



## Item 4

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# Nonpoint Source Grants in the North Coast:

## Highlights from the Past and Opportunities for the Future

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Rebecca Fitzgerald  
Senior Environmental Scientist  
June 15, 2016  
Santa Rosa, CA





# Presentation Outline

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## 1. Overview of grant programs

## 2. Highlights of past & current grants

- **Shasta River Watershed Grants**  
Adriane Garayalde with Shasta Valley RCD
- **Fish Friendly Farming Grants**  
Laurel Marcus with CA Land Stewardship Institute
- **Laguna de Santa Rosa Dairy Grants**  
William Hart with Gold Ridge RCD

## 3. Future grant priorities



# **Nonpoint Source Grant Programs**

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## **Grants administered by Regional Water Board staff:**

- **Clean Water Act Section 319(h) Nonpoint Source Grant Program**
- **Timber Regulation and Forest Restoration Grant Program**

## **Other grant programs:**

- **Proposition 1: Water Quality, Supply, and Infrastructure Act of 2014**



# 319(h) NPS Grants

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## **\$4 mil per year for California projects**

- **U.S. EPA awards grant to Water Boards, who then administers and awards grants to projects**

## **Eligible projects:**

- **Implementation of on-the-ground management measures to address NPS pollution**
- **Planning and assessment projects (funded in previous years)**
- **Projects located in watersheds with a watershed-based plan**



# 319(h) NPS Grants

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## Watershed-based plans include 9 key elements

1. Identification of **causes and sources** of impairment
2. Expected **load reductions** from management measures
3. Description of **management measures**
4. Estimate of **financial costs** and technical assistance needed
5. Description of **education and outreach** activities
6. **Schedule** for implementing management measures
7. Description of **measurable milestones**
8. Criteria for **evaluating progress**
9. **Monitoring** to determine if progress is being made

*Often Available in a TMDL*



# 319(h) NPS Grants

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7. Description of **measurable milestones**
8. Criteria for **evaluating progress**
9. **Monitoring** to determine if progress is being made

*Available in a Planning Document*



# Timber Fund Grants

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## **\$2 mil per year for California projects**

- **Funds provided by 1% sales tax on lumber products**

## **Eligible projects:**

- **Implementation of forest management measures to improve water quality**
- **Projects located on forested lands with  $\geq 10\%$  canopy cover**
- **Projects located in impaired or unimpaired watersheds**



# 319(h) & Timber Grants

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## Eligible entities:

- Nonprofit 501(c)(3) organizations
- Local, state, or federal public agencies
- Federally recognized tribes
- Public colleges

## Solicitation and Selection Process:

- Request for proposals – Aug/Sept
- Concept proposals – Oct/Nov
- Full proposals – Jan
- Selection – April/May

## Grant Administration





# Other Grant Programs

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## Proposition 1: Water Quality, Supply, and Infrastructure Act of 2014

- **\$7.545 billion available statewide**
- **Administered by the State Water Board and other state agencies**

## Grant Information

- **Funding Fairs**
- **Attachment 1**

### Next Funding Fair

July 26, 2016

Redding Library

1100 Parkview Ave

Redding, CA

CA Financing Coordinating Committee

[www.cfcc.ca.gov](http://www.cfcc.ca.gov)



# Last 10 Years

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**\$13,880,711 provided in 319(h) & Timber Fund grants since 2006**

**See Attachment 2 for a list of grants by watershed**

## **New 2016 grants**

<b>Mendocino County road upgrades</b>	<b>\$800,000</b>
<b>Scott River stream bank restoration</b>	<b>\$333,626</b>
<b>Shasta River riparian fencing &amp; planting</b>	<b>\$340,760</b>

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**\$15,355,097**



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# Highlights of Past & Current Grants

## Shasta River Watershed

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**Adriane Garayalde**  
**District Administrator**  
**Shasta Valley Resource Conservation District**

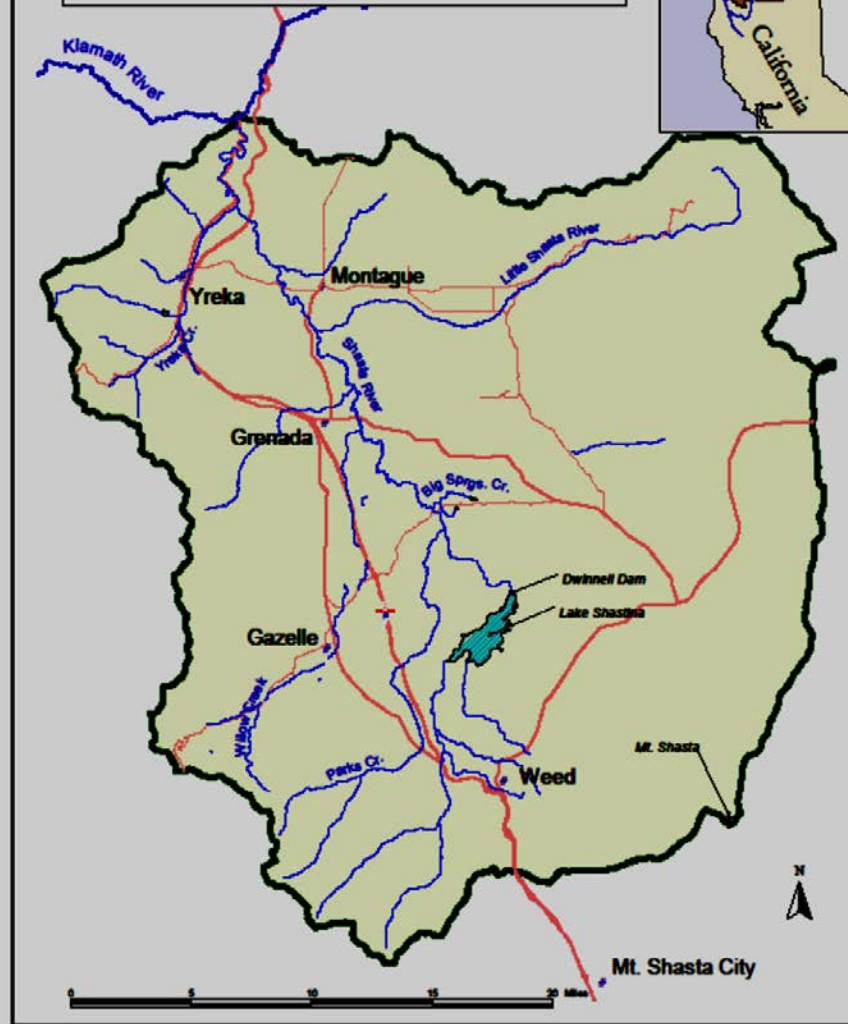


# Shasta River Water Quality Improvement Projects

A Presentation to the  
North Coast Water Quality  
Control Board  
June 2016



# Shasta River Watershed





# Shasta River TMDL

Impoundment Removal



## GOALS

Increase dissolved oxygen

Reduce water temperature

Tailwater Management



Fencing & Stockwater



On farm efficiency

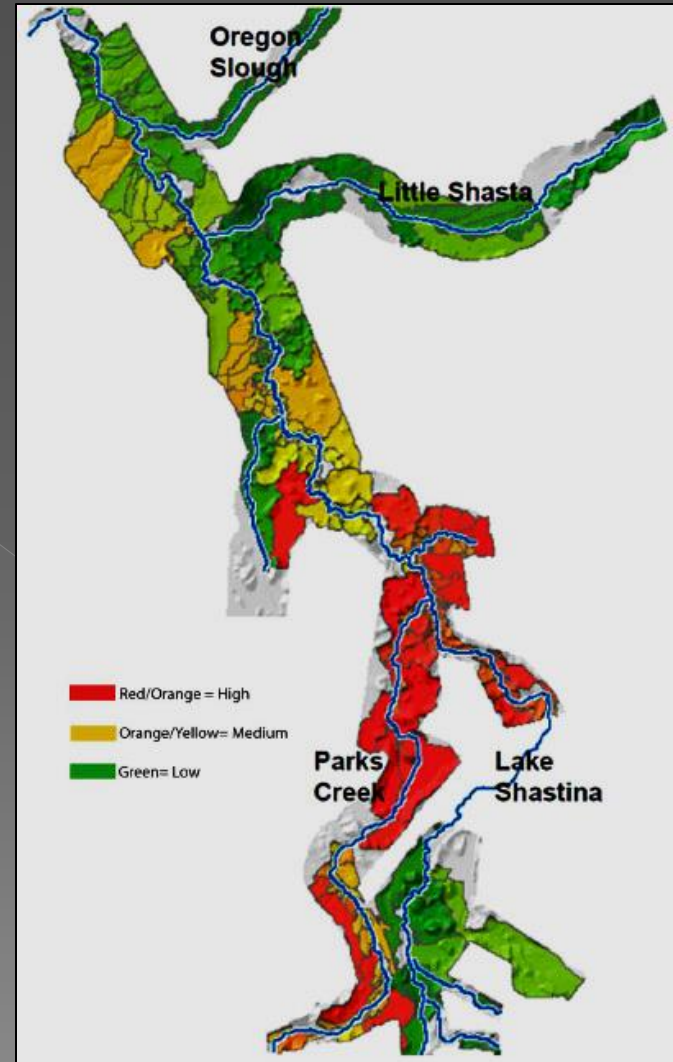


Riparian Planting



# Tailwater Program

*Goal: Keep warm water out and cold water in.*







## Meamber Tailwater Capture Pond & Re-use Project



# Hidden Valley Ranch - Bunkhouse

499 ac-ft



# Tailwater Projects Implemented (2008-2015)

- Shasta Big Springs Ranch North Ditch Head gate and Water Control Structure
- Meamber Tailwater Re-use Improvement Project
- Freeman Ranch Pipeline Efficiency Project
- Hole in the Ground Ranch Ditch Maintenance Project
- Kuck River Ranch Tailwater Re-use Project
- Shasta River Water Association tailwater Ditch Rehabilitation Project
- Lemos Tailwater Re-use Improvement Project
- Hidden Valley Westside Pipeline Efficiency Project
- Hidden Valley Bunkhouse Pipeline Efficiency Project
- Meamber Pipeline Efficiency Project
- Hidden Valley Riparian Buffer Project
- Shasta River Water Association Turn-out and Lateral Replacement



September 2011



# Hidden Valley Riparian

October 2015





Typical Results –Herbaceous response in first season.  
Woody response (if any) readily apparent after ~ 15 years.  
Goals—bank stabilization, filter strip and shade



*Shasta River near (RM 16)  
1994 and 2011. Fenced 1994*

# BENEFITS OF SVRCD PROJECTS

- 1) Increased efficiency and water conservation users in Shasta Valley . Helps ensure the viability of our ranching heritage.
- 2) Reduced impoundments and improved water quality to help meet Shasta River TMDL and Coho recovery objectives.
- 3) Removed barriers to fish passage, providing year round passage for all life stages, to meet Coho recovery objectives.
- 4) Reduced and reused warm runoff (tailwater), to help meet TMDL and Coho recovery objectives.
- 5) Demonstrated collaborative efforts of multiple stakeholders to achieve cooperation and successful outcomes.
- 6) Over \$16 million dollars in funding has provided economic opportunities for local contractors and businesses.
- 7) Increased awareness and education of conservation issues for landowners and community.

*Opened the opportunity to do additional projects  
to improve water quality!*

## **Upcoming 319h Grant Projects**

- Build pasture berm to eliminate threats of tailwater return. (2/2017)
- Connect an upland spring to the river. (12/2016 )
- Diversion upgrade, efficiency improvements and large wood installation at a cold water spring (10/2016)
- Fencing and stockwater systems. Bogus Creek and Shasta River.

# On to the Future...

## *Implementation of the Stewardship Program*

### Provides:

- A framework for an adaptive management method to evaluate progress toward water quality goals.
- A Shasta River Stewardship Report...a living document to report stewardship activities and accomplishments
- A coordinated, voluntary community, agency and tribal efforts to address water quality concerns
- A coordinated and defined method to collect monitoring data and reporting status of progress in meeting water quality goals
- KBMP( public) site to the Stewardship Report and information
- KTAP registry for water quality improvement projects
- Retention of historical and current information for formal reporting to the Water Board on TMDL status
- A coordinator to organize the program and arrange informational sharing forums



# Thank You



Adriane Garayalde

Executive Director

*Shasta Valley Resource Conservation District*

530-905-1055

[www.svr.cd.org](http://www.svr.cd.org)





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# Highlights of Past & Current Grants

## Fish Friendly Farming

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**Laurel Marcus**  
**Executive Director**  
**California Land Stewardship Institute**

**CERTIFIED**



**FISH  
FRIENDLY  
FARMING**

**Laurel Marcus  
Executive Director  
Ca. Land Stewardship Institute  
550 Gateway Dr. #108  
Napa, CA. 94558  
707 253 1226  
Fish Friendly Farming®  
Environmental Certification**

Fish Friendly Farming Certification Program started in 1997. It was developed with input from a committee of growers and agencies including the North Coast Regional Water Quality Control Board.

Grapegrowers in Sonoma and Mendocino were interested in having a program that addressed federal and state environmental regulations, assisted growers in complying with these regulations and implemented ecological restoration and sediment reduction projects.

The FFF program incorporates the Clean Water Act/Porter Cologne Act, Endangered Species Act (for salmonids), State water rights laws, Fish and Game code and pesticide regulations.

The FFF program conservation measures and methodology is science-based and was peer reviewed

Fish Friendly Farming Environmental Certification focuses on implementation and measurable improvements. Professional one-on-one technical assistance to inventory and assess numerous features of the site. Produces a complete farm plan with maps

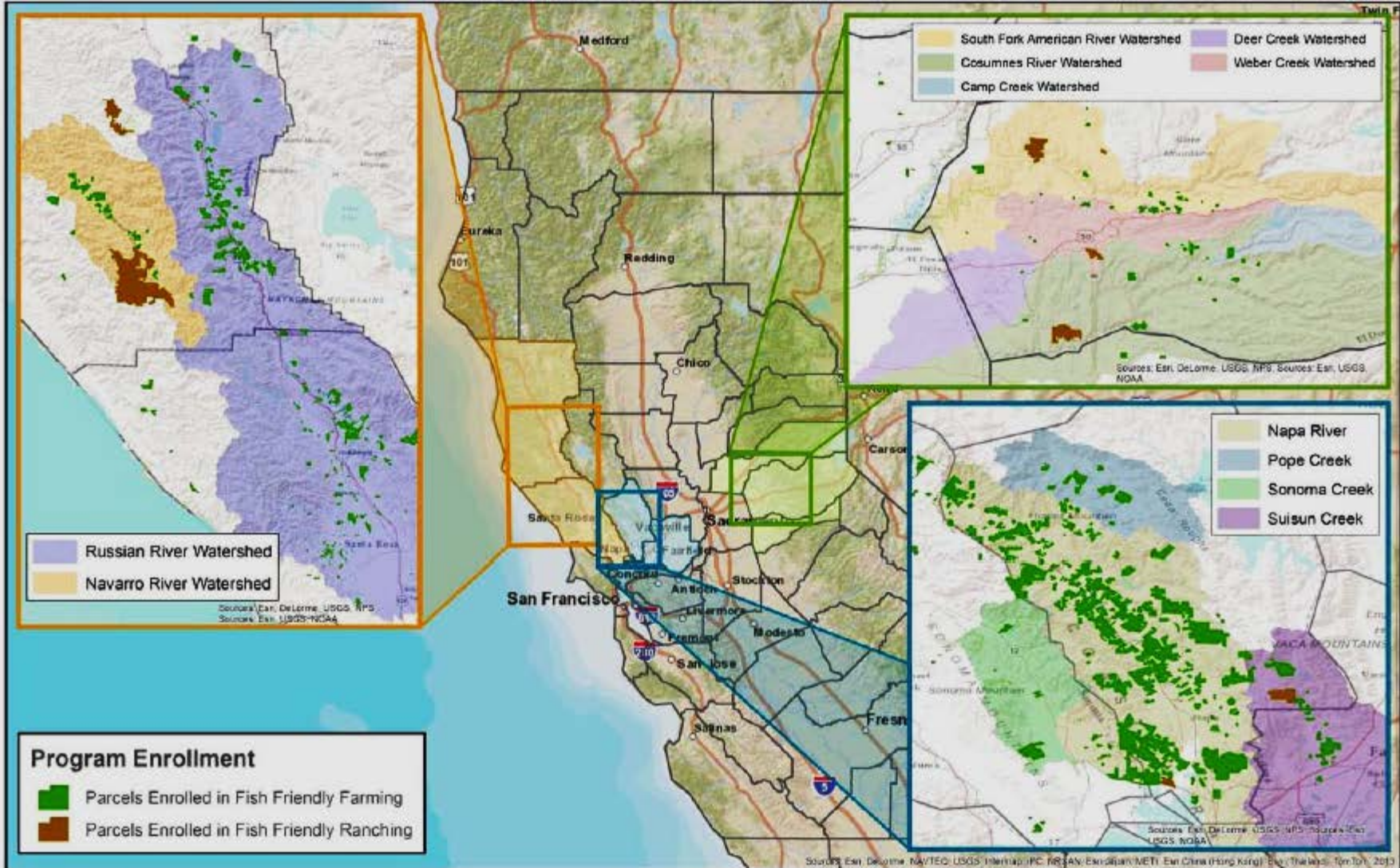
Certification is done by agencies – Regional Water Quality Control Board, the National Marine Fisheries Service, Agricultural Commissioner

Fish Friendly Farming is recognized in the Napa River and Sonoma Creek TMDLs as a compliance program. Application of FFF BMPs has been evaluated for sediment retention quantities under a number of 319 grants. These evaluations found that FFF BMPs retain 3 tons of sediment per acre from being washed into creeks.

Benefits to landowners – design, permit and financial assistance for a variety of projects, green marketing ability, ongoing technical assistance, proposed as regulatory compliance for WDRs.

Two grants from the water board have funded the program in Region 1. In 2007 \$300,000 of a \$750,000 was for the FFF program in 4 counties including Sonoma and Mendocino Counties. In 2014 a \$250,750 grant was approved for the FFF program in the Navarro River watershed.





Total enrollment has reached over 140,000 acres statewide. The FFF program has assessed and improved 745 miles of dirt roads, 696 miles of blue-line creeks, 55 miles of river corridors and many more miles of ephemeral creeks. In addition to vineyards FFF also certifies fruit /nut orchards, row crops and rangeland. Over 35,500 acres are enrolled in the Fish Friendly Ranching program.

# **FISH FRIENDLY FARMING FARM CONSERVATION PLAN**

**Element I - General Site Features**

**Element II - New Vineyard Design**

**Element III - Managing the Existing Vineyard**

**Element IV - Major Replant Design**

**Element V - Roads**

**Element VI - Creek/River Corridors**

**Element VII- Photo-monitoring**

**Element VIII – Work Force and Community**

**Element IX – Business Practices**

**Element X – Green Initiatives**

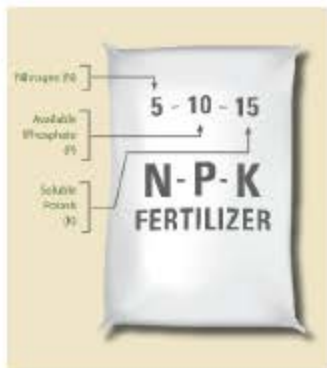


**INVENTORY AND ASSESS SOIL CONSERVATION AND EROSION CONTROL PRACTICES INCLUDING COVER CROPS, GRASS FILTER STRIPS, WINTERIZATION AND EROSION CONTROL INCLUDING ALL CONCENTRATED FLOW SOURCES**





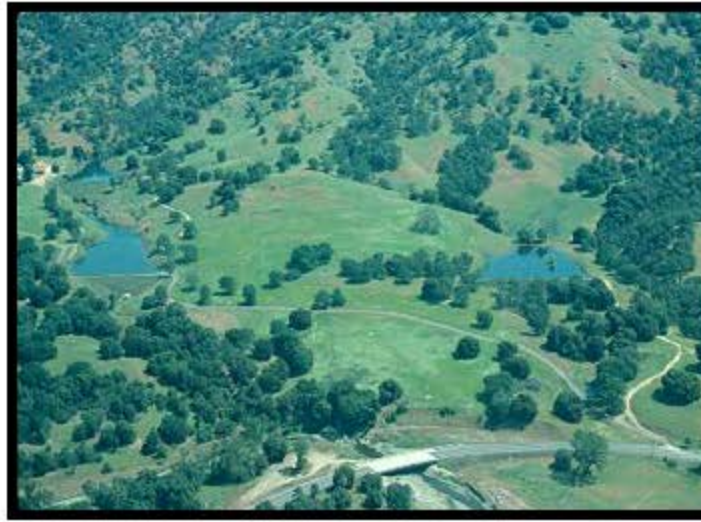
# INVENTORY AND ASSESS CHEMICAL USE, PEST AND DISEASE CONTROL PRACTICES, FERTILIZER USE, CHEMICAL STORAGE, MIX AND LOAD AND APPLICATION METHODS





Trade Name (Product Name)	Common Name (Chemical Name)	Use	Fish LC <sub>50</sub> (mg/L) for rainbow trout	Bird LD <sub>50</sub> (mg/kg)	Soil Half-life (days)	Pathway/Movement into water or groundwater	Notes
Chateau	Flumioxazin	H	Moderate toxicity, 2.3 mg/l	Low toxicity, >2250 mg/kg	22 days, non persistent	Low leachability	
Clutch	Clothianidin	I	Low, >104.2 mg/l	Moderate, 430 mg/kg	545 days, very persistent	High leachability	An insecticide used to control sucking and chewing pests on a range of crops
Copper Sulfate (Bordeaux mix)	Copper sulfate	F	High fish toxicity - 0.13	Low bird toxicity >2000	Copper will persist indefinitely and is bound to organic materials and clay.	Copper absorbed to clay can reach waterways through soil erosion	Eutypa treatment, powdery mildew, botrytis control.

# INVENTORY AND ASSESS WATER CONSERVATION PRACTICES IN IRRIGATION AND FROST CONTROL, WATER SUPPLY AND WATER RIGHTS







**Sediment is the main pollutant in northern California waterways and roads are the largest source of sediment. A complete road assessment and sediment source inventory is included in each farm plan**

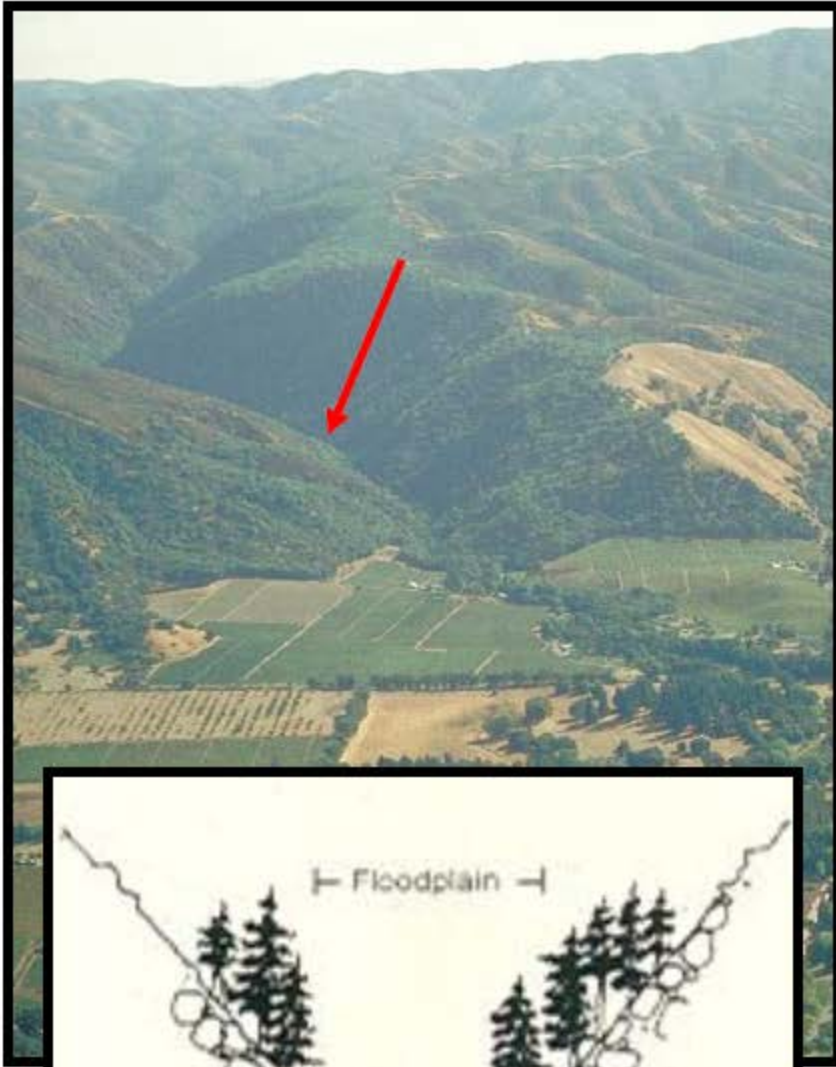
**ERODING INSLOPED ROAD**



**RE-GRADED OUTSLOPED ROAD WITH ROLLING DIPS**



# Confined Channel



## Assess condition of:

Vegetation

Channel features

Fish migration barriers

Water flow

Sediment

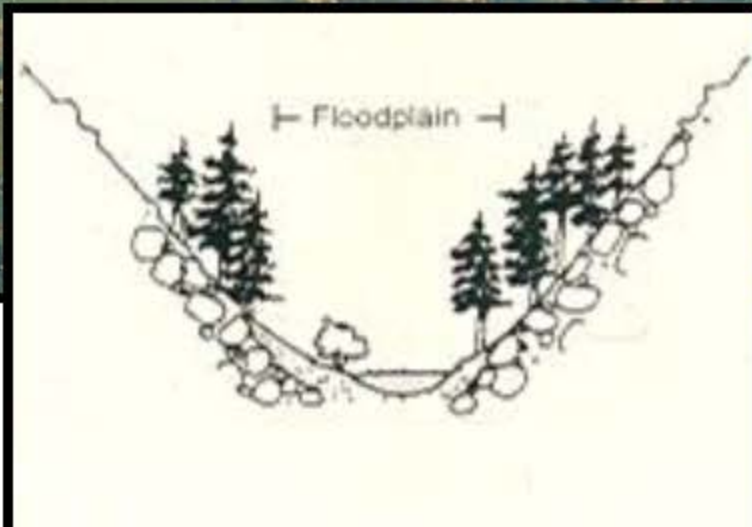
Roads and crossings, fish passage barriers

Hillslope stability

Management practices – past and present

Upstream and downstream conditions –  
reservoirs, urban development, slides, timber  
harvest

**Determination of restoration strategy**





## **BANKFULL CHANNEL**

**Assess Condition of:**

**Scour Channel Width**

**Corridor Width**

**Distance to Vineyard From Scour Channel Edge**

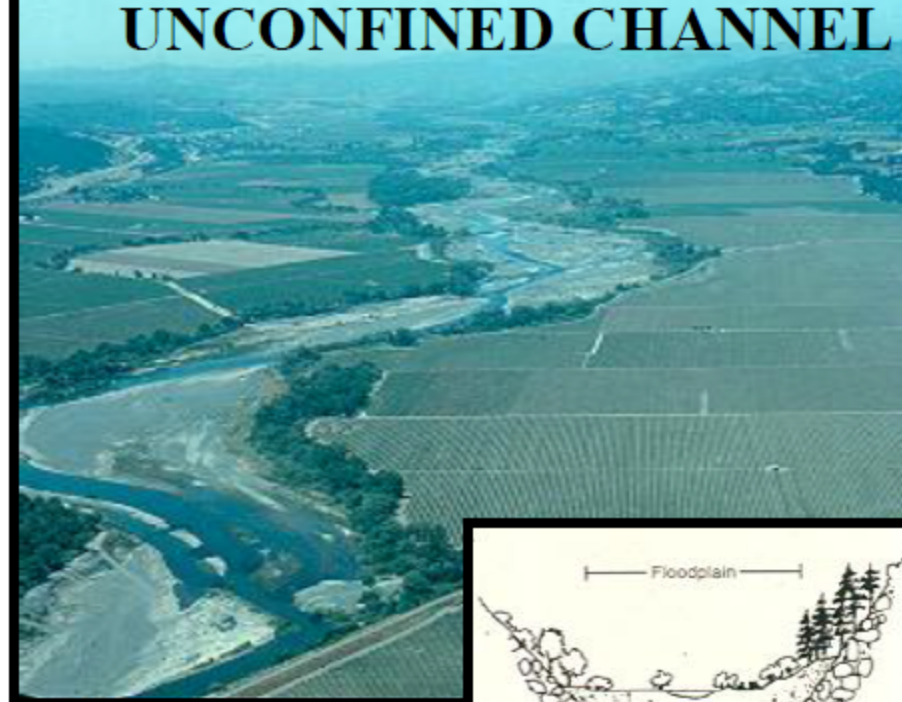
**Distance to Vineyard From Corridor Edge**

**Bank Heights**

**Vegetation Type for Outside Edge of Corridor**

**Vegetation Type for Edge of Scour Channel**

## **UNCONFINED CHANNEL**



**Summer Water Features**

**Stream Bottom Features**

**Flooding Areas and Frequency**

**Changes Over Time**

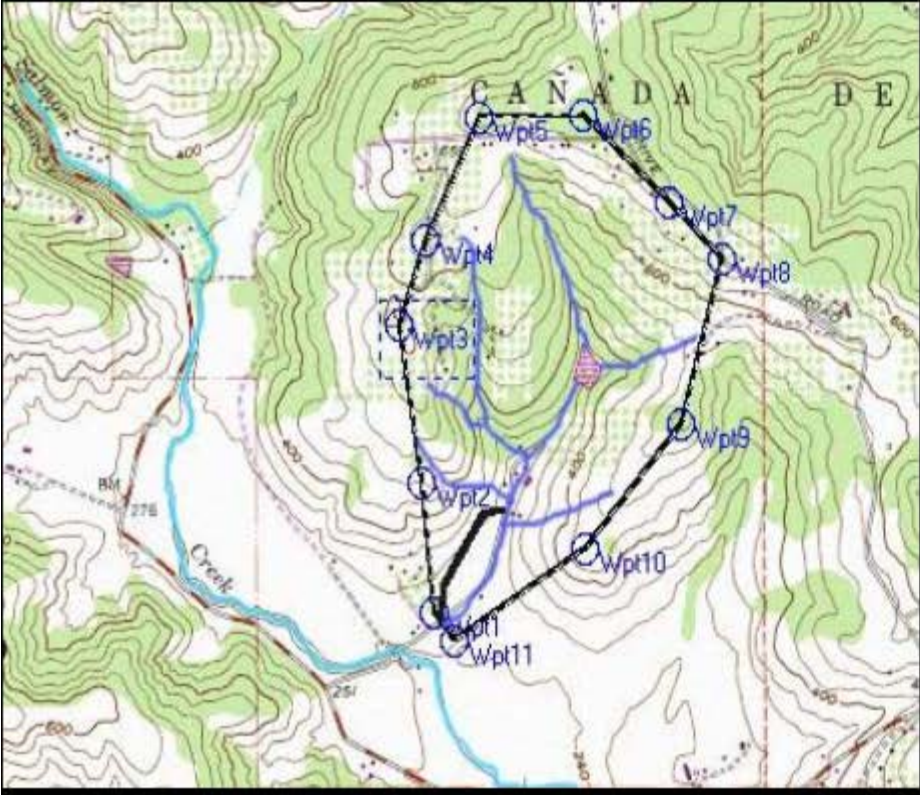
**Upstream/Downstream Conditions**

**Primary Management Practices**

**Corridor Condition**

**Determine needed corridor width and restoration strategy**





**BLACK LINE INDICATES CREEK ON FARM SITE**

**EPHEMERAL TRIBUTARIES ARE OUTLINED IN DARK BLUE TO DEFINE SUBWATERSHED**

**SUBWATERSHED OF CREEK IS OUTLINED AND ACREAGE IS CALCULATED TO DETERMINE RESTORATION CORRIDOR SIZE**

**BANKFULL CHANNEL WIDTH , CORRIDOR WIDTH, PROXIMITY OF VINEYARD AND BANK HEIGHTS ARE ALL MEASURED**



**ECOLOGICAL  
EVALUATION OF  
RIPARIAN CORRIDOR  
INCLUDING EXTENT  
OF INVASIVE NON-  
NATIVE PLANTS**



**BLUE PERIWINKLE OR VINCA MAJOR**



**HIMALAYAN BLACKBERRY**



# INVASIVE NON-NATIVE PLANT REMOVAL



Arundo donax  
Removal



Tree of heaven removal



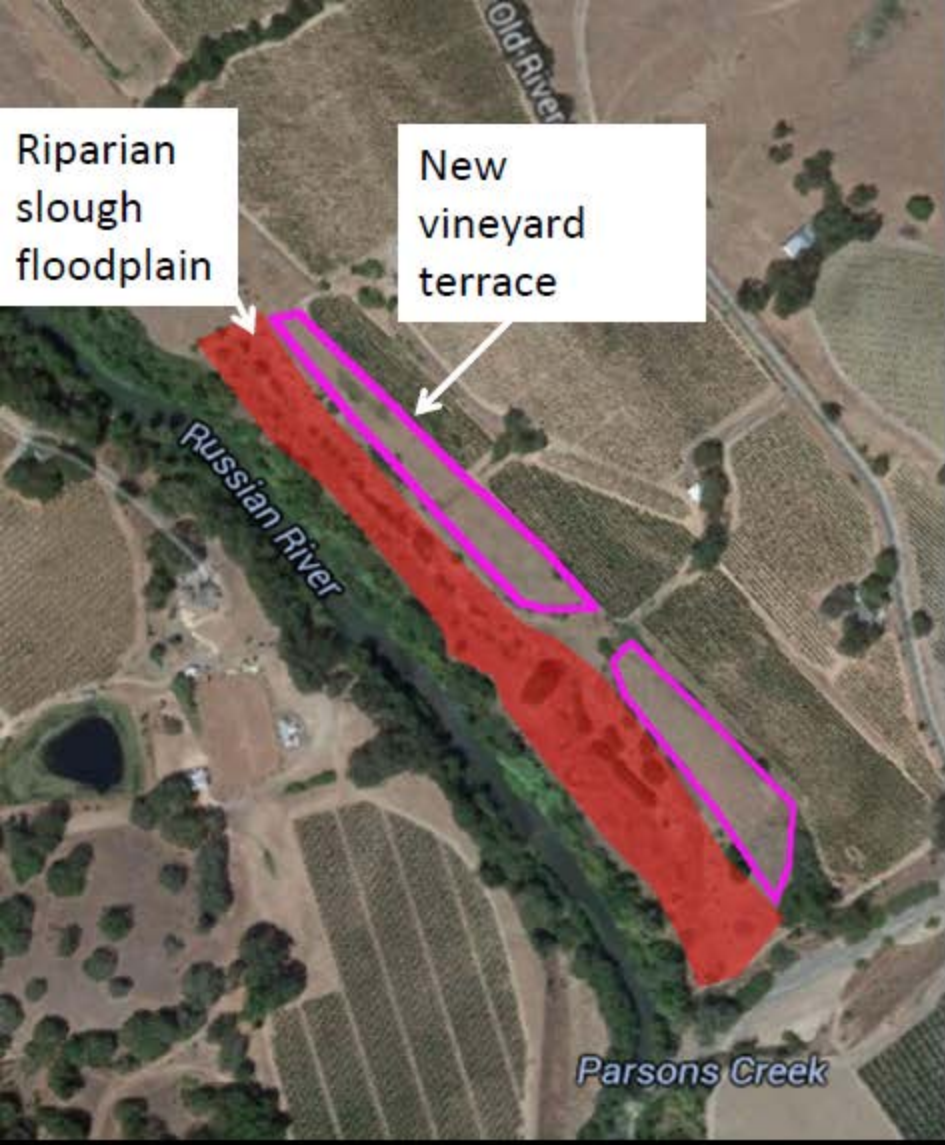
Eucalyptus removal



Native plant revegetation







Creation of riparian slough, floodplain and new vineyard terrace. Addresses river channel entrenchment and future climate conditions



Before 2002 project



Grading for 2002 project



Revegetation



Successful establishment of riparian slough and floodplain



# Changes to Water Supply for Frost Protection to Reduce Effects on Salmonids



With the NRCS and growers built \$5.1 million in off-stream ponds. Can fill during the day and reduce the demand from the stream system during the frost event



Growers learning to take a discharge measurement



Established stream flow monitoring program with growers to coordinate and change diversions.



Map of gage network used to determine effect of each diversion and on-stream reservoir on stream flow and need to coordinate diversion to protect salmonids



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# **Highlights of Past & Current Grants**

## **Laguna de Santa Rosa Dairy Grant**

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**William Hart**  
**Project Manager**  
**Gold Ridge Resource Conservation District**



# Laguna de Santa Rosa Dairy Enhancement Program





# Laguna Dairy Enhancement



- Reduce nutrient loading to the Laguna de Santa Rosa watershed by funding priority improvements on dairies.
  - Nutrient Management
  - Technical Assistance & Education
  - Implementation of priority projects

# Deliverables

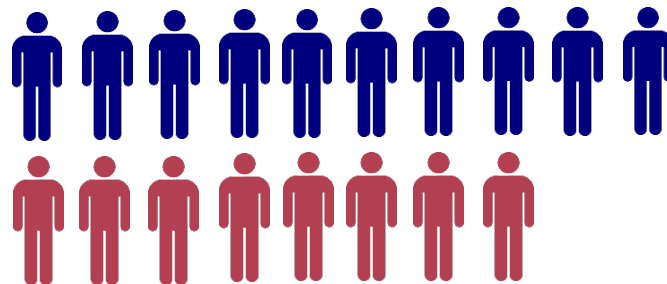
- Technical Advisory Group
- Education and Outreach
- Nutrient Plan Design / Development
- Implementation of Prioritized NPS Pollution Prevention Projects



# Comprehensive Nutrient Management Plans (CNMPs)

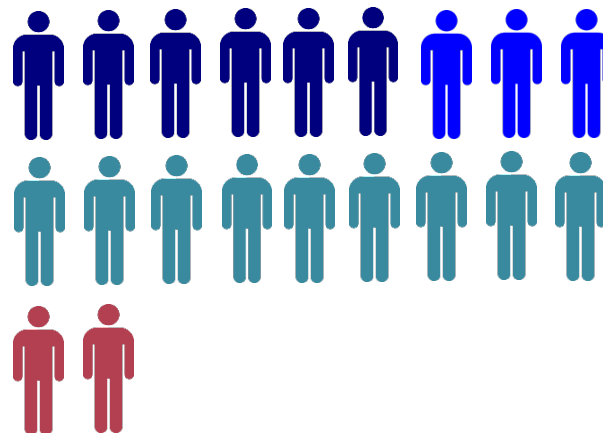
## Before:

- 18 Dairies
  - 10 with CNMPs
  - 8 without a plan

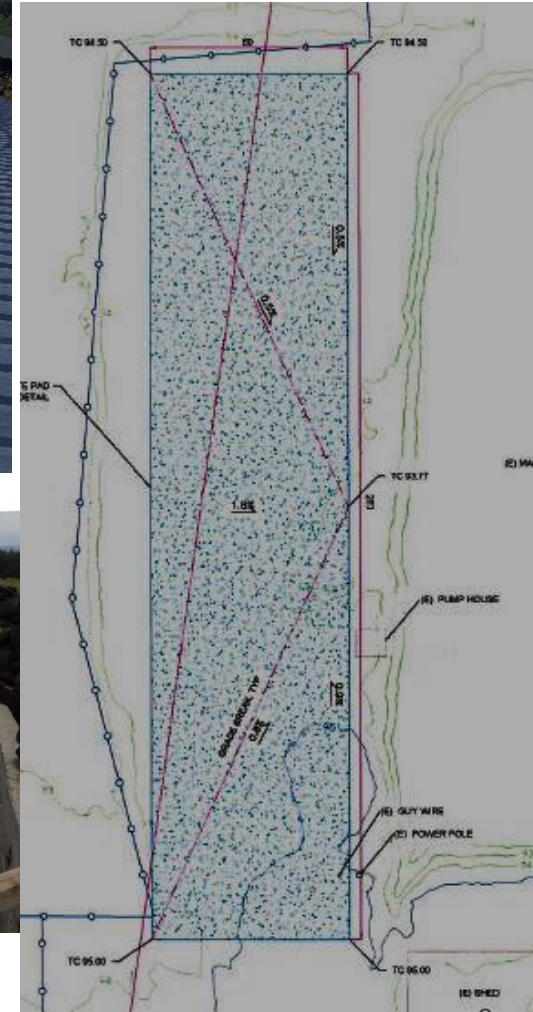


## After:

- 20 Dairies
  - 6 with CNMPs existing
  - 9 new CNMPs
  - 3 with CNMPs existing and amended
  - 2 without a plan

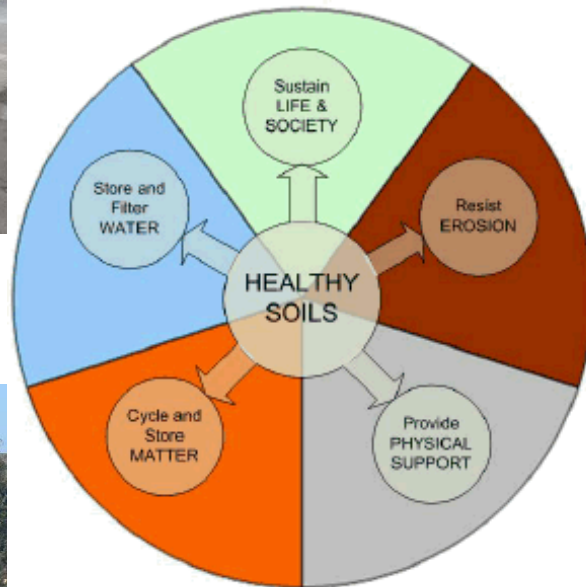


# Types of Projects





# Projects in the works





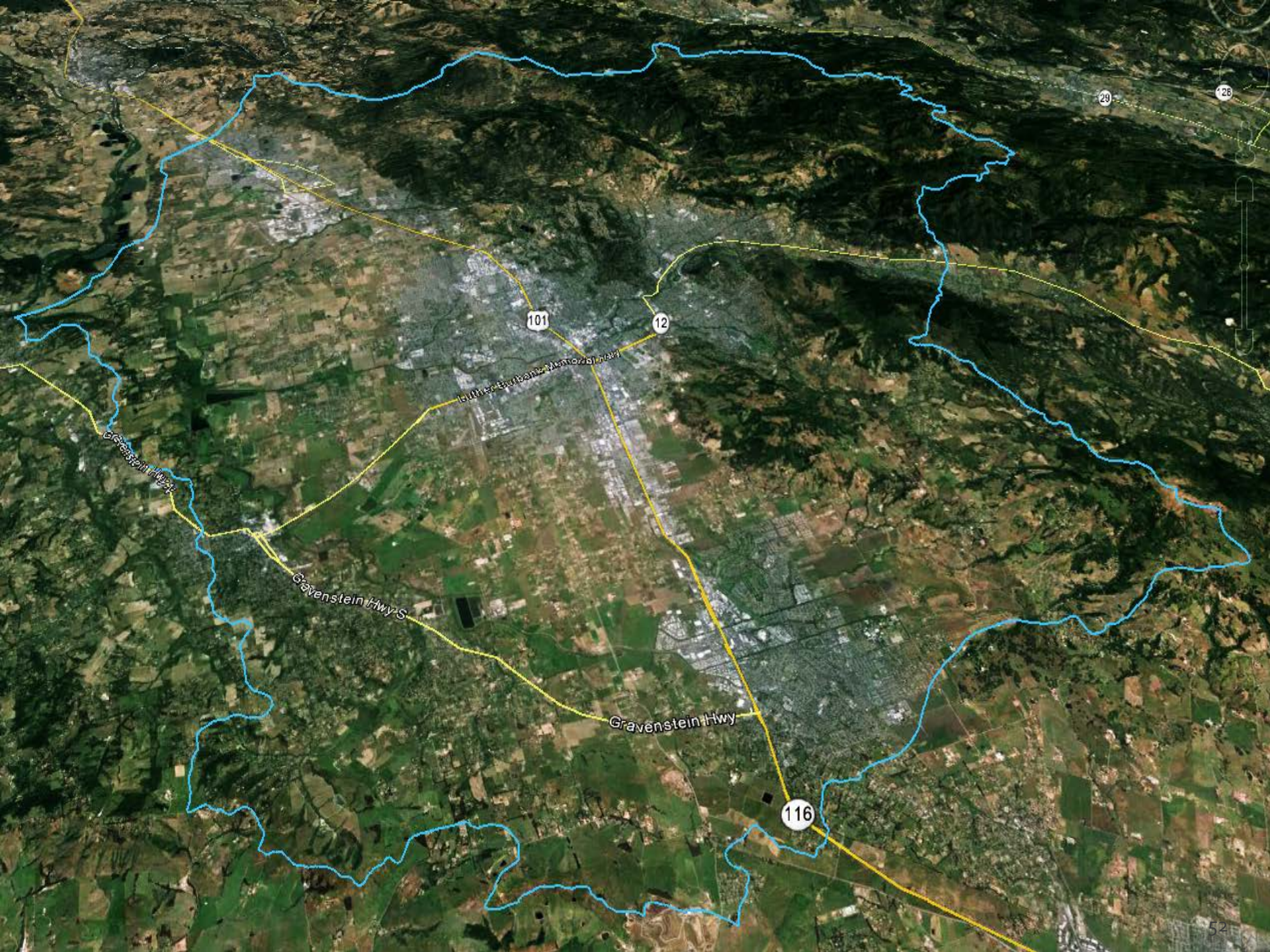
# Cost Share

	319h Grant Funds	NRCS Cost Share
Personnel	\$ 114,735.00	\$ 231,000.00
Operating Expenses	\$ 3,640.00	
Equipment	\$ -	
Professional / Consultant Services	\$ 164,905.00	
Construction	\$ 295,000.00	\$ 113,000.00
	<b>\$ 578,280.00</b>	<b>\$ 344,000.00</b>

# Future considerations







101

12

Luther Burbank Memorial Hwy

Gravenstein Hwy

Gravenstein Hwy S

Gravenstein Hwy

116

29

126





# The Future

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## 2017 draft priorities for 319(h) Grants

- Pathogen reduction projects – Russian River
- Sediment control projects from unpaved roads
- Temperature reduction projects
- Nutrient reduction projects – Upper Klamath Basin

## 2017 draft priorities for Timber Fund Grants

- Forest management projects
- Projects located on forested lands with  $\geq 10\%$  canopy cover



*And many thanks to . . .*

*Bernadette Reed*

*and*

*Michele Fortner*







**For more information:**

**[http://www.waterboards.ca.gov/water\\_issues/programs/grants\\_loans/](http://www.waterboards.ca.gov/water_issues/programs/grants_loans/)**

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