

**MEMORANDUM OF AGREEMENT AMONG THE CITY OF SANTA CRUZ, THE SAN LORENZO VALLEY
WATER DISTRICT, THE SCOTTS VALLEY WATER DISTRICT, AND THE COUNTY OF SANTA CRUZ ON
EXPLORING POTENTIAL PROJECTS FOR THE CONJUNCTIVE USE OF SURFACE AND GROUNDWATER
RESOURCES IN THE SANTA MARGARITA BASIN AND SAN LORENZO RIVER WATERSHED**

The parties to this AGREEMENT ("AGREEMENT") are the CITY OF SANTA CRUZ ("CITY"), the SAN LORENZO VALLEY WATER DISTRICT ("SAN LORENZO VALLEY"), the SCOTTS VALLEY WATER DISTRICT ("SCOTTS VALLEY"), and COUNTY OF SANTA CRUZ ("COUNTY") or collectively referred to herein as, "the PARTIES".

RECITALS

- A. CITY is a charter city which owns and operates a municipal water system in the City of Santa Cruz and in portions of County of Santa Cruz adjacent to SAN LORENZO VALLEY and SCOTTS VALLEY water systems.
- B. SAN LORENZO VALLEY and SCOTTS VALLEY are County water agencies that own and operate water systems providing water service to the City of Scotts Valley, San Lorenzo Valley and unincorporated areas of Santa Cruz County to the north of the CITY.
- C. COUNTY implements the County General Plan, the San Lorenzo River Watershed Management Plan and other programs to promote sound watershed management, groundwater recharge, sustainable water supply, and fish habitat restoration in the San Lorenzo River Watershed.
- D. CITY has significant water infrastructure in the mid and upper parts of San Lorenzo Valley, including the Newell Creek Dam and Loch Lomond Reservoir, the Felton Diversion, and untreated water pipelines connecting Newell Creek dam, the Felton Diversion, the Felton Booster Pump Station and the Graham Hill Water Treatment Plant.
- E. CITY has a long history utilizing the San Lorenzo River as a source of supply and is very invested in preserving and enhancing the river's natural resources and pursuing opportunities to use available wet season flows to improve the reliability of the CITY's water supply.
- F. SAN LORENZO VALLEY and SCOTTS VALLEY have worked together and with COUNTY over the last few years to explore conjunctive use opportunities for existing surface and groundwater resources.
- G. SAN LORENZO VALLEY and SCOTTS VALLEY have established emergency interties to improve supply reliability for their agencies during drought or other emergency conditions.
- H. SAN LORENZO VALLEY, SCOTTS VALLEY and COUNTY have collaborated for many years to manage the Santa Margarita Groundwater Basin, which is the sole source of supply for SCOTTS VALLEY, a major part of SAN LORENZO VALLEY's supply system, and a major source of base flow to the San Lorenzo River and its tributaries.
- I. Mainly from over pumping in 1980's and 1990's the Santa Margarita Groundwater Basin is over-drafted. Recently, through the collaborative work of SAN LORENZO VALLEY and SCOTTS VALLEY groundwater levels have stabilized, although at levels up to 200 feet lower than historical levels.

- J. SAN LORENZO VALLEY, SCOTTS VALLEY, and COUNTY have a strong interest in and commitment to the restoration of the Santa Margarita Groundwater Basin. SCOTTS VALLEY has been exploring a variety of approaches using an excess of the tertiary treated wastewater available to them.
- K. CITY has been exploring passive and active recharge opportunities in the Santa Margarita Groundwater Basin, likely using some yet to be defined combination of in lieu recharge and aquifer storage and recovery to create additional storage for wet season water from CITY's San Lorenzo River supply which, if successful, would substantially increase the reliability of CITY's supply and decrease its vulnerability to drought, including multi-year droughts.
- L. CITY is also exploring the opportunity to develop a source of advanced treated wastewater that may be determined to be a necessary part of a future water supply for the CITY.
- M. SAN LORENZO VALLEY has a contractual right to 313.4¹ acre feet of water per year (AFY) from the CITY's Loch Lomond Reservoir, which it has been unable to access due to the lack of inter-connections between CITY and SAN LORENZO VALLEY systems.
- N. SAN LORENZO VALLEY is interested in evaluating opportunities for creating a connection with the CITY's system to gain access to water from Loch Lomond Reservoir and improve the reliability of SAN LORENZO VALLEY supply.
- O. In 2016, CITY, SAN LORENZO VALLEY, SCOTTS VALLEY and COUNTY staff participated with other regional agencies in an effort to develop ideas about the potential for regional collaboration among water utilities. During this effort, CITY, SAN LORENZO VALLEY, and SCOTTS VALLEY recognized that the three parties had common interests that could be supported by a joint project or projects that have a potential to advance the conjunctive use of surface water and groundwater in the Santa Margarita Basin and the middle and upper San Lorenzo River watershed.
- P. CITY is also investigating opportunities to work with the Soquel Creek Water District in developing active and/or passive recharge in the jointly operated Santa Cruz Mid-County Groundwater Basin and is actively engaged with the Soquel Creek Water District, the Central Water District, COUNTY, and private well owners in the Mid-County Groundwater Basin in working on implementing the Sustainable Groundwater Management Act.
- Q. SAN LORENZO VALLEY, SCOTTS VALLEY, and COUNTY have entered into a Joint Powers Agreement to form the Santa Margarita Groundwater Agency (SMGWA) for management of the Santa Margarita Basin under the Sustainable Groundwater Management Act. CITY has a representative on the Board of SMGWA, but is not a member agency of the Joint Powers Agreement at this time.²

¹ 313.4 acre feet per year was determined to be equivalent to 12.5% of the safe annual yield of the Loch Lomond Reservoir as a result of a 1980 court case and subsequent yield analysis establishing the safe annual yield of the reservoir as communicated by the City to the San Lorenzo Valley Water District via a June 16, 1981 letter from City Attorney Rod Atchison to District Counsel C. Shelley Emerson.

² The City was not asked to be a member agency of the Santa Margarita Groundwater Agency Joint Powers Agreement because it is not a user of groundwater in the basin. However, it was invited to join the Santa Margarita Groundwater Agency Board due to its surface water supply facilities in the basin.

- R. COUNTY and SAN LORENZO VALLEY have received a grant from the California Wildlife Conservation Board to develop a plan for streamflow enhancement in the San Lorenzo River and its tributaries, utilizing conjunctive use and groundwater storage in the Santa Margarita Groundwater Basin.

NOW, THEREFORE, IT IS HEREBY AGREED:

TO JOINTLY FUND AND COLLABORATIVELY IMPLEMENT A WORK PLAN TO EXPLORE OPPORTUNITIES FOR CONJUNCTIVE USE OF SURFACE AND GROUNDWATER IN THE SANTA MARGARITA GROUNDWATER BASIN AND VICINITY.

PARTIES agree to jointly fund and collaboratively implement a WORK PLAN to explore opportunities to develop and implement one or more projects to improve the conjunctive use of surface and groundwater resources in the Santa Margarita Groundwater Basin while also improving the sustainability of groundwater resources and reliability and resiliency of the water supplies serving customers of the three water utilities.

The WORK PLAN to be implemented shall be substantially in the form of Gantt Chart appended to this AGREEMENT as Attachment 1³, with the provision that due to the exploratory nature of the work, the Director of CITY Water Department, the District Manager of SAN LORENZO VALLEY, the General Manager of SCOTTS VALLEY, and the Water Resources Division Director of COUNTY may jointly agree to revise the WORK PLAN as needed to most effectively achieve the project goals identified in Section 1.

PARTIES agree that funding for each shared task in this WORK PLAN will be proportionally split as agreed by the PARTIES on case by case basis.

This AGREEMENT shall terminate at the completion of the work outlined in the WORK PLAN as amended in accordance with the second paragraph of this section. Should PARTIES decide to pursue implementation of any project or program as a result of this effort, a separate agreement, including separate financial or cost sharing provisions would need to be developed and agreed to by PARTIES choosing to do so.

1. Key Questions to be Answered through the Implementation of the WORK PLAN

- a. What are the opportunities for improving supply reliability and resiliency through the use of in lieu water transfers between the PARTIES and other regional water agencies?
- b. What are the opportunities to bank available wet season flows for long term (more than one year) storage in the Santa Margarita Groundwater Basin?
- c. What are the opportunities to share existing or new infrastructure and facilities for achieving increased reliability and resiliency?
- d. How could the development of an aquifer storage and recovery program using treated drinking water as a source of supply in the Santa Margarita Groundwater Basin affect the health of the

³ Additional details supporting the work plan are included as Attachment 2, San Lorenzo Conjunctive Use Current Investigations and Potential Programs, and Attachment 3, Key Questions and Work Plan Activities and Initiatives.

basin? How would this compare to the outcome produced by recharging the basin with advanced treated wastewater?

- e. What are the benefits to the base flow in local creeks and streams from the injection of treated drinking water or advanced treated wastewater into the basin? Can those benefits be quantified and how?
- f. What are the feasible alternatives for SAN LORENZO VALLEY to access its contractual right to Loch Lomond supply? Which of these options is most cost-effective and most readily implemented?
- g. What would be the elements of a proposed conjunctive use project in the basin, and how could the benefits be the most fairly distributed among PARTIES?
- h. What water right implications would have to be considered?
- i. How would any proposed conjunctive use project(s) developed under this AGREEMENT support, complement or conflict with the plans of the Soquel Creek Water District and other regional water agencies?
- j. What opportunities would conjunctive use project(s) using regional groundwater and surface water to support in lieu and/or aquifer storage and recovery provide for altering the operations of the existing water systems of the PARTIES?

2. NOTIFICATIONS AND RECORD KEEPING

For the purposes of this agreement, all notifications related to this MOA will be directed to the PARTIES' general managers. Records related to this MOA will be maintained by the City of Santa Cruz Water Department.

3. NATURE OF AGREEMENT

It is understood and acknowledged by PARTIES that this AGREEMENT is only for the purpose specified herein, and that no obligations are imposed on the parties beyond the completion of the WORK PLAN included as Attachment 1.

4. EFFECTIVE DATE:

This AGREEMENT shall become effective only upon its approval by the governing bodies of each party hereto.

5. TERMINATION ON THIRTY-DAY NOTICE

This AGREEMENT may be terminated by any party hereto upon the furnishing to the other parties a thirty (30) day notice of intent to terminate or with an email notification that is acknowledged by the receiving party provided, however, that a terminating party shall be obligated to pay its pro-rata share of any costs incurred up to the date of the termination.

6. RELEASE AND INDEMNITY

Each of PARTIES hereto agrees to indemnify, defend and hold harmless the other PARTIES, and any agency or instrumentality thereof, and their respective elected and appointed officials, officers, employees and agents from and against all liabilities, claims, actions, causes of action, proceedings, suits, damages, judgments, liens, levies, costs and expenses of whatever nature, including reasonable attorneys' fees and disbursements arising out of any actions taken by it in the implementation of this agreement, or any environmental review conducted under the California Environmental Quality Act (CEQA) in connection with this agreement. In the event of concurrent negligence of the PARTIES, their respective officers and/or employees, then the liability for any and all claims for injuries or damages to persons and/or property, which arises out of the terms and conditions of this AGREEMENT shall be apportioned according to the California theories of comparative negligence and/or equitable indemnity, as applicable.

7. GOVERNING LAW

This AGREEMENT is executed in the State of California and that the law of the State of California shall govern this agreement.


8. SEVERABILITY

Should any portion, term, condition, or provision of this AGREEMENT be decided by a court of competent jurisdiction to be illegal or in conflict with any law, or otherwise rendered unenforceable or ineffectual, the validity of the remaining portions, terms, conditions, or provisions shall not be affected thereby.

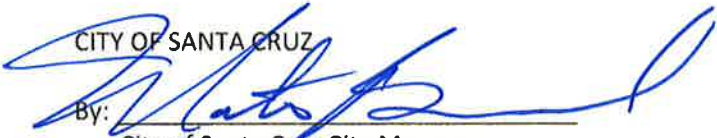
APPROVED AS TO FORM:


Attorney, CITY of SANTA CRUZ

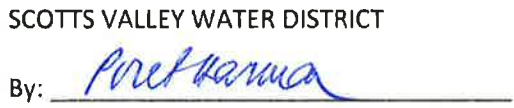

Legal Counsel, SAN LORENZO VALLEY WATER DISTRICT


Legal Counsel, SCOTTS VALLEY WATER DISTRICT


Office of the County Counsel, COUNTY OF SANTA CRUZ

Dated: 11-30-17
CITY OF SANTA CRUZ
By: 
City of Santa Cruz City Manager

Dated: 12/7/17
SAN LORENZO VALLEY WATER DISTRICT
By: 
President of the Board of Directors

Dated: 11/20/17
SCOTTS VALLEY WATER DISTRICT
By: 
General Manager

Dated: 11/07/17
COUNTY OF SANTA CRUZ
By: 
Health Services Agency Director

Attachment 1
SVWD, SLVWD, COUNTY, CITY MOA Work Plan

In Lieu Evaluation: Agreements, Water Rights, Pipe Loop Study, Water Quality Analysis (CITY, SVWD, SLVWD)		In Lieu Agreements Review and Approval (TBD)		In Lieu Infrastructure Improvements (TBD)			
ASR Phase 1 Studies and Evaluation (CITY)		ASR Phase 2 Testing and Analysis includes SMGB and Mid-County Basin Pilots (CITY)		ASR Program Development (TBD)			
Recycled Water Alternatives Study with Final Report (CITY)		Update Desalination Feasibility (CITY)		Element 3 Alternative to Advance based on Yield, Cost, and Timeliness (CITY)			
Regional Collaboration on Water Supply Reliability Alternatives (Joint projects/shared Infrastructure /cost distribution) (CITY, SVWD, SLVWD, COUNTY, SqCWD)				Update Urban Water Management Plan (CITY)			
2017	2018	2019	2020	2021			
Conjunctive Use Grant Project Administration: Contracts, Invoicing, and Reporting (COUNTY)							
	Winter Surface Water Availability (COUNTY, SLVWD)						
	Groundwater Availability (SMGB)						
		Summary of Findings (COUNTY, SLVWD, SMGB)					
	Evaluate Flows for Fish and Analyze Results (COUNTY, SLVWD)						
Evaluate Municipal Needs (SLVWD/SVWD)							
	Develop Conjunctive Use Management Plan (COUNTY, SLVWD, SVWD, CITY)						
		Water Rights (COUNTY, SLVWD, CITY)					
		CEQA Compliance (COUNTY)					
Public Outreach on Conjunctive Use Management (CITY, COUNTY, SLVWD, SVWD)				Implement San Lorenzo Watershed Conjunctive Use and Baseflow Enhancement Plan (COUNTY, SLVWD)			

COUNTY: County of Santa Cruz
 SVWD: Scotts Valley Water District
 SLVWD: San Lorenzo Valley Water District
 SqCWD: Soquel Creek Water District
 SMGB: Santa Margarita Groundwater Management Agency
 CITY: City of Santa Cruz

Attachment 2

San Lorenzo Watershed/Santa Margarita Basin Conjunctive Use Activities

San Lorenzo Valley Water District (SAN LORENZO VALLEY)

1. Working on evaluating Westside diversions to quantify available flow, diversion amounts, bypass amounts, impact on River and tributary flow and temperature.
2. Replacing pipe on Bull Creek and Bennet Creek to enable more use of those sources and allow less diversion from Fall Creek.
3. Evaluating potential use of Kirby treatment plant to treat Loch Lomond water to be able to use their contracted water.
4. Conducting flow gaging on Boulder Creek, Zayante Creek at Zayante and Lompico Creek.

Consultants: Balance Hydrologics, Don Alley, Nick Johnson

Scotts Valley Water District (SCOTTS VALLEY)

1. Completed an evaluation of the feasibility of using advanced treated recycled water from the Scotts Valley Wastewater Treatment Plant to recharge the aquifer, including evaluating potential recharge at several locations.
2. Developed and updated a Santa Margarita Basin Groundwater Model.
3. Implemented stormwater recharge projects
4. Ongoing monitoring and annual reporting of basin conditions.

Consultants: Kennedy Jenks, Hydrometrics

City of Santa Cruz Water Department (CITY)

1. Working on investigating opportunities for passive and active recharge (in lieu water transfers and aquifer storage and recovery) in the Santa Margarita Groundwater Basin utilizing available wet season flows and existing surface water rights.
2. Investigating the use of Ranney Collectors or other river bank filtration options to improve quality of water available during the wet season, to reduce the potential requirement for expensive treatment upgrades.
3. Conducting extensive work on establishing fish flow releases and San Lorenzo River watershed restoration efforts to protect and support recovery of threatened steelhead trout and endangered coho salmon.

Consultants: Pueblo Water Resources, Gary Fiske, Balance, Mike Cloud, Kennedy Jenks, Jeff Hagar.

County of Santa Cruz (COUNTY)

1. Conducting flow gaging on Bean Creek and Zayante Creek above Bean Creek, Eastside flow accretion study from Boulder Creek to Zayante Creek.
2. Performing monthly flow measurements on various streams.
3. Working with Soquel Creek Water District (SOQUEL CREEK) and Resource Conservation District (RCD), to identify locations and implement passive recharge projects.

Consultants: Balance Hydrologics, Don W. Alley

Joint Efforts

1. SCOTTS VALLEY working with CITY to investigate feasibility of regional projects for indirect potable reuse.
2. Formation of the Santa Margarita Groundwater Agency.
3. CITY, SOQUEL CREEK, SCOTTS VALLEY and SAN LORENZO VALLEY evaluating potential distribution system water quality issues associated with mixing surface water and groundwater supplies.
4. Developing MOA for conjunctive use investigations between CITY, SCOTTS VALLEY, SAN LORENZO VALLEY and COUNTY.

Consultants: Hydrometrics, Kennedy Jenks, Black and Veatch

ATTACHMENT 3

Work Plan Activities in Support of Key Questions

The partner agencies are all actively involved in exploring various approaches to improve water supply reliability and environmental sustainability. Section 1 of the MOA includes a set of Key Questions intended to be answered through implementation of a Work Plan Gantt Chart in Attachment 1.

Attachment 1 emphasizes the work being done as part of the CITY's implementation of the recommendations of the Water Supply Advisory Committee and COUNTY'S work with the SAN LORENZO VALLEY and SCOTTS VALLEY that is being completed under a grant funded scope of work for Conjunctive Use for the upper San Lorenzo Watershed.

The partner agencies are and have been engaged in a variety of independent and collaborative studies as summarized on Attachment 2.

Below, the key questions from the MOA are repeated along with a brief description of how work being pursued by the various partner agencies, as well as that contemplated by this MOA will provide information needed to answer these questions.

AVAILABILITY OF WATER FOR GROUNDWATER RECHARGE, AND TRANSFERS OR EXCHANGES

- a. **What are the opportunities for improving regional water supply reliability and resiliency through the use of in lieu transfers with regional water agencies?**

The agencies are working with each other to evaluate opportunities for conjunctive use of available surface water through in lieu water transfers between various partners.

In collaboration with the MOA partner agencies, the CITY is leading a project that includes evaluating the compatibility of surface and groundwater resources to assess the water quality/corrosion issues associated with comingling waters from varying sources and to identify steps needed to address any issues identified.

- b. **What are the opportunities for improving regional water supply reliability and resiliency by banking available wet season flows for long term (more than one year) storage in the Santa Margarita Groundwater Basin (SMGB)?**

The CITY is completing Phase 1 of an Aquifer Storage and Recovery (ASR) feasibility study in the SMGB and the Santa Cruz Mid-County Groundwater Basin (SCMCGB) and will be initiating Phase 2 of this work in 2018. Phase 2 includes pilot testing of ASR in both basins.

The COUNTY is working with SAN LORENZO VALLEY to evaluate the feasibility and infrastructure requirements of diverting winter water for ASR.

The Santa Margarita Groundwater Basin Advisory Committee, which has evolved into the Santa Margarita Groundwater Agency, has recently updated the SMGB model. This model will be used for evaluating the benefits, opportunities, and challenges of potential groundwater recharge projects and their impacts on local surface water resources.

While not using wet season flows, another option for improving regional water supply and resiliency was evaluated by SCOTTS VALLEY in its recently completed Recycled Water Groundwater Recharge feasibility study for the SMGB.

INFRASTRUCTURE

- c. What are the opportunities to share existing or new infrastructure and facilities for achieving increased reliability and resiliency?**

The partner agencies are evaluating infrastructure requirements of groundwater recharge projects and possible synergies of sharing existing infrastructure or partnering on the development of potential new infrastructure.

BASIN WATER QUALITY

- d. How could the development of an ASR program using treated drinking water as a source of supply in the SMGB affect the health of the Basin? How would this compare to the outcome produced by recharging the basin with advanced treated wastewater?**
- e. What are the benefits to the base flow in local creeks and streams from the injection of treated drinking water or advanced treated wastewater into the basin? Can those benefits be quantified and how?**

The CITY's ASR pilot testing program will include significant work to evaluate the potential water quality benefits or challenges associated with injection of treated drinking water into the SMGB.

The partner agencies' evaluation of ASR includes groundwater modeling as well as pilot testing. The CITY's recently completed Recycled Water Feasibility Planning Study also included groundwater modeling to evaluate opportunities for using advanced treated wastewater to recharge groundwater basins. These studies will increase the understanding of potential benefit(s) of groundwater augmentation to the groundwater basin(s) as well as local creeks and streams and project any increases in base flow that could result from groundwater augmentation.

MANAGEMENT AND LEGAL

- f. What are the feasible alternatives for SAN LORENZO VALLEY to access its contractual right to Loch Lomond supply? Which of these options is the most cost-effective and most readily implemented?**

As part of the CITY's evaluation of water supply augmentation options, and in collaboration with the SAN LORENZO VALLEY, options for allowing IT access the water in Loch Lomond to which it has a contractual right are being explored.

- g. What would be the elements of a proposed conjunctive use project in the basin, and how could the benefits be most fairly distributed among regional water agencies?**

The ASR, in lieu and recycled water studies that have been and will be conducted by the partner agencies will yield information about the various elements required for project success. Elements included in this evaluation include physical infrastructure (number pumps, pipes, tanks, wells treatment facilities, etc.), siting facilities, and operational agreements (injection, withdrawal, water rights, etc). Should a project emerge for implementation by a set of partner agencies, the data developed through these efforts would support negotiations to achieve a fair distribution of costs and benefits among the parties.

- h. What water right implications would have to be considered?**

Pre-1914 and appropriative surface water rights are held by both the CITY and the SAN LORENZO VALLEY. In addition, the Sustainable Groundwater Management Act, which applies to the SMGB, will require the development of Groundwater Sustainability Plan that may affect the ongoing operation of the groundwater basin in a manner that may introduce new constraints on basin usage.

Should any project be identified to be pursued, addressing the water rights and resource management implications will be a critically important element of the work. Specifically, water rights constraints such as place of use may need to be revised for any post 1914 water rights that may be involved in such a project.

- i. How would any proposed conjunctive use project(s) support, complement or conflict with the plans of Soquel Creek Water District (SOQUEL CREEK) and other regional water agencies?**

The CITY is working closely with SOQUEL CREEK as they develop their Pure Water Soquel project as well as during the CITY's evaluations of water supply alternatives. In addition, CITY, COUNTY, SOQUEL CREEK, SCOTTS VALLEY and SAN LORENZO VALLEY are working collaboratively to identify and evaluate a wide range of potential opportunities to develop regional projects that may improve regional water supply reliability and resiliency.

- j. What opportunities would conjunctive use project(s) using regional groundwater and surface water to support in lieu and/or ASR provide for altering the operations of existing water systems of the agencies?**

Conjunctive use of water resources amongst SCOTTS VALLEY, SAN LORENZO VALLEY, CITY, COUNTY and any associated water rights considerations is foundational to the work being done by all the partner agencies.