

**Rising Waters**  
**April 2024**  
**RRWA TWG Summary**  
Exploring the Nexus of Water Quality and  
Community Members Experiencing Homelessness



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## **Background**

Over the next decade, water agencies, utilities, and service providers will face unprecedentedly complex challenges that require new ways of identifying and implementing sustainable water solutions. University partnerships have a unique role to play in identifying new ways forward. They bring the greatest resources in academia — professors, students, laboratories, research libraries, curriculum — to tackle the biggest challenges faced by local communities.

Rising Waters is a new university partnership that helps decision makers develop solutions that cross jurisdictional boundaries and disciplines. The initiative measures success by the development and implementation of new solutions and ways of looking at complex issues. Excitingly for educators, it provides professional training in cross-disciplinary problem solving to students across a variety of disciplines.

Rising Waters emerged from the Waters Collaborative, an interdisciplinary collaboration funded by Sonoma Water to engage Sonoma State University (SSU) students in the investigation of regional water issues. As of 2019, WATERS had engaged ~2,700 students across 118 courses in 229 water specific projects and regularly was engaging 30 faculty with 20 community partners per year.

In 2018, Sonoma Water, the Russian River Watershed Association, City of Santa Rosa and SSU's Center for Environmental Inquiry (CEI) began discussions to build on this long-term collaboration in ways that would more directly engage academics with regional leaders on priority water challenges. A new format for engagement was developed: CEI would speak with regional leaders to identify priority challenges, host workshops to reveal common needs among cross-sector leaders, form a steering committee, and help the committee develop a series of targeted questions that could be addressed by faculty-student teams.

Sonoma Water, Russian River Watershed Association, and private donor Alexander Leff funded the first year of Rising Waters (academic year 2020-21).

## **Water Quality and Homelessness**

Following studies that identified homeless encampments as one of two primary sources of trash and a source of fecal matter in the Russian River, Rising Waters project partners chose the Intersection of Water Quality and Homelessness as the topic area for the first year. Matt St. John at the North Coast Regional Water Quality Control Board later shared TMDL (total maximum daily load) research confirming homeless encampments as a source of contamination. Andy Rodgers shared information about homelessness as a source of trash from a 2018 trash assessment.

# Water Quality and Homelessness - Research Questions and Summary of Results to Date

Note: The brief descriptions provided here are intended to supplement the greater detail provided in previous reporting. For a more complete list of past efforts, please refer to the following:

1. Summary of Rising Waters Deliverables provided in July 2023 (Please refer to Task 1.6 in the spreadsheet):

[https://docs.google.com/spreadsheets/d/1TtilUh5lp98e\\_DibQLVOxOXRT4jQ10WPxd0Ux2eP\\_NU/edit#gid=0](https://docs.google.com/spreadsheets/d/1TtilUh5lp98e_DibQLVOxOXRT4jQ10WPxd0Ux2eP_NU/edit#gid=0)

2. Rising Waters Year 3 Results and 2024 Kickoff Meeting. This video provides much more detail about the program and future directions.

<https://www.youtube.com/watch?v=oUqQM5lndzw&t=164s>

To summarize, in September 2020, SSU led a series of discussions with RRWA, Sonoma Water, North Coast Regional Water Quality Control Board and others to identify research questions that need to be addressed so that solutions to challenges surrounding homelessness and water quality can be pursued. Three initial questions were refined and focused through discussion with RRWA and community leaders in October and November 2020. Since that time, the collaboration has added two additional questions. The current topics are:

1. Mapping Study. Develop a map of locations preferred by people experiencing homelessness and use the map to determine where to best deploy trash receptacles and toilets. The map shall include other spatial data (e.g., data restroom access, services, privacy, etc.) and an initial analysis of why certain areas are preferred.

To Date: Mapping data has been collected, privacy issues have been discussed and a plan outlined to address those concerns, and a mapping tool suitable for cross-agency and countywide collaboration as well as crowd-sourcing, has been identified.

2. Case Studies. Use case studies to identify the legal and political barriers to providing toilets to people experiencing homelessness. Case study examples may include restrooms that are portable or permanent.

To Date: The Sanitation Options Report developed by two MBA students (and Professor Armand Gillinsky) was quite detailed, and compared several options for reducing the impact of individuals experiencing homelessness and alleviating the lack of access to sanitation. SSU is working with the Continuum of Care to synthesize the information appropriately and ensure that it is in a format that is appropriate for County leaders and decision makers.

3. Agency Alignment Assessment and Knowledge Map. Identify how organizations and agencies are engaging with homeless populations in Sonoma County. The analysis will include information on where and what services are being provided and how these services affect different populations of people experiencing homelessness (e.g., veterans, LGBTQ, elderly, etc.).

To Date: A detailed database of approximately 200 agencies and organizations working in the areas of homelessness and water quality has been developed and is being shared with the Continuum of Care (as well as being discussed with selected staff of the Board of Supervisors). One major challenge in developing this database has been the reluctance of some organizations to go “on the record” for fear of political consequences. Breaking down funding barriers (the ability to share funds and personnel across agencies) has been identified as a major stumbling block in addressing a fluid situation such as homelessness.

4. Water Quality Sampling. Identifying impacts of homeless encampments on riparian areas and water quality, as well as the influence of local water quality in individuals experiencing homelessness, was identified as a priority in the initial discussions for Rising Waters. This field effort began as the Covid restrictions eased.

To Date: In conjunction with the City of Santa Rosa and the North Coast Water Quality Control Board, Professor Jacquelyn Guilford has led two seasons of water quality sampling on creeks in Santa Rosa. Special attention was paid to developing estimates of measuring the “impact” of homeless individuals on creeks, a particularly challenging measurement to obtain given the fluid nature of the population. Measurement interpretation is complicated by seasonal effects. Jackie has worked to develop a cheaper option to the standard bacteroides test (used to determine if E. Coli is of a human or animal source), and is currently working with her students to validate / benchmark this option.

Professor Guilford and her student Claudia Mayo were awarded the 2023 Outstanding Science Student Project Award by the California Stormwater Quality Association.

5. Social Media Campaign. In the first year of Rising Waters, SSU students were often frustrated by attempting to discuss homeless and water quality issues with community members and even advocates. Although tensions can clearly run “hot” on such a complicated topic, they were dismayed at the myths that tend to get in the way of open dialogue. Toward that end, the students suggested that the collaboration develop a media library to humanize homeless individuals, provide factsheets and allow community members to see the great work being done, and to allow civic organizations to play short video clips prior to meetings discussing homeless issues to help attendees come together and provide a framework for productive discussion.

To Date: Rising Waters began development of a media library, and SSU Professor Gina Baleria continues to lead student teams in developing materials and videos of homeless individuals and professionals working in this complicated field. Many of the Steering Committee were interviewed last summer as part of this effort. The social media website is undergoing renovation.

The latest Steering Committee meeting included a discussion of the materials and interviews:

Material Development: Video Link (<https://www.youtube.com/watch?v=oUqQM5lndzw>), timestamps 55:57 - 57:17.

Interviews: Video Link (<https://www.youtube.com/watch?v=oUqQM5lndzw>), timestamps 57:26 - 1:03:48.

## Into the Future

Efforts continue on the above items. Specifically:

1. Mapping - SSU is proposing to hold discussions with appropriate agencies to determine how to structure the licensing and ownership of the mapping application Ushahidi.
2. Case Studies - SSU is working with Continuum of Care to share the case studies of sanitation options, and to determine if further work should be done on the economic analyses.
3. Agency Alignment - SSU is sharing information with Continuum of Care and Board of Supervisor staff as appropriate.
4. Water Quality Sampling - Water quality sampling continues, with the aim of expanding the sampling effort, continuing to tease out seasonal and other effects, and validating the low-cost testing option to differentiate between human and animal E. Coli.
5. Media Library. Development of the media library and a set of appropriate tools for use by agencies continues.

There are some other items under discussion as well. In particular, as we begin to implement (or provide) some of the previous research to the community, where should Rising Waters focus in the future? Some possibilities include:

1. SSU, and RRWA could work with Sonoma Water to develop a Rising Waters Pilot Project, where we apply the tools developed by the Rising Waters Collaboration (particularly the Mapping Tool and the Sanitation Options Report). The project involves identifying a riparian area that is affected by homeless encampments, and that is near at least two agencies that need to work together to solve the logistical and legal issues when developing solutions. The goal is to help develop appropriate solutions and save money, while navigating the logistical hurdles imposed by different legal and cultural concerns within each agency. We anticipate that lessons learned during this process can form the basis of a larger county-wide discussion in the future.
2. The collaboration could begin to focus on areas of the Russian River north of Sonoma County. This effort would require spending some time identifying sites and issues for study, and recruiting additional faculty/student teams.
3. The collaboration could shift focus slightly, and include investigation into other regional concerns like the Potter Valley Project. This concern would likely need to involve a series of discussions with stakeholders and agencies to properly hone research questions and determine how to focus our efforts.
4. CEI is working with other academic partners to write a grant proposal to expand this collaborative model to other watersheds and locations throughout the state of California.