

SAFE CLEAN WATER PROGRAM SCIENTIFIC STUDY PROPOSAL QUESTIONNAIRE

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

Title: **Regional Pathogen Reduction Strategy**

Proposing Organization: **Gateway Water Management Authority**

Your summary of the Project Goals and Objectives:

The reviewers agreed that the overarching goal of this project is to develop targeted, science-informed management strategies for remediating the specific sources of human fecal pollution in L.A. County watersheds that pose the greatest human health risks. Specifically, the study will leverage recent scientific advances in fecal pollution tracking and fecal risk assessment to: (1) determine the sources of fecal pollution that pose the greatest human health risks during both dry and wet weather, (2) identify beaches and other recreational water bodies where these risks are greatest, and (3) identify management interventions that could effectively combat fecal pollution in the highest-risk areas.

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

The reviewers disagreed on whether the project's objectives are clearly stated. Two reviewers concluded the objectives are clearly stated, with one of these reviewers adding that the proposal requires "no further clarification," while the other reviewer caveated their positive assessment by noting that they would have liked to see clarification about how permittees are to be supported. The third reviewer concluded that the first two project objectives are clear, while the third is not because the proposal does not make clear whether the management solutions that will be evaluated are stormwater control measures vs. other management actions.

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 supports the SCWP's goals of reducing stormwater or urban runoff pollution. They all characterized the project's goal of collecting specific, detailed fecal pollution data sets for this region as essential in helping managers effectively reduce risks to public health.

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 study's technical elements will consist of: (1) collecting water samples from beaches, rivers, creeks and channels, (2) using both legacy fecal pollution detection methods and next-generation molecular methods to measure fecal indicators, fecal genetic markers, viruses and other pathogens, (3) estimating human health risks at beaches and other recreational water bodies and (4) developing a management tool and management solutions for addressing the highest-risk human fecal contamination sources.

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

The reviewers all agreed that insufficient information is provided describing the proposal's technical approach, with each reviewer citing numerous examples of missing information. One reviewer cited a lack of clarity about sample collection and analysis methods, how the modeling work will be conducted to estimate health risks, and how the project will identify which sources represent the biggest risks to public health and which source control measures are most effective. A second reviewer cited much of the same missing information as the first reviewer, and also cited a lack of clarity about whether the project has established relationships with necessary stakeholders, whether a cost-benefit analysis will be done for each identified management solution, and how the management insights generated by the project will help managers comply with regulatory requirements for bacteria. The third reviewer also cited much of the same missing information as the other two reviewers, and expressed particular concern about the lack of detail about the sampling protocols, including how targeted the sampling effort will be.

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 expressed concerns about the technical soundness of the proposal, although they differed in their level of concern. One reviewer characterized the proposal as overall having a "logical progression," but lamented the fact that more detail was not provided to evaluate the proposal's technical soundness. The other two reviewers were more critical. One reviewer noted that "at minimum" additional information should have been provided on sampling methods, and expressed concern that the project does not intend to collect samples from each site at the same time, which will limit the study's ability to compare health risks at different locations. The second of the latter two reviewers said that the technical approach is sound for the sections with sufficient detail, but expressed particular concerns with the planned sampling approach, including: (1) whether flow rates associated with different sampling sites will be measured – a key measurement for understanding how much of a health risk a highly polluted source might represent to its downstream environment – and (2) whether modeling will be used to help determine specifically where to sample.

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

The reviewers disagreed on how achievable the study would be within the planned timeframe and budget. Two reviewers expressed concern, with both reviewers using the word "ambitious" to describe the project's timeline; one of these reviewers explained that the timeframe for completing the modeling work and developing risk models might be inadequate. The third reviewer complimented the proposal for presenting a "logical progression," but lamented the fact that numerous important details are missing from the proposal. Regarding budget, one of the reviewers characterized the project's budget as "reasonable," a second reviewer said they were not qualified to comment on the budget, and the third reviewer did not explicitly weigh in on budget.

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

All three reviewers agreed that the project faces technical risks. One reviewer expressed concern about whether the sampling could be completed because of the challenges associated with measuring the specific constituents that are planned to be measured, and consequently whether the modeling work could be completed. This reviewer also expressed concerns about the study being able to achieve its goal of estimating site-specific health risks because of its reliance on “disparate,” geographically expansive data sets. A second reviewer questioned whether multiple laboratories would be asked to analyze samples, noting that this factor could challenge the study’s ability to reach rigorous conclusions. The third reviewer said the study’s success will be shaped by how study sites are selected, whether updated sampling methods are used, and whether flow rates at the sampling sites are measured – which is critical to put into context the relative health risk that a site represents.

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 agreed that the project has the potential to produce results useful to stormwater managers, but varied in the degree of confidence they put behind this assessment. One reviewer commended the study’s “excellent regional coverage” across the L.A. region, but caveated this assessment by stressing that the study’s managerial relevance will depend on whether it is conducted in a technically rigorous manner. The other two reviewers offered fully positive assessments of the study’s managerial relevance, expressing confidence that the modeling tools and engagement channels developed during the study will be widely applicable after the study, including to other regions.

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

Two of the reviewers shared additional technical perspectives. One reviewer noted their biggest concern is the “overly optimistic” sample collection effort being planned, which could impede the study’s ability to collect necessary data for estimating health risks associated with each study site. The second reviewer noted that it will be important for the study to use risk modeling approaches that have been developed specifically for use in the L.A. region.

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?

The reviewers generally agreed that the proposal’s objectives will be adequate for addressing SCWP goals, with two reviewers giving a “very good” rating and the third giving an “excellent” rating. Only one reviewer caveated this assessment by reiterating their concerns about the achievability of achieving the study’s goals.

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

The reviewers did not agree about the achievability of the study's objectives and desired outcomes. One reviewer gave a rating of "not applicable because insufficient information" and reiterated their concerns about the proposal's omission of key information. A second reviewer gave an "adequate" rating, and echoed the first reviewer's concerns about missing information. The third reviewer rated the technical approach to the sampling and modeling work "very good," and the development and transition of management solutions for combatting major sources of fecal pollution "not applicable because of insufficient information."

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

The reviewers did not agree in their assessment of the study team's experience and qualifications. Two reviewers gave a rating of "not applicable because of insufficient information," with one of these reviewers expressing "particular concern" at the lack of details about the study team's qualifications because of the difficulty associated with measuring the constituents will be measured. The third reviewer gave a "very good" rating, noting that while the study team's qualifications are omitted, the team appears competent because the team cited (1) relevant studies in the proposal and (2) a plan for engaging with appropriate experts and stakeholders.