources of contamination to Cowell and Capitola beaches.

Watershed and Aquatic Habitat

1. The Resource Conservation District of Santa Cruz County worked with landowners and agency partners to complete over 70 habitat improvement projects through the Integrated Watershed Restoration Program (IWRP). These projects included wetland restoration, fish barrier removal, rural road upgrades, stream habitat improvement, and community education.

2. County staff worked with the water agencies to maintain annual sampling of stream habitat and juvenile salmonids in four watersheds: San Lorenzo, Soquel, Aptos and Pajaro. In 2013, young-of-the-year steelhead numbers were relatively good, reflecting good survival from limited winter storms, but were small in size. Steelhead yearling densities were low throughout the four watersheds. Steelhead numbers were low in Aptos Lagoon compared to the two previous years and steelhead were again not found in Pajaro Lagoon.
3. County staff completed riparian assessments and general stream condition surveys for much of Bean and Zayante creeks and portions of Soquel, Lompico and Mountain Charlie Gulch.
4. County staff continued to implement the large woody material management program to maintain large wood for habitat value in county streams without jeopardizing public safety. There were few requests for large woody material removal due to the limited number of storms in the 2012-13 winter season.
5. County staff are participating in a multi-agency group working with Caltrans to replace the Highway 1 Bridge at Scott Creek in a way that also enhances lagoon and beach habitat for listed species including coho salmon, steelhead, tidewater goby, red-legged frog, and snowy plover.
6. County staff are working with the National Marine Fisheries Service to identify critical efforts to be implemented from the Coho Salmon Recovery Plan, which was released in 2013. The draft Steelhead Recovery Plan is expected to be released for public review later in 2014.
7. County Planning and Environmental Health staff met with other regulatory agencies to develop more effective approaches to environmental code compliance.
8. County staff are participating with the Coastal Watershed Council, City of Santa Cruz, and other entities in the formation of the new San Lorenzo River Alliance, which is seeking to improve water quality and reinvigorate community engagement with the lower river and the watershed.

Stormwater and Flood Management

1. County Public Works staff maintained the ALERT flood warning system.
2. County Public Works staff completed the updates to the drainage master plans for Zone 5 and Zone 6 in the mid-county area.
3. County staff continued to implement the County's stormwater management program and are updating the program to bring it into compliance with the State's new municipal stormwater permit, which was adopted in 2013.
4. The County, City of Santa Cruz, and Scotts Valley Water District recently received Proposition 84 stormwater grant to implement projects to reduce stormwater runoff and increase groundwater recharge by infiltrating runoff from impervious surfaces. This will be implemented in 2013 and 2014.

5. The County and water agencies are working with Ecology Action of Santa Cruz to implement a grant to promote use of low impact development measures and rainwater catchment to reduce stormwater runoff.

IRWM Planning and Administration

1. Regional partners completed 16 projects funded by \$12.5 million Proposition 50 IRWM Implementation Grant from the State Water Resources Control Board, which began in 2008. Following is a listing of the components, including the responsible partner agency, and the current grant amount:
 2.
 - a. Overall Project Administration: Regional Water Management Foundation (RWMF), \$758,000
 - b. Abandoned Well Destruction, County Environmental Health Services, \$355,000
 - c. San Lorenzo/Scotts Valley Conjunctive Use, County Environmental Health Services, \$227,500
 - d. Aptos Watershed Drainage Master Plan, County Public Works Department, \$227,500
 - e. Stormwater Pollution Prevention, County Public Works Department, \$207,500
 - f. Groundwater Recharge Projects and Policies, County Environmental Health, \$332,500
 - g. New Brighton Sewer Line Relocation, County Sanitation District, \$1,365,000
 - h. Desal Project Intake Study, Soquel Creek Water District/City of Santa Cruz, \$611,000
 - i. Polo Grounds Well, Treatment Plant, and Water Conservation Element; Soquel Creek Water Dist. and County Parks; \$2,065,295
 - j. Polo Grounds Monitoring Well, Soquel Creek Water District, \$150,000
 - k. Davenport Drinking Water Treatment, Davenport County Sanitation District, \$334,393
 - l. Watsonville Sloughs Restoration, Resource Conservation District, \$690,000
 - m. Integrated Watershed Restoration Program, Resource Conservation District, \$3,825,000
 - n. Recycled Water Pipeline Extensions, Scotts Valley Water District, \$705,705
 - o. Coordinated Monitoring, County Environmental Health Services, \$350,000
 - p. Improve Integration of Water Management, County Environmental Health Services, \$295,607
3. Regional partners continued 8 projects funded by a \$1 million Proposition 84 IRWM Planning Grant, which is due to be completed in 2014:
 - a. Update the IRWM plan framework, including governance, financing, relation to land use planning, and stakeholder involvement, County Environmental Health, \$14,000
 - b. Provide improvements to the IRWM Plan, including updated objectives, management strategies, projects, project prioritization and effectiveness assessment, data management, and performance evaluation, County Environmental Health, \$120,000
 - c. Develop a climate change strategy relative to water resources and water facilities, County Environmental Health, \$31,500.
 - d. Evaluate the potential to increase pumping in the eastern Purisima Formation in order to reduce pumping from the overdrafted Aromas formation, Central Water District, \$200,000

- e. Update the Santa Margarita Groundwater Model, Scotts Valley Water District, \$221,519
 - f. Develop detailed recommendations for conjunctive use and water transfers, County Environmental Health, \$164,500
 - g. Develop a hydrologic and hydraulic model of the middle and lower Watsonville Slough system to support future management and enhancement efforts, Resource Conservation District, \$199,056
 - h. Administer and manage the Grant, RWMF, \$49,175
4. The RWMF received a \$100,000 grant from California Department of Water Resources to promote engagement of disadvantaged communities in IRWM. Work will be focused in Davenport, Watsonville, Lompico and other small low income communities in the region.
 5. County and RWMF staff continued work on the IRWM Plan Update, which is scheduled to be completed in 2014 and will form the basis for application for additional water bond grant funds.
 6. Partner agencies agreed to provide \$80,000 to the RWMF to support ongoing IRWM planning and management in the region for 2014.
 7. County staff have provided outreach to the community on IRWM efforts, including one public meeting and talks to County Commissions and service groups.
 8. County staff participated in statewide water planning, including the Public Advisory Committee for the California Water Plan Update 2013, and the IRWM Strategic Plan development.
 9. County staff were invited to participate in the local panel for a special hearing by the Assembly, Water, Parks and Wildlife Committee on the need for a future State water bond.
 10. County staff have tracked water related mitigation actions in the County's Climate Action Strategy and have participated in a project to evaluate the potential effects of sea level rise in the Monterey Bay areas.

Pajaro Management Activities

County staff also participate actively in the Pajaro IRWM, which encompasses the entire 1300 square mile Pajaro watershed. Pajaro IRWM includes water supply and flood management projects throughout the Pajaro Valley, as well as water quality and habitat restoration projects in the Pajaro Valley outside the Watsonville Slough system. The Pajaro IRWM is led by Santa Clara Valley Water District, San Benito County Water District and the Pajaro Valley Water Management Agency. Following is the list of current water resource management activities within the Santa Cruz County portion of the Pajaro Watershed:

1. The Pajaro Valley Water Management Agency (PVWMA) completed the Draft Environmental Impact Report for the Basin Management Plan Update, which is anticipated to be finalized and adopted in 2014. Implementation of this plan is expected to reduce groundwater extraction by 12,000 af/yr and halt further seawater intrusion.

2. PVWMA has formed an Ad Hoc Funding Committee to develop a rate structure for collection of pumping fees to fund implementation of the updated Basin Management plan. The new rates will be put to a vote of the well owners in 2015.
3. The Community Water Dialog, a community stakeholder group has organized grower and community support for a variety of efforts to implement managed recharge projects, improved irrigation efficiency, and community support for improved basin management.
4. The Resource Conservation District has worked with the agricultural community to implement a variety of outreach, technical assistance and cost-sharing programs to reduce water use, promote groundwater recharge, and improve water quality.
5. The City of Watsonville, County and other entities have worked together to better characterize and address the causes of excessive harmful algae blooms at Pinto Lake. Additional grant funds are being sought to better characterize the specific sources and to begin implementation of measures to reduce nutrient loading.
6. The County has taken further steps to reduce flood hazard through bench excavation of accumulated sediment from the Salsipuedes Creek channel. The County, City and other entities continue to pursue implementation of a project with the Army Corps of Engineers to significantly upgrade the flood conveyance system to provide an adequate level of flood protection.
7. The Resource Conservation District and partner agencies have completed the Watsonville Slough Hydrologic Model, which provides critical information on the movement of water through the slough system. This will help guide future management efforts for water supply, drainage, and habitat restoration.
8. In 2014 the Resource Conservation District and partner agencies will complete College Lake Improvement and Watershed Management Project. This project involves field work and modeling to better understand the movement and storage of water in College Lake, and will evaluate various scenarios for management of the lake for water supply, fish habitat, wildlife habitat and agricultural use.
9. In 2014, the Pajaro IRWM region will complete implementation of projects funded by a \$25 million Proposition 50 IRWM Implementation Grant and a \$1 million Proposition 84 Planning Grant that will result in an updated IRWM plan.
10. In late 2013 the Pajaro Region was notified that they were the only region in the Central Coast selected for Round 2 of Proposition 84 funding, at an amount of \$7,569,000. Within Santa Cruz County, this grant will fund an increased recycled water storage project for PVWMA and an agricultural water quality and aquifer enhancement project to be conducted by the Resource Conservation District of Santa Cruz County.

Water Exchange Evaluation: Potential Yields and Costs under Various Infrastructure Upgrade Scenarios

The Santa Cruz Regional Water Exchange Project proposes to transfer excess available surface water from the San Lorenzo River during the winter months of November through April. Water would be transferred to the surrounding groundwater agencies to supply their demands, allowing them reduce pumping from their overdrafted groundwater basins, and helping those basins to recover. As basin recovery occurs, increased groundwater levels will increase stream baseflow and available fish habitat, and during dry summers water could be provided back to the City of Santa Cruz (City) to help meet their demands while leaving more flow in the streams for fish. The timing and amount of return flow back to the City are presently undetermined and depend on the condition of the groundwater basins, pumping capabilities of the groundwater agencies, and policies for basin management established by the governing boards. The City would also benefit from some increase in San Lorenzo River flow and increase in groundwater levels in the western Purisima basin, which they share with the Soquel Water District.

As originally conceived, water would first be provided to the Scotts Valley area (Scotts Valley and San Lorenzo Valley Water Districts), which is within the San Lorenzo Watershed, and would eventually lead to increased baseflow in Bean Creek and the lower San Lorenzo River. Any available water in excess of Scotts Valley demand would be provided to Soquel Water District. The eventual priority and timing of deliveries is a matter subject to negotiation and agreement among the water agencies.

The City utilizes the Confluence model to model its operations, taking into account the variation in demand, the availability of water from its various sources, and the capacity of its infrastructure to pump and treat the water. Confluence has been used to model various water transfer scenarios to calculate the expected yield during the range of historical hydrologic conditions. All model runs took into account the need protect fish habitat throughout the City operations and utilized the flow bypass requirements that are currently under consideration in the City's Draft Habitat Conservation Strategy. Under those conditions, it should be noted that the City utilizes the Tait Street Diversion significantly more than they have historically used it, leaving less water available for transfer to neighboring agencies. The total amount potentially transferred in a day is also limited to the actual daily demand of the groundwater agencies.

Winter flow in the San Lorenzo River is frequently subject to higher sediment load, higher turbidity, and increased organic and potential pathogen load, requiring considerable treatment to meet State Public Health requirements. Depending on the amount of water transferred, pumping more winter water from Tait Street, with treatment at the City's Graham Hill Treatment Plant, will require upgrade of diversion and treatment facilities and increased operation costs. Kennedy/Jenks Consultants has prepared an analysis of the improvements needed under the various scenarios and a planning level estimate of the capital and operational costs of those improvements. (Water rights changes needed to accomplish the various scenarios are discussed in a subsequent section.)

The following scenarios have been evaluated:

1. Utilize of current water rights, current Tait Street Diversion capacity 7.8 million gallons per day (mgpd), current Graham Hill Treatment Plant (Treatment Plant) capacity 10 mgpd, and existing interties between Santa Cruz and Soquel to transfer water to Service Area 1 of the Soquel Water District. This assumes a capacity of 1.06 mgpd, but the actual hydraulic capacity of those interties is currently being re-evaluated and may be greater.
2. Utilize current water rights and diversion/treatment infrastructure, with new interties to Scotts Valley (1-2 mgpd capacity) and to Soquel (1.5-3.5 mgpd capacity). This would also require some upgrades to the Tait Street intake to better handle the increased sediment load from increased winter use.
3. Increase Treatment Plant Capacity to 16 mgpd. This would require replacement of the pre-treatment solids settling and filtration components and oxidation/disinfection components at the Treatment Plant.

4. Increase Treatment Plant capacity to 16 mgpd as in Scenario 2 and double diversion capacity at Tait Street to 14 mgpd by constructing an additional new diversion works and upgrading pumps.
5. Increase Treatment Plant capacity to 16 mgpd as in Scenario 2 and upgrade treatment process to treat turbid source water up to 200 NTU, by upgrading the solids handling process. This allows more days of diversion during the winter.
6. Increase Treatment Plant capacity to 16 mgpd and turbidity treatment to 200 NTU per Scenario 4 and Tait Street diversion capacity to 14 mgpd per scenario 3.

The following table presents the results of the yield and cost analysis of the various scenarios.

	Scenario	SqCWD Average Yield MG(AF)	SVWD Average Yield MG(AF)	Total Potential Yield MG(AF)	Capita l Cost \$M ⁴	Annual Cost \$M ⁴	Productio n Cost/AF \$/AF ⁴
1	Current Tait / GHWP Infrastructure/ Water Rights/ Connections 1.06 mgpd to SqCWD SA1 ¹	122 (375)	0	122 (375)	2.77	0.32	850
2	Current Infrastructure/Rights ^{2,3} New interties (SV: 1-2 mgpd; SqCWD: 1.5-3.5 mgpd)	39 (120)	106 (325)	145 (445)	26.95	1.90	4,260
3	Increase GHWTP Capacity from 10 mgpd to 16 mgpd ^{2,3}	95 (292)	108 (331)	204 (623)	77.53	5.24	8,420
4	Increase GHWTP Capacity and Increase Tait Capacity from 7.8 to 14 mgpd ^{3,5}	333 (1,022)	154 (473)	488 (1495)	90.61	6.40	4,280
5	Increase GHWTP Capacity and Turbidity Treatment from 15 to 200 NTU (Tait at 7.8 mgpd) ^{2,3}	136 (417)	124 (381)	260 (798)	85.73	5.91	7,410
6	Increase GHWTP Capacity, Increase Tait Capacity, Increase Turbidity Treatment ⁶	384 (1,178)	174 (534)	558 (1,712)	91.68	6.68	3,900

Sources/Notes

¹ Hydraulic capacity of current interties is currently being re-evaluated, which could result in different yields.

² Fiske, Phase 2 Water Transfer Analysis: Task 1 Results (Second Revision), May 22, 2013

³ Fiske, Water Transfer Phase 2 Summary, June 27, 2013

⁴ Kennedy/Jenks, Water Transfer Infrastructure Summary Report, October 25, 2013; costs are costs of production and do not include additional costs of delivery to customers.

⁵ Fiske, Phase 2 Water Transfer Project Draft Task 3 Technical Memorandum: Potential Transfers with Unlimited Tait Street Capacity, June 20, 2013

⁶ Fiske, Supplemental Analysis of Water Transfer Volumes, July 24, 2013

⁷ Fiske, Water Transfer Project: Long-Term Analysis Scenario 2 (REVISED), June 22, 2012

Attachment 3

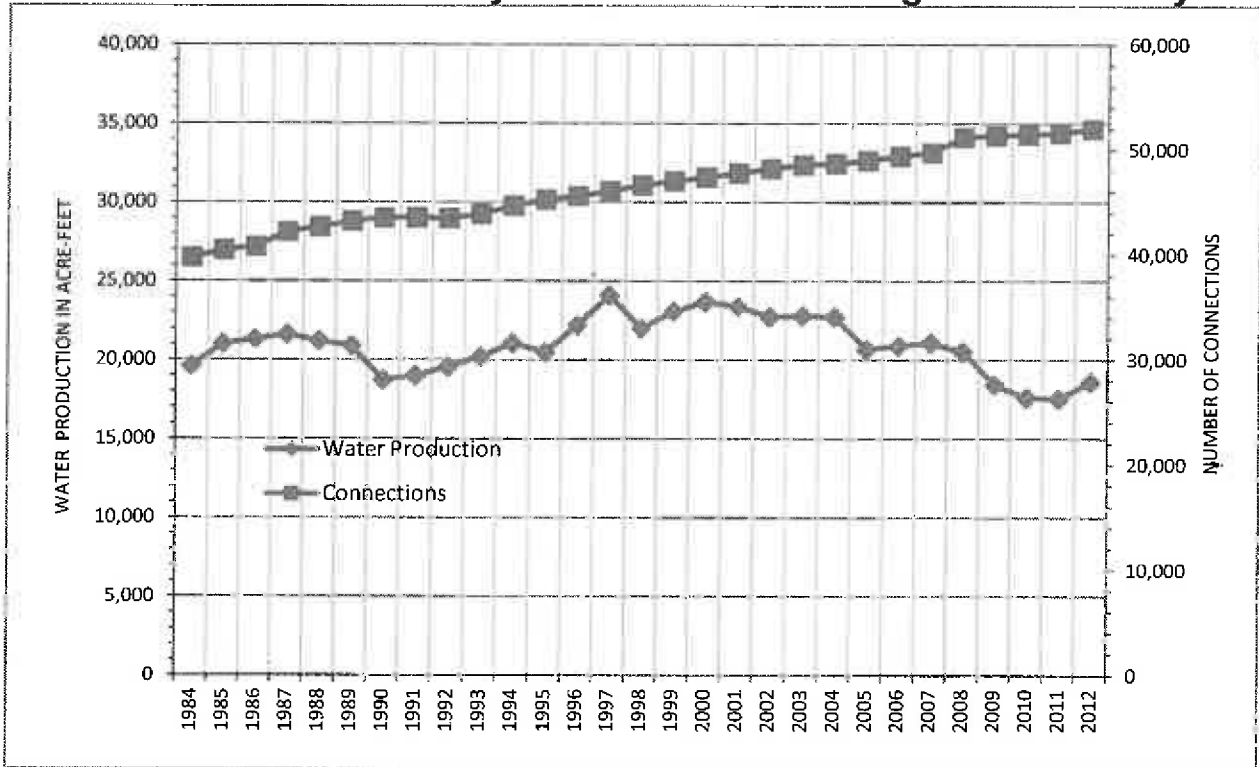
Water Use in Santa Cruz County - 2012

Water Supplier	Connections	Population	Water Use acre-feet/yr	Ground water	Surface Water	Recycled Water
Santa Cruz City Water Dept.	24,425	93,400	10,134	5%	95%	
Watsonville City Water Dept	14,843	65,000	7,760	92%	8%	
Soquel Creek Water District	15,562	38,000	4,171	100%		
San Lorenzo Valley (SLVWD)	5978	18,200	1,845	56%	44%	
SLVWD-Felton	1,337	4,000	393		100%	
Scotts Valley Water District	3,900	11,700	1,537	88%		12%
Central Water District	810	2,700	535	100%		
Lompico Creek Water District	495	1,300	93	77%	23%	
Big Basin Water Company	580	1,500	240	15%	85%	
Mount Hermon Association	530	1,400	250	100%		
Forest Lakes Mutual Water Company	330	900	140	100%		
Smaller Water Systems (5-199 conn.)*	3,000	8,000	1,800	95%	5%	
Individual Users*	8,000	20,000	5,000	95%	5%	
Pajaro Agriculture (SC Co only)**			25,254	94%	1%	5%
Mid- & North-County Agriculture*			2,400	75%	25%	
Totals	79,790	266,100	63,498	78%	20%	2%

*Values are Estimates

**Ag water use in 2012 on the Monterey County side of the Pajaro Basin, was 20,891 af/yr

Northern Santa Cruz County Water Production Large Water Purveyors*



* Includes Santa Cruz, Scotts Valley, San Lorenzo Valley, Lompico, Soquel Creek, and Central Water Districts

Current and Proposed Water Use Restrictions in Santa Cruz County, January 24, 2014

Agency	Current Restrictions	Restrictions Under Consideration	2012 Average Total Daily Use, per connection, gpd	2010 Single Family Res. Average Daily Use per conn., gpd	2010 per capita use gpcd	UWMP 5 year Base use per capita gpcd	UWMP 10 year Base use per capita gpcd
County of Santa Cruz	<ul style="list-style-type: none"> Permanent Water Waste Prohibition 	<ul style="list-style-type: none"> Drought Declaration 20% voluntary reduction 					
City of Santa Cruz Water	<ul style="list-style-type: none"> Stage 1 Water Use Restrictions in effect: <ul style="list-style-type: none"> Water Waste Prohibition No Watering 10am-5pm Water service at visitor facilities only on request 	<ul style="list-style-type: none"> Drought Declaration 20% voluntary reduction Considering Stage 2-5 restrictions and rationing, depending on additional rain. 	370.4	172.1	93.1	115.6	112.7
Soquel Creek Water District	<ul style="list-style-type: none"> Voluntary 15% Reduction Water Waste Prohibition No Watering 10am-8 pm 	<ul style="list-style-type: none"> Considering Tier 3 mandatory 25% curtailment Considering long term Phase 1 Mandatory Water rationing 	239.3	169.5	97.0	121	118
Scotts Valley Water District	<ul style="list-style-type: none"> Water Waste Prevention Ordinance in effect all year: <ul style="list-style-type: none"> No spray irrigation 10am-5pm No hosing off of hardscapes No irrigation run-off 	Considering Stage 2 (15% cut) or Stage 3 (20%) restrictions	351.8	223.4	117.6	164.7	179.9
San Lorenzo Valley Water District		<ul style="list-style-type: none"> Considering Stage 2 or 3 restrictions 	273.0	171.0	89.0	--	103
City of Watsonville	<ul style="list-style-type: none"> Permanent Water Wise Use Permanent Water Waste Prohibition 	<ul style="list-style-type: none"> Drought Resolution 20% Voluntary Reduction 	590.0	237.3	101.2	114.2	115.9
Central Water District	Increase in water rates.	Drought Resolution 2/18/14	467.0	467	--		
Pajaro Valley Water Management Agency	Permanent Water Waste Prohibition	10-20% Voluntary Reduction					
Lompico County Water District			168.0	168	--		
State	<ul style="list-style-type: none"> Declaration of Drought Emergency Voluntary 20% Reduction 						192
Central Coast Region							154

Notes:

gpd=gallons per day, gpcd=gallons per capita per day

UWMP: 2010 Urban Water Management Plans require establishing a 5 year base water use and a 10 year base water use based on historical water use, in order to set targets for water use reduction by 2020.

**BEFORE THE BOARD OF SUPERVISORS
OF THE COUNTY OF SANTA CRUZ, CALIFORNIA**

RESOLUTION NO. 13-2014

**On the motion of Supervisor Leopold
duly seconded by Supervisor Coonerty
the following resolution is adopted:**

**RESOLUTION DECLARING A STATE OF DROUGHT
FOR SANTA CRUZ COUNTY**

WHEREAS Santa Cruz County is experiencing the third consecutive year of below normal precipitation, with 2013 the driest year on record; and

WHEREAS the County's water supplies are in dire condition, indicated by: the San Lorenzo River is at its lowest January level ever recorded; Loch Lomond is at only 65% of its full capacity; and groundwater levels are declining in already overdrafted basins; and

WHEREAS dry conditions and lack of precipitation present urgent problems: drinking water supplies are at risk; businesses may be impacted by reduced water supply reliability; animals and plants that rely upon local streams and rivers, including threatened and endangered species, will be further threatened; groundwater wells may run dry or be impacted by seawater intrusion; fewer crops may be cultivated, at a higher cost, and farmers' long-term investments are put at risk; and the potential for catastrophic wildfire is greatly increased; and

WHEREAS extremely dry conditions have persisted since 2012 and may continue beyond this year and more regularly into the future, based on scientific projections of the impact of climate change upon rainfall patterns, runoff rates and recharge volumes in Santa Cruz County, requiring both short and long term approaches to better manage our water resources; and

WHEREAS the magnitude of the severe drought conditions presents threats beyond the control of the services, personnel, equipment and facilities of any single local government entity; and

WHEREAS the County is working closely with the other water supply agencies to address the short term and long term water shortages; and

WHEREAS, on January 17, 2014, Governor Brown declared a state of State of Emergency to exist in California due to prolonged drought conditions; and

WHEREAS, the Governor has called on all Californians to voluntarily reduce their water usage 20 percent, to ease the effects of the water shortage on agriculture, communities, and fish and wildlife.

NOW, THEREFORE, BE RESOLVED AND ORDERED that the Santa Cruz County Board of Supervisors declares that a State of Drought exists in Santa Cruz County.

BE IT FURTHER RESOLVED AND ORDERED that the Santa Cruz County Board of Supervisors urges all County residents, including small water systems and private well owners, to become aware of the drought and take actions to reduce water usage by at least 20 percent.

BE IT FURTHER RESOLVED AND ORDERED that all County departments will immediately implement water conservation measures and take all reasonable actions to reduce water use at least 20 percent at County facilities including parks, buildings and rights of way.

BE IT FURTHER RESOLVED AND ORDERED that the County of Santa Cruz work with local water districts, non-governmental organizations and interested stakeholders to identify additional actions that residents, business and government should take to lessen the impacts of drought.

BE IT FURTHER RESOLVED AND ORDERED that the County of Santa Cruz Water Resources Division Director continues to support the activities of water agencies to develop alternative water supply and conservation projects in collaboration with local stakeholders.

BE IT FURTHER RESOLVED AND ORDERED that the County of Santa Cruz Water Resources Division Director monitor drought impacts and identify subsequent actions that should be taken to address critical issues within particular areas of the County.

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Santa Cruz, State of California, this 28th day of January, 2014, by the following vote:

AYES:	SUPERVISORS	Leopold, Coonerty, Caput, McPherson and Friend
NOES:	SUPERVISORS	None
ABSENT:	SUPERVISORS	None

ZACH FRIEND
Chairperson of the Board

ATTEST: TESS FITZGERALD
Clerk of the Board

Approved as to Form:

Assistant County Counsel

STATE OF CALIFORNIA)
COUNTY OF SANTA CRUZ) ss
I, SUSAN A. MAURIELLO, County Administrative Officer and ex-officio Clerk of the Board of Supervisors of the County of Santa Cruz, State of California do hereby certify that the foregoing is a true and correct copy of the resolution passed and adopted by and entered in the minutes of the said board. In witness whereof I have hereunto set my hand and affixed the seal of the said Board on 1-28-20
SUSAN A. MAURIELLO, County Administrative Officer
By [Signature] Deputy

36