



Application Form for 2025 Local Cooperative Solution for Overlying or Adjudicated Groundwater Rights in Scott River and Shasta River Watersheds

Please complete this form if you plan to implement a groundwater local cooperative solution (LCS) for the 2025 irrigation season under the Scott River and Shasta River watersheds [emergency regulation](#). Applications must be submitted for at least a full irrigation season. A separate application should be submitted for each type of groundwater LCS proposal. **The form and attachments are due by April 15, 2025.**

How to Submit: To submit your application and associated required materials (see Section 2) you can:

- Use the online form
- Email: DWR-ScottShastaDrought@waterboards.ca.gov
- Mail:

State Water Resources Control Board Division
of Water Rights - Instream Flows Unit
1001 I Street - 14th Floor
Sacramento, CA 95814

Section 1: Applicant Information

Name	Connor Martin
Name of Farm, Ranch, or Business	Martin Dairy
Phone Number	
Email Address	

By typing or signing your name below and submitting this form to the State Water Resources Control Board (State Water Board) you hereby certify that the submitted information is true and correct to the best of your knowledge.

Name: Connor Martin

Date: 04/14/2025

Section 2: Application Checklist

Below is a list of items to include with your application form:

- Application Form (paper or email submittal accepted).
- If working with a Coordinating Entity (Section 4 of application), submit a signed Binding Agreement (paper or email submittal accepted).
- Supporting Information (electronic submittal only). Submit the applicable information based on selected groundwater LCS.
 - Best Management Practices Groundwater LCS (see Section 7 of application)
 - Description of how you will implement all of the required components.
 - Map(s) with each well(s), meter location(s), and field(s) labeled.
 - Graduated Groundwater Cessation Schedule LCS (see Section 8 of application)
 - Description of how you will reduce irrigation compared to standard practices on the property (e.g., practice in a similar unregulated year).
 - Map(s) designating the area where diversions will cease by the required dates, well location(s) and meter location(s), and field(s) labeled.
 - Percent Reduction Groundwater LCS (see Section 9 of application)
 - Description of verifiable water reduction actions that will be implemented.
 - Spreadsheet with monthly volumes for baseline year and current year. Use one row per irrigation method per field.
 - Map(s) with each well(s), meter location(s), and field(s) labeled.
- A description of existing and planned groundwater metering (Section 6 of application), a time schedule for additional installation or information to support a waiver request, and a plan to record metered extractions or applications weekly and to report them monthly to your Coordinating Entity and/or State Water Board.
- Groundwater Well or Metered Application Information (see Section 5 of application) (paper or email submittal accepted).

Section 3: Requirements for All Groundwater LCS Proposals

- **Deadline:** Proposals are due to the State Water Board by April 15, 2025.
- **Implementation:** Proposals must be implemented during the entirety of one or more irrigation seasons (including the time prior to approval), unless the applicant withdraws the application.
- **Metering:** Proposals must include a description of metering that will be used to measure groundwater well extractions or applications covered under the LCS and information on how extractions and/or applications will be recorded weekly and reported monthly to the Deputy Director (or Coordinating Entity, if so agreed). Please note the Coordinating Entity is required to provide this data to the State Water Board.
 - Funding for Meters: The State Water Board has limited funding and technical support available for some amount of metering and those interested in such assistance should promptly contact State Water Board staff using the "Contact Information" at the end of this application.
 - Time Schedule for Metering: All applicants should have the required metering equipment installed and operating before the start of irrigation season so that all groundwater extractions or applications covered by the LCS are metered.
 - Waivers: Proposals may include information requesting waiver of the metering provisions in the following instances:
 - Groundwater wells that irrigate less than 30 acres. Information supporting the request to waive metering provisions must be provided, including the distance of the groundwater well to surface water. The State Water Board may require other information in lieu of monitoring.
 - Metering is not feasible. Substantiation for the infeasibility of installing a meter must be provided. This includes feasibility evaluation of installing a meter at the well(s) and at the place(s) of use (e.g., pivot).

Section 4: Coordinating Entity

Select only one (1) box below. Please note that a Coordinating Entity is not required. If a Coordinating Entity is not selected, parties will work directly with the State Water Board to provide metering data and ensure performance of the groundwater local cooperative solution. For more information on Coordinating Entity provisions, refer to Section 875(f)(1)(G) in the [emergency regulation](#).

☐ California Department of Fish & Wildlife
Contact: Crystal Robinson
(530) 340-0767
crystal.robinson@wildlife.ca.gov

☐ Shasta Valley Resource Conservation District
Contact: Rod Dowse
(530) 598-1253
rdowse@svrccd.org

☐ Siskiyou Resource Conservation District
Contact: Evan Senf
(530) 643-1585
evan@siskiyoucd.com

☒ Scott River Water Trust
Contact: Chris Voigt
(916) 396-0131
chrisb.voigt@gmail.com

☐ Other, I am proposing an Entity not in the provided options. Please provide the name of the Entity, contact information, and description of qualifications in the box below.

☐ I select not to work with a coordinating entity.

Section 5: Groundwater Well Information

Complete the table below or upload an attachment for information on the groundwater wells, fields irrigated by the well and the APN, and associated meters that are covered under the proposed groundwater LCS.

- Well ID: Name of the well covered by the proposal LCS
- Well Coordinates: Latitude and Longitude of the well location
- Field APNs: List the APNs for the fields irrigated by the well. Please include APN of fields fallowed as part of the LCS plan.
- Meter ID: List the meters recording extraction or application from this well.

Well ID	Well Coordinates	Field APNs	Meter ID
Example: Well #1	(40.57686, -122.3657)	547-988-0975; 547-989-0976	Meter 1 Meter 3
Pump 1			NA 28 acres
Pump 2			Meter 2 (Secured funding TBD installation)
Pump 3			Meter 3

For assistance in finding well coordinates, you can use Google Maps (www.google.com/maps).

Upload Well Information

Section 6: Metering Information

Please describe the metering plan for all the fields that will be irrigated under the LCS. Remember that meters can be installed at the well head or at the place of use (e.g., pivots). All meters should be installed to manufacturers' specifications and recommendations and measurements should be in the expected accuracy range. Fill in the box below, upload an attachment, or email a document or spreadsheet with the information requested in this section.

- a. Describe how you will record weekly extractions or applications and report monthly volumes. Include a description of all water uses associated with each groundwater well that is part of this groundwater LCS. For each meter include the Well ID the meter is recording, the amount of irrigated acres covered and the crop type. Each meter should have an identifier (e.g., Meter #1) included in the description and in the monthly reports.

For example, *"the ranch manager will log meter readings at Well #1 using Meter #1; and for Well #2, the ranch manager will log meter readings at pivots 1 & 2 using Meters #2 and #3."* Also note what the water is being used for – *"Well #1 irrigates 50 acres of grain on fields A and B, 100 acres of pasture on fields E, G, and Z. Meter #2 will irrigate 75 acres of alfalfa on field Y and Meter #3 will irrigate 25 acres Alfalfa on Field W. The manager will send the logs and photos to the Water Board by no later than the 5th of the month for the preceding month."*

The ranch manager will take photos and recordings of the meter weekly and report those findings to the water board around the first week of each month. It will be noted which well, what is it being used to irrigate and how many acres. While we have secured funding for a second meter to be installed, we are beginning the season like last with meter 1 on pump #3. This pump is used to irrigate fields 6,7,8 a&b, 10, 11, and 13. Pump #1 irrigates fields 1-4 which are less than 30 acres and exempt from recording. When the second meter is installed, it will be on pump #2 which can irrigate fields 6-12 but will not always. Exact

- b. For groundwater wells and applications that are NOT currently metered, in the box below please describe the time schedule and plan to install meters, including a description of efforts to obtain a meter before the initiation of groundwater diversions covered by this groundwater LCS, and when such efforts were undertaken. If you want to file for a waiver to the metering requirement, please use the box below and include information on why metering of your well(s) or applications should be waived. Be sure to include total irrigated acres, distance of the well(s) from surface water, a description of why metering is infeasible, if applicable, and any additional information that supports your waiver request.

Pump #1 irrigates fields 1-4 which are less than 30 acres total and exempt from recording. Pump #2 is not currently metered but funding to purchase and install one has been approved with a completion date of 2026. See attached supporting documents.

Upload Attachment

Select the type of groundwater LCS you are applying for and complete the corresponding sections of the application. A separate application should be submitted for each type of groundwater LCS request.

- ☐ Best Management Practices Groundwater LCS - Complete sections 7
- ☐ Graduated Groundwater Cessation Schedule LCS - Complete sections 8
- ☒ Percent Reduction Groundwater LCS - Complete sections 9

Please indicate the proposed time period for the LCS you are applying for (e.g., one irrigation season or multiple seasons). If multiple seasons, please provide the time period.

2025 growing season

Section 7: Best Management Practices Groundwater LCS

1. Provide the total amount of all irrigated acreage (with units) covered under your proposal for a Best Management Practices Groundwater LCS:
2. Upload an attachment, write in the box, and/or email a description of the irrigation system that will be used under this proposal, specifying details of your low-energy precision application system, soil moisture sensors, and any corners that will be irrigated. (Refer to Section 875(f)(4)(D)(vii) of the [emergency regulation](#).)

3. Provide a map(s) of each field with labels for well(s), meter(s), and field crop type. Upload as an attachment or email.

Upload Map(s)

4. Certify all of the following by initialing or checking each box:
 - ☐ a. I certify the use of a low-energy precision application (LEPA) system on all irrigated acreage covered under this groundwater LCS.
 - ☐ b. I certify to not use end guns for irrigation for the duration of the season.
 - ☐ c. I certify to cease irrigation of corners after June 15, 2025.
 - ☐ d. I certify to use soil moisture sensors to inform irrigation timing, and maintenance of such records, which I will make available for inspection by the Coordinating Entity, if applicable, and/or the State Water Board.
 - ☐ e. I certify that I will further limit irrigation based on water year, in the event of the hydrologic condition noted in i or ii below. If this requirement is triggered, the State Water Board will inform all Best Management Practices Groundwater LCS applicants for the applicable watershed(s).
 - i. Scott River Watershed: Snow pack of 80% or less of the Department of Water Resources California Data Exchange Center's first May snow water equivalent station average (or the average of the first April measurement if May snow pack measurements are not gathered) in Scott River watershed.
 - ii. Shasta River watershed: A water year determination of dry or very dry in the Shasta River watershed, as determined under Table 2 of the March 2021 Montague Water Conservation District water operation plan.

Section 8: Graduated Groundwater Cessation Schedule LCS

A Graduated Groundwater Cessation Schedule LCS may be approved if the applicant agrees to a below schedule AND provides evidence that irrigated acreage is reduced compared to standard practice on the property (e.g., practice in a similar unregulated year). Under this groundwater LCS type, the applicant must select one of two potential irrigation schedules, listed below. See section 875(f)(4)(D)(vi) of the [emergency regulation](#).

1. Provide the total amount of irrigated acreage (with units) under your proposal for a Graduated Groundwater Cessation Schedule LCS:
2. Select the irrigation schedule you certify to implement.

☐

Option 1: By the dates below, pumping to irrigate the following percentages of irrigated acres shall cease:

- 15% by July 15,
- 50% by August 15, and
- 90% by August 31, with a maximum of 8 inches of water to be applied to the remaining 10% of irrigated acres during the remainder of the irrigation season. This 10% can be on land previously fallowed.

☐

Option 2: By the dates below, pumping to irrigate the following percentages of irrigated acres shall cease:

- 20% by July 20,
- 50% by August 20, and
- 95% by September 5, with a maximum of 6 inches of water to be applied to the remaining 5% of irrigated acres during the remainder of the irrigation season. This 5% can be on land previously fallowed.

4. Please upload an attachment, write in the box, or email a description that demonstrates that the proposal reduces irrigation as compared to standard practices on the property (e.g., practice in a similar unregulated year). If applicable, please take crop rotation and number of alfalfa cuttings into account.

Upload Attachment

5. Please upload or email a map(s) that identifies the well(s), meter(s), and which field(s) are associated with each cessation date covered by this groundwater LCS.

Upload Map(s)

Section 9: Percent Reduction Groundwater LCS

The applicable percent reduction in groundwater pumping noted below must be demonstrated for the Percent Reduction Groundwater LCS consistent with section 875(f)(4)(D)(v) of the [emergency regulation](#), and summarized below.

- **Scott River Watershed:** A net groundwater pumping reduction of at least 30% throughout the irrigation season (April 1 – October 31) and a monthly reduction of at least 30% between July 1 through October 31.
- **Shasta River Watershed:** A net groundwater pumping reduction of at least 15% throughout the irrigation season (March 1 – November 1) and a monthly reduction of at least 15% between June 1 through September 30.
- The relevant water use reduction shall be based on a comparison to a baseline irrigation season (i.e., 2020, 2021, 2022, or 2023).
 - BUT, if the previous year baseline is higher than the following applied water rates:
 - 33 inches per year for alfalfa,
 - 14 inches per year for grain, or
 - 30 inches per year for pasture
 - Then the above values shall be used as the baseline UNLESS the applicant provides sufficient additional information supporting an alternative baseline.
- Please provide the total amount of irrigated acreage (with units) under your proposal for a Percent Reduction Groundwater LCS.
- If you are proposing a Percent Reduction Groundwater LCS, attach or email the following files to the State Water Board and your Coordinating Entity.
 - a. A description of practices that reduces groundwater pumping and how the State Water Board (or Coordinating Entity, if applicable) can verify those actions.

Upload Attachment

- b. A spreadsheet with monthly pumping volumes for the selected baseline year and current year. Use one row per irrigation method per field.

Upload Baseline Pumping

- c. Map(s) with each field labeled, well locations, and meter locations.


Upload Map(s)

Submission of Groundwater LCS Proposal to State Water Board

A groundwater LCS may require the applicant to attach or email additional information, such as descriptions, spreadsheets, maps, or other relevant information. State Water Board staff request descriptions be submitted as Microsoft Word (.docx, .doc) or Adobe PDF (.pdf) files as these file formats are easiest for staff to work with applicants to review and revise, if needed. For the same reasons, staff request that applicants submit spreadsheets as Microsoft Excel files (.xlsx, .xls).

Submitting documents in other formats, such as photographs of narratives or narratives via traditional mail may lengthen the review process. If you need assistance, please contact your Coordinating Entity (see Section 4) or State Water Board staff identified in the Contact Information section below.

To submit your application with all required materials (see Section 2), you can:

- Use the online form 
- Email: DWR-ScottShastaDrought@Waterboards.ca.gov
- Mail:
State Water Resources Control Board
Division of Water Rights - Instream Flows Unit
1001 I Street - 14th Floor
Sacramento, CA 95814

Contact Information for State Water Board Staff

- Rachel Wright
Phone: (916) 322-8420
Email: Rachel.Wright@waterboards.ca.gov
- Robert Solecki
Phone: (916) 341-5400
Email: Robert.Solecki@Waterboards.ca.gov
- Division of Water Rights – Scott-Shasta Phone Line and Email
Phone: (916) 327-3113
Email: DWR-ScottShastaDrought@Waterboards.ca.gov

What's Next?

State Water Board staff will review each groundwater LCS application. If staff identify errors, a need for additional information, or changes that need to be made, they will contact the applicant. Once staff determine the application is substantially complete, it will be posted as pending on the State Water Board's [Local Cooperative website](#) for the Scott River and Shasta River watersheds emergency regulation.

Local Cooperative Solution for the Scott River Watershed

My family and I own and operate a 980 acre ranch in Scott Valley; [REDACTED]

[REDACTED]. Our operation consists of an organic dairy, beef ranch, and hay and pasture that we raise solely for our own livestock. As an organic livestock operation, we are required to have 30% of our feed come from pasture.

Our adjudicated water rights are as follows:

Big Slough

(2nd) 4.13 CFS (298 acres)

Greenview Town Ditch

(3rd) 2.63 CFS (118 acres)

Lower Kidder Creek

(4th) 3.42 CFS (171 acres)

(1st) 6.73 CFS (471 acres)

Wright and Fletcher Ditch (pre 1914)

(2nd) approx 10CFS (391 acres)

We are predominantly using our first priority rights to wells from lower Kidder Creek. We irrigate approximately 290 acres with wheel lines, big guns, K-lines, and pivots. Another 100 acres can be flood irrigated with water from [REDACTED] when water is available. We are using the 2020 irrigation season for our baseline.

Please reference the attached spreadsheet and field map for specifics on the following information:

We are meeting the 30% water reduction by converting some of our baseline crops to less water intensive crops. Fields 6 and 7 are dryland alfalfa and will be

irrigated for one crop this season as opposed to 3-4x like that of traditional alfalfa. We have combined fields 11 and previously 13 to be one whole section, field 11.

Monthly Water Usage in Acre Inches Per Field							
2025 Estimated Monthly Usage							
	April	May	June	July	August	September	October
Field 1: Alfalfa		40	40	40	40	40	40
Field 2: Pasture		48	48	48	48	48	48
Field 3: Pasture		14	14	14	14	14	14
Field 4: Fallow		0	0	0	0	0	0
Field 5: Pasture		353	353	353	353	353	353
Field 6: Dryland Alfalfa		113	113	0	0	0	0
Field 7: Dryland Alfalfa		124	124	0	0	0	0
Field 8a: Alfalfa/Sorghum		240	240	240	240	240	240
Field 8b: Alfalfa		240	240	240	240	240	240
Field 9: Spring Pasture	x	x	x	x			0
Field 10: Alfalfa		237	237	237	237	237	237
Field 11: Fallow		0	0	0	0	0	0
Field 12: Fallow		0	0	0	0	0	0
Acre Inches Crop Totals:	2025						
Total in Alfalfa:	3345						
Total in Dryland Alfalfa:	473						
Total in Pasture:	3168						
Total in Grain:	080						

Monthly Water Usage in Acre Inches Per Field									
2020:Baseline									
	April	May	June	July	August	September	October		
Field 1:Alfalfa	104	104	104	104	104	104	104		
Field 2: Alfalfa	48	48	48	48	48	48	48		
Field 3: Pasture	14	14	14	14	14	14	14		
Field 4: Pasture	24	24	24	24	24	24	24		
Field 5: Pasture	353	353	353	353	353	353	353		
Field 6: Alfalfa	84	84	84	84	84	84	84		
Field 7: Alfalfa	92	92	92	92	92	92	92		
Field 8: Alfalfa	412	412	412	412	412	412	412		
Field 9: Pasture	175	175	175	175	175	175	175		
Field 10: Alfalfa	232	232	232	232	232	232	232		
Field 11: Grain	84	84	84	0	0	0	0		
Field 12: Pasture	268	268	268	268	268	268	268		
Field 13: Grain	0	0	0	0	0	0	0	receiving no irrigation	
Crop Totals:	2020								
Total in Alfalfa:	6797								
Total in Pasture:	5841								
Total in Grain:	0								

Monthly Water Usage in Acre Inches Per Field							
2025 Estimated Monthly Usage							
	April	May	June	July	August	September	October
Field 1:Alfalfa		40	40	40	40	40	40
Field 2: Pasture		48	48	48	48	48	48
Field 3: Pasture		14	14	14	14	14	14
Field 4: Fallow		0	0	0	0	0	0
Field 5: Pasture		353	353	353	353	353	353
Field 6: Dryland Alfalfa		113	113	0	0	0	0
Field 7: Dryland Alfalfa		124	124	0	0	0	0
Field 8a: Alfalfa/Sorghum		240	240	240	240	240	240
Field 8b: Alfalfa		240	240	240	240	240	240
Field 9: Spring Pasture	x	x	x	x			0
Field 10: Alfalfa		237	237	237	237	237	237
Field 11: Fallow		0	0	0	0	0	0
Field 12: Fallow		0	0	0	0	0	0
Acre Inches Crop Totals:	2025						
Total in Alfalfa:	3345						
Total in Dryland Alfalfa:	473						
Total in Pasture:	3168						
Total in Grain:	0						

Additionally, we have continually strived to increase our irrigation efficiency through the years of operation:

- converted most of our land from wild flood irrigation to sprinklers (wheel lines) in the 1970s.
- Installed 2 center pivots in 2016 and 2020
- 2021 we replaced our 50 HP pump with a new pump and variable speed drive, which only pumps as much as the demand.
- Secured funding for purchase and installation of LEPA sprinkler systems, to be completed by 2026.

We will work with Chris Voigt with the Scott River Water Trust as our coordinating entity.

Calculating Baseline Irrigation Application Amounts for Scott Valley Irrigated Pasture

Scott Valley Agriculture Water Alliance

Updated 4/14/24

Sources:

1. California Water Exchange Center. Department of Water Resources. Monthly average precipitation at Fort Jones, CA. [Dam Profile for \(ca.gov\)](#)
2. Orloff, S., Harter, T., Snyder, R., and Hanson, B. UC Cooperative Extension Siskiyou County and LAWR UC Davis. [Alfalfa Water Use in the Scott Valley: Resolving the Discrepancy Between Theory and Practice](#). PowerPoint presentation. 2011-2012.
3. University of California Agriculture and Natural Resources. [Drought Tip: Field Irrigation Water Management in a Nutshell](#). September 2019.
4. Zaccaria, Daniele, PhD. Agriculture Water Management Specialist, UC Davis. Personal communication, 4/12/24.

Overview: Approximate irrigation baselines for Scott Valley irrigated pasture can be determined based on four factors:

1. The evapotranspiration (ET) of pasture (how much water the plants use) during growing season.
2. Rainfall occurring during the growing season (and resulting infiltrated rainfall into the crop root zone).
3. Soil moisture that can be accessed by the roots.
4. Irrigation application efficiency rates for different irrigation systems.

Approximate baseline for water application can be determined by dividing crop ET (minus effective rainfall, minus existing stored soil moisture) by the application efficiency rate.

Establishing Pasture evapotranspiration (ET): Pasture ET was determined in 8 fields across 4 years in the Scott and Shasta valleys by Orloff et al. (2007-2010). See Figure 1 below. Because “Reference ET” (far right column) is a determination of well-watered, unstressed, irrigated grass pasture, it can be used synonymously with “pasture ET.” The average cumulative pasture ET for Scott and Shasta was on average 40 inches for the growing season over the course of the study period. This is the amount of water the irrigated grass pasture used during the growing season under well-watered, non-stressed conditions.

Region	Site	Year	Age of Alfalfa	Seasonal ET (inches)	Reference ET (inches)
Scott Valley/Shasta Valley	EN	2007	2	39.6	44
	EN	2008	3	32.8	42.6
	EN	2009	4	33.8	40.4
	FI	2009	5	36.1	37.4
	SH	2009	4	38.8	40.4
	AP	2010	5	37.3	37.4
	FI	2010	2	34.7	37.4
	FA	2010	6	38.8	41.1
				Ave: 36.5	Ave. 40.1

Figure 1. Orloff et al recordings of Alfalfa ET and Reference grass ET (ET_o) for Scott and Shasta valleys at 8 sites between 2007-2010.

Establishing application efficiency: The UC Davis Drought Tips Fact Sheet titled “Irrigation water management in a nutshell” outlines application efficiency rates for various irrigation systems. See Figure 2 below. Efficiencies

range from 90 percent (LEPA pivot systems) to 45 percent (furrow irrigation). “Side-roll” refers to “wheel line” systems.

Box 1 – Application Efficiency

Some extra water must be added to the soil in addition to the amount needed to adequately replenish water used by the crop since the last irrigation or rainfall. Such extra water is required to compensate for losses from the irrigation systems that occur through deep percolation, surface runoff, evaporation, wind-drift, and nonuniform water application. Because of losses occurring during irrigation application, application efficiency is always less than 100 percent.

Application efficiency is defined as the ratio of **water beneficially used by the crop to the total water applied**, where “beneficial use” includes water used for crop evapotranspiration, frost protection, salt leaching, canopy cooling, etc. Application efficiency provides an indication of how well an irrigation system performs its objective of applying water in adequate amounts and uniformly throughout the field, and allowing it to be stored in the crop root zone to meet the crop water requirements. No irrigation system can achieve 100% application efficiency, but adequate system design, regular maintenance, and careful irrigation management can minimize water losses, thus increasing the relative portion of applied water that is beneficially used by plants. Some irrigation methods perform relatively better than others in terms of the water application rate matching the soil intake rate and for the evenness with which water is distributed throughout the field (distribution uniformity). Table 3 shows potential values of application efficiency for properly-designed and well-managed irrigation systems.

Table 3. Ranges of potential application efficiency (Eff_A) of well-designed and well-managed irrigation systems

Irrigation method/system	Potential Eff _A (%)
Sprinkler	
LEPA	80–90
linear move	75–85
center pivot	75–90
traveling gun	65–75
side-roll	65–85
hand-move	65–85
solid-set	70–85
Surface	
furrow (conventional)	45–65
furrow (surge)	55–75
furrow (with tailwater reuse)	60–80
basin	60–75
precision level basin	65–80
Microirrigation	
bubbler (low head)	80–90
microspray	85–90
micropoint source	85–90
microline source	85–90
surface drip	85–95
subsurface drip	90–95

Source: Adapted from Howell 2003.

Figure 2. Application efficiency rates as found in UC-ANR Drought Tips Fact Sheet published in 2019.

Establishing total water needs of pasture: The equation for calculating total water needs during the growing season is: pasture ET (which Orloff et al established as 40 inches during the growing season) minus “effective rainfall” (the rain that percolates and doesn’t run-off), minus stored soil moisture.

Establishing effective rainfall for Scott Valley during growing season: According to California Data Exchange Center, average rainfall occurring during the growing season is 5.33 inches. Orloff et al determined that 60% of total in-season rainfall percolates the soil. Therefore, $5.33 \times .60 = 3$ inches.

Establishing water supplied through existing soil moisture: Pasture roots systems can vary, but 12 inches can be used as an estimate. Orloff determined root systems extract about 2 inches of water per foot of roots.

Calculating applied water needs for pasture: ET – effective rainfall – soil moisture / application efficiency rate.

Scenario 1: pasture irrigated by wheel line sprinkler system.

Crop ET: 40 inches

Total water need (subtracting rain and soil moisture): 40 inches – 3 inches – 2 inches = 35 inches.

Application efficiency rate: 75%

Total irrigation water needed for growing season $(35 / .75) = 46.7$ inches

Scenario 2: pasture irrigated by center pivot sprinkler system.

Crop ET: 40 inches

Total water need (subtracting rain and soil moisture): 40 inches – 3 inches – 2 inches = 35 inches.

Application efficiency rate: 80%

Total irrigation water needed for growing season $(35 / .80) = 41.2$ inches

Scenario 3: pasture irrigated by flood irrigation (basin irrigation)*

Crop ET: 40 inches

Total water need (subtracting rain and soil moisture): 40 inches – 3 inches – 2 inches = 35 inches.

Application efficiency rate: 55%

Total irrigation water needed for growing season $(35 / .55) = 63.6$ inches

*Note that flood irrigation often applies more water, but has no wind drift and can have low evaporation loss. If runoff rates are low, then a high percentage of water unused as ET will percolate back into the water table.

Scenario 4: pasture corners irrigated by K-line or traveling gun.

Crop ET: 40 inches

Total water need (subtracting rain and soil moisture): 40 inches – 3 inches – 2 inches = 35 inches.

Application efficiency rate: 75%

Total irrigation water needed for growing season $(35 / .75) = 46.7$ inches



Scott River
Water Trust

P.O. Box 591 ~ Etna, CA 96027
530-643-2395 scottwatertrust@gmail.com

Month, Day, Year
04/18/2024

**APPLICATION TO SCOTT RIVER WATER TRUST AS COORDINATING ENTITY for the SCOTT VALLEY
GROUNDWATER REDUCTION LOCAL COOPERATIVE SOLUTION**

The following request is being submitted pursuant to Section 875, , subdivision (f)(4)(C)[Scott River] of the Scott-Shasta Drought Emergency Regulation of the State Water Resources Control Board (SWB). The purpose of this Local Cooperative Solution (LCS) is to document the applicant's proposed reduction in use of overlying or adjudicated groundwater use by a certain amount over the entire irrigation season.

Applicant's Name: Connor Martin

Address: [REDACTED]

Phone: [REDACTED] E-mail: [REDACTED]

Owner of property (if different): Charles Martin

Leaseholder of property (if different):

Other Contact Info:

Total irrigated acres to be included in this agreement: 310

► Attach curtailment plan and map of properties to be included in plan

I agree to pay SRWT for its time to help prepare my water reduction plan at the rate of \$75/hr. When your LCS plan is complete, a Binding Agreement will need to be signed with the SRWT as your designated Coordinating Entity. SRWT will need to verify that the plan's actions are being met.

Connor Martin

Connor Martin (Apr 18, 2025 15:48 PDT)

► Applicant signature

04/18/2025

Date:

Christopher Voigt

Scott River Water Trust signature

Date: 4/14/2025



Scott River Water Trust

P.O. Box 591 ~ Etna, CA 96027
530-643-2395 scottwatertrust@gmail.com

Month, Day, Year
04/18/2025

Binding Agreement

Contractor Contact Information:

Business:	Scott River Water Trust
Contact Person:	Chris Voigt
Address:	9933 South State Highway 3, Callahan CA
Phone:	(916) 396-0131
Email:	chrisb.voigt@gmail.com

Landowner Contact Information:

Business:	Martin Dairy
Contact Person:	Connor Martin
Address:	
Phone:	
Email:	

Background

On December 19, 2023, the State Water Board adopted a new emergency regulation for the Scott and Shasta River Watersheds. The Office of Administrative Law approved the emergency regulation on January 27, 2025 and is in effect for one year, unless re-adopted or rescinded. Under the 2021 drought emergency regulation instated by the State Water Resources Control Board (SWRCB) that established drought emergency minimum flows in the Scott River, a Local Cooperative Solution (LCS) may be proposed by individuals or groups to submit by petition to the Deputy Director of the SWRCB as an alternative means of reducing water use to meet or preserve drought emergency minimum flows and provide fishery benefits, in lieu of curtailment. This binding agreement between the (Landowner) Scott River Water Trust (SRWT) will monitor the SRWCB approved LCS to achieve 1) a net reduction of water use of 30 percent throughout the irrigation season; and 2) a monthly reduction of at least 30 percent in the July through October 31 period, as compared to 2020, 2021, 2022 or 2023.

Recitals

1. *Local cooperative solutions by individuals or groups may be proposed by petition to the Deputy Director as an alternative means of reducing water use to meet or preserve drought emergency minimum flows, or to provide other fishery benefits (such as cold-water refugia, localized fish passage, or redd protection), in lieu of curtailment as described in this section.*

(A) Petitions to implement local cooperative solutions that coordinate diversions, share water, strategically manage groundwater and/or surface water for fisheries benefits, reduce annual water use, or engage in similar activities may be submitted to the Deputy Director at any time, except as noted in subsection (f)(4)(D)(ii).

(G) A coordinating entity for the purposes of this section shall refer to an entity which possesses the expertise and ability to evaluate and require performance of the commitments made in a local cooperative solution, and which commits that:

(i) Evaluation of local cooperative solution proposals and inspections shall be conducted by representatives who lack a financial or close personal interest in the outcome, and

(ii) Information collected on compliance with local cooperative solutions is provided to the State Water Board monthly and upon request. The entity shall undertake data collection (including metering data) and inspections, either by itself or in coordination with State Water Board staff, sufficient to ensure implementation of local cooperative solutions, including inspection or data collection targeted within two weeks of completion of commitments to cease pumping as of a date certain.

2. *For overlying or adjudicated groundwater diversions for irrigated agriculture described under in section 875.5, subdivision (a)(1)(A)(ix) [Scott River] or section 875.5, subdivision (b)(1)(C) [Shasta River] the Deputy Director may approve a groundwater basin-wide, groundwater-sub-basin-wide, or any number of individual local cooperative solutions where:*

(i) The proposal may be based on a binding agreement made with a coordinating entity with primary responsibility to verify implementation of the local cooperative solution.

(ii) For individual proposals, the proposal must be submitted no later than April 15 and must be implemented during the entirety of the irrigation season (including during pendency of approval), unless the proponent withdraws.

(iii) The proposal includes a description of metering in place for groundwater well extractions, and a proposal to meter and record such extractions daily and report monthly to the Deputy Director or the coordinating entity, as applicable, except as described below. The State Water Board has funding and technical support available to

support some amount of metering, and those interested in such assistance are encouraged to promptly contact the State Water Board.

3. For percent-based reduction in pumping local cooperative solutions:

a. For the Scott River: The proposal provides at least:

- (i) A net reduction of water use of 30 percent throughout the irrigation season (April 1 – October 31); and*
- (ii) A monthly reduction of 30 percent in the July through October time period.*

- b. The relevant water use reduction shall generally be based on a comparison to the 2020, 2021, 2022, or 2023 irrigation season, and may be demonstrated by evidence that provides a reasonable assurance that the change in farming practice or other action results in at least the relevant proportionate reduction in water use. Such evidence may include but is not limited to: pumping reports; actions that will be taken to reduce water use; estimation of water saved from conservation measures or changes in irrigation or planting decisions; and electric bills. However, if evidence for the amount of water applied for the 2020, 2021, 2022, or 2023 irrigation seasons indicates a base rate of applied water that is higher than 33 inches per year for alfalfa, 14 inches per year for grain, or 30 inches per year for pasture, then the base rate of applied water shall be the aforementioned values unless the proponent makes an additional showing that a higher base rate number is an appropriate comparison in light of relevant information that can include but is not limited to multi-year practices, soil type, and irrigation methods.*

Proposed Local Cooperative Solution: *(Specific action plan to be completed by landowner, see attached LCS application form and/or specific landowner curtailment plan)*

The Landowner is required to adhere to the LCS, as approved by SWRCB. The Landowner has requested that SRWT serve as the coordinating entity. As such, both parties agree to the following:

- For the duration of this binding agreement where SRWT is the coordinating entity, the Landowner shall give SRWT the right to reasonably access the included parcels for the limited purpose of verifying execution of the LCS. Any individual not directly employed or contracted by SRWT shall provide pre-notification to, and shall obtain approval by the Landowner before accessing the property,
- SRWT will strive to notify the Landowner a day in advance of visiting the parcels and shall provide the Landowner or designee the ability to participate in monitoring activities,
- It is anticipated that SRWT representatives will visit the property approximately twice per month to monitor the approved LCS, unless inadequacies are discovered, in which case additional field visits will occur until inadequacies are rectified. A monitoring inspection may include verification of any or all of the actions described in the conservation plan and may include inspection checklist/notes/reports and photo verification,
- In the (unexpected) event that staffing levels at SRWT are insufficient, SRWT may coordinate with the Landowner and State Water Board staff to allow State Water Board staff to conduct some of the inspections,
- SRWT will submit the information regarding the verification materials and actions described in this agreement, and conservation plan incorporated by reference, to the State Water Board upon request, for the purposes of verifying compliance with the LCS,
- This binding agreement is not intended to preclude, harm, or otherwise interfere with the landowner's ability to secure any funding to mitigate the financial impacts imposed by the emergency regulation or proposed conservation practices. SRWT supports the use of funding programs to ameliorate the costs of implementing the conservation practices described in the proposed conservation plan: planning and cooperation under a voluntary LCS should not undermine the ability to receive such funding,
- This binding agreement may be terminated by either party at any time. Both parties agree to take reasonable measures to resolve any concerns related to the performance of the LCS, negative interpersonal interaction, or any unforeseen circumstance prior to invoking termination,
- As the irrigation season unfolds, there may be reason to change the terms of the LCS or this binding agreement with respect to its implementation and verification. Any such changes to the LCS or service agreement will need to be agreed upon by the landowner and SRWCB requests SRWT assistance with an updated LCS, the SRWT and Landowner will enter into a new Binding Agreement and,

Payment

\$75.00 per hour for initial consultation and \$75.00 per hour for all services rendered after signing of the binding agreement.

Expenses

The Landowner will reimburse SRWT for expenses that are attributable directly to work performed under this Agreement. Any expenses incurred will be approved by the Landowner beforehand. SRWT will submit an itemized statement of Contractor's expenses attached with invoicing.

Terms of Payment

Upon completion of SRWT services under this binding agreement, SRWT will submit an invoice. The Landowner will pay SRWT the compensation described within 30 days of receiving SRWT's invoice.

Term of Agreement

This agreement will become effective when signed by both parties and will terminate on:

- November 1, 2025, or
- The date a party terminates the binding agreement.
- Monitoring information will be collected by the SRWT and shared with State Water Board as a field report in accordance with their reporting schedule or upon request
- SRWT is not authorized to and will not distribute data or other information regarding work done under this contract to any third party without previous written approval by the Landowner
- Landowner agrees that water saved under the LCS will not be transferred to parcels not included under the LCS, and Landowner will not knowingly or intentionally otherwise take actions outside of the LCS that diminish, in any material way, the overall thirty percent reduction established by the actions described in the LCS

Signatures

Christopher Voigt

SRWT Representative

Connor Martin

Connor Martin (Apr 18, 2025 06:42 PDT)

Landowner

Signature:

Connor Martin

Connor Martin (Apr 18, 2025 06:42 PDT)

Email:

[REDACTED]