"At this moment in time, we are called to lead and act with courage. We are called to embrace change. Change in our societies. Change in the management of our economies. Change in our relationship with our one and only planet."

 Unitied Nations 2014, p. 3

Transformational Goal

An Environmentally Ready Society

…one where everyone has the skills to find solutions to challenges facing the North Bay.
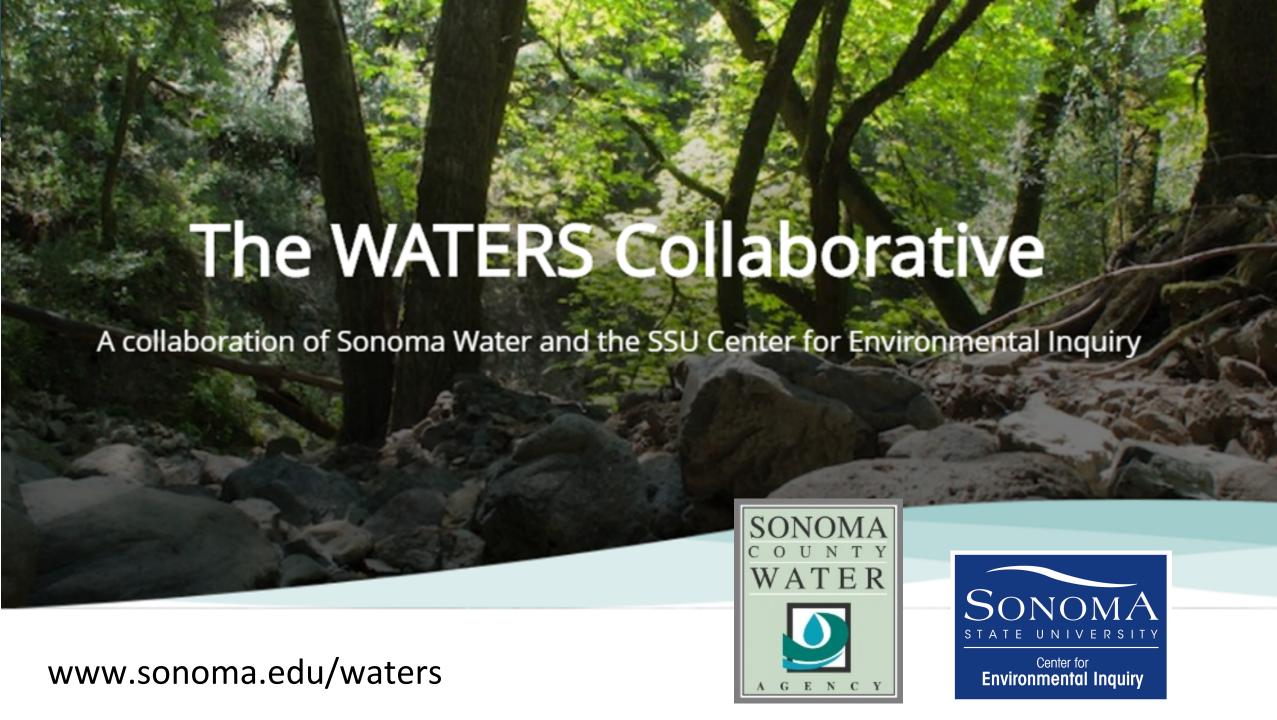
Center for Environmental Inquiry

Education for a changing planet:

- First-hand understanding of our connection with the environment

- Skill-building experiences

- Innovative solutions

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The WATERS Collaborative

A collaboration of Sonoma Water and the SSU Center for Environmental Inquiry

www.sonoma.edu/waters

SONOMA COUNTY WATER AGENCY

SONOMA STATE UNIVERSITY
Center for Environmental Inquiry

WATERS Accomplishments

- 229 projects

- 2,691 students (118 courses)

- 20+ partners/yr

- 30 faculty/yr; 15+ departs/yr

- Internships & jobs

Flood

Challenge

Flooding Lichau Road access

Project

Flood modeling of Copeland Creek

Results

Sonoma Water flood control design

Invasive Aquatics

Challenge

Ludwigia invasion in the Laguna

Project

Plant response to channel design

Results

Channel design for invasive species control

Land Use Planning

Challenge

Water integration in land use planning

Project

General Plan assessments

Results

Issues, goals, policies, actions, success indicators

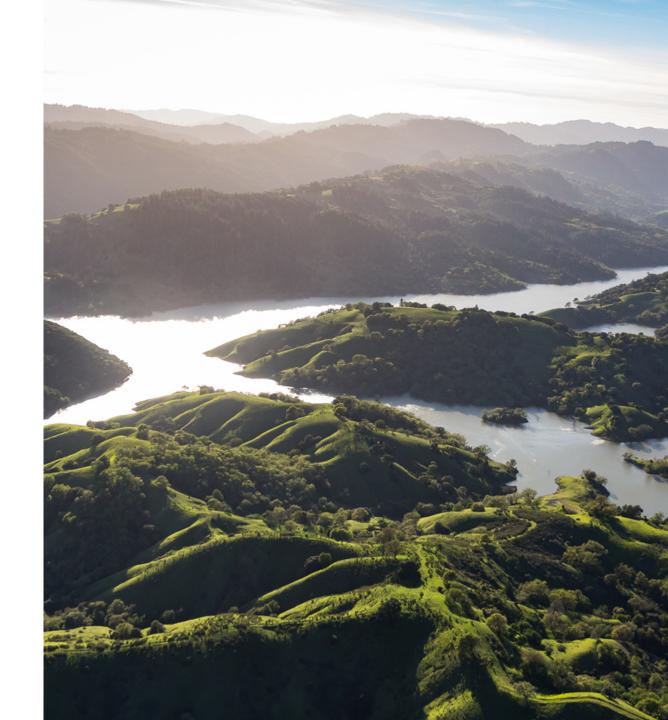SONOMA STATE UNIVERSITY | Center for Environmental Inquiry

Rising Waters Initiative

- Complex high-priority issues surrounding water

- Neutral meeting ground for diverse partners

- Cross-disciplinary engagement to address cultural, economic and environmental issues

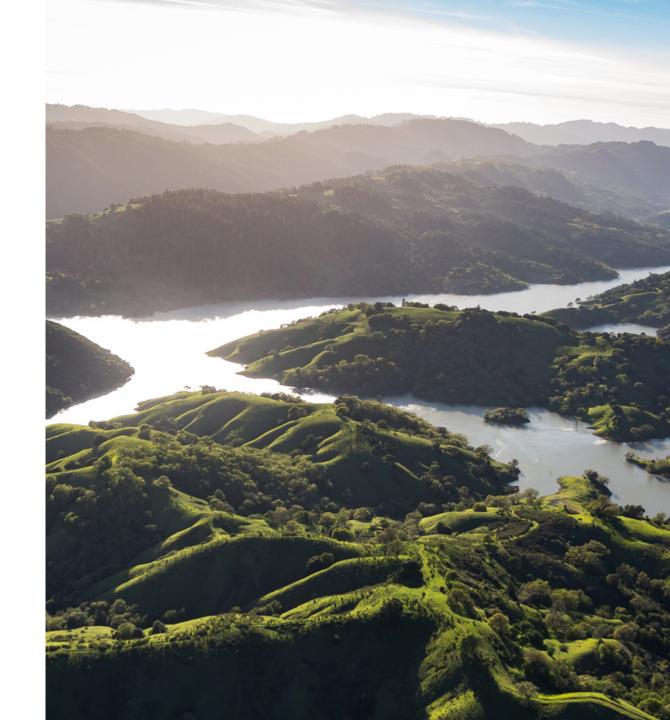- Facilitated process targeting innovative and practical solutions

Rising Waters Process

- Rising Waters Working Group identifies issue(s)

- Multi-disciplinary faculty-student teams collect and summarize data

- Collaborative brainstorm for solutions and cost-benefit analysis by teams

- Presentations and reports

Rising Waters supported by:
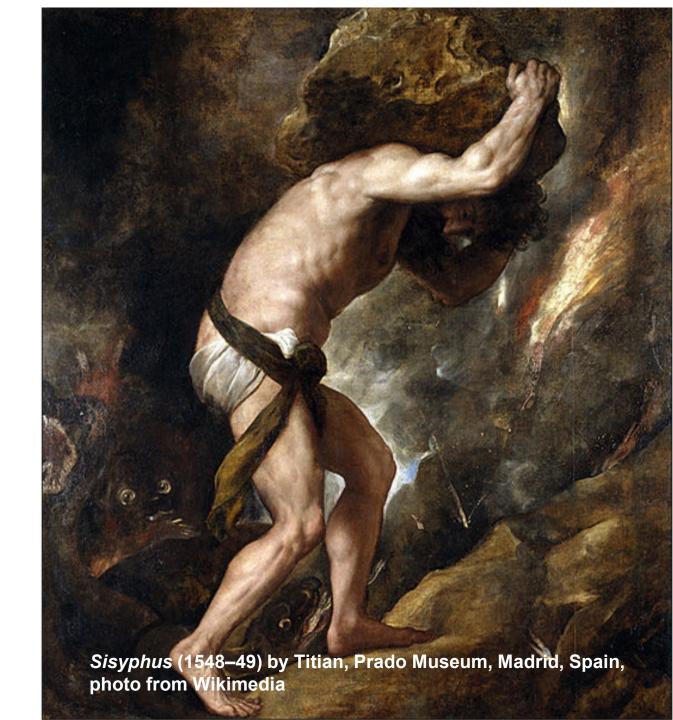

Alexander Leff

Year 1 Steering Committee:

- Michael Thompson, Assistant General Manager, Sonoma Water
- Andy Rogers, Executive Director, Russian River Watershed Association
- Jenna Garcia, Housing Administrator, City of Rohnert Park
- Lynea Seiberlich-Wheeler, Associate Director of Behavioral Health, West County Health Centers
- Sean McNeil, Deputy Director of Environmental Services, City of Santa Rosa
- Matt St. John, Executive Officer, North Coast Regional Water Quality Control Board

Rising Waters Timeline

- Fall 2018, Spring 2019 - Discussions Begin

- Fall / Spring 2020 - Funding Allocated

- Spring / Summer 2020 - Public Workshops To Hone Questions

- Fall 2020 - Identification of Steering Committee, Further Meetings to Hine Questions

- Fall 2020, - Faculty / Student Research Grants Awarded (including help with "bite sized pieces")

- May 2021 - Initial Public Workshop Led by Students

- Sept 2021 - Formal Public Workshop (Year 1 Results)

Sisyphus (1548–49) by Titian, Prado Museum, Madrid, Spain, photo from Wikimedia

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Year 1: Homelessness and Watersheds

- flood protection

- water quality

- sanitation/health

- habitat conservation

Rising Waters:
Water Quality & Homelessness Results
& Implementation Workshop

September 24, 2021

Question 1: Where Are Services Needed to Reduce Water Quality Impacts?

Refined Goal: Resource Mapping, instead of Impact / Location mapping.
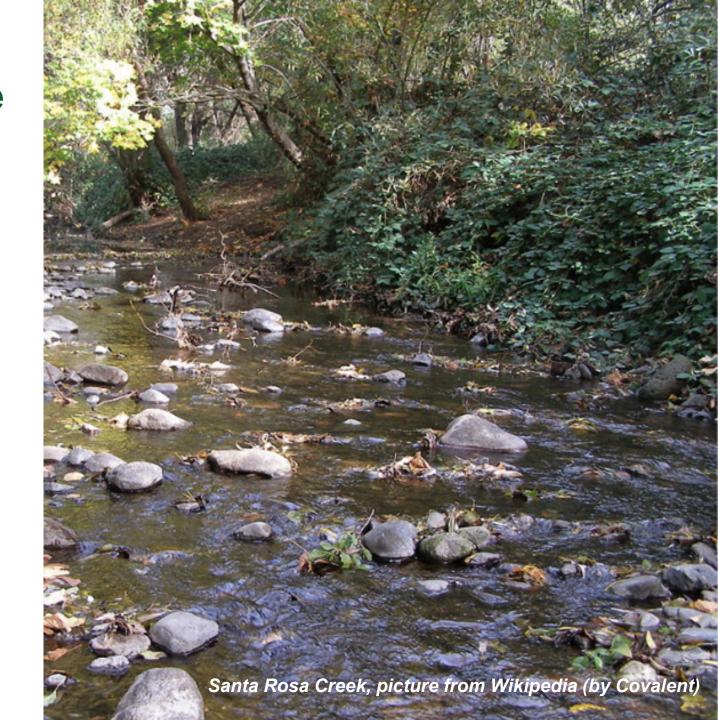
Team: Dr. David Sul
MPA Candidate Nadine Magallanes
MPA Candidate IMatt Roehm
MPA Candidate Jamie Thompson
Graduate Samantha Stevens

SONOMA STATE UNIVERSITY | Center for Environmental Inquiry

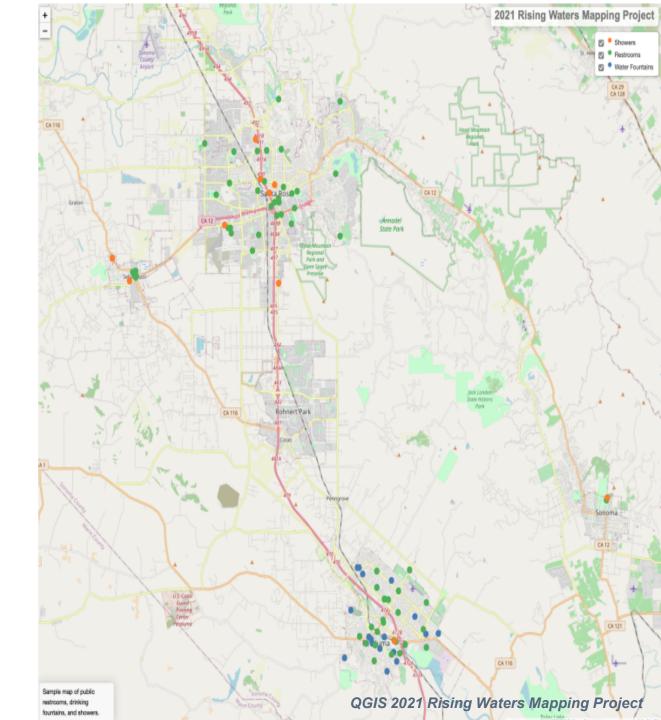*Santa Rosa Creek, picture from Wikipedia (by Covalent)*

Question 1 - Resource Mapping: Methods / Results

- Proof-of-concept mapping tool app developed (QGIS, an open source GIS Software).

- Mapped public data includes restrooms (85 locations), water fountains (36 locations), and public showers (13 locations).

- Security issues identified for further discussion.

2021 Rising Waters Mapping Project

QGIS 2021 Rising Waters Mapping Project

Sample map of public restrooms, drinking fountains, and showers.

Question 1: Resource Mapping Next Steps?

- Develop security protocols to address privacy and safety issues
- Transfer the Mapping Tool to a robust server
- Begin "In Field" Data Collection.
- Compare mapping tool results with water-quality sampling for fecal contamination.
- Add historical observations of trash from previous encampments to better understand distribution through time.
- Add locations of agencies engaged in homeless issues (from Question 3).

Question 2: What are the economic, social and political barriers to providing services to people experiencing homelessness?

Refined Goal: Investigate the barriers and cost of providing sanitation services, including the "do nothing" option. Focus on real world case studies for background.

Team: Dr. Armand Gillinsky
          MBA Candidate Lauren Hart
          MBA Candidate Itze Pena-Andrade

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ADA compliant toilet / handwashing station placed next to the Santa Rosa Veterans Memorial Building during COVID. Phot by Lauren Hart.

Question 2: Sanitation Case Studies Methods / Results

- Evaluated 5 Options
- Choice of Option Depends Upon Situation
- "Do Nothing" Option Can Have Significant Costs
- SWOT Analysis (Strengths, Weaknesses, Opportunities) of Rising Waters
- PESTEL Analysis of Homelessness in Sonoma County

Portable Toilets

Mobile Shower / Restroom Trailer

Portland Loo

Expanded Hours at Existing Facilities

Doing Nothing

LavaMae Bus. *Courtesy of photographer Henrik Kam, San Francisco USA.*

Question 2: Sanitation Case Studies: "Doing Nothing"

- Hazardous Waste: up to $60,000 per clean up event.
- Law Suits (e.g. violation of the Clean Water Act): up to $100M
- Public Health Risks: The 2016-2018 California Hepatitis A outbreak was attributed to lack of handwashing and restroom facilities for persons experiencing homelessness.
- Costs that were not quantified in the study: social, environmental, recreation, tourism.

Question 2: Sanitation Case Studies Next Steps? (I)

- Identify if additional economic cost evaluations (e.g., social, environmental, recreation, health) are needed by organizations and agencies to justify the need for sanitation services.

- Work through the entire installation process with government officials at selected sites to identify the legal and logistic process of installing and funding a new station. Include social barriers as part of the study.

Portland Loo, Santa Rosa City Hall Annex, March 2021. Photo by Itze Peña-Andrade.

Question 2: Sanitation Case Studies Next Steps? (II)

- Expand study to characterize social and political barriers.

- Explore whether cities or the county can receive credits from water quality regulators for providing restrooms and sanitation. Is there an appropriate set of guidelines or a framework to receive credits?

Portland Loo, Santa Rosa City Hall Annex, March 2021. Photo by Itze Peña-Andrade.

Question 3: How Can we better align investments across all sectors?

Refined Goal: Develop an inventory of organizations and individuals that work on homeless issues in Sonoma County. Interview advocates and summarize pressing issues. Begin exploring presenting this inventory in a "knowledge map".

Team:　　Dr. Megan Burke
　　　　　Philosophy Major, 4th Yeat, Deborah Barrera
　　　　　Philosophy Major, 1st Year, Lauren Williams
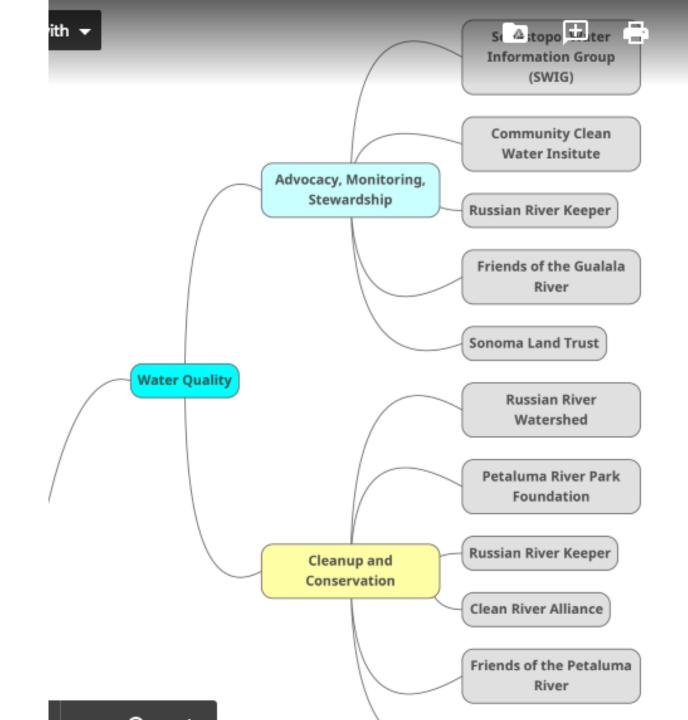　　　　　Psychology Major, 1st Year, Camille Babida

B	C	D
Mobile Shower Trailer (Catholic Charities)		
Redwood Gospel Mission		
Community Church of Sebastopol	Hot showers available in Memorial Hall, complete with soap, shampoo & towels. Warm socks, underwear, sweat pants & jackets as available.	S
The Haven (Sonoma Overnight Support)	Showers, laundry, food, bus passes, computers & case management for Sonoma & Sonoma Valley residents in need. Mon, Tue, Wed, Thu 9am-1:30pm. Fri 1:30-4:30pm	CS
St. Paul's Episcopal Church	Daytime showers Tues 2-5pm. Wed 2-4pm. Thu & Fri 10am-4pm. Se habla español.	H
Buckelew Programs	Family Service Coordination, housing, independent living skills, and employment services for adults with mental illness. Family Service Coordinator (FSC): free education, support & assistance with accessing community resources & navigating mental health system for anyone with an adult family member or loved one with a mental illness.	SR
	For very low income families &	

Question 3: Knowledge Mapping Methods / Results

- Initial database of 150 stakeholder organizations developed, with 30 interviewed. Interviewees often preferred to remain anonymous.

- Initial "knowledge map" layouts.

- Philosophical / moral approach.

- Education is key, even among advocates / stakeholders.

- Flexible steady funding approach identified as major stumbling block.
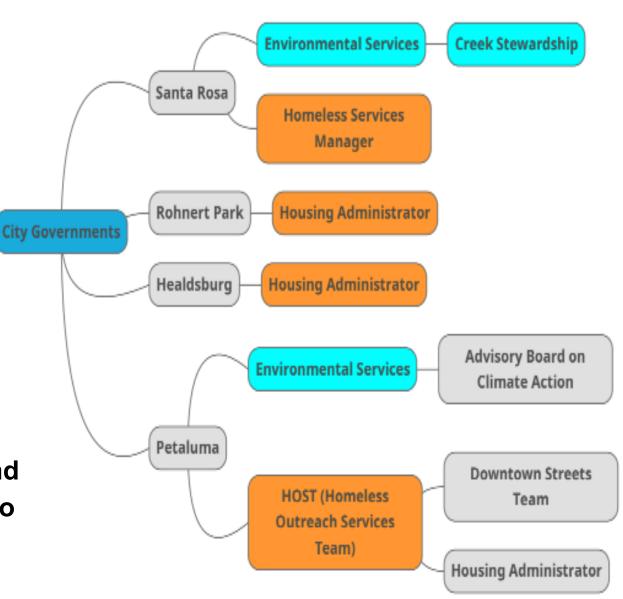
Question 3: Knowledge Mapping Next Steps? (I)

- Interview more of the 150 stakeholder organizations to create a comprehensive database of services while respecting preferences for anonymity.

- Use the mapping tool app (Question 1) to create a map of locations where organizations provide services to people experiencing homelessness.

- Quantify the value (reduction in human and social cost) of using the knowledge map to better coordinate efforts.
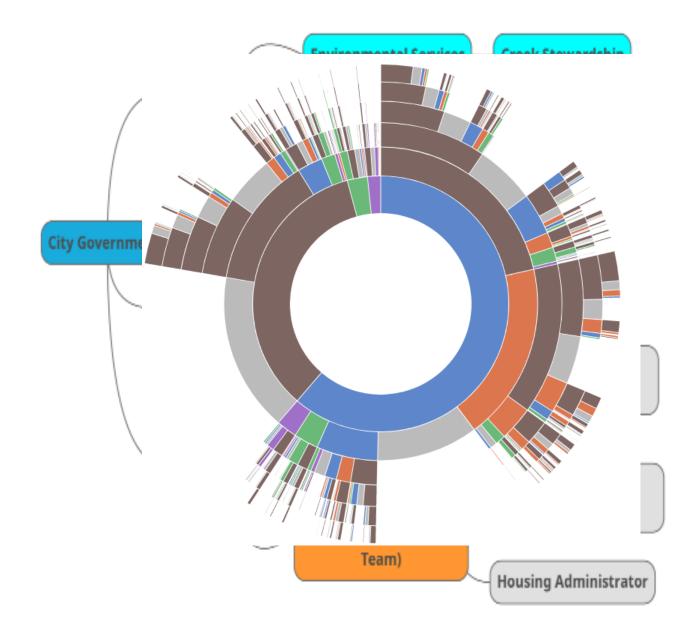
Question 3: Knowledge Mapping Next Steps? (II)

- Categorize and place interview summaries in appropriate databases such as SQL, to allow further work on developing graphical knowledge maps.

  (example map from: https://observablehq.com/@kerryrodden/sequences-sunburst)

- Work with legislators to reduce the "silo effect" of distributing funds.

A Common Issue (NIMBY)

- Misconceptions and frustration were encountered by all student teams.

- Misconceptions encountered among public and homeless advocates.

- Education / public media / story campaign advocated by students.

Homeless Shelters at Finley Community Center. Picture courtesy of Santa Rosa Press Democrat.

Water Quality Sampling ?

- Field Work May Be Possible This Coming Season
- Add Water Quality Sampling To Mapping or Sanitation Effort?
- Clearly document / establish link between homeless encampments and water quality issues?
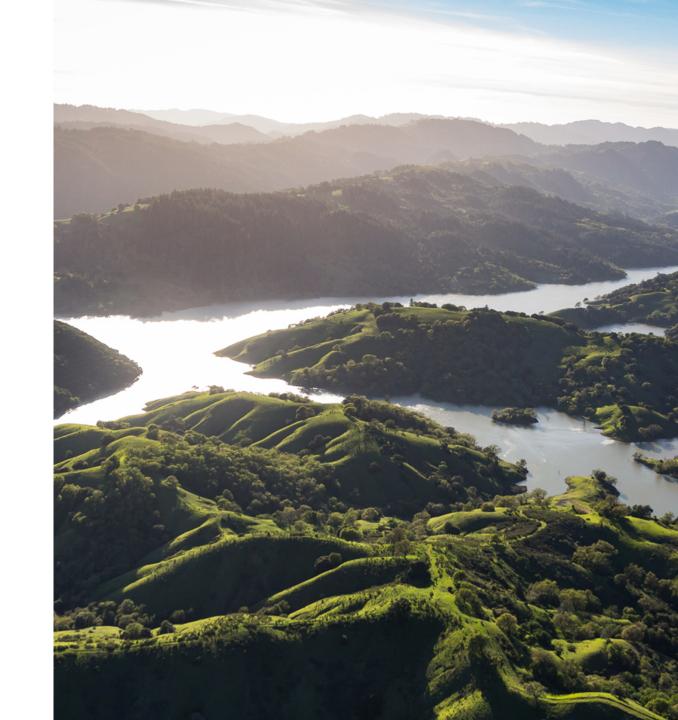- What kind of water are individuals experiencing homelessness exposed to?
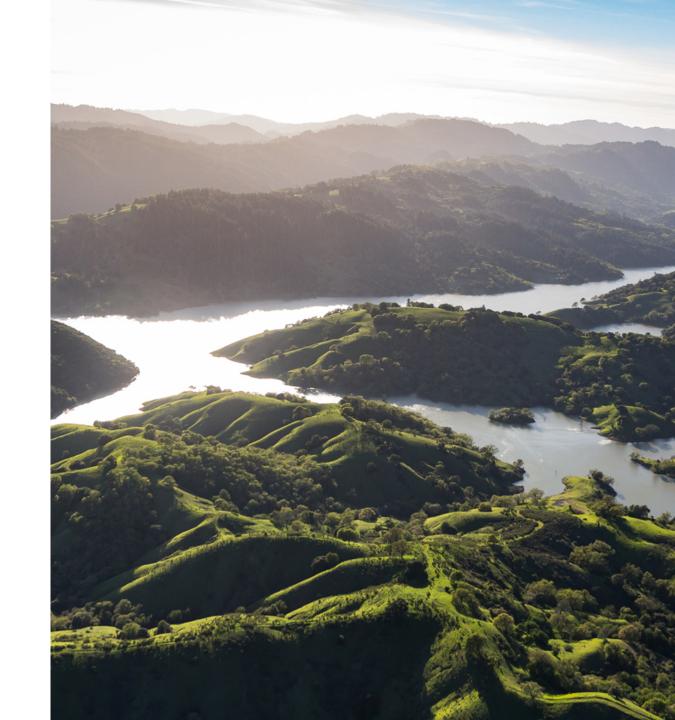
Academic Year 2021 - 2022

- **Resource Mapping**: Continue Study?

- **Sanitation:** Continue Study, or shift to Media Campaign or Water Quality Sampling?

- **Knowledge Mapping**: Continue Study?

Feedback?

- Would you like to be involved?

- Do you have suggestions for the coming year?

- Is the information useful?

- Do you agree with the next steps we outlined? Are there next steps we missed?

Transformative Impact

" I am walking away with valuable skills: teamwork, leadership, communication, and creativity. "

Nicole Manzares

An Environmentally Ready Society

More Waters Information:

http://cei.sonoma.edu/waters/about

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