

Safe, Clean Water Program

Programming of Nature-Based Solutions



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Purpose

Los Angeles Flood Control District Code states that one of the Safe, Clean Water Program (SCWP) goals is to “**prioritize Nature-Based Solutions**” (Section 18.04.F) to achieve water quality, water supply, and community investment benefits. This goal applies across the entire SCWP, with specific requirements in both the Municipal and Regional Program elements. This guidance seeks to help project proponents and decision-making bodies “prioritize” Nature-Based Solutions.

Specifically, this guidance clarifies how best to prioritize Nature-Based Solutions by:

1. Establishing a shared vocabulary, starting from the SCWP definition, for considering Nature-Based Solutions during Project development and the programming of Stormwater Investment Plans (SIPs);
2. Providing guidance to the nine Watershed Area Steering Committees (WASCs) about how to prioritize Nature-Based Solutions when evaluating Projects and programming SIPs;
3. Clarifying how a Project developer or applicant can and should support the Program Goal of prioritizing Nature-Based Solutions; and
4. Highlighting how the Feasibility Study requirements and virtual application submittal tool support Project proponents and WASCs in the prioritization of Nature-Based Solutions.

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This guidance is focused on elements within the Regional program but may also be an important reference for the Municipal program.

Nature-Based Solutions in the Safe, Clean Water Program

Section 16.03.V: **Nature-Based Solutions** means a Project that utilizes natural processes that slow, detain, infiltrate or filter Stormwater or Urban Runoff. These methods may include:

- relying predominantly on soils and vegetation;
- increasing the permeability of Impermeable Areas;
- protecting undeveloped mountains and floodplains;
- creating and restoring riparian habitat and wetlands;
- creating rain gardens, bioswales, and parkway basins; and
- enhancing soil through composting, mulching, and planting trees and vegetation, with preference for native species.

Nature-Based Solutions may also be designed to provide additional benefits such as sequestering carbon, supporting biodiversity, providing shade, creating and enhancing parks and open space, and improving quality of life for surrounding communities.

Nature-Based Solutions include Projects that mimic natural processes, such as green streets, spreading grounds and planted areas with water storage capacity.

In short, Projects that use natural processes or nature-mimicking strategies to meet identified needs and deliver SCWP benefits are Nature-Based Solutions:



Such projects can employ natural processes or nature-mimicking strategies to achieve any of the key benefits that SCWP seeks to provide:

- Water Quality
- Water Supply
- Community Investments, including, but not limited to:
 - Improved flood management, flood conveyance, or flood risk mitigation;
 - Creation, enhancement or restoration of parks, habitat, or wetlands;
 - Improved public access to waterways;
 - Enhanced or new recreational opportunities;
 - Greening of schools; and
 - Reduced heat island effect and increased shade or planting of trees / other vegetation

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Below are examples of Nature-Based Solutions that can be used to address needs or desired outcomes and to provide SCWP Benefits.



It is important to note that Nature-Based Solutions are inherently holistic approaches, and as a result, often provide multiple benefits. The examples above have been simplified for illustrative purposes. The actual benefits provided through these Projects are more extensive than those listed.

The prioritization of Nature-Based Solutions, as called for in the Program Goals, is intended to apply to both the Regional and Municipal Programs. The Los Angeles Flood Control District Code calls for the following high-level policies related to Nature-Based Solutions:



Regional Program

Section 16.05.D.1.g: Regional Infrastructure Program funds *“Shall be programmed, to the extent feasible, such that Nature-Based Solutions are prioritized.”*

Municipal Program

Section 16.05.C: *“Projects implemented through the Municipal Program shall include a Water Quality Benefit. Multi-Benefit Projects and Nature-Based Solutions are strongly encouraged.”*

Section 16.05.C.1: Municipalities receiving funds shall prepare *“...a progress/expenditure report that details a program-level summary of expenditures and a description of Water Quality Benefits, Water Supply Benefits, Nature- Based Solutions, and Community Investment Benefits realized through use of Municipal Program Funds.”*

Prioritizing Nature-Based Solutions

The prioritization of Nature-Based Solutions can be realized from initial Project design to recommended programming of funds in SIPs, to retrospective program evaluation. Across these varied contexts, the following question can help Program participants prioritize Nature-Based Solutions:

Are there natural processes or nature-mimicking strategies that this Project can use to address watershed needs and deliver SCWP benefits?

For example, using this question, a Project proponent can design a Project that maximizes the use of natural processes and nature-mimicking strategies to provide needed or desired water quality, water supply, or community enhancement benefits, or to submit a request under the Technical Resources Program such that a Feasibility Study would be conducted, including an investigation as to if and how natural processes and nature-mimicking strategies can be used at the particular site.¹ Likewise, the governance committees can use this question in evaluating the extent to which individual Projects and SIPs for each Watershed Area are fulfilling the directive to prioritize Nature-Based Solutions in order to meet needs of the watershed and/or communities within it. Additional tools and suggestions are included in the section, “Regional Program Guidance,” below.

It is important to acknowledge that some needs and desired outcomes the SCWP seeks to address cannot be met using natural processes or nature-mimicking strategies. So too, Nature-Based Solutions

¹ Any requests to explore project concepts as part of the Technical Resources Program must be approved by Watershed Area Steering Committees (WASCs) as part of Stormwater Investment Plans for the Watershed Area in which the request was submitted.

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that address needs and provide benefits in one context or location may not be able to do so in all contexts or locations. Assessing the feasibility of using natural processes or nature-mimicking strategies is key to Project development, when programming Stormwater Investment Plans (SIPs), and when evaluating the extent to which SIPs might prioritize such Nature-Based Solutions.

For many watershed and community-level needs—from addressing unreliable local water supply to improving community-level investment in historically underinvested communities—and for each of the core SCWP benefits, there are proven Nature-Based Solutions in the greater Los Angeles region and elsewhere around the world. Further, the use of Nature-Based Solutions can, in many circumstances, be the most effective tool for achieving multiple benefits. For example, prioritizing solutions that use natural processes or nature-mimicking strategies to address poor water quality or insufficient local water supply can often produce community enhancements as well. In cases where the need is not feasibly met by Nature-Based Solutions, other identified needs or desired outcomes, such as increasing access to green space or reducing vulnerability to the urban heat island effect, may perhaps be addressed with natural processes or nature-mimicking strategies. There are plentiful examples for using Nature-Based Solutions to meet a variety of needs and desired outcomes, including improved flood management; additional parks, habitat or wetlands; increasing access to waterways; enhancing recreational opportunities; increasing green space on school property; and mitigating against extreme heat.

Natural Processes and Nature-Mimicking Strategies Used in Nature-Based Solutions

A clear linkage exists between watershed and community needs, Nature-Based Solutions, and delivery of the core benefits the Safe, Clean Water Program. Below is a table that attempts to capture and make explicit some of those linkages. It is important to note that many of the needs or desired outcomes, feasible Nature-Based Solutions, and the benefits that can be achieved by using them are integrated. Thus, there is significant overlap in the contents of the rows below.

The table below is not intended to be an exhaustive list of needs/desired outcomes, strategies, or benefits in any of its columns; rather it is illustrative and presented to support Project developers and WASC members in identifying ways in which natural processes and nature-mimicking strategies can be used to address known challenges and as means of yielding tangible benefits. Because this table is not comprehensive, there may be natural processes and/or nature-mimicking strategies that address needs/desired outcomes and provide benefits outside of these categories. ***Any natural processes or nature-mimicking strategy claimed as Nature-Based Solutions by a Project applicant but not included on this table will be evaluated at the discretion of WASC members in each individual Watershed Area on a case-by-case basis.***

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Identified Need or Desired Outcome	Potential Natural Processes & Nature-Mimicking Strategies	SCWP Benefits
Improved environmental water quality	Bioretention; biofiltration; removed impermeable area; increase of permeability; soil enhancement; green streets	Water Quality Benefit
Increased local water supply	Surface and subsurface infiltration to groundwater; treat and release clean stormwater flows for a justified beneficial use; stormwater capture to offset irrigation with potable water; soil enhancement to offset irrigation with potable water; new native and climate-appropriate planting to offset irrigation with potable water; remove impermeable area; increase permeability	Water Supply Benefit
Improved flood management	Bioretention; native and climate appropriate planting; removal of impermeable area; increase of permeability; microtopography changes; protection or restoration of riparian or wetland systems	Community Investment Benefit (CIB): Flood Management
Improved flood conveyance	Stream daylighting; bioretention; microtopography changes; removed impermeable surfaces; increase of permeability; localized infiltration to groundwater	CIB: Flood Conveyance
Reduced flood Risk	Bioretention; microtopography changes; native and climate appropriate planting; soil enhancement; construction or restoration of riparian or wetland systems; protection of undeveloped mountains or floodplains	CIB: Flood Risk Mitigation
Increased park space	New pocket parks, green alleys, green medians; new access to stormwater facilities or streams; park renovation; new native or climate appropriate planting	CIB: Create, Enhance, Restore Parks
Increased, improved, or restored habitat area	Construction or restoration of riparian or wetland systems; new native and climate appropriate planting; soil enhancement; treat and release clean stormwater flows for a justified beneficial use; protection or restoration of native or climate appropriate habitat; protection of undeveloped mountain or floodplains	CIB: Create, Enhance, Restore Habitat
Increased, improved, or restored wetlands	Construction or restoration of riparian or wetland systems; new native and climate appropriate planting, soil enhancement; treat and release clean stormwater flows to wetland habitats	CIB: Create, Enhance, Restore Wetlands
Increased public access to waterways	New parks or greenways at street ends or in streamside rights-of-way; new access points and services in waterway rights-of-way	CIB: Public Access to Waterways
Increased access to quality	New or enhanced parks or greenways; stream daylighting; treat and release clean stormwater flows in recreational areas; new native and climate appropriate planting	CIB: Enhanced or New

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Identified Need or Desired Outcome	Potential Natural Processes & Nature-Mimicking Strategies	SCWP Benefits
recreational opportunities		Recreational Opportunities
Increased green space on school property	Removal of impervious area; new native and climate appropriate planting	CIB: Greening Schools
Extreme heat mitigation	Removal of impervious area, new native and climate appropriate planting, soil enhancement	CIB: Reduced Heat Island Effect
Increase in shade/tree canopy and vegetation	Native and climate-appropriate shade tree planting ²	CIB: Increased Shade; Planting Trees
Improved air quality	Native and climate-appropriate tree planting	CIB: Planting Trees
Increase in green space	New pocket parks, green alleys, green medians; new access to natural stormwater facilities; park renovation; new native or climate appropriate planting	CIB: Planting Other Vegetation
Greenhouse gas emissions mitigation	Native and climate appropriate planting; soil enhancement; construction or restoration of riparian and wetland systems	CIB: Sequestering Carbon
Enhanced biodiversity	Native and climate appropriate planting; soil enhancement; construction or restoration of riparian and wetland systems	CIB: Supporting Biodiversity
Improved quality of life	New or enhanced parks, green alleys, green medians; new or enhanced access to rights-of-way along waterways; new native and climate appropriate planting	CIB: Improving Quality of Life
Improved public health	New native and climate appropriate planting, soil enhancement; vector minimization strategies; biofiltration; treat and release stormwater flows to recreational areas; new or enhanced park and recreational access	CIB: Improve Public Health

Regional Program Guidance

1. Scoring and Feasibility Studies via the Project Module

All applicants seeking funding through the Regional Program must submit a Feasibility Study, or equivalent, for review by the Scoring Committee and one of nine Watershed Area Steering Committees.

² For all plantings on SCWP Project sites, there is a preference for plants that are native or climate-appropriate for the Los Angeles Region. Several resources with examples of these plant types are linked in the “Regional Program Guidance” section. Note that these lists are not intended to be exhaustive, and a proponent may choose to justify that a plant not found on these lists is climate-appropriate and/or native as well.

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Feasibility Study applications are submitted using a virtual tool on the website, the Project Module. Using the Feasibility Study information provided by the applicant via the Project Module, the Scoring Committee will verify the points awarded for Projects, including points specifically for Nature-Based Solutions.

Known or Perceived Need Addressed by Project

The Project Module asks each Project applicant to identify the known or perceived needs or desired outcomes of the community or Watershed Area within which a Project is located, justification of why the Project developer understands those to be needs, and the ways that the Project is anticipated to address those needs and achieve desired outcomes. This question is posed for each of the three SCWP benefits – Water Supply Benefit, Water Quality Benefit, and Community Investment Benefit.

While not scored, this is an important part of the Project narrative that WASC members should consider in their evaluation of the strength of any individual Project or suite of Projects for inclusion in a Stormwater Investment Plan.

Points Available for Nature-Based Solutions

Of the total 110 points maximum, Project applicants can attain a total of 15 points for implementation of Nature-Based Solutions. See description and point distribution in the table below.

D.	15 points max	The Project implements Nature-Based Solutions
Nature-Based Solutions	15 points	D1. Project: <ul style="list-style-type: none"> • Implements natural processes or mimics natural processes to slow, detain, capture, and absorb/infiltrate water in a manner that protects, enhances and/or restores habitat, green space and/or usable open space = 5 points • Utilizes natural materials such as soils and vegetation with a preference for native vegetation = 5 points • Removes Impermeable Area from Project (1 point per 20% paved area removed) = 5 points

Project applicants must include the following Nature-Based Solutions information in their Feasibility Studies in order to be awarded points:

- 5 points for **implementing natural processes** (yes/no)

The Project Module provides the following example for implementing natural processes: *“For example, does this project implement natural processes or mimic natural processes to slow, detain, capture, and absorb/infiltrate water in a manner that protects, enhances or restores habitat, green space or usable open space.”*

To be eligible for points in this category, Projects should support achieving desired outcomes related to improved water quality, water supply, and/or community investments using **embedded solutions** where the processes used to slow, detain, capture, and absorb/infiltrate water is both a natural process or nature-mimicking strategy AND protects, enhances, and or



restores habitat, green space and/or usable open space.

Importantly, habitat, green space, and usable open space or other natural processes or nature-mimicking strategies that are independent of the stormwater improvement would not be eligible for points in this category. Excluded strategies may include, but are not limited to, ornamental landscaping, pocket parks, and shade trees..

- 5 points for **utilizing natural materials** (yes/no)

The Project Module references the following example for how a Project can use natural materials: *“For example, such as soils and vegetation with a preference for native vegetation. The explanation should include the relative increase in soils and vegetation at the project site and/or the relative increase in native vegetation. If a plant palate has been developed, it should be attached.”*

To be eligible for points in this category, the Project should advance benefits related to water quality, water supply, and/or community investments by incorporating natural materials such as soils and vegetation—with a preference for native and climate-appropriate vegetation—anywhere within the Project area. There are multiple databases (some examples are shown in Figure 1) produced by Los Angeles area organizations and institutions that can support the selection of appropriate and preferred plants, trees, and soil amendments. Note that these lists are not intended to be exhaustive, and a proponent may argue that a plant not found on these lists is climate-appropriate and/or native.

The natural materials may be associated with the stormwater improvement but are not required to be. Strategies may include, but are not limited to, adding landscaping, planting shade trees, planting native and climate appropriate vegetation, soil enhancement for infiltration (or subsurface infiltration) or improved soil health, and other strategies listed in the table above.

- Up to 5 points for **removing impermeable surface** (1 point for every 20% impervious area removed)

The Project Module asks the proponent to quantify the amount of impermeable surface that will be removed during the course of the Project, with this guidance: *“An engineering estimate for how much impermeable area is removed after the construction of the project. Compares the impermeable area of the site before construction to after the project is completed.”* (Yes/No;

Figure 1. Resources for Native and Climate-Appropriate Vegetation.

Los Angeles County Waterworks Division:
<https://dpw.lacounty.gov/wwd/web/Conservation/NativePlant.aspx>

California Native Plant Society:
<https://vegetation.cnps.org>

Metropolitan Water District Water Wise Program:
https://www.bewaterwise.com/assets/mwd_plantguide-screen_la_4_23.pdf

Theodore Payne Foundation: Plant Guides: [Plant Guides | Theodore Payne Foundation](#)

TreePeople Climate-Appropriate Non-Native Plants List:
<https://www.treepeople.org/wp-content/uploads/2020/08/Non-Native-Plant-Starter-List.pdf>



Acreage estimation before and after)

The role of impermeable surfaces in the production of polluted runoff and as a barrier to infiltration is well established. Impermeable surfaces are also often the cause of heat islands and the associated negative public health outcomes.

Absence of Nature-Based Solutions

If Nature-Based Solutions are not used, the proponent is required to provide an explanation, with supporting analysis and information, of why it is not feasible to do so.

For each of the three scored benefits in the Project Module, Water Quality, Water Supply, and each of the identified Community Investments, a Project developer is asked the following: *“Can you describe how natural processes or nature-mimicking strategies have been used to achieve this benefit? If you have achieved this benefit without using Nature-Based Solutions, please include a description of what options were considered and why Nature-Based Solutions were not utilized.”*³

Project proponents are responsible for prioritizing Nature-Based Solutions at the earliest available stage of development by working through the feasibility of using natural processes and nature-mimicking strategies to meet identified needs in the watershed and/or community and provide Program benefits.

2. Evaluating Projects at the Watershed Area Steering Committee

Watershed Area Steering Committees (WASCs) develop Stormwater Investments Plans (SIPs), which summarize WASC recommendations for how to allocate Regional Program funding for each Watershed Area. One criterion the WASCs must consider in the development of their SIP recommendations is the prioritization of Nature-Based Solutions to the extent feasible.

WASC Evaluation of Individual Projects

WASCs can use the materials submitted by each applicant in the Project Module to evaluate the Nature-Based Solutions submitted for funding consideration. WASCs can use this question set to assist their consideration of each qualified Project, alongside the answers provided by the proponent when they submitted the Project and asserted the use of, or the decision to not use, Nature-Based Solutions:

³ Note that previously, a version of this question was asked just on the Project Module page for Nature-Based Solutions. Starting in Round 3, it instead is asked for each benefit in order to help the WASCs better understand and evaluate the project- and program-level prioritization of NBS.



Questions to Ask Regarding Individual Projects

Are there natural processes or nature-mimicking strategies that this Project will use to address watershed needs and deliver SCWP benefits?

If not, should this project be revisited for future SIP consideration instead?

Where possible, WASC members should consider known needs of the Watershed Area and/or the community in which the Project is located when evaluating the benefits that it is providing.

Note that the feasibility of using Nature-Based Solutions is key to the treatment of the second question. In situations where a Project proponent has expressed that Nature-Based Solutions are infeasible, the WASC can evaluate how the proponent analyzed and ultimately decided to not include natural processes or nature-mimicking strategies in the proposed Project. If the infeasibility is considered to be demonstrated adequately, the WASC should not consider the absence of natural processes or nature-mimicking strategies as the sole grounds to revisit the Project in the future.

However, for those sites where Nature-Based Solutions are feasible and desirable, the WASC may consider shifting the Project to the Technical Resources Program for refined/new concept development (incorporating Nature-Based Solutions) or requesting the proponent bring a revised proposal back to the WASC for consideration in a future year.

WASC Evaluation of SIPs

Additionally, WASCs can prioritize Nature-Based Solutions by considering how the suite of Projects supported by past SIPs, and those under consideration each fiscal year as a SIP is programed, together reflect a prioritization of Projects that use natural processes or nature-mimicking strategies across the Watershed Area and to the benefit of all communities. A couple questions that could help this consideration are:

Questions to Ask Regarding SIPs

Has the WASC prioritized Nature-Based Solutions within this and prior Stormwater Investment Plans?

How are the Nature-Based Solutions funded to-date collectively providing the anticipated benefits to the Watershed Area, and where are the biggest needs or opportunities?



Considering the known and perceived needs of the Watershed Area, WASC members should evaluate the extent to which full suites of Projects programmed in Stormwater Investment Plans meet or are anticipated to meet those needs.

In cases where collective groups of Projects, including Nature-Based Solutions, do not adequately address Watershed Area needs, WASC members may wish to reevaluate programming recommendations to have a suite of Projects more targeted toward providing specific benefits or achieving particular outcomes. If programming a Stormwater Investment Plan such that Watershed Area needs can be met is not possible (i.e. there are not eligible Projects that meet those needs that can be programmed), WASC members should provide that information to the Flood Control District staff and to their Watershed Coordinator(s) to assist with developing the pipeline of such Projects applying for funding in future years.

Other Tools Available to WASC Members A series of actions and activities are available to WASCs for prioritizing Nature-Based Solutions:

Strategies to prioritize Nature-Based Solutions that WASC members can use during Project evaluation and SIP recommendation development:

- Prior to sending submitted Projects to Scoring Committee, the WASC can choose to evaluate the extent to which natural processes or nature-mimicking strategies are included in each Project, and the extent to which Nature-Based Solutions appear across the suite of Projects. This evaluation can support the WASC decision-making about which Projects are “sent” to Scoring.
- Upon the completion of scoring and during review of individual Projects, the WASC should read materials provided by proponents about natural processes and nature-mimicking strategies included in Projects, and in the case where Nature-Based Solutions were judged infeasible, about the analysis and reasons given.
- During presentations by Project proponents, the WASC members can ask questions about the natural processes or nature-mimicking strategies included in the Project, or about the analysis completed which showed Nature-Based Solutions to be infeasible.
- When programming the SIP, the WASC can review SIP of previous years, and the suite of Projects proposed, to consider how Nature-Based Solutions are being prioritized in the Watershed Area.



Strategies to prioritize Nature-Based Solutions that WASC members can use at any time:

- **WASCs can ask their Watershed Coordinator(s) to evaluate and report to the WASC how the people, city and county agencies, and other stakeholders would prioritize Nature-Based Solutions in the Watershed Area.**
- **WASCs can invite informational presentations from agencies, organizations, and other stakeholders to better understand how Nature-Based Solutions would bring benefits and meet the challenges faced in the Watershed Area.**

SCWP Fund Transfer Agreements in the Regional and Municipal Programs

In addition to the requirements listed above, recipients of SCWP funding in the Regional and Municipal Programs do not receive funds until they execute a Fund Transfer Agreement that outlines several expectations relative to Nature-Based Solutions in Project design, implementation, and reporting.

Both Regional Program Fund Recipients and Municipalities are required:

- To consider using and incorporating Nature-Based Solutions for their Projects.
- To include in their Progress reports (quarterly and annual) and in the Expenditure report a summary whether and how their Projects achieve a good, better, best for each of the 6 Nature-Based Solutions methods in accordance with guidance (See Appendix for the good/better/best guidance for Nature-Based Solutions).
- To include in their Progress reports (quarterly and annual)/ Expenditure Reports a discussion of any considerations taken to maximize the class within each Nature-Based Solutions method. If at least 3 Nature-Based Solutions methods score within a single class, the overall Project can be characterized as that class.
- To attach a copy of the matrix for each Project with the good, better, or best column indicated for each method, to facilitate District tracking of methods being utilized.

Long-Term Vision for Nature-Based Solutions

The Flood Control District recognizes that, long-term, additional measures will need to be taken across SCW Program implementation—from project design to retrospective considerations, along with ongoing adaptive management—to facilitate the prioritization of Nature-Based Solutions. While not appropriate to include within the scope of this guidance, the Flood Control District anticipates pursuing additional activities and exploring further potential guidance within the following contexts by the year 2025.

- **Regional Program Project Design Phase:** Build the pipeline of Nature-Based Solutions applications received for funding consideration. This could be accomplished through a variety of tactics, including but not limited to the following:
 - Identification of regional and watershed-level needs that can be met using Nature-Based Solutions



- Education/training for Project developers on what is considered a Nature-Based Solution in the SCWP, how to design, construct, and maintain Nature-Based Solutions, and examples of projects that are considered good, better, or best for meeting Nature-Based Solutions preferences of the SCWP
- Incentives for Project developers, such as by specifying round-specific program preferences for funding, development of Nature-Based Solutions targets for WASCs, or other measures
- Exploration of an iterative project design process that enables Project developers to engage with the District and with WASCs earlier in the design process so that any preferences in design can be shared by governance committees and taken into account by Project developers
- Facilitating WASC discussions to further establish Watershed Area specific needs and opportunities that inform new project concepts and ensure maximum consideration of potential Nature-Based Solutions
- **Regional Program Scoring:** Make sure that:
 - Desirable Nature-Based Solutions are competitive in scoring (i.e., pass threshold)
 - Nature-Based Solutions on the lower end of the good/better/best spectrum are not awarded de facto full points
- **SCWP Evaluation:** Establish processes for the biennial review in developing recommendations for adaptive program management. This will include careful consideration of lessons learned to date and resulting options to potentially improve outcomes.
- **Integration Across SCWP:** Ensure that Regional Program processes and preferences are appropriately integrated with the implementation of the Municipal Program, Watershed Coordinators, and District Programs, including the District Education Program, such that all parties working to implement the SCWP are fulfilling the directive to prioritize Nature-Based Solutions.
- **Integration Across WHAM:** Establish processes to collaborate early with other funding programs to evaluate opportunities and maximize Nature-Based Solutions that may achieve multi-sector benefits in addition to SCWP objectives.

In the nearer term, these concepts will be explored and advanced to the degree feasible for the anticipated 2022 guidance, which is expected to be available for the Regional Program Round 4 (FY 2022-23) Call for Projects. For Round 4, the primary focus will be to expand from ensuring consistent use of terminology and clarifying categories to fostering more effective planning and evaluation of Nature-Based Solutions. This will include efforts to map challenges to solutions and assist project developers and WASCs in further expanding their design thinking and decision-making, as well as expanding messaging why selected solutions may be most prudent. The 2022 guidance is expected to include multiple opportunities for input, including a public review period.



APPENDIX: Annotated "Nature-Based Solutions Best Management Practices"

The content below has been taken from the Fund Transfer Agreements, and annotated for clarity. This annotation is meant to assist the Project developers and Municipalities in filling out progress reports for Projects and expenditures. It clarifies terms and other ambiguities for each of the Nature-Based Solutions methods highlighted in the evaluation form.

Nature-based solutions (NBS) refers to the sustainable management and use of nature for undertaking socio-environmental challenges, including climate change, water security, water pollution, food security, human health, and disaster risk management. As this environmental management practice is increasingly incorporated into projects for the SCW Program, this guidance document may be expanded upon to further quantify NBS practices based on benefits derived from their incorporation on projects.

The SCW Program defines Nature-Based Solutions as a Project that utilizes natural processes that slow, detain, infiltrate or filter Stormwater or Urban Runoff. These methods may include relying predominantly on soils and vegetation; increasing the permeability of Impermeable Areas; protecting undeveloped mountains and floodplains; creating and restoring riparian habitat and wetlands; creating rain gardens, bioswales, and parkway basins; enhancing soil through composting, mulching; and, planting trees and vegetation, with preference for native species. Nature-Based Solutions may also be designed to provide additional benefits such as sequestering carbon, supporting biodiversity, providing shade, creating and enhancing parks and open space, and improving quality of life for surrounding communities. Nature-Based Solutions include Projects that mimic natural processes, such as green streets, spreading grounds and planted areas with water storage capacity. Nature-Based Solutions improve water quality, collect water for reuse or aquifer recharge, or to support vegetation growth utilizing natural processes.

Recipients are to consider using Nature-Based Solutions for infrastructure projects and t include in each quarterly and annual report whether and how their project achieves a good, better, or best for each of the 6 NBS methods in accordance with the guidance below. Additionally, reports should include discussion on any considerations taken to maximize the class within each method. If at least 3 methods score within a single class, the overall project can be characterized as that class.

Note that because Nature-Based Solutions are inherently holistic approaches, many attributes of projects that meet the description under one method will receive credit under other methods.



Method 1: Vegetation/Green Space

Purpose: This method refers to the utilization of climate-appropriate and native vegetation, as well as strategically placed shade trees that provide cooling benefits. The class is determined by the type of vegetation included in the project as well as estimated percentage of vegetative cover.

Evaluation: To be considered as meeting any class in this method, both criteria must be met in that class. This method is also intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION
GOOD	Use of climate-appropriate, eco-friendly vegetation (groundcover, shrubs, and trees) / green space 5%-15% covered by new climate-appropriate vegetation
BETTER	Use of native, climate-appropriate, eco-friendly vegetation (groundcover, shrubs, and trees) / green space 16%-35% covered by new native vegetation
BEST	Establishment of plant communities with a diversity of native vegetation (groundcover, shrubs, and trees) / green space that is both native and climate-appropriate More than 35% covered by new native vegetation

NOTES

“Climate appropriate vegetation” means a variety of plants that may not be “native” to the Los Angeles region, but which require below-average amounts of water. This includes certain shade trees. Examples can be found here: [TreePeople Climate-Appropriate Non-Native Plants List](#)

The **percentages** indicated here mean the portion of the total Project area cover by vegetation at plant maturity.⁴

“Native vegetation” means a variety of plants that are adapted to and historically grown within the Los Angeles region, and are non-invasive. Examples may be found using the following resources:

- [Los Angeles County Waterworks Division Native Plant List](#)
- [Metropolitan Water District Water Wise Program Native Planting Guide for LA County](#)
- [TreePeople Native Plants List](#)
- [California Native Plant Society](#)
- [Theodore Payne Foundation: Plant Guides](#)

⁴ While only the portion of vegetation relative to the whole Project area is noted as a criteria for this method, Project developers and WASCs should consider the total absolute square footage of vegetation when self-assessing for reporting purposes and evaluating Project impact.



Method 2: Increase of Permeability

Purpose: This method is about increasing the amount of permeable surface in LA County. Accordingly, for projects implemented on land that is already fully permeable, this method does not apply.

Evaluation: To be considered as meeting any class in this method, two criteria must be met: (1) percentage of impermeable/paved surfaced removed and (2) the type of landscape installed (see “Notes” section for details). The other criterion in each class is desirable, but not required. This method is intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION
GOOD	Installation of vegetated landscape – 25%-49% paved area removed Redesign of existing impermeable surfaces and/or installation of permeable surfaces (e.g. permeable pavement and infiltration trenches)
BETTER	Installation of vegetated landscape – 50%-74% paved area removed Improvements of soil health (e.g., compaction reduction)
BEST	Installation of vegetated landscape – 75%-100% paved area removed Creation of well-connected and self-sustained natural landscapes with healthy soils, permeable surfaces, and appropriate vegetation

NOTES

Paved area means anything impermeable through which water cannot percolate or infiltrate.

The **percentages** refer to the proportion of paved/impermeable surface being removed in the Project area.⁵

To meet a **“good” class** in this method, a Project must have removed at least the listed percentage of impermeable/paved area, AND installed a permeable surface in its place, including but not limited to permeable pavement, soil, or vegetated landscape. Redesign of remaining impermeable/paved surfaces is encouraged but not required.

To meet a **“better” class** in this method, a Project must have removed at least the listed percentage of impermeable/paved area, AND installed soil or landscape in its place (permeable pavement does not count). Redesign of remaining impermeable/paved surfaces and improvements to soil health are encouraged but not required.

To meet a **“best” class** in this method, a Project must have removed at least the listed percentage of impermeable/paved area, AND installed vegetated landscape with groundcover, shrubs, and/or trees in its place. Redesign of remaining impermeable/paved surfaces, improvements to soil health, and creation of landscapes are encouraged but not required.

⁵ While only the portion of impermeable/paved surface removed relative to the whole Project area is noted as a criteria for this method, Project developers and WASCs should consider the total absolute square footage of removed surface when self-assessing for reporting purposes and evaluating Project impact. For example, removing a total of 1 square foot of pavement that exists on a Project site shouldn’t qualify for the “best” class even if the Project removes 100% of the impermeable surface.



Method 3: Protection of Undeveloped Mountains & Floodplains

Purpose: This method refers to the preservation of existing habitat, wetland, and natural hydrologic features of the watersheds of Los Angeles County. For Projects located on land that does not have existing vegetation or land to preserve, this method does not apply.

Evaluation: To be considered as meeting any class in this method, both criteria must be met in that class. This method is intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION
GOOD	Preservation of native vegetation
	Minimal negative impact to existing drainage system
BETTER	Preservation of native vegetation
	Installation of new feature(s) to improve existing drainage system
BEST	Creation of open green space
	Installation of features to improve natural hydrology

NOTES

Preserving native vegetation: Projects built in locations that already have a lot of native vegetation that is protected or will be preserved via Project implementation are considered to be in the “good” and “better” classes.

The **existing drainage system** may be the natural hydrology or an existing built drainage system, depending on the project site.

Minimal negative impact is any action or impact considered “less than significant” as defined by CEQA.

Improvements will enhance the drainage system’s ability to slow, detain, capture, and/or infiltrate water without creating increased flood damage risk to property or persons.

Creating open space: Those projects that preserve native vegetation AND create open green space, using climate-appropriate and native vegetation, that is intended for safe public use are considered to be in the “best” class.

The **natural hydrology** is comprised of green infrastructure and land elements that direct and infiltrate water entering the built drainage system. To meet the “best” class in this method, improvements should be to the natural hydrology, rather than to a built system.

Safe, Clean Water Program

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Method 4: Creation & Restoration of Riparian Habitat & Wetlands

Purpose: This method is about restoration of former or existing degraded riparian habitat and wetlands and/or creation of riparian and/or wetland habitat on the Project site.

Evaluation: To be considered as meeting any class in this method, all criteria must be met in that class. This method is intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION	NOTES
GOOD	Partial restoration of existing riparian habitat and wetlands Planting of climate appropriate vegetation - between 5 and 15 different climate-appropriate or native plant species newly planted No potable water used to sustain the wetland	<p>Riparian habitat is defined by the U.S. Fish and Wildlife Service and can be found here.</p> <p>Wetland is defined by the U.S. Environmental Protection Agency and can be found here.</p> <p>Restoration means the manipulation of physical, chemical, or biological characteristics of a site with the goal of returning natural or historic function of degraded habitat to equal or better than its former state.</p> <p>Partial restoration means less than 80% of the existing riparian habitat or wetlands on the parcel will be restored as part of the project scope.</p>
BETTER	Full restoration of existing riparian habitat and wetlands Planting of native vegetation - between 16 and 30 different native plant species newly planted No potable water used to sustain the wetland	<p>A list of climate-appropriate and native vegetation can be found in Method 1, “Vegetation/Green Space.” Plant palettes should be designed to consider habitat opportunities, functional use, and site conditions.</p> <p>Full restoration means all or almost all (at least 80%) of the existing riparian habitat or wetlands on the parcel has been restored as part of the Project scope.</p>
BEST	Full restoration and expansion of existing riparian habitat and wetlands Planting of plant communities with a diversity of native vegetation – greater than 31 native plant species newly planted No potable water used to sustain the wetland	<p>To meet the “best” class in this method, new riparian habitat or wetlands must be created in addition to the area restored.</p>



Method 5: New Landscape Elements

Purpose: This method refers to the use and/or manipulation of the natural landscape to capture or direct stormwater flows and to improve water quality. These new landscape elements may supplement or even replace existing drainage systems.

Evaluation: To be considered as meeting any class in this method the capture criteria indicated below must be met. This method is intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION
GOOD	Elements designed to capture runoff for other simple usage (e.g. rain gardens and cisterns), capturing the 85th percentile 24-hour storm event for at least 50% of the entire parcel
BETTER	Elements that design to capture/redirect runoff and filter pollution (e.g. bioswales and parkway basins), capturing the 85th percentile 24-hour storm event from the entire parcel
BEST	Large sized elements that capture and treat runoff to supplement or replace existing water systems (e.g. wetlands, daylighting streams, groundwater infiltration, floodplain reclamation), capturing the 90 th percentile 24-hour storm event from the entire parcel and/or capturing off-site runoff

NOTES

Landscape elements that qualify a project for credit under this method include any of the following:

- Cisterns (small-scale)
- Rain gardens (small-scale)
- Treewells (small- to medium-scale)
- Bioswales (medium-scale)
- Parkway basins (medium-scale)
- Retention ponds (medium- to large-scale)
- Wetlands (large-scale)
- Daylighting streams (large-scale)
- Regional groundwater infiltration basins (*must be vegetated*) (large-scale)
- Floodplain reclamation (large-scale)

The “good,” “better,” or “best” evaluation for this method will depend on the amount of **stormwater effectively captured or redirected** by the elements across the parcel and off-site, as noted in the matrix.

For the **“best” class**, Projects must capture either the 90th percentile OR at least the 85th percentile from the entire parcel plus off-site runoff in order to qualify. For off-site runoff, WASCs should verify volumes in order to consider a Project as “best” under this method.



Method 6: Enhancement of Soil

Purpose: This method refers to the health of soil at the project site to ensure adequate drainage and advance co-benefits associated with healthy soils, like greenhouse gas sequestration, erosion prevention, water retention, and others.

Evaluation: To be considered as meeting any class in this method, all criteria must be met in that class. This method is intended to be cumulative, where a “best” classification is attained only when all requirements of lower tier(s) are satisfied as well. If you believe you have met a “good,” “better,” or “best” class but haven’t met all the criteria within or below a tier, please justify.

CLASS	DESCRIPTION	NOTES
GOOD	<p>Use of soil amendments such as mulch and compost to retain moisture in the soil and prevent erosion</p> <p>Planting of new climate-appropriate vegetation to enhance soil organic matter</p>	<p>Soil amendments mean materials that are mixed into the soil to improve water retention and nutrient absorption, which could include compost, manure, wood chips, or rocks.</p> <p>A list of climate-appropriate and native vegetation can be found in Method 1, “Vegetation/Green Space.”</p>
BETTER	<p>Use of soil amendments such as mulch and compost that are locally generated to retain moisture in the soil, prevent erosion, and support locally-based composting and other soil enhancement activities</p> <p>Planting of new native, climate-appropriate vegetation to enhance soil organic matter</p>	<p>Locally-generated soil amendments are those sourced and processed within the Watershed Area of the project under consideration. Locally-based soil enhancement activities will be those taking place within that same Watershed Area.</p>
BEST	<p>Use of soil amendments such as mulch and compost that are locally generated, especially use of next-generation design with regenerative adsorbents (e.g. woodchips, biochar) to retain moisture in the soil, prevent erosion, and support on-site composting and other soil enhancement activities</p> <p>Planting of new native, climate appropriate vegetation to enhance soil organic matter</p>	<p>For the “best” class, Projects should include on-site soil enhancement.</p>