

## SAFE CLEAN WATER PROGRAM SCIENTIFIC STUDY PROPOSAL QUESTIONNAIRE

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

Title: **Next Gen Bioretention: Towards Living and Adaptive Stormwater**

**Systems for a Resilient Los Angeles County**

Proposing Organization: **TreePeople**

Your summary of the Project Goals and Objectives:

**All three reviewers agreed that the goal of the study is to evaluate the effectiveness and long-term viability of bioretention systems in Los Angeles County. The study aims to assess the condition, performance, and ecological development of existing bioretention systems, with a particular focus on the Upper San Gabriel River, Lower San Gabriel River, and Rio Hondo watersheds. The research findings will be used to refine bioretention system designs, providing resilience under future climate conditions.**

**Specific objectives include:**

- **Conducting field surveys and laboratory analysis to assess the condition of existing bioretention systems.**
- **Developing site-specific hydrological models for present and future climate conditions.**
- **Establishing a design framework for next-generation bioretention systems.**
- **Exploring bioretention as a community asset by integrating artistic and cultural elements into stormwater infrastructure.**

**Two reviewers emphasized that the study's outcomes will be instrumental in guiding future infrastructure funding and grant proposals for SCWP projects.**

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

**All reviewers agreed that the objectives are clearly stated. However, one reviewer suggested that the fourth objective—exploring bioretention systems as a community asset—lacks specificity in terms of expected deliverables. Additional clarification is needed regarding how artistic and cultural elements will be integrated into stormwater projects.**

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 reviewers concurred that the study directly supports stormwater management goals by:**

- **Enhancing the understanding of bioretention system longevity and effectiveness.**
- **Developing improved design parameters that maximize stormwater capture and pollutant reduction.**
- **Informing best practices for maintenance and system optimization over time.**

**One reviewer noted that the next-generation systems proposed in the study are designed to handle 95th percentile storm events, ensuring greater long-term effectiveness under changing climate conditions.**

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 identified the following key technical approach elements:**

1. **Field Data Collection: Assessing the structural integrity, soil health, plant conditions, and overall performance of 45 bioretention systems.**
2. **Hydrologic Modeling: Developing models to evaluate bioretention performance under various climate scenarios.**
3. **Soil Evolution Analysis: Investigating how soil properties within bioretention systems change over time and how these changes impact system performance.**
4. **Design Framework Development: Establishing new, data-driven guidelines for bioretention system design and maintenance.**
5. **Community Integration: Exploring ways to incorporate art and cultural relevance into bioretention features to enhance public engagement and stewardship.**

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

**Two reviewers found the technical approach well-detailed and comprehensive. However, one reviewer recommended additional information on:**

- **Soil and Plant Comparisons: How soil health in bioretention systems compares to natural, pre-development soils in the region.**
- **Modeling Scope: The number of models to be developed and whether different scenarios will be tested across varied conditions.**
- **Community Integration Methods: More details on how artistic and cultural elements will be incorporated into project designs.**

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 reviewers found the technical approach sound, with minor recommendations for improvement:**

- **Expand Diversity of Study Sites: Ensure that selected bioretention systems cover a broad range of site conditions and design variations.**
- **Stakeholder Engagement: Consult with LA County officials early in the site selection process to align the study with regional stormwater priorities.**
- **Practicality of New Design Frameworks: Verify that new bioretention design recommendations balance performance improvements with cost and material availability.**

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

**Two reviewers found the study's objectives achievable within the proposed 26-month timeframe**

and budget, provided that field data collection and modeling remain on schedule. However, one reviewer suggested extending the project timeline to four years to allow for more data analysis and refinement of bioretention system models.

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

**The reviewers identified the following risks:**

- 1. Site Diversity: Many bioretention systems have been built using similar design guidelines, potentially limiting the variability of findings.**
- 2. Model Generalizability: The ability to extrapolate study results to different watershed conditions may be constrained by limited site diversity.**
- 3. Community Engagement Complexity: Integrating artistic elements into stormwater infrastructure could prove challenging if stakeholders have differing expectations.**

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 reviewers agreed that the study's findings will assist stormwater managers by:**

- Identifying best practices for bioretention system maintenance and optimization.**
- Providing data-driven criteria for designing future bioretention facilities.**
- Offering insights into long-term bioretention system performance under evolving climate conditions.**

**One reviewer highlighted the potential for this study to inform updates to the Low Impact Development (LID) Manual, verifying that future bioretention projects align with evolving regional needs.**

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

**The reviewers offered the following insights:**

- The study should prioritize developing practical soil media specifications that balance high performance with cost-effectiveness and material availability.**
- More research is needed on how local climate and hydrology influence long-term bioretention function.**
- Including case studies from other regions with similar conditions may provide useful comparative insights.**

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 objectives as "very good," citing the study's focus on improving bioretention efficiency and expanding stormwater capture. The third reviewer rated the objectives as "excellent," emphasizing their potential to refine regional stormwater management strategies.**

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

**All reviewers rated the technical approaches as "very good," highlighting the study's robust methodology and its reliance on field data and modeling. One reviewer noted that practicality should remain a focus, ensuring that proposed design changes are feasible for widespread implementation.**

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

**All reviewers rated the study team as "excellent," noting their expertise in bioretention system assessment, stormwater modeling, and ecological design. The team's track record of conducting similar studies was seen as a strong asset.**