The Nature Conservancy
Protecting nature. Preserving life.™

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June 15, 2018

The Honorable Sheila Kuehl Supervisor,
Los Angeles County Board of Supervisors
500 Temple Street
Los Angeles, CA 90012

RE: Safe, Clean Water Program

Dear Supervisor Kuehl,

The Nature Conservancy is committed to working with the Los Angeles County Board of Supervisors to ensure safe and clean water for future generations through a multi-benefit stormwater and urban runoff capture program that utilizes nature-based solutions to increase water supply, improve water quality, and invest in communities. You have laid out a bold vision for the region and we believe that our science, policy, and financing expertise can help make it a reality through clear, implementable program criteria and guidance.

The Nature Conservancy (Conservancy) is an international non-profit organization dedicated to conserving the lands and waters on which all life depends. Our on-the-ground work is carried out in all 50 states and in 72 countries around the world and is supported by approximately one million members. To date, we have helped conserve more than 120 million acres (including nearly 1.5 million acres in California) and 5,000 river miles around the world. We have been engaged in the protection and management of natural resources across the U.S. since 1951.

Nature-Based Solutions Definition
Nature-Based solutions should be defined as projects that manage stormwater by: relying predominantly on soils and vegetation to slow, detain, and absorb water; infiltrate water to aquifers; and filter pollutants out of water and air. These may include removing or increasing permeability of impervious surfaces, utilizing spreading grounds, strategically protecting undeveloped mountains and floodplains; creating and restoring riparian habitat and wetlands using rain gardens, bioswales, soil enhancement through composting and mulching and, tree and vegetation planting, with preference for native species; and creating parkway basins. Nature-Based Solutions may also be designed to provide additional benefits such as sequestering carbon; supporting biodiversity; providing shade; and aesthetically enriching environments.

Prioritization of Nature-Based Projects
We write to strongly encourage the Safe, Clean Water Program to prioritize distributed and neighborhood scale, nature-based solutions to capture, infiltrate, treat, and use stormwater and dry-weather runoff. Such projects and programs can help achieve a more sustainable and equitable water

future for all communities in Los Angeles County. Funding for nature-based and multi-benefit projects should include different project scales, from retrofitting residential parcels and schools to large regional parks. We also firmly believe it be critically important that these projects be built throughout the region in an equitable way for all residents. In particular, Nature-Based Solutions should be prioritized. The life cycle costs of nature-based solutions are less than the gray infrastructure alternatives, especially if the multiple benefits that these projects provide are taken into account and the problems they solve over the long-term. Nature-Based Solutions can provide social, economic, and environmental benefits for our communities.

Nature-Based Solutions Scoring Criteria: Habitat Benefits

To ensure that projects that utilize Nature-Based Solutions are prioritized, we urge the County to include a points system for the Nature-Based Solutions section of the scoring criteria as the Water Quality, Water Supply, and Leveraging Funds & Readiness for Implementation sections have outlined. The Conservancy's Science, Program, and Policy teams developed the points system below to embed in the scoring criteria. It is based on habitat metrics that the Conservancy submitted to the County in February 2018 (Appendix A). To clarify what constitutes a Nature-Based Project, the Conservancy has highlighted the importance of creating more permeable surfaces, adding native vegetation to the site, ensuring a diversity of native plant species, and implementing a maintenance and monitoring plan.[1]

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Nature-Based Solutions: Habitat Benefits* (15 points max):

1. Size: Percent of project footprint converted to permeable surface

Less than 25% converted = 0 points
At least 25% and less than 50% converted = 1 point
At least 50% and less than 75% converted = 2 points
At least 75% and less than 100% converted = 3 points
100% converted = 4 points

2. Native vegetation cover: Percentage of project footprint covered by new native vegetation

Less than 5% covered by new native vegetation = 0 points
At least 5% and less than 15% covered by new native vegetation = 1 point
At least 15% and less than 25% covered by new native vegetation = 2 points
At least 25% and less than 35% covered by new native vegetation = 3 points
More than 35% covered by native new vegetation = 4 points

3. Diversity and composition: Number of different/distinct native plant species newly planted

Fewer than 10 different native plant species newly planted = 0 points
Between 11 and 20 different native plant species newly planted = 1 point
Between 21 and 30 different native plant species newly planted = 2 points
Between 31 and 40 different native plant species newly planted = 3 points
Between 41 and 50 different native plant species newly planted = 4 points

4. Monitoring and Maintenance: Plan in place

Plan in place for less than 3 years = 0 points
Plan in place for 3-5 years = 2 points
Plan in place for more than 5 years = 3 points

*All projects must have a minimum of 5 points from the Habitat Benefits section.

Community Investment Benefits Scoring Criteria
Similarly, we urge the County to include a points system for the Community Investment Benefits section to ensure that the benefits are included in each project and can be measured.

> Section C. Community Investments – 2 points for achieving at least 1 of the following community benefits, 5 points for achieving at least 4 of the following community benefits, 10 points for achieving 7 of the following community benefits:
>
> a. Creation and enhancement of parks and wetlands, or restoration of habitat and wetlands;
> b. Improved public access to recreation and open space or providing enhanced or new recreational opportunities;
> c. Greening of schools;
> d. Flood control;
> e. Improved public health;
> f. Reduction of urban heat island effect;
> g. Carbon reduction/sequestration;
> h. Improved air quality;
> i. Green waste reduction/diversion;
> j. Education

We appreciate the County of Los Angeles' strong commitment to achieving a safe and clean water future for all residents. We stand ready to work with you on providing input on the Safe, Clean Water Program and to assist with outreach to communities and leaders throughout Los Angeles County.

Sincerely,

Jill Sourial
Urban Conservation Program Director
The Nature Conservancy

Shona Ganguly
Associate Director
Advocacy & Campaigns
The Nature Conservancy

CC: Hon. Hilda L. Solis, Supervisor, First District, Los Angeles County
Hon. Mark Ridley-Thomas, Supervisor, Second District, Los Angeles County
Hon, Janice Hahn, Supervisor, Fourth District, Los Angeles County
Hon. Kathryn Barger, Supervisor, Fifth District, Los Angeles County
Mark Pestrella, Director of Public Works, Los Angeles County
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Appendix A: Habitat Metrics

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Habitat metrics for multi-benefit nature-based stormwater projects

Background

The State Water Resources Control Board's Stormwater Resource Plan Guidelines (2015) lists and defines appropriate metrics for a variety of benefits that may be derived from stormwater/green infrastructure projects. The document explicitly names "habitat protection", and some of the information in the document could be helpful in developing metrics related to habitat, and to the diverse lifeforms supported by this habitat. The Environmental Benefits named in the Stormwater Resource Plan Guidelines document include:

1. Environmental and habitat protection and improvement
2. Wetland enhancement and/or creation
3. Stream/riparian enhancement and/or instream flow augmentation
4. Increased urban green space
5. Reduced energy use, greenhouse gas emissions, or provides a carbon sink
6. Re-establishment of the natural hydrograph
7. Water temperature improvements

Among the Environmental Benefits listed above, the first three are typically the focus of projects that aim to restore/enhance habitat.

The metrics named in the document as being related to these Environmental Benefits include: "Size and/or Rate: acres, cubic feet per second (cfs), and carbon sequestration". The first of these (size, e.g., acres) is the only metric listed in the Guidelines that relates directly to habitat restoration/enhancement. The document is silent about other habitat features which could both be enhanced and serve as metrics.

Preliminary Metrics

Ideally, a habitat metric would be a factor whose increase or decrease is desired and a goal of the project, and that is measurable, and preferably easily measured.

A preliminary list of measurable characteristics of a site where wildlife habitat has been restored/enhanced (hereafter referred to as the "site") is included below. These site characteristics may serve as useful metrics of habitat for multi-benefit stormwater/green infrastructure projects. It is important to note that the measurement of these characteristics is meaningful only in context. In the case of a multi-benefit stormwater/green infrastructure project site where wildlife habitat has been restored and/or enhanced, **characteristics measured after project completion should be compared with baseline values and well-defined goals that have been identified and set during the planning phase, before the project is implemented**.

In addition to measuring the following characteristics both before and after plan implementation, project planners may wish to choose a reference site or sites with which to compare the site where wildlife habitat has been restored/enhanced. Guidance for choosing reference sites can be found in White and Walker (1997).

1. Size

a. How large is the site? (e.g., How much area does it cover? How much of this is upland, wetland, water, or other habitat types?)

2. Plant cover
   a. How much ground is covered by plants at the site (e.g., What is the percentage of bare ground? Structures, paths, or other features? How does plant cover vary across the site?)
   b. What are the differences in the abundance of plant cover at the site (e.g., What is the relative area covered by different plant species or of different types of plant species such as trees, shrubs, grasses, and herbs, or of native species versus non-native species?).
      - If the site includes more than one habitat type, then the site should be broken into sub-areas by habitat type, and assessment of this metric should take place separately within each sub-area.
   c. How many layers of vegetative canopy exist at the site? (i.e. trees, shrubs, herbaceous growth)
3. Composition (alpha diversity)
   a. What species are present at the site? (e.g., What is the species richness?)
      - Measuring species richness for very small organisms (e.g., microbes) is difficult; these organisms are therefore typically excluded from simple species counts.
   b. What is the taxonomic/phylogenetic diversity at the site? (e.g., What are the abundances of different suites of species at the site—plants, fungi, invertebrates, vertebrates, etc.)
      - Organisms may also be enumerated according to functional group as opposed to taxonomic group.
   c. What is the species evenness of the site? (e.g., How equal are the abundances of each of the species at the site?)
   d. How well are native, rare, or special status species represented at the site? What is the presence or abundance of certain species? (e.g., Many restoration projects seek to provide habitat for certain threatened and endangered species or other species of special concern (e.g. southwestern willow flycatcher, California gnatcatcher, arroyo toad or Nevin's barberry)
4. Demographics
   a. What is the abundance/density of each organism at the site?
   b. What is the growth rate (for plants) or reproductive rate (for plants and animals) for organisms at the site? Are certain species reproducing? For example, are oak seedlings and saplings present, and if so how abundant are they?
   c. What are survival rates for organisms at the site?

Additional Metrics

Other characteristics of a site that could be measured, but would be more difficult to quantify, include the following:

1. Biological Interactions
   a. For each of the following types of relationships between species, these questions can be asked: How many examples of this type of relationship exist at the site?

What is the prevalence of this relationship among organisms? Are the organisms involved in the relationship native or non-native?)

- Disease
- Parasitism
- Commensalism
- Mutualism
  - Pollination
  - Seed dispersal
- Competition
- Cooperation
- Predation

2. Ecosystem Processes
   a. Primary Production (e.g., How much carbon is fixed from CO_2 into plants at the site? Is the rate of primary production increasing over time, and if so, how quickly?)
   b. Energy Flow (e.g., How much carbon is contained at the site, and what are the dynamics of carbon cycling between the various organisms: plants, animals, and abiotic pools such as soil?)
      - Energy flow can also be tracked by studying the sequence of consumption (from plant to herbivore, to carnivore, to detritivore), and enumerating how many tropic levels are present in food webs at the site.
      - The number of species present in each tropic level is an indicator of the ecological complexity of the site.
   c. Decomposition (e.g., How quickly are organic materials broken down at a site? Or conversely, what is the rate of litter buildup on the site?)
   d. Nutrient Cycling (e.g., How quickly are nitrogen, phosphorus, and other nutrients cycling at a site? Are these elements sequestered or otherwise made biologically unavailable at the site?)
3. Indicator Species: Because biological interactions and ecosystem processes may be difficult and costly to measure, indicator species may be selected and monitored instead, or in addition to, these site characteristics. Some indicator species may also be of inherent interest, perhaps because of their own rarity or legal status (e.g. state or federal listing as endangered), or because they are recognized as a keystone species or dominant element of the vegetation). Some species that have been used as indicators include terrestrial arthropods (Longcore 2003), dragonflies (Simaika et al. 2009), and birds (Johnson 2007). Aquatic restoration projects sometimes use the diversity of certain insect groups as a measure of water quality and ecosystem health. Guidance from Carignan and Villard (2001) suggests that,

"although the use of indicator species remains contentious, it can be useful if (1) many species representing various taxa and life histories are included in the monitoring program, (2) their selection is primarily based on a sound quantitative database from the focal region, and (3) caution is applied when interpreting their population trends to distinguish actual signals from variations that may be unrelated to the deterioration of ecological integrity."

Finally, habitat metrics allow for post-implementation measurement of one crucial element of multi-benefit stormwater/green infrastructure projects. Beyond the plants, animals, and natural communities supported by this habitat (i.e. site biodiversity and its associated metrics), there are other important features of an ecologically successful restoration. Guidance about what this includes can be found in Palmer et al. (2005).

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