

Unlocking Nature's Potential:

A Guide to Navigating Federal Permits
& Environmental Reviews to Facilitate
Use of Nature-Based Solutions

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The Environmental Law Institute (ELI) makes law work for people, places, and the planet. Since 1969, ELI has played a pivotal role in shaping the fields of environmental law, policy, and management, domestically and abroad. Today, in our sixth decade, we are an internationally recognized, nonpartisan research and education center working to strengthen environmental protection by improving law and governance worldwide.

ELI staff primarily contributing to this paper include Senior Attorney Regina Buono, Staff Attorney Jarryd Page, and (Former) Public Interest Environmental Law Fellow Victoria Molyneaux. The authors would like to thank our partners and colleagues who have provided invaluable ideas for and input into this paper. We also want to acknowledge the contributions of our former ELI colleagues, whose work we have used and built on here. Funding for research and drafting was provided by the Walton Family Foundation.

Cover photo by Amy Reed.

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BHPAP	Biden Harris Permitting Action Plan
BRRIT	San Francisco Bay Restoration Regulatory Integration Team
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
CPRA	Coastal Protection and Restoration Authority (Louisiana)
CWA	Clean Water Act
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management
FHWA	Federal Highway Administration
FPISC	Federal Permitting Improvement Steering Committee
FONSI	Finding of No Significant Impact
FRA	Fiscal Responsibility Act
GAO	Government Accountability Office
GP-40	General Permit-40
IJA	Infrastructure Investment and Jobs Act
MDSPGP-6	Maryland State Programmatic General-Permit 6
MOU	Memoranda of Understanding
NEP	National Estuarine Project
NEPA	National Environmental Policy Act
NNBI	Natural or Nature-Based Infrastructure
NOI	Notice of Intent
NRCS	Natural Resources Conservation Services
NWPS	Nationwide General Permits
OIRA	Office of Information and Regulatory Affairs
OMB	Office of Management and Budget
PASPGP-6	Pennsylvania State Programmatic General-Permit 6
PEIS	Programmatic Environmental Impact Statement
PEA	Programmatic Environmental Assessment
RGPs	Regional General Permits
ROD	Record of Decision
SAMPs	Special Area Management Plans
SPGP	State Programmatic General Permits

Table of Abbreviations

USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Services
WRDA	Water Resources Development Act
WRRDA	Water Resources Reform and Development Act

Executive Summary

Natural ecological processes are crucial tools in the fight against climate change, and many policymakers have sought to capitalize on their functions by facilitating their implementation and use in infrastructure and land management projects. Permitting of infrastructure projects is an intricate process, often spanning a multitude of agencies across various levels of government. The scope and substance of laws and regulations applicable to a project may vary, depending on the size, type, or location of the project. Guiding a project with natural or nature-based infrastructure elements through regulatory approval may add an additional layer of complexity, as government decision makers who are often under-resourced and overwhelmed are confronted with proposals that vary from the accustomed norm.

Like many proposals to modify or enhance the natural environment for the benefit of people, proposals for large-scale natural infrastructure projects will often require environmental reviews under the National Environmental Policy Act (NEPA), as well as permits and permissions pursuant to other federal laws. State and local governments may also require reviews and permits. NEPA especially has been subject to criticism because of the expense and length of time that reviews can sometimes require. Identified issues include inadequate financial resources supporting agency review, lack of human capacity, and overlapping or conflicting legal obligations. Further, the federal environmental review and permitting regime—long targeted for reform—is currently in flux. In the last few years, amendments to NEPA, mandates for updates to supporting regulations, and a judicial upending of Clean Water Act protections in the *Sackett* case have resulted in uncertainty around permitting requirements and processes.

Building on ELI's past efforts to identify tools to improve efficiency of environmental compliance for coastal restoration projects¹, this report examines the processes to implement infrastructure projects requiring federal and other regulatory approvals, with an eye toward how those requirements and processes apply to projects with natural infrastructure elements. We examine the requirements for environmental reviews and permits under federal law and offer suggestions to guide permit applicants in navigating regulatory processes and to aid agencies in supporting applicants through review processes.

We also survey recent developments in federal law and policy that have created unprecedented opportunity for advancing infrastructure, including natural and nature-based infrastructure, and increased demand for environmental review and permitting services. Finally, we briefly consider regulatory conditions at the state level that may be relevant to proposed projects or provide models for other states to follow. Where possible, we have sought to highlight examples and applications in the vast geography of the Mississippi River Basin, where ELI and others are

¹ ELI, Fast-Tracking “Good” Restoration Projects in the Gulf of Mexico: Existing Mechanisms for Effective and Efficient Environmental Compliance (Feb. 2017), <https://www.eli.org/sites/default/files/eli-pubs/fast-tracking-combined-2917.pdf>; ELI, Fast-Tracking Restoration: Addressing Resource Constraints in Federal Agencies (Dec. 2017), <https://www.eli.org/sites/default/files/eli-pubs/fast-tracking-resource-constraints.pdf>.

working to advance use of natural and nature-based infrastructure to address the region’s myriad water management and water quality challenges.

I. Natural and Nature-based Infrastructure

A. What is Natural and Nature-based Infrastructure?

In recent decades, much attention has been given to infrastructure and policies that seek to capture the benefits of natural ecosystems to address social-ecological challenges, such as excess carbon in the atmosphere, flooding, or water pollution. Protecting, preserving, and restoring natural elements such as forests, coastal marshes, and wetlands allow humans to capitalize on the ecosystem processes those biomes offer, such as carbon sequestration, erosion prevention, and water filtration. Natural ecological processes are crucial tools in the fight against climate change, and many policymakers have sought to facilitate their implementation and use.

Terminology to describe the use of natural solutions has varied widely in legal and policy literature, encompassing terms such as “green infrastructure,” “ecosystem-based adaptation,” “natural infrastructure” or “nature-based solutions.”² Varied terminology is present also across the laws, regulations, and multilateral agreements used by U.S. federal agencies. A recent report from the White House highlighted this variation and provided a “non-exhaustive compendium” of relevant definitions (see Table 1).³

² *Natural Infrastructure Strengthens Our Climate Resilience*, Env’t Def. Fund, edf.org/ecosystems/natural-infrastructure-strengthens-our-climate-resilience (last visited May 24, 2023) (defining natural infrastructure as “naturally occurring landscape features and/or nature-based solutions that promote, use, restore or emulate natural ecological processes”); Heather Luedke, *Fact Sheet | Nature as Resilient Infrastructure – An Overview of Nature-Based Solutions*, Env’tl. & Energy Study Inst. (Oct. 16, 2019), eesi.org/papers/view/fact-sheet-nature-as-resilient-infrastructure-an-overview-of-nature-based-solutions (nature-based solutions are “actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.”); Raffaele Vignola, Bruno Locatelli, Celia Martinez, & Pablo Imbach, *Ecosystem-Based Adaptation to Climate Change: What Role for Policy-Makers, Society and Scientists?*, 14 MITIGATION & ADAPTATION STRATEGIES FOR GLOBAL CHANGE 691, 692 (defining ecosystem-based adaptation as “adaptation policies and measure that take into account the role of ecosystem services in reducing the vulnerability of society to climate change, in a multi-sectoral and multi-scale approach”).

³ WHITE HOUSE COUNCIL ON ENV’T QUALITY, WHITE HOUSE OFF. OF SCI. & TECH. POL’Y, WHITE HOUSE DOMESTIC CLIMATE POL’Y OFF., OPPORTUNITIES FOR ACCELERATING NATURE-BASED SOLUTIONS: A ROADMAP FOR CLIMATE PROGRESS, THRIVING NATURE, EQUITY, AND PROSPERITY 38-39 (2022), <https://www.whitehouse.gov/wp-content/uploads/2022/11/Nature-Based-Solutions-Roadmap.pdf> [hereinafter NATURE-BASED SOLUTIONS ROADMAP] (collecting definitions from international sources, federal laws, and agencies).

Table 1. Selected Definitions of Nature-based Solutions and Related Concepts in Federal Law.⁴

Term	Definition
Nature-Based Solutions	<i>International</i> : “Actions to protect, sustainably manage and restore natural or modified ecosystems which address societal challenges effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits.” ⁵
	<i>Domestic</i> : “Sustainable planning, design, environmental management, and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience.” ⁶ Recognized as including both natural and nature-based features. ⁷
Nature-Based Feature	“A feature that is created by human design, engineering, and construction to provide risk reduction in coastal areas by acting in concert with natural processes.” ⁸
Natural Feature	“A feature that is created through the action of physical, geological, biological, and chemical processes over time.” ⁹
Green Infrastructure	“Range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.” ¹⁰
Natural Infrastructure	“Infrastructure that uses, restores, or emulates natural ecological processes.” ¹¹
Low-Impact Development	Systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat. ¹²

⁴ Table modified from Table A1 (Terms and definitions related to nature-based solutions used or agreed to by the U.S. government) in NATURE-BASED SOLUTIONS ROADMAP, *supra* note 3, at 38.

⁵ E. Cohen-Shacham et al., *Nature-based Solutions to Address Global Societal Challenges*, INT’L UNION FOR CONSERVATION OF NATURE (2016); *see also* Environment Assembly of the United Nations Environment Programme Res. EA.5/Res.5 (March 2, 2022).

⁶ FED. EMERGENCY MGMT. AGENCY, BUILDING COMMUNITY RESILIENCE WITH NATURE-BASED SOLUTIONS: A GUIDE FOR LOCAL COMMUNITIES (2021).

⁷ FED. HIGHWAY ADMIN., HEP-19-042, NATURE-BASED SOLUTIONS FOR COASTAL HIGHWAY RESILIENCE: AN IMPLEMENTATION GUIDE (2019).

⁸ Water Infrastructure Improvement Act, Pub. L. 114-322 (2016); FED. HIGHWAY ADMIN., HEP-19-042, NATURE-BASED SOLUTIONS FOR COASTAL HIGHWAY RESILIENCE: AN IMPLEMENTATION GUIDE (2019).

⁹ Water Infrastructure Improvement Act, Pub. L. 114-322 (2016); FED. HIGHWAY ADMIN., HEP-19-042, NATURE-BASED SOLUTIONS FOR COASTAL HIGHWAY RESILIENCE: AN IMPLEMENTATION GUIDE (2019).

¹⁰ Water Infrastructure Improvement Act, Pub. L. 115-436 (2019); *Nonpoint Source: Urban Areas*, EPA, <https://www.epa.gov/nps/nonpoint-source-urban-areas> (last visited Dec. 1, 2023).

¹¹ 23 U.S.C. 101(a)(17) (Infrastructure Investment and Jobs Act of 2021) (“(A) is created through the action of natural physical, geological, biological, and chemical processes over time; (B) is created by human design, engineering, and construction to emulate or act in concert with natural processes; or (C) involves the use of plants, soils, and other natural features, including through the creation, restoration, or preservation of vegetated areas using materials appropriate to the region to manage stormwater and runoff, to attenuate flooding and storm surges, and for other related purposes”). A shortened version of the definition is also used by NOAA, which uses green and natural infrastructure interchangeably. Natural Infrastructure, NOAA, <https://coast.noaa.gov/digitalcoast/topics/green-infrastructure.html> (last visited Dec. 1, 2023).

¹² *Nonpoint Source: Urban Areas*, ENV’T PROT. AGENCY, <https://www.epa.gov/nps/nonpoint-source-urban-areas#LID> (last visited Dec. 20, 2023).

Many projects that will undergo the regulatory approval processes discussed in this report will do so via the U.S. Army Corps of Engineers (hereinafter, USACE or Corps). The USACE relies upon the statutory definitions of “natural feature” and “nature-based feature” in the Water Resources Development Act (WRDA) of 2016 (see Table 1). The Corps has interpreted these definitions broadly, encompassing a wide variety of physical infrastructure and management practices often included in other terminology referring to solutions that use, restore, or emulate natural ecological processes. According to USACE, natural and nature-based features include:

- The creation, enhancement, or re-creation of natural habitats, including salt marshes, mangrove forests, dunes, beaches, seagrass, oyster and coral reefs, wetlands, prairies, meadows, and woodlands;¹³
- The ecological enhancement of existing hard infrastructure, such as creating rock pools within seawalls or using textured concrete to improve colonization by marine organisms;¹⁴
- Beach berms, living shorelines, ecological seawalls, and ecotones in coastal areas;¹⁵
- Bioengineering, vegetative stabilization, riparian buffers, watershed-wide woodland planting, and removal of embankments to restore and reconnect floodplains in fluvial systems;¹⁶
- Crop rotation, conservation tillage, cover crops, buffer strips, and grassed waterways in agricultural operations;¹⁷ and
- Rain gardens, green roofs, swales, and permeable surfaces and paving in urban environments.¹⁸

The White House “Roadmap” report discusses the advancement of “nature-based solutions” and encourages alignment toward, and usage of, a common definition of that term. However, because so many of the laws and permitting processes within the scope of this report are pertinent to USACE, this report will use the phrase “nature and nature-based infrastructure” (NNBI) for ease of reference. The intent is to track the Corps’ regulatory language while maintaining an inclusive and broad focus on infrastructure solutions of all kinds.

¹³ Jonathan Simm, *Introduction to NNBF in Coastal Systems*, NNBF: INTERNATIONAL GUIDELINES ON NATURAL AND NATURE-BASED FEATURES FOR FLOOD RISK MANAGEMENT 320 (2021), issuu.com/powerofercd/docs/nnbf-guidelines-2021/348?fr=sY2U2ZjQyNjA2NDE; Collier County Hurricane and Storm Damage Reduction Feasibility Study, 84 Fed. Reg. 34382, 34382 (July 18, 2019); Lydia Burgess-Gamble et al., *Description Of Fluvial NNBF*, NNBF: INTERNATIONAL GUIDELINES ON NATURAL AND NATURE-BASED FEATURES FOR FLOOD RISK MANAGEMENT 854, 863, 879 (2021), <https://issuu.com/powerofercd/docs/nnbf-guidelines-2021/875?fr=sNjgwYTQyNjA2NTg>.

¹⁴ Simm, *supra* note 13, at 320.

¹⁵ Natural Disaster Procedures: Preparedness, Response, and Recovery Activities of the Corps of Engineers, 87 Fed. Reg. 68386, 68397 (Nov. 15, 2022); Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. 73522, 73557 (Feb. 25, 2022); Notice of Early Scoping for the San Francisco Waterfront Flood Resiliency Study National Environmental Policy Act Compliance, 85 Fed. Reg. 51419, 51420 (Oct. 21, 2020).

¹⁶ Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. at 73582; Burgess-Gamble et al., *supra* note 13, at 851, 863.

¹⁷ Burgess-Gamble et al., *supra* note 13, at 871–73.

¹⁸ *Id.* at 879–80.

B. What Are the Benefits of NNBI?

Natural and nature-based infrastructure can yield a multitude of financial and quality-of-life benefits, especially when compared to traditional grey infrastructure. NNBI provides numerous ecosystem services¹⁹ that benefit surrounding and downstream communities, including improved water quality, air quality, and wildlife habitat²⁰ and billions of dollars in flood reduction and storm protection in both coastal and riparian environments.²¹ Figure 1 illustrates the many ways that natural infrastructure can reduce flooding across a watershed. In addition to allowing communities to reduce or avoid the costs of flooding, water purification, and air purification, NNBI often has lower initial capital costs and maintenance costs than grey infrastructure, as well as a quicker, and thus less costly, permitting process due to greater public support.²²

Local communities also receive quality-of-life benefits from NNBI. Green infrastructure can enhance recreational opportunities through creating or enhancing park amenities, such as waterways, hiking or biking trails, and wildlife viewing areas; reducing required maintenance; and increasing social and environmental

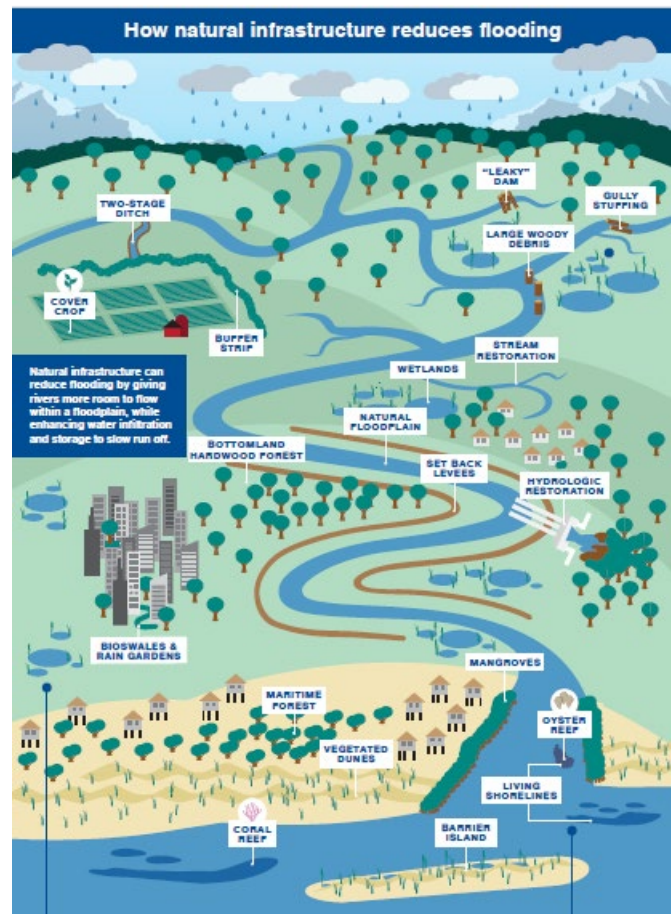


Figure 1. Illustration of the role of natural infrastructure in reducing flooding. Copyright © 2023 Environmental Defense Fund. Used by permission. Original material available at www.edfaction.org/naturalinfrastructure.

¹⁹ Ecosystem services are “the outputs, conditions, or processes of natural systems that directly or indirectly benefit humans or enhance social welfare.” Robert L. Johnson, *ecosystem services*, BRITANNICA (Oct. 13, 2023), www.britannica.com/science/ecosystem-services.

²⁰ *Benefits of Green Infrastructure*, ENV’T PROT. AGENCY, <https://www.epa.gov/green-infrastructure/benefits-green-infrastructure> (last visited Feb. 16, 2023).

²¹ JOSH FOSTER, ASHLEY LOWE & STEVE WINKELMAN, CTR. FOR CLEAN AIR POL’Y, THE VALUE OF GREEN INFRASTRUCTURE FOR URBAN CLIMATE ADAPTATION 26–27 (2011), https://www.cakex.org/sites/default/files/documents/The-Value-of-Green-Infrastructure-for-Urban-Climate-Adaptation_CCAP-Feb-2011.pdf; see also *Natural Infrastructure*, THE NATURE CONSERVANCY (Apr. 5, 2020), <https://www.nature.org/en-us/about-us/who-we-are/how-we-work/policy/natural-infrastructure/> (last visited Dec. 19, 2023).

²² LAUREN CARLSEN & PATRICIA WHITE, THE BUSINESS CASE FOR GREEN INFRASTRUCTURE: RESILIENT STORMWATER MANAGEMENT IN THE GREAT LAKES REGION (2017), <https://ulidigitalmarketing.blob.core.windows.net/ulidcnc/sites/50/2019/12/The-Business-Case-for-Green-Infrastructure.compressed.pdf>.

equity when implemented in underserved or underprivileged communities.²³ Both residential and commercial properties located near NNBI typically see significant increases in property values;²⁴ however, equity concerns arise when green infrastructure signals revitalization in a community and leads to increased costs of living that ultimately displace residents.²⁵

The U.S. Global Change Research Program, a congressionally mandated effort to coordinate federal research and investments on global change, is currently developing an online evidence library for studies on the effectiveness of nature-based solutions for climate mitigation and adaptation, as well as other benefits.²⁶

C. Considerations and Challenges for NNBI Implementation: Why Another Report on Permitting?

NNBI projects have been shown to be helpful in addressing environmental problems across various landscapes and to provide co-benefits not offered by traditional infrastructure solutions. However, as they are increasingly considered for implementation, project proponents face the necessity of securing regulatory approval from the appropriate federal or state authorities. Understanding that regulatory landscape, including the potential pitfalls and opportunities it presents for innovative approaches such as NNBI, is essential to the successful and efficient implementation of NNBI projects and project elements.

This report reviews the regulatory landscape with an eye toward aiding NNBI project proponents to understand some of the laws and processes at work, how they are evolving, and how they might prepare to navigate regulatory requirements effectively. Due to a plethora of opportunity for and interest in NNBI within the vast geography of the Mississippi River Basin, we have sought, where possible, to highlight examples and applications in that region.

II. Permitting and Environmental Review of Nature-Based Projects: Facilitating Uptake and Regulatory Efficiency

“Permitting” in the United States is intricate. The scope and substance of laws and regulations applicable to a project may vary depending on the size, type, or location of the project.

²³ ENV'T PROT. AGENCY, GREEN INFRASTRUCTURE IN PARKS: A GUIDE TO COLLABORATION, FUNDING, AND COMMUNITY ENGAGEMENT (2017), https://www.epa.gov/sites/default/files/2017-05/documents/gi_parksplaybook_2017-05-01_508.pdf.

²⁴ JOSH FOSTER, ASHLEY LOWE & STEVE WINKELMAN, CTR. FOR CLEAN AIR POL'Y, THE VALUE OF GREEN INFRASTRUCTURE FOR URBAN CLIMATE ADAPTATION 26–27 (2011), https://www.cakex.org/sites/default/files/documents/The-Value-of-Green-Infrastructure-for-Urban-Climate-Adaptation_CCAP-Feb-2011.pdf; Carlsen & White, *supra* note 22.

²⁵ ENV'T PROT. AGENCY, HEALTHY BENEFITS OF GREEN INFRASTRUCTURE IN COMMUNITIES 2 (2017), https://www.epa.gov/sites/default/files/2017-11/documents/greeninfrastructure_healthy_communities_factsheet.pdf.

²⁶ NATURE-BASED SOLUTIONS ROADMAP, *supra* note 3, at 34.

Obtaining approval for a given project, especially for a large-scale infrastructure endeavor, may involve navigating multiple laws and agencies. At the federal level, proposals for large-scale infrastructure projects will often require environmental reviews under the National Environmental Policy Act (NEPA) and permits and permissions pursuant to the Clean Water Act (CWA) and Rivers and Harbors Act, among others.²⁷ Local or state laws may also require permits or authorizations. Often these processes can be lengthy and time-consuming, delaying implementation of projects or, in some cases, terminating the projects altogether. Guiding a project with natural or nature-based infrastructure elements through regulatory approval may add an additional layer of complexity, as busy agency decisionmakers are presented with proposals that vary from their accustomed norm and may carry greater levels of uncertainty.

Professor Jamie Pleune of the University of Utah, in testimony before the U.S. House of Representatives in 2023, highlighted the complex web of requirements and interests at play, noting that projects can “implicate a variety of legal standards and permitting authorities, each focused on protecting different resources such as clean air, clean water, endangered species, and cultural resources.”²⁸ The core insight is that there is no single infrastructure “permitting process,” as every project will encounter a unique subset of applicable laws, regulations, and environmental conditions that will vary across jurisdiction, geography and function. Further, NEPA, the primary regulatory driver behind many requirements for environment analysis, does not itself mandate a permitting process, but rather is triggered by or occurs in conjunction with laws that do require permitting to occur. Thus, efforts at “permitting reform” are often imprecise in targeting NEPA and could benefit from more strategic engagement.

This report provides a high-level overview of the substance and context of NEPA and other selected federal laws that play key roles in the review and permitting of infrastructure projects, including NNBI. We also consider recent changes in those legal authorities, including the implications those changes may have for NNBI projects seeking approval, as well as policies implemented or proposed to facilitate more efficient and effective processing of permit applications by regulatory entities.

A. NEPA

1. The NEPA Process

Originally enacted in 1970, NEPA imposes a procedural requirement that all federal agencies identify and consider the effects of their “major” actions on the environment, and alternatives to proposed actions, before deciding on a final course of action.²⁹ Proposals for large-scale natural

²⁷ This report is limited primarily to these federal laws. Other potentially applicable laws are identified in the Federal Environmental Review and Authorization Inventory, <https://www.permits.performance.gov/tools/federal-environmental-review-and-authorization-inventory>.

²⁸ *Hearing on The Biden Administration’s Executive Overreach and its Impact on American Energy Independence Before the Subcomm. on Oversight & Investigations of the H. Comm. on Nat. Resources*, 118th Cong. (2023) [hereinafter *Pleune Testimony*] (written testimony of Professor Jamie Pleune), <https://democrats-naturalresources.house.gov/imo/media/doc/Testimony%20Pleune.pdf>.

²⁹ 42 U.S.C. § 4332 et seq. (1970).

infrastructure projects often require compliance with NEPA. Proponents of natural infrastructure projects and stakeholders seeking to advance use of natural infrastructure solutions in agency decision making must therefore be aware of how the NEPA process works, and where it may offer opportunities to advance the use and integration of natural infrastructure solutions.

In developing a proposal for action, an agency must first determine whether environmental effects are likely to be significant, a finding that will determine which of three categories the project falls into: (1) categorical exclusion (CE),³⁰ (2) requiring an environmental assessment (EA),³¹ or (3) requiring an environmental impact statement (EIS).³² Figure 2 illustrates the flow of decisions with respect to how agencies navigate the NEPA process.

When an agency proposes actions that “significantly affect[] the quality of the human environment,” NEPA requires the agency to conduct an environmental review.³³ An agency may forego detailed analysis on a proposed action if the action falls within an established categorical exclusion (see step 3 in the diagram).³⁴ A categorical exclusion

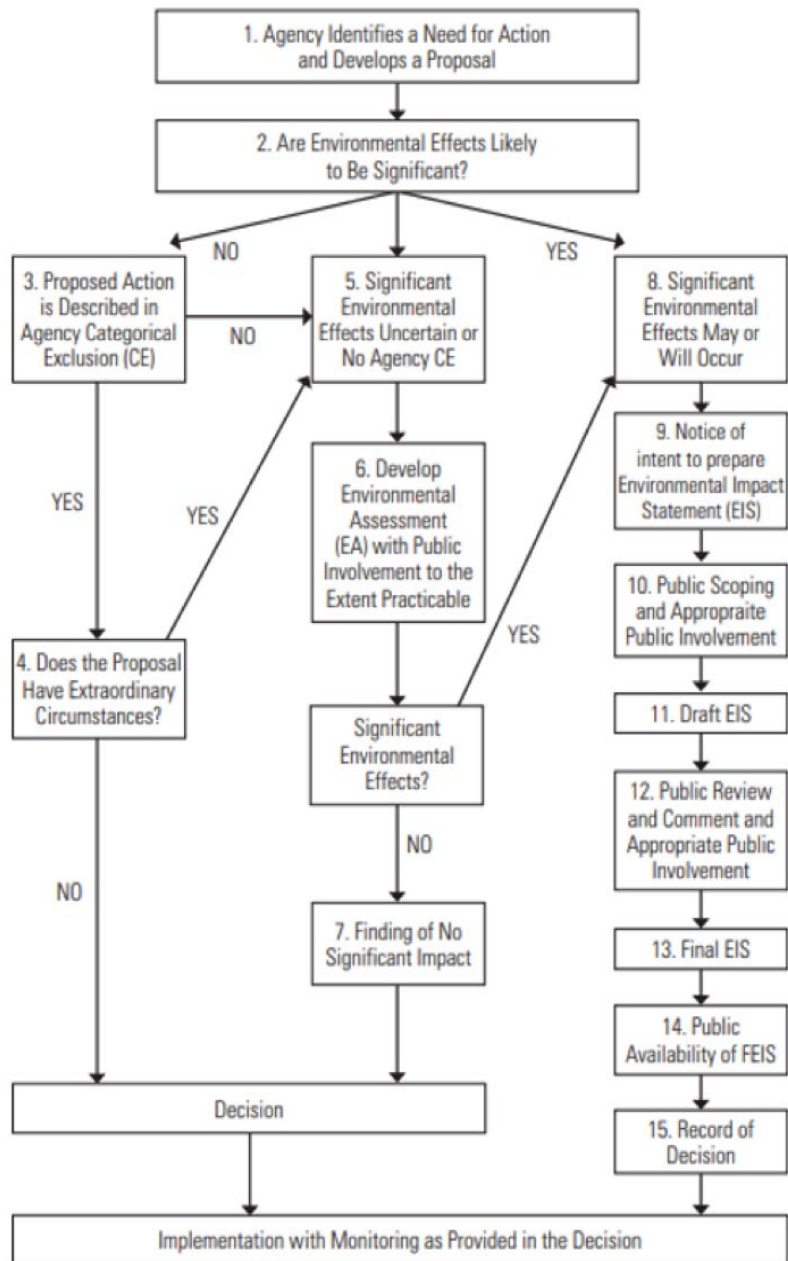


Figure 2. Diagram representing the NEPA process. Source: CEQ, A CITIZEN’S GUIDE TO NEPA 8 (2021), <https://ceq.doe.gov/docs/get-involved/citizens-guide-to-nepa-2021.pdf>.

³⁰ 40 C.F.R. § 1501.5 (2023).

³¹ *Id.* § 1501.4.

³² *Id.* §§ 1502.1-1502.24.

³³ 42 U.S.C. § 4332 (2)(C) (2018 & Supp. 2023).

³⁴ 40 C.F.R. § 1501.4 (2023); see also *Categorical Exclusions*, NEPA.gov, <https://ceq.doe.gov/nepa-practice/categorical-exclusions.html> (last visited Dec. 6, 2023) (listing CEs by agency).

is one among a set of actions that the agency has determined in advance will not have a significant impact on the environment, individually or cumulatively.³⁵

If the action does not qualify for a CE and the agency determines that there are potentially significant environmental effects of the project or the impacts are unknown, the agency may prepare an EA to determine whether a full EIS is necessary (step 6 in Figure 2).³⁶ An EA can result in a Finding of No Significant Impact (FONSI) (step 7), including in situations where the agency has identified and agreed to measures to minimize the environmental impacts, in what is known as a “mitigated FONSI.”³⁷ Alternatively, if the agency determines—either with or without first conducting an EA—that the proposed action significantly affects the quality of the human environment, then the agency must prepare a more robust analysis—an EIS—before proceeding with the proposed project or issuing a permit.³⁸

Regulations issued by the Council on Environmental Quality (CEQ)—a division of the Executive Office of the President—require agencies to publish EISs first in draft form to solicit comments from other agencies and the public.³⁹ Agencies then respond to comments received, modify conclusions where necessary, and provide authorities supporting the final conclusions in the Final EIS.⁴⁰ The EPA plays an important role in reviewing EISs,⁴¹ and can refer to CEQ any proposed actions that are determined “unsatisfactory from the standpoint of public health or welfare or environmental quality.”⁴²

³⁵ 40 C.F.R. § 1501.4 (2023). If the agency determines that the project falls under a categorical exclusion, it must still evaluate for “extraordinary circumstances” where a normally excluded action may have a significant effect. *Id.*

³⁶ 40 C.F.R. § 1501.5(a) (2023).

³⁷ CEQ has issued guidance on the use of mitigated FONSI. See Memorandum from Nancy H. Sutley on Appropriate Use of Mitigation & Monitoring & Clarifying the Appropriate Use of Mitigated Findings of No Significant Finding to Heads of Federal Departments and Agencies (Jan. 14, 2011) available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.

³⁸ 42 U.S.C. § 4332(2)(C) (2018 & Supp. 2023); 40 C.F.R. § 1502.3 (2023).

³⁹ 40 C.F.R. § 1502.9(b) (2023).; 40 C.F.R. § 1503 (2023) (Commenting on Environmental Impact Statements).

⁴⁰ 40 C.F.R. § 1503.4 (2023) (Response to Comments); 40 C.F.R. § 1502.9 (2023) (“the agency shall discuss any responsible opposing view that was not adequately discussed in the draft statement and shall indicate the agency’s response to the issues raised.”)

⁴¹ EPA reviews EISs pursuant to Section 309 of the Clean Air Act. 42 U.S.C. § 7609(b) (2018 & Supp. 2023). Details on the policies and procedures relating to EPA’s EIS oversight role can be found at <https://www.epa.gov/nepa/policy-and-procedures-review-federal-actions-impacting-environment-under-section-309-clean-air>.

⁴² *Referral of Inter-Agency Disagreements to CEQ Under the National Environmental Policy Act*, COUNCIL ON ENV’T QUALITY, <https://ceq.doe.gov/docs/nepa-practice/referrals-to-ceq-dec-2016.pdf> (last visited Dec. 19, 2023).

2. *The Evolution of NEPA: Regulations, Amendments, and Contextual Uncertainty*

In addition to the statute itself, CEQ's implementing regulations,⁴³ as well as any agency-specific implementing regulations,⁴⁴ govern the NEPA process. The CEQ NEPA regulations have been in flux and continue to be updated, which presents a challenge for project proponents looking to advance a permitting effort. In 2020, the CEQ under the Trump Administration finalized changes to government-wide NEPA regulations that had been mostly unchanged since their introduction in 1978.⁴⁵ Those regulations required agencies to update their own agency-specific regulations in accordance with CEQ's changes and set a deadline for doing so. In 2021, the CEQ under the Biden Administration extended the deadline to September 2023 and announced planned updates in two phases "in order to comply with the law; meet the environmental, climate change, and environmental justice objectives of [Biden] E[xecutive] O[rder]s 13990 and 14008; ensure full and fair public involvement in the NEPA process; provide regulatory certainty to stakeholders; and promote better decision making consistent with NEPA's statutory requirements."⁴⁶ The first phase of updates went into effect May 20, 2022 and reinstated many of the original 1978 provisions that had been removed in 2020.⁴⁷

On June 3, 2023, the Fiscal Responsibility Act (FRA) became law,⁴⁸ amending the NEPA statute for the first time in decades. The FRA changed NEPA in several ways, primarily by codifying various provisions already found in CEQ regulations and modifying certain provisions in an effort to streamline permitting processes.⁴⁹ Notably, page limits for EAs and EISs were codified, setting limits for EAs at no more than 75 pages (excluding citations and appendices) and for EISs at no more than 150 pages.⁵⁰ EISs of "extraordinary complexity" are limited to 300 pages.⁵¹ In addition, time limits were set for the completion of EAs and EISs, at one and two years respectively. If an agency does not meet an applicable deadline, a new one may be set after consulting with the applicant, to provide only "so much additional time as is necessary to

⁴³ See 40 C.F.R. §§1500-1508 (2023); see also Council on Env't Quality, *CEQ NEPA Regulations*, <https://ceq.doe.gov/laws-regulations/regulations.html>. Additional CEQ guidance documents are housed on the Department of Energy's website at <https://www.energy.gov/nepa/ceq-guidance-documents>.

⁴⁴ See, e.g., 33 C.F.R. §230 (2023) (Corps' NEPA implementing regulations).

⁴⁵ James M. McElfish, Jr., *What Did CEQ Do?*, ELI Vibrant Environment Blog (Sept. 14, 2020), <https://www.eli.org/vibrant-environment-blog/what-did-ceq-do>.

⁴⁶ <https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=202110&RIN=0331-AA07>.

⁴⁷ National Environmental Policy Act Implementing Regulations Revisions, 87 Fed. Reg. 23,453 (Apr. 20, 2022), (definition of "effects" is codified at 40 C.F.R. § 1508.1(g)). In early 2023, the CEQ also released interim guidance on the consideration of greenhouse gas emissions in NEPA compliance. National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, 88 Fed. Reg. 1196 (Jan. 9, 2023).

⁴⁸ Fiscal Responsibility Act of 2023, Pub. L. No. 118-5 (2023).

⁴⁹ Dan Farber, *The New NEPA: A User's Guide*, LEGAL PLANET (June 5, 2023), <https://legal-planet.org/2023/06/05/the-new-nepa-a-users-guide/> (surveying the NEPA amendments).

⁵⁰ Fiscal Responsibility Act of 2023, Pub. L. No. 118-5, § 321 (2023) (NEPA, sec. 107(e)). According to CEQ's NEPA regulations, "[p]age means 500 words and does not include explanatory maps, diagrams, graphs, tables, and other means of graphically displaying quantitative or geospatial information." 40 C.F.R. § 1508.1(v).

⁵¹ NEPA, § 107(e)(1)(B).

complete” the review.⁵² Project sponsors can also petition a court for alleged failures to meet deadlines; a court is empowered to set a schedule that “shall not exceed 90 days” from the court order.⁵³

The ultimate implications of the FRA amendments to NEPA and changes to CEQ regulations remain to be seen. Early scholarly commentary to the FRA amendments expressed concern that the revision would “complicate the agency’s task in complying with NEPA and increase litigation, neither of which is likely to be conducive to the goal of making permitting more efficient.”⁵⁴ Among other questions raised by the FRA is the effect of changes to key definitions that obscure meanings long settled under the prior text.⁵⁵ On July 31, 2023, the CEQ published its draft Phase 2 revisions in the Federal Register; the public comment period ended September 29, 2023. The proposed rule changes build on the new provisions added to NEPA and would require agencies to consider, analyze, or mitigate impacts to “communities with environmental justice concerns,” including impacts on the rights of Tribal Nations, when implementing NEPA.⁵⁶ How these statutory changes and proposed rule changes will be interpreted in subsequent litigation remains to be seen. Some commentators have argued that rather than promote efficiency for NEPA, the proposed Phase 2 rules impose substantive requirements into a procedural statute, and that they will have the effect of hindering, rather than facilitating needed development.⁵⁷

3. *Opportunities in NEPA Processes to Incorporate NNBI into Projects*

The environmental review process mandated by NEPA for projects that significantly affect the quality of the environment offers an opportunity for proponents of NNBI to present natural and nature-based approaches as infrastructure projects, or elements of such projects, that can provide benefits for both humans and the environment. Here we consider points in the NEPA process that may prove fertile ground for proponents who wish to advocate for NNBI.

Scoping. Scoping is an “open and early” process in which agencies must determine the issues that are appropriate for analysis in an EIS through consideration of connected actions; alternatives to the proposed action, including the no-action alternative; and direct, indirect, and

⁵² *Id.* at § 107(g)(2).

⁵³ *Id.* at § 107(g)(3).

⁵⁴ Farber, *supra* note 49.

⁵⁵ Dan Farber, *On the Perils of Hasty Drafting*, LEGAL PLANET, <https://legal-planet.org/2023/05/31/on-the-perils-of-hasty-drafting/> (discussing the implications of changes to the definition of “major federal action”).

⁵⁶ National Environmental Policy Act Implementing Regulations Revisions Phase 2, 88 Fed. Reg. 49924 (July 31, 2023).

⁵⁷ Brandon Tuck, Corinne Snow, Jason Fleischer, Mike Wigmore, Audrey Doane, John Geilman, and Jeremy Marwell, CEQ’s Proposed NEPA Phase 2 Rule Turns Procedure Into Substance and Could Have “Significant Effects” on Permitting and Infrastructure Projects, VINSON & ELKINS INSIGHTS (Aug. 1, 2023), <https://www.velaw.com/insights/ceqs-proposed-nepa-phase-2-rule-turns-procedure-into-substance-and-could-have-significant-effects-on-permitting-and-infrastructure-projects/>.

cumulative impacts.⁵⁸ In its NEPA implementing regulations, CEQ instructs agencies to use the scoping process “not only to identify significant environmental issues deserving of study, but also to deemphasize insignificant issues, narrowing the scope of the environmental impact statement process accordingly,” in an effort to reduce both delays and excessive paperwork.⁵⁹ USACE’s NEPA implementing regulations require the agency to begin scoping processes as soon as practicable after the decision to prepare an EIS is made and to publish notices inviting public participation in the scoping process, declaring it to be “key to preparing a concise EIS and clarifying the significant issues to be analyzed in depth.”⁶⁰ Some resources on public participation in NEPA process are provided in Box 1.

Box 1. Resources for NEPA Participation

Many resources are available to provide guidance to the public on participating in NEPA scoping processes, including:

- CEQ, [Collaboration in NEPA: A Handbook for NEPA Practitioners](#) (2007)
- Federal Interagency Working Group on Environmental Justice NEPA Committee, [Promising Practices FOR EJ Methodologies in NEPA Reviews](#)
- Environmental Law Institute Ocean Program, [FAQs on the NEPA Scoping Process](#) (2017)
- U.S. Army Corps of Engineers and the Water Institute of the Gulf, [Partnering with the U.S. Army Corps of Engineers: A Guide For Communities, Local Governments, States, Tribes, and Non-Governmental Organizations](#) (2019)

Opportunities to advance NNBI arise throughout the scoping process. Because scoping is an inherently participatory process, advocates for NNBI may submit comments to USACE encouraging the agency to consider NNBI alternatives to a proposed grey infrastructure project. NNBI proponents may also advocate for USACE to deemphasize environmental issues that may be of less concern with NNBI projects, such as the environmental impact of ecosystem restoration measures. Deemphasizing these issues may narrow the scope of the EIS process and reduce the time and resources required to reach a record of decision (ROD). And because NNBI tends to generate greater public support than gray infrastructure,⁶¹ litigation risks for NNBI

⁵⁸ 40 C.F.R. §§ 1501.9, 1508.1(g) (2023).

⁵⁹ *Id.* § 1500.4(i). *See also id.* §§ 1500.5(f), 1501.9(a).

⁶⁰ 33 C.F.R. § 230.12 (2023).

⁶¹ Gabrielle Wong-Parodi & Kelly Klima, *Preparing for Local Adaptation: A Study of Community Understanding and Support*, 145 *Climatic Change* 413 (2017) (finding that “people tend to favor green infrastructure over gray”); *see also* URBAN LAND INST., *supra* note X, at 12; EARTH ECON. ET AL., *BUILDING URBAN RESILIENCE WITH NATURE* 19 (2018), <https://abag.ca.gov/sites/default/files/100-resilient-cities-and-earth-economics-building-urban-resilience-with-nature.pdf>.

projects may be decreased insofar as the public will be less likely to submit comments in opposition to the project, foreclosing later litigation on the issue.⁶²

Alternatives. An agency must identify, consider, and analyze alternatives to a proposed action throughout the EIS process.⁶³ Consideration of alternatives begins during scoping, when the agency identifies a reasonable number of alternatives for assessment and in-depth discussion in the EIS.⁶⁴ These must include the no-action alternative, other reasonable courses of action that would avoid or minimize adverse impacts to or enhance the quality of the human environment, and mitigation measures that are not included in the proposed action.⁶⁵

Pursuant to WRDA 2020, the Corps must include consideration of certain types of alternatives, which may include NNBI. WRDA Section 124 directs the Corps to maximize the “development, evaluation, and recommendation” of project alternatives that produce “multiple project benefits, such as navigation, flood risk management, and ecosystem restoration benefits, including through the use of natural or nature-based features and the beneficial use (BU) of dredged material.”⁶⁶

Section 110 further requires the Corps to apply the Principles and Requirements for Federal Investments in Water Resources (PR&G) to its evaluations.⁶⁷ The PR&G require that the Corps include in a NEPA analysis, among other alternatives, “non-structural” approaches that can effectively address the relevant problem, the locally preferred alternative, and, where identified by NEPA, the environmentally preferred alternative.⁶⁸ Nonstructural approaches “alter the use of existing infrastructure or human activities to generally avoid or minimize adverse changes to existing hydrologic, geomorphic, and ecological processes.”⁶⁹ Nonstructural measures may include changes in public, regulatory, or pricing policy, and in management practices, including in the use of green infrastructure.⁷⁰ Effective non-structural alternatives must be not just included in a NEPA analysis but also fully considered, carried forward to the final array of solutions, and “given full and equal consideration in the decision making process.”⁷¹

NNBI advocates can leverage these WRDA provisions throughout the EIS process to encourage USACE to include NNBI alternatives. During the scoping period, commenters may encourage the Corps to identify NNBI proposals as meeting its required alternatives. NNBI has

⁶² See Jeffrey Lubbers, *Fail to Comment at Your Own Risk: Does Issue Exhaustion Have a Place in Judicial Review of Rules?*, 110 ADMIN. L. REV. 109, 160-61 (2018).

⁶³ 40 C.F.R. §§ 1501.9(e)(2), 1502.14 (2023).

⁶⁴ *Id.* §§ 1501.9(e)(2), 1502.14(f).

⁶⁵ *Id.* at § 1502.14.

⁶⁶ WRDA 2020, § 124 (emphasis added).

⁶⁷ WRDA 2020, §§ 110(b)(1)(A), (e)(2).

⁶⁸ U.S. ARMY CORPS OF ENG'RS, PRINCIPLES AND REQUIREMENTS FOR FEDERAL INVESTMENTS IN WATER RESOURCES 11-12 (2013), [planning.erdc.dren.mil/toolbox/library/Guidance/Principles_and_Requirements_FINAL_March2013.pdf](https://www.planning.erdc.dren.mil/toolbox/library/Guidance/Principles_and_Requirements_FINAL_March2013.pdf). The Corps is statutorily required to consider nonstructural alternatives for projects that include flood protection. 22 U.S.C. § 701b-11.

⁶⁹ *Id.* at 11.

⁷⁰ *Id.*

⁷¹ *Id.* at 12.

the potential to meet both the general NEPA requirement as an alternative that avoids or minimizes adverse effects on, or enhances the quality of, the environment, and WRDA 2020's preference for non-structural, environmentally preferred, or even locally preferred alternatives.

4. *A Deeper Dive into the Levels of NEPA Environmental Review*

NNBI projects that require a federal permit are covered by NEPA and will go through some level of environmental review. The options range from essentially no individualized review, if the action is one that an agency has determined falls within a certain category (e.g., CE), to a much more thorough and rigorous review when an action's environmental effects are more significant (e.g., EIS).

Categorical Exclusions. Some projects are able to obtain approval with a more limited environmental review. These are projects that are categorically excluded from the requirement to prepare an EA or EIS under NEPA. Categorical exclusions account for 94% of NEPA documentation.⁷² They have a median completion time of four months.⁷³

Only projects that do not normally have a significant effect on the environment qualify for categorical exclusions.⁷⁴ Even if the proposed action appears to be covered by a categorical exclusion, agencies must also consider whether there are any extraordinary circumstances that might lead to the action having a significant effect.⁷⁵ If extraordinary circumstances exist, an

⁷² Pleune Testimony, *supra* note 28.

⁷³ John C. Ruple, Jamie Pleune, & Erik Heiny, *Evidence-Based Recommendations for Improving National Environmental Policy Act Implementation*, 47 COLUM. J. OF ENVTL. L., 273, 293.

⁷⁴ 40 C.F.R. § 1501.4 (2023) (describing the categorical exclusion process); 40 C.F.R. § 1508.1 (2023) (defining "categorical exclusion"). Before this, the long-standing 1978 CEQ regulations stated that "categorical exclusion" means a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations (§ 1507.3) and for which, therefore, neither an environmental assessment nor an environmental impact statement is required. An agency may decide in its procedures or otherwise, to prepare environmental assessments for the reasons stated in § 1508.9 even though it is not required to do so. Any procedures under this section shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect." 40 C.F.R. § 1508.4 (1978). In 2020, the 1978 regulations were revised in response to Executive Order 13807. 82 Fed. Reg. 40463 (2017) ("Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure"). The CEQ's proposed Phase 2 rules would largely maintain the definition as written in the 2020 revision, but would include a reference to § 1501.4(c), which sets out additional mechanisms (such as a land use plan or decision document supported by a PEIS) and conditions through which agencies may establish categorical exclusions. National Environmental Policy Act Implementing Regulations Revisions Phase 2, 88 Fed. Reg. 49924, 49970, 49986 (July 31, 2023).

⁷⁵ 40 C.F.R. § 1501.4(b) (2023). Extraordinary circumstances include significant impacts on public health or the environment, highly uncertain or controversial environmental effects, or a disproportionately adverse effect on low income or minority populations. 43 C.F.R. 46.215 (2023) (listing the twelve extraordinary circumstances under which actions that would otherwise be categorically excluded require analysis under NEPA); *see also Bark v. U.S. Forest Serv.*, 958 F.3d 865, 870 (9th Cir. 2020) ("A project is highly controversial if there is a substantial dispute about [its] size, nature, or effect.") and *Earth Island*

agency must either determine that there are conditions such that the effects will be lessened or avoided, or prepare an EA or EIS as appropriate for the project.⁷⁶

Each agency has the authority to identify and adopt, after notice and comment, their own categorical exclusions.⁷⁷ Amendments to CEQ NEPA regulations, adopted in 2020, direct agencies to identify activities for which categorical exclusions can be used “[f]or efficiency.”⁷⁸ CEQ’s 2020 revisions also introduced, and the Fiscal Responsibility Act of 2023 subsequently codified, a way for agencies to adopt the categorical exclusions of other agencies in their agency-specific NEPA procedures.⁷⁹ Doing so requires an agency to consult the agency that originally issued the CE to determine whether adopting it would be appropriate, and provides a way to inform the public about new CEs that an agency may use.⁸⁰ For example, when plugging oil and gas wells at Padre Island National Seashore, the RESTORE Council used a Department of Interior CE for “removal of non-historic materials and structures in order to restore natural conditions.”⁸¹

The Transportation Secretary may assign to states the responsibility to determine whether proposed activities are included within the Department of Transportation’s established categorical exclusions.⁸² This is done through memoranda of understanding (MOUs) that are subject to public notice and comment. The MOUs, which are renewable, have terms of up to three years.⁸³ For states that already have assumed categorical exclusion responsibility MOUs for not fewer than ten years, those MOUs have terms of five years.⁸⁴

Given the broad potential applicability of categorical exclusions, identifying which ones might be used for NNBI can benefit agencies across the federal government.⁸⁵ ELI has identified existing

Inst. v. Muldoon, 82 F.4th 624 (9th Cir. 2023) (finding that a project was not sufficiently controversial when there was scientific disagreement with a 2004 plan relied upon by the agency in approving projects in 2021 and 2022, but the challenging party could not point to how the relevant science had changed since the original plan had been adopted).

⁷⁶ *Id.* § 1501.4(b)(1), (2).

⁷⁷ *Id.* § 1507.3(e)(2)(ii); CEQ, Establishing, Applying, and Revising Categorical Exclusions under the National Environmental Policy Act (Nov. 23, 2010), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/NEPA_CE_Guidance_Nov232010.pdf (memorandum providing guidance to federal agencies).

⁷⁸ 40 C.F.R. § 1501.4(a) (2023) (adopted 2020).

⁷⁹ *Id.* § 1507.3(f)(3).

⁸⁰ Pub. L. No. 118-5, § 321 (passed June 6, 2023) (codifying 40 C.F.R. § 1507.3(f)(3)).

⁸¹ GULF COAST ECOSYSTEM RESTORATION COUNCIL, CATEGORICAL EXCLUSION DETERMINATION FORM – PLUG ABANDONED OIL AND GAS WELLS (2015), www.restorethegulf.gov/sites/default/files/FPL_ECLib_TX_Plug_Abandoned_Oil_Gas_Wells_CE_signed.pdf; see also ELI, Fast Tracking “Good” Restoration Projects, *supra* note 1, at 4.

⁸² 23 U.S.C. § 326(a)(1) (2018 & Supp. 2023).

⁸³ *Id.* §§ 326(c)(3)(A), (B).

⁸⁴ *Id.* § 326(c)(3)(C).

⁸⁵ NEPA.gov, Categorical Exclusions, <https://ceq.doe.gov/nepa-practice/categorical-exclusions.html>. For a similar effort in the net-zero context, see BIPARTISAN POLICY CENTER, THE ROLE OF CATEGORICAL EXCLUSIONS IN ACHIEVING NET-ZERO BY 2050 (Sept. 27, 2022), <https://bipartisanpolicy.org/report/categorical-exclusions/>.

categorical exclusions that may cover certain aspects of natural infrastructure, including restoration efforts, construction, and land use and land use conversion (see Table 2).⁸⁶

Table 2. Selected Categorical Exclusions Pertinent to NNBI Projects.

Agency	Categorically Excluded Action
Bureau of Reclamation ⁸⁷	“Minor construction activities associated with authorized projects which correct unsatisfactory environmental conditions”
Department of Homeland Security ⁸⁸	“Natural resource management activities on Department-managed property to aid in the maintenance or restoration of native flora and fauna, including site preparation, landscaping, and control of non-indigenous species”
	“Construction of aquatic and riparian habitat in streams and ponds on Department-managed land, using native materials or best natural resource management practices”
	“Federal assistance for drainage, berm, water crossing, and detention, retention, or sediment pond projects which have the primary purpose of addressing flood hazards”
FEMA’s administration of the National Flood Insurance Program ⁸⁹	“Review of information, provision of technical assistance, and classification for individual communities under the Community Rating System”
	“Creation of new flood zones, except establishing new flood zones for areas protected by structural flood control structures or systems or dams”
	“Revisions to Standard Flood Insurance Policy and Group Flood Insurance Policy”
	“Actions associated with inspections and monitoring, and enforcement of Federal, State, Tribal, or local floodplain management codes, standards, or regulations”
Federal Transit Authority ⁹⁰	“Activities designed to mitigate environmental harm that cause no harm themselves or to maintain and enhance environmental quality and site aesthetics, and employ construction best management practices”
	Federally funded projects: (i) That receive less than \$5,000,000 (adjusted annually) of Federal funds; or (ii) With a total estimated cost of not more than \$30,000,000 (adjusted annually) and Federal funds comprising less than 15 percent of the total estimated project cost
Federal Highway Administration ⁹¹	Landscaping, acquisition of scenic easements
	Federally funded projects: (i) That receive less than \$5,000,000 (adjusted annually) of Federal funds; or (ii) With a total estimated cost of not more than \$30,000,000 (adjusted annually) and Federal funds comprising less than 15 percent of the total estimated project cost
	“Environmental restoration and pollution abatement actions to minimize or mitigate the impacts of any existing transportation facility [...] carried out to address water pollution or environmental degradation”
	Various real estate grants

⁸⁶ The CEQ maintains on its website a database of federal agency CEs that is current as of May 2021. Council on Env’t Quality, *Categorical Exclusions* (last visited Dec. 12, 2023), <https://ceq.doe.gov/nepa-practice/categorical-exclusions.html> (providing link to Excel database).

⁸⁷ DEP’T OF THE INTERIOR, 516 DEP’T MANUAL 14, MANAGING THE NEPA PROCESS – BUREAU OF RECLAMATION (2020).

⁸⁸ DEP’T OF HOMELAND SECURITY, INSTRUCTION MANUAL #023-01-001-01, IMPLEMENTATION OF THE NATIONAL ENVIRONMENTAL POLICY ACT A-9–A-10, A-27 (2014).

⁸⁹ DEP’T OF HOMELAND SECURITY, INSTRUCTION MANUAL #023-01-001-01, IMPLEMENTATION OF THE NATIONAL ENVIRONMENTAL POLICY ACT A-22 (2014).

⁹⁰ 23 C.F.R. § 771.118(c) (2023).

⁹¹ 23 C.F.R. § 771.117(c) (2023).

Agency	Categorically Excluded Action
U.S. Army Corps of Engineers ⁹²	“Minor maintenance dredging using existing disposal sites”
Farm Service Agency ⁹³	Activities with ground disturbance, including riparian buffer establishment, stream bank and shoreline protection, and wetland restoration
U.S. Forest Service ⁹⁴	“Restoring wetlands, streams, riparian areas or other water bodies by removing, replacing, or modifying water control structures [...] to allow waters to flow into natural channels and floodplains and restore natural flow regimes to the extent practicable”
	“Removing and/or relocating debris and sediment following disturbance events [...] to restore uplands, wetlands, or riparian systems to pre-disturbance conditions, to the extent practicable, such that site conditions will not impede or negatively alter natural processes”
Natural Resources Conservation Service ⁹⁵	“Removing dikes and associated appurtenances [...] to allow waters to access floodplains to the extent that existed prior to the installation of such dikes and associated appurtenances”
	“Plugging and filling excavated drainage ditches to allow hydrologic conditions to return to pre-drainage conditions”
	“Restoring the natural topographic features that were altered by farming and ranching activities for purpose of ecological restoration”
	“Removing or relocating residential, commercial, and other public and private buildings and associated structures constructed in the 100-year floodplain or within the breach inundation area of an existing dam or other flood control structure in order to restore natural hydrologic conditions of inundation or saturation, vegetation, or reduce hazards posed to public safety”
	“Stabilizing stream banks and associated structures to reduce erosion through bioengineering techniques following a natural disaster to restore pre-disaster conditions”
	“Repairing or maintenance of existing small structures or improvements (including structures and improvements utilized to restore disturbed or altered wetland, riparian, in stream, or native habitat conditions)”
	“Constructing small structures or improvements for the restoration of wetland, riparian, in stream, or native habitats”
	“Restoring an ecosystem, fish and wildlife habitat, biotic community, or population of living resources to a determinable pre-impact condition”
USDA’s administration of Rural Development ⁹⁶	“Conversion of land in agricultural production to pastureland or forests, or conversion of pastureland to forest”
	“Repair, rehabilitation, or restoration of water control, flood control, or water impoundment facilities, such as dams, dikes, levees, detention reservoirs, and drainage ditches, with minimal change in use, size, capacity, purpose, operation, location, or design from the original facility”

⁹² 33 C.F.R. § 230.9 (2023).

⁹³ 7 C.F.R. § 779.32(2) (2023).

⁹⁴ 36 C.F.R. § 220.6 (2023).

⁹⁵ 7 C.F.R. § 650.6(d)(2) (2023).

⁹⁶ 7 C.F.R. §§ 1970.53(c)(9), 1970.54(a)(7) (2023).

As evidenced by the varying review times for CEs (see Section II.A.4), shoehorning a project into an existing CE may not always prove expeditious and may instead result in longer timetables for NEPA review or increased risk of delay from litigation.⁹⁷ In some instances, agencies may be able to adopt new CEs to advance NNBI projects as long as the agency determines that the action normally does not have a significant effect on the environment.⁹⁸

Environmental Assessments and Mitigated FONSIs. For projects that are not categorically excluded and not obviously going to require an EIS, agencies prepare environmental assessments, or EAs.⁹⁹ EAs are essentially mini-EISs, and for permit applications where an EA will need to be prepared, CEQ regulations require the agency to “commence the environmental assessment as soon as practicable after receiving the application.”¹⁰⁰ Most often, an EA results in either the agency preparing an EIS (see below), or issuing a finding of no significant impact (FONSI).

A FONSI is issued when it is determined that “the proposed action will not have significant [environmental] effects.”¹⁰¹ Agencies can rely on mitigation to conclude that a project will not have significant effects and, accordingly, issue a “mitigated FONSI,” as long as it contains the authority for carrying out mitigation actions.¹⁰² A 30-day public review period is required when a FONSI covers an action that normally requires an EIS or is an action without precedent.¹⁰³ Mitigation might include planting trees, conserving wetlands, or other actions that offset the impacts of a proposed project.

Environmental Impact Statements. Although only about 1% of NEPA decisions are based on an Environmental Impact Statement, or EIS, they are the most involved form of environmental review under NEPA and thus generally also the lengthiest. They are also the most likely to result in litigation (see Section II.B.7).

Between 2010 and 2018, the median length of time from a notice of intent (NOI) to a record of decision (ROD) associated with a USACE EIS was 5.3 years.¹⁰⁴ EIS timelines vary significantly, however. Data from 2013 and 2018 indicate that, within that period, the shortest USACE EIS to

⁹⁷ RAYAN SUD, SANJAY PATNAIK, & ROBERT GLICKSMAN, HOW TO REFORM FEDERAL PERMITTING TO ACCELERATE CLEAN ENERGY INFRASTRUCTURE: A NONPARTISAN WAY FORWARD 5, 16 (Feb. 2023), https://www.brookings.edu/wp-content/uploads/2023/02/20230213_CRM_Patnaik_Permitting_FINAL.pdf.

⁹⁸ See 40 C.F.R. § 1501.4 (2023).

⁹⁹ *Id.* § 1501.5(a) (requiring the preparation of an EA when “a proposed action that is not likely to have significant effects or when the significance of the effects is unknown”). The action or proposal does not need to be a “major federal action,” and agencies have the discretionary authority to “prepare an environmental assessment on any action in order to assist agency planning and decision making.” *Id.* § 1501.5(b).

¹⁰⁰ *Id.* § 1501.5(d).

¹⁰¹ *Id.* § 1501.6(a).

¹⁰² *Id.* § 1501.6(c); see also Final Guidance for Federal Departments and Agencies on the Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact, 76 Fed. Reg. 3843 (Jan. 14, 2011).

¹⁰³ 40 C.F.R. § 1501.6(a)(2)(i), (ii) (2023).

¹⁰⁴ COUNCIL ON ENV'T QUALITY, ENVIRONMENTAL IMPACT STATEMENT TIMELINES (2010-2018) (2020), 12, https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timeline_Report_2020-6-12.pdf.

reach a ROD did so in one year and the longest took 17 years (see Table 3).¹⁰⁵ Significant variation also exists in the duration of discrete steps within the EIS process. Although the USACE has been able to complete each step of the process – going from an NOI to a draft EIS (DEIS), a DEIS to a final EIS (FEIS), and a FEIS to a ROD – in under a year, these steps on occasion have taken up to fifteen, six, and three years, respectively. Producing a DEIS is typically the lengthiest part of the process, as it has both the highest average timespan at 4.36 years and the largest range at 15 years.

Table 3. U.S. Army Corps EIS Timelines Based on CEQ Data (2013-2018)¹⁰⁶

	Years from NOI to DEIS	Years from DEIS to FEIS	Years from FEIS to ROD	Years from NOI to ROD
Mean	4.36	1.46	0.62	6
Median	4	1	<1 year	5
Mode	2	1	<1 year	3
Longest	15	6	3	17
Shortest	<1	<1 year	<1 year	1
Range	15	6	3	16

5. The Big NEPA Delay: Long and Unpredictable Timelines

The length of time between a project proposal and conclusion of the environmental review can vary considerably depending on whether the action requires an EIS, EA, or is categorically excluded. Somewhat paradoxically, however, while the level of analysis is the strongest predictor of the time required to complete a NEPA decision, research has also shown that the level of review is not dispositive in terms of how long a review might take.¹⁰⁷ One study of U.S. Forest Service NEPA reviews found that the “fastest 25% of EISs are completed more quickly than the slowest 25% of EAs, and the fastest 25% of EAs are completed more quickly than the slowest 25% of CEs.”¹⁰⁸ This is in part due to large variations in the time required to conclude NEPA processes for projects at the same level of review. This suggests that, even if a project qualifies for a CE, it will not necessarily advance through the permitting process any quicker than a project subject to an EA, or that just because a project requires an EIS does not mean it is relegated to the “slow” lane of environmental review.

¹⁰⁵ Council on Environmental Quality, CEQ_EIS_Timeline_Data_2020-6-12, <https://ceq.doe.gov/nepa-practice/eis-timelines.html>

¹⁰⁶ Table by the authors using CEQ data on federal agency preparation of an EIS; numbers are rounded (*see id.*).

¹⁰⁷ Ruple et al., *supra* note 73, at 300-04. “The full regression model (which contains predictor variables: level of analysis, year, activities, and region) can explain 25% of all the variation in elapsed time for a NEPA decision. By itself, level of analysis can explain 20% of the variability in our response variable.” *Id.* at 300.

¹⁰⁸ *Id.* at 350.

The regression model in the U.S. Forest Service study—designed to test the influence of NEPA-specific factors on decision-making timetables for the Forest Service’s NEPA proceedings—was able to explain only 25% of the variability in timelines.¹⁰⁹ The model’s inability to predict accurately using NEPA-specific information which projects would encounter delays and which would proceed efficiently contributed to the conclusion that factors other than the analytical requirements of NEPA contribute to significant delays.¹¹⁰ The factors include inadequate budgetary resources, shortages of qualified staff, staff turnover, applicant-caused delays in the receipt of information, and the requirements of other laws and regulations.¹¹¹ We discuss several of these below.

6. *Facilitating NEPA: Approaches to Accelerating and Finding Efficiencies in Review*

Scholars and policy makers have written extensively on approaches to facilitate NEPA review of permit applications. This section considers proposed areas for reform and improvement in the process for all permit applications and, where possible and appropriate, zooms in on key mechanisms or proposed changes that could advance or better support NNBI projects.

Federal law has sought to mandate efficiencies in NEPA review where possible. CEQ regulations provide some touchstone concepts and principles that promote efficiency in the review process.¹¹² This includes the incorporation of documents by reference¹¹³ and the combining of documents,¹¹⁴ both of which prevent unnecessary and duplicative work that can delay the review process. Effective consultation and coordination can help facilitate the identification of existing studies and documents that might be applicable, and thus the incorporation by reference for the proposed project. More recently, the Fiscal Responsibility Act of 2023 requires agencies to consolidate efforts into producing a single NEPA document “to the extent practicable” and directs CEQ to explore a unified NEPA portal (see Box 4) that has the potential to provide some of that functionality.¹¹⁵ Scholars have also offered suggestions, including that location-specific environmental checklists, possibly for specific regions, could

¹⁰⁹ *Id.* at 279, 299.

¹¹⁰ Ruple et al., *supra* note 73, at 322-29. The multivariate regression model created by the Ruple research team incorporated four different factors: the level of analysis applied, the year of project initiation, project implementation activities, and the region conducting the analysis. External factors the authors believe to influence NEPA review time include ecological differences, cultural differences, and the level of regional development. *Id.* See also, Jamie Pleune, *Playing the Long Game: Expediting Permitting Without Compromising Protections*, 52 ENVTL. L. REP. 10893, 10899 (2022) (discussing the same study).

¹¹¹ Ruple et al., *supra* note 73; Pleune, *supra* note 110, at 10899.

¹¹² See, e.g., Helen Leanne Serassio, *Legislative and Executive Efforts to Modernize NEPA and Create Efficiencies in Environmental Review*, 45 TEX. ENV’T L. J. 317, 331 (2015) (stating that “the concept of efficiency is embedded” in NEPA regulations).

¹¹³ 40 C.F.R. § 1501.12 (2023) (noting that incorporated material should be cited, briefly described, and be “reasonably available for inspection by potentially interested persons within the time allowed for comment”).

¹¹⁴ *Id.* § 1506.4 (directing agencies to combine documents “to the fullest extent possible”).

¹¹⁵ Fiscal Responsibility Act of 2023, Pub. L. No. 118-5 (2023) (NEPA, § 110).

help,¹¹⁶ as well as leveraging access to prior NEPA documents through a “geographically organized, searchable database.”¹¹⁷ We explore several suggested measures and mechanisms in greater depth here.

Consultation and Coordination: Better Planning, Better Results. When multiple laws and agencies are implicated, permits for proposed projects are not likely to advance efficiently unless all relevant agencies are consulted at the outset and engage in productive coordination throughout. NEPA regulations recognize this. The regulations provide that agencies should apply NEPA early in the process so that information and advice from “designated staff” can be shared with applicants as quickly as possible,¹¹⁸ and so that reasonably foreseeable stakeholders, including states, tribes, local governments, organizations, and private parties, are involved.¹¹⁹ Joint planning, environmental research and studies, public hearings, and joint EAs and joint EISs, should be pursued “to the fullest extent practicable.”¹²⁰

This early stakeholder involvement can include pre-application meetings, which may help to avoid delays caused by missing or incomplete information from a project applicant. In the renewable energy context, these meetings have helped improve efficiency and have led to better end results with “a final application that was processed more expeditiously.”¹²¹ For water resources projects, non-federal project sponsors should collaborate with USACE throughout the earliest stages of project development.¹²² In addition, non-federal sponsors are expected to provide local expertise and participate in the project’s Project Delivery Team.¹²³ The Team should work closely with impacted agencies, interest groups, private businesses, homeowners, and the public at large.¹²⁴ Early coordination and consultation with a wide variety of stakeholders can reduce conflict and, potentially, future litigation, helping to ease another barrier to efficient reviews—litigation risk (see Section II.B.7).

Which Agency Takes the Lead?

When two or more agencies are involved in a permitting process, the question arises of which assumes the lead role. While it must be a federal agency that assumes the lead role, state,

¹¹⁶ Pleune, *supra* note 110, at 10903.

¹¹⁷ *Id.*

¹¹⁸ Obtaining documents from applicants can be a critical source of delay in permitting, and facilitating the framework for document-sharing early in the process can minimize this cause for delay. See Pleune Testimony, *supra* note 28.

¹¹⁹ 40 C.F.R. § 1501.2(b)(4) (2023).

¹²⁰ *Id.* §§ 1506.2(b), (c).

¹²¹ Jamie Pleune & Edward Boling, *This Permit Reform Already Works. Why Aren’t More Mining Projects Using It?*, 53 ENVTL. L. REP. 10463, 10479 (2023).

¹²² Most water resource development projects begin with a request to the local USACE District office. A local project manager will work with the potential partner to learn about the problem and determine its eligibility for a USACE program. In-person meetings and site visits are frequently utilized for further information gathering. Institute for Water Resources, *Partnering with the U.S. Army Corps of Engineers: A Guide for Communities, Local Governments, States, Tribes, and Non-Governmental Organizations 7* (August 2019), <https://www.iwrlibrary.us/#/document/a50ba6d1-50ca-4ac9-ac64-d5b2dab21ee6>.

¹²³ *Id.* at 6.

¹²⁴ *Id.*

tribal, and local government entities can be co-leads, if the federal agencies involved determine it to be appropriate.¹²⁵ Other agencies are considered cooperating agencies.

Lead agencies are determined by considering five factors:

- Magnitude of agency involvement;
- Approval or disapproval authority for the project;
- Expertise on environmental effects;
- Duration of agency involvement; and
- Sequence of agency involvement.¹²⁶

If no agency assumes a lead role, then anyone “substantially affected” by the absence of a lead agency can make a written request to any participating agency that a lead agency be identified.¹²⁷ If participating agencies are unable to agree on the designation of a lead agency within 45 days of such a request, then the substantially affected party can request that CEQ designate one.¹²⁸

Lead agencies are charged with requesting participation from all cooperating agencies as early as possible in the process and supervising preparation of the environmental document.¹²⁹ They are also required to develop a schedule, in consultation with cooperating agencies, and to keep the agencies on schedule.¹³⁰ The statute requires that the lead agency consider any analysis or proposal put forward by a cooperating agency.¹³¹ This presents an opportunity for NNBI proponents, who may be able to capitalize on the requirement in order to advance the uptake of NNBI by having a cooperating agency propose the alternative, and thus ensuring its consideration. The law does not, however, require the lead agency to adopt or follow that analysis or proposal.

Tools for Designating Roles and Responsibilities

Clarifying each agency’s role, particularly those of cooperating agencies, is essential.¹³² MOUs offer one way to clarify these roles. MOUs can operate at various administrative levels and are one tool to help facilitate the complex legal and organizational arrangements of a project. Congress, in the 2014 Water Resources Reform and Development Act (WRRDA), acknowledged the importance of MOUs for allowing agencies to cooperate “at the earliest

¹²⁵ 40 C.F.R. § 1501.7 (2023); see also 33 U.S.C. § 2348(d)(1)(B) (2018 & Supp. 2023) (providing co-lead authority in the Corps context).

¹²⁶ Fiscal Responsibility Act of 2023, Pub. L. No. 118-5, § 321 (2023); 40 C.F.R. § 1501.7(c) (Lead Agencies).

¹²⁷ This includes “[a]ny Federal, State, Tribal, or local agency or person.” Fiscal Responsibility Act of 2023, Pub. L. No. 118-5, § 321 (2023) (codifying existing regulations at 40 C.F.R. § 1501.7(d)).

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

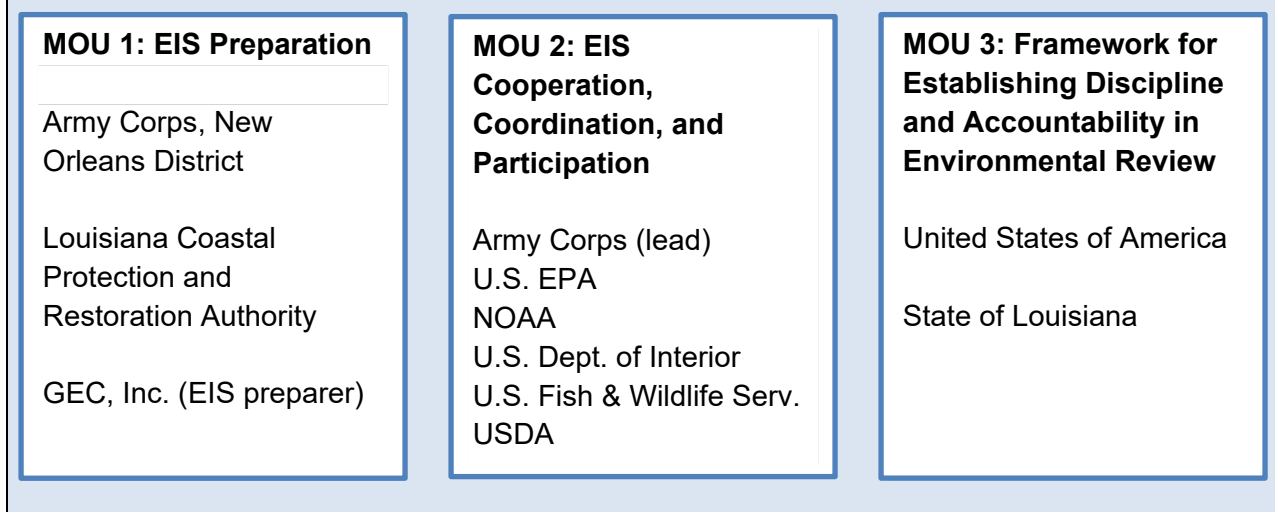
¹³¹ *Id.*

¹³² Serassio, *supra* note 112, at 341.

practicable time to avoid delays and duplication of effort later in the process, prevent potential conflicts, and ensure that planning and project development decisions reflect environmental values.”¹³³

Box 2. The Mid-Barataria Sediment Diversion, a large-scale project designed to curb land loss in the Mississippi River delta, will divert freshwater and sediment from the main stem of the river to create wetlands. The project, initiated by Louisiana’s Coastal Restoration and Protection Authority (CPRA), included three MOUs – one among federal agencies; one among the Corps, CPRA, and a third-party contractor; and another between the United States and Louisiana (See Figure 3).¹³⁴ For each potentially complicated governmental interface – federal/federal, federal/state, and federal/state/private – the agencies involved outlined their respective roles.

Figure 3. Tripartite MOU structure for the Mid-Barataria Sediment Diversion.¹³⁵



A failure to anticipate and plan for how each agency will integrate individual reviews into one coordinated effort can lead delays. For example, while the lead agency might limit the number of alternatives analyzed, a cooperating agency’s rules may require examining additional alternatives. Because each federal agency has their own set of NEPA regulations, clarifying in advance which agency’s NEPA procedures apply to a proposal can benefit the public by specifying which standards the federal agency is following. The approach can also help avoid disputes that may arise if expertise between agencies is in conflict.¹³⁶

Congress has outlined a simple issue resolution framework for USACE water resource development project studies. If an issue arises through the course of the project study process that could either slow the review process or result in project failure altogether, USACE, of its own accord or at the request of a project sponsor or an involved agency, will convene an “issue

¹³³ See 33 U.S.C. § 2348(i)(1)(A) (2018 & Supp. 2023).

¹³⁴ U.S. Army Corps of Engineers, Mid-Barataria Sediment Diversion (MBSD), last visited Dec. 18, 2023, <https://www.mvn.usace.army.mil/Missions/Regulatory/Permits/Mid-Barataria-Sediment-Diversion-EIS/>.

¹³⁵ All MOUs are available at: <https://www.mvn.usace.army.mil/Missions/Regulatory/Permits/Mid-Barataria-Sediment-Diversion-EIS/>.

¹³⁶ Serassio, *supra* note 112, at 338.

resolution meeting.”¹³⁷ Absent good cause, this meeting must be convened within three weeks of the request.¹³⁸ If the parties cannot come to a resolution within 30 days, then the issue is elevated to the heads of the relevant agencies.¹³⁹

Dedicated Staff to Lead Permit Processing

CEQ regulations grant agencies the authority to identify and appoint individual leads to expedite the NEPA process.¹⁴⁰ For example, this person may be the project manager or someone in the agency’s office with NEPA responsibilities.¹⁴¹ Similar to the benefits of having one agency in charge, having an experienced and capable reviewer at that agency, who is appointed to shepherd project reviews through from start to finish, can provide significant time and resource efficiencies. As such, advocating for an experienced individual agency lead from a NEPA-proficient office may be one clear pathway for reducing delays in approving a particular NNBI projects.

Variations in Office Culture Matter

Research has found that cultural differences have significant impacts on NEPA processing times. A study of processing times at regional Bureau of Land Management offices found that times varied from more than 300 days (in Buffalo, WY and Miles City, MT) to less than 40 days (in Anchorage, AK).¹⁴² The U.S. Department of Interior’s Office of Inspector General attributed the fact that applying the same legal standard to the same permit request varied so widely among these offices to “lack of staff, poor data management, and weaknesses in oversight and accountability.”¹⁴³ Although no analogous study has been conducted on USACE permit processing times, a report from the Georgetown Climate Center found that “each district office has developed a distinct culture and permitting is not uniformly administered.”¹⁴⁴ Additional training and standardization of protocols across offices could contribute to more uniform results.

One success story related to improved consultations and coordination by agencies is that of the San Francisco Bay Restoration Regulatory Integration Team (BRRIT), which has been working since 2019 to improve the permitting process for multi-benefit wetland restoration projects in

¹³⁷ 33 U.S.C. 2348(h)(4)(A) (2018 & Supp. 2023).

¹³⁸ *Id.* 2348(h)(4)(B).

¹³⁹ *Id.* 2348(h)(4)(D).

¹⁴⁰ 40 C.F.R. § 1501.10(e) (2023).

¹⁴¹ *Id.*

¹⁴² Pleune Testimony, *supra* note 28 (citing Office of Inspector General, Department of the Interior, Onshore Oil and Gas Permitting, U.S. Dept. of Int., Report No. CR-EV-MOA-0003-2013 (June 2014)).; see also Ruple et al., *supra* note 73 **Error! Bookmark not defined.**, at 322.

¹⁴³ Pleune Testimony, *supra* note 28 (citing Office of Inspector General, Department of the Interior, Onshore Oil and Gas Permitting, U.S. Dept. of Int., Report No. CR-EV-MOA-0003-2013 (June 2014)).

¹⁴⁴ Georgetown Climate Center, Preparing Our Communities for Climate Impacts: Recommendations for Federal Action (2014), <https://www.georgetownclimate.org/reports/preparing-our-communities-for-climate-impacts-recommendations-for-federal-action.html>.

San Francisco Bay.¹⁴⁵ BRITT is also an example of an interagency review team that has capitalized on the nature-based solutions expertise within the constituent agencies. The group includes representatives from three federal agencies (USFWS, NOAA Fisheries, and the USACE) and three state agencies (the San Francisco Bay Regional Water Quality Control Board, California Department of Fish and Wildlife (CDFW), and San Francisco Bay Conservation and Development Commission).¹⁴⁶ The EPA also provides guidance and occasionally participates.¹⁴⁷

The BRRIT team takes advantage of pre-application meetings and offers resources for how to submit a project proposal.¹⁴⁸ Past permitted projects include a nature-based shoreline to prevent erosion, enhance habitat, and enable resilience to sea level rise at Heron's Head Park on San Francisco's southeast shoreline, and the enhancement and restoration of wetlands and riparian habitat to provide wildlife habitat, sustainable flood protection, and public access and recreation along Walnut Creek and Pacheco creeks.¹⁴⁹ The group has developed three permitting tools to advance nature-based projects. These include a Restoration Management Permit through the CDFW, a Statewide Restoration General Order from the State Water Resources Control Board, and a Programmatic Biological Opinion from the USFWS.¹⁵⁰

Programmatic Reviews and Tiering. Programmatic assessments at the EA and EIS level, with subsequent tiered documents, have been long recognized as another method of facilitating projects and reducing delay.¹⁵¹ Programmatic assessments lay a foundation for accelerated reviews by outlining a general framework for subsequent project-level implementation. Rather than conducting a separate EIS for each project, agencies can conduct a broader programmatic EIS (PEIS) or EA (PEA), then follow up with narrower EAs or EISs that are tiered to the earlier document.

¹⁴⁵ S. F. BAY RESTORATION AUTH., SAN FRANCISCO BAY RESTORATION REGULATORY INTEGRATION TEAM (BRRIT), <https://www.sfbayrestore.org/san-francisco-bay-restoration-regulatory-integration-team-brrit> (last visited Dec. 23, 2023).

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ S. F. BAY RESTORATION AUTH., BRITT PROCESS, <https://www.sfbayrestore.org/brrit-process> (last visited Dec. 23, 2023); Bay Restoration Regulatory Integration Team, Annual Report (Sept. 2023) https://www.sfbayrestore.org/sites/default/files/2023-10/2023%20BRRIT%20Annual%20Report_FINAL_101223.pdf

¹⁴⁹ S. F. BAY RESTORATION AUTH., BRITT PROJECTS, <https://www.sfbayrestore.org/brrit-projects> (last visited Dec. 23, 2023).

¹⁵⁰ S. F. BAY RESTORATION AUTH., *supra* note 145.

¹⁵¹ 40 C.F.R. § 1502.4(b) (2023) (noting that when preparing programmatic assessments “agencies may find it useful to evaluate...[g]eographically...[g]enerically...[or] “[b]y stage of technological development; *Id.* § 1501.11 (describing the tiering framework); *Id.* § 1508.1(ff) (defining tiering as “the coverage of general matters in broader environmental impact statements or environmental assessments (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements)”). incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.”); see also Nature-Based Solutions Roadmap, *supra* note 3, at 19.

For example, an agency may execute a PEIS for a resource management plan covering a large geographic area where many individual projects will eventually be implemented. Programmatic reviews are now available for agencies for up to five years, “unless there are substantial new circumstances or information about the significance of adverse effects” that might mean a new analysis is required.¹⁵²

Box 3. Programmatic Assessments Advancing Natural Infrastructure

The 2022 White House Nature-Based Solutions Roadmap highlights the Federal Highway Administration (FHWA), which employs programmatic documents to coordinate species and wetlands reviews under their “Eco-logical” decision-making approach,¹⁵³ and the National Marine Fisheries Service, which uses a Restoration Center PEIS for coastal restoration actions including salt marsh and barrier island restoration.¹⁵⁴

In the watershed context, the Federal Emergency Management Agency (FEMA) released a PEA (and FONSI) in 2022 covering the state of Montana, and providing a foundation for actions by FEMA, FHWA, USDA, HUD, among others. The programmatic assessment lays the groundwork for the expenditure of federal funds that “may be used in an effort to make structures safe and useable, and the watersheds functional and more resilient.”¹⁵⁵ Projects are planned to address “the need to restore watershed hydraulic capacity and floodplain capacity” through “Nature-based and biologically inspired mitigation measures.”¹⁵⁶

Programmatic EISs or programmatic EAs, with subsequent tiered reviews, can help accelerate environmental reviews by avoiding duplication.¹⁵⁷ Agencies can also use programmatic reviews to consider larger policy and planning frameworks, as CEQ advocates in 2014 guidance, to consider how nature-based solutions might fit within broader agency priorities and programs.¹⁵⁸ Programmatic reviews may be used in conjunction with mapping efforts and can help “scale up and coordinate use of nature-based solutions in specific regions (e.g., a watershed) to address

¹⁵² 42 U.S.C. § 4336b (2018 & Supp. 2023).

¹⁵³ U.S. DEP’T OF TRANSP., FED. HIGHWAY ADMIN., *INITIATIVES TO ACCELERATE PROJECT DELIVERY* (last visited May 24, 2023), https://www.environment.fhwa.dot.gov/env_initiatives/eco-logical.aspx.

¹⁵⁴ U.S. Dep’t of Commerce, NOAA Fisheries, NOAA Restoration Center Programmatic Environmental Impact Statement (June 2015), https://media.fisheries.noaa.gov/dam-migration/2015_noaa_restoration_center_final_peis.pdf.

¹⁵⁵ FEMA, Watershed Resilience Projects, Programmatic Environmental Assessment Montana 11 (Oct. 25, 2022), <https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/programmatic-environmental-22>.

¹⁵⁶ *Id.* at 12.

¹⁵⁷ 40 C.F.R. § 1500.4(k) (2023) (requiring agencies to reduce paperwork by using PEIS and tiering “to eliminate repetitive discussions of the same issues”); *Id.* § 1501.11(a) (stating that “[a]gencies should tier their environmental impact statements and environmental assessments when it would eliminate repetitive discussions of the same issues, focus on the actual issues ripe for decision, and exclude from consideration issues already decided or not yet ripe at each level of environmental review.”).

¹⁵⁸ Council on Env’t Quality, Effective Use of Programmatic NEPA Reviews (Dec. 18, 2014), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/Effective_Use_of_Programmatic_NEPA_Reviews_Final_Dec2014_searchable.pdf.

large-scale problems.”¹⁵⁹ The Inflation Reduction Act of 2022 (IRA) expressly directs funds to help agencies with preparing programmatic review documents.¹⁶⁰

Proactive mapping may be useful in focusing agency resources for preparing programmatic reviews. In the context of renewable energy development and transmission, some have proposed extensive mapping to identify and prioritize development in low-impact and high-opportunity zones.¹⁶¹ This might build on current mapping efforts, such as the U.S. EPA’s Re-Powering America’s Land program that identifies priority sites for renewables development.¹⁶² The European Commission is actively pursuing a similar strategy.¹⁶³ In the context of NNBI, efforts to map (locally, state-wide, regionally, or beyond) natural infrastructure opportunities that are likely to provide high-impact benefits and are determined to have a low potential for adverse impacts could provide future projects with a path for more efficient reviews and a chance to scale up across broad landscapes.

7. Assessing Litigation Risk

Litigation has been cited by federal agencies as one of the primary reasons for delays in preparing environmental reviews.¹⁶⁴ One reason this creates delay is that the threat of litigation can lead to “analysis paralysis,”¹⁶⁵ or the practice of agency staff crafting “litigation-proof” EISs,¹⁶⁶ which often means additional costs and delays without necessarily improving quality.¹⁶⁷

Although there are few studies that have evaluated NEPA litigation, the limited evidence suggests that NEPA litigation is not a significant reason for delaying project permits.¹⁶⁸ In 2014, the Government Accountability Office (GAO) found that the majority of NEPA analyses do not

NATURE-BASED SOLUTIONS: A ROADMAP, *supra* note 3.

¹⁶⁰ Inflation Reduction Act of 2022, Pub. L. No. 117-169 § 50301 (Dep’t of Energy); *Id.* § 50303 (Dep’t of Interior); *Id.* § 60115 (Env’t Prot. Agency); *Id.* § 60402 (Council on Env’t Quality).

¹⁶¹ Sud et al., *supra* note 97.

¹⁶² *Id.*

¹⁶³ *Id.*; see also EUR. COMM’N, REPOWEREU: A PLAN TO RAPIDLY REDUCE DEPENDENCE ON RUSSIAN FOSSIL FUELS AND FAST FORWARD THE GREEN TRANSITION (May 18, 2022), https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131.

¹⁶⁴ LINDA LUTHER, CONG. RSCH. SERV., RL 33152, THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA): BACKGROUND AND IMPLEMENTATION 25-26 (2011), <https://crsreports.congress.gov/product/pdf/RL/RL33152>.

¹⁶⁵ *Id.* at 27.

¹⁶⁶ *Id.*; GOV’T ACCOUNTABILITY OFF., REPORT TO CONGRESSIONAL REQUESTERS: NATIONAL ENVIRONMENTAL POLICY ACT: LITTLE INFORMATION EXISTS ON NEPA ANALYSES 21 (2014) (GAO-14-3770), <https://www.gao.gov/assets/gao-14-370.pdf>. At least one commentator has observed that agencies could use “agency discretion to reign in unnecessarily lengthy NEPA documents.” Serassio, *supra* note 112, at 335.

¹⁶⁷ LUTHER, *supra* note 164, at 26.

¹⁶⁸ David E. Adelman & Robert L. Glicksman, *Presidential and Judicial Politics in Environmental Litigation*, 50 ARIZ. ST. L. J. 1, 19-24 (2018).

result in litigation and that, in most cases, the federal government wins in court.¹⁶⁹ According to one estimate, less than one quarter of one percent (.02%) of NEPA decisions result in litigation each year.¹⁷⁰

In another study, researchers analyzed 13 years' worth (2001-2013) of NEPA litigation data, totaling just shy of 1,500 cases.¹⁷¹ The researchers concluded "that the NEPA litigation burden may be overstated because few decisions are challenged in court, the rate of challenges is declining, and environmental plaintiffs are likely to bring only cases where they have a high likelihood of success."¹⁷² Of these cases, those challenging the adequacy of an EIS made up the greatest proportion (34.2%), followed by EAs (26.6%), supplemental EISs (6.7%), and CEs (6.4%). The remaining 20% were dismissed on jurisdictional or justiciability grounds.¹⁷³

Some agencies are challenged more frequently than others. The Forest Service accounts for more than one-third of all NEPA litigation, and its decisions were challenged twice as often as other federal agencies.¹⁷⁴ This may be a result of its broad geographic authority, or its mandate to balance multiple—sometimes conflicting—resources, which can lead to dissatisfaction with an outcome, and ultimately to litigation.¹⁷⁵ The data set included 126 NEPA challenges of Corps action, an average of nearly 10 per year.¹⁷⁶ Of those, the Corps won just over 65% of its 131 rulings, with another almost 10% resulting in a neutral outcome.¹⁷⁷ In other words, the Corps lost fewer than 25% of its NEPA challenges in court.

There may actually be reduced risk from agencies taking longer to complete environmental reviews, however, as the agencies that take longer to complete their NEPA analyses are sued at lower rates than those agencies that complete NEPA analyses more quickly.¹⁷⁸ Put differently, there was an inverse relationship between the time an agency spent preparing an EIS and the likelihood of its challenge in court.¹⁷⁹

¹⁶⁹ GOV'T ACCOUNTABILITY OFF., *supra* note 166, at 19; *see also* Amanda M.A. Miner et al., *Twenty Years of Forest Service National Environmental Policy Act Litigation*, 12 ENVTL. PRAC. 116, 118, 122 (2010) (in a study of U.S. Forest Service cases, finding that the agency won the NEPA challenge but lost 7.5% of the cases because of violations of another statute(s)).

¹⁷⁰ Serassio, *supra* note 112, at 333-34 (finding that less than .02% of more than 50,000 NEPA decisions were challenged).

¹⁷¹ John C. Ruple & Kayla Race, *Measuring the NEPA Litigation Burden: A Review of 1,499 Federal Court Cases*, 50 ENVTL. L. 479 (2020).

¹⁷² *Id.* Specifically, the authors found that only one in 450 NEPA decisions were challenged, or .22% of all decisions subject to NEPA. *Id.* at 483.

¹⁷³ *Id.* at 505. The authors note that CEQ data does not break down the cases dismissed by justiciability or jurisdictional grounds. *Id.* at 504-05.

¹⁷⁴ Ruple & Race, *supra* note 171, at 486.

¹⁷⁵ *Id.* at 486.

¹⁷⁶ *Id.* at 508.

¹⁷⁷ *Id.* at 517. The Corps lost 24.4% of cases. There are more rulings than cases because there may be more than one decision in a single case. *Id.* at 516, n. 201.

¹⁷⁸ *Id.* at 483.

¹⁷⁹ Sud et al., *supra* note 97, at 17.

Per the CEQ, the most frequent point of contention is the preparation of an EA instead of an EIS.¹⁸⁰ Since EAs do not always require public input, they have been criticized by states, citizen groups, and businesses as being used to avoid public involvement.¹⁸¹ Consequently, the idea of issuing draft EAs for public comment has been proposed¹⁸² and, although not widely followed, the Corps does issue them occasionally. ELI's research did not, however, uncover any Corps draft EAs focused on nature-based solutions.

8. NEPA: Opportunities Among the Obstacles

Despite criticism from some project proponents and commentators, the NEPA process provides an opportunity for efficiency when multiple agencies and/or permits and permissions are involved. NEPA has been described “as an umbrella statute, facilitating compliance with a host of other laws such as the Clean Water Act, the National Forest Management Act, or the National Historic Preservation Act.”¹⁸³ Rather than delay major projects that must be approved by multiple federal agencies and offices, NEPA “provides the platform for agencies to coordinate permitting and planning activities at all levels of the government, thereby avoiding duplicate or sequential reviews and providing the opportunity for potential issues to be identified and resolved early in the process.”¹⁸⁴ NEPA scholars suggest “there is some evidence that permitting decisions undergoing a NEPA review are often completed faster than those that are exempted from NEPA.”¹⁸⁵ In updates to NEPA's implementation regulations in 2022, CEQ also found that “an effective NEPA process can save time and reduce overall project costs by identifying and avoiding problems, including potential significant effects, that may occur in later stages of project development.”¹⁸⁶

A preliminary problem in determining how to improve NEPA processes is lack of data and understanding about what actually causes environmental review and permitting delays. A 2014 GAO study concluded that there is regrettably “little information” on critical aspects of the law's implementation.¹⁸⁷ This is somewhat surprising, given the breadth of the statute's applicability and the significance of its widely alleged impacts to project costs and timelines. A foundational challenge is that even data on how many detailed NEPA analyses are performed in an average

¹⁸⁰ Council on Environmental Quality, *The National Environmental Policy Act: A Study of its Effectiveness After Twenty-Five Years* at 19 (1997), <https://ceq.doe.gov/docs/ceq-publications/nepa25fn.pdf>.

¹⁸¹ LUTHER, *supra* note 164, at 27.

¹⁸² Serassio, *supra* note 112, at 340.

¹⁸³ Pleune, *supra* note 110, at 10905; *see also* LUTHER, *supra* note 164, at 1 (noting that “[m]ost agencies use NEPA as an umbrella statute”).

¹⁸⁴ Serassio, *supra* note 112, at 330.

¹⁸⁵ Pleune, *supra* note 110, at 10905. *See also* John Ruple et al., *Does NEPA Help or Harm ESA Critical Habitat Designations? An Assessment of Over 600 Critical Habitat Rules*, 46 *ECOLOGY L.Q.* 829 (2020) (discussing the issue in the endangered species context).

¹⁸⁶ National Environmental Policy Act Implementing Regulations Revisions, 87 *Fed. Reg.* 23453, 23467-68 (Apr. 20, 2022).

¹⁸⁷ GOV'T ACCOUNTABILITY OFF., *supra* note 166; *see also* Adelman & Glicksman, *supra* note 168, at 16 (remarking that “[a] central challenge for empirical studies of NEPA compliance is the paucity of data available.”).

year, and by which agencies, is sparse.¹⁸⁸ In 2014, the GAO estimated that approximately 1% of NEPA decisions were environmental impact statements (EISs), less than 5% were environmental assessments (EAs), while the remaining 95% were categorical exclusions (CEs).¹⁸⁹ While this government data is nearly a decade old, it appears to be the most recent available.¹⁹⁰ A 2019 academic study building on GAO's estimates and additional data from U.S. EPA suggests the annual numbers come to nearly 50,000 CEs, just over 2,500 EAs, and approximately 500 EISs.¹⁹¹ Despite various mandates¹⁹² and individual agency efforts,¹⁹³ there is no centralized, government-wide repository for similar information about EAs or CEs.¹⁹⁴

Box 4. A Unified Portal for NEPA Documentation

Congress, in the Fiscal Responsibility Act, directed CEQ to prepare a study (within one year of enactment) on the "potential for online and digital technologies to address delays in reviews and improve public accessibility and transparency," including through "a unified permitting portal."¹⁹⁵ The portal would:

- enable applicants to submit documents, collaborate with agencies and upload documents and other visual features in real time, and track progress of application;
- promote interagency consultation by centralizing all "data, visuals, and documents," streamlining communication, allowing for comments and responses in one portal, and generating analytical reports to aid in organizing and cataloging public comments;
- be accessible on mobile devices; and
- boost transparency by presenting information for a "lay audience" and including examples of how at least five permits would be reviewed and processed.

Congress appropriated CEQ \$500,000 for the task.¹⁹⁶

The unified portal could offer an opportunity to support the adoption and use of NNBI by providing a permitting hub specifically for natural infrastructure solutions, akin to the Department of Energy's [RAPID Toolkit](#).¹⁹⁷

¹⁸⁸ GOV'T ACCOUNTABILITY OFF., *supra* note 166.

¹⁸⁹ *Id.* at 8.

¹⁹⁰ *See, e.g.,* Pleune, *supra* note 110, at 10898 (citing to the 2014 study for the latest numbers).

¹⁹¹ Ruple & Race, *supra* note 171, at 485-86.

¹⁹² Recent legislation has included mandates to collect data: the Infrastructure Investment and Jobs Act required the Transportation Secretary to report NEPA data annually to the Senate, P.L. 117-58, § 11312 (2021) (codified at 23 USC § 157), and the 2022 Water Resources Development Act required the Corps to track and report environmental review timelines of water resources projects. Water Resources Development Act of 2022, Pub. L. No. § 8134 (2022).

¹⁹³ One promising approach can be found in the Bureau of Land Management's (BLM) "National NEPA Register," a website that offers a searchable database of all BLM's NEPA decisions. *See* U.S. Bureau of Land Mgmt., *BLM National NEPA Register*, <https://eplanning.blm.gov/eplanning-ui/home> (last visited June 8, 2023) and Dep't of Energy, *NEPA Documents*, <https://www.energy.gov/nepa/nepa-documents> (last visited June 8, 2023). Another example is the EPA's work tracking the number of EISs filed. U.S. EPA, *Environmental Impact Statement (EIS) Database* (last updated Mar. 31, 2023), <https://cdxapps.epa.gov/cdx-enepa-ll/public/action/eis/search>.

¹⁹⁴ Ruple & Race, *supra* note 171, at 490.

¹⁹⁵ Fiscal Responsibility Act of 2023, Pub. L. No. 118-5 (2023) (NEPA, § 110).

¹⁹⁶ *Id.*

¹⁹⁷ *See* Nat'l Renewable Energy Lab'y, *Regulatory and Permitting Information Desktop Toolkit* <https://openei.org/wiki/RAPID>, (last visited December 6, 2023).

This lack of understanding around key metrics such as the number of reviews, the time required to prepare them, and the frequency and success rates of legal challenges precludes a well-informed assessment of the reasons for delays in project approvals—much less ways to improve them. More studies are needed to understand even basic metrics, such as the number and type of NEPA analyses agencies are conducting; the benefits and costs of those analyses; and the extent and impact of litigation related to agencies’ NEPA decisions. While the Fiscal Responsibility Act of 2023 directs CEQ to prepare a report on a unified NEPA portal that may provide some of this information and fill known data gaps (see Box 4), details around its development and adoption are uncertain, and deployment of any “E-NEPA” portal is likely years away.

Despite the lack of clarity around its impact, the NEPA process and environmental reviews offer critical inflection points for advancing nature-based infrastructure. The opportunities include the synergies of consultation and coordination among agencies and the development of programmatic environmental documents, as well as the openings to advance NNBI offered by the processes for categorical exclusions, environmental assessments, and aspects of the EIS process, such as scoping and alternatives. The process, in general, offers NNBI proponents a multitude of chances to put forth the solutions for consideration and adoption.

B. Other Federal Permitting Regimes

1. The Clean Water Act

Environmental review under NEPA often is required for projects requiring the issuance of a Section 404 permit under the Clean Water Act. This provision regulates the discharge of dredged or fill material into the “waters of the United States,”¹⁹⁸ and the Secretary of the Army—through the USACE—is responsible for issuing permits to do so.¹⁹⁹ The central tenet of the regulatory regime is that the discharge of dredged or fill material may not be permitted if (1) there is a practicable alternative that is less damaging to the aquatic environment or (2) it would cause or contribute to the significant degradation of the nation’s waters.²⁰⁰ Proposed activities are regulated through a permit review process. A discharge of dredged or fill material that will have potentially significant impacts requires an individual permit, which is reviewed by USACE or a State/Tribal 404(g) Program.²⁰¹ These authorities evaluate applications under a public

¹⁹⁸ 33 U.S.C. § 1344 (2018 & Supp. 2023) (Permits for Dredged or Fill Material). Dredged material is defined as “material that is excavated or dredged from waters of the United States.” 33 C.F.R. § 323.2(c) (2023). Fill material is defined as “material placed in waters of the United States where the material has the effect of: (i) replacing any portion of a water of the United States with dry land; or (ii) changing the bottom elevation of any portion of a water of the United States.” *Id.* at § 323.2(e)(1).

¹⁹⁹ 33 U.S.C. § 1344(a) (2018 & Supp. 2023) (“The Secretary may issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites.”)

²⁰⁰ See 40 C.F.R. § 230.10 (2023) (Restrictions on discharge).

²⁰¹ 33 U.S.C. § 1344(a), (g) (2018 & Supp. 2023).

interest review, as well as the environmental criteria set forth in EPA’s CWA Section 404(b)(1) Guidelines.²⁰² The holding of the U.S. Supreme Court in *Sackett v. EPA* (2023) removed CWA coverage of wetlands without a continuous surface connection to other covered “waters of the United States”.²⁰³ This is likely to have implications on the volume of environmental reviews required under NEPA, as the non-applicability of Section 404 will often “remove the only federal ‘hook’” for the application of NEPA and other federal agency consultation requirements.²⁰⁴

Natural and nature-based infrastructure projects that will result in dredged or fill material being deposited into “waters of the United States” require a federal Clean Water Act Section 404 permit.²⁰⁵ Other federal and state permits may also be required, depending on the project’s location and scope.²⁰⁶ However, as noted above, following the *Sackett* decision, the ability of the federal government to regulate and protect wetlands by requiring assessment of the environmental impacts of a proposed project is now uncertain.²⁰⁷ One commentator noted that the decision raises many questions about how water managers and residents will “deal with levees, seasonally flooded floodplain wetlands, interdunal wetlands, and many other bodies of water with substantial hydrological connections to the nation’s waters but without continuous

²⁰² U.S. Army Corps of Engineers Permitting Process Information, USACE, <https://www.lrl.usace.army.mil/Portals/64/docs/regulatory/Permitting/PermittingProcessInformation.pdf>; 40 C.F.R. § 230 (2023) (Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material).

²⁰³ *Sackett v. Env’t Prot. Agency*, 598 U.S. 651, 678-79 (2023); see also Revised Definition of “Waters of the United States”; Conforming, 88 Fed. Reg. 61,964 (Sept. 8, 2023) (EPA and USACE final rule amending the definition of “waters of the United States to conform with the holding in *Sackett*).

²⁰⁴ James M. McElfish, Jr., *What Comes Next for Clean Water? Six Consequences of Sackett v. EPA*, ENVTL L. INST.: VIBRANT ENV’T BLOG (May 26, 2023), <https://www.eli.org/vibrant-environment-blog/what-comes-next-clean-water-six-consequences-sackett-v-epa>.

²⁰⁵ 33 U.S.C. § 1344(a). The long-term implications for permitting in light of the U.S. Supreme Court decision in *Sackett v. U.S. EPA*, No. 21-454 (2023), holding that the Act extends protection only to those waters that are described “in ordinary parlance” as “streams, oceans, rivers, and lakes,” and to wetlands only if those wetlands have a “continuous surface connection” to such waters “making it difficult to determine where the water ends and the wetland begins” are still uncertain. However, the sharply limited scope of protection under the federal Clean Water Act may mean that certain infrastructure projects that would have required a CWA Section 404 permit under the old regime, may now no longer need one. For implications of the decision, see James M. McElfish, Jr., *What Comes Next for Clean Water? Six Consequences of Sackett v. EPA*, ELI VIBRANT ENV’T BLOG (May 26, 2023), <https://www.eli.org/vibrant-environment-blog/what-comes-next-clean-water-six-consequences-sackett-v-epa>.

²⁰⁶ A project that seeks to discharge dredged or fill material must also obtain a water quality certification under Sec. 401. See 33 U.S.C. 1341 (2018 & Supp. 2023).

²⁰⁷ McElfish, *supra* note 205. McElfish also raises concerns about the fate of wetland mitigation banks—a long established NNBI solution used by the compensatory mitigation industry to help developers and governments comply with legal requirements to offset habitat destruction. McElfish notes:

Substantial investments have been made in constructing and restoring freshwater wetlands across the nation to offset permitted impacts to such wetlands under the Clean Water Act. Now, at a stroke, the permit requirement (along with the need for compensation) is gone for large areas of the country. What will be the response? Among other questions will be how to assess and coordinate remaining state mitigation requirements with a suddenly absent Corps of Engineers permitting component. *Id.*

surface connection.”²⁰⁸ Decisions made in the management of these natural features will have potentially serious implications for water quality, habitat, risk management, and public health.²⁰⁹ Justice Kavanaugh noted the potential of the Court’s decision to use a “continuous surface connection” test to undermine Clean Water Act coverage and protections for wetlands adjacent to levees on the Mississippi River, since the very presence of the levees would break the continuity of the surface connection, despite the wetlands’ important role as part of the flood-flood-control project.”

Discharges of dredged or fill material that will have only minimal adverse effects may be authorized under a general permit. General permits—which consist of nationwide general permits (NWP or nationwides), regional general permits (RGPs), and programmatic general permits (PGPs)—allow the USACE to simplify the authorization process for activities that require 404 permits.²¹⁰ USACE can issue general permits after notice and opportunity for a public hearing, provided that projects authorized under the permit “will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effects on the environment.”²¹¹ USACE regulations provide for regional or state permits to be issued by district or division engineers, while nationwide permits are issued by Corps headquarters.²¹²

Nationwide General Permits. The Corps has issued dozens of NWPs, which authorize similar, minimally environmentally impactful private landowner actions across the United States.²¹³ NWPs can significantly reduce the regulatory burden on private actors by allowing landowners to avoid the time-consuming process for obtaining standard individual permits.²¹⁴ Corps Headquarters issues NWPs under Section 404(e) of the Clean Water Act, and Corps district

²⁰⁸ McElfish, *supra* note 204.

²⁰⁹ *Id.*

²¹⁰ *Permits Types and Processes*, U.S. ARMY CORPS OF ENG’RS, BALD. DIST., nab.usace.army.mil/Missions/Regulatory/Permit-Types-and-Process/ (last visited June 15, 2023). States may also issue General Authorizations (GAs) for specific types of minimal impact projects. *State Programmatic General Permits*, NAT’L ASS’N OF WETLAND MANAGERS, nawm.org/wetland-programs/regulation/programmatic-general-permits (last visited December 11, 2023).

²¹¹ 33 U.S.C. § 1344(e) (2018 & Supp. 2023).

²¹² NICOLE T. CARTER, CONG. RSCH. SERV., 97-223, THE ARMY CORPS OF ENGINEERS’ NATIONWIDE PERMITS PROGRAM: ISSUES AND REGULATORY DEVELOPMENTS 4, n.7 (updated Jan. 12, 2017), <https://crsreports.congress.gov/product/pdf/RL/97-223>:

The Corps also uses the general permit authority to authorize statewide general permits covering activities in states that are deemed to have sufficient state regulatory authority. These statewide general permits (programmatic general permits, or PGPs) are derived from an existing state, local, or other federal agency program and are designed to avoid duplication with that program. They function as a substitute for full state program authorization to administer the 404 program. Depending on the core state program, state PGPs may encompass all wetlands regulation in a state, certain waters only, or certain types of regulated activities. Once a PGP is approved, the Corps suspends its permit activity in lieu of the authorized state or sub-state entity, although the Corps retains the right to override the PGP and issue a federal permit in individual cases.

²¹³ CONG. RSCH. SERV., R 97-223, THE ARMY CORPS OF ENGINEERS’ NATIONWIDE PERMITS PROGRAM: ISSUES AND REGULATORY DEVELOPMENTS 1-2 (2017), https://www.everycrsreport.com/files/20170112_97-223_271c5b98b058e7b84bab465be90e05777cf735ea.pdf.

²¹⁴ *Id.*

offices and states can impose additional conditions on NWP. ²¹⁵ The Corps has (re)issued these general permits, which are valid for 5-year periods, since 1977. There are currently 52 NWPs in effect, which are set to expire March 14, 2026. ²¹⁶

Qualifying for a NWP can reduce both the approval time and administrative burden on the project applicant because, in issuing the NWP, the Corps has already completed several prerequisite tasks, such as conducting environmental review under NEPA and consulting with other federal and state agencies. ²¹⁷ Three NWPs may be particularly relevant to NNBI projects that require discharges of dredged or fill material into rivers, lakes, oceans, and other waters of the United States: ²¹⁸

- **Nationwide Permit 13 - Bank Stabilization.** NWP 13 authorizes small discharges of dredged or fill material for bank stabilization activities necessary for erosion control or prevention, including soft stabilization techniques like vegetative bank stabilization and bioengineering using appropriate native plants. ²¹⁹ Though NWP also authorizes hard stabilization activities, the Corps recommends that soft bank stabilization techniques generally be considered first when project proponents consider the use of NWP 13. ²²⁰
- **Nationwide Permit 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities.** NWP 27 authorizes aquatic habitat restoration, enhancement, and establishment that is “planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference.” ²²¹ Several forms of NNBI qualify for NWP 27, including:
 - Re-establishment of tidal wetlands in tidal waters where those wetlands previously existed;
 - Re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed;
 - Relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services; and

²¹⁵ See, e.g., U.S. ARMY CORPS OF ENG’RS, KANS. CITY DIST., STATE OF MISSOURI 2021 NATIONWIDE PERMIT REGIONAL CONDITIONS (2021), [usace.contentdm.oclc.org/utills/getfile/collection/p16021coll11/id/6219](https://www.usace.contentdm.oclc.org/utills/getfile/collection/p16021coll11/id/6219).

²¹⁶ Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. 2744 (Jan. 13, 2021) (reissuing and modifying 12 NWPs and issuing four new NWPs); Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. 73522 (Dec. 27, 2021) (reissuing 40 NWPs and one new NWP).

²¹⁷ GEORGETOWN CLIMATE CTR., *supra* note 144.

²¹⁸ See Nature-Based Solutions Roadmap, *supra* note 3, at 19.

²¹⁹ These activities must be less than 500 feet in length unless the district engineer makes a written determination that the fill material used will have minimal adverse environmental effects. U.S. ARMY CORPS OF ENG’RS, NATIONWIDE PERMIT 13 - BANK STABILIZATION (2022), <https://www.swt.usace.army.mil/Portals/41/docs/missions/regulatory/2021%20NWP/NWP-13.pdf>.

²²⁰ Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. 73522, 73533-34 (Dec. 27, 2021).

²²¹ U.S. ARMY CORPS OF ENG’RS, NATIONWIDE PERMIT 27 - AQUATIC HABITAT RESTORATION, ENHANCEMENT, AND ESTABLISHMENT ACTIVITIES (2017), <https://www.swf.usace.army.mil/Portals/47/docs/regulatory/Permitting/Nationwide/NWP27.pdf>.

- Activities needed to reestablish vegetation, such as plowing or discing for seed bed preparation and the planting of appropriate wetland species.²²²
- **Nationwide Permit 54 – Living Shorelines.** Under NWP 54, dredged or fill material may be discharged into *coastal* waters of the United States, including the Great Lakes, for the construction and maintenance of living shorelines to stabilize banks and shores.²²³ Living shorelines may contain harder infrastructure like rock sills or reefs, but they must incorporate vegetation or other living, natural soft elements and have a “substantial biological component,” which can be either wetlands or reef structures.²²⁴ The Corps additionally recommends that projects authorized under NWP 54 “maintain the natural continuity of the land-water interface, and retain or enhance shoreline ecological processes.”²²⁵

Additional actions beyond simply utilizing existing NWPs, including but not limited to the recommendations identified below, could further leverage the Corps’ permitting authority under 404(e) for the purpose of advancing NNBI.

Develop USACE Guidance on NWPs for Small-Scale NNBI

The Corps’ eight regional divisions and 38 district offices vary in whether they authorize small-scale, nature-based projects through NWPs.²²⁶ Guidance from Corps Headquarters on whether these projects are appropriately authorized through NWPs could encourage district offices that do not currently use NWPs for NNBI to begin doing so, streamlining the administrative processes for NNBI in those districts.²²⁷

Reduce the Scope of Certain NWPs

Some NWPs that authorize NNBI may be overinclusive in their simultaneous authorization of standalone hard infrastructure. For example, environmental groups, federal agencies, and local governments opposed the 2017 reissuance of NWP 13 because they believed that the Corps was ignoring the negative environmental impacts of coastal armoring and the changing circumstances presented by sea level rise.²²⁸ These concerns were further exacerbated by the concurrent issuance of NWP 54, which provided a model for a nature-focused NWP whose

²²² *Id.*

²²³ U.S. ARMY CORPS OF ENG’RS, NATIONWIDE PERMIT 54 – LIVING SHORELINES 1 (2017), <https://www.swt.usace.army.mil/Portals/41/docs/missions/regulatory/2021%20NWP/NWP-54.pdf>.

²²⁴ *Id.*

²²⁵ *Id.*

²²⁶ GEORGETOWN CLIMATE CTR., *supra* note 144, at 78, 87 n.40.

²²⁷ *Id.*

²²⁸ Travis O. Brandon, *A Wall Impervious To Facts: Seawalls, Living Shorelines, and the U.S. Army Corps of Engineers’ Continuing Authorization of Hard Coastal Armoring in the Face of Sea Level Rise*, 93 TUL. L. REV. 557, 560 (2019).

design features could have been incorporated into NWP 13 to better serve its regulatory purpose.²²⁹

When NWP 13 expires in 2026, the Corps should consider reissuing the permit with a scope more similar to that of NWP 54, which requires permittees to include NNBI such as vegetative stabilization and bioengineering.²³⁰ Other NWPs may also be reissued with a greater focus on NNBI and reduced capacity for hard infrastructure.

Not all nature-based activities will qualify for an NWP. In those cases, a regional general permit or programmatic general permit may be available.

Regional General Permits. Division or district engineers with regulatory jurisdiction over the covered geographic area issue RGPs to authorize similar, minimally impactful activities in a particular state or other geographic region and reduce the duplication of regulatory control by state and federal agencies.²³¹ RGPs may cover a portion of a state, an entire state, or multiple contiguous states.²³²

Several Corps division districts along the Upper Mississippi River have issued RGPs that can advance natural infrastructure projects in their jurisdiction. These include districts in the Mississippi Valley Division, the Great Lakes and Ohio River Division, and the Northwestern Division. A few representative RGPs authorizing NNBI in the Mississippi River Basin are included below.

Ponds

The Corps' St. Paul District has issued a Wildlife Ponds RGP that provides eligibility for projects constructing small ponds for wildlife habitat in Minnesota and Wisconsin.²³³ Depending on the existing land use, small ponds are one natural infrastructure tool that can help improve water quality and reduce flooding impacts. Ponds can provide a buffer for floodwaters and reduce downstream impacts.²³⁴

²²⁹ *Id.* at 562.

²³⁰ See NATIONWIDE PERMIT 54 – LIVING SHORELINES, *supra* note 223, at 1.

²³¹ U.S. ARMY CORPS OF ENG'RS, *supra* note 202, at 2-3, 9; U.S. ARMY CORPS OF ENG'RS, LOUISVILLE DIST., THE REGULATORY PERMIT PROGRAM 2, <https://www.lrl.usace.army.mil/Portals/64/docs/Regulatory/Forms/About%20The%20Regulatory%20Permit%20Program.pdf?ver=2019-04-17-140304-430>.

²³² See U.S. ARMY CORPS OF ENG'RS, *supra* note 202, at 2.

²³³ U.S. ARMY CORPS OF ENG'RS, ST. PAUL DIST., WILDLIFE PONDS REGIONAL GENERAL PERMIT (2023), <https://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RGP/Wildlife%20Ponds.pdf?ver=259HC-02s699bCri-KznuQ%3d%3d>.

²³⁴ Kelly M. Suttles, Alison J. Eagle, and Eileen L. McLellan, *Upstream Solutions to Downstream Problems: Investing in Rural Natural Infrastructure for Water Quality Improvement and Flood Risk Mitigation*, 13 WATER 24, art. 3979 (2021); Carla Sofia Santos Ferreira, Kristina Potocki, Marjiana Kapovic-Solomon & Zahra Kalantari, *Nature-Based Solutions for Flood Mitigation and Resilience in Urban Areas*, in NATURE-BASED SOLUTIONS FOR FLOOD MITIGATION (Carla S. S. Ferreira et al. eds., 2022)

Projects under St. Paul's Wildlife Ponds RGP cannot result in losses of more than 0.5 acre of waters of the United States, unless multiple ponds are authorized under the permit, in which case no more than one acre of water can be lost cumulatively.²³⁵ Ponds must have irregular shorelines and have waters not deeper than six feet, dominated by water depths of four feet or less.²³⁶ Limits on the use of this permit include anything that will have even "minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands."²³⁷ There are additional limitations related to activities in a calcareous fen or tributaries, or that might cause impacts to anything on the National Register of Historic Places or rivers in the National Wild and Scenic River System.²³⁸

Another RGP, issued by the Rock Island District, covers ponds up to 10 acres in Iowa.²³⁹ These ponds are typically recreational, and used for hunting and fishing, but can be used for other purposes. No losses of more than two acres of waters of the U.S. through filling and inundation are permitted, and stream losses are limited to 1,000 linear feet.²⁴⁰ Ponds that impact jurisdictional springs, seeps, fens, or bogs are also ineligible for this RGP.²⁴¹

Habitat Improvement and Bank Stabilization

On February 20, 2023, the St. Paul District issued an RGP for bank stabilization and habitat improvement in Minnesota and Wisconsin.²⁴² This RGP covers bio-stabilization and habitat improvement efforts associated with stabilization that lead to permanent losses of no more than 0.1 acres of wetlands and temporary losses of no more than 0.5 acres of waters of the United States.²⁴³ The Corps may waive these threshold restriction amounts if the discharge will result in no more than minimal adverse environmental effects, and waivers may entail compensatory mitigation requirements.²⁴⁴

The RGP defines 'bio-stabilization' as "[n]ative material revetments that combine live and/or dead plant materials," such as live vegetated cuttings.²⁴⁵ Habitat improvement efforts permitted under the RGP must "provide a measurable functional lift to the aquatic resource" and are defined to encompass several types of NNBI, including:

²³⁵ U.S. ARMY CORPS OF ENG'RS, ST. PAUL DIST., WILDLIFE PONDS REGIONAL GENERAL PERMIT (2023), *supra* note 233, at 1.

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* at 5-8.

²³⁹ U.S. ARMY CORPS OF ENG'RS, ROCK ISLAND DIST., REGIONAL GENERAL PERMIT #42, FILL MATERIAL PLACED FOR PONDS UP TO 10-ACRES IN SIZE (2021), <https://www.mvr.usace.army.mil/Portals/48/docs/regulatory/2021%20NWPs/2021%20Regional%20Permits/2020-786%20RP%2042%20Final.pdf?ver=9jlbW6s-317nF6caOB7aYw%3d%3d>.

²⁴⁰ *Id.* at 1.

²⁴¹ *Id.* at 2.

²⁴² U.S. ARMY CORPS OF ENG'RS, ST. PAUL DIST., BANK STABILIZATION AND HABITAT IMPROVEMENT REGIONAL GENERAL PERMIT (2023), www.mvp.usace.army.mil/LinkClick.aspx?fileticket=ObSV-qK5-jQ%3d&portalid=57.

²⁴³ *Id.* at 2.

²⁴⁴ *Id.*

²⁴⁵ *Id.* at 14.

the construction of oyster habitat over unvegetated bottom in tidal waters; coral restoration or relocation activities; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; reestablishment of submerged aquatic vegetation in areas where those plant communities previously existed; [and the] re-establishment of tidal wetlands in tidal waters where those wetlands previously existed.²⁴⁶

Hard rock features may be incorporated into authorized bio-stabilization projects if they constitute a minor component of the design and are imperative to the integrity of the bio-stabilization activity.²⁴⁷ The RGP does, however, also authorize hard armoring projects for bank stabilization actions necessary for erosion control or prevention.²⁴⁸

The Rock Island District has also issued RGP-16 for bank stabilization activities in Illinois.²⁴⁹ RGP-16 primarily covers hard infrastructure but also allows permittees to fill waters of the United States using natural vegetation with proper grading and to engage in minimal grading and bank shaping for state-of-the-art natural vegetative stabilization methods like the willow post method.²⁵⁰ Permittees may not deposit any material produced as a result of grading or bank shaping into waters of the United States, including wetlands.²⁵¹

Federal Agricultural Conservation Practices

In April 2023, the Corps' Kansas City District reissued General Permit-40 (GP-40), which authorizes the general public to discharge dredged or fill material into waters of the United States in Kansas, including in Indian country, for specified agriculture conservation practices designed or approved by the Natural Resources Conservation Service (NRCS) where there will be minimal adverse impacts.²⁵² Authorized NRCS activities that may encompass NNBI include grassed waterways; wetland creation, enhancement, and restoration; and stream habitat, bed, bank, and shoreline stabilization, enhancement, and restoration.²⁵³ All activities authorized by GP-40 require written preconstruction notification to the Corps submitted by NRCS or a NRCS Certified Technical Service Provider.²⁵⁴

²⁴⁶ *Id.*

²⁴⁷ *Id.* at 2.

²⁴⁸ *Id.* at 2-3.

²⁴⁹ U.S. ARMY CORPS OF ENG'RS, ROCK ISLAND DIST., REGIONAL GENERAL PERMIT 16: BANK STABILIZATION ACTIVITIES IN THE STATE OF ILLINOIS (2020), mvr.usace.army.mil/Portals/48/docs/regulatory/Permits/RG-IL/IL%20RP%2016.pdf?ver=Acbnzv5cIIKw0WXEJEokbg%3d%3d.

²⁵⁰ *Id.* at 3, 5.

²⁵¹ *Id.* at 5.

²⁵² Though GP-40 states that it is a RGP, it is considered a SGP for the purposes of this report because it is applicable only within the state of Kansas. U.S. ARMY CORPS OF ENG'RS, KANS. CITY DIST., GP-40 (NATURAL RESOURCES CONSERVATION SERVICE – AGRICULTURAL CONSERVATION PRACTICES) 1 (2023), usace.contentdm.oclc.org/utills/getfile/collection/p16021coll15/id/2017.

²⁵³ *Id.*

²⁵⁴ *Id.* at 4.

The Rock Island District likewise authorizes federal agricultural conservation practices under its RGP 34.²⁵⁵ Under RGP 34, fill or dredged materials may be discharged into waters of the United States in Iowa for certain NRCS or Farm Service Administration (FSA) activities—including constructed wetlands and wetland creation, restoration, and enhancement—under established size thresholds.²⁵⁶ Permittees engaged in projects authorized by RGP 34 must notify the Rock Island District Engineer, and any RGP 34-authorized projects on tribal land require an individual 401 Water Quality Certification from the relevant tribe.²⁵⁷

Public Stormwater Systems

The St. Louis District's RGP 44 authorizes excavation in and the discharge of fill into waters of the United States in Missouri for work associated with the maintenance, repair, or inspection of existing public stormwater, sanitary, and combined sewer systems.²⁵⁸ Key for NNBI is RGP 44's inclusion of "[i]mprovements or maintenance to existing stormwater management features to improve water quality or add bio-retention, setbacks, rain gardens, [or] natural re-vegetation."²⁵⁹ To qualify for RGP 44, projects may not involve activities in forested wetland or migratory bird nesting areas, nor may permittees build new infrastructure in natural streams or wetland areas.²⁶⁰

State Programmatic General Permits. Programmatic general permits authorize governmental entities with regulatory programs comparable to the Corps' Section 10 or 404 programs to issue permits for enumerated activities that would otherwise require permits directly from Corps district engineers.²⁶¹ Corps districts issue PGPs to reduce administrative redundancies for permittees by merging the efforts of the Corps and other governmental programs into a single general permit.²⁶²

For state programmatic general permits (SPGPs), Corps districts issue the SPGP, and then state environmental agencies administer the permit.²⁶³ SPGPs apply within one state, and they may operate statewide or only within certain areas of the state.²⁶⁴

²⁵⁵ U.S. ARMY CORPS OF ENG'RS, ROCK ISLAND DIST., REGIONAL GENERAL PERMIT 34: CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP) STRUCTURES AND CONSERVATION RESERVE PROGRAM (CRP) STRUCTURES IN WATERS OF THE UNITED STATES IN IOWA 1 (2022), mvr.usace.army.mil/LinkClick.aspx?fileticket=MasQjLMcMEI%3d&portalid=48.

²⁵⁶ *Id.*

²⁵⁷ *Id.* at 1-2.

²⁵⁸ U.S. ARMY CORPS OF ENG'RS, ST. LOUIS DIST., REGIONAL GENERAL PERMIT 44, MAINTENANCE OF PUBLIC STORMWATER, SANITARY, AND COMBINED SEWER SYSTEMS (2023) (on file with the USACE).

²⁵⁹ *Id.* at 1.

²⁶⁰ *Id.* at 1, 2.

²⁶¹ See NAT'L ASS'N OF WETLAND MANAGERS, *supra* note 210.

²⁶² See *id.*; U.S. ARMY CORPS OF ENG'RS, *supra* note 202, at 2-3.

²⁶³ NAT'L ASS'N OF WETLAND MANAGERS, *supra* note 210; see e.g., U.S. ARMY CORPS OF ENG'RS, PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT-6 (PASPGP-6) (2021), nab.usace.army.mil/Portals/63/PASPGP-6_Permit_signed_20210625.pdf.

²⁶⁴ Compare U.S. ARMY CORPS OF ENG'RS, PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT-6 (PASPGP-6) (2021), nab.usace.army.mil/Portals/63/PASPGP-6_Permit_signed_20210625.pdf (covering

Several states, including states in the Mississippi River Basin, have SPGPs that may cover NNBI. Two examples of SPGPs, from Pennsylvania and Maryland, are described below.

It is important to note that beyond working with individual states to generate SPGPs authorizing NNBI, the Corps can make programmatic-level efforts to reduce administrative burdens on permittees seeking to implement NNBI, including coordinating permitting requirements. States, localities, and tribes can collaborate with the Corps to coordinate review of projects across multiple levels of government through Corps programs including PGPs, Special Area Management Plans (SAMPs), or the National Estuary Program (NEP).²⁶⁵ The Corps should use these programs to better align federal, state, and local permitting requirements, and in turn reduce project applicants' administrative burdens, for NNBI.

Pennsylvania State Programmatic General Permit-6 (PASPGP-6)

PASPGP-6 authorizes the discharge of dredged or filled materials into waters of the United States in Pennsylvania for a variety of minimally environmentally impactful activities, many of which can include NNBI.²⁶⁶ To qualify, projects must meet a number of threshold limitations. Most notably, the projects cannot result in (a) more than 0.5 permanently lost acres of waters of the United States, including jurisdictional wetlands, or (b) more than 1000 permanently lost linear feet of jurisdictional stream channels.²⁶⁷

However, there are no eligibility threshold limitations for (i) the restoration, enhancement, and/or establishment of tidal and non-tidal wetlands and riparian areas; (ii) the restoration and/or enhancement of nontidal streams and other non-tidal open waters; or (iii) the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided that those activities “result in net increases in aquatic resource functions and services.”²⁶⁸ PASPGP-6 accordingly covers not only any NNBI projects below the specified size thresholds, but also NNBI that meet the aforementioned ecological objectives without regard to their size. Additional size thresholds exist for notification requirements.²⁶⁹

Maryland State Programmatic General Permit-6 (MDSPGP-6)

all of Pennsylvania), *with* U.S. ARMY CORPS OF ENG'RS, NORFOLK DIST., STATE PROGRAMMATIC GENERAL PERMIT (SPGP) RESIDENTIAL, COMMERCIAL, INSTITUTIONAL AND RECREATIONAL DEVELOPMENT (RCIR) 22-SPGP-RCIR (2022), <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021col17/id/20217> (covering only areas of Virginia under the jurisdiction of the Norfolk District).

²⁶⁵ GEORGETOWN CLIMATE CTR., *supra* note 144, at 79.

²⁶⁶ PASPGP-6, *supra* note 263.

²⁶⁷ *Id.* at 5.

²⁶⁸ *Id.*

²⁶⁹ *Id.* at 11-24.

In 2021, the Baltimore District of USACE issued MDSPGP-6, which authorizes certain activities in waters of the United States throughout almost all of Maryland.²⁷⁰ Among the NNBI-focused projects authorized under MDSPGP-6 are shoreline and stream bank stabilization activities, and MDSPGP directs permittees engaged in these projects to generally prioritize nonstructural shoreline and bank stabilization practices over structural types of stabilization.²⁷¹ This mandate is explicit for non-tidal streambank stabilization activities, where non-structural or bioengineering bank stabilization measures including root wads, brush layering, and live stakes are listed as preferred over structural approaches.²⁷² Additional conditions, such as size limitations and other environmental impact mitigation measures, also apply to non-tidal stabilization.²⁷³

III. Considerations for Facilitating Efficient Environmental Review and Permitting

A. Diagnoses: Challenges and Impediments in the Permitting Regime

As noted previously, recent empirical research has attempted to illuminate the most common reasons for permitting and environmental review delays.²⁷⁴ Among scholars' conclusions was the realization that regulatory process requirements were not the key element leading to delay; instead, "factors outside the analytical requirements of NEPA contribute significantly to project delays."²⁷⁵ Delays were attributable to insufficient agency budgets, a dearth of qualified staff, staff turnover, delays receiving information from permit applicants, and the need to comply laws other than NEPA.²⁷⁶ Predicting which factors will matter and how they will impact permitting and environmental review timelines is a difficult task.

Inadequate data collection and tracking complicates the diagnosis. A 2002 study, which informed a NEPA Task Force Report on modernizing NEPA implementation to CEQ,²⁷⁷ found that "due to budget and staff constraints, most agencies' NEPA offices lack an ongoing national tracking system to monitor the numbers and types of NEPA documents that their agency is

²⁷⁰ Waters in the Philadelphia district (parts of the Eastern Shore) and presumably also in the Pittsburgh District (parts of Western Maryland) are not within the purview of MDSPGP-6. U.S. ARMY CORPS OF ENG'RS, BALT. DIST., MARYLAND STATE PROGRAMMATIC GENERAL PERMIT-6 (MDSPGP-6) 4 (2021), nab.usace.army.mil/Portals/63/MDSPGP-6%20Permit%20Final%20with%20Appendicies%2020210930.pdf [hereinafter MDSPGP-6].

²⁷¹ *Id.* at 55.

²⁷² *Id.* at 61.

²⁷³ *Id.* at 62.

²⁷⁴ John C. Ruple et al., *supra* note 73; Pleune, *supra* note 107.

²⁷⁵ Pleune, *supra* note 110, at 10899.

²⁷⁶ *Id.*

²⁷⁷ THE NEPA TASK FORCE REPORT TO THE COUNCIL ON ENVIRONMENTAL QUALITY, MODERNIZING NEPA IMPLEMENTATION (2003).

preparing or has completed.”²⁷⁸ That study also “found that agencies were unable to document their NEPA workload, calculate average preparation times or costs, show trends in these factors over time or respond objectively to assertions that excessive time or money is being spent on complying with NEPA’s requirements.”²⁷⁹

Despite the lack of insight and understanding in the research literature into exactly which factors determine how much time is needed for a project to pass through the permitting process (see Section II.B.4 and accompanying notes), we seek throughout this report to highlight cross-cutting opportunities for agencies to coordinate and collaborate within each level of review to facilitate timely review and support agencies’ selection of NNBI projects where beneficial. The focus is on ways each of the highlighted measures could be leveraged to address what have been identified—to greater or lesser extent—as common culprits of delay: insufficient resources, tardy submission of documents by permit applicants, the requirement to consult with other agencies, the need to comply with other laws, and the real or perceived threat of litigation.

B. Solutions to Help Facilitate Federal Permitting Processes

A lack of resources and capacity may be a significant barrier to efficient project delivery, especially when agencies charged with conducting environmental reviews and making permitting decisions face greater-than-normal workloads. Researchers have found that capacity involves both staff availability and expertise or institutional knowledge, which “includes confidence to make a decision—even if it results in litigation.”²⁸⁰ What are some ways to address inadequate budgets and a dearth of qualified staff? One way is for Congress to increase the size of the resourcing pie, either by authorizing agencies to find and accept funding from sources outside the federal appropriations process or by increasing direct federal funding for agencies, while explicitly designating funds to go towards permitting efforts. Additional measures include directing funds for specific personnel or providing ways to help with the review of environmental documents or training activities. Here, we discuss various existing policy mechanisms designed to achieve these objectives.

1. Enabling Non-federal Resources to Support Review and Permitting

Section 214 Agreements. Since 2000, Congress has provided a way for the USACE to accept non-federal funds from public entities, such as tribal, state, or municipal governments, as well as public utilities, natural gas companies, and railroad companies, for the purpose of facilitating

²⁷⁸ LUTHER, *supra* note 164, at 28 (citing Robert Smythe & Caroline Isber, *NEPA In The Agencies: 2002, A Report to the Natural Resources Council of America* (2002)). Smythe and Isber published similar findings in *NEPA In the Agencies: A Critique of Current Practices*, 5 ENVTL. PRAC. 290 (2003)).

²⁷⁹ LUTHER, *supra* note 164, at 28.

²⁸⁰ Pleune, *supra* note 110, at 10900 (noting that these efforts “to ‘bulletproof’ NEPA documents by addressing every possible issue ...produce[] unwieldy, bulky, time-consuming documents that unnecessarily consume time and agency resources.”).

permit evaluations.²⁸¹ These agreements, known as WRDA Section 214 Agreements for the section of the bill they first appeared in,²⁸² cover permits and permissions issued under Clean Water Act Section 404, Rivers and Harbors Act Section 10, and Marine Protection, Research, and Sanctuaries Act Section 103.²⁸³

Section 214 agreements can reduce the time needed to review a permit by facilitating relationships between applicants and the reviewing agency, supporting the addition of expertise that can improve efficiency, and promoting early engagement. A 2021 report by the Corps indicates a measurable improvement in review times for regional general permits and programmatic general permits with Section 214 agreements, compared to reviews of those permits without the agreements (Figure 3).²⁸⁴ Moreover, the Federal Improvement Steering Council's 2018 best practices report on environmental reviews and authorizations for infrastructure projects includes Section 214 agreements as an agency success story for the Corps.²⁸⁵ The report points to the establishment of a liaison within the Corps that can "develop expertise in the applicant's projects and processes, which translates to improved predictability, consistency, and efficiency during the permit review process."²⁸⁶

²⁸¹ 33 U.S.C. § 2352(a)(2) (2018 & Supp. 2023) (enacted Dec. 11, 2000). See also U.S. ARMY CORPS OF ENGRS, IMPLEMENTATION GUIDANCE FOR SECTION 1125 OF THE WATER RESOURCES DEVELOPMENT ACT (WRDA) OF 2016 – USE OF FUNDING AGREEMENTS WITHIN THE REGULATORY PROGRAM (Jan. 19, 2018), <https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll5/id/1306>.

²⁸² See U.S. Army Corps of Engr's, *Section 214 / Transportation Information*, <https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Section-214/>. See also note 294, *infra*, describing other provisions allowing the Corps to enter into similar agreements with non-federal entities to expedite permitting for transportation projects that receive funding from the U.S. Department of Transportation (USDOT).

²⁸³ USACE's Regulatory Program, which is primarily responsible for the regulation of dredged and/or fill material into U.S. waters, gets its authority from the Clean Water Act (CWA), Rivers and Harbors Act (RHA), and Marine Protection, Research, and Sanctuaries Act (MPRSA).²⁸³ As such, Section 214 Agreements encompass permits under CWA § 404, RHA § 10, and MPRSA § 103.²⁸³

²⁸⁴ U.S. Army Corps of Engr's, Corps Regulatory Program's FY 2021 Annual Report for Section 1006(2)(e) of WRRDA 2014.

²⁸⁵ Fed. Permitting Improvement Steering Council, Recommended Best Practices for Environmental Reviews and Authorizations for Infrastructure Projects for Fiscal Year 2018 29 (Dec. 2017), <https://www.permits.performance.gov/sites/permits.dot.gov/files/2019-10/fast-41fy-2018best-practices-report.pdf>.

²⁸⁶ *Id.*

Permit Timeframe Data: General Permits

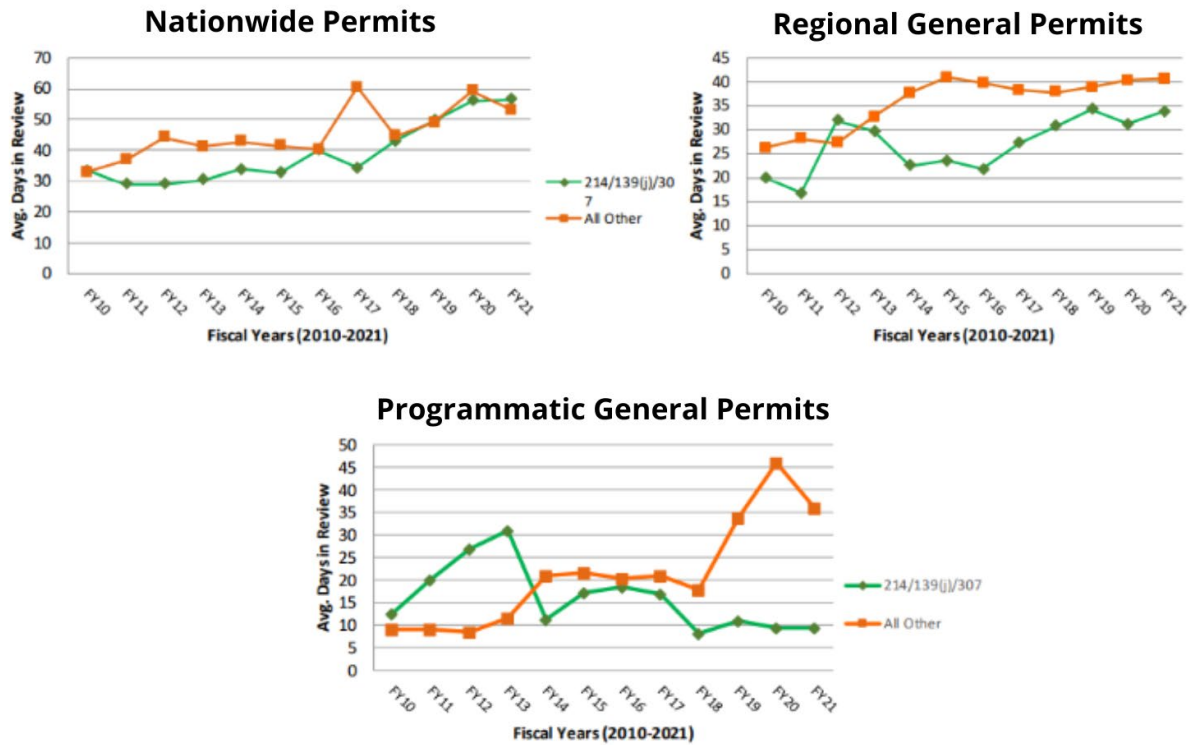


Figure 3. Permit Timeframe Data: General Permits.²⁸⁷

The funds associated with Section 214 agreements must come from the entity applying for the permit and may only be accepted after public comment is received.²⁸⁸ Corps guidance details the parameters and substance of what these agreements should include,²⁸⁹ and constrains the Corps to only accept funds for a project that will serve a public purpose.²⁹⁰ The timeline for evaluation of permits from applicants that do not provide funds through this mechanism should not be adversely affected.²⁹¹ In other words, a Corps district cannot favor a project with a Section 214 agreement over a project without one. Section 214 arrangements can give certain projects a boost, but not at the expense of advancing other projects. There are potential

²⁸⁷ U.S. Army Corps of Eng'rs, *supra* note 284, Appendix B, at 2 (reprinted figure adapted to remove USACE figure numbers).

²⁸⁸ 33 U.S.C. § 2352(a)(2) (2018 & Supp. 2023).

²⁸⁹ EC 1165-2-220. Appendix I covers Funding Agreements. Section I-5 is devoted to Section 214 of WRDA 2000.

²⁹⁰ EC 1165-2-220, Appendix I5(e).

²⁹¹ 33 U.S.C. § 2352(a)(3) (2018 & Supp. 2023).

conflicts of interest, or the appearance of a conflict, associated with these agreements.²⁹² Safeguards are in place to address some of these concerns, including requirements that a project with a Section 214 agreement adhere to the same procedures as other applications and for review of the evaluation of the permit by an official whose activities on the project are not funded by the permit applicant.²⁹³

According to the Corps' 2021 Annual Report on Section 214 Agreements, the most recent available as of this report, "the Corps Regulatory Program had 95 active Section 214, 139(j), and/or 307 funding agreements across 28 of our 38 Corps districts,"²⁹⁴ five more than the prior year, but in one fewer district.²⁹⁵ Accepted funds totaled \$14.21 million (with \$11.31 million of that expended), a \$1.57 million increase from the previous fiscal year.²⁹⁶

Some Section 214 agreements provide for funds to go directly from a permit applicant to a Corps employee's salary. For example, a 2020 agreement between the Corps and Commonwealth Edison (ComEd), a utility company, provided that ComEd would pay part of a Corps employee's salary and, in exchange, that employee was required to dedicate a commensurate amount of work time to ComEd's projects.²⁹⁷ In 2017, the GAO published a study of the Corps' use of this authority with respect to Clean Water Action Section 404 and Rivers and Harbors Act (RHA) Section 10 permits, as well as RHA Section 408 permissions.²⁹⁸ The study found that when the public entities initiated conversations, agreements took 9 -13 months from initiation to approval and were designed to last 3 - 4 years.²⁹⁹ The GAO report noted Corps district officials and funding entity representatives found that having a dedicated Corps employee working on the project approvals from the start helps to avoid mistakes early on in the planning process.³⁰⁰ The idea of a dedicated employee to help shepherd a permit through the process is one that has shown promise in a number of contexts and agencies.

²⁹² See ELI, Fast-Tracking Restoration, *supra* note 1, at 4 (noting that research did not uncover any studies evaluating whether safeguarding provisions are effectively ensuring impartiality).

²⁹³ *Id.* (citing 33 U.S.C. § 2352(b)(2), (c)).

²⁹⁴ U.S. Army Corps of Eng'rs, *supra* note 284, at 1. Other provisions allow the Corps to enter into similar agreements with non-federal entities to expedite permitting for transportation projects that receive funding from the USDOT. Section 139(j) and Section 307 agreements, named for their U.S. Code citation numbers, 23 U.S.C. § 139(j) and 49 U.S.C. § 307, are USDOT authorities that allow public entities receiving financial assistance from the agency to provide funds to other agencies to support activities that "directly and meaningfully contribute to expediting and improving permitting and review processes." Implementation Guidance (2018), *supra* note 281, at 2.

²⁹⁵ U.S. Army Corps of Eng'rs, Corps Regulatory Program's FY 2021 Annual Report for Section 1006(2)(e) of WRRDA 2014, *supra* note 284.

²⁹⁶ *Id.*

²⁹⁷ Memorandum of Agreement between Commonwealth Edison Company and United States Army Corps of Engineers, for the Funding of a Review Position (Oct. 7, 2019), (<https://usace.contentdm.oclc.org/utills/getfile/collection/p16021coll5/id/35609>). The employee was to dedicate 25% of their time to ComEd projects, and ComEd was to pay no more than \$50,000 annually. *Id.*

²⁹⁸ GEN. ACCOUNTABILITY OFF., CORP OF ENGINEERS: EXTENT AND STATUS OF EXPEDITED PERMIT PROCESSING FOR PUBLIC-UTILITY COMPANIES, NATURAL GAS COMPANIES, AND RAILROAD CARRIERS (Aug. 3, 2017), (<https://www.gao.gov/assets/gao-17-678r.pdf>).

²⁹⁹ *Id.* at 5.

³⁰⁰ *Id.* at 7.

Along the Mississippi River, few entities have entered into Section 214 agreements with the Corps to support environmental compliance, much less nature-based solutions. One notable exception is in Louisiana, where the state's CPRA has two Section 214 agreements, one for each of two planned large-scale projects: the Mid-Barataria and Mid-Breton Sediment Diversions (see Box 2). These diversions are construction projects designed to reestablish the natural deltaic processes of the Mississippi River and reduce land loss in coastal Louisiana by fostering the creation of wetlands.³⁰¹ CPRA's MOU with the Corps for the Mid-Barataria Sediment Diversion covered Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permits, as well as RHA Section 408 permissions.³⁰² The agreement estimated total payments of \$1.5 million by CPRA over the course of the 3-year term to be spent primarily on salaries, direct labor, and overhead for permit processing activities, including NEPA and Section 404 synchronization.³⁰³ While there is not a strict formula used to calculate how much an entity should commit to the Corps for permitting, CPRA provided to the Corp to support permitting costs less than 1% of the total project costs, which are projected to exceed \$2 billion. The Mid-Barataria diversion project permits were approved in a Record of Decision in 2022, approximately six and a half years after CPRA submitted the initial permit application in June 2016.³⁰⁴

It is worth noting that, while Section 214 benefits permit applicants broadly by supplementing available resources for permit review, the reliance on non-federal parties to provide those resources may limit the communities that are able to benefit, in effect giving a leg up to communities that are better able to fund negotiation and completion of an MOU or to support additional employees or other resources. Though the conflict-of-interest precautions described above, decisionmakers and applicants ought to be aware of the equity considerations inherent in these agreements.

Rivers and Harbors Act Section 408 Permissions. For activities that will alter an existing USACE civil works project, Rivers and Harbors Act Section 408 permissions are required. Civil works projects encompass flood risk management, navigation, recreation, infrastructure, and environmental stewardship. Depending on the type and scope of the project, natural and nature-based solutions may require Section 408 permissions, whether constructed from scratch or as alterations to existing projects. When deciding whether to grant a Section 408 request, the

³⁰¹ Coastal Protection and Restoration Authority, *Mid-Barataria and Mid-Breton Sediment Diversions: Overview & Frequently Asked Questions*, https://coastal.la.gov/wp-content/uploads/2018/03/OVERVIEW_FAQs_Mid-Barataria-and-Mid-Breton-Sediment-Diversions.pdf.

³⁰² Memorandum of Agreement between the Department of the Army and the State of Louisiana Coastal Protection and Restoration Authority for the Expedited Evaluation of Permit Applications for the Mid-Barataria Sediment Diversion, Louisiana Project, <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll5/id/35377>.

³⁰³ *Id.* at 2, 4.

³⁰⁴ Memorandum for Record on Pending Permit Decisions (ROD), CEMVN-RGE (File Number, MVN-2012-2806-EOO), https://www.mvn.usace.army.mil/Portals/56/docs/regulatory/permits/EIS/MBSD_Sect10-404_MFR.pdf?ver=sustwRiwSRH0Rt37oNaXLQ%3d%3d.

Corps needs to determine that the planned alteration to the existing civil works would not injure the public interest and will not impair the project's usefulness.³⁰⁵

While Section 214 Agreements are only available to public entities seeking one of three types of permits, public and private applicants that seek only RHA Section 408 permits can rely on another of the Corps' funding agreement authorities to expedite those requests. Since 2016, the Corps has been authorized to accept and spend funds from non-federal entities, including from public and private sources, to assist with conducting this review and evaluating a Section 408 request.³⁰⁶ These agreements allow the Secretary to "accept and expend funds received from non-Federal public or private entities to evaluate ... an alteration or permanent occupation or use of a work built by the United States."³⁰⁷ According to Corps guidance from 2018 on processing Section 408 requests, this "is the most flexible and streamlined authority for accepting funding for Section 408 reviews."³⁰⁸ Appendix I of Corps guidance lays out the parameters of these agreements.³⁰⁹ The funds can be used for "all activities related to the USACE review of a Section 408 request, including pre-coordination and review activities."³¹⁰

Human Resources: Direct Provision of Personnel and Capacity Building. Providing funds to support agency processing efforts is one way that permit applicants can try to shorten permitting timelines. Another is by increasing human capacity, either by adding more people or by increasing the skill and capacity of existing staff. Discussed in ELI's 2017 "Fast-Tracking Restoration" report,³¹¹ the Intergovernmental Personnel Act provides an opportunity for a time-limited (two years, with an opportunity to renew for another two years) transfer of a federal employee to a state, tribe, higher education institution, or "other" organization.³¹² The example cited in that report—the appointment of a National Marine Fisheries Service biologist to the Port of Tacoma to help with endangered species reviews—remains the only example of this

³⁰⁵ 33 U.S.C. § 408(a) (2018 & Supp. 2023).

³⁰⁶ *Id.* § 408(b)(3).

³⁰⁷ *Id.* "Work" does not include unimproved real estate that is part of a larger water resources development project. *Id.* § 408(d).

³⁰⁸ EC 1165-2-220(7)(g)(1). This Engineering Circular expired September 30, 2020. According to the Federal Register notice announcing the circular's publication, after two years the circular is converted to an Engineering Regulation, which does not expire. As of December 26, 2023, the Corps has not revised the circular or posted a regulation version to their website.

<https://www.federalregister.gov/documents/2018/09/13/2018-19926/policy-and-procedural-guidance-for-processing-requests-to-alter-us-army-corps-of-engineers-civil>.

³⁰⁹ EC 1165-2-220, Appendix I.

³¹⁰ EC 1165-2-220, App. I-3(d).

³¹¹ ELI, Fast-Tracking, *supra* note 1, at 8-10.

³¹² 5 U.S.C. §§ 3372, 3371(2)(c) (2018 & Supp. 2023). The provision is inapplicable to the following types of federal employees: "a noncareer appointee, limited term appointee, or limited emergency appointee ... in the Senior Executive Service and an employee in a position which has been excepted from the competitive service by reason of its confidential, policy-determining, policy-making, or policy-advocating character." *Id.* § 3372(a)(1). The term "other organization" is defined as an "organization representing member State or local governments," "an association of State or local public officials," "a nonprofit organization which has as one of its principal functions the offering of professional advisory, research, educational, or development services, or related services, to governments or universities concerned with public management," or "a federally funded research and development center." *Id.* § 3371(4); see also 5 C.F.R. § 334.102 (2023).

mechanism used for environmental compliance uncovered by ELI's research. Several state of Washington ports contributed funds that paid for the biologist's assignment. Given the promising, if anecdotal, response,³¹³ the transfer under the Intergovernmental Personnel Act appears to be an underutilized approach to increasing human capacity where needed.

Box 6. Third-Party Contractors and Environmental Reviews

Following enactment of the Fiscal Responsibility Act, agencies are now authorized to "prescribe procedures" that would allow for project sponsors to prepare their own environmental documents.³¹⁴ This extends possibilities for applicants beyond the ability to engage third-party contractors for the preparation of an EIS and provides them with a greater degree of control over the process. The agency has discretion to provide guidance and assist a sponsor with this preparation.³¹⁵ The Corps has typically relied on third-party contractors to prepare much of this documentation.³¹⁶ An MOU can facilitate this contractor process, as was done for the Mid-Barataria Sediment Diversion (see Box 2).

In addition to the potential for a third party to prepare environmental documents, EPA regulations governing the use of an EA or EIS provide that agencies can "engage[] and pay[] for the services of a third-party contractor."³¹⁷ The third-party's qualifications must be approved, and they "must be selected on the basis of ability and absence of any conflict of interest."³¹⁸ They are given guidance from the agency on the project's scope and various approaches to collecting, analyzing, and presenting the information.³¹⁹ And, ultimately, the agency's Responsible Official is vested with "sole authority" to approve an EA or EIS.³²⁰

Augmenting human skill, expertise, and experience can also result in shorter permitting timelines. If agency staff training is under-resourced, federal law authorizes non-profit organizations to assist by providing funding to support training (and associated costs) of federal employees at all agencies.³²¹ Subject to ethics rules,³²² non-profits can pay for both trainings, and for "contributions and awards incident to training in non-Government facilities, and payment of travel, subsistence, and other expenses incident to attendance at meetings."³²³ Since a federal employee cannot be paid twice for the same work, this training and associated expenses are deducted from the federal balance sheet.³²⁴ This can shift some of the funding burden off of the agency and onto a non-profit; however, the effectiveness of such an initiative may be

³¹³ ELI, Fast-Tracking Report, *supra* note 1, at 10 (noting that "staff concluded that "[p]ermit review of port-related projects [is] more efficient because of the regulatory and technical expertise of the USACE program managers and NOAA biologists").

³¹⁴ 42 U.S.C. § 4336a(f) (2018 & Supp. 2023).

³¹⁵ *Id.*; see also 40 C.F.R. § 1506.5(b) (2023).

³¹⁶ U.S. Army Corp of Engineers, Regulatory Guidance Letter No. 05-08 (Dec. 7, 2005).

³¹⁷ 40 C.F.R. § 6.303 (2023).

³¹⁸ *Id.* § 6.303(a).

³¹⁹ *Id.*

³²⁰ *Id.* The Responsible Official is defined as "the EPA official responsible for compliance with NEPA for individual proposed actions." 40 C.F.R. § 6.102(b)(9) (2023).

³²¹ 5 U.S.C. § 4111(a) (2018 & Supp. 2023).

³²² See ELI, Fast-Tracking Restoration, *supra* note 1, at 16 (citing 5 C.F.R. § 410.502(a)(2), (2)(ii)).

³²³ *Id.*

³²⁴ 5 U.S.C. § 4111(b) (2018 & Supp. 2023).

diminished when agencies are unable to provide adequate staff to participate in the trainings in the first instance.

2. *Federal Legislative Developments*

Two major pieces of federal legislation are reshaping the timelines and resource constraints associated with the permitting of infrastructure solutions: the Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act of 2022 (IRA).

Infrastructure Investment and Jobs Act (IIJA). The IIJA became law on November 15, 2021.³²⁵ Among other things, it codified “One Federal Decision,”³²⁶ and provided additional authority to use “protective features” to bolster climate resilience of natural infrastructure projects.³²⁷ We discuss the implications of these in turn below.

Streamlining Permitting: One Federal Document, One Federal Decision

One Federal Decision is a policy propagated under a Trump Administration executive order that seeks to consolidate the federal permitting process associated with “major” infrastructure projects, which are those that require multiple regulatory approvals by federal agencies.³²⁸ One Federal Decision sought to establish clear timelines for completing NEPA processes, in hope of reducing uncertainty in the procurement process, deflating overall project costs due to fewer built-in contingencies and, ultimately, improving project outcomes. The IIJA codifies the One Federal Decision process, establishing a 2-year time limit to complete NEPA review and permitting processes for major projects. The IIJA calls for the lead agency and any participating and cooperating agencies to conduct environmental reviews concurrently.³²⁹ An exception to

³²⁵ P.L. 117-58 (2021). Also referred to as the Bipartisan Infrastructure Law, it passed the Senate 69-30, and the House of Representatives with a slightly narrower margin, 221-201.

³²⁶ P.L. 117-58, § 11301 (codifying Exec. Order No. 13807, 82 Fed. Reg 40463 (Aug. 15, 2017)). One Federal Decision is codified at 23 U.S.C. § 139.

³²⁷ P.L. 117-58, §§ 11105, 11106, 11109 (enacted 2021).

³²⁸ Exec. Order No. 13807, 82 Fed. Reg 40463, 40464 (Aug. 15, 2017) (defining “major infrastructure project” as “an infrastructure project for which multiple authorizations by Federal agencies will be required to proceed with construction, the lead Federal agency has determined that it will prepare an environmental impact statement (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. 4321 et seq., and the project sponsor has identified the reasonable availability of funds sufficient to complete the project.”). The IIJA uses the term “major project,” defined as “a project for which (i) multiple permits, approvals, review, or studies are required under a Federal law other than [NEPA]; (ii) the project sponsor has identified the reasonable availability of funds sufficient to complete the project; the project is not a covered project (as defined in section 41001 of the Fast Act (43 U.S.C. 4370m)); and (iv) (I) the head of the lead agency has determined that an environmental impact statement is require; or (II) the head of the lead agency has determined that an environmental assessment is require, and the project sponsor requests that the project be treated as a major project.” 23 U.S.C. § 139(a)(7) (2018 & Supp. 2023).

³²⁹ 23 U.S.C. § 139(d)(7) (2018 & Supp. 2023).

this requirement is provided if doing so would impair a reviewing federal agency from conducting necessary analysis or carrying out its NEPA obligations.³³⁰

One of the primary goals of the policy is to minimize the number of review documents, placing everything into “a single environmental document.”³³¹ The single document can apply to both an individual project and a class or program of projects.³³² With the passage of the Fiscal Responsibility Act in 2023, the requirement that agencies work together to produce a “single environmental document” now extends to all environmental reviews conducted under NEPA.³³³

Similar to NEPA, One Federal Decision sets forth a coordination and scheduling plan, including timelines, for major projects. Timelines are to “average ... not more than 2 years” from the date a notice of intent to prepare an EIS is issued or when it is determined that an environmental assessment is required.³³⁴ Since not all projects are created equal, there are several factors that the lead agency must consider when setting a schedule, including, among other things, the size and complexity of the project and the sensitivity of natural and historic resources potentially affected.³³⁵

As discussed above, critical to the process is the early identification and resolution of possible conflicts. Once an issue is identified, any federal agency of jurisdiction, project sponsor, or state governor where the project is located, can request a resolution meeting, led by the lead agency, to be convened within three weeks.³³⁶ If there is no resolution on the matter within 30 days, the process repeats,³³⁷ and if there is still no resolution after 30 days, the issue is referred to CEQ, who will hold a resolution meeting.³³⁸ If the matter has not been resolved within 30 days of the CEQ-led meeting, the matter is referred directly to the President.³³⁹

IIJA Funding for Infrastructure and Resilience Needs

The IIJA also provides a vast infusion of financial resources to support existing and newly created programs in federal agencies, including in support of infrastructure and climate resilience. For example, the Act allocated more than \$5 billion to the USACE for disaster preparedness, flooding, coastal community management/restoration, storm risk management,

³³⁰ *Id.* § 139(d)(7)(A).

³³¹ *Id.* § 139(d)(8)(A). An “environmental document” includes environmental assessments, findings of no significant impact, notice of intent, an environmental impact statement, or record of decision. *Id.* § 139(a)(3).

³³² *Id.* § 139(b)(1).

³³³ P.L. 118-5, § 321 (enacted 2023).

³³⁴ 23 U.S.C. § 139(g)(1)(B)(iii) (2018 & Supp. 2023). Page limits are also at issue for these documents, calling for the primary substance of environmental impact statements, mainly the alternatives and impacts analysis, to be limited to 200 pages. However, the lead agency can set different page limits for individual projects. *Id.* § 139(n)(3).

³³⁵ *Id.* § 139(g)(1)(B)(ii).

³³⁶ *Id.* § 139(h)(6)(A). Likewise, the lead agency can convene a resolution meeting at any time. *Id.* § 139(h)(6)(A)(vi).

³³⁷ *Id.* § 139(h)(6)(B).

³³⁸ *Id.* § 139(h)(6)(C).

³³⁹ *Id.* § 139(h)(6)(B), (C).

water quality/aquatic ecosystems/watersheds, and navigable waterways.³⁴⁰ The U.S. Forest Service was allotted \$580 million for general restoration actions, water quality/aquatic ecosystems/watersheds, and fish passage/dam removal.³⁴¹ NNBI solutions can play important and effective roles in all of these areas to support infrastructure and climate resilience.

The IJA recognizes that climate change has increasingly posed structural risks to infrastructure projects and adds authority for “resiliency” actions³⁴² and the implementation of “protective features.”³⁴³ Protective features are described by the law to include “the use of natural infrastructure to mitigate the risk of recurring damage or the cost of future repair from extreme weather events, flooding, or other natural disasters.”³⁴⁴ For costs associated with improvements to federal-aid highways and bridges that are not part of the National Highway Performance Program, the act allows for the use of federal funds (up to 15 percent of the state’s National Highway Performance Program allocation) on “protective features” designed to lessen these risks.³⁴⁵

Funding is also available through the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program, for “resilience improvement[s] . . . that allow a project to better anticipate, prepare for, and adapt to changing conditions and to withstand and respond to disruptions; and to be better able to continue to serve the primary function of the project during and after weather events and natural disasters for the expected life of the project.”³⁴⁶

Inflation Reduction Act (IRA). Passed as a budget reconciliation bill,³⁴⁷ the IRA became law on August 16, 2022.³⁴⁸ Among many other things, the law includes provisions intended to assist various executive agencies to develop environmental review processes that are efficient,

³⁴⁰ GRACE EDINGER & PHOEBE HIGGINS, DELIVERING FASTER RESTORATION WITH BIPARTISAN INFRASTRUCTURE LAW (BIL) Funding 6 (2022), <https://www.policyinnovation.org/publications/delivering-faster-restoration>.

³⁴¹ *Id.*

³⁴² 23 U.S.C. § 119(b)(4) (2018 & Supp. 2023).

³⁴³ *Id.* § 119(k).

³⁴⁴ *Id.* § 119(k)(2)(J).

³⁴⁵ *Id.* § 119(k)(1). See also CONG. RSCH. SERV., SURFACE TRANSPORTATION AND CLIMATE CHANGE: PROVISIONS IN THE INFRASTRUCTURE INVESTMENT AND JOBS ACT (P.L. 117-58), IF11921 (Mar. 4, 2022), <https://crsreports.congress.gov/product/pdf/IF/IF11921/4>.

³⁴⁶ 23 U.S.C. § 176(a)(4) (2018 & Supp. 2023). The IJA also defines “resilience” as “a project with the ability to anticipate, prepare for, or adapt to conditions or withstand, respond to, or recover rapidly from disruptions, including the ability—(A) (i) to resist hazards or withstand impacts from weather events and natural disasters; or (ii) to reduce the magnitude or duration of impacts of a disruptive weather event or natural disaster on a project; and (B) to have the absorptive capacity, adaptive capacity, and recoverability to decrease project vulnerability to weather events or other natural disasters.” *Id.* § 101(24).

³⁴⁷ Reconciliation bills provide a way to consider tax, spending, and debt-related bills, and cannot be filibustered. See Megan S. Lynch, Cong. Rsch. Serv., The Budget Reconciliation Process: Timing of Legislative Action, RL30458 (updated Feb. 23, 2016), <https://crsreports.congress.gov/product/pdf/RL/RL30458>.

³⁴⁸ P.L. 117-169 (2022). The IRA was enacted in the Senate along party lines, 51-50, with Vice President Kamala Harris casting the deciding vote.

accurate, and timely, and that improve engagement, transparency, and accountability.³⁴⁹ Like the IIJA, the IRA includes provisions intended to help address the impacts of climate change, including through the use of NNBI.³⁵⁰

Generally, funding in the IRA is for personnel training, improving public engagement, technical assistance, equipment purchasing, and developing new tools to facilitate environmental reviews. Depending on the agency, the funds remain available through either the 2026 or 2031 fiscal year. Targeted agencies include the EPA, CEQ, the Federal Housing Authority, FERC, NOAA, the Departments of Interior and Energy, as well as the Federal Permitting Improvement Steering Council (FPISC) (see Table 4). The IRA does not direct any to support permitting by the Army Corps of Engineers, which may present a missed opportunity for advancing natural infrastructure projects.

Of particular interest, the IRA appropriates \$40 million to EPA, available until the end of September 2026, to help with various aspects of permitting.³⁵¹ The law identifies several ways that EPA can use the funds, including through technical improvements such as developing environmental data or information systems and purchasing new environmental analysis equipment.³⁵² Funds may likewise be used to improve transparency, accountability, and engagement in the permitting process by developing GIS and other tools, techniques, and guidance, as well as other stakeholder and community engagement strategies.³⁵³ The law addresses staffing constraints by providing for the expenditure of funds on hiring and training personnel, as well as procuring technical or scientific review services.³⁵⁴ Lastly, the money can help with developing additional programmatic documents.³⁵⁵

³⁴⁹ Jordan Perry, *Opportunities for Nature-Based Solutions in the Inflation Reduction Act*, ELI Vibrant Environment Blog (Oct. 19, 2022), <https://www.eli.org/vibrant-environment-blog/opportunities-nature-based-solutions-inflation-reduction-act>.

³⁵⁰ See e.g., 23 U.S.C. § 177 (2018 & Supp. 2023) (Neighborhood Access and Equity Grant Program) (identifying “natural infrastructure” as a solution for stormwater management and urban heat island hot spots). For a database that tracks climate change-related provisions of IRA implementation, see Sabin Center for Climate Change Law & Env’t Def. Fund, Inflation Reduction Act Tracker (last visited Dec. 11, 2023), <https://iratracker.org/>.

³⁵¹ Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 stat. 2077, § 60115. Additional information on select environmental provisions in the IRA is available from the Congressional Research Service. See CONG. RES. SERV., INFLATION REDUCTION ACT OF 2022: U.S. ENVIRONMENTAL PROTECTION AGENCY AND SELECTED OTHER ENVIRONMENTAL PROVISIONS, <https://crsreports.congress.gov/product/pdf/IN/IN11987>.

³⁵² Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 stat. 2077, § 60115

³⁵³ *Id.*

³⁵⁴ *Id.*

³⁵⁵ *Id.*

Table 4. Funds dedicated to permitting in the Inflation Reduction Act, organized by agency and suggested uses.³⁵⁶

Agency		EPA	CEQ	DOI	FERC	FHA	NOAA	DOE	FPISC
Suggested Uses	Hire and/or train personnel	X	X	X	X	Check for this	X	X	
	Develop programmatic documents	X	X	X	X			X	
	Perform stakeholder & community engagement	X	X	X	X		X	X	
	Procure technical or scientific services	X		X	X			X	
	Develop environmental data or information systems	X		X	X			X	
	Purchase new equipment for environmental analysis	X		X	X		X	X	
	Develop GIS and other analysis tools, techniques, and guidance	X							
Fund Expenditure Deadline	2026	2026	2026	2031	2026	2026	2031	2031	
IRA Section Number	60115	60402	50303	50302	60505	40003	50301	70007	

The IRA also provides a substantial increase to the Federal Permitting Improvement Steering Council Environmental Review Improvement Fund,³⁵⁷ directing to it \$350 million, which will remain available through the 2031 fiscal year.³⁵⁸ The Federal Permitting Improvement Steering Council (FPISC or “Council”) was created in 2015, with the goal of improving the outcomes in the environmental reviews and permitting of infrastructure projects.”³⁵⁹ The Council is chaired by the Permitting Council Executive Director, with additional deputy-secretary level members from

³⁵⁶ Table created by the Environmental Law Institute using data from the Inflation Reduction Act of 2022, P.L. 117-169.

³⁵⁷ 42 U.S.C. 4370m-8 (2018 & Supp. 2023).

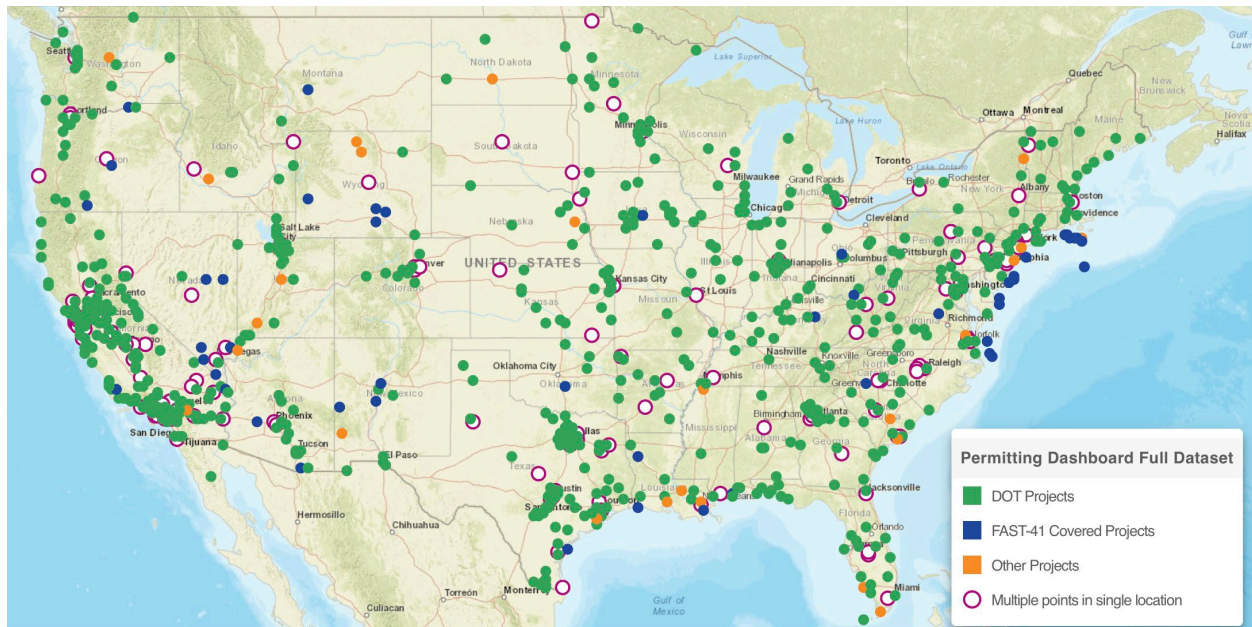
³⁵⁸ P.L. 117-169, § 70007.

³⁵⁹ The Council’s original name, the Federal Infrastructure Permitting Improvement Steering Council, reflected this focus. “Infrastructure” was excised from the title by § 70801(a)(3) of the IIJA. See 42 U.S.C. § 4370m(5) (2018 & Supp. 2023).

13 federal agencies (including the USACE),³⁶⁰ the OMB Director, and CEQ Chair.³⁶¹ The Biden Administration’s Nature-Based Solutions Roadmap calls for using this mechanism to the fullest extent possible to prioritize these projects.³⁶² The money authorized by the IRA is significant because the Council’s Executive Director has the authority to transfer funds to other federal agencies, as well as state, tribal, and local governments, to help with timely environmental reviews and authorizations for covered projects.³⁶³

The Federal Infrastructure Permitting Dashboard is a centralized data tool used by the FIPSC to track FAST-41 projects (see Box 7), some Department of Transportation projects, as well as other infrastructure projects (see Figure 4).³⁶⁴ Through December 2023, the dashboard included 18 non-irrigation-related water resources projects, which involve stormwater management, flood risk management, and restoration activities.³⁶⁵ Four of those are FAST-41 projects, and all but two are within the jurisdiction of the USACE.

Figure 4. Map depicting projects on the Federal Infrastructure Permitting Dashboard (data current as of May 2023). Source: <https://www.permits.performance.gov>.



³⁶⁰ Deputy secretary-level designees are included from the Secretaries of Agriculture, Army, Commerce, Interior, Energy, Transportation, Defense, Homeland Security, and Housing and Urban Development, the Administrator of the Environmental Protection Agency, and the Chairs of the Federal Energy Regulatory Commission, Nuclear Regulatory Commission, and the Advisory Council on Historic Preservation. PERMITTING COUNCIL LEADERSHIP, PERMITTING DASHBOARD: FEDERAL INFRASTRUCTURE PROJECTS <https://www.permits.performance.gov/fpsc-content/permitting-council-leadership> (last visited Dec. 7, 2023).

³⁶¹ *Id.*

³⁶² NATURE-BASED SOLUTIONS ROADMAP, *supra* note 3, at 20.

³⁶³ 42 U.S.C. 4370m-8(d)(3) (2018 & Supp. 2023).

³⁶⁴ For data on all the projects, see *Permitting Dashboard Data Portal* (last visited Dec. 22, 2023), <https://data.permits.performance.gov/>.

³⁶⁵ *Id.*

Box 7. FAST-41 Project Criteria

To qualify as a FAST-41 project, a project must fall within one of eighteen named sectors — which include water resource projects, carbon capture, and ports and waterways — and meet one of the four criteria below:

1. **Objective Criteria** – Project must be subject to NEPA review, be likely to require a total investment of more than \$200,000,000 and must not qualify for “abbreviated authorization or environmental review processes.”
2. **Discretionary Criteria** – Project must be subject to NEPA and be sufficiently large and complex that a majority of the Permitting Council believes that they would benefit from improved oversight and coordination. This can include projects requiring an EIS or authorization from two or more federal agencies.
3. **Tribal Sponsored Criteria** — Project must be within one of the eighteen sectors; subject to NEPA; sponsored by an Indian Tribe, an Alaska Native Corporation, a Native Hawaiian, the Department of Hawaiian Home Lands, or the Office of Hawaiian Affairs; and be located on land owned or under the jurisdiction of the sponsor.
4. **Carbon Capture Sector** — Project must be covered by an environmental review or a programmatic plan that was developed to facilitate the development of carbon dioxide pipelines. Project does not need to be subject to NEPA.³⁶⁶

Projects led by USDOT and water resources projects led by USACE are not eligible to be FAST-41 covered projects.³⁶⁷

The dashboard helps with coordination and transparency, but the Council has identified that additional and improved graphic tools, such as flow charts and checklists, could “promote efficiency and help ensure that applicants provide necessary information in a timely manner.”³⁶⁸ Flow charts and schematics setting out the processes for various permits, such as provided by the Washington State Governor’s Office for Regulatory Innovation and Assistance, may be also be helpful (Figure 5).

³⁶⁶ The Federal Permitting Improvement Steering Council (Permitting Council), FAST-41 Fact Sheet (2022), https://www.permits.performance.gov/sites/permits.dot.gov/files/2022-09/FPISC_090922.pdf.

³⁶⁷ 42 U.S.C. § 4730m(6)(B) (2018 & Supp. 2023) (excluding projects subject to 23 U.S.C. § 139 (environmental studies conducted by DOT) and 33 U.S.C. § 2348 (USACE water resource project studies)).

³⁶⁸ Pleune, *supra* note 110, at 10904 (citing Federal Permitting Improvement Steering Council, Recommended Best Practices for Environmental Reviews and Authorizations for Infrastructure Projects for Fiscal Year 2018, at 11 (2017)).

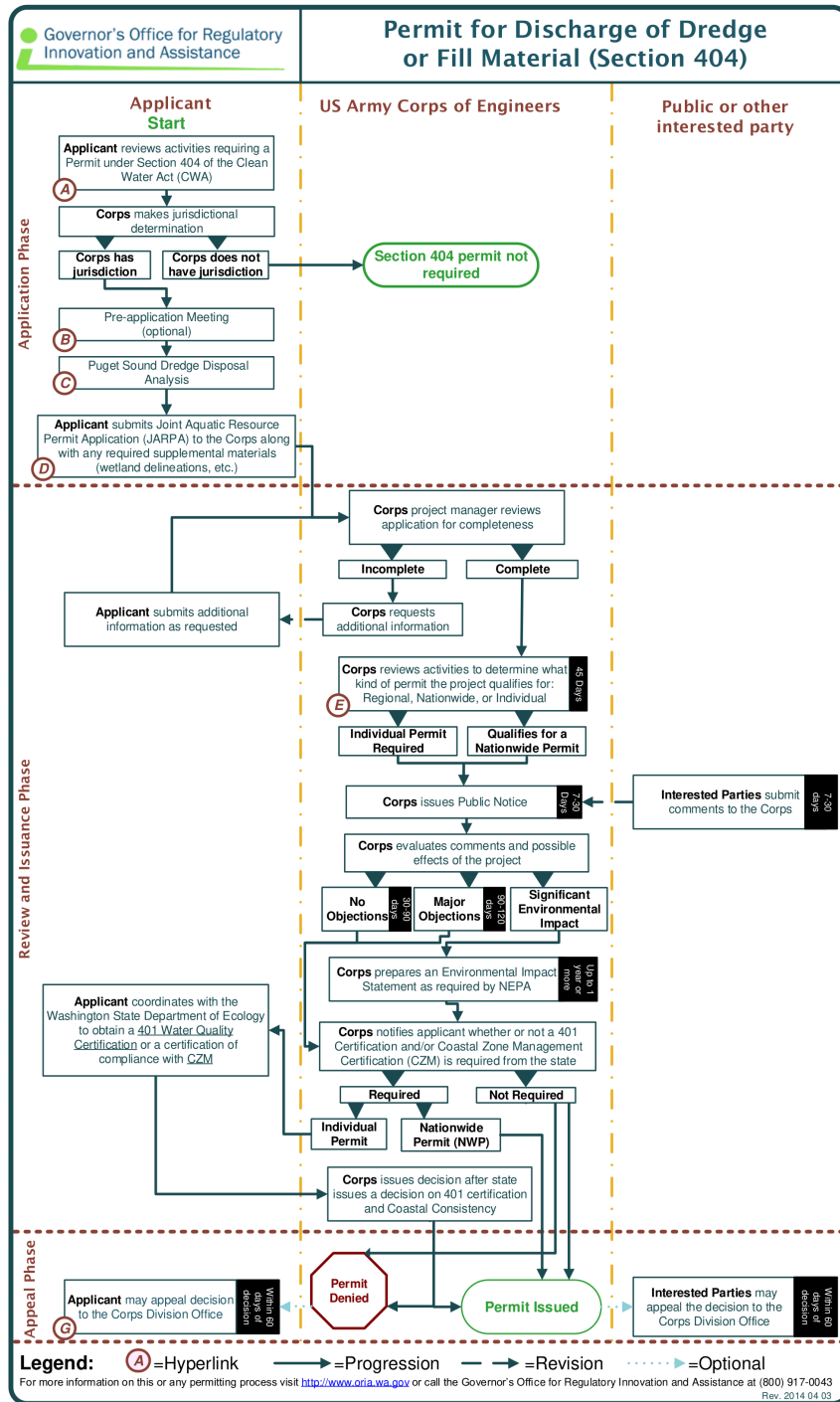


Figure 5. Sample schematic describing the process to acquire a Permit for Discharge of Dredge or Fill Material (Section 404) in Washington State.³⁶⁹

³⁶⁹ State of Washington Governor's Office for Regulatory Innovation and Assistance, Permit for Discharge of Dredge or Fill Material (Section 404), (last visited Dec. 20, 2023),

One other piece of federal legislation that may work to improve aspects of the permitting process and lend support to NNBI is the Water Resources Development Act of 2022.

Water Resources Development Act of 2022. In December 2022, Congress passed the Water Resources Development Act of 2022 (WRDA 2022), which included new provisions for USACE to improve the permitting process for water resources projects. WRDA 2022 facilitates the procedural elements of the development of water resources by directing the Secretary to review policies and procedures related to the use of easements and to identify potential opportunities for increased use of such easements in future water resources projects.³⁷⁰ Improvements to easement procedures, which have already shown promising results in the context of water resources development,³⁷¹ may expand the use of natural solutions on private land. WRDA 2022 also directed the Secretary of the Army (“the Secretary”) to expedite the completion of a predetermined list of projects and studies to the maximum extent possible.³⁷² This section may have the effect of accelerating the timelines of water resources projects, including any that employ natural solutions. In particular, one provision directs the Secretary to work with state and local government officials and develop a comprehensive Lower Mississippi River Basin restoration plan with a focus on flood and coastal storm risk management or aquatic ecosystem restoration. Notably, the section also prescribes that the plan should prioritize projects involving “natural features or nature-based features.”³⁷³

WRDA 2022 also increases the funding authorization for technical assistance, gives the Secretary discretion to waive fees for economically disadvantaged communities, and prioritizes assistance for inland and coastal life safety risks.³⁷⁴ This is especially pertinent given the occurrence of life-threatening floods along the Mississippi River, most recently in April 2023 when rapidly melting snowpack in Minnesota sent river levels in Wisconsin to near-record levels.³⁷⁵ The provision’s emphasis on coastal safety in conjunction with the authorization of fee waivers opens the door for natural solutions, such as floodplain improvements or setback levees, to reduce flooding risks that “disproportionately [affect] low-income communities.”³⁷⁶

Additionally, WRDA 2022 provides further funding opportunities to help non-federal interests satisfy costs associated with water resources projects. For designated projects related to land acquisition, easements, rights-of-way, and relocations, the law authorizes the Secretary to

https://www.oria.wa.gov/Portals/_oria/VersionedDocuments/Permit_Schematics/Permit-For-Discharge-Of-Dredge-Or-Fill-Materials-Section-404-Schematics.pdf.

³⁷⁰ WRDA 2022, § 8235.

³⁷¹ Todd Gartner, et al., *Natural Infrastructure*, World Resources Institute (Oct. 15, 2013),

<https://www.wri.org/research/natural-infrastructure#:~:text=Promising%20efforts%20across%20the%20country%20have%20secured%20natural,payments%20to%20private%20landowners%20for%20best%20management%20practices>.

³⁷² WRDA 2022, § 8397.

³⁷³ WRDA 2022, § 8145.

³⁷⁴ WRDA 2022, § 8119.

³⁷⁵ Scott McFetridge & Todd Richmond, *Mississippi River flooding prompts evacuations, sandbagging*, PBS (Apr. 26, 2023), <https://www.pbs.org/newshour/nation/mississippi-river-flooding-prompts-evacuations-sandbagging>.

³⁷⁶ Julie Hill-Gabriel, *Our Blueprint for a Resilient Lower Mississippi River*, Audubon (Mar. 22, 2022), <https://www.audubon.org/news/our-blueprint-resilient-lower-mississippi-river#:~:text=By%202030%2C%20river%20flood%20risk%20across%20the%20entire,of%20color%2C%20and%20Tribal%20Nations%20and%20Indigenous%20communities>.

provide the federal share of funds in advance to a non-federal interest.³⁷⁷ It also authorizes the use of funds provided by another federal agency to satisfy the non-federal share of the study or project cost as long as certain conditions are satisfied.³⁷⁸ Together, these provisions may advance nature-based solutions by lessening funding obstacles.

IV. Executive Branch Policy Support for Improved Permitting Processes and Natural and Nature-Based Infrastructure

The Biden Administration has issued numerous documents at the intersection of nature-based infrastructure and permitting, including executive orders, presidential memoranda, and guidance from various White House offices. Broadly, these declare support for accelerating nature-based infrastructure and provide guidance to federal executive agencies on how to do so.

A. Executive Actions

The Biden Administration has indicated that it seeks to prioritize both expediting review and permitting processes and the use of natural infrastructure to address pressing environmental problems such as climate change and species loss.

Modernizing Regulatory Review

On January 20, 2021, President Biden’s “Modernizing Regulatory Review” memorandum called for the evaluation of the processes and principles governing regulatory review in order to facilitate swift and effective action by federal agencies to support national priorities. The memorandum directed the director of the Office of Management and Budget (OMB)³⁷⁹ to consult with other federal agencies to produce a set of recommendations for “improving and modernizing” the regulatory review process.³⁸⁰ It also sought to promote the use of new scientific and economic information, accounting for “regulatory benefits that are difficult or impossible to quantify,” and to propose procedures to “ensure that regulatory initiatives appropriately benefit and do not inappropriately burden disadvantaged, vulnerable, or marginalized communities.”³⁸¹ On April 6, 2023, the administration issued an executive order, also titled “Modernizing Regulatory Review,” that further implemented the January 2021 memorandum.³⁸²

³⁷⁷ WRDA 2022, § 8148.

³⁷⁸ WRDA 2022, § 8149.

³⁷⁹ The Office of Management and Budget oversees the administrative and regulatory activities of agencies in the Executive Branch, among other responsibilities. According to the Congressional Research Service, OMB serves the following major functions: “budget formulation and execution; legislative coordination and clearance; executive orders and proclamations; information and regulatory affairs; and mission-support areas and management initiatives.” CONG. RSCH. SERV., OFFICE OF MANAGEMENT AND BUDGET (OMB): AN OVERVIEW, RS21665 (last updated Nov. 12, 2020).

³⁸⁰ Modernizing Regulatory Review, 86 Fed. Reg. 7223, 7223 (Jan. 26, 2021).

³⁸¹ *Id.* at 7223.

³⁸² Exec. Order No. 14094, Modernizing Regulatory Review, 88 Fed. Reg. 21879 (Apr. 11, 2023).

In coordination with the April 2023 executive order, OMB released draft guidance.³⁸³ The Office of Information and Regulatory Affairs (OIRA) released a new draft of Circular A-4 on regulatory analysis, and OMB released a draft of Circular 94, on the guidelines for discount rates for cost-benefit analysis of federal programs.³⁸⁴ Together, these documents are an effort to revise the federal administrative process, in particular the procedures that govern the review, revision, and approval of federal rules. One way they do that is by lowering the discount rate,³⁸⁵ which means that projects where health and social benefits that will accrue in the future, including nature-based solutions, will be easier to justify.

The implementation of nature-based solutions is also a policy priority of the administration, and it has directed federal agencies to consider and accelerate that implementation.

Executive Orders 14072 and 14082

On April 22, 2022, President Biden issued Executive Order 14072, “Strengthening the Nation’s Forests, Communities, and Local Economies.”³⁸⁶ This order is important for laying out policy priorities, calling for a key opportunities report, as well as guidance on evaluating ecosystem services. Ecosystem services refer to the benefits provided to humans by nature and natural systems, such as the ability of a wetland to absorb storm surges, reduce flooding impacts, and filter harmful toxins. Nature-based solutions capitalize on ecosystem services to address environmental challenges. Improving land, water, wildlife, and community resilience in the face of climate impacts through nature-based solutions, among other strategies, is one of the executive order’s primary policy goals.³⁸⁷

Executive Order 14072 details two ways the Biden Administration plans to better deploy nature-based solutions to generate broad benefits to “protect coasts and critical marine ecosystems, reduce flooding, moderate extreme heat, replenish groundwater sources, capture and store carbon dioxide, conserve biodiversity, and improve the productivity of agricultural and forest lands to produce food and fiber.”³⁸⁸ One is through a report, put together by CEQ, the Office of Science and Technology Policy, and the Assistant to the President and National Climate

³⁸³ Circular A-4 (Apr. 6, 2023), <https://www.whitehouse.gov/wp-content/uploads/2023/04/DraftCircularA-4.pdf> (draft form); Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, <https://www.whitehouse.gov/wp-content/uploads/2023/04/CircularA94.pdf>. A preamble to the Circular can be found at <https://www.whitehouse.gov/wp-content/uploads/2023/04/DraftCircularA-4Preamble.pdf>.

³⁸⁴ James M. McElfish, Jr., *Rulemaking Reset*, ELI Vibrant Environment Blog (Apr. 12, 2023), <https://www.eli.org/vibrant-environment-blog/rulemaking-reset>.

³⁸⁵ Discount rates are used to calculate the economic value of a project. Lowering the discount rate attributes a higher present value to future benefits, which promotes long-term investments.

³⁸⁶ Exec. Order No. 14072, Strengthening the Nation’s Forests, Communities, and Local Economies, 87 Fed. Reg. 24851 (Apr. 22, 2022).

³⁸⁷ *Id.*

³⁸⁸ *Id.* at 24854. Despite setting deadlines with respect to other directives in the executive order, there are no timelines or deadlines for when these nature-based tasks should be completed.

Advisor,³⁸⁹ on ways to better deploy nature-based infrastructure solutions through changes to policy, guidance, and programs.³⁹⁰ The other addresses a key gap in advancing natural infrastructure solutions, namely in how environmental and ecosystem benefits are quantified and weighed in the cost-benefit calculus required to advance a project. Specifically, the Order directs the OMB Director to issue guidance on ecosystem and environmental service valuation.

Issued in September 2022, Executive Order 14082 guides implementation of the IRA.³⁹¹ It explicitly acknowledges that the IRA will “harness nature-based solutions—including climate-smart agriculture and forestry—that deliver economic benefits for rural communities, Tribes, farmers, ranchers, and forest landowners,” among other goals.³⁹² It also sets out priorities for federal agencies, including to accelerate innovation to reduce greenhouse gas emissions, reduce energy costs and increase energy security, and advance environmental and climate justice.³⁹³ Despite the acknowledgement that the IRA will drive nature-based solutions, they are not explicitly included among these priorities.

B. Other Action Plans and Reports

The Biden Administration has also released the Biden-Harris Permitting Action Plan (BHPAP), with associated guidance, and a Nature-Based Solutions Roadmap and Resource Guide to complement and guide other legislative and executive action.

Biden-Harris Permitting Action Plan

The BHPAP, designed to leverage the funding and permitting directives in the IIJA, focuses on five elements: cross-agency coordination, clear goals and tracking, early outreach, improved responsiveness and technical assistance, and adequate resourcing.³⁹⁴ In March 2023, OMB, CEQ, and FPISC released guidance for the BHPAP, which indicates that the FPISC is intended to “serve as the primary center for permitting excellence.”³⁹⁵ The FPISC is directed to act as a convener to discuss strategies for improved coordination, provide advanced training and support for project managers, share lessons learned, and address bottlenecks in the permitting

³⁸⁹ In consultation with the Secretaries of Defense, Interior, Agriculture, Commerce, Housing and Urban Development, Homeland Security, and the Administrators of the EPA and Small Business Administration. *Id.* at 24854.

³⁹⁰ *Id.* at 24854.

³⁹¹ Exec. Order No. 14082, Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act, 87 Fed. Reg. 56861 (Sept. 16, 2022).

³⁹² *Id.* at 56861 (§ 1(h)).

³⁹³ *Id.* at 56861-62 (§ 2).

³⁹⁴ The Biden-Harris Permitting Action Plan to Rebuild America’s Infrastructure, Accelerate the Clean Energy Transition, Revitalize Communities, and Create Jobs (May 11, 2022), <https://www.whitehouse.gov/wp-content/uploads/2022/05/Biden-Harris-Permitting-Action-Plan.pdf>.

³⁹⁵ Implementation Guidance for the Biden-Harris Permitting Action Plan, M-23-14, 2 (Mar. 6, 2023), https://www.whitehouse.gov/wp-content/uploads/2023/03/M-23-14-Permitting-Action-Plan-Implementation-Guidance_OMB_FPISC_CEQ.pdf.

and environmental review process.³⁹⁶ When setting permitting timelines, the guidance provides that agencies should look to set “highly ambitious schedules” and, where appropriate, use a Chief Environmental Review and Permitting Officer to review and approve timelines.³⁹⁷

Agencies moreover should track all infrastructure-related projects reviews, even if they are not on the Dashboard,³⁹⁸ and are encouraged to “increas[e] the use and development of centralized and interoperable datasets and systems . . . to facilitate more robust, standardized environmental reviews.”³⁹⁹ The guidance also addresses resource constraints, directing agencies to “prioritize available resources to address workforce needs. . . identify and use any hiring, funding, and transfer authorities. . . including funding liaison positions, developing reimbursable agreements. . . and establish[ing] interagency protocols to facilitate interagency communication.”⁴⁰⁰

Nature-Based Solutions Roadmap

In November 2022, CEQ, along with the White House Office of Science and Technology Policy and the White House Domestic Climate Policy Office, released a report on opportunities to accelerate nature-based solutions.⁴⁰¹ The report was accompanied by a resource guide that included examples from federal agencies, as well as additional guidance, resource documents, tools, and technical assistance.⁴⁰² The opportunities identified, such as incorporating nature-based solutions into the alternatives in the NEPA process, leveraging programmatic reviews, and using general permits where possible, are consistent with this report. Other recommendations include increased training across the federal workforce to improve the visibility and understanding of nature-based solutions and their potential for meeting various legal requirements.⁴⁰³

³⁹⁶ *Id.* at 2.

³⁹⁷ *Id.* at 6.

³⁹⁸ *Id.* at 7.

³⁹⁹ *Id.* at 9.

⁴⁰⁰ *Id.*

⁴⁰¹ NATURE-BASED SOLUTIONS ROADMAP, *supra* note 3.

⁴⁰² WHITE HOUSE COUNCIL ON ENV'T QUALITY, WHITE HOUSE OFF. OF SCI. & TECH. POL'Y, WHITE HOUSE DOMESTIC CLIMATE POL'Y OFF., NATURE-BASED SOLUTIONS RESOURCE GUIDE (2022), <https://www.whitehouse.gov/wp-content/uploads/2022/11/Nature-Based-Solutions-Resource-Guide-2022.pdf>.

⁴⁰³ NATURE-BASED SOLUTIONS ROADMAP, *supra* note 3, at 30-31.

C. State Policy Initiatives in Support of NNBI

State governance regimes and permitting requirements for infrastructure projects vary widely across the states, but many have already begun to consider, adopt, and implement NNBI solutions to address environmental challenges.

Box 8. Cutting the Green Tape in California

California has a unique comprehensive initiative to accelerate large-scale environmental restoration projects. The Cutting the Green Tape initiative works to develop and implement improvements to the way California state agencies issue permits and administer grant programs.⁴⁰⁴ The program implements a 2020 report that offered 14 recommendations to enable restoration and stewardship projects across the state.⁴⁰⁵ Since the initiative began in 2021, key successes include the creation of a statutory exemption for habitat restoration projects (SERP), regardless of size;⁴⁰⁶ the establishment by CDFW of a restoration management permit;⁴⁰⁷ and a restoration consistency determination, which allows a project applicant who has obtained certain authorizations under the U.S. Endangered Species Act (ESA) to request that the CDFW Director find the federal documents consistent with the California ESA.⁴⁰⁸ All of these instruments help consolidate environmental authorizations into fewer actions.

One mechanism that states use to facilitate the permitting of nature-based projects are general permits for small, voluntary ecosystem restoration projects. Due to strict requirements on project types, sizes, and/or location, these general permits are not the most impactful mechanism to promote innovative projects with watershed-level climate or flood resilience benefits. For example, California and Michigan have general permits that allow voluntary ecosystem or habitat restoration projects to move forward with fewer permitting requirements, but only if they are at or under five acres in size.⁴⁰⁹ However, these general permits may offer a framework many states could build upon.

Other states have new legislative mandates to use permits to promote nature-based projects providing climate and flood resilience benefits. Maryland's Conservation Finance Act creates the Green and Blue

⁴⁰⁴ Cal. Dep't of Fish & Wildlife, *Cutting the Green Tape*, CA.GOV

<https://wildlife.ca.gov/Conservation/Cutting-Green-Tape#background> (last visited Dec. 22, 2023).

⁴⁰⁵ CAL. LANDSCAPE STEWARDSHIP NETWORK, CUTTING GREEN TAPE: REGULATORY EFFICIENCIES FOR A RESILIENT ENVIRONMENT (2020), https://calandscapestewardshipnetwork.org/sites/default/files/2020-12/CGT_FINAL_hires.pdf.

⁴⁰⁶ Cal. Dep't of Fish & Wildlife, *Statutory Exemption for Restoration Projects (SERP)*, <https://wildlife.ca.gov/Conservation/Cutting-Green-Tape/SERP> (last visited Dec. 22, 2023).

⁴⁰⁷ Cal. Dep't of Fish & Wildlife, *Restoration Management Permit (RMP)*, <https://wildlife.ca.gov/Conservation/Cutting-Green-Tape/RMP> (last visited Dec. 22, 2023).

⁴⁰⁸ Cal. Dep't of Fish & Wildlife, *Restoration Consistency Determination (CD)*, <https://wildlife.ca.gov/Conservation/Cutting-Green-Tape/CD> (last visited Dec. 22, 2023).

⁴⁰⁹ Cal. Dep't of Fish & Wildlife, *Habitat Restoration and Enhancement Act Approvals*, <https://wildlife.ca.gov/Conservation/Environmental-Review/HREA#56048908-resources> (last visited Dec. 22, 2023). The Habitat Restoration and Enhancement Act of 2014 established a permitting process with the state's Department of Fish and Wildlife for small-scale projects that meet the eligibility requirements for the State Water Resources Control Board's Amended Order for Clean Water Act Section 401 General

Infrastructure Commission,⁴¹⁰ which must make recommendations on “ways to prioritize green and blue infrastructure through the state permitting process.”⁴¹¹ An amendment to Wisconsin law in 2021 requires the Wisconsin Department of Natural Resources to “issue a general permit that authorizes wetland, stream, and floodplain restoration and management activities that will result in a net improvement in hydrologic connections, conditions, and functions.”⁴¹² The ultimate effect of these efforts is still uncertain as they are still in the planning and development phases, but effective implementation could provide high-impact nature-based solutions to flooding and other climate impacts.

V. Conclusions and Summary Recommendations

Natural and nature-based infrastructure solutions are increasingly being considered valid and implementable solutions to address environmental challenges, including those caused or exacerbated by climate change. Like other infrastructure projects, NNBI may require review by and regulatory authorization from federal, state, or local government entities. This report has attempted to illuminate the review and permitting requirements that frequently apply to proposed infrastructure, including NNBI. The relevant legal regimes are to some extent in flux, as recent years have seen changes to administrative and legislative authorities underpinning federal NEPA review and the timelines and agency processes. However, much of the touted reform has been minimal, as many changes have merely codified existing practice, while debate about the future of NEPA and regulatory permitting continues.

Researchers have sought to identify the causes—within the analytical requirements of NEPA’s environmental review mandate and other laws requiring regulatory approval, and beyond the four corners of the laws themselves—of delays experienced as projects undergo environmental review and permitting procedures. Among the contributing factors are inadequate financial and human resources, delays in provision of information to agencies from applicants, and conflicting or inconsistent requirements from other legal authorities. This report reviewed relevant regulatory processes, identified potential obstacles and resource constraints that may lead to delays, and offered suggestions to help NNBI proponents understand the regulatory landscape and how to navigate it effectively. It also highlighted recent developments that have produced unprecedented federal policy and financial support for the nation’s infrastructure, including for NNBI initiatives.

Water Quality Certification for Small Habitat Restoration Projects File # SB 12006GN, and that have the primary purpose of improving fish and wildlife habitat and that avoid or minimize incidental impacts. *Id.* Department of Environment, Great Lakes, and Energy, Minor Project Categories in the State of Michigan, at 54, <https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/Wetlands/Minor-Project-Categories.pdf?rev=c0e17657e1484b20afe47010a67a6999&hash=3C83AAE98832042FA83E28328C7C9842> (defining project categories that may be considered for accelerated processing).

⁴¹⁰ MD. CODE ANN., ENVIR. § 5-1402.

⁴¹¹ MD. CODE ANN., ENVIR. § 5-1403(b).

⁴¹² WIS. STAT. § 30.2065(1g)(a) (2023).

In summary, we offer the following recommendations to NNBI project proponents facing the need for environmental review and permitting:

- *Start early and work strategically.* Anticipate the information needed for environmental review of the proposed project, including scientific studies, stakeholder consultations and endorsements, and planning documents, and seek to document and deliver the information to the agency conducting the review as quickly and efficiently as possible.
- *Seek out and capitalize on collaborative policy mechanisms* designed to facilitate reduced review times, such as Section 214 agreements and MOU agreements, in advance.
- *Educate decision makers about the benefits and co-benefits of NNBI.* Though increasingly prominent in environmental policy and infrastructure circles, NNBI varies from grey infrastructure solutions in ways that may require decisionmakers to deviate from their disciplinary or experiential backgrounds. Helping agency personnel and other project proponents to understand the benefits and co-benefits of NNBI, as well as the trade-offs inherent in NNBI, can lead to smoother reviews of permit applications.
- *Improve data collection about all aspects of NNBI,* including the effects that NNBI has on the ground when implemented, the installation and maintenance costs, and the social, ecological, and health co-benefits that the specific NNBI solution provides to sponsoring and nearby communities.

We also recommend that federal and state agencies take the following actions:

- *Improve data collection and analysis around NEPA environmental review and other permitting processes* so that decisionmakers can understand what might be causing delays, as well as whether and how reforms are succeeding in reducing the requirements and timeline of the regulatory process.
- *Capitalize on Section 214 agreements and other legal authorities* that allow an agency tasked with issuing a permit to establish win-win relationships with other relevant federal agencies, permit applicants, and interested actors, such as by coordinating efforts through better communication and dedicated project leads, facilitating non-federal financial support for environmental reviews through authorized means, and supporting increased capacity through targeted training programs. Consider what can be done to make these cooperative instruments easier to negotiate and finalize to benefit both the agency and the project applicant.
- Agencies tasked with reviewing permit applications for infrastructure projects that include, or are likely to include in the future, NNBI elements should issue *specific guidance on how NNBI will be considered by the agency through the process*, whether as a standalone project or as part of a hybrid project. The process of tailoring such guidance may present an opportunity for agency personnel to become more familiar with NNBI and the attendant benefits and drawbacks of common NNBI solutions and their regional application, leading to reduced administrative timelines for prospective projects.

The federal environmental review and permitting processes, though time-consuming and complex to navigate, offer critical inflection points for enabling responsible environmental management and governance and an opportunity for advancing nature-based infrastructure projects and the benefits they offer in the face of climate change. The opportunities inherent in these processes include facilitating consultation and coordination among stakeholders, agencies, and local communities and the identification and cultivation of efficiencies.