

SAFE CLEAN WATER PROGRAM SCIENTIFIC STUDY PROPOSAL QUESTIONNAIRE

1. Proposal identification information and summary of the project goals.

Title: **Microplastics in LA County Stormwater**

Proposing Organization: **University of California Riverside**

Your summary of the Project Goals and Objectives:

The reviewers agree that the project's overarching goal is to develop standardized methods for monitoring microplastics in urban streams and to collect baseline monitoring data for L.A. County rivers and streams. Specifically, the project will compare two different measurement methods – one cheaper and more rapid, and the other more costly but known to produce more accurate results. The project also will seek to estimate microplastic loadings – key numerical data that will be used to build regional understanding of the source, fate and transport of plastic pollution. The project is part of a series of ongoing microplastics monitoring, modeling and analysis projects by the study team.

2. Are the objectives clearly stated? What portion of the objectives need more clarification?

All three reviewers agreed that the study's objectives are clear. Two of the reviewers offered suggestions for further improving clarity, including more details about the sampling plans, modeling, as well as about why there is unevenness in the number of samples to be collected at each site during different years.

3. How do the project goals directly support a nexus to increasing stormwater or urban runoff capture and/or reducing stormwater or urban runoff pollution?

All three reviewers agreed that the project effectively supports the SCWP's goals of increasing stormwater or urban runoff capture and/or reducing stormwater or urban runoff pollution. All reviewers emphasized that this study constitutes foundational research to understand microplastics contamination in rivers and streams, noting that managers cannot effectively intervene to reduce microplastics pollution until they understand how much is present and how it is entering and traveling through stormwater systems. The baseline data from this project will be critical for evaluating future management action success. Finally, two reviewers commented on the positive aspects of developing a standardized sampling method that could be used throughout L.A.

4. What is (are) the overarching technical approach element(s) of the proposed project as you understand them (not necessarily the same as the elements described in the proposal)?

The reviewers agreed that the key technical elements of the study are: (1) Conduct field sampling using two different, previously developed methods to gather data on microplastic fluxes, (2) estimate microplastics fluxes via established modeling techniques, (3) compare results from the two methods and (4) integrate the data into regional watershed modeling.

5. Has the proposal provided sufficient information to describe the technical approach for each element? If not, what information is missing?

All three reviewers agreed that, on the whole, sufficient information was provided describing the study's technical approaches. However, all three reviewers cited things they would have preferred to see more information on. Two reviewers expressed a preference for more details on how the flux modeling portions will be done. Although the third reviewer explicitly stated that the modeling work is "well-described". The third reviewer, asked for an explanation of how the proposal's authors decided to use a specific analytical technique for identifying tire wear particles.

6. Is the technical approach sound? If not, what do you recommend should be done to improve the technical approach of the proposed project?

All three reviewers agreed that the technical approach for the sampling methods portion of the study is sound. The reviewers disagreed on whether the modeling portion of the study is sound: Two expressed confidence that the modeling portion is technically sound, while the third said it was difficult to make this determination because of a lack of detail.

7. How achievable are the study's stated technical objectives, especially within the proposed timeframe and budget?

All three reviewers expressed general optimism that the study's objectives are achievable within the proposed timeframe and budget, although two of them caveated their assessments by saying they would have preferred to see a breakdown of costs by task to have more confidence that the budget will be appropriate.

8. What are the greatest technical risks that you foresee the proposing agency facing when implementing the project?

All three reviewers identified technical risks, but they said that none of these risks would be insurmountable or would be likely to derail the project. One reviewer said that an unavoidable risk is the prospect of insufficient rain events during the planned sampling period. A second reviewer noted the logistical difficulty of having a sampling team ready to deploy within minutes of a "first-flush" rain event. And the third reviewer said identification and analysis of microplastics in a laboratory can often take more time than is allocated, especially in stormwater where there are likely to be a lot of [microplastic and non-microplastic] particles.

9. Please describe the linkages between the project's technical objectives and the types of decisions that stormwater managers will make based on the project's outcome(s)? Will the technical achievements provide stormwater managers useful linkages that extend beyond this study?

All three reviewers agree that the study has direct and important links to stormwater management. One reviewer characterized the information that will be provided by the study as "extremely useful." Two reviewers stated that the monitoring will help to establish estimates of microplastic loads providing information about the magnitude of stormwater loads relative to other pathways, establish baseline loads against which future loads assessment may be compared, and help establish grounds for potential concern. All three reviewers also agreed that the vetting of the two candidate monitoring methods is likely to pave the way for establishment of routine microplastics monitoring initiatives for the region's rivers and streams.

10. Please provide any additional technical perspectives you would like to share.

Two of the reviewers provided additional comments. One reviewer commended the study design as being the most robust microplastics monitoring study of its kind that they've come across, and suggested that the study could be further strengthened by comparing the two monitoring methods to a third method (a single depth-integrated sample at the thalweg), provided additional funding could be secured. The other reviewer suggested that the study reconsider the method that the study is planning to use for monitoring tire wear particles, but characterized it as a "small" suggestion because the authors can adjust the method to optimize as the study progresses.

11. Please answer each of the following questions by selecting one of the following five answer choices: *Excellent, Very good, Adequate, Inadequate or Not applicable because of insufficient information.* Please add an explanation to accompany your answer choice (or refer to the question number above for appropriate context and rationale):

- a. How well do the proposal objectives address the County's goals of increasing stormwater or urban runoff capture and/or reducing stormwater or urban runoff pollution?

Two reviewers rated the proposal's objectives as being "excellent" for addressing SCWP goals, while the third reviewer gave a "very good" rating and did not elaborate further.

- b. How well do you think the technical approaches will achieve the study objectives and stated outcomes?

Two reviewers rated the chances of the study's technical approach achieving its stated outcomes as "excellent." The third reviewer gave a "very good" rating and cited concerns about the method that will be used to identify tire wear particles as the reason for not giving the highest possible rating.

- c. Technical experience and qualifications of the study team?

All three reviewers rated the study team's capabilities as "excellent."