BASED SOLUTIONS

Blue-Ribbon Panel Recommendations Report

January 2026

LA COUNTY
WATER PLAN

COUNCIL FOR
WATERSHED
HEALTH

Executive Summary

Purpose and Context: In response to the County Water Plan's call for clearer guidance around Nature-based Solutions (NbS) and to help achieve the County Water Plan's goal to equitably achieve safe, clean, and reliable water resources for Los Angeles County by 2045, Los Angeles County Public Works "Public Works" convened the Nature-based Solutions Task Force in August 2024. Recognizing the social and ecological impacts of reliance on gray infrastructure, the Task Force sought to standardize and prioritize Nature-based Solutions by developing a Definition and Standard complete with criteria and indicators, as well as actionable recommendations that build on the Safe Clean Water Program 2025 Interim Guidance and the Metrics and Monitoring Study.

The Task Force's efforts to refine the standardization, application, and assessment of Nature-based Solutions considered both the County Water Plan and the Safe Clean Water Program. As such, the Task Force's work, and this report, addresses Nature-based Solutions as it applies to water-related initiatives and more generally as it applies to natural resource and land management Countywide efforts.

Council for Watershed Health led this effort, informed by robust partnership with Public Works, Better World Group and interested party engagement. The briefing of work completed by the Task Force, included in this report, reflects the expertise of over 50 participants, including Tribal representatives, technical experts, academia, and community-based organizations. The resulting Definition and Standard for Nature-based Solutions, included as part of this report, seek to adapt international best practices to the regional context of Los Angeles County and offer a consistent and measurable way of better assessing and incentivizing Nature-based Solutions. This report summarizes the work completed by the Nature-based Solutions Task Force and Nature-based Solutions Blue-Ribbon Panel. It is intended to inform the implementation of NbS, incentivize NbS in the Safe Clean Water Program, and inform programs and policy strategies for the advancement of NbS Countywide.

Participatory Process: The Task Force included over 50 participants representing Tribes, CBOs, technical experts, government agencies, and academia. The Blue Ribbon Panel (BRP) was a smaller working group of the Task Force that led the iterative process of developing the Definition and Standard. The strategic direction of this process was led by the CWH Team, guided by continued input from the co-chairs, and continuously revised through feedback from both the BRP and the Task Force.

Definition and Standard: The Task Force considered a variety of existing definitions and frameworks and decided to embrace a regionally adapted version of the International Union of Conservation of Nature and Natural Resources (IUCN) Global Standard for Nature-based Solutions. The Definition and Standard for Nature-based Solutions across the County is as follows:

> **NbS Definition:** Nature-based Solutions address societal challenges through sustainable actions that protect and restore living ecosystems and their functions to ensure human well-being and benefit biodiversity by meeting the established NbS standard and associated criteria.
>
> **Water-specific Definition:** Nature-based Solutions address water quality, water supply and stormwater challenges through sustainable actions that protect and restore living ecosystems and their functions to ensure human well-being and benefit biodiversity by meeting the established NbS standard and associated criteria.

Standard: Nature-based Solutions must implement place-appropriate and evidence-backed living processes and infrastructure, such as soil and vegetation, to improve long-term ecosystem function, habitat connectivity, and community health and well-being. Success of Nature-based Solutions should be qualitatively and quantitatively evaluated using the following criteria and indicators (full set of criteria outlined in the Standard, to be read as an integrated framework, can be found in the report).

The aforementioned criteria that compose the Standard are adapted from the IUCN but reorganized and updated for Los Angeles County accordingly. Long form versions of the criteria can be found in the report:

- **Key Criteria**: Foundational for any project to qualify as NbS
- **Project Guidance**: Strengthens project-level outcomes and is applicable across all projects, whether or not they are a NbS project.
- **Program Guidance**: Ensures long-term governance and institutional alignment with Nature-based Solution projects.

Recommendations Summary: For the implementation of the Definition and Standard, the BRP developed the following recommendations:

- **Holistic Assessment of Projects**: Projects should be designed and evaluated holistically based on how well they function as integrated Nature-based Solutions, not just on individual features. *Additional approaches to holistic assessment of the project can be found in the Recommendations Section of this report.*

- **Restructure the SCWP Scoring**: Revise the SCWP scoring to meaningfully prioritize and incentivize Nature-based Solutions.

- **Scoring on a Spectrum**: Evaluate projects along a spectrum from gray to nature-based infrastructure to reflect degrees of alignment with the NbS Standard, rather than placing them in a singular category based on a set of features. The Spectrum is composed of real-world projects drawn from across the region (see Appendix E). It accounts for site context, ecological opportunity, and system integration, and is intended as a qualitative visualization tool that could evolve into a scoring and benchmarking system. The Spectrum is supported by case studies and participatory assessments.

    - **Scoring Spectrum Tool:** A key recommendation was to develop the Scoring Spectrum as a tool to move beyond the amorphous terminology of “green infrastructure” and “nature-mimicking,” and toward a more holistic assessment of Nature-based Solutions. This approach goes beyond a checklist of items and instead evaluates how a project functions within its site context, how it fits into the larger ecology, and how well it performs within the limitations of the site. *Additional details on the Spectrum can be found in the Nature-based Solutions Spectrum section of this report. Case studies that compose the Spectrum Tool can be found in Appendix E.*

- **Parallel Tracks and Incentivization for Open Space + Conservation NbS Projects**: Create a dedicated evaluation and funding pathways for open space acquisition, conservation, and restoration projects that align with NbS project goals within the SCWP and in future County programs.

Next Steps: Phase 2 of the Nature-based Solutions Task Force will focus on sharing the work completed to date, and supporting the development of metrics as they relate to the recommendations for application to the SCWP and Countywide Planning.

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List of Blue-Ribbon Panel Participants

- Alduenda, Eileen - Council for Watershed Health *
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- Arends, Claudia – US Forest Service
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- Hala, Keith – Los Angeles County Public Works *
- Hamamoto, Bruce – Los Angeles County Public Works *
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- Ouwersloot, Natalie – Foothill MWD
- Robinson, Claire – Amigos de los Rios
- Roderick-Jones, Rowan – Stillwater Sciences
- Santilena, Susie – City of Los Angeles Sanitation & Environment
- Scaduto, Michael – City of Los Angeles Sanitation & Environment
- Trivedi, Geraldine – City of Redondo Beach
- Tsong, Jane – Watershed Conservation Authority
- Vona, Andrea – Los Angeles County Parks and Recreation
- Watts, Melina – Safe Clean Water Program, County of Los Angeles
- Winter, Melanie – The River Project

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Ready, Drew
Reznik, Bruce
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We would like to extend our sincere thanks to the members of the Blue Ribbon Panel, the Nature-based Solutions Task Force, and our partners at the County of Los Angeles for their thoughtful contributions, continued collaboration, and commitment to advancing more equitable, effective, and ecologically grounded projects and Nature-based Solutions— Your expertise and dedication have been instrumental in shaping the work outlined in this report.

We also wish to acknowledge the late Melanie Winter, who contributed to this work and was a dedicated advocate for water-related nature-based solutions and climate resilience in Los Angeles throughout her career. Melanie's insight, leadership, and long-standing commitment to advancing resilient watershed planning continue to inform and inspire this work.

CWH Report Synthesis Lead: Tanishka Chellani

CWH Report Team: Eileen Alduenda, Jason Casanova, Debbie Enos, Drew Ready

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Terminology and Abbreviations

- Blue Ribbon Panel (BRP): A core working group within the Task Force responsible for developing the Definition, the Standard, and recommendations to support the implementation of Nature-based Solutions.
- Council for Watershed Health (CWH): The nonprofit organization supporting the coordination of the Task Force and BRP process in partnership with Los Angeles County Public Works.
- County Water Plan (CWP): Los Angeles County's long-term strategic plan for achieving a shared, inclusive, regional path forward to sustainably and equitably achieve safe, clean, and reliable water resources for Los Angeles County.
- "the County": Refers to the County of Los Angeles and its relevant agencies, departments, and programs.
- "the Definition": Refers to the formal County-specific Definition of Nature-based Solutions developed by the Blue Ribbon Panel, which serves as a foundational reference for project identification, design, and evaluation.
- Nature-based Solutions Task Force (Task Force): A County-convened advisory group composed of interested parties and experts tasked with advancing the Charter priorities related to Nature-based Solutions.
- Safe, Clean Water Program (SCWP): A Los Angeles County program established by Measure W to fund stormwater capture, water quality, and multi-benefit projects.
- "the Standard": Refers to the set of criteria and indicators developed alongside the Definition to evaluate whether a project qualifies as a Nature-based Solution.

Background

Increasingly, Nature-based Solutions (NbS) are viewed as an instrumental resource management solution and an effective multiple benefit approach to addressing water challenges and facilitating long-term climate resilience. Effective Nature-based Solutions are living systems that require a holistic, ecosystem-based approach that, when supported and maintained, can increase water supply, improve water quality, and provide a myriad of additional benefits. NbS can restore ecosystems, support biodiversity—as a key indicator of ecosystem and human health, create recreational opportunities, facilitate flood control, sequester carbon, and create habitats for wildlife, all while addressing public health issues (such as urban heat island effect) and a range of broader societal and communal challenges. However, there are often different definitions of NbS, misalignment about what solutions are truly "nature-based", ambiguity around how to measure the impact of such projects, and challenges around how to effectively incentivize them within existing governance and programming (Horvath, 2023).

In 2023, the County of Los Angeles adopted a County Water Plan "CWP" to "articulate a vision and establish a shared, inclusive, and regionally specific path forward to sustainably and equitably achieve safe, clean and relatable water resources for Los Angeles County by 2045. To encourage a robust roll out of this plan, the County Board of Supervisors urged the "establishment of a Blue-Ribbon Panel to develop standards for nature-based water management solutions, involving tribal, non-profit, academic, community, labor, technical experts, and water agencies, and report to the Board, in writing, within twelve months on the findings" (Horvath, 2023) to guide CWP implementation. The department responded by creating four separate task forces including a Nature-based Solutions Task Force. With the charter to "implement priority tasks from the CWP 2-Year Action Plan and support the use of Nature-based water management solutions across the County," Los Angeles County Public Works (Public Works) worked with Council for Watershed Health (CWH) to assemble a Task Force and Blue Ribbon Panel of experts and interested parties from federal, state, and local agencies, utilities, academia, tribes, community-based organizations, and other interest groups.

The goals of the Nature-based Solutions Task Force "NbS Task Force" were to champion the adoption and implementation of NbS to improve the health of communities and ecosystems throughout Los Angeles County by:

1. Developing a Countywide definition and standard for Nature-based Solutions,
2. Creating a framework to more effectively prioritize Nature-based Solutions in stormwater capture projects, and

3. Building upon the LA County Safe, Clean Water Program's (SCWP) Metrics & Monitoring Study and 2025 Interim Guidance.[1]

The County Water Plan (CWP) encompasses a broad range of water management priorities. The Task Force focused on stormwater and the Safe, Clean Water Program (SCWP) as key points of intervention for advancing Nature-based Solutions. Stormwater offers an entry point for multi-benefit nature-based projects to be realized, improving water quality and supply while also supporting biodiversity, ecosystem health, and community well-being. The SCWP, as an existing and successful program, provides both a foundation to test and refine Nature-based Solutions in practice and an opportunity to retrofit current approaches while proactively shaping implementation for future programs. The insights and recommendations detailed in this report, are grounded in the SCWP and Measure W; however, these strategies can be adapted to apply to other Measures and County Programs. Nature-based Solutions have applications across most, if not all, County Water Plan Strategies, with particular relevance to several priorities. Some of the ways Nature-based Solutions can support select CWP strategies is as follows:

- Strategy 1 by reducing outdoor water use through native landscaping, soil health practices, and ecosystem-based approaches that lower irrigation demand while enhancing stormwater infiltration.
- Strategy 3 by facilitating stormwater capture through Nature-based design and green infrastructure by developing local supplies while integrating into regional conveyance and recharge systems.
- Strategy 5 through the restoration of floodplains and parks designed for infiltration expands groundwater storage capacity.
- Strategy 9 by making groundwater recharge visible and tangible through parks, restored streams, and green schoolyards, building regional understanding and collaboration.
- Strategy 10, which encourages designs that maximize natural infiltration of precipitation while delivering multiple co-benefits.
- Strategy 12 by mitigating wildfire impacts through reforestation, slope stabilization, and riparian restoration that reduce erosion and sedimentation, alongside planning for wildfire recovery and wildland–urban interface (WUI) resilience.
- Strategy 13, replacing invasive riparian species with native vegetation strengthens water quality, ecosystem services, and climate resilience.

The NbS Task Force efforts began in August 2024. Within the overall Task Force, the County and CWH established the NbS Blue-Ribbon Panel (BRP), a lead working group which engaged in a series of workshop style meetings with iterative exercises related to Task Force priorities. While the BRP directed this effort, members of the Task Force reviewed and contributed to the broader recommendations and provided essential input, guidance and feedback at every step of our process.The insights developed here as part of this effort will be strategically shared to facilitate regional collaboration in Phase 2 of the Task Force's work.

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[1] See the complete Nature-based Solutions Task Force Charter here.

To ground its efforts in the types of Nature-based Solutions it aimed to promote, the Task Force developed an iterative visioning document that can be found in Appendix A.

Introduction

This document is a recommendation report and briefing to the Los Angeles County Board of Supervisors, Los Angeles County Public Works staff, project proponents, and other interested parties. It summarizes the work completed by the Nature-based Solutions Task Force and Blue-Ribbon Panel (BRP) on the NbS Charter priority tasks[2] to date. This report is intended to be used to inform future programmatic and policy updates, scoring and implementation strategies under the County Water Plan, Safe Clean Water Program (SCWP), and NbS-related programs across LA County.

As part of this effort, the BRP has drawn from a variety of sources that define Nature-based Solutions in order to develop a definition ("Definition") and standard ("Standard") for the use of the term, including criteria and indicators that are tailored to the land use and unique regional challenges of Los Angeles County. Through a thorough literature review process and ongoing guidance from the Task Force, the BRP agreed to adapt the International Union for the Conservation of Nature's Global Standard for Nature-Based Solutions (IUCN) to ensure it is regionally specific and applicable.[3] The following recommendations aim to effectively incentivize Nature-based Solutions in stormwater capture and water management projects. As part of this report, the BRP has assessed the metrics developed as part of the Safe Clean Water Program's "2025 Interim Guidance" and the "Metrics and Monitoring Study (MMS)," and will continue to refine scoring and metric recommendations through a dedicated NbS SCWP Working Group as part of the larger Nature-based Solutions Task Force.

The NbS Task Force worked to balance regionally specific concerns and needs while engaging in the broader global conversation around Nature-based Solutions, a challenge that was particularly evident when refining the Definition and aligning it with the IUCN criteria. Another complexity the Task Force faced was retrofitting the Definition and Standard with the existing Safe, Clean Water Program (SCWP) framework, which presents limitations in how NbS projects are currently scored and prioritized. To address these challenges, the BRP has started to

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[2] NbS Charter Priority Tasks: (1) Establishing a clear, consistent definition and standard for NbS that can be applied across various water management projects, (2) Creating a Framework to Prioritize Nature-based Solutions in Stormwater Capture Projects: Promoting green infrastructure and ecosystem-based approaches over gray infrastructure for more sustainable stormwater management, (3) Building on the Safe, Clean Water Program's Metrics & Monitoring Study and 2025 Interim Guidance: Refining metrics, monitoring practices, and evaluation methods for NbS projects, ensuring measurable benefits for communities and ecosystems.

[3] The International Union for Conservation of Nature (IUCN), a global network of government and civil society organizations, first introduced the term "Nature-based Solutions" in 2009. It has since developed the most comprehensive international Standard for Nature-based Solutions, based on eight criteria and indicators, with input from over 800 experts worldwide. While global in scope and less focused on site-level or urban contexts, the IUCN Standard provides a valuable foundation for evaluating ecological, social, and economic performance, supported by detailed guidance and self-assessment tools. A more thorough review of available Nature-based Solutions frameworks that have informed the work of the BRP can be found in the NbS Task Force Technical Memo.

develop recommendations for integrating the updated Definition and Standard into the SCWP in a way that is both functional and moves toward a more holistic approach to project evaluation, in order to more effectively prioritize NbS projects.

In building a Definition for Nature-based Solutions, the BRP sought to balance the reality of NbS projects at scale, in our urban context, while also paving the way for a broader, more ambitious understanding of what NbS can look like in the future. Currently, Safe Clean Water Program deems projects as "nature-based" if they remove impermeable services and use "native and climate appropriate plants" that can thrive in local soils, dry hot summers. While these features are valuable, the criteria for NbS projects across county efforts, should be expanded to accommodate a longer-term strategy that promotes Countywide invasive species removal and habitat restoration, open space acquisition, avoided land development, and efforts to restore and protect stream flows and riparian habitats, wetlands, floodplains, and our coastal shoreline, thereby providing more societal, communal and ecological benefits.

Through the process, the BRP, informed by a commitment to equity, ecology, resilience, and long-term benefits to biodiversity and public health, has attempted to ground all recommendations and feedback in the broader context of the SCWP and County efforts with the goal of structurally incentivizing NbS.

Appendix J provides a working list of regional collaboration opportunities to advance Nature-based Solutions across Los Angeles County.

Methods

Council for Watershed Health (CWH)[4] coordinated a series of meetings and iterative workshop activities to develop consistency around Nature-based Solutions including recommendations for a Definition and Standard (including criteria, indicators of success, and metrics for measuring success).[5]

This Methods section outlines the interaction between the NbS Task Force and Blue Ribbon Panel, describes engagement strategies and tools used, and explains how feedback was integrated throughout the process.[6]

Image 1: Nature-based Solutions Blue Ribbon Panel Meeting 1

[4] The Council for Watershed Health (CWH) team supporting this effort includes: Eileen Alduenda, Tanishka Chellani, Jason Casanova, Debbie Enos, Drew Ready, and Nate Sachs.

[5]Better World Group team providing facilitation and notetaking support for BRP meetings included: Shona Ganguly, Kimberly Guo, and Colleen Easler

[6] Meeting notes for each of these meetings can be found on the Council for Watershed Health Webpage on the NbS Task Force

Task Force Meeting	Blue- Ribbon Panel Meeting
Task Force Meeting 1 Date: 09/04/24 Priority: Introduction of Priority Tasks.	**Blue-Ribbon Panel Meeting 1** Date: 09/24/24 Priority: Overview of Task Force directives, reviewed Charter, and developed Nature-based Solutions Definition.
Task Force Meeting 2 Date: 10/22/24 Priority: Provided update on the proceedings of first workshop of the Blue Ribbon Panel; Receive feedback on the results of Blue Ribbon Panel activities.	**Blue-Ribbon Panel Meeting 2** Date: 11/12/24 Priority: Continued refining the Nature-based Solutions Definition and associated implementation criteria.
Task Force Meeting 3 Date: 11/12/24 Priority: Discussed updated timeline and reviewed key trends from NbS Definition survey.	**Blue-Ribbon Panel Meeting 3** Date: 12/17/24 Priority: Continued working of the Definition and developing the standards and criteria for Nature-based Solutions.
Task Force Meeting 4 Date: 12/17/24 Priority: Provided feedback on the working NbS Definition and discussed updates from the literature review.	**Blue-Ribbon Panel Meeting 4** Date: 02/11/25 Priority: Shared updated NbS Definition, gathered feedback on the BRP Standard, and discussed how recent fires may shift the scope and scale of NbS approaches.

Task Force Meeting 5 Date: 02/11/25 Priority: Shared updated NbS Definition, gathered feedback on the BRP Standard, and discussed how recent fires may reshape the scope and scale of NbS considerations.	**Blue-Ribbon Panel Meeting 5** Date: 04/01/25 Priority: Confirmed the status of the NbS Definition, standards, and criteria, and refined indicators and metrics to measure NbS success.
Task Force Meeting 6 Date: 04/01/25 Priority: Shared updates on BRP virtual workshops and reviewed "What is/isn't an NbS?" exercises developed from BRP Workshop 1 feedback.	**Blue-Ribbon Panel Meeting 6** Date: 05/20/25 Priority: Reviewed all BRP work to date and focused on refining recommendations and metrics.

Additional Virtual Workshops, Co-chairs Meetings and one-on-ones with BRP, Task Force Participants and County Team members were conducted to support the effort.

Task Force and Blue Ribbon Panel

As Task Force Lead, CWH worked closely with the NbS Task Force and BRP throughout the process to ensure a diverse and representative set of perspectives. Task Force participants were selected to reflect geographic diversity, include a range of organizations, tribal perspectives, and agencies, and ensure representation across multiple disciplines (e.g., engineers, landscape architects, ecologists). The Task Force operated on an open-invite basis, while the BRP was a closed group. Based on the strategic direction set by the Task Force co-chairs, the BRP participated in foundational, iterative workshopping and exercises to shape each piece and work product of the process. The work of the BRP was shared with the Task Force, which played a critical role in providing feedback and shaping the NbS Definition, offering insights on its framing and structure.

The BRP and Task Force considered both relevant materials to the NbS Charter, but also the broader vision and potential for NbS to address regional challenges, including the January 2025 Los Angeles County wildfires.

The BRP worked intensively on drafting recommendations, metrics, and indicators and the Task Force offered an external perspective and helped ground them in the priorities identified in our charter. CWH ensured that Task Force input was documented using interactive tools such as Miro Boards, which enabled collaborative feedback and transparent revisions.

The NBS Task Force will continue to develop and refine metrics and scoring recommendation materials in Phase 2 of their work.

Co-Chair Engagement

CWH worked closely with BRP Co-Chairs to shape the strategic direction of the effort. Across three co-chair meetings, CWH received targeted input on work plans for BRP activities, including in-person meetings, virtual workshops, and development of criteria, indicators, metrics, and recommendations. Co-Chairs also provided feedback on draft materials and ensured alignment with Countywide goals.

Virtual Workshops

CWH facilitated a series of four focused virtual workshops with BRP members to support content development:

1. Workshop 1: Focused on developing criteria and exploring alignment with IUCN's global standard.

2. Workshop 2: Concentrated on identifying and refining indicators associated with the selected criteria.

3. Workshop 3: Provided updates and synthesis of outcomes from the previous two workshops and integrated additional input from the fifth in-person BRP meeting.

4. Workshop 4: Shared updates on report drafting, clarified next steps, and discussed alignment across ongoing workstreams.

Individual Meetings with BRP Members

CWH also held individual meetings with BRP members to gather targeted input based on each participant's area of expertise. This ensured comprehensive feedback and captured insights from members who may not have been available for group sessions.

Coordination with County Departments

CWH maintained regular engagement with County partners, through Los Angeles County Public Works, Senior Civil Engineers, Keith Hala and Lee Alexanderson, and collaborated closely with the Watershed Planning Division and Stormwater Planning teams. These partnerships helped align the work with County policy, frameworks, and planning priorities.

Iteration and Consensus Building

Given the large size and diversity of both the Task Force and BRP, CWH prioritized consensus-building throughout the process. The Task Force averaged around 35-40 participants per meeting, while the BRP averaged 25. CWH sought majority alignment before

finalizing major deliverables, ensuring that materials reflected collective input while allowing room for technical refinement.

Specific methodology on the development of each section of this report can be found in Appendix B.

Nature-based Solutions Definition and Standard

NbS Definition(s):

Nature-based Solutions address societal challenges through sustainable actions that protect and restore living ecosystems and their functions to ensure human well-being and benefit biodiversity by meeting the established Nature-based Solutions standard and associated criteria.

Water-specific Definition:

Nature-based Solutions address water quality, water supply and stormwater challenges through sustainable actions that protect and restore living ecosystems and their functions to ensure human well-being and benefit biodiversity by meeting the established NbS standard and associated criteria.

Standard:

Nature-based Solutions must implement place-appropriate and evidence-backed living processes and infrastructure, such as soil and vegetation, to lead to improved long-term ecosystem function, habitat connectivity, and community health and well-being. Success of Nature-based Solutions should be qualitatively and quantitatively evaluated using the following criteria and indicators:[7]

> The original IUCN criteria are reorganized into three tiers; this tiered approach emphasizes the areas of highest importance for successful application in the region:
>
> **Key NbS Criteria:** IUCN Criteria 3, IUCN Criteria 2, IUCN Criteria 7, IUCN Criteria 1
>
> > These are foundational and absolutely essential for a project to qualify as a Nature-based Solution.
>
> **Project Guidance:** IUCN Criteria 4, IUCN Criteria 6
>
> > While not unique to NbS, these criteria are critical for improving project-level implementation and outcomes. This category was created to ensure that all projects, including NbS, are held to the same precedent.
>
> **Program Guidance:** IUCN Criteria 5, IUCN Criteria 8

[7] The Nature-based Solutions Blue-Ribbon Panel recommended adopting the IUCN criteria with additional guidance. This decision reflects the local and regional relevance of the criteria and their feasible application to Los Angeles County and the County Water Plan. While the IUCN framework is globally oriented and less focused on highly urbanized areas, the BRP simplified and adapted the guidance to ensure it is applicable, approachable, and appropriate for SCWP implementation, while also informing broader program design under the County Water Plan.

These represent broader program-level standards (Ex: County Sustainability Plan) that establish the enabling conditions for NbS. Even if a program does not currently meet these, it should aim to meet or exceed them to support scalable and effective NbS implementation.

Key NbS Criteria

BRP Criterion 1: NbS result in a benefit to biodiversity and ecosystem integrity

Adapted from IUCN Criteria 3.

Criteria 1 Guidance: NbS design and implementation should proactively provide social, communal and public health benefits while enhancing and/or supporting the function and connectivity of native ecosystems.

1.1: NbS actions are informed by local, Indigenous, and community knowledge and directly respond to a well-informed assessment of the functional health of the ecosystem and prevailing drivers of degradation and loss.

Guidance: To develop a Nature-based Solution, a well-informed understanding of the current state of the ecosystem is required. Ecosystem assessments need to be broad enough to characterize ecological conditions, drivers of degradation and loss, and options for net ecological health improvements informed by local, Indigenous, and community knowledge.

1.2: Measurable biodiversity outcomes that support improved ecosystem health and function are identified, benchmarked, and periodically measured and assessed.

Guidance: In order to inform the design, monitoring and assessment of NbS, targets for enhancing key biodiversity support, restoration, or enhancement should be established. For each NbS, the type of target may differ; for example, the target could be the acreage of native ecosystem area restored or the return of keystone species.

1.3: Nbs require monitoring including periodic assessments of unintended adverse and beneficial consequences as nature responds and adapts from the NbS.

Guidance: Ecosystems are complex, with interdependent components and processes. There will always be a level of uncertainty in how they respond to specific interventions or external change. Nature-based Solutions should recognize and document uncertainties minimizing potential harm while remaining open to unexpected ecological benefits. Monitoring should support adaptive learning and may include community and place-based observation to help ensure the long-term integrity of the NbS.

1.4: Opportunities to enhance ecosystem integrity and connectivity are identified and incorporated into the NbS strategy.

Guidance: Ecosystems are largely distributed systems and NbS create opportunities to support, restore and enhance biodiversity in ways that other types of centralized engineering interventions, on their own, cannot achieve. Wherever possible, NbS should be designed to restore lost ecosystems, reintroduce beneficial ecological functions, and strengthen connectivity with nearby natural areas and existing conservation or land management efforts.

BRP Criterion 2: Design of NbS is informed by scale

IUCN Criteria 2

Criteria 2 Guidance: NbS designs recognize the complexity within and across living ecosystems. Scale, in this context, applies not only to biophysical or geographic perspectives but also to time scales, socio-political frameworks, and cultural perspectives that influence the effectiveness and longevity of NbS. NbS design should be informed by the geographic, hydrological, and biological conditions of the site, as well as a long-term vision of its full potential, considering the site, its relationship to other parts of the landscape, and in the context of the broader environment.

2.1: Design of Nature-based Solutions recognizes and responds to ecological, hydrological, and social interactions across both spatial and functional scales.

Guidance: NbS should be informed by ecological, hydrological, and social interactions that occur across watershed boundaries and at multiple spatial and governance scales. Effective design considers how water, people, and ecosystems are connected across the upstream and downstream areas, at the watershed, subwatershed, and site level, to support long-term resilience and coordination beyond the immediate site.

2.2: Design of the NbS recognizes and responds to interaction between the ecosystem, society and economy.

Guidance: The success of NbS will be determined not only by the quality of the technical intervention but, critically, by how well the interactions between people, the economy, and the ecosystem are understood and responded to. For NbS to be durable and sustainable, the design of NbS acknowledges and is informed by the interaction between ecology, equity, and economy and builds them into the decision making.

2.3: The design of the NbS considers potential positive and negative impacts on and beyond the intervention site.

Guidance: NbS has the potential to either positively or negatively impact ecosystems. For the solution to be sustainable, such types of interactions—both within and around the intervention area, need to be understood and

accounted for in the decision making process. Strategies for identifying and responding to both positive and negative ecological and social outcomes should be incorporated into NbS design.

BRP Criteria 3: NbS effectively respond to societal and communal[8] challenges

IUCN Criteria 1

Criteria 3 Guidance: Nature-based Solutions are designed to adaptively and effectively respond to societal and communal challenges identified as priorities by those directly affected. All interested parties, especially Tribes, underserved communities, and others served by the NbS, must be included in the decision-making process for identifying priority challenges.

3.1: The most pressing societal challenges for affected communities, interested parties and beneficiaries are prioritized.

Guidance: NbS should address societal challenges and deliver tangible benefits to the communities surrounding the project site. These challenges and priorities should be identified through a transparent and inclusive consultation process.

3.2: Societal and communal challenges are understood, documented, and addressed.

Guidance: Establishing a clear understanding and rationale of the societal and communal challenges to be addressed, and ensuring these are documented is important for future accountability and optimizing those strategies to contribute to human well-being outcomes.

3.3: Societal and communal well-being outcomes arising from the NbS are identified, benchmarked and periodically assessed.

Guidance: NbS must deliver substantive benefits to communal and societal well-being. Specific, measurable, attainable, realistic and timely (SMART) targets should be used as appropriate, as they are important for accountability and informing adaptive management.

[8] For the purpose of this effort, *communal* (in the context of Nature-based Solutions) refers to the interconnectedness of people, ecosystems, and place. It highlights the shared nature of challenges and benefits, emphasizing mutual responsibility, collective well-being, and the role of place-based knowledge in shaping just and effective outcomes. For additional definitions, see the glossary.

Criteria 4: NbS are a communal asset cared for through adaptive management and stewardship.

IUCN Criteria 7

Criteria 4 Guidance: NbS implementation plans include provisions to use adaptive design and management to achieve ecosystem and biodiversity benefits and resilience.

The foundation of adaptive management is the evidence-base provided by regular monitoring and evaluation, drawing on scientific, indigenous, traditional, community and local knowledge. By proactively adopting an adaptive design and management approach, NbS can continue to be relevant through its lifecycle and the limit risk of failed projects.

4.1: Appropriate approaches for long-term stewardship and adaptive management are identified and integrated into the NbS design and implementation.

Guidance: NbS requires adaptive management and stewardship to ensure resilience and long-term success. NbS strategies must be co-developed with local communities and should reflect a commitment to stewardship, iterative learning, resource sharing, and evolving community needs.

4.2: An adaptive design and management plan, that includes monitoring and evaluation, is developed and implemented throughout the intervention cycle.

Guidance: A monitoring and evaluation plan is necessary to understand whether NbS Strategies effectively deliver intended outcomes and are essential to informing how care practices can evolve. Insights generated should inform future decision-making and long-term stewardship.

4.3: The NbS intervention is supported by a plan for operations, management, and outlines a pathway for community engagement and long-term stewardship.

Guidance: A plan for operations, management, and stewardship, is essential for the long-term function of NbS. Operations and maintenance refer to the routine, day-to-day activities needed to keep the intervention functioning as designed, while management refers to the ongoing cultivation of stewardship, including support for community roles, adaptive care strategies, and sustained relationships across agencies and interested parties. Plans should aim to engage communities meaningfully in stewardship where possible, with appropriate support and alignment from public agencies.

While project proponents and community partners may help inform stewardship approaches, they are not expected to manage or coordinate long-term interagency systems.

Project Guidance:

Adapted from IUCN Criteria for Application Across All Projects (including NbS Projects).

Economic viability of a project is best understood not only as financial feasibility but also as the effectiveness, equity, and sustainability of a project over time.

IUCN Criteria 4

Economic viability is an essential consideration for all projects including Nature-based Solutions, which often involve long-term, multi-benefit investments. Rather than requiring NbS to justify their value against conventional engineering approaches, the focus should be on whether the intervention is designed and resourced in a way that ensures long-term functionality, financial sustainability, and equitable distribution of costs and benefits. Projects should document and assess the economic impacts of their design and implementation, including the identification of direct and indirect benefits, potential public health and well-being outcomes, and the long-term return on investment. Cost-effectiveness analyses should identify trade-offs between upfront and ongoing costs and the anticipated ecological and social gains over time.

Economic viability also depends on securing diverse sources of funding. A viable approach should include leveraged funding, particularly when benefits cross sectors or interested parties. This includes attention to who pays and who benefits, ensuring equity in project planning and evaluation.

Where appropriate, quantitative indicators such as avoided infrastructure costs, improved public health metrics, or long-term maintenance costs should be used to assess outcomes and to capture broader social-ecological value that may be less easily monetized. Metrics should reflect the full suite of Project and NbS benefits rather than relying solely on conventional cost-benefit tools.

Projects are better when balancing trade-offs and ensuring equitable outcomes.

IUCN Criteria 6

Nature-based Solutions deliver a wide range of social, ecological, and economic benefits, but they may also involve trade-offs, particularly when land use changes, access shifts, or certain benefits accrue more to some groups than others. Equitable project design requires that these trade-offs are proactively assessed, transparently communicated, and managed in a way that prioritizes the rights, well-being, and participation of the most affected communities, especially Indigenous peoples, frontline communities, and other interested parties in Los Angeles County.

Projects should anticipate potential trade-offs early, integrate safeguards and due diligence measures, and ensure that benefits are distributed equitably. In line with previous guidance on NbS, projects should:

- Conduct equity-centered trade-off or risk assessments that go beyond cost-benefit ratios to consider who benefits, who bears costs, and how impacts are distributed.
- Identify and document associated costs and benefits in addition to primary project goals, and track how these may shift over time.
- Apply adaptive management to ensure trade-offs remain equitable and do not reinforce existing disparities.
- In cases involving Indigenous communities, it is critical that projects receive project direction and conduct meaningful engagement with Tribes and Indigenous groups and respect rights and responsibilities related to land and resources.[9]

Program Guidance:

Adapted from IUCN Criteria for Application Across All Programs. To effectively incentivize NbS, programs should meet or exceed this standard.

Inclusive, Transparent, and Empowering Governance

IUCN Criteria 5

> Programs should be grounded in governance structures that are inclusive, transparent, and accountable— especially to the communities and partners most directly impacted. This means going beyond procedural requirements to foster genuine power-sharing, trust, and long-term engagement.[10]
>
> Program guidance should ensure that accessible and clearly defined feedback and grievance mechanisms are in place from the outset, co-developed with community input to promote legitimacy and responsiveness. Participation must be equitable and informed, with intentional outreach to historically excluded groups. For Indigenous communities, this includes honoring the right to Free, Prior, and Informed Consent (FPIC)[11] and recognizing Tribal sovereignty and cultural knowledge systems.

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[9]The following is guidance for Tribal consultation drawn from an unpublished framework authored by Talia Dotson, Roland Pacheco, and Ariel Lew Ai Le Whitson, and edited by the Sacred Places Institute: "(1) Building authentic relationships take time: Partnerships with tribes should be seen as long term investments into a relationship based on showing up, listening first and engaging in reciprocal exchanges., (2) Re-evaluate notions of time/pace: Patience is key—restricting tribes on time can deeply be deeply harmful and setback the relationship and we must evaluate who in society we allow more time for vs who we don't and why, (3) Inclusion every step of the way: "We are still connected to these lands... let us decide if we need to be there or not based on what's happening and what topic it is." - Tina Calderon, (4) Be comfortable with the uncomfortable: Tribes have had to endure 200+ years of not being heard, erasure, oppression, and subjection to violence—listening and having patience and a growth mindset are critical."

[10] See additional resource here: "We Are Still Here: A Report on Past, Present, and Ongoing Harms Against Local Tribes"

[11]See additional resource here: FAO Resources on Free, Prior and Informed Consent

Programs should require that community and partner involvement is integrated throughout planning and implementation, not just through interested party identification, but through structures that support meaningful influence over decisions. Documentation of governance processes, including who is involved, how input is incorporated, and how decisions are made should be a standard component of program accountability, particularly in contexts shaped by historic inequities.

For initiatives spanning jurisdictions, governance frameworks should support interagency coordination and shared decision-making, especially in water and land-based programs. Public access to meetings, clear and accessible translation services, comment opportunities, and regular updates must also be embedded as standard program practices to ensure transparency and build community trust.

Aligning Programs Across Jurisdictions and Agencies

IUCN Criteria 8

Program guidance should ensure that the Definition, Standard, and adaptive management lessons emerging from Nature-based Solutions are not treated as isolated efforts, but are continuously integrated into broader County plans, programs, and frameworks (e.g., the OurCounty Sustainability Plan, County Water Plan, and Regional Planning initiatives).

Programs should also encourage coordination across County departments and divisions to ensure institutional support and visibility for, and management of NbS projects, and respect Tribal guidance, particularly for projects on or near culturally significant lands or within Tribal jurisdiction.

Programs should be structured to advance long-term sustainability and alignment with local and regional planning priorities. This includes supporting policies and institutional practices that enable the continued implementation of equitable, ecosystem-based approaches across agencies and jurisdictions.

Programs should also establish mechanisms for capturing and sharing lessons learned across funded projects to support ongoing coordination, adaptation, and capacity-building at the regional scale.

By embedding these practices, programs can play a key role in reinforcing durable policy change, facilitating interagency collaboration and providing institutional support for Nature-based Solutions.

Recommendations

The following recommendations are intended to guide the integration of the Nature-based Solutions Definition and Standard into future County implementation efforts. Developed by the Nature-based Solutions Blue Ribbon Panel (BRP) and with the guidance of the Nature-based Solutions Task Force, these recommendations aim to align with and support the County Water Plan (CWP) and Safe Clean Water Program (SCWP) goals, particularly strategies focused on increasing groundwater recharge and decentralized infiltration. While the BRP has made significant progress in drafting the recommendations made as part of this report, these recommendations also have implications on other stormwater management practices in the County and the SCWP; as such, they require additional consideration. Importantly, the following recommendations are framed not only to support project-level implementation but also to address broader structural and programmatic considerations needed to meaningfully inspire and incentivize Nature-based Solutions across Los Angeles County.

Recommendation Summary

- **Holistic Assessment of Project:** Evaluate projects holistically based on how well they function as integrated Nature-based Solutions, not just on individual features. Potential approaches to the holistic assessment of NbS Projects include the Peer Review Panel and a Letter of Intent. Additional details about these approaches can be found in this section.
- **Restructure the SCWP Scoring:** Revise the SCWP scoring to meaningfully prioritize and incentivize Nature-based Solutions.
- **Scoring on a Spectrum:** Evaluate projects along a spectrum from gray to nature-based infrastructure to reflect degrees of alignment with the NbS Standard, rather than placing them in a singular category based on a set of features.
- **Parallel Tracks for Open Space + Conservation NbS Projects:** Create dedicated evaluation and funding pathways for open space acquisition, conservation, and restoration projects that align with Measure W goals. While considered within the context of the SCWP, establishing a specific track for open space and conservation NbS projects is essential to advancing Nature-based Solutions Countywide.[12]

[12] Measure W Language (archived ballot text): authorizes the use of program revenues for projects that "increase stormwater capture and reduce urban runoff pollution which may increase water supply; improve water quality; and provide community investment benefits," as described in the Expenditure Plan of the Ordinance establishing the Los Angeles Region Safe, Clean Water Program (SCWP). The Ordinance also allows SCWP funds to be used for real property acquisition (Section 16.05.A.2(b)), making open space preservation a clearly eligible project type. Open space is central to NbS, because preserved permeable landscapes directly support projects that: (1) Provide water quality and water supply benefits, (2) Improve watershed health and resilience, and (3) Deliver multi-benefit outcomes that incorporate natural processes.

Holistic Assessment of Projects

The BRP strongly recommends that all assessments of NbS should include a holistic evaluation of projects, recognizing that simply including individual features associated with Nature-based Solutions (e.g., canopy cover, living soils, or native vegetation) does not guarantee that a project functions as a Nature-based Solution.

NbS assessment should inform design. NbS must be developed holistically with site-specific conditions in mind. The Key NbS Criteria as an initial guide for design. Additional design-oriented documentation will be developed as this work advances.

Based on the concept of holism, a holistic approach designs and assesses systems as an interdependent whole in which the characteristics, functions, and outcomes of each component are transformed by their participation in the wider system and are therefore more than the sum of their individual parts, as articulated in Jan Smuts' conception of holism. Accordingly, the assessment of Nature-Based Solutions (NbS) as multi-benefit interventions integrated within broader systems cannot be conducted by evaluating their components in isolation. This understanding underpins the holistic assessment framework applied throughout this recommendations report (Ristić Trajković et. al., 2024).

Practical considerations for conducting a holistic project assessment will ultimately need to be tailored to each program. For Nature-based Solutions, "holistic" refers to evaluating how all components of a project function together within the ecological and social context of the site. This includes assessing projects relatively, recognizing when site conditions allow for greater or lesser use of Nature-based Solutions compared to gray or green alternatives, and using both qualitative and quantitative methods to understand multi-benefit outcomes. Because Nature-based Solutions do not fit cleanly into traditional project evaluation models, capturing their full value requires balancing contextual systems-level interactions, co-benefits, and long-term resilience outcomes rather than focusing on isolated features. Specific assessment models and program-level implementation guidance still need to be developed to operationalize this holistic approach.

Investing public dollars in open space acquisition is therefore one of the most effective and durable strategies to improve water quality, enhance local water supply, and generate community benefits in Los Angeles County. Conserved land permanently restores natural hydrologic functions by slowing, filtering, and infiltrating stormwater, while delivering broad ecosystem, climate, and public health co-benefits required under modern multi-benefit water policy. Urban areas like Los Angeles cannot meet long-term stormwater, MS4, climate, and supply-reliability goals without treating open space as essential water infrastructure worthy of public investment, further justifying the creation of a parallel track for open space acquisition to support the goal to prioritize Nature-based Solutions. Funding for open space acquisition projects should be pursued through alternative sources of funding as the SCWP is not designed to, and does not have the capacity to fund everything.

To encourage the holistic assessment of projects, the BRP has discussed incorporating a qualitative review mechanism(s), such as a Letter of Intent (LOI), a Peer Review Panel (PRP)[13], or a similar process, that would complement holistic assessments. This approach would help place projects on a spectrum from Gray Infrastructure to a Nature-based Solution appropriately and support the accurate assessment of projects within the context of the site and surrounding ecology, while also broadening the range of eligible NbS projects under SCWP.

> **LOI:** The proposed Letter of Intent can serve as a valuable tool for project proponents to describe the context of their site, explain how their project fits within that context, and demonstrate the intentional use of a systems-based approach. It provides a qualitative opportunity to articulate the project's alignment with the Nature-based Solutions Definition and Standard.
>
> **PRP**: The Peer Review Panel (PRP) is proposed as an interdisciplinary mechanism to support holistic, site-specific evaluation of SCWP projects. Modeled conceptually on the Scientific Studies Review Panel to determine whether projects meet the Nature-based Solutions (NbS) Definition and to apply a consistent framework for classifying projects along the Gray–to–NbS Spectrum. A pilot implementation is strongly recommended to evaluate feasibility, workflow, and practical considerations. Panelists may include hydrologists, landscape architects, ethnobotanists, ecologists, and academic researchers.

Additional efforts to enhance scorer capacity include targeted educational materials and training on NbS assessment. While not a replacement for the PRP, education can help reinforce consistent application of the framework. Together, these approaches would strengthen the prioritization and clarity of NbS evaluation within the SCWP.

While the Blue Ribbon Panel did not reach consensus on a single model for the Peer Review Panel, several proposed scenarios offer a flexible foundation for its future implementation within the SCWP. Depending on the selected scenario, the PRP could operate in a purely advisory capacity or be directly integrated into the scoring and funding process. In all cases, its role would be to determine or validate project classifications and ensure that scoring and funding decisions reflect meaningful ecological performance, community benefit, and alignment with the BRP's NbS Standard. Some proposed models include the use of tiered scoring or partial funding based on PRP classification, allowing more nuanced and equitable evaluation. By providing expert review early in the process, the PRP would support transparency, consistency, and continuous learning across the SCWP.

Sample approaches illustrating the PRP's potential role in the scoring process can be found in Appendix C.

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[13] Sample approaches illustrating the PRP's role in the Scoring process can be found in Appendix C

Restructuring SCWP Scoring

The BRP has come to consensus that, in order to meet the Safe Clean Water Program goal to ensure that "Nature-based Solutions are prioritized" (Chapter 16.05.D.1.g), a revised scoring mechanism is needed so that Nature-based Solutions play a more significant role in meeting the current 60-point funding eligibility threshold. Currently, projects can reach this threshold based solely on water quality and water supply scores without incorporating any NbS elements, implicitly and severely limiting any potential effort to meaningfully incentivize and prioritize NbS approaches into SCWP projects and funding.

While the precise structure of an improved scoring system is still under development, the BRP agrees that funded projects should include a significant measurable NbS value to help align the scoring framework with SCWP, County Water Plan goals, and the County Board of Supervisors' commitment and effort to prioritize NbS. Scoring should be viewed through a NbS lens to not only encourage, but explore, NbS as a core part of project design and implementation. Further consideration on scoring approaches and their implementation to fulfill this recommendation and outcome objective will be further refined in the future work of the Nature-based Solutions Task Force.

Sample approaches to restructuring Scoring can be found in Appendix C.The BRP used this tool to begin thinking about the ways the updated NbS Standard could fit into SCWP Scoring.

Scoring on a Spectrum

The comprehensive Spectrum Recommendation complete with a graphic and project examples can be found in the following "Nature-based Solutions Spectrum" Section.

The BRP has reached consensus on the importance of scoring projects along a spectrum, rather than categorically labeling them as Gray Infrastructure, Green Infrastructure, Nature-Mimicking, or Nature-based Solutions. This approach recognizes that (1) projects exist within a specific and relative context, (2) the categories themselves are amorphous, and (3) projects exist on a continuum from gray to Nature-based Solutions and should be evaluated accordingly.

In the context of the Safe Clean Water Program, the first step in this process is determining whether a project meets the established criteria to be considered a Nature-based Solution, based on the agreed-upon Definition and Standard. This determination, whether made by reviewers, scorers, or a future Peer Review Panel, would serve as a primary filter in the evaluation process. Projects would then be assessed along the spectrum. The value of this approach lies in the nuanced approach to evaluation it provides. It allows for recognition of incremental progress toward more Nature-based designs, while incentivizing Nature-based Solutions in the long term.

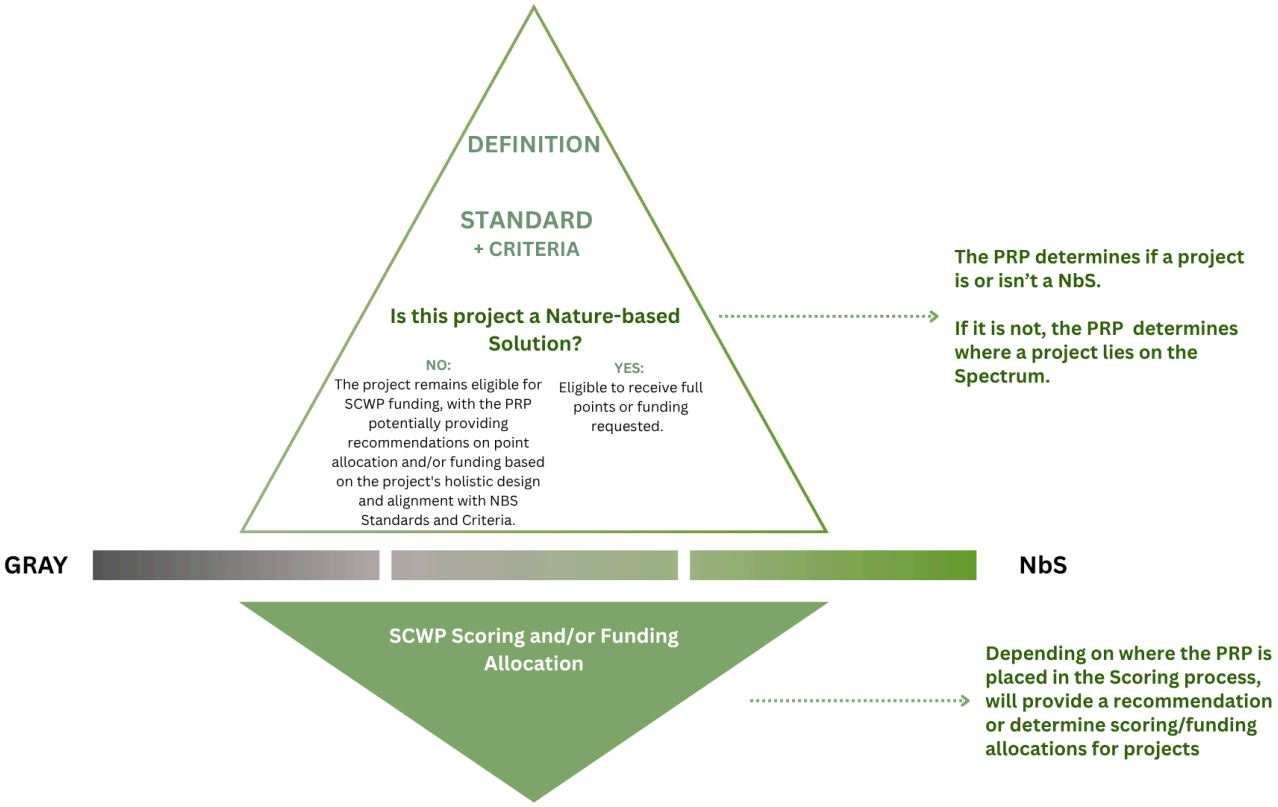

Figure 1 : Visualizing Integration of Spectrum Scoring Into a Holistic Assessment Framework

Several considerations have guided the BRP's thinking. These include (1) the physical and institutional limitations of implementing fully nature-based projects in highly urbanized and developed environments, (2) the need to protect human life and property, which may not always align with a Nature-based Solutions in high density urban settings, (3) the reality that shifting toward Nature-based Solutions will require transition time and mechanisms for sustained operations, management and stewardship, and (4) balancing the need for gray infrastructure in certain situations with its potential negative impacts, including habitat loss, channelization of waterways, degraded ecosystems, altered hydrology, increased heat, and limited adaptability to changing conditions.

Scoring on a spectrum makes it possible to acknowledge a project's merits even if it does not fully qualify as a Nature-based Solution. The first step is determining whether a project meets the criteria for a NbS. If so, it may receive full points. If not, it can still fall at various points along the spectrum and should accordingly receive partial/scaled points.

Under this model, within the context of the SCWP, the BRP has been discussing how Safe Clean Water Program points can be better allocated. Current recommendations are as follows, and can be adapted to different Measures, policies, and programs:

- Gray infrastructure projects would receive no NbS points.
- Projects fully aligned with NbS criteria projects would receive full points.

- Projects that incorporate some NbS elements would receive partial points based on how effectively they protect or restore living ecosystems and their functions to promote human well-being and benefit biodiversity.

To operationalize this approach, the BRP has begun mapping real-world project examples along the proposed spectrum to serve as reference points for evaluation. This method is not unlike the "Achievement Units" concept developed in the Metrics and Monitoring Study that builds on the Good-Better-Best (GBB) framework outlined in the Interim Guidance.[14]

While the GBB approach offers clear and discrete categories that can be helpful for project proponents and scorers, the BRP has identified key limitations. The checklist of standards used to qualify a project as "good," "better," or "best" for each tier is not sufficient from the BRP's perspective. Further, the categories used to assess projects are not well-defined and may be applied in isolation rather than as part of an integrated, holistic systems approach.

Using a spectrum approach provides greater flexibility to evaluate projects that do not fit neatly into a single category or that integrate elements across multiple categories. Unlike the GBB framework, a spectrum model enables more qualitative evaluation and nuanced scoring, better aligned with the criteria and indicators developed by the BRP.

The NbS Task Force will continue aligning the Spectrum approach with specific metrics, coordinating with Los Angeles County teams developing those metrics in Phase 2 This effort will aim to ensure consistency across evaluation tools and reinforce the prioritization of Nature-based Solutions within the SCWP framework.

Parallel Tracks for Open Space + Conservation NbS Projects

In addition to infrastructure projects, other forms of Nature-based Solutions, such as open space acquisition, conservation, and restoration projects are necessary for the long term ecosystem, biodiversity, and public health. Strategic open space acquisition should be prioritized across Countywide programs due to its relevance to County Water Plan objectives.[15]

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[14] As proposed in the Metrics and Monitoring Study, Nature-Based Solutions could be evaluated using "Achievement Units" (AUs), with projects earning 1 AU for "Good," 2 for "Better," and 3 for "Best" in each of six categories, up to a maximum of 18 AUs. The six categories for the evaluation of NbS projects are: Vegetation/Green Space, Increase of Permeability, Protection of Undeveloped Mountains and Floodplains, Creation and Restoration of Riparian Habitats and Wetlands, New Landscape Elements, and the Enhancement of Soil. See: *Metrics and Monitoring Study* for more.

[15] Land acquisition is central to scaling up Nature-based Solutions in Los Angeles County. For example, strategic acquisition of parcels in the high fire risk, wildland–urban interface (WUI), under utility infrastructure, and coastal areas can provide managed fire breaks, facilitate stormwater capture, storage, and infiltration, and support public access to trails, parks, and community spaces.

In the context of the SCWP, initial Measure W language supports multi-benefit investments, including green space, habitat enhancement, and related ecological and community benefits. The SCWP currently includes in its definition of NbS "protecting undeveloped mountains and floodplains." A key approach to realizing the full extent of these benefits is open space acquisition and conservation projects. These forms of projects provide the many water quality and supply benefits that the SCWP aims to provide and should be prioritized for funding under the Safe, Clean Water Program. However, because these project types are not supported by the current SCWP scoring mechanisms, they don't have any avenues for funding and are rarely proposed, supported, or approved.

While the Safe, Clean Water Program (SCWP) includes recommendations related to open space conservation, it is important to note that the program is not designed to fund all aspects of open space acquisition. As such, the recommendations outlined above should be understood as complementary to SCWP objectives, and implementation will likely require pursuing additional and alternative funding sources to fully support open space acquisition and long-term stewardship efforts.

This misalignment underscores the need for a parallel track specifically designed to support open space acquisition and conservation projects within the broader Countywide Nature-based Solutions framework. To encourage project applications seeking to purchase open space or hydrological systems for conservation and restoration, the BRP recommends establishing parallel funding and evaluation tracks specifically designed to support the development and implementation of open space acquisition and conservation NbS projects.

In Phase 2, the NbS Task Force will discuss how projects under the Safe, Clean Water Program (SCWP) can better support land acquisition and ecological restoration efforts. Some considerations for further evaluation could include:

- Providing quantitative measurements that demonstrate how land acquisition prevents future water quality impairment
- Measuring how preserved or restored natural habitats, particularly riparian and wetland habitats and highland meadows, can facilitate and/or increase groundwater recharge
- Quantifying the acre-feet of recharge enabled through actions like large-scale removal of invasive species such as *arundo-donax.*

Establishing a parallel application pathway, paired with appropriate assessment, would support and encourage high-impact, open space acquisition Nature-based Solutions projects, enabling them to better compete for SCWP funding.

Additional opportunities from such projects include proactively engaging with tribes and tribal partners to support land back initiatives and tribal land acquisition. These efforts can also encourage leveraged funding for open space acquisition, tapping into a range of available funding pathways that align with and support SCWP goals.

Additional Recommendations

1. Developing a Tribal Engagement Framework to inform government-to-government relations and Expand Free Prior and Inform Consent (FPIC)[16]:

   As part of a good faith effort to prioritize Nature-based Solutions, County should develop and formalize a tribal engagement framework to guide government-to-government relations as part of due diligence in planning and scoring projects. This framework should build on the principle of Free, Prior, and Informed Consent (FPIC) to establish a clear, funded process for tribal engagement, emphasizing early project planning and land stewardship, (like those funded by Measures W, H, A, and M).

   In addition, Operations and Maintenance (O&M) and training for Nature-based Solutions should be adapted to include (native) land, flora, fauna, and care practices alongside conventional O&M practices. (Watershed Coordinators, funded by Measure W, have begun developing best practices that County can collaborate with and elevate via a larger taskforce effort.)

2. Ecological and Biological Expertise:

   Los Angeles County should build internal capacity by hiring botanists and ecologists on staff to ensure prioritization of Nature-based Solutions across County efforts. This expertise is essential to ensure projects are designed with ecological integrity, native biodiversity and resilience benefits, and address existing gaps in the County Water Plan.

3. Explore Community Stewardship for NbS:

   The BRP recommends continued exploration of strategies to center community-based stewardship as the preferred approach to the long-term care of Nature-based Solutions (alongside workforce development). While not all NbS projects require intensive management, both management and stewardship are important to consider from the outset. Management refers to the technical and operational tasks needed to ensure performance, while stewardship reflects a broader commitment to community involvement, ownership, and ecological care. Integrating both dimensions early in project planning can support long-term efficiency, adaptability, and community benefit. Further discussion is needed to define appropriate mechanisms for embedding workforce development into these efforts and to plan for the eventual release of NbS projects over time.

[16] County efforts have made progress on tribal engagement, as seen in the process for the LA River Master Plan and within certain departments that have established tribal liaisons. However, adopting a government-to-government consultation process remains essential. For reference, see the Native American Heritage Commission, *Tribal Consultation Policy* (2020): https://nahc.ca.gov/wp-content/uploads/2020/09/Signed-NAHC-Tribal-Consultation-Policy.pdf

4. Facilitate Interagency and Interdepartmental Coordination for NbS Management:

   Address structural silos between agencies and even internal County departments to improve coordination and expand the prioritized implementation of NbS projects and emphasize adaptive management.

5. Reassess and improve the Technical Resources Program

   The BRP recommends continued discussion on how the Technical Resources Program can be strengthened to better support NbS opportunities and more effectively prioritize and fund community-based organizations. While not directly focused on NbS, this aligns with BRP considerations around addressing programmatic limitations that impact the accessibility of NbS projects.

Nature-based Solutions Spectrum

The use of Nature-based Solutions Spectrum ("the Spectrum") scoring emerged as a recommendation from the BRP after reflecting on the limitations of the Good-Better-Best framework outlined in the 2025 Interim Guidance.[17] The intent of the Spectrum approach was to better reflect the nuance and context specificity that is necessary for the equitable and accurate assessment of NbS projects. While the Spectrum tool was inspired by the Good-Better-Best model and considers the assessment of Nature-based Solutions, it also has multiple broader uses; it can serve as an educational resource, a design and planning tool, and a mechanism for tracking the implementation of Nature-based Solutions across the County.

The Spectrum is intended to serve as a practical, real-world illustration of how projects can span a continuum, from gray infrastructure to fully Nature-based Solutions. Rather than relying on a checklist of features, this tool encourages a more holistic understanding of project design by considering site context, ecological potential, and community co-benefits.

Current BRP discussions configure the Spectrum approach such that projects are first evaluated against the NbS Definition and Standard for full points, and if they do not qualify, they are qualitatively assessed alongside existing metrics and placed on the Spectrum to receive partial, gradient-based points.[18]

This approach moves beyond binary classifications and invites a more nuanced assessment of how infrastructure projects align with the principles of Nature-based Solutions. It also helps reconcile the gap between ideal NbS definitions and the realities of implementation in the unique context of Los Angeles. There are projects that, while they may not appear to be NbS at first glance, are in fact employing a systems approach and intentional site design to the best of their ability, and should be acknowledged as such.

This approach also provides a valuable foundation for learning and knowledge sharing, particularly for agencies, project proponents, and community organizations seeking to implement, advocate for, or design Nature-based Solutions. It can help support the long-term implementation of NbS across the region.

While the Spectrum currently functions as a qualitative assessment and visualization tool, its future potential lies in becoming a dynamic, data-driven resource. With additional data inputs, such as conceptual plans, budgets, completed site photos, stewardship plans, and engagement strategies, the tool could evolve into an interactive project database, educational platform, and means of tracking NbS implementation Countywide.

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[17] Additional information on the BRP's reflections on the Good-Better-Best Framework can be found in the Metrics and Recommendations section of this document.

[18] See Figure 1.

Critically, the tool will also need to align with the evaluative framework developed by the NbS Task Force, particularly the criteria and indicators used to assess project alignment with NbS goals. At present, the Spectrum is not intended to serve as a formal scoring tool. However, with further refinement and integration of the BRP's criteria, it will be used to support project evaluation, scoring, and benchmarking in a structured fashion.

To develop the Spectrum of example projects, the NbS Team collected site submissions from Task Force participants.[19] The NbS Team then assessed each site by reviewing project features, available documentation, and leveraging contextual knowledge shared by participants. Projects were qualitatively assessed against the NbS Definition and Standard using site submissions, documentation, and contextual knowledge, and placed relative to one another on the Spectrum based on features, site potential, and alignment with NbS principles.[20]
In future phases, this approach could be operationalized with a qualitative backing and integrated into SCWP metric development.

Key Considerations in Placement

- Use of NbS Features: Projects were assessed based on how effectively they incorporated nature-based design elements.

- Contextual Knowledge: The BRP, Task Force participants, and the NbS Team provided critical site-specific knowledge, allowing the CWH Team to assess not only what project features were implemented, but what could have been done given the site conditions and context.
    - For example, a project on a site with high restoration potential, such as open space near a river, might include more interventions, like tree planting or green infrastructure. However, the project did not fully take advantage of the site's ecological potential, it may have been placed lower on the Spectrum. In contrast, a project on a smaller or more constrained site that has fewer NbS-aligned features may be placed higher if it makes the most of its limited opportunities through thoughtful and impactful design. This approach recognizes not just the number of features implemented, but how well a project responds to the potential of its site.

- Relative Assessment: Projects were evaluated in relation to one another, not solely on absolute merit, but on how effectively they leveraged their site conditions and opportunities. Projects that best aligned with the Nature-based Solutions Standard and made the most of their site context were ranked highest.

To support the development of this Spectrum tool to its full potential, future phases should aim to incorporate:

- Conceptual plans

[19] Spectrum Exercise Attached as Appendix F
[20] Spectrum Project Case Studies can be found in Appendix E

- Project budgets
- Before-and-after visuals
- Maintenance or stewardship plans (if available)
- Community engagement materials

These additional elements will enable a more robust and comprehensive dataset and support deeper understanding of project intent, implementation, and impact, ultimately strengthening the accuracy and value of project placement on the Spectrum.

Spectrum Project Case Studies can be found in Appendix E.

Encanto Nature Walk Bioswale and Outdoor Nature Classroom
Location: El Encanto Park, 777 Encanto Parkway, City of Duarte, CA

River Park
Location: 255 San Fidel Ave, Avocado Heights, CA 91746

Carli Creek Water Quality and Habitat Enhancement Project
Location: Clackamas County, WA (Out of State)

Earvin "Magic" Johnson Park Water Quality and Community Enhancement Project
Location: 905 E El Segundo Blvd, Willowbrook, Unincorporated Los Angeles County, CA 90059

Urban Orchard Project
Location: City of South Gate, along the Bandini Channel of the L.A. River

Albany Street Stormwater Facility (Albany Stormwater Pond Retrofit)
Location: Rochester, Thurston County, WA (Black River Watershed) (Out of State)

Jeff Seymour Family Center
Location: 10900 Mulhull Street, El Monte, CA

Brookside Park Stormwater Capture Project
Location: Brookside Park, Pasadena, CA (alongside the Arroyo Seco stream)

Figure 2 : List of Spectrum Project Examples

Metrics

The SCWP Interim Guidance, released in May 2022, provided short term guidance on early implementation challenges in the Safe Clean Water Program. The Metrics and Monitoring Study built on the work of the 2025 Interim Guidance to provide a more formalized framework for project evaluation, community engagement, and the integration of Nature-based Solutions.

Both the Interim Guidance and Metrics and Monitoring Study assess Nature-based Solutions based on 6 categories: “Vegetation/Green Space, Increase of Permeability, Protection of Undeveloped Mountains and Floodplains, Creation and Restoration of Riparian Habitats and Wetlands, New Landscape Elements, and the Enhancement of Soil.”

This section identifies gaps in the metrics for assessing Nature-based Solutions as proposed in the 2025 Interim Guidance and Metrics and Monitoring Study, as noted by the Blue Ribbon Panel, and outlines next steps to align these foundational efforts with metrics consistent with the Task Force’s proposed Definition and Standard for NbS.

Interim Guidance

The Interim Guidance includes a useful question for assessing whether a project qualifies as a Nature-based Solution: “Are there natural processes or nature-mimicking strategies that this Project can use to address watershed needs and deliver SCW Program benefits?” (Safe, Clean Water Program, 2022, p. 25). This framing aligns with the BRP’s recommendation to ask more holistic, context-specific questions during project assessment. It also reflects a recurring theme in the BRP’s development of the Spectrum Tool: whether a project has fully leveraged its site’s opportunities. The BRP recommends institutionalizing this type of inquiry throughout the project evaluation process to support more integrated assessments of NbS projects.

Some of the limitations the BRP has identified include the tendency to equate Nature-based Solutions with “nature-mimicking” features, rather than evaluating them against a clearer and higher standard. In response, the Task Force has been working to define that standard more rigorously. While the Interim Guidance outlines how SCWP projects are currently scored, the BRP recommends revisions to the scoring approach to address these limitations. These proposed changes are detailed in the Recommendations section of the report.

Per the review of the BRP, a key limitation of the Interim Guidance is its reliance on the Good–Better–Best framework. Recipients are instructed to consider how their project meets the six NbS methods and to categorize their project based as “good,” “better,” and “best” on whether at least three methods fall into the same tier. However, the BRP found multiple issues with this structure. First, the use of distinct categories is antithetical to a holistic analysis of NbS Projects; the use of Nature-based Solution features in a project does not ensure that a project employs a systems-based approach. Similarly, a project that does not meet all six method categories may still represent a strong Nature-based Solution if it maximizes what is possible within the context of the site, highlighting the importance of holistic project analysis. Crucially, the breakdown of the six categories doesn’t set a high enough bar to qualify as NbS.

Third, the terms “good,” “better,” and “best” limit the potential for long-term progress by framing NbS in relative rather than substantive terms. Finally, the six categories themselves predate both the Interim Guidance and the MMS and were not designed to support a comprehensive evaluation of Nature-based Solutions.

Metrics and Monitoring Study

The following table includes metrics extracted from Appendix D of the Metrics and Monitoring Study (MMS). These metrics were organized according to the six categories recommended in the MMS and the Interim Guidance for evaluating projects.

To assess their relevance and alignment with the Blue Ribbon Panel’s) work, each metric was reviewed and assigned a ranking from 1 to 4, as shown below:

Key for Alignment with BRP (Column 3):

- 1: Limited Relevance: Not well suited for assessing Nature-based Solutions
- 2: Needs Revision: Potentially useful but requires clarification or adjustment
- 3: Valuable with Modifications: Aligned with BRP goals but may need refinement
- 4: No Changes Needed: Directly supports BRP’s understanding of NbS

Reviewers were asked to provide qualitative comments on each metric, highlighting any issues related to clarity, usefulness, or interpretability. Reviewers also identified potential gaps in the current list, such as missing categories or key indicators not yet captured that would enhance the ability to evaluate projects as Nature-based Solutions. Missing categories are identified in the *Gaps Identified* subsection following the review. This process informs both the refinement of existing metrics and the identification of new or modified metrics to support more robust and NbS-aligned project evaluations within the Safe Clean Water Program.

In addition to building on the metrics developed through the Metrics and Monitoring Study (MMS), the Nature-based Solutions Blue Ribbon Panel considered the merits of the Achievement Unit approach introduced in that study. The Achievement Units approach applies the Good, Better, Best (GBB) framework, awards projects between 1 and 3 “Nature-based Solutions Achievement Units” (AUs) per category: 1 for Good, 2 for Better, and 3 for Best, up to a maximum of 18 AUs. Although the BRP does not recommend the six GBB categories (as discussed above) or the full adoption of the Achievement Unit model, it recognizes the value of the AU structure as a precedent for evaluating projects along a continuum rather than through the use of rigid thresholds. The BRP sees a parallel between this approach and the spectrum-based scoring model currently under development by the Task Force.

See the Nature-based Solutions Spectrum for project examples that illustrate varying levels of alignment with NbS principles and support context-specific scoring

MMS Metric	Alignment w/ BRP *See key above*	Notes
NbS 1: Vegetation + Greenspace		
F3: % of project site to be covered by both groundcover and tree canopy	2	• The inclusion of both groundcover and tree canopy may be redundant. • Focusing on tree canopy is more relevant for understanding the project's vegetative coverage.
F2a. Area of the project site covered by climate appropriate vegetation	3	• Rephrase to "California-friendly climate appropriate vegetation • Area (ex: sq ft) may be more valuable metric for larger projects, whereas a percentage may be more valuable for smaller projects. • Capture both percentage and area for a comprehensive understanding.
F2b. Area of project site covered by native vegetation	3	• Similar to F2a, it's crucial to measure both the percentage and the area covered by native vegetation to capture the appropriate extent of native species used. • May be useful to establish a baseline for non-native vegetation on site as reference.
NbS 2: Increase Permeability		

F4. Net conversion of impermeable hardscape to green space (acres, % of impervious hardscape) - (1/16th for initial qualification)	4	• Including both acreage and percentage is important for comprehensive data collection • Scoring should account for both total area reduced and percent of site improved, so large projects with significant reductions aren't undervalued and small projects with high percentages aren't overvalued.
F11. Net conversion of hardscape to either greenspace or permeable hardscape	3	• Strongly recommend separating conversion to greenspace from permeable hardscape, as they serve different stormwater functions. Greenspace supports infiltration and habitat; permeable pavement primarily reduces runoff. Distinction is important for accurate assessment.
F10. Other design elements improving permeability (drop down list) - Direct runoff to infiltrating surfaces - Improve soil health - Creation of well connected self-sustaining natural landscape *No achievement units associated*	1	• This metric overlaps with other categories and lacks clarity on how it contributes to improved permeability. The relationship between soil health, permeability, and infiltration needs further explanation to be meaningful.
NbS 3: Protection of Underdeveloped Mountains and Floodplains		
F6a. Area of existing vegetation preserved (acres, %)	2	• Preservation is a valuable metric, but we should consider the removal of invasive species and fireload as a metric.

		• Additional metric suggested for area of existing native vegetation preserved. • Another such metric should be used focusing on the broader protection of habitats titled, “Existing Native Habitat Preserved”
F6b. Area of existing vegetation on site (acres)	2	• Include both the area and percentage of existing vegetation to better capture what’s being preserved. • Add a separate metric for native vegetation, while also recognizing that some non-native vegetation may still support habitat in urban areas, and removal of said non-native vegetation may be disruptive • The metric should reflect how the site supports a healthy landscape, through preservation, enhancement, or restoration. • Additional Metric recommended: “Existing Native Habitat on Site”
F6c. Type of impact on natural hydrology (none, minimal, improved drainage, improvised natural hydrology)	3	• Clarify thresholds: “Minimal” aligns with CEQA’s “less than significant impact” (no major changes to recharge, drainage, or water plans); “Improved” refers to enhanced built systems; “Improved natural hydrology” involves land-based or green infrastructure. Additional examples can help distinguish these levels. • It’s important to emphasize that improvements should focus on enhancing or restoring natural hydrology through Nature-based Solutions rather than relying on built drainage systems. • The metric sets a high standard for drainage system improvements: "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." This high standard ensures that projects meet strong hydrology performance criteria. • For alignment with NbS Standards, improvements should prioritize restoring natural hydrology where feasible, while carefully considering agency concerns around flooding and liability.
F6d. Does the project create open green space, using climate appropriate and native vegetation, intended for safe public use?	3	• "California- friendly" rather than "climate appropriate" • Metrics should consider native habitats in addition to public spaces. • Projects that support biodiversity should identified as such
NbS 4: Creation and Restoration Riparian Habitats and Wetlands		
F7a. How is restoration of riparian and wetland habitats at the project site characterized (Partial, Full, Full + Expanded)?	4	NC
F7b. # of native plant species to be incorporated?	3	• The focus should be on creating native habitats that support keystone species and ensure compatibility with urban conditions. • It's essential to design with a systems approach, considering which species work together to support the right kind of biodiversity and species restoration. • Plant the right plants for the right places, reflecting what would thrive in a space. • Plant companion plants so that we

		are supporting biodiversity. • Including a percentage of native species is valuable to track overall project diversity and ensure ecological health. • The design approach should consider the ecological context and how the species interact within the larger ecosystem, ensuring that the restoration effort fosters long-term ecological balance.
F7c. Is potable water used on restoration site for irrigation beyond establishment period (yes/no)?	2	• Some sites are required to have potable water as a backup, so the metric should distinguish between required/emergency use and routine reliance. It would also be informative if it captured quantity and context of use, especially during drought. Projects should not be penalized for required use but should be recognized for minimizing reliance through reuse or efficiency. • Consider adding a complementary metric to capture use of non-potable water sources (e.g., recycled, stormwater, greywater) for irrigation beyond the establishment period.
NbS 5: New Landscape Elements		
F8a. New landscape elements to be included?: • Cisterns (small-scale) • Rain gardens (small-scale) • Tree wells (small- to medium-scale) • Bioswales (medium-scale) • Parkway basins (medium-scale)	3	• The term "landscaping elements" is too amorphous, suggesting “Design Solutions” instead. • Would be more useful to describe the specific design solutions incorporated into the project and explain how these elements function together to achieve the project’s sustainability goals. • Cisterns are generally not considered to be a “landscape

• Retention ponds (medium- to large-scale) • Wetlands (large-scale) • Daylighting streams or naturalizing concrete channels (large-scale) • Regional groundwater infiltration basins (must be vegetated) (large-scale) • Floodplain reclamation (large-scale) • Signage for historic streams that have been undergrounded or channelized.		element.”
F8b. Capture area and storm event to be managed (ie. 85th%ile, 24hr storm for 50% parcel etc.)	4	NC
NbS 6: Enhancement of Soil		
F9a. Source of mulch and compost (unspecified/local/etc.)	2	• While this metric tracks material sources, it does not fully capture soil health enhancement.
F9b. Disposal of landscape waste (none, local, compost, soil enhancement activities, etc.)	2	• Similar to F9a, while this metric tracks the disposal process, it should be paired with metrics that more effectively assess the improvements in soil. • Perhaps suiter for a different category, however, if a project can reuse concrete or compost existing turf, for instance, on-site instead of hauling it away it should be rewarded.
F9c. Use of regenerative	2	• These applications are one-time

absorbents (none, woodchips, biochar)?		treatments that do not persist in the landscape. More focus should be placed on long-term soil health improvements that are sustained through ongoing practices. • Specify that only organic or naturally inert materials (e.g., woodchips, biochar) are considered acceptable, not synthetic polymers.
F9d. Type of vegetation added (native, climate appropriate, non-native irrigated)?	1	• The inclusion of specific soil health metrics and long-term outcomes for vegetation survival would strengthen this measure.

Gaps Identified by the BRP

The work completed in the Interim Guidance and Metrics and Monitoring Study was valuable in informing the BRP's efforts. The development of a new scoring approach based on updated categories provided a foundation for discussion and will continue to inform the Task Force's future work on metrics. However, adjustments will be necessary to transition from these existing categories to those aligned with the Standards established by the Task Force for evaluating Nature-based Solutions. Wherever possible, the Task Force aims to build on what has already been developed.

Key Considerations:

- Many MMS metrics are no longer fully relevant or well-aligned due to the evolving standard for Nature-based Solutions.
- There is a need for more integrated and comprehensive metrics that span functional, ecological, and community dimensions, rather than being limited to individual categories.
- In response, the BRP has recommended a set of additional categories of metrics that should be measured to assess NbS projects. These align with the proposed Standard but will require further refinement to fit within the structure of the recommended Nature-based Solutions criteria.

Additional Categories of Metrics

The level of effort needed to operationalize these metrics and to establish a functional approach for assessing Nature-based Solutions within the SCWP process will extend beyond this report.

This work represents an ongoing effort to build a comprehensive, Countywide assessment framework.

Improved Soil Health Metrics:

Improved soil health metrics should focus on measuring key indicators such as soil organic content, structure, and microbial health after implementing Nature-based Solutions. These metrics play a critical role in assessing the effectiveness of NbS in enhancing soil properties, supporting plant growth, improving water retention, and facilitating stormwater capture.

Suggested metrics include: Soil Biodiversity or other Bioindicators, Soil Structure and Aggregate Stability, Soil Infiltration Rate, Soil Organic Matter, Absorption Rate, Soil Temperature, Water Holding Capacity, and Cooling Air Time.

Functional Flow Measurements:

Functional Flow Measurements, informed by California's Functional Flows Framework, are crucial for quantifying the improvements in hydrological functions like water retention, infiltration, and flow dynamics post-intervention. These metrics help assess how NbS impacts biodiversity and stream health by improving natural flow regimes and supporting aquatic ecosystems.

Suggested metrics include: Streamflow Regimes, Base Flow Maintenance, Floodplain Connectivity, Sediment Transport, Biodiversity Indicators, and Ecosystem Resilience.

Tree Canopy:

Healthy, mature tree canopies provide habitats for a variety of species, support urban biodiversity, and contribute significantly to improving air quality and reducing the urban heat island effect, serving as a valuable measure of benefits provided by NbS projects.

Suggested metrics include: Percentage of the site covered by Tree Canopy, Projected Mature Tree Canopy, Net Change in Tree Canopy on Project Site (based on projected tree maturity), Net New Tree Canopy.

Biodiversity:

Biodiversity metrics play an essential role in measuring the success and impact of NbS interventions on ecosystems, and are a key NbS Criteria. These metrics can be quantitative (e.g., species counts, habitat area) or qualitative (e.g., ecosystem function, species health). A distinguishing factor is the timing of their use, with some more relevant during the project design phase and others after the intervention has been implemented.

Suggested Project Design Metrics: % of Existing Habitat Restored, % Increase in Native Plant Cover, Number of Culturally Significant Species Expected to Return, Target Species Return/Increase, Indicator Species designed for

Suggested Post-Project Implementation Metrics: Acreage Restored to Functioning Habitat, Acres of Habitat Reconnected or Corridor Created, Number of Host Plants for Native Pollinators, Macroinvertebrate Pollinator Presence/Diversity, Habitat Complexity Index, Presence of Bird or Amphibian Indicator Species.[21]

Ecosystem Health & Function:

Ecosystem health and function is a lens and a category of metrics that are comprehensive and can be used to evaluate both the natural and built environments. It can help focus on liminal areas that might otherwise be overlooked in metrics by emphasizing and integrating the intersection of land use and human communities, perhaps through the use of "ecotones,"[22] areas where natural landscapes and urban infrastructure meet and interact. Approaching ecosystem health in this holistic fashion can further support functional diversity, species resilience, and long-term sustainability across urban and rural landscapes. As a metric category for the purposes of the SCWP, it can also be integrated into other categories such as biodiversity.

Suggested Ecosystem Health and Function Metrics Include: Acres of Riparian or Wetland Habitat Restored/Created, Species Composition, Habitat Structure, and Ecosystem Processes, Diversity of Species Richness, Resilience Measured by Recovery Time, Species Richness and Functional Diversity, Habitat Structure and Vegetation Arrangement, Habitat Connectivity Index, Connectivity Across Edge Zones (ecotones)

Metrics Next Steps

In future work, the NbS Task Force intends to take on next steps for developing and aligning the metrics with the Definition and Standard, to better develop mechanisms for holistic project assessment, integrating additional categories of metrics into the Standard, and collaborating with County Teams on metrics development to be integrated into the SCWP Watershed Management Plans and to ensure alignment with the NbS Definition and Standard.

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[21] Please Note: Other factors may limit the existence of native pollinators, macroinvertebrates, pollinators, and bird or amphibian indicator species and should be accounted for in project assessment

[22] Ecotones are liminal spaces of drastic transition between ecological communities, ecosystems, and/or ecological in an environment. Ecotones are crucial to consider in the context of NbS due to their high biodiversity, role in connectivity, and their central role in providing ecosystem services— particularly where natural and built environments intersect.

Next Steps

This section summarizes future efforts of the Nature-based Solutions Task Force to facilitate the development and implementation of the recommendations made in this report.

In future efforts, the NbS SCWP Task Force will continue the work of the Blue Ribbon Panel, in operationalizing the Definition and Standard for Nature-based Solutions. This process will be grounded in the SCWP and its current processes, but can be adapted and applied across County initiatives.

Operationalizing the NbS Definition and Standard is complex and will need to be an iterative process. It will require careful balancing of multiple goals, supporting strong and measurable projects, producing data that demonstrates value, and minimizing administrative burdens on project proponents, while also effectively and feasibly incentivizing Nature-based Solutions.

I. Scoring

The Task Force may reassess and enhance project evaluation frameworks, with an emphasis on equity, accessibility, and spectrum-based scoring for Nature-based Solutions. To support more integrated, systems-based assessment, the Task Force will also further develop the assessment tools proposed in this report:

- Peer Review Panel (PRP): An interdisciplinary body providing holistic, site-specific evaluations informed by established metrics and criteria.
- Letter of Intent (LOI): An early-stage narrative to help project proponents articulate site context, systems-thinking, and alignment with Nature-based Solutions principles before submitting a full application.

II. Metrics

The NbS Task Force will continue to convene in 2026 to support the integration of Nature-based Solutions definitions, metrics, and performance measures into the Safe, Clean Water Program. In coordination with County staff and consultants, the Task Force will provide input on the development and refinement of these metrics, with the goal of informing program integration by May 2027, contingent on the readiness and applicability of the performance measures.

III. Recommendations

The Nature-based Solutions Task Force may make additional recommendations related to the Spectrum. This may entail establishing a more robust list of examples, and developing it such that it can serve as a functional scoring tool.

The Task Force may also further develop recommendations to address process-related barriers and structural gaps in the SCWP, that limit assessment and funding pathways

for a broader variety of Nature-based Solutions projects, including open space acquisition.

IV. Regional Collaboration

The Council for Watershed Health team may support regional collaboration and consistency on Nature-based Solutions, working with Public Works to ensure alignment and coherence in applying NbS principles across Countywide initiatives.

V. Wildfire Resilience

The Nature-based Solutions Task Force may explore the integration of NbS into wildfire resilience strategies, examining how NbS can be deployed as part of broader hazard mitigation, recovery and watershed resilience efforts, particularly in fire-prone areas, and may focus on specific issue areas and CWP Strategies related to both NbS and wildfire response and resilience.

The focus of the Nature-based Solutions may change following the publication of this report.

Appendices

Appendix A: BRP Visioning Document

This is an iterative and visioning document compiled by members of the BRP that explores what Nature-based Solutions are and what they can be. The document pulls from a variety of sources and is further informed by the expertise and experience of the BRP's members.

Nature is the community of all living beings, interconnected and interdependent.
All nature exists in relationship with place-specific ecosystems.
Every ecosystem is composed of the diverse group of plants and animals that evolved to live in that space and the people and other species who live along with them.
If biodiversity survives and thrives, people will survive and thrive.

Nature-based Solutions are human actions and interventions that sustain and restore natural ecosystem functions. They serve to improve water, soil and air quality, to increase groundwater recharge and sustain local water supply, to mitigate climate change impacts such as heat, fire and flooding, to sustain and restore regional biodiversity, to improve public health and wellbeing, to provide recreational access to greenspace, to provide opportunities for environmental education, and to elicit joy.

Nature-based Solutions for water: Biodiversity thrives when riparian, wetland, groundwater and floodplain systems are interconnected, and historic stream flow is sustained. A nature-based watershed plan prioritizes sustaining or restoring riparian connections, so that a creek or river flows from the mountains to the Pacific shore, creating opportunities to sustain and restore flow wherever possible.

As examples, floodplain acquisition can help restore groundwater, mitigate flood risk, improve water quality, and provide parks for people and habitats for biodiversity.

Defining Nature-based Solutions requires example categories and types of projects.

Best case scenario Nature-based Solutions include:

1. Acquisition, restoration, and/or stewardship of land for riparian, wetland, floodplain, montane, woodland, grassland and shoreline habitats.
2. Replacement of impervious areas with healthy soil and plants to infiltrate stormwater.
3. Assessing and working to sustain functional stream flows; taking care to avoid dewatering creeks, rivers and wetlands.
4. Proactive use of native plants as systemic Countywide habitat restoration, i.e. plant for widespread Monarch butterfly habitat or for migratory birds on the Pacific flyway.

Nature-based Solutions bring nature into urban contexts through distributed projects, via methods such as:

1. Backyard and rooftop habitat for wildlife and pollinators
2. Rain-gardens, swales, and parkway basins
3. Protecting and expanding urban tree canopy and understory planting
4. Use of site specific native plants in landscaping, considering local soil, water, geographic location, historic and current ecological conditions, and avoiding one size fits all gardening.
5. Creation of mini-forests, mini grasslands, mini coastal shrub habitats and shoreline habitat.
6. Linking habitat via strategic placement of parks, paths and systemic cross-neighborhood plantings.
7. Where possible, linking disconnected riparian ecosystems.
8. Daylighting buried streams where feasible.

Nature-based Solutions may incorporate structural and cultural design to mitigate impacts of climate change and sustain biodiversity,

1. Owl / bird / bat boxes
2. Use of biofiltration planting to capture run-off from stables before it gets into creeks.
3. Increases in tree canopies in low-income communities to include foodscaping if communities request this need.
4. Use of greywater for gardening.
5. At-scale cisterns to capture all annual rainwater off of rooftops for use in summer landscaping or fire prevention.
6. Fire resilient gardening concepts, hardening of homes, and eliminating use of wooden fencing.

Nature-based Solutions can influence landscaping and urban design and lifestyle choices,

1. Reduction in number of and size of lawns.
2. Elimination of plastic lawns / playing fields.
3. Encourage non-roaming of loose cats and dogs.
4. Facilitation of easy, inexpensive or even free removal of asphalt and use of ecosystem friendly landscaping at schools K-12, both public and private, and at universities.
5. For a genuine NbS approach, eliminate some or all fertilizers and some or all pesticides.
6. For a genuine NbS approach, eliminate plastics.

Nature-based Solutions can incorporate cultural components,

1. Educating gardeners and maintenance workers on how to support natural systems.
2. Supporting slower driving in wildland areas.
3. Supporting stickers, painting, coloration or imprinting on windows to show birds the glass and reduce deaths from flying into windows.
4. Supporting dark skies where safe to sustain biodiversity.
5. Teach names of local species of plants and animals in every school starting in kindergarten.

6. Permanently fund local First Nations elders to teach cultural values at elementary schools.
7. Teach soil health basics – 5% of soil is alive; it is home to 59% of all life on earth; sustaining living soil is vital to sustaining life on earth.
8. Fund community outreach to support sustaining and increasing biodiversity Encourage media, fiction, film, radio, t.v. to center biodiversity in reporting and stories.

Nature-based Solutions require ongoing science to be productive and reality based.

1. Support ongoing biodiversity monitoring and research.
2. Integrate biodiversity goals into watershed visioning and planning. Engage in a large-scale public assessment of best-case scenario restoration opportunities across L.A. County, watershed by watershed; look at historic conditions of watershed prior to urbanization and explore where options might exist to soften urban/wildlife interface and restore habitat and ecosystem functions. This large-scale assessment should be updated every four years; potential project lists should be created and prioritized. Each project that is completed should be celebrated.
3. Explore the use of riparian restoration as a water quality treatment option with the LA Regional Water Quality Control Board as is done in other regions, and seek credit for restoration projects as TMDL implementation. Explore the use of sustaining and restoring hyporheic zones in creeks and wetlands as a water quality treatment option with LA Regional Water Quality Control Board as is done in other states.

Los Angeles County joins the IUCN in their assessment of how to get to best case scenario Nature-based Solutions.

April 2, 2025

Inspired by input from all members of the LA County NBS Blue Ribbon Committee

Draft 1 by Melina Watts

Edits by Melanie Winter

Further input by BRP participants

Appendix B: Detailed Methods Document

The methodology for developing the Los Angeles County Nature-based Solutions framework centered on a co-creative, iterative process led by the Blue Ribbon Panel, continual feedback from the Nature-based Solutions Task Force (Task Force), and supported by Council for Watershed Health (CWH) with additional facilitation from Better World Group (BWG). Facilitation was done through a multi-stage engagement process. The effort included working sessions, virtual workshops, feedback cycles, and comparative analysis with global and local frameworks. The work was organized around four core outputs: a shared Definition, a refined Standard (with criteria and indicators), a set of Recommendations, and a strategy for aligning and advancing Metrics. Below is a breakdown of the approach for each**:**

1. Definition

The initial phases focused on grounding the working group in existing definitions of Nature-based Solutions. The following definitions were introduced as early reference points:

- Safe, Clean Water Program (SCWP) Ordinance Language
- IUCN Global Standard for Nature-based Solutions
- White House Council on Environmental Quality (CEQ) Nature-based Solutions Roadmap
- California's 30x30 Initiative (CA Natural Resources Agency)
- United Nations Environment Assembly (UNEA) Resolution on NbS

Through a series of facilitated workshops, participants ranked definition elements, responded to interactive surveys (e.g., via Miro and Zoom polls), and analyzed trade-offs between precision and applicability. While some participants advocated for adopting one of the existing definitions directly, the group ultimately determined that a new definition was necessary—one that reflected the unique ecological, infrastructural, and governance conditions of Los Angeles County. Additional feedback emphasized the need to explicitly center Indigenous stewardship, equity, and urban ecological realities.

The final definition iterates on the original SCWP definition, synthesizing input from both Blue Ribbon Panelists and Task Force participants. In particular, feedback was used to refine two core areas:

- Defining the Purpose: The definition emphasizes actions that are intended to *ensure and improve* human well-being, ecosystem function, and biodiversity, using the phrase "improve" instead of "benefit" or "promote" to highlight accountability and measurable outcomes.
- Defining the Action: It clarifies that NbS are interventions that *prioritize living natural solutions* to sustainably protect and restore terrestrial and aquatic ecosystems.

This iterative process is documented in a series of collaborative Miro Boards, including live feedback from the Task Force captured here: Miro Board – NbS Definition Feedback.

2. Standard (Criteria + Indicators)

The development of the Standard began with a comparative review of multiple frameworks:

- IUCN Global Standard for Nature-based Solutions
- 2022 SCWP Interim Guidance
- Metrics & Monitoring Study (MMS)

After presenting the IUCN Standard, BRP participants noted it was robust but not tailored to the Safe Clean Water Program (SCWP) or the County's watershed-based implementation model. The BRP documented the need to draft a standard specific to the highly urbanized landscape and community context while being mindful of integrating NbS into an existing funding and governance structure, specifically the SCWP.

A deliberative process followed, completed through:

- Multiple workshops comparing IUCN's 8 criteria with the BRP's preliminary list
- Several rounds of voting on how to integrate or adapt IUCN criteria
- A consensus decision to adopt the IUCN criteria with added project and program guidance

The IUCN's 8 criteria were then restructured into three categories:

- Key NbS Criteria: prioritized as essential for defining and scoring NbS
- Project Guidance: guidance for all projects NbS included
- Program Guidance: guidance for County-wide/regional programs that support project development and funding.

Edits to the criteria were tracked line-by-line, with rationales for changes documented. Indicators were developed in parallel and grouped by their alignment with each criterion, with guidance added for local application. Interested party feedback, County staff input, and crosswalks with SCWP guidance helped refine the final package.

Criteria has been tested through a Project Sample Scoring Worksheet as an initial pass at reviewing the efficacy of the Criteria.

3. Recommendations

The Recommendations emerged through the Blue Ribbon Panel's engagement over several months and were finalized through Task Force validation and peer working groups. Key methods included:

- Small-group synthesis discussions
- Spectrum-based analysis exercises
- Feedback prompts using color-coded digital sticky notes (e.g., "gut checks" on proposed ideas)
- Co-chair meetings to confirm feasibility and alignment with County policy goals

Recommendations were organized around structural program changes, including:

- Restructuring the SCWP scoring system to center NbS
- Creating a spectrum-based evaluation tool from gray to nature-based infrastructure
    - Developed by collected project examples by the BRP through the completion of the Spectrum Project Example Worksheet (can be found here)
- Establishing a Peer Review Panel (PRP) or another method to support the holistic project assessment
- Expanding pathways for land acquisition, conservation, and decentralized projects

Workshops were used to develop and deliver on the feasibility and resonance of these ideas with participants, and later drafts incorporated refinements such as emphasizing community stewardship, O&M funding, and technical assistance to CBOs.

4. Metrics

Metric development was rooted in a careful crosswalk between existing tools (MMS, Interim Guidance) and the evolving Standard. The process included:

- Discussions with BRP Participants that were involved in the drafting and development of the Interim Guidance 2022 and the Metrics and Monitoring Study
- Reviewing metrics from the MMS and categorizing them by relevance, criticality, and alignment with proposed criteria
- Scoring and commenting on metrics during workshops and online collaborative tools
- Identifying gaps, particularly for process-oriented metrics such as stewardship, adaptive management, and ecosystem health in the built environment

This process informed a reorganized set of metrics grouped by criteria and intended use. Two parallel tracks for metric development will be explored:

1. Binary metrics for compliance with the NbS Criteria
2. Qualitative/holistic metrics to support project evaluation beyond checklists

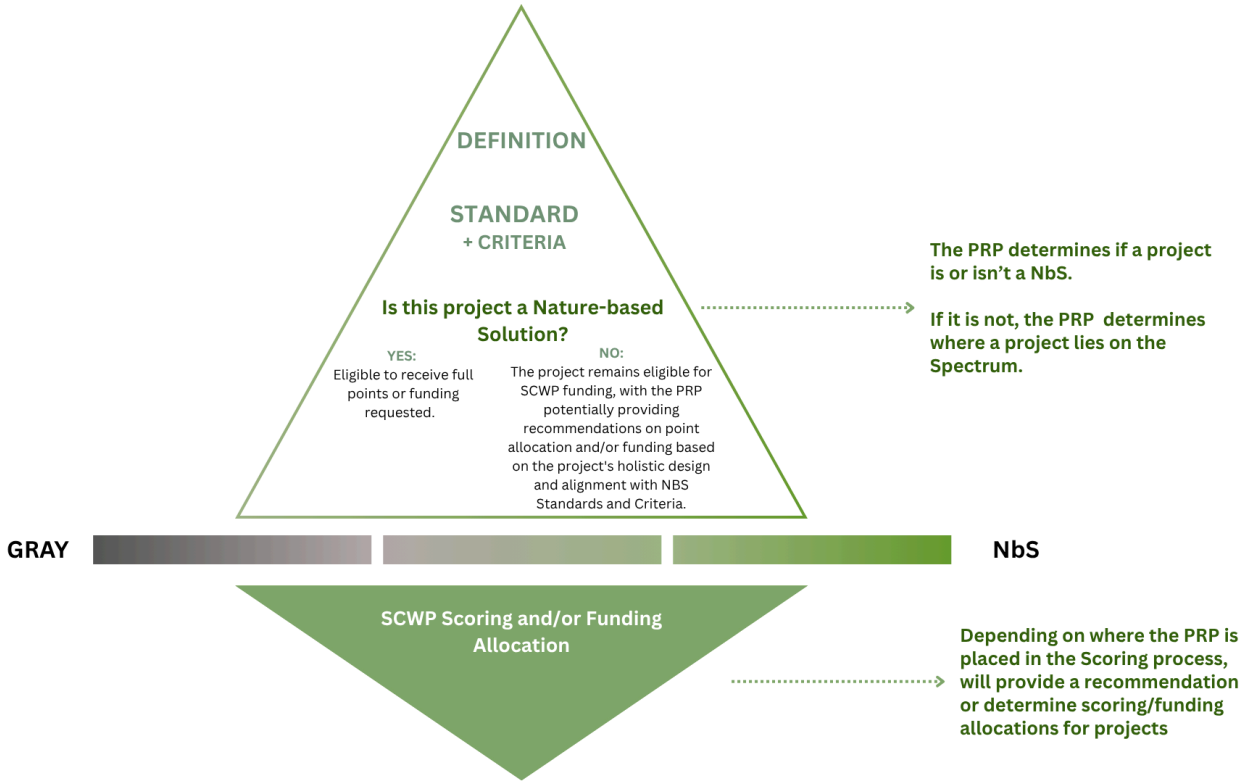
Appendix C: Sample Approaches to the Role of the PRP in SCWP Scoring

Peer Review Panel (PRP)

The Peer Review Panel (PRP) is proposed as a funded independent advisory body modeled after the SCWP's Scientific Studies review process. The PRP would help determine whether a project is, or is not, a Nature-Based Solution by evaluating how its components work together holistically, rather than assessing each feature in isolation. Composed of technical experts in fields including biology, botany, ecology, soil science, geo-hydrology, and landscape architecture, the PRP would offer interdisciplinary feedback to ensure project designs benefit public health and biodiversity and are ecologically sound, site-appropriate, and oriented toward long-term resilience and impact.

The PRP's key functions would include:

- Determining whether a project meets the SCWP's Definition and Standard of an NbS
- Providing applicants with detailed feedback to strengthen NbS integration across the design and implementation phases
- Supporting WASCs by delivering evaluations that address not just feasibility, but long-term vision and site-specific ecological relevance including biodiversity and public health benefits.



Key to the viability and effectiveness of the Peer-Review-Panel are Ordinance Changes that permit the partial funding of projects for Safe-Clean Water Program Projects. While some concerns have been raised about the potential for PRP involvement to delay project timelines, these must be weighed against the broader goal of meaningfully incentivizing high-quality NbS. It is stated in the Safe Clean Water Program ordinance that the Regional Program "shall be programmed, to the extent feasible, such that Nature-Based Solutions are prioritized." The PRP is feasible and will ensure that projects truly meet a level of review that affirms the integrity of biodiversity and public health benefits of NbS through integrated, living systems.

The Peer Review Panel is crucial because holistic assessment of Nature-Based Solutions is fundamental to realizing their ecological and community potential. Current evaluation frameworks within the SCWP rely heavily on a component-based scoring approach that assesses project features in isolation—an approach that is antithetical to NbS, which requires systems-level assessment and a nuanced lens. This is further evidenced by the fact that some GI components can be part of an NbS project, and conversely, a project may include all the "features" of what would be considered an NbS but still fail to function holistically. While these metrics are valuable, they are not designed to evaluate how a project functions as an integrated living system.

Outside of SCWP, holistic evaluation models exist but often lack regulatory depth or enforcement. Within SCWP, the Scientific Studies Scoring Committee's ongoing work to improve metrics, through the Metrics and Monitoring Study and the Interim Guidance (2022), is important, but it remains tied to a system that evaluates projects through discrete categories rather than integrated performance.

As a result, the program may continue to fund projects that meet thresholds but fall short of their NbS potential. Further, the current scoring structure limits innovation. Without a dedicated body applying a systems-level filter, SCWP risks reinforcing piecemeal designs and missing the opportunity to elevate more imaginative, context-responsive, and regenerative NbS strategies that reflect the complexity of natural and social systems. The Peer Review Panel fills this critical gap, ensuring that projects are not only eligible, but ecologically and socially coherent.

Moving forward, different models for the PRP's structure and timing can be explored, including whether the PRP functions as a parallel advisory committee who reviews proposals prior to scoring or integrated checkpoint in the review cycle. The following section offers an overview of different roles the Peer Review Panel could play in the Regional Program Project Evaluation Process:

Peer Review Panel Evaluation Placement Scenarios

Scenario 1: PRP as an Advisory Review Panel (Low Impact, Low Incentives)

Position in Process:
After scoring, available during the WASC deliberation process.

Influence Level:
Advisory. Offers structured feedback and serves as a resource for WASCs but does not impact scoring or funding.

Mechanism:
The PRP conducts a holistic systems-level review of infrastructure projects claiming to be Nature-based Solutions. It assesses alignment with the County's NbS definition and standards and provides a written evaluation memo. This memo is included in project materials shared with the Scoring Committee and WASC.

Pros:

- Mirrors the existing Scientific Review Panel structure, making it easy to implement.
- Offers early-stage ecological review and can additionally serve as a resource to project proponents.
- Increases transparency and accountability in how NbS claims are evaluated and offers an avenue for adaptive management.
- Helps WASCs identify projects that may need design refinement.

Cons:

- Relies on WASC willingness and ability to consider and act on PRP feedback.
- Relatively ineffective in incentivizing NbS
- No direct impact on scoring or funding amounts.

Scenario 2: PRP Precedes/Happens During Scoring and Informs Scoring Committee (Moderate Impact/Incentives)

Position in Process:
Following project submission deadline and before scoring.

Influence Level:
Moderate to high. Shapes how scores are assigned. Will require potential changes to scoring and ordinance.

Mechanism:
PRP reviews NbS-designated projects and issues a formal evaluation memo identifying whether the project meets NbS standards. The memo is shared with the Scoring Committee, which considers and integrates PRP's insights through an updated scoring structure to effectively incentivize NbS.

Pros:

- Shapes scoring outcomes

- Encourages applicants to integrate stronger NbS design before submission.
- Supports the Scoring Committee with interdisciplinary review they may not have capacity to conduct.

Cons:

- Requires coordination between PRP and Scoring Committee.
- Adds one more pre-scoring review step that may lengthen timelines.
- Still depends on committee discretion; recommendations are not enforced.

Scoring Changes (if panel sits within scoring)

Scenario A: In order to prioritize NbS goals (per County BOS motion), change the balance of scoring so that the NbS category has weighting equal to (or greater than) water supply and water quality. In order to get maximum NbS points, a project must be deemed a "true" NbS project per the PRP. If it is not deemed NbS, the PRP will recommend where the project sits on the spectrum (e.g. nature mimicking, green infrastructure, gray infrastructure) and assign partial points accordingly. (Optional: As an added incentive, tiered funding awards may also be designated by the PRP - see Scenario 3).

Scenario B: In order to prioritize NbS goals (per County BOS motion), incorporate NbS points into the existing scoring criteria for water supply, water quality, and community investment benefits. The NbS category itself will still stay within the Scoring Rubric, but will be renamed "Ecological Benefits" to focus specifically on biodiversity, habitat creation/restoration, and soil health aspects of NbS. (Optional: As an added incentive, tiered funding awards may also be designated by the PRP - see Scenario 3).

Scenario 3: PRP with Funding Influence (High Impact/Incentives)

Position in Process:
After scoring, before WASCs develop the Stormwater Investment Plan (SIP).

Influence Level:
High. Directly influences project funding levels. Will require the integration of partial funding for projects.

Mechanism:
PRP reviews scored projects to validate the quality of their NbS claims. It provides a tiered funding recommendation based on alignment with NbS standards:

- Full funding for projects with strong, coherent NbS integration.
- Partial funding for projects that are Nature Mimicking or Green Infrastructure Projects

- No funding or deferral for Gray Infrastructure Projects

The Peer Review Panel also serves as an advisory resource to help project proponents develop NbS Components throughout the project design process and will provide insights into which parts of the project need to be revised.

Pros:

- Aligns funding decisions with ecological rigor and long-term resilience.
- Introduces a tiered funding model that incentivizes design improvement. Makes space for partial funding that supports iterative or phased projects.

Cons:

- Requires a policy shift toward allowing partial or conditional funding. Could be seen as challenging existing scoring authority or SIP decisions.
- More complex to implement and may face resistance without clear County guidance.

Funding Changes:

Tiered funding structure: This structure would align funding levels with the ecological integrity of project design, based on the PRP's determination:

- Full funding for projects with strong, coherent Nature-based Solutions integration
- Partial funding for projects that are Nature-Mimicking or qualify as Green Infrastructure, but fall short of full NbS standards
- No funding or deferral for projects determined to be primarily Gray Infrastructure, lacking ecosystem functionality or long-term regenerative value

To further incentivize NbS, it is recommended that projects receiving a strong NbS determination be exempt from leveraged funding requirements.

Personnel Structure

The PRP will be composed of 3 to 4 members, including the individual who currently serves as the Nature-based Solutions expert on the SCWP Scoring Committee. The remaining members will bring interdisciplinary expertise across the following areas:

- Biology, Botany, Urban Ecology or Restoration Ecology: to assess habitat value, biodiversity benefits, and ecological coherence
- Soil Science, or Biogeochemistry: to evaluate soil health, infiltration capacity, and regenerative strategies
- Landscape Architecture or Urban Design: to review planting design, spatial layout, and site-specific integration

- Geo-Hydrology Urban Hydrology, Ecological Engineering or Green Stormwater Infrastructure (GSI) : to evaluate capture, infiltration, and stormwater function
- Public Health
- Environmental Compliance
- Tribal Representation: Traditional Ecological Knowledge

We recommend prioritizing Peer Review Panel members who have strong community ties, are Indigenous scientists, and/or come from frontline or impacted communities. Panelists should be a combination of academics or practitioners, and should collectively reflect a balance of applied and research experience in NbS. Panelists may either be appointed by the SCWP governance body or selected through a nomination process. The final process will be determined based on County preferences for transparency and implementation ease.

Appendix D: Scoring Worksheet

Project Test Template

This template can be used as a sample test for running projects through both the current SCWP scoring framework and the BRP Standard. The scoring approach applied here is adapted from the IUCN model and is a sample. As the BRP continues broader discussions around how scoring should be structured, this exercise is intended to support exploration of how the BRP Criteria might be operationalized within a scoring context.

Step 1: Calculate SCWP Score

Current SCWP Scoring for Nature-based Solutions
Maximum Points: 15

For projects that have been scored through SCWP, please share how many points you received, or proceed through the self assessment process. Refer to the NbS Programming Guidelines for more guidance on scoring if needed.

Criteria	Please Describe how the Project Met the Criteria	Project Points Awarded	Maximum Points
Implements natural processes or mimics nature processes to slow, detain, capture, and absorb/infiltrate water in a manner that projects enhances and or restores habitat, green space and/or unusable open space (yes/no).		X	5
Utilizes natural materials such as soils and vegetation with a preference for native vegetation (yes/no).		X	5
Removes Impermeable Area for a Project (1 point for 20% paved area removed)		X	5
	Total Points	X	15

Step 2: Calculate BRP Score

BRP NbS Scoring

For the purpose of this exercise, we are adopting the scoring model used by IUCN as part of its self-assessment framework. While this approach may evolve in the long term for scoring projects under the SCWP, it will serve as the basis for this exercise to validate the effectiveness of the BRP Criteria and Indicators.

Instructions: (IUCN Guidance for using the IUCN Global Standard for Nature-based Solutions, 2020):

For each Indicator, a score out of four is recorded, depending on whether the intervention addresses the Indicator to a strong, adequate, partial or insufficient extent. The result is used to calculate the level of adherence to each individual Criterion, also giving a strong, adequate, partial and insufficient result for scores greater than 75, between 50 and 75, between 25 and 50 and lower than 25 per cent respectively.

	Key (%)		Output
	≥75	Strong	Intervention adheres to the IUCN Global Standard for NbS.
	≥50 & <75	Adequate	
	≥25 & <50	Partial	
	<25	Insufficient	Intervention does not adhere to the IUCN Global Standard for NbS.

IUCN Self-Assessment Break Down

Key NbS Criteria:

BRP Criteria	Self-Assigned Value + Explanation (Insufficient: 25, Partial: 50, Adequate: 75, Strong: 100)
Criteria 1: NbS result in a benefit to biodiversity and ecosystem integrity	
1.1:NbS actions are informed by local, Indigenous, and community knowledge and directly respond to a well-informed assessment of the functional health of the ecosystem and prevailing drivers of degradation and loss. Guidance: To develop a Nature-based Solution, one must have a well-founded understanding of the current state of the ecosystem concerned. The baseline assessment needs to be broad enough to characterize ecological conditions, drivers of degradation and loss, and options for net functional health improvements informed by local, Indigenous, community knowledge and scientific understanding.	
1.2: Measurable biodiversity outcomes that support improved ecosystem health and function are identified, benchmarked, and periodically assessed. Guidance: In order to inform the design, monitoring and assessment of an NbS, targets for enhancing key biodiversity values should be established. For each NbS, the type of target may differ; for example, the target could be the percentage of ecosystem area restored or the return of a keystone species.	

1.3: Monitoring includes periodic assessments of unintended adverse and beneficial consequences as nature responds and adapts from the NbS. Guidance: Ecosystems are complex, with interdependent components and processes. There will always be a level of uncertainty in how they respond to specific interventions or external change. Nature-based Solutions should be designed to recognize this uncertainty, minimizing potential harm while remaining open to unexpected ecological benefits. Monitoring should support adaptive learning and may include community and place-based observation to help ensure the long-term integrity of the solution.	
1.4: Opportunities to enhance ecosystem integrity and connectivity are identified and incorporated into the NbS strategy Guidance: Ecosystems are largely distributed systems and NbS can create opportunities to enhance biodiversity conservation and ecosystem management efforts in ways that other types of centralized engineering interventions, on their own, cannot achieve. Wherever possible, NbS should be designed to restore lost ecosystems, reintroduce beneficial ecological functions, and strengthen connectivity with nearby natural areas and existing conservation or land management efforts.	
BRP Criteria 1 Average Value:	
Criterion 2: Design of NbS is informed by scale	

2.1: Design of Nature-Based Solutions recognizes and responds to ecological, hydrological, and social interactions across both spatial and functional scales. Guidance: Nature-based Solutions should be informed by ecological, hydrological, and social interactions that occur across watershed boundaries and at multiple spatial and governance scales. Effective design considers how water, people, and ecosystems are connected across the upstream and downstream areas, at the watershed, subwatershed, and site level, to support long-term resilience and coordination beyond the immediate site.	
2.2: The design of the NbS recognizes and responds to interaction between the ecosystem, society and economy. Guidance: The success of an NbS will be determined not only by the quality of the technical intervention but, critically, how well the interactions between people, the economy, and the ecosystem are understood and responded to. For NbS to be durable and sustainable, the design of NbS requires a “systems” framing that acknowledges and is informed by the interaction between ecology, equity, and economy and builds them into the decision making.	
2.3: The design of the NbS considers potential positive and negative impacts on and beyond the intervention site.	

Guidance: NbS has the potential to either positively or negatively impact ecosystems outside the immediate intervention area. For the solution to be sustainable, such types of interactions both within and around the intervention area need to be understood and accounted for in the decision making process. Appropriate approaches to anticipate and respond to both positive and negative ecological and social outcomes should be incorporated into NbS design.	
BRP Criteria 2 Average Value:	
Criteria 3: NbS effectively respond to societal and communal challenges	
3.1: The most pressing societal challenges for affected communities, interested parties and beneficiaries are prioritized Guidance: NbS interventions must address challenges that have significant and demonstrable impacts on society. Identification of the most pressing challenges is best informed by a transparent and inclusive consultation process.	
3.2: Societal and communal challenges are understood, documented, and addressed. Guidance: Establishing a clear understanding and rationale of the societal and communal challenges to be addressed, and ensuring these are documented is important for future accountability and optimizing those strategies to contribute to human well-being outcomes.	

3.3: Societal and communal well-being outcomes arising from the NbS are identified, benchmarked and periodically assessed Guidance: NbS must deliver substantive benefits to communal (ie. both environmental and human) and societal wellbeing. Specific, measurable, attainable, realistic and timely (SMART) targets should be used as appropriate, as they are important for accountability and informing adaptive management.	
BRP Criteria 3 Average Value:	
BRP Criteria 4: NbS are a communal asset cared for through adaptive management and stewardship.	
4.1: Appropriate approaches for long-term stewardship and adaptive management are identified and integrated into the NbS design and implementation. Guidance: NbS requires adaptive management and stewardship to ensure resilience and long-term functionality. These strategies should be co-developed with local communities or stewards and should reflect a commitment to iterative learning, resource sharing, and relational care over time, including consideration of operations and maintenance and evolving community needs.	
4.2: A monitoring and evaluation plan is developed and implemented	

throughout the intervention cycle to support adaptive management. Guidance: A monitoring and evaluation plan is a key requirement to understand whether NbS Strategies effectively deliver intended outcomes and are essential to informing how care practices can evolve.Insights generated should inform adaptive decision-making and support those responsible for long-term stewardship.	
4.3: The NbS intervention is supported by a plan for operations and maintenance, and outlines a pathway for communal and long-term stewardship. Guidance: Effective long-term care of NbS should build on adaptive management and be further supported by a plan for Operations and Management and evolving stewardship. Plans for operations and maintenance and stewardship should be designed to work across agencies and departments where appropriate.	
BRP Criteria 4 Average Value:	
Total Points:	**X/400**
Key NbS Criteria Score = (Total Criterion Score/400) × 15	

Understanding the SCWP Score vs. BRP Score

While this exercise translates the BRP criteria into a 15-point scale to resemble the existing SCWP NbS scoring, it's important to note that the two scores are not directly comparable. This assessment looks at the BRP criteria at face value, *without* metrics or recommendations, and serves as a starting point for thinking about how those pieces might eventually align.

The BRP criteria are intentionally more selective and holistic, aiming to evaluate Nature-Based Solutions across multiple dimensions. The BRP is also exploring changes to how NbS is scored and weighted within the SCWP framework. This exercise is a tool to begin evaluating the effectiveness of those criteria and considering future refinements to SCWP scoring.

The IUCN scoring model included here is simply a reference that is useful for structure and comparison, but not definitive. It's meant to help test and refine the BRP criteria.

Reflection Questions:

- What could be streamlined in the NbS BRP Self-Scoring process?
- Did your project score higher or lower under the BRP criteria compared to the SCWP NbS score?
- Were there criteria where your project stood out or struggled?
- Did the exercise surface any gaps or strengths in the BRP criteria?
- What criteria might deserve more weight?
- Any thoughts on how metrics and recommendations could complement the Standard?

Appendix E: Spectrum Project Case Studies

Projects are organized by their degree of alignment with the Nature-based Solutions Standard, from most to least aligned.

1. Encanto Nature Walk Bioswale and Outdoor Nature Classroom

Location: El Encanto Park, 777 Encanto Parkway, City of Duarte

Date: 2011

Project Submitted by: Debbie Enos, Project Manager, Council for Watershed Health

Project Summary: This park project features a 1,000-foot bioswale, utilizes primarily materials native to the San Gabriel Foothill and adjacent floodplain— located along the southern and western perimeter of Encanto park. Designed to naturally filter water flows while also solving a localized flooding condition. The bioswale collects stormwater overflow, from a grey concrete swale, that once flooded park's sports fields and adjacent neighboring yards.

Key Features:

- Incorporates infiltration ponds, check dams, eddy zones, and a stone infiltration basin that doubles as an outdoor classroom and shaded seating area.
- Allows small storms to infiltrate naturally and larger storms to pond and overflow into the San Gabriel River via vegetated channels.
- Features upland native plantings, a ½-mile walking loop, interpretive signage, and interactive art of local flora and fauna.
- Provides ADA-accessible and natural play paths.

Goals and Outcomes:

- Designed to naturally filter stormwater runoff using native vegetation, rock, and sediment pathways. The bioswale treats neighborhood runoff through infiltration, settling, and plant uptake before discharge into the San Gabriel River.
- Addresses chronic localized flooding of impacted park fields and residential properties by upgrading a gray infrastructure swale with a naturalized bioswale and infiltration basin.

- Prioritizes the initial usage of native plants, rock placement, and a naturalized ephemeral stream. Park goers report that the project has supported the return of frogs, indicating a successful ecological restoration.
- Doubles as an outdoor nature classroom and shaded gathering space. Integrated interpretive signage, art, and accessible walking paths.

- Connects park users with the adjacent Emerald Necklace trail system and San Gabriel River corridor, including ADA and universal accessibility.

NbS Assessment:

While modest in scale, this project demonstrates how a multi-benefit approach can transform an underperforming neighborhood space into a living system. It addresses local flooding, replaces gray infrastructure with a functioning nature-based solution, and thoughtfully integrates regionally specific native plants and an ephemeral stream. The design promotes both ecological and physical connectivity, through planted corridors and trail linkages (See Image 1 for a visual illustrating how the trail connects to the park and contributes to the broader ecological system.), delivering water quality, habitat, and community benefits. It serves as an ideal example of a Nature-based Solution at the neighborhood scale.

Image 1 *Encanto Nature Trail.* [Image] (n.d.). Los Angeles County Regional Park and Open Space District., *This image depicts an enhancement to the SGR trail located across the street from the park and is not part of the project described. Funded by LA County Parks Prop A, the trail features native plants and materials. It reflects the park's role in a larger ecological system connected to the river.*

Image 2 *Encanto stone infiltration basin and outdoor classroom.* [Image] (n.d.). Los Angeles County Regional Park and Open Space District.

Additional Resources:

Los Angeles County Regional Parks & Open Space District. (n.d.). Encanto Nature Trail. https://rposd.lacounty.gov/portfolio/encanto-nature-trail/

2. River Park

Location: 255 San Fidel Ave, Avocado Heights, CA 91746

Date: Completed in 2024

Project Submitted by: Debbie Enos, Project Manager, Council for Watershed Health

Project Summary: This project is a 30-acres nature park, located along a 1-mile stretch along the San Gabriel River. Part of the greater Emerald Necklace 17-mile trail system connecting the foothills to the Whittier Narrows Recreation Area via the Rio Hondo and the San Gabriel Rivers. The project serves as Phase I of a 90-acre master plan to restore land previously used as a commercial duck farm, addressing both a previously impaired floodplain, and prioritizing community access and connection to the river, Working within the limitations of the adjacent flood control infrastructure, such as riprap-lined channels, rubber dams, and transmission corridors, the restored floodplain supports infiltration, habitat restoration, and community recreation.

Key Features:

- Native plant palette matched to riparian, upland, and meadow habitats of the San Gabriel River
- Phytoremediation to mitigate high nitrogen soils from past agricultural operations
- Bioswale stream and wetland ponds to direct, cleanse, and infiltrate stormwater
- Trail network for pedestrians, cyclists, and equestrians
- Interpretive signage and a “history wall” chronicling land use change
- Overlook area and shaded gathering spaces
- Outdoor classroom and picnic facilities
- Reconnection of community to river access via underpass beneath the 605 freeway

Goals and Outcomes:

- Restore ecological function to a historically disconnected and contaminated floodplain
- Improve soil health and biodiversity through native replanting and habitat restoration
- Facilitate groundwater recharge through naturalized bioswales and wetlands
- Provide shade, habitat, and air quality benefits through tree and shrub plantings
- Foster community connection and education through accessible trails and interpretive elements
- Integrate into the Emerald Necklace 17-mile regional trail system

NbS Assessment:

This project represents a large-scale, high-functioning Nature-based Solution with measurable ecological, hydrologic, and social benefits. Notably this project serves as an Nbs despite the adjacent flood control infrastructure by going beyond retrofitting gray infrastructure by reclaiming and rewilding a significant river-adjacent site. While the floodplain is not fully reconnected due to surrounding infrastructure, the project exemplifies how partial restoration can still deliver critical water quality outcomes, biodiversity, societal and communal benefits.

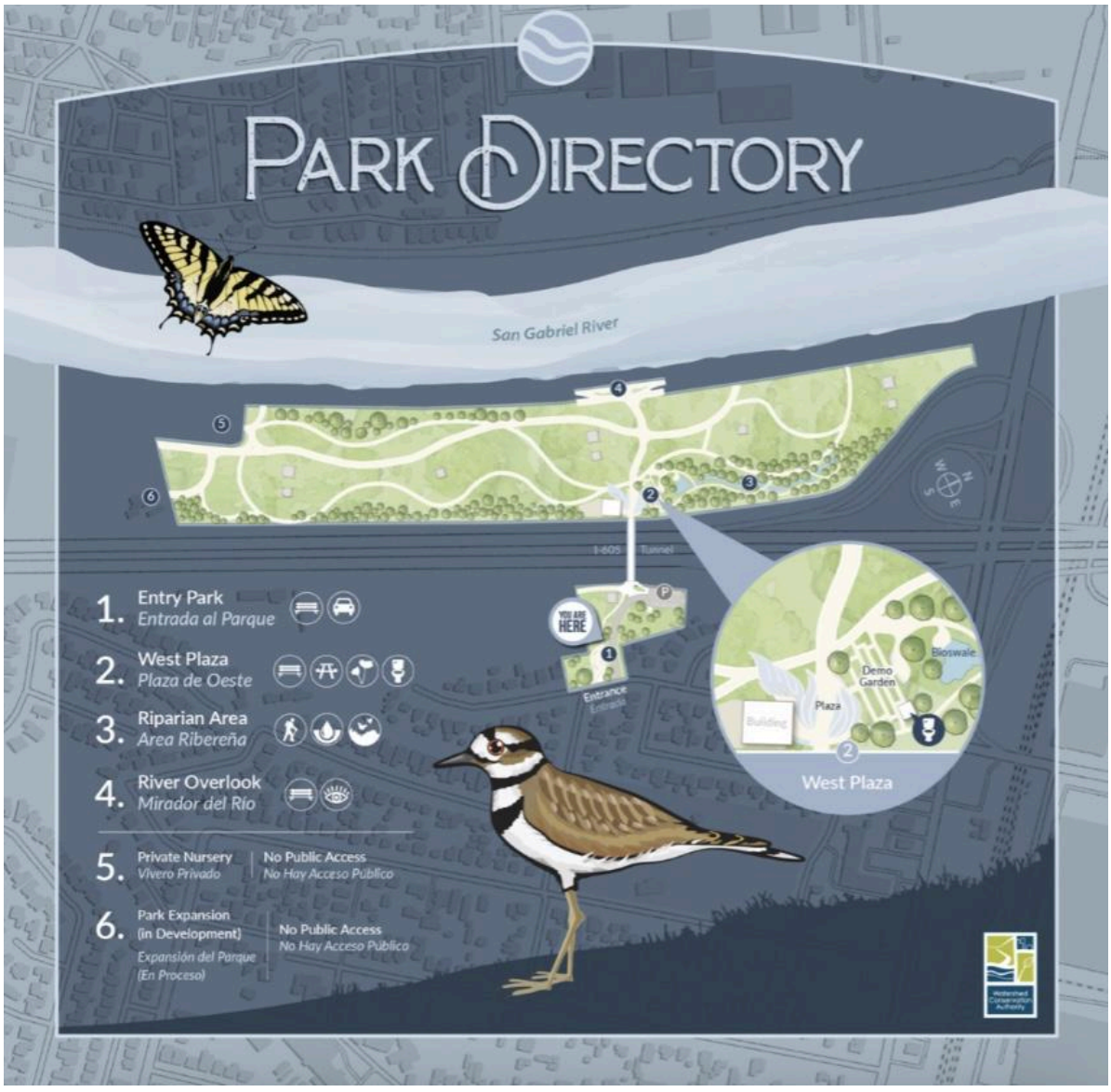


Image 3 *River Park Map and Park Directory also highlighting the Kill Deer, having adapted to urbanization, nests in the rocky grasslands and calls the muddy flats of the riverbed home.* [Image] (n.d.).Watershed Conservation Authority

Image 4 *River Park natural material bioswale within the floodplain.* [Image] (n.d.).Watershed Conservation Authority

Additional Resources:

Watershed Conservation Authority. (n.d.). River Park. https://www.wca.ca.gov/river_park

Los Angeles County Department of Parks and Recreation. (n.d.). *San Gabriel River Park*. https://parks.lacounty.gov/san-gabriel-river-park/

3. Carli Creek Water Quality and Habitat Enhancement Project

Location: Clackamas County, WA (Out of State)

Date: 2019

Project Submitted by: Craig Doberstein, Principal Engineer, California Regional Director, Herrera Environmental Consultants

Project Summary: The Carli Creek facility was designed to address water quality concerns impacting the Clackamas River, a drinking water source for nearly 400,000 residents. The project demonstrates how ecological restoration and industrial land use can coexist, achieving both environmental and community benefits.

Key Features:

- Stormwater diverted from over 400 acres of industrial land into a series of constructed wetlands, channels, ponds, and permeable berms
- Treatment through detention, infiltration, and filtration processes
- Graded areas designed to create off-channel and floodplain habitat, enhancing ecological connectivity and habitat diversity
- Meandering 1,700-linear-foot channel with pools to support aquatic life
- 61 large wood structures installed to improve habitat complexity for fish and wildlife
- Backwater channel and floodplain enhancements, including invasive species removal and native planting
- Wetland expansion, including an additional 1.36 acres of enhanced wetland habitat

Goals and Outcomes:

- Water Quality Improvement: Designed to slow, infiltrate, and filter runoff through wetland cells where plants, soil, and microbes work together to remove pollutants
- Habitat Enhancement: Successfully reduced stream erosion, increased habitat diversity, and restored native plant communities through grading, large wood additions, and native vegetation planting
- Floodplain and Watershed Benefits: Integrated stormwater treatment with floodplain restoration, benefiting the broader watershed through improved hydrologic function and habitat conditions
- Innovative Design: Features a regional constructed wetland to maximize the volume of water treated while maintaining base and dynamic stream flows

NbS Assessment:
Carli Creek addresses a clear and pressing issue: filtering polluted stormwater runoff from surrounding industrial areas before it reaches Carli Creek and, ultimately, the

Clackamas River. The project successfully blends stormwater treatment infrastructure with ecological restoration, supporting long-term resiliency and biodiversity. Although some purely habitat-focused projects (e.g., wetland or creek restoration done solely for ecological purposes) may deliver even greater ecological benefits, Carli Creek exemplifies how a project designed to address an active water quality issue can deliver robust Nature-based Solutions outcomes. It integrates hydrologic, ecological, and community goals into a single, multifunctional landscape, making it a strong example of NbS in a developed industrial context.

Image 5 *Carli Creek enhancement project infrastructure vision.* [Image] (n.d.). Clackamas County.

Image 6 *Carli Creek Section: Mature Habitat Vision* [Image]. (n.d.). Clackamas County.

Additional Resources:

Carli Creek Water Quality Project. (n.d.). Clackamas County. https://www.clackamas.us/wes/carlicreek.html

Carli Creek enhancement and industrial water quality. (n.d.). Clackamas County. https://dochub.clackamas.us/documents/drupal/d4c9f1ae-72e3-453e-bc67-dd54c1227dd

Blackpoint IT. (2021, May 26). *Carli Creek: A reflection on sustainable industrial stormwater treatment*. Herrera. https://www.herrerainc.com/carli-creek-a-reflection-on-sustainable-industrial-stormwater-treatment%E2%80%AF/

The Clackamas Partnership. (n.d.). *Carli Creek restoration project fact sheet*. https://www.clackamaspartnership.org/Project/FactSheet/30?utm_source=chatgpt.com

Clackamas River Basin Council. (2022, May 16). *Carli Creek regional stormwater wetland*. https://clackamasriver.org/carli-creek-regional-stormwater-wetland/

4. Earvin “Magic” Johnson Park Water Quality and Community Enhancement Project

Location: 905 E El Segundo Blvd, Willowbrook, Unincorporated Los Angeles County, CA 90059

Date: Opened 2020

Project Submitted by: Gary Lai, Principal and Founder, Quixotic Nature-Based Solutions

Project Summary: Located in the unincorporated Willowbrook community, Earvin “Magic” Johnson Park is a promising demonstration of remediating part EJ issues into green space that can provide stormwater testament, habitat restoration and community benefits. The park diverts and treats stormwater from the surrounding 375-acre watershed through natural biofiltration processes and stores the treated water in two on-site lakes for irrigation reuse. In addition to providing recreational green space in a highly concretized part of Los Angeles county, the project Project incorporates native habitat zones, including freshwater marsh and coastal sage scrub, providing refuge for birds, insects, and urban wildlife while supporting local biodiversity.

Key Features:

- Stormwater diverted from a 375-acre watershed (Compton Creek Watershed)
- Treated through biofiltration via constructed wetlands and stored in two man-made lakes
- Treated water reused for on-site irrigation
- Creation of freshwater marsh and coastal sage scrub habitat
  Habitat supports resident and migratory birds and other wildlife
- Interpretive signage and outdoor classrooms to support environmental education
- Additional features:
  - ½-mile lakeside trail with picnic areas and fitness equipment
  - Destination play area with splash pad
  - Viewing points, community gathering spaces, and wedding lawn

Goals and Outcomes:

- Stormwater Treatment and Reuse: Capture and biofilter runoff from a 375-acre urban watershed, storing treated water in on-site lakes for non-potable reuse
- Habitat Creation and Biodiversity: Establish freshwater marsh and native coastal habitats to support wildlife and increase ecological diversity within a heavily urbanized landscape
- Community Access and Education: Provide high-quality recreational amenities and environmental learning opportunities in a community long impacted by environmental injustice

- Sustainable Urban Retrofit: Transform gray, underperforming infrastructure into a system that manages water, supports habitat, and meets community needs

NbS Assessment:
While not an NbS project at face value, Earvin “Magic” Johnson Park is notable for its transformation of a former brownfield site where soil and groundwater contamination had been documented. Located adjacent to Ujima Village, a housing complex vacated due to long-standing pollution from historic oil tank storage, the project retrofitted an existing turf- and lake-dominated park into a sustainable green space. Although it does not fully restore the site’s pre-industrial ecosystem, it integrates natural systems to improve water quality, enhance habitat, and build community resilience.

Ranked highly for transforming a historically contaminated site, this project renovates a turf-dominated park with 15 acres of manmade lakes into a multi-benefit space. While full ecosystem restoration wasn’t feasible, it incorporates ecological design to improve water quality, enhance habitat, and support community use.

Image 7 Visual of project outline [Image]. (n.d.). ASLA California Southern.

Additional Resources:

Section 3: Project description. (2015, September). LA County. https://file.lacounty.gov/SDSInter/dpr/233231__03.0ProjectDescription_.pdf

Miranda, C. A. (2021, May 20). What's hiding in plain sight at Magic Johnson Park? Maybe a solution to our water problem. Los Angeles Times. https://www.latimes.com/entertainment-arts/story/2021-05-20/magic-johnson-park-water-capture-station

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Safe, Clean Water Program. (2023, January). Earvin “Magic” Johnson Park Operation and Maintenance Project [PDF]. https://safecleanwaterla.org/content/uploads/2023/01/IP-Earvin-Magic-Johnson-Park.pdf

Rain Ready California. (n.d.). Earvin “Magic” Johnson Park. https://www.rainreadyca.org/earvin-magic-johnson-park

5. Urban Orchard Project

Location: City of South Gate, along the Bandini Channel of the L.A. River

Date: N/A

Project Submitted by: Devon Provo, Senior Policy Manager, Accelerate Resilience Los Angeles (ARLA)

Project Summary:
The Urban Orchard Project transforms a previously underutilized corridor into a multifunctional green space that blends ecological restoration with community-driven design. Covering roughly 7 acres of the larger 30-acre site, the project incorporates constructed wetlands, stormwater treatment features, an orchard, and educational amenities. It captures and treats stormwater from the Channel, integrates native landscaping, and elevates community input in plant selection and cultural representation.

Key Features:

- Constructed wetland stream and biofiltration systems
- Orchard and community garden co-designed with local interested parties
- Multi-use paths and a natural playground with water play elements, including picnic areas, shaded structure and public art
- Educational signage and cultural interpretation aligned with community priorities

Goals and Outcomes:

- Stormwater Treatment & Reuse: Diverts runoff into wetlands and bioswales
- Urban Greening & Biodiversity: Commenced with planting 75 trees and 196 fruit trees; aims to increase canopy coverage and habitat functions
- Community Engagement & Education: Features co-designed orchard and garden, cultural signage, and programming spaces to bolster stewardship and education

NbS Assessment:
The Urban Orchard Project goes beyond Green Infrastructure to integrate some Nature-based elements, by emulating natural ecosystems. While focused on a 7-acre developed phase, it's part of a broader strategy to transform 30 acres of post-industrial land. The project handles stormwater treatment through living systems, enhances local biodiversity, and supports social cohesion through public amenities.

The Urban Orchard satisfies the NbS criteria by addressing urban water quality challenges through ecosystem-based solutions, enhancing biodiversity in an urban corridor, and providing culturally meaningful public spaces. Its living systems approach and biodiversity outcomes align strongly with the BRP NbS definition.

Image 8 *Diagram of project outline* [Image]. (2019, July 18). Urbanize.

Additional Resources:

City of South Gate. (2019, June 26). *City of South Gate Urban Orchard Demonstration Project* [PDF]. https://www.cityofsouthgate.org/files/sharedassets/public/v/1/government/departments/public-works/documents/urban-orchard-ceqa-is-mnd-_june-26-2019_.pdf

City of South Gate. (n.d.). *Urban Orchard Project*. https://www.cityofsouthgate.org/Government/Departments/Public-Works/Capital-Improvement-Program-Projects/Urban-Orchard-Project?utm_source=chatgpt.com

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California Statewide Park Development and Community Revitalization Program. (n.d.). *Urban Orchard Project #21209*. https://www.parksforcalifornia.org/project/21209/

Accelerate Resilience L.A. (2020). *The collaborative advantage: Realizing the potential of multi-benefit stormwater management in Los Angeles County* [PDF]. https://acceleratela.org/wp-content/uploads/The_Collaborative_Advantage.pdf

6. Albany Street Stormwater Facility (Albany Stormwater Pond Retrofit)

Location: Rochester, Thurston County, WA (Black River Watershed) (Out of State)

Date: 2020

Project Submitted by: Craig Doberstein, Principal Engineer, California Regional Director, Herrera Environmental Consultants

Project Summary:
The Albany Stormwater project manages runoff from a 30-acre drainage basin, addressing local water quality and flooding challenges, supporting instream flow needs, and doubling as an open-air amphitheater during the dry summer months. It also provides additional recreational spaces for public enjoyment. Dedicated to community and environmental uplift, the project exemplifies thoughtful integration with native soils and habitat-friendly landscaping in a multi-benefit stormwater design that prioritizes both stormwater control and instream flow improvements.

Key Features:

- Drainage Basin Capture: Manages runoff from a 30-acre basin, directing stormwater into a landscaped infiltration area that captures and treats approximately 24 acre-feet of water annually
- Hydrologic Function: Designed to increase base flows to the Black River during summer months, supporting form and planning for salmon and other fish and aquatic life
- Community Amenities: Includes a walking trail, a crosswalk to a nearby park, and an amphitheater that doubles as a water basin—usable in dry months and submerged in wet seasons
- Ecological Planting Strategy: The site features vegetation inspired by the local South Puget Sound prairie ecosystem, with drought-tolerant native species selected for pollinator and bird habitat
- Sustainable Soil Management: Excavated native sand and topsoil were salvaged, blended, and reused as filtration media, reducing costs and transportation emissions.
- Community-Informed Process: Local residents shaped site features through engagement during the planning phase

Goals and Outcomes:

- Water Recharge and Flow Support: Replenishes groundwater and supports summer base flows in the Black River, improving aquatic habitat
- Habitat Enhancement: Establishes native prairie-inspired vegetation that attracts pollinators, birds, and small wildlife
- Public Access and Education: Provides year-round amenities for local residents, including nature play, trails, and informal learning

- Material Reuse: Prioritizes on-site resource use by re-integrating native soils into the water treatment area, reducing environmental impact

NbS Assessment:
This project presents a thoughtful approach to stormwater retrofit and public space enhancement in a small urban-rural context. Its location in western Washington allows it to benefit from a higher water table, and regular precipitation—all conditions that differ significantly from those in Los Angeles County. The project integrates multiple functions—runoff management, seasonal use as an amphitheater, habitat restoration, and passive recreation—into a relatively compact site. Its focus on soil health, native planting, and seasonally responsive design illustrates how infrastructure can deliver environmental and social benefits. However, its applicability to highly urbanized, arid regions like Los Angeles is limited by these environmental and spatial differences.

The Albany project uses a lot of concrete and gray materials, but integrates multiple landscape functions and emphasizes ecological design to manage water while enhancing biodiversity and community use. While not located in Los Angeles, and therefore not subject to the same density, climatic constraints, or infrastructural challenges, this project offers a useful example of how landscape-based strategies can fulfill overlapping ecological and social goals. The emphasis on restoring native planting palettes, recharging flow-impaired streams, and supporting indicator fish species and wildlife demonstrates a systems-based approach that blends infrastructure and ecological intention.

Image 9 *Development progress of amphitheater* [Photograph]. (n.d.). Herrera.

Additional Resources:

Recreation and Conservation Office (RCO). (n.d.). *Albany Street Stormwater Pond Retrofit*. Salmon Recovery Portal. https://srp.rco.wa.gov/project/120/82379?utm_source=chatgpt.com

Herrera Environmental Consultants. (n.d.). *Albany Street Stormwater Facility*. https://www.herrerainc.com/projects/rochester-infilitration-facility/

Thompson, E. (2021, October 5). Projects tour highlights efforts benefiting streamflow restoration efforts in Chehalis Basin. *The Chronicle*. https://www.chronline.com/stories/projects-tour-highlights-efforts-benefiting-streamflow-restoration-efforts-in-chehalis-basin,274108

Washington State Department of Ecology. (2021, December 2). *Competitive streamflow grants support water for people, farms, and fish*. https://ecology.wa.gov/blog/december-2021/competitive-streamflow-grants-projects

7. Jeff Seymour Family Center

Location: 10900 Mulhull Street, El Monte, CA

Date: Opened 2017

Project Submitted by: Devon Provo, Senior Policy Manager, Accelerate Resilience Los Angeles (ARLA)

Project Summary:
Located in El Monte, a historically underserved area in the San Gabriel Valley, the Jeff Seymour family center transforms part of a school based community site into a mindfully designed landscape that supports ecological function and community well being— including urban heat and limited tree canopy. The project addresses the need for climate resilience, food access, and environmental education. It integrates stormwater capture, native habitat restoration, and community gardening in a compact and highly utilized urban space.

Key Features:

- Rain garden, bioswale, and stormwater basin to support on-site infiltration and reduce flooding
- Urban forest with native species to enhance habitat, reduce heat island effects, and sequester carbon
- Community garden supporting food access and nutrition education
- Cool pavement installation to reduce surface temperature
- Educational signage and spaces for passive recreation and community programming

Goals and Outcomes:

- Improve water quality and manage runoff through infiltration
- Increase biodiversity and habitat value through native planting
- Reduce urban heat through increased canopy and reflective materials
- Support local food production and environmental education
  Provide accessible, inclusive green space for an underserved community

NbS Assessment:
The project is situated at a school site and serves the surrounding community with both ecological and social co-benefits in a region with high pollution burdens and limited green space. The emphasis is on native vegetation and stormwater infiltration and community benefits including improved biodiversity, cooling, and public access to nature and fresh food, designed to restore ecological function rather than just being a beautification effort.

This project addresses multiple societal challenges, including flooding, extreme heat, biodiversity loss, and food insecurity, through ecological interventions shaped by extensive community engagement. Features such as rain gardens, native plantings, and food-producing gardens reflect an integrated approach that supports ecosystem function and improves human well-being. However, the design does not fully restore or regenerate natural systems and landscapes.

Image 10 *On-site water infrastructure* [Image]. (n.d.). Amigos De Los Rios.

Image 11 *Image of campus site* [Image]. (n.d.). Amigos De Los Rios.

Additional Resources:

Amigos de los Rios. (n.d.). *Jeff Seymour Family Center*. https://amigosdelosrios.org/jeff-seymour-family-center/

Pacific Institute. (n.d.). *Jeff Seymour Family Center*. Water Action Hub. https://wateractionhub.org/projects/1738/d/jeff-seymour-family-center/

OurWaterLA. (n.d.). *Existing projects we'd like to see more of*. https://ourwaterla.org/existing-projects-wed-like-to-see-more-of/?utm_source=chatgpt.com

Accelerate Resilience L.A. (2020). *The collaborative advantage: Realizing the potential of multi-benefit stormwater management in Los Angeles County* [PDF]. https://acceleratela.org/wp-content/uploads/The_Collaborative_Advantage.pdf

8. Brookside Park Stormwater Capture Project

Location: Brookside Park, Pasadena, CA (alongside the Arroyo Seco stream)

Date: In design; final design anticipated for Summer 2026

Project Submitted by: Tim Brick, Executive Director, Stewards of the Arroyo Seco

Project Summary:
The Brookside Park Stormwater Capture Project, located alongside the Arroyo Seco stream, is designed to capture urban runoff and stormwater from the Seco Street Drain, treat it through underground infrastructure, and facilitate recharge to the Raymond Basin aquifer. The project does include limited above-ground amenities such as tree plantings and pedestrian improvements, however the main project features—pretreatment, storage, and infiltration are buried beneath the Brookside Park parking lot.

Key Features:

- Underground diversion and infiltration system to recharge local groundwater
- Subsurface treatment and storage for water quality improvements
- Minimal integration with surface-level green infrastructure or ecological habitat
- Potential inclusion of trees and pedestrian safety enhancements as secondary features
- Located adjacent to a natural stream corridor (Arroyo Seco) but primarily engineered underground

Goals and Outcomes:

- Improve stormwater quality and reduce pollutant loads through pretreatment
- Recharge the Raymond Basin aquifer with captured urban runoff
- Reduce urban flooding by diverting high flows into subsurface infrastructure
- Provide some pedestrian improvements and minor greening as co-benefits

NbS Assessment:
This project addresses stormwater management and groundwater recharge, but it does so through a largely engineered and buried system with limited ecological integration. It lacks a visible, nature-based or community-facing landscape strategy, missing opportunities for bioremediation, stream restoration, or habitat creation. The project reinforces a separation between infrastructure and nature, treating the stream as a drainage channel rather than a community or ecological asset.

While the project provides water quality and groundwater benefits, it does not engage the stream corridor as a living system or provide surface-level ecological function or access. The emphasis on underground infrastructure separates the project from the natural landscape and stream corridor. Opportunities to restore or enhance the Arroyo

Seco as a dynamic, nature-based system were not incorporated, and the project lacks the multi-benefit approach central to Nature-based Solutions.

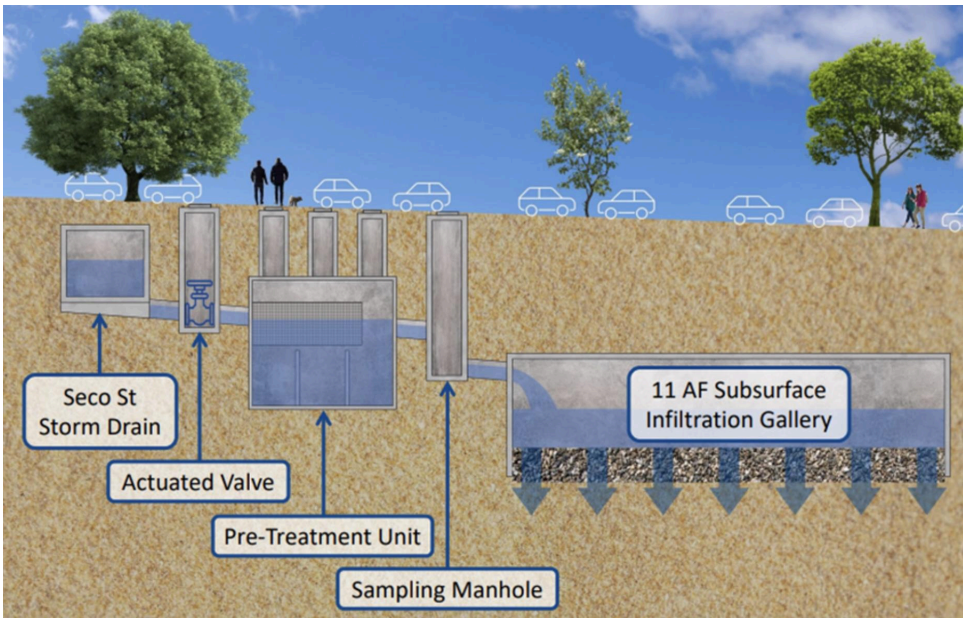

Image 12 *Preliminary Concept* [Image]. (n.d.). City of Pasadena.

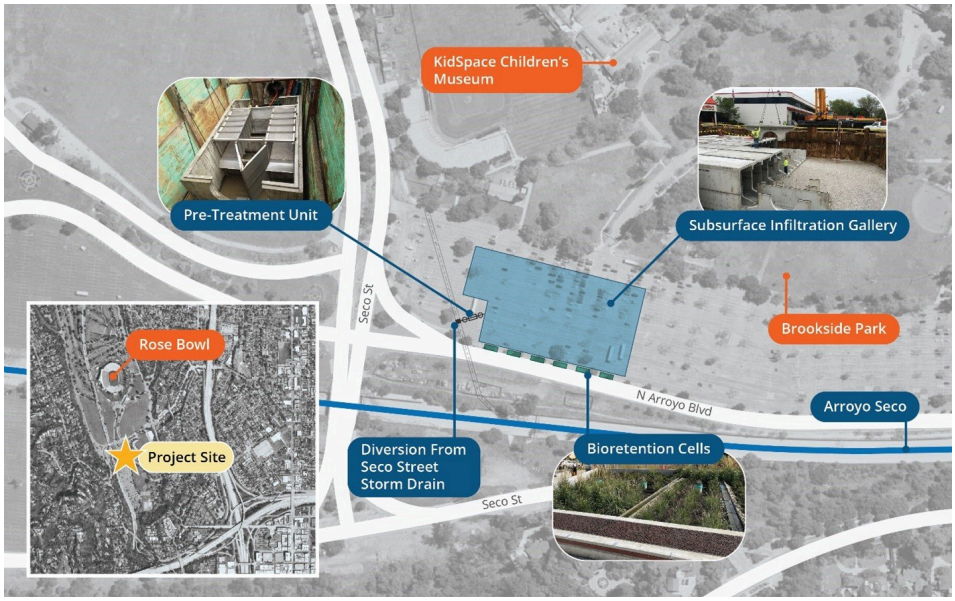

Image 13 *Project Map* [Image]. (n.d.). City of Pasadena.

Additional Resources:

Safe, Clean Water Program. (2023, January). *Brookside Park Stormwater Capture Project* [PDF]. https://safecleanwaterla.org/content/uploads/2023/01/IP-Brookside-Park-Stormwater-Capture-Project.pdf

Arroyo Seco Foundation. (n.d.). *The Central Arroyo Stream Restoration Program (CASRP)*. https://www.arroyoseco.org/casrp.htm

Arroyo Seco Foundation. (n.d.). *Brookside Parking Lot*. https://www.arroyoseco.org/parkinglot.htm

City of Pasadena. (n.d.). *Brookside Park Stormwater Capture Project – Engineering Design Services*. OpenGov Procurement. https://procurement.opengov.com/portal/pasadena/projects/100255/document?section=912497

List of Additional Spectrum Projects

Additional projects have been identified on the following webpages and may be placed on the spectrum in the future:

> Landscape Architecture Foundation. (n.d.). *Case study briefs*. https://www.landscapeperformance.org/case-study-briefs?state%5BCA%5D=CA&keys=

Projects identified by the CWH to be assessed, which we believe align with the BRP's understanding of Nature-Based Solutions to varying extents.

Project Name	Location
Tanaka Park	1400 W Wardlow Rd, Long Beach, CA
Willow Springs Park	2745 Orange Ave, Long Beach, CA
Lewis MacAdams Riverfront Park	Elysian Valley, Los Angeles, CA
Augustus F. Hawkins Nature Park	5790 Compton Ave, Los Angeles, CA
Rio de Los Angeles State Park	1900 San Fernando Rd, Los Angeles, CA
River Park	255 San Fidel Ave, La Puente, CA
Eagle Rock Elementary & Magnet Center	2057 Fair Park Ave, Los Angeles, CA
Rory M. Shaw Wetlands Park	8175 Fair Avenue, Sun Valley, CA 91352
Adventure Park Stormwater	10130 Gunn Ave, South Whittier, CA
Dominguez Gap Wetlands	286 W. Del Amo Blvd, Long Beach, CA 9080
Alfred S. Madrid Middle School	3300 Gilman Rd, El Monte, CA
East LA Sustainable Median Stormwater Capture Project	Multiple street medians across unincorporated East Los Angeles

Appendix F: Spectrum Project Worksheet

This worksheet was used to collect examples of projects for inclusion on the Nature-based Solutions Spectrum. While the initial submission window has closed, you are still welcome to complete the worksheet and send it to tchellani@watershedhealth.org for potential inclusion in future iterations.

We are developing a "Spectrum" that categorizes projects along a continuum from Gray Infrastructure to Nature-based Solutions. To support this, we are requesting real project examples that can be used to illustrate different placements on the spectrum, along with a brief explanation of why each project fits its position.

Use of Categories:
While categories like "Green Infrastructure" and "Nature-Mimicking" are useful for illustrating the range of infrastructure solutions, orienting project proponents, and setting a standard for NbS, their amorphous definitions limit their function as labels and they should not be used as such. The terms "Gray" and "NbS" are more easily defined, with "NbS" being defined by the BRP.

As the BRP iterated on the spectrum concept and how it could be used constructively for both project development and future scoring, the BRP moved away from using "Green Infrastructure" and "Nature-Mimicking," as categories of projects, but rather moved to develop a gradient spectrum from Gray to NbS— recognizing that no single label can capture the full complexity of a project, as holistic assessment of projects is foundational to evaluating NbS effectiveness.

Therefore, the BRP decided to use actual projects to anchor the spectrum, accompanied with a note on the approach and effectiveness of the project to inform its placement of the spectrum. To guide how projects are placed along this spectrum, the BRP's initial sticky note exercise was used to create parameters for placing example projects on the spectrum (for this tool only). The parameters are as follows:

<u>Gray Infrastructure:</u>

Parameters: Fully engineered, man-made systems such as pipes, culverts, and concrete channels designed to convey stormwater. These structures offer little to no ecological function and tend to prioritize rapid drainage over infiltration or habitat value.

Key Characteristics:

- Largely engineered systems designed for controlled water conveyance
- Constructed with concrete and other non-organic materials
- Little to no ecological consideration or function
- Static, centralized design that lacks connectivity and place-based context

Examples:

- Concrete Earthen Dams
- Astroturf
- Plastic Mulch
- Projects that Don’t Support Soil Health
- Concrete Lined Channels
- Concrete Shorelines
- Storm Drains
- Decorative Rock
- Projects Lacking of Ecosystem Function
- Projects Lacking Hydrological Connectivity
- Decorative Water Features

Green-Infrastructure

Parameters: Engineered systems that manage water and environmental functions using “green” elements like vegetation, soil, or permeable materials, but don’t necessarily replicate natural ecosystems or enhance ecological function.

Key Characteristics:

- Often single-function, focused on stormwater management, aesthetic, or resource efficiency.
- May use non-native or ornamental vegetation, or grey materials with green elements added.
- Can be designed without enhancing biodiversity or long-term ecological processes.

Examples:

- Golf courses: green spaces with infiltration that can be ecologically limited, often high in water and chemical use,
- Permeable streets/sidewalks: allow infiltration but don’t necessarily support biodiversity and habitat
- Dry wells/cisterns/rain barrels/rain tanks: captures (and infiltrates in the case of dry wells) runoff but doesn't necessarily interact with natural ecosystems.
- Decorative bioswales – may manage runoff but lack native planting or ecological function.
- Trees that don’t support wildlife: can offer shade, but often don’t have any habitat or food value
- Solar/wind farms: renewable energy infrastructure with minimal ecological restoration.
- Decomposed granite, low flow diversions, interpretive signage: green-adjacent but not ecological interaction and systems in mind

Nature-Mimicking

Parameters: Systems that intentionally emulate natural processes and are often designed to restore or replicate natural hydrology, habitat, or ecosystem services. They fall short of full Nature-based Solutions but move beyond green infrastructure by incorporating natural patterns.

Key Characteristics:

- Often multi-functional, integrating water, soil, and habitat functions.
- Use native or adaptive vegetation and design cues from nature.
- Still engineered or maintained, but with ecological intentions.

Examples:

- Greenroofs: mimic vegetated landscapes, provide some habitat and cooling benefits.
- Treewells: manage stormwater and provide tree canopy, especially if designed with ecological considerations.
- Stream restoration with controlled flows: partially restore natural channels but with engineered flow paths.
- High-maintenance native landscapes: support biodiversity but require inputs that make them less self-sustaining.

Trees in grey landscapes: Integrated into urban infrastructure and may be ecologically valuable if native.

Spectrum Project Example Worksheet

Project Name:

Project Location:

Project Date:

Key Features:

Project Type (select one option below, or indicate if the project falls between two categories):

A. Gray Infrastructure Project
    - Hard/traditional infrastructure projects

B. Uses primarily engineered systems that manage water and environmental functions using “green” elements like vegetation, soil, or permeable materials, but doesn't necessarily replicate natural ecosystems or enhance ecological function.

C. Uses systems that intentionally emulate natural processes and are often designed to restore or replicate natural hydrology, habitat, or ecosystem services, but full Nature-Based Solutions but move beyond green infrastructure by incorporating natural patterns.

D. NbS Project
    - BRP NbS Definition for Reference: Nature-based Solutions address societal challenges through sustainable actions that protect and restore living ecosystems and their functions to ensure human well-being and benefit biodiversity.

    Why did you select this option (1-3 sentences):

    Other Comments:

Appendix G: Framework Comparison

This section outlines how the Task Force and Blue Ribbon Panel engaged with each of the major frameworks, the IUCN Global Standard, Interim Guidance, and the Metrics and Monitoring Study (MMS), to inform the development of criteria, standards, and guidance for Nature-based Solutions under the Safe, Clean Water Program (SCWP). It highlights the ways in which each resource influenced our process, where adaptations were necessary, and how elements were ultimately integrated or restructured to better reflect the unique context of Los Angeles County.

IUCN Global Standard for Nature-based Solutions

CWH initially introduced the IUCN's definition of Nature-based Solutions as a resource during early definition discussions. It provided a strong global reference point, prompting repeated reflection on whether we were "reinventing the wheel" by developing new criteria. However, members of the Blue Ribbon Panel rightfully noted that the IUCN Standard, while robust, was developed for a broader international context, not tailored to the highly urbanized, ecological, and governance-specific realities of Los Angeles County. Further, it was also not designed to be compatible with an existing program like the Safe, Clean Water Program (SCWP), which posed additional reconciliation challenges.

As the conversation shifted toward frameworks, the BRP reviewed its initial set of draft criteria alongside the IUCN's. The BRP collectively found that the IUCN's framework was more comprehensive and better articulated across multiple dimensions. This led to an extended deliberation on whether to fully adopt the IUCN framework, blend it with the BRP's draft criteria, or adopt it with modifications.

After several votes and rounds of feedback, the BRP ultimately decided to adopt the IUCN Standard with additional guidance, rather than combining it or modifying it wholesale. This approach recognized the strengths of the IUCN framework while allowing for regional specificity. The specific language of the IUCN criteria was edited by the BRP. Based on the feedback of the BRP, the CWH elevated the most relevant IUCN criteria to serve as core Nature-based Solutions criteria for project assessment. Other IUCN components were reclassified as general project guidance (applicable to all projects, including but not limited to NbS) and programmatic guidance (for initiatives that support implementation and evaluation of projects over time).

Interim Guidance (Safe Clean Water Program, 2022)

The Interim Guidance served as a starting point for understanding how the SCWP had previously characterized "good," "better," and "best" projects. While these categories offered discrete and accessible entry points for applicants, they lacked strong alignment with the systems approach integral to Nature-based Solutions. The checklist-style evaluation format also risked oversimplifying complex systems and left out

considerations central to ecological processes, community resilience, and long-term sustainability.

The BRP referenced the Interim Guidance throughout discussions but recognized that a transition was necessary. The aim was to move from categorical tiers to a more flexible and evaluative framework that better reflects the nuances of what constitutes a Nature-based Solution. Lessons from the Interim Guidance informed how we approached criteria language, especially in terms of accessibility and user-friendliness for project proponents.

Metrics and Monitoring Study (MMS, 2023)

The Metrics and Monitoring Study provided a foundational effort to propose metrics aligned with SCWP goals. However, many of the metrics were not grounded in a standard for Nature-based Solutions, and some lacked relevance when viewed through the lens of the updated BRP criteria. In reviewing the MMS, the BRP emphasized the need for integrated metrics that span functional, ecological, and community dimensions. While the MMS informed our understanding of possible data collection pathways, the shift toward an NbS-aligned framework required redefining categories and refining indicators to support more meaningful assessment and long-term tracking.

Appendix H: Completion of Chapter Tasks

1. Develop Countywide Definitions and Standards for Nature-based Solutions

This priority was met through the Task Force's development of a Countywide Definition and Standard for Nature-based Solutions. The resulting framework draws from international benchmarks and was tailored to reflect the region's specific governance, ecological, and community needs.

2. Prioritize Nature-based Solutions in Stormwater Capture Projects

The Criteria, Recommendations, and Metrics developed by the Task Force provide a clear structure to prioritize and incentivize Nature-based Solutions within stormwater capture projects. The Safe, Clean Water Program (SCWP) remains the most immediate mechanism for implementation, and the Standard is designed to guide consistent evaluation and prioritization across projects.

3. Build Upon the Safe, Clean Water Program's Metrics & Monitoring Study (MMS) and 2025 Interim Guidance

The Task Force reviewed both the 2025 Interim Guidance and the MMS, identifying areas of alignment and gaps, particularly in the context of the Good-Better-Best (GBB) framework. Appendix D of the Interim Guidance served as a starting point for revisiting and refining relevant metrics. The Task Force's updated Criteria and Indicators build on this foundation to ensure future scoring and assessment better reflect the principles outlined in the new Standard for NbS.

Desired Outcomes

Desired outcomes as detailed in the Nature-Based Solutions Task Force Charter, 2023:

> *"The Task Force will support the SCW Program's Metric & Monitoring Study (MMS), Goal F: 'Prioritize Nature-Based Solutions.' NBS are currently being evaluated based on the Good, Better, Best (GBB) framework identified in the SCW Program's 2025 Interim Guidance (Programming of Nature-Based Solutions). The development of more consistent definitions, specific standards, and refined scoring criteria is needed and will further benefit implementation of the SCW Program.*
>
> *Task Force efforts will build upon previous feedback gathered during the development of the CWP and April 2024 Water Resiliency Summit. The Task Force will support progress towards relevant CWP targets and strategies such as:*
>
> - *Target H: Increase groundwater recharge and storage by increasing decentralized infiltration by 80,000 AFY*
> - *Strategy 10: Facilitating natural infiltration of precipitation*

Additionally, the Task Force will support related targets detailed in the California's Nature- Based Solutions Climate Targets released in April 2024, including but not limited to:

- *Wildfire Risk Reduction (Beneficial Fire and Other Fuel Reduction Activities)*
- *Developed Lands (Afforestation, Conservation, Urban and Community Greening and Forestry, and Reducing Community Wildfire Risks)"*

The work of the Task Force supports Goal F of the SCW Program's Metrics & Monitoring Study by proposing more consistent definitions and evaluation tools beyond the current Good-Better-Best (GBB) framework.

Task Force efforts also align with CWP Target H and Strategy 10 by emphasizing decentralized infiltration and ecosystem-based project design. Although not deeply explored, the Task Force's approach supports broader climate goals, including components of California's Nature-based Solutions Climate Targets related to urban greening and resilience in developed lands. Continued work by the NbS SCWP Working Group, or an additional group derived from the Task Force, may continue to build on the Desired Outcomes.

Appendix I: Glossary

Glossary of general Water Terms

Several definitions in this glossary reference or adapt language from the IUCN Global Standard for Nature-based Solutions (2020). See the IUCN Glossary for additional definitions.

Term	Definition	Source	Found in:
Adaptive management	"Adaptive management is a multidisciplinary approach for confronting uncertainty in natural resource issues. It treats policies as hypotheses and management actions as experiments, using monitoring and active learning to adjust strategies over time to support flexible decision-making that evolves with new information and shifting ecological and social conditions."	Definition adapted from Gunderson (1999)	Criteria 3, Criteria 4, Project Guidance, Program Guidance
Beneficiaries	Interested parties or social groups that benefit directly from the services being provided or the challenges being addressed by each intervention. Including: governmental bodies, public sector institutions, non-government organizations, researchers, citizens or community groups.	Definition Adapted from: C. Cooper, N. Cunningham, L.J. Bracken (2023)	Criteria 3
Biodiversity	"The diversity of life in all of its forms–the diversity of species, of genetic variations within one species, and ecosystems."	IUCN	Definition, Standard, Criteria 1, Criteria 4
Communal asset	"Anything that can be used to improve the quality of community life, including people, physical structures or places, community services, and businesses. Community assets can strengthen existing relationships and build new ones that will promote successful community development in the future."	Kansas University Center for Community Health and Development	Criteria 4
Communal challenges	"Communal, in the context of Nature-based solutions, refers to the interdependent relationships between people, ecosystems and the places they inhabit. It reflects a recognition that challenges and benefits are experienced collectively, and that ecological and human well-being are deeply connected. The framing emphasizes shared responsibility, mutual care, and the importance of place-based knowledge in shaping just and effective solutions."	NbS Task Force	Criteria 3

Community benefit	"A range of services and activities that provide affirmative economic, social, cultural or physical value to a community."	Definition adapted from Illinois General Assembly	Project Guidance
Connectivity (ecological)	"External exchanges - the 2-way flows that occur between ecological units within the landscape or aquatic environment including flows of energy, water, fire, genetic material, animals and seeds. Exchanges are facilitated by habitat linkages."	IUCN	Standard, Criteria 1
Degradation and Loss	"The deterioration of the natural environment through the depletion of resources, loss of biodiversity, and destruction of ecosystems." Potential Update: "The deterioration of the natural environment through the depletion of resources, loss of biodiversity, and destruction of ecosystems, at a faster rate than it is naturally replenished."	United Nations Economic and Social Commission for Western Asia	Criteria 1
Economic viability	"A project is economically viable if the economic benefits of the project exceed its economic costs, when analyzed for society as a whole."	World Bank	Project Guidance
Ecology	"The study of the relationship between living organisms, including humans, and their physical environment."	Ecological Society of America	Criteria 2, Project Guidance
Ecosystem function	The sustained longevity of the health and functioning of "critical processes at the ecosystem level that influence local and global environmental conditions that ultimately affect human welfare, including plant productivity, soil fertility, water quality, atmospheric quality."	Definition adapted from the Ecological Society of America	Standard
Free, Prior, and Informed Consent (FPIC)	FPIC is the right of Indigenous Peoples, recognized in international law. In the context of Nature-based Solutions, FPIC allows Indigenous Peoples to give or withhold consent to a project that may affect them or their territories, and to negotiate the conditions under which the project will be designed, implemented, monitored, and evaluated. Consent should be sought before any project, plan, or action takes place. It should be independently decided upon and based on accurate, timely, and sufficient information provided in a culturally appropriate way, for it to be considered the result of a collective decision-making process.	Definition adapted from United Nations Department of Economic and Social Affairs Indigenous Peoples	Program Guidance

Holistic Assessment	An assessment approach that considers a system's full set of interconnected functions, relationships, and co-benefits, rather than isolated or single-purpose metrics, to understand performance as an integrated whole.		
Inclusive, Transparent and Empowering Governance	A framework for engagement and consultation developed by the IUCN to encourage equitable participation, shared decision-making, and accountability throughout the entire lifecycle of a Nature-based Solutions intervention. Inclusive, Transparent and Empowering Governance requires proactive inclusion of all interested parties, especially Indigenous Peoples, historically marginalized communities, and those directly or indirectly affected, using tools like interested party mapping, Free Prior and Informed Consent (FPIC), and accessible grievance redress. Aiming to foster trust, address structural inequities, and enable joint decision-making, this approach is the foundation for the success, long-term stewardship, ownership, and sustainability of NbS. Full approach can be found in the IUCN Global Standard for Nature-based Solutions.	Definition adapted from IUCN	Program Guidance
Interested Parties	Interested Parties are involved in a project to varying degrees, and are directly or indirectly influenced, benefit from or are disadvantaged by an NbS project.	Definition adapted from the Pacific Institute	Criteria 3, Project Guidance
Keystone species	Organisms that, if removed from an ecosystem, "set off a chain of events that drastically changes the structure and biodiversity of its habitat."	Definition adapted from the NRDC	Criteria 1
Leverage funding	The strategic use of one source of funding to attract, secure, or complement additional funding from other sources—such as local, state, federal, or private partners. This approach maximizes overall investment in a project or program by combining resources, often through partnerships, to increase impact and scale beyond what a single funding stream could achieve alone.	Definition adapted from the SCWP	Project Guidance
Living infrastructure	"The practice of bringing together gray and gray-green technologies by pairing them with social and ecological practices to address long standing challenges like equity, socio-ecological connection, and	ARLA	Standard

	stewardship."		
Monitoring and evaluation	"An ongoing process through which an organisation draws conclusions about its contribution to intended outcomes and impacts. A monitoring and evaluation system consists of a set of interconnected functions, processes and activities including systematic collection of monitoring data on specified indicators and the implementations of outcome and impact evaluations."	IUCN	Criteria 1, Criteria 4
Nature	"Biodiversity at a genetic, species and ecosystem level, to all the dynamic processes and features of geodiversity, and to all their interactions, encompassing both the non-living components and living components of the natural world."	Definition adapted from IUCN	Criteria 1, Project Guidance
Return on Investment	Return on investment compares the costs of a project to the benefits it generates over time. For Nature-based Solutions, ROI includes not only financial returns but also long-term social, ecological, and public health benefits, many of which may be indirect or intangible, considering both upfront and ongoing costs alongside the full range of accrued co-benefits.	Definition adapted from the US Chamber of Commerce	Project Guidance
Site, Subwatershed, Watershed	**Site**: "a discrete area or location. Can occur at different scales but is generally at the patch or property scale." **Subwatershed**: "a smaller watershed within a larger basin. The water from the subwatershed contributes to a stream connected to the main river." **Watershed**: "A watershed is the land area where water collects and drains onto a lower level property or drains into a river, ocean, or other body of water. Watersheds are interconnected systems, where actions in one area can impact water quality, flow, and ecosystems throughout the entire watershed."	Site: IUCN, Subwatershed: Nottawasaga Valley Conservation Authority , Watershed Definition Adapted from: Los Angeles County Public Works	Criteria 2
Societal Challenges	The IUCN defines climate change, natural disasters, social and economic development, human health and wellbeing, water supply and water quality, ecosystem degradation and biodiversity loss as the main societal challenges NbS seeks to address .	Definition adapted from the IUCN	Definition, Criteria 3
Stewardship	"A mechanism for shared responsibility and collective action to achieve goals in ensuring equity and creating transformative change in	Community Commons	Criteria 4

	communities."		
Sustainable actions	"Those actions that meet the needs of the present without compromising the ability of future generations to meet their own needs."	United Nations Brundtland Commission (1987)	Definition
Trade-offs	"A choice that involves losing one quality or service (of an ecosystem) in return for gaining another quality or service. Many decisions affecting ecosystems involve trade-offs, sometimes mainly in the long term."	IUCN	Project Guidance
Tribal sovereignty	In reference to Native Americans and Alaskan Natives, tribal sovereignty protects and maintains land that belongs to federally recognized tribes against further encroachment by other sovereigns, such as states. Tribal sovereignty ensures that any decisions about the tribes with regard to their property and citizens are made with their participation and consent.	Definition adapted from the US Department of the Interior Indian Affairs	Program Guidance
Upstream and downstream areas	Longitudinal flows refer to water moving in an upstream-to-downstream direction. These flows typically pass through three zones: the headwaters, where flow is lowest, slopes are steep, and erosion exceeds deposition; the transfer zone, where slopes flatten, flow increases, and both erosion and deposition occur; and the depositional zone downstream, where flow is highest but slowest, and sediment is mostly deposited rather than eroded.	Definition adapted from the EPA	Criteria 2

Appendix J: Regional Collaboration Opportunities

- Chief Sustainability Office: Align NbS with *OurCounty Sustainability Plan* goals on infrastructure, ecosystems, and public spaces.
- SCWP Watershed Coordinators: SCWP includes NbS goals; watershed plans create additional opportunities.
- Regional Oversight Committee (ROC): Charged with evaluating water projects, including NbS. Members bring relevant expertise; stronger NbS representation could be developed.
- Department of Beaches & Harbors: Potential partner on NbS opportunities connected to shoreline and recreational access.
- LA County Parks & Recreation: Strong alignment with open space, urban forestry, and ecological restoration.
- Metropolitan Water District / ARLA Turf Rebates: Turf rebate programs can be linked to NbS and healthy soils strategies.
- Blue Ribbon Commission on Fire Recovery + Climate Resilience: Overlap on wildfire resilience and climate adaptation efforts.
- Regional Parks and Open Space District: Opportunities to integrate NbS into regional park planning and funding.
- Department of Regional Planning: Biodiversity Index and Wildlife Ordinance efforts align with NbS.
- Los Angeles Department of Water and Power (LADWP): Links through the Biodiversity Commission and sustainability initiatives.
- The Nature Conservancy: Actively working to scale NbS in the LA region.
- County Water Plan – Communications Task Force: Opportunity to integrate NbS framing into Countywide messaging.
- County Water Plan – Regional Water Supply Task Force: Opportunity to connect NbS with supply strategies and groundwater management.
- County Regional Planning Division / Planning Commission: Guides land use decisions; could integrate NbS into zoning, TODs, and General Plan updates.

- County Agricultural Commissioner's Office: Leads invasive plant management (County Water Plan Strategy 13), relevant to NbS and biodiversity protection.
- TreePeople: Partner on school greening, soil health, and IPM research.
- LAUSD: Moving away from artificial turf toward NbS schoolyard greening.
- County Fire: Opportunity to integrate NbS into defensible space and wildfire resilience strategies.
- U.S. Green Building Council (USGBC): Supports landscaping standards aligned with NbS.
- County Public Health: Extreme heat, wellness, and climate-health connections present strong collaboration opportunities.

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