

ARTICLES

Natural Resource Damages, Mitigation Banking, and the Watershed Approach

by Cynthia R. Harris and
James M. McElfish, Jr.

Cynthia R. Harris is a Staff Attorney at the Environmental Law Institute. James McElfish is a Senior Attorney at the Environmental Law Institute.

Summary:

This Article examines potential opportunities for state and tribal natural resource trustees to integrate restoration and compensation for Natural Resource Damages (NRD) with other ecological restoration programs and coordinating with mitigation banks and in-lieu fee (ILF) programs developed under Clean Water Act §404. The Oil Pollution Act and the Comprehensive Environmental Response, Compensation, and Liability Act provide for recovery of funds from responsible parties to restore natural resources damaged by the release of petroleum or hazardous substances. Programs under other laws are designed to offset *permitted* impacts to waters of the United States. Integrating §404 banking and ILF programs, the watershed approach, and conservation banking with the NRDA process offers three potential advantages: (1) It may reduce the time period until active restoration occurs; (2) it provides for potential efficiencies in evaluating ecosystem services, identifying restoration options, and implementing needed actions; and (3) it may produce a more regionally oriented outcome by identifying sites that can serve multiple ecosystem goals.

Spills of petroleum and releases of hazardous substances give rise to liability not only for cleanups, but also for damages to natural resources, including wetlands and waterways. Under the Oil Pollution Act (OPA)¹ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),² as well as under state laws, federal agencies, states, and tribes can act as trustees for recovery of damages and restoration of these resources.³

Natural resource trustees may be able to leverage existing watershed plans, mitigation banks, and in-lieu fee (ILF) programs associated with CWA §404 compensatory mitigation programs and state and tribal aquatic resource programs (regulatory and nonregulatory) to produce efficiencies and landscape-scale improvements in the resolution of NRD claims. Such approaches may also provide more diverse options for restoration, possibly facilitating settlements with potentially responsible parties (PRPs).

This Article examines opportunities to integrate restoration and compensation actions for natural resource damages (NRDs) with other ecological restoration programs—specifically, programs that use a “watershed approach” to compensate for authorized impacts to state and tribal waters and waters of the United States under the federal Clean Water Act (CWA)⁴ and state laws. Part I discusses the legal and policy framework for NRD and for compensatory mitigation and conservation banking. Part II reviews existing guidance on use of banking-type approaches in the NRD context, and provides examples of this approach in practice. Part III identifies challenges to integrating the two regimes. Part IV offers feedback from participants in these processes on the factors that will affect the integration of these approaches. Part V offers some conclusions.

Author's Note: This Article is adapted from a report prepared by the Environmental Law Institute (ELI) with funding support from the U.S. Environmental Protection Agency (EPA), Office of Wetlands, Oceans, and Watersheds Wetlands Division, under Wetlands Program Development Grant WD-83695901. ELI is solely responsible for its contents, and no official endorsement by EPA should be inferred. Additional ELI staff contributing to the report include Azi Akpan and Thien Chau.

1. 33 U.S.C. §§2701-2761, ELR STAT. OPA §§1001-7001.

2. 42 U.S.C. §§9601-9675, ELR STAT. CERCLA §§101-405.

3. NRD claims may also be brought under §311 of the CWA, but only federal and state agencies may be trustees. 33 U.S.C. §1321, ELR STAT. FWPCA §311.

4. 33 U.S.C. §§1251-1387, ELR STAT. FWPCA §§101-607.

I. Legal and Policy Framework

The processes for assessing NRDs are governed by regulations adopted by the federal trustee agencies. These procedures are detailed and complex. At the same time, the regulations defining compensatory mitigation for CWA §404 permitting of authorized impacts to waters of the United States also are detailed. Both of these regimes aim to identify effective ways to offset or replace injuries to natural resources and to the ecological services they provide.

A. NRDs

Both the OPA and CERCLA provide for recovery of funds to restore natural resources damaged by the release of petroleum or hazardous substances, and to compensate for the injury to the resources. Natural resources include “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources.” A natural resource is defined as “belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by” the United States, any state, an Indian tribe, a local government, or a foreign government.⁵ Responsibility for protecting these resources and directing their restoration lies with natural resource “trustees,” which usually include the U.S. Department of the Interior (DOI), National Oceanic and Atmospheric Administration (NOAA), state natural resource agencies, and affected Indian tribes (depending on the location and type of resource damaged by the release).⁶

Trustees are responsible for assessment of the injury to natural resources, and for planning and implementing restoration of the resources injured and services lost due to the release. Restoration actions are designed to return the damaged resources to “baseline” conditions and to compensate the public for interim losses to the damaged resources between the time of injury and full restoration. A natural resource damage assessment (NRDA) is carried out under regulations adopted by DOI or NOAA.⁷ Assessments conducted in accordance with the regulations are accorded a “rebuttable presumption” in a court action for recovery of damages from a PRP (see Table 1).⁸ The laws authorize trustees to recover expenses incurred by the trustees during the NRDA process.

NRDA regulations specify processes for quantifying damages and recovering funds for:

1. **Restoration:** Direct impacts to injured natural resources;
2. **Interim losses:** The reduction in services (ecological productivity, water quality, storm surge protec-

tion) those resources provide to humans or to other natural resources—specifically, recovery of ecological services’ economic value under CERCLA and compensatory restoration under the OPA; and

3. **Reasonable assessment costs:** Recovery of costs incurred by trustees for assessment.

NRDA’s scope encompasses injuries that remain after the U.S. Environmental Protection Agency (EPA) and/or a responsible party (RP)⁹ conducts the required removal and remedial actions, as well as interim loss of services from those resources. There are four phases of NRDA: (1) **pre-assessment**, or the initial screen to determine whether trustees should proceed with conducting an assessment; (2) **injury determination and quantification**; (3) **damage assessment**, which determines the costs of restoration, replacement, or acquisition of in-kind resources to restore natural resources to the baseline condition, plus compensation for interim losses (which may be based on lost value of the services, or the cost of projects that will compensate for interim losses); and finally (4) **restoration implementation**.

Figure 1. The Four Phases of NRDA



A lead agency is designated, and coordinates these processes with other affected agencies; these agencies are encouraged to work with the RP(s). Both the RPs and the public are entitled to notice and comment at various junctions.

The trustees identify restoration alternatives that can restore or replace the injured resources and services and calculate the costs for achieving these results. Under the OPA regulations, scaling of compensatory restoration is required for interim losses. Trustees determine the appropriate spatial and temporal extent of restoration actions, and generally may use one of three methods, ranked as follows: (1) resource-to-resource/service-to-service (which is typically used for ecological and resources losses); or (2) one of two valuation approaches—value-to-value or value-to-cost (most often used for recreational losses). In developing the restoration plan, trustees must evaluate various alterna-

5. 33 U.S.C. §2701(20); 42 U.S.C. §9601(16).

6. Tribes’ status as trustees may be based on injuries to natural resources on reservation and trust lands, as well as injuries to resources on lands and waters where tribes have reserved treaty rights (hunting, fishing, gathering).

7. 43 C.F.R. pt. 11 and 15 C.F.R. pt. 990, respectively. The DOI regulations apply to CERCLA and the NOAA regulations to both CERCLA and the OPA.

8. 42 U.S.C. §9607(f)(2)(C); 33 U.S.C. §2706(e)(2).

9. A responsible party is a PRP that has been found liable or agreed to liability for the discharge or release.

tives, including consideration of “natural recovery” (e.g., no active restoration measures taken).

More than one-half of the states have enacted statutes that authorize response actions and NRD recovery claims; these include claims under state laws for spills and releases, as well as authority to participate in federal NRDA claims.

Nearly all states have designated a specific agency or office to act as a trustee. State trustees can bring claims for injuries under CERCLA, the OPA, and the CWA, and can take advantage of the rebuttable presumption by following the federal regulations. Tribal trustees too have participated in numerous federal NRDA processes.

**Table 1. Rebuttable Presumption
Conferred by Statute and Regulations**

CERCLA	• §9607(f)(2)(C): Any determination or assessment of damages to natural resources in accordance with the regulations shall have the force and effect of a rebuttable presumption on behalf of the trustee in any administrative or judicial proceeding. • 43 C.F.R. §11.10: Assessment procedures are not mandatory, but must be used by trustees in order to obtain the rebuttable presumption. • Trustees are not required to follow the regulations; they are optional, but if they do, they obtain the benefit of a rebuttable presumption in any administrative or judicial proceeding under CERCLA or CWA §311.
OPA	• Trustees are not required to follow OPA NRDA regulations, but if they do, they receive the benefit of a “rebuttable presumption” for any determination or assessment of damages in accordance with the regulations. Section 2706(e)(2).
CWA	• Trustees are not required to follow the regulations; they are optional, but if they do, they obtain the benefit of a rebuttable presumption in any administrative or judicial proceeding under CERCLA or CWA §311.

I. DOI NRDA Regulations

DOI’s NRDA regulations¹⁰ and procedures¹¹ provide specific processes for carrying out an NRDA for releases of hazardous substances. DOI has also published an online primer describing the process for trustees and others.¹²

While this section describes the current DOI NRDA process, it is important to note that DOI is currently considering substantial revisions to its NRDA regulations to make them more like the NOAA regulations, and to focus them more directly on early restoration opportunities and possible use of “restoration banking.”¹³

The **pre-assessment phase** begins after the incident and includes a series of coordination actions. It occurs during the emergency response portion of an incident and includes the following steps: formal notification of trustees by the on-scene coordinator or remedial project manager, preliminary data collection and sampling primarily to preserve ephemeral information, and determination of the likelihood of a successful claim. In pre-assessment, the trustees conduct a pre-assessment screen to determine the suitability of performing an NRDA.

The pre-assessment screen includes the following activities: confirm jurisdiction and appropriateness of proceeding; collect and review readily available data (e.g., incident, substances involved, historic site uses, PRPs); identify possible pathways for exposure of natural resources; determine likelihood of injury; and ensure reasonable probability of making a successful claim.¹⁴

The **assessment phase** includes coordination and designating the lead agency, notifying PRPs and co-trustees, and developing the assessment plan.¹⁵ The trustees determine the type of assessment they will conduct. Under DOI rules, Type A is a simplified assessment, requiring minimal field observation. It applies only to releases in the Great Lakes and coastal and marine environments involving damages of \$100,000 or less.¹⁶ Type B is the assessment approach in general current usage. It requires extensive sampling and field observation. The plan must be made available to PRPs, other trustees, affected agencies, and the public for 30 or more days prior to proceeding with a Type B assessment.¹⁷

The assessment moves through a series of specific stages prescribed in the regulations.

Preliminary estimate. The trustees develop a preliminary estimate of damages. This includes a preliminary estimate of costs of restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the injured natural resources, with consideration of a range of possible alternative actions that would accomplish one or more of

10. 43 C.F.R. pt. 11 (revised in 2008).

11. Procedures include the BUREAU OF LAND MANAGEMENT (BLM) NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION HANDBOOK (2008) [hereinafter BLM HB], and DOI, POLICIES AND OPERATING PRINCIPLES FOR NATURAL RESOURCE RESTORATION ACTIVITIES (2004) [hereinafter DOI POP].

12. DOI NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION PROGRAM, NATURAL RESOURCE DAMAGE ASSESSMENT AND RESTORATION PRIMER FOR FEDERAL, STATE, AND TRIBAL TRUSTEES, FEDERAL ON-SCENE COORDINATORS, AND OTHERS INVOLVED IN PREPAREDNESS AND EMERGENCY RESPONSE ACTIVITIES UNDER THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN, CERCLA, OPA, AND OTHER AUTHORITIES [hereinafter DOI NRDA PRIMER], available at <https://www.doi.gov/restoration/primer>.

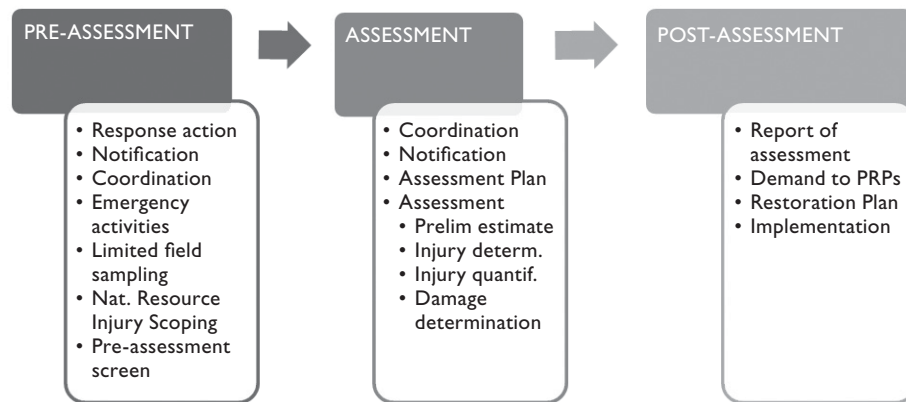
13. DOI, Natural Resource Damages for Hazardous Substances: Advance Notice of Proposed Rulemaking, 83 Fed. Reg. 43611-13 (Aug. 27, 2018). DOI sought comment on six issue areas: (1) simplification of the regulations (“arguably complicated, overly prescriptive, repetitive, and dense . . . when compared with [NOAA OPA regulations]”); (2) revision of procedures for small (Type A) spills; (3) early emphasis on restoration over damages; (4) procedures to encourage negotiated settlements and early restoration; (5) supporting advance restoration and restoration banking; and (6) integration with NEPA, including categorical exclusions. The comment period closed October 26, 2018).

14. 43 C.F.R. §11.23.

15. *Id.* §11.32.

16. If damages are in excess of \$100,000, trustees can limit the portion of the claim to \$100,000 in order to use Type A. Type A modeling is rarely used.

17. Plan modifications must also be made available for review for 30 or more calendar days, but trustees may proceed with implementation if the modification is not significant.

Figure 2. DOI Regulations: Three Phases of Carrying Out an NRDA

these options.¹⁸ It also includes a preliminary estimate of compensable value (interim losses) that should be consistent with the range of possible alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources under consideration. These are revised in subsequent stages.¹⁹

Injury determination. The trustees must determine that injury to natural resources has occurred as a result of a release. Injury means any “measurable adverse change.” An injured resource may be surface water, groundwater, air, geological, or biological resources. Trustees link the injury to the release/spill via a pathway analysis, and select testing and sampling methods from the available procedures that meet the requirements (“acceptance criteria”) for the specific resource type.²⁰

Injury quantification. The trustees then quantify the extent of the injury in terms of loss of services, including ecological services, performed by the injured resources.²¹ This requires reviewing the nature, scope, and severity of the injury. The approach identifies interdependent services to avoid double-counting. The baseline should reflect conditions that would have been expected at the assessment area had the discharge not occurred, taking into account both natural processes and those that are the result of human activities. The trustees measure the difference in post-incident services to quantify injury/degree of service reduction. They conduct a resource recoverability analysis to determine the time needed to recover with and without restoration action, and to determine whether restoration is technically feasible. Trustees may rely on studies, field/lab studies, and experience of managers.²²

Damage determination. The trustees prepare a restoration and compensation determination plan (RCDP); consider alternatives for restoration, rehabilitation, replacement, and/or acquisition of equivalent resources; and consider approved cost estimating and valuation method-

ologies. The trustees translate the injury into a damage determination expressed in dollars. The two main components of damages are the restoration of injured resources (including replacement where necessary) and compensation for interim losses of services.²³

Restoration involves a determination of the costs to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources and the services they provide. The trustees develop an RCDP and provide opportunity for public notice and comment.²⁴ The trustees

must develop and evaluate a reasonable variety of restoration alternatives, which could range from intensive action to restore to baseline as quickly as possible, to natural recovery with minimal management actions. Factors to consider in selecting the alternative to pursue include technical feasibility, cost benefit, and cost-effectiveness.²⁵

There is no regulatory preference for one category of restoration strategy over another, such as in-situ rehabilitation activities over replacement or acquisition of equivalent resources. However, federal trustees cannot select an alternative that requires acquisition of land for federal management unless they make a determination that restoration/rehabilitation/replacement is not possible. The trustees estimate project costs in developing the RCDP to monetize restoration costs.²⁶

Compensable value determines the value of services lost over the time it takes to restore resources and services to baseline. (This is “interim lost use” under the OPA.) Under the DOI CERCLA regulations, the compensable value can include the “economic value of lost services provided by the injured resources, including both public use and nonuse values such as existence and bequest values.” Alternatively, compensable value can be determined utilizing a “restoration cost approach, which measures the cost of implementing a project or projects that restore, replace, or acquire the equivalent of natural resource services lost pending restoration to baseline.”²⁷

In some cases, it may not be possible to restore an injured resource or lost service, but similar resources or services elsewhere that meet overall restoration goals and are acceptable to the public could be restored or enhanced. The Bureau of Land Management’s (BLM’s) *BLM Natural Resource Damage Assessment and Restoration Handbook* notes that there may be existing resource management plans (RMPs)

18. The preliminary estimate includes consideration of the ability of the resources to recover naturally. 43 C.F.R. §11.38(c).

19. *Id.* §11.38.

20. *Id.* §11.61.

21. *Id.* §11.70.

22. *Id.* §11.73.

23. *Id.* §11.80.

24. *Id.* §11.81.

25. *Id.* §11.82. The RCDP must include the “no action-natural recovery” alternative.

26. *Id.* §11.83.

27. *Id.* §11.83(c). Habitat equivalency analysis (HEA) is used in cases of habitat injury when the service of the injured area is ecologically equivalent to the service that will be provided by the replacement habitat. BLM HB, *supra* note 11, at 55.

regarding the same resources locally or regionally that identify desired actions to improve the condition of those resources. An RMP, for example, may identify areas that BLM regards as having high resource value or where BLM would like to acquire important habitat or further develop a recreation opportunity. A project or action identified in an RMP *that is not already funded* and that addresses resources or services injured by the release could be considered as an NRDA restoration alternative.²⁸

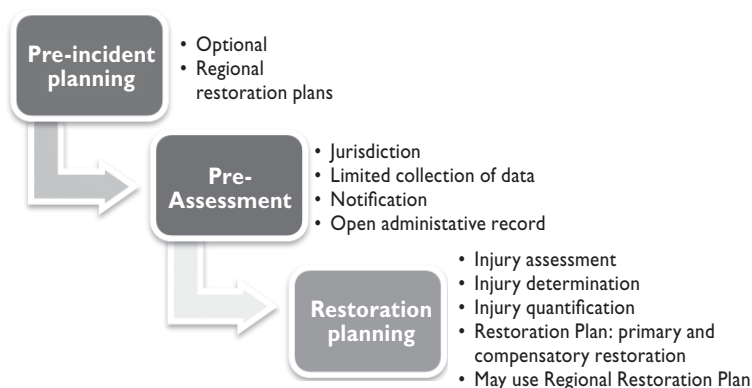
The **post-assessment phase** begins with the *report of assessment*, which includes the preliminary assessment of damages, the assessment plan, all documentation supporting the injury determination, quantification, and the damage determination, the RCDP, and all comments and responses to comments.²⁹ It becomes a basis for the trustees' claim to RPs. The RCDP should clearly identify and explain the relationship between each restoration alternative considered and the resource injuries or service losses the action would address. The plan should include provisions that establish both performance standards (materials and methods) and performance criteria (measures of success), and that describe the legal protections (e.g., easements, deed restrictions) developed for the completed restoration projects.³⁰

The restoration plan is based on the RCDP and explains how the restoration activities will be carried out with the funds recovered.³¹ DOI policies note that in an area where there have been multiple settlements with RPs for similar types of injury, or where such settlements are anticipated, a regional restoration plan may be developed and used as the basis of combining claims to maximize restoration success. An existing plan (e.g., regional, endangered species recovery, coastal zone management plan, tribal resource management plan) or portions of such a plan may be incorporated into a restoration plan.³²

2. NOAA NRDA Regulations

NOAA's regulations³³ and procedures³⁴ set a similar approach to NRDAs under the OPA. Under these regulations, trustees proceed through a phased process: pre-incident planning; pre-assessment; and restoration planning.

**Figure 3. NOAA Regulations:
Three Phases of Processing NRDAs**



Trustees may engage in **pre-incident planning**, including identifying natural resources and services potentially at risk of future spills, and compiling available baseline information on those resources.³⁵ Where practicable, incident-specific plan development is preferred; however, trustees may use regional restoration plans, which may be used to support a claim. This may consist of databases that identify, on a regional or watershed basis, or otherwise as appropriate, existing, planned, or proposed restoration alternatives for consideration in the context of specific incidents. Plans or projects developed on a regional basis (e.g., ecosystem, landscape, watershed, or any other basis) are appropriate so long as natural resources and/or services comparable to those expected to be injured by an incident are addressed in the plans.³⁶ These are recognized for impacts of small incidents, particularly when multiple spills may have cumulative impacts.

In the **pre-assessment** phase, the trustees make the threshold decision whether to pursue restoration. Emergency restoration is permitted prior to undertaking NRDA processes if action is needed, feasible, likely to minimize or prevent additional injury, and costs are reasonable. During pre-assessment, trustees will determine jurisdiction and probable liability. In determining whether to conduct restoration planning, trustees consider whether injuries have resulted or are likely to result from the incident, whether response actions are insufficient, and whether feasible restoration actions exist. If pursuing restoration, the trustees issue the notice of intent to conduct restoration planning, inviting the PRPs to participate, and establish the administrative record.

The **restoration planning** phase includes selecting candidate injuries for analysis, designing assessment studies, and performing the injury assessment. Injury quantification determines the severity, spatial, and temporal extent of injuries relative to baseline. Three metrics may be used: (1) adverse change in the resource; (2) adverse change in the resource with translation to reduction in services provided; or (3) direct estimate of the reduction in services.

28. BLM HB, *supra* note 11, at 59-60.

29. 43 C.F.R. §11.90.

30. DOI POP, *supra* note 11, at 3.

31. 43 C.F.R. §11.93.

32. DOI POP, *supra* note 11, at 3.

33. 15 C.F.R. pt. 990.

34. Policy/guidelines:

- NOAA DAMAGE ASSESSMENT AND RESTORATION PROGRAM, INJURY ASSESSMENT: GUIDANCE DOCUMENT FOR NATURAL RESOURCE DAMAGE ASSESSMENT UNDER THE OIL POLLUTION ACT OF 1990 (1996)
- NOAA, PRIMARY RESTORATION: GUIDANCE DOCUMENT FOR NATURAL RESOURCE DAMAGE ASSESSMENT UNDER THE OIL POLLUTION ACT OF 1990 (1996) [hereinafter NOAA G-PR]
- NOAA, RESTORATION PLANNING: GUIDANCE DOCUMENT FOR NATURAL RESOURCE DAMAGE ASSESSMENT UNDER THE OIL POLLUTION ACT OF 1990 (1996) [hereinafter NOAA G-RP]

35. 15 C.F.R. §990.15.

36. NOAA G-RP, *supra* note 34.

Trustees next develop the **restoration plan**, which supports the claim for damages. Trustees develop and evaluate a range of alternative restoration actions, which must include consideration of natural recovery (no action). Each alternative has two components: determination of primary restoration to return resources/services to the baseline, and compensatory restoration to compensate for interim losses (losses in services pending return to baseline). Trustees must identify a preferred alternative or alternatives.³⁷

In considering primary restoration, trustees consider actions that would be effective in achieving or accelerating a restoration of key natural resources and services to baseline (e.g., replacing essential species, habitats, or services that would facilitate the replacement of other, dependent natural resource or service components).³⁸

In considering compensatory restoration, trustees must scale the restoration to the interim loss. Trustees must first consider actions providing services of the same type and quality and comparable values to those ecological services injured and unavailable to the public in the interim between the release and the completion of primary restoration.³⁹

The preferred approach is the resource-to-resource or service-to-service method. It is based on a virtual “trade” in the resources or services lost with those being provided elsewhere. Habitat equivalency analysis (HEA) is the standard approach to this trade-off calculation. Trustees evaluate restoration alternatives that will provide the same amount of services to the public to replace the services that were lost. Unlike valuation methods,⁴⁰ service-to-service scaling does not require quantification of lost services in monetary terms. Trustees may, alternatively, use valuation scaling methods.⁴¹

Using value-to-value methods, trustees compare the interim loss in the *value* of resources/services to the equivalent value to the public of replacement resources/services. Or trustees may use value-to-cost methods, estimating the cost of actions to produce equivalent values.⁴²

Criteria for selecting among alternatives include the “extent to which each alternative benefits more than one natural resource and/or service.”⁴³ Under the regulations, trustees must select the most cost effective among equally preferable alternatives. Factors include: (1) cost to carry out the alternative; (2) extent to which each alternative is expected to meet the trustees’ goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses; (3) likeli-

hood of success of each alternative; (4) extent to which each alternative will prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative; (5) extent to which each alternative benefits more than one natural resource and/or service; and (6) effect of each alternative on public health and safety.⁴⁴ All service quantities/values are discounted to the date the demand is presented.

The trustees prepare a draft restoration plan (DRP) for public review and comment.⁴⁵ The National Environmental Policy Act (NEPA)⁴⁶ and Council on Environmental Quality (CEQ) regulations apply to restoration actions by federal trustees. NEPA alternatives analysis, public notice and comment, and mitigation requirements apply when federal trustees propose to take restoration actions that may significantly affect the quality of the human environment. Federal trustees should develop a DRP that will also serve as an environmental assessment (EA) or environmental impact statement (EIS) under NEPA. OPA regulations were specifically designed to complement and work with the NEPA planning process, so trustees can combine the planning processes.⁴⁷

If a regional restoration plan or existing restoration project is proposed for use, federal trustees may be able to tier the NEPA analysis to an existing EA or EIS prepared for that plan or project, thus simplifying the environmental review.⁴⁸ Trustees may consider using a regional restoration plan or existing restoration project where such a plan or project is determined to be the preferred alternative among a range of feasible restoration alternatives.⁴⁹

Trustees may also select a component of a regional restoration plan or an existing restoration project as the preferred alternative, provided that the plan or project: (1) was developed with public review and comment; (2) will adequately compensate the environment and public for injuries; (3) addresses, and is currently relevant to, the same or comparable natural resources and services; and (4) allows for reasonable scaling relative to the incident.⁵⁰ If the scale is greater than that of the compensation required, trustees may only request funding from the RPs equivalent to the scale of the restoration determined to be appropriate for the incident. Trustees may pool such partial recoveries until adequate funding is available to successfully implement the existing plan or project.⁵¹

Trustees issue the notice of availability of the DRP and provide for public review. Then they prepare the final restoration plan (FRP) and the FRP record.⁵² Restora-

37. 15 C.F.R. §990.53(a). Each restoration alternative consists of primary and/or compensatory restoration components that address one or more specific injury or injuries associated with the incident.

38. *Id.* §990.53.

39. *Id.* §990.53(c)(2).

40. NOAA, DAMAGE ASSESSMENT, REMEDIATION, AND RESTORATION PROGRAM, *Valuation*, <https://darrp.noaa.gov/economics/valuation> (last visited Oct. 8, 2018).

41. Carol A. Jones & Lisa DiPinto, *The Role of Ecosystem Services in USA Natural Resource Liability Litigation*, 29 ECOSYSTEM SERVICES 333-51 (2018). The resource-to-resource/service-to-service approach is most closely analogous to §404 compensatory mitigation.

42. *Id.*

43. 15 C.F.R. §990.54.

44. NOAA G-PR, *supra* note 34.

45. 15 C.F.R. §990.55.

46. 42 U.S.C. §§4321-4370h, ELR STAT. NEPA §§2-209.

47. NOAA G-PR, *supra* note 34.

48. 15 C.F.R. §990.23 (CEQ regulations at 40 C.F.R. §§1502.20, 1508.28 describe tiering).

49. *Id.* §990.56.

50. NOAA G-PR, *supra* note 34.

51. *Id.*

52. Trustees may consider a regional restoration plan or existing restoration projects as a restoration alternative. This may be selected, so long as it is preferred under the selection criteria for restoration alternatives and undergoes/has undergone review and comment. They prepare a notice of intent to use a

tion implementation is similar to the process described in the DOI regulations. The trustees prepare and issue the demand to the PRP(s), open the restoration account, and implement the plan in compliance with applicable laws.

B. CWA Compensatory Mitigation for Impacts to Aquatic Resources⁵³

The CWA's §404 program, regulating dredge and fill activities, supports a robust compensatory mitigation process to address *authorized impacts* to the waters of the United States. The Act is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 404 of the Act regulates discharges of "dredged or fill material" to the waters of the United States, including wetlands and other aquatic resources. Dischargers must apply to the U.S. Army Corps of Engineers (the Corps) for a permit authorizing any such discharge.⁵⁴ Permitting is carried out by the Corps' 38 district offices.

Although the Corps is the permitting authority, EPA established the environmental guidelines (§404(b)(1) guidelines) that the Corps uses to evaluate the impact of proposed projects. EPA also has authority under §404(c) to veto permits approved by the Corps. Other agencies, including the U.S. Fish and Wildlife Service (FWS), NOAA, and the Natural Resources Conservation Service, have the opportunity to review and comment upon Corps permits, and EPA, FWS, and NOAA may "elevate" disputes over specific proposed permits and policies under §404(q). The CWA further requires §404 permits to be in accordance with state water quality standards under §401, which gives states an opportunity to assert requirements supported in state law and regulation.⁵⁵

The §404(b)(1) guidelines support the national policy goal of no net loss of wetlands values and functions and provide for a mitigation "sequence" derived from CEQ NEPA regulations, and further supported by the Compensatory Mitigation Rule described below. The mitigation sequence is:

- Avoid impacts;
- Minimize impacts that cannot be avoided;
- Compensate for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required.

Compensatory mitigation to offset permitted impacts to waters of the United States is conducted in accordance with the Compensatory Mitigation Rule issued by the Corps and EPA in 2008.⁵⁶ In December 2003, the U.S. Congress required the U.S. Department of the Army (DA) to promulgate regulations providing fair and efficient standards and procedures for wetland and stream mitigation. The Corps and EPA elected to develop the regulations together, and in 2008 published final regulations. The Compensatory Mitigation Rule standardized requirements for the various compensatory mitigation mechanisms (mitigation banks, ILFs, and permittee-responsible mitigation) to achieve comparable outcomes and promote more environmentally protective and durable compensatory mitigation projects.⁵⁷ The rule formalized and expanded requirements based on decades of previous practice.

After a proposed permitted action has been designed to avoid and minimize potential impacts, compensatory mitigation may be required to offset remaining unavoidable impacts. Compensatory mitigation consists of the restoration (reestablishment or rehabilitation), establishment, enhancement, or, in certain circumstances, preservation of aquatic resources⁵⁸—typically within the same "watershed" as the permitted impacts. The rule requires the Corps to use a "watershed approach" in determining the appropriate compensatory mitigation, to the extent appropriate and practicable.⁵⁹ The watershed approach means "an analytical process for making compensatory mitigation decisions that support the sustainability or improvement of aquatic resources in a watershed."⁶⁰

regional restoration plan or existing restoration project, and make it publicly available. 15 C.F.R. §990.56(3). When using a regional restoration plan or existing restoration project, the demand will invite the RPs to implement a component, or advance the trustees' estimate of damages. *Id.* §990.62.

53. Portions of this section are adapted from JAMES McELFISH, NATIONAL CO-OPERATIVE HIGHWAY RESEARCH PROGRAM, LEGAL RESEARCH DIGEST NO. 75, LEGAL REQUIREMENTS FOR STATE TRANSPORTATION AGENCY PARTICIPATION IN CONSERVATION PLANS (2017), prepared by the Environmental Law Institute.

54. 33 U.S.C. §1344. This discussion also includes permitting under §10 of the Rivers and Harbors Act.

55. *Id.* §1341.

56. 73 Fed. Reg. 19594 (Apr. 10, 2008).

57. ILF programs collect funds from a permittee that has a compensatory mitigation obligation, and use the collected funds to construct and maintain the required compensation, accounted for as mitigation "credits." ILFs must be operated by a governmental or nonprofit entity. Mitigation banks are sites where advance mitigation is conducted and the resulting credits sold to permittees with compensatory mitigation obligations. Banks may be operated by governments, nonprofits, or for-profit entities. In either case, the bank or ILF must meet regulatory standards for its establishment and operation, including its geographic service area, and each credit sale must be approved by the relevant Corps district with the advice of the interagency review team (IRT). 33 C.F.R. §332.2; 40 C.F.R. §230.92.

58. 33 C.F.R. §332.2; 40 C.F.R. §230.92.

59. 33 C.F.R. §332.3(c); 40 C.F.R. §230.93(c).

60. 33 C.F.R. §332.2; 40 C.F.R. §230.92.

Compensation Methods

The Compensatory Mitigation Rule recognizes four compensation methods^a:

- *Restoration* means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. Restoration is divided into two categories: reestablishment and rehabilitation.
- *Reestablishment* means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. It results in a gain in aquatic resource area and functions.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource *function*, but does not result in a gain in aquatic resource *area*.

Establishment (creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

^a33 C.F.R. §332.2; 40 C.F.R. §230.92.

The Compensatory Mitigation Rule improved the planning, implementation, and long-term management of compensatory mitigation. It standardized requirements for compensatory mitigation, and required, to the extent appropriate and practicable, that all compensatory mitigation decisions be made in the context of a watershed approach.

Compensation Mechanisms

The Compensatory Mitigation Rule defines three mechanisms by which permittees can satisfy their compensatory mitigation obligations^a:

- *Mitigation bank* means a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor.
- *ILF program* means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a *governmental* or *nonprofit* natural resources management entity to satisfy compensatory mitigation requirements for DA permits. Similar to a mitigation bank, an ILF program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. Unlike mitigation banks, ILFs are authorized to sell a limited number of credits in advance of their production in accordance with an approved mitigation project plan.
- *Permittee-responsible mitigation* means an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

^a33 C.F.R. §332.2; 40 C.F.R. §230.92.

The Corps recently summarized the key improvements embodied in the rule as:

1. Use of the watershed approach, which involves “consideration of watershed needs and how locations and types of compensatory mitigation projects address those needs”⁶¹;
2. Establishment of a mitigation hierarchy that requires each Corps district engineer to consider the prioritization of compensatory mitigation in the following order⁶²: credits from a mitigation bank; credits from an ILF program; permittee-responsible mitigation under a watershed approach; permittee-responsible on-site, in-kind mitigation; and permittee-responsible off-site and/or out-of-kind mitigation;
3. Preparation of a “mitigation plan” with 12 required elements ensuring effectiveness and durability; and
4. Clear time lines for decisionmaking.⁶³

61. See, e.g., ENVIRONMENTAL LAW INSTITUTE & THE NATURE CONSERVANCY, WATERSHED APPROACH HANDBOOK: IMPROVING OUTCOMES AND INCREASING BENEFITS ASSOCIATED WITH WETLAND AND STREAM RESTORATION AND PROTECTION PROJECTS (2014), available at https://www.eli.org/sites/default/files/eli-pubs/watershed-approach-handbook-improving-outcomes-and-increasing-benefits-associated-wetland-and-stream_0.pdf.

62. 33 C.F.R. §332.3(b); 40 C.F.R. §230.93(b).

63. INSTITUTE FOR WATER RESOURCES, THE MITIGATION RULE RETROSPECTIVE: A REVIEW OF THE 2008 REGULATIONS GOVERNING COMPENSATORY MITIGATION FOR LOSSES OF AQUATIC RESOURCES (2015) (IWR 2015-R-03).

The “Watershed Approach”

The “watershed approach” required by the Compensatory Mitigation Rule applies to all forms of aquatic compensatory mitigation, and especially to the siting and use of §404 mitigation banks and ILFs. The purpose of a watershed approach is to “maintain and improve the quality and quantity of aquatic resources within watersheds through strategic selection of compensatory mitigation sites.”^a Corps districts use existing watershed plans, when available, but they may also use other types of plans and information to guide their decisions. In the absence of a prepared watershed plan, district engineers may use data on trends in habitat conversion and loss, cumulative impacts, presence and needs of sensitive species, site conditions that affect the success of compensatory mitigation, and other information. The watershed approach is designed to enhance the aquatic resource mitigation program.

The rule expressly requires consideration of “the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site.”^b Site sustainability includes “appropriate siting to ensure that natural hydrology and landscape context” will support the functions of the site over the long term.^c

While finding suitable permittee-responsible compensatory mitigation sites within the same watershed as the impacts can sometimes be difficult for permit applicants—particularly where land development has been intensive, or where aquatic sites are scarce to begin with—the development and approval of mitigation banks and ILF programs has helped to ensure that applicants have options to satisfy their compensatory mitigation needs. It has also increased the likely ecological value compensatory mitigation activities produce in terms of watershed health.

^a33 C.F.R. §332.3(c)(1); 40 C.F.R. §230.93(c)(1).

^b33 C.F.R. §332.4(c)(3); 40 C.F.R. §230.94(c)(3).

^c33 C.F.R. §332.7(b); 40 C.F.R. §230.97(b).

The rule defines the role of geographically based inter-agency review teams (IRTs). Each IRT consists of federal, state, tribal, and/or local regulatory and resource agency representatives with expertise and/or jurisdiction over natural resources activities in the geographic area(s) of the proposed permitted impacts and the proposed compensatory mitigation activities. The IRT “reviews documentation for, and advises the [Corps] district engineer on, the establishment and management of” §404 mitigation banks and ILF programs.⁶⁴

Each §404 mitigation bank and ILF must have a program instrument, approved by the Corps district with the advice and comments of the IRT. The program instrument must include⁶⁵:

- Definition of the geographic service area for use of credits in compensatory mitigation. This must demonstrate use of the watershed approach;
- Accounting procedures for tracking the generation and sale of credits;
- Legal responsibility for carrying out compensatory mitigation obligations and implementing the mitigation plan;
- Default and closure procedures and guarantees;
- Reporting protocols;
- A mitigation plan with the elements required by the rule; and
- Credit release schedule and milestones for the release and availability of credits (or advance credit allocation, credit and fee methodology, and description of program account, for ILFs).

Mitigation banks and ILFs are required to prepare a mitigation plan for each mitigation site,⁶⁶ which must include the following elements⁶⁷:

- A description of the objectives for the compensatory mitigation project(s), including resource type, methods of compensation, and relationship to watershed needs.
- Site selection factors, including the consideration of watershed needs and practicality of self-sustaining ecological outcomes.
- Legal arrangements for long-term site protection to ensure the legal status of the site in perpetuity.
- Baseline ecological characteristics of the compensatory mitigation site, including descriptions of historic and existing plant communities, hydrology, soils, mapped characteristics, and delineation of waters of the United States. The number of credits to be generated by the compensatory mitigation sites, including the rationale and methodology used to determine the credits.
- A mitigation work plan, including engineering specifications, construction methods, timing, sequence, source of water, methods for establishing plant communities, grading, erosion control, and other relevant factors.
- Maintenance activities and a schedule to ensure the continued viability of the resources once construction has been completed.
- Ecological performance standards, which will enable the operator and regulators to determine

64. 33 C.F.R. §332.2; 40 C.F.R. §230.92. Where a mitigation bank or ILF program is proposed to satisfy requirements of another federal, tribal, state, or local program in addition to §404, the responsible agency may be invited to co-chair the IRT. 33 C.F.R. §332.8(b); 40 C.F.R. §230.98(b).

65. 33 C.F.R. §332.8(d)(6); 40 C.F.R. §230.98(d)(6).

66. Banks must complete this plan and have it approved before selling any credits; in contrast, ILFs can sell specified numbers of “advance credits” before these plans are prepared and approved, but must do so in accordance with a previously approved “compensation planning framework.”

67. 33 C.F.R. §332.4(c); 40 C.F.R. §230.94(c).

whether the compensatory mitigation project is achieving its objectives.

- Monitoring requirements, including description of the parameters to be monitored, and a schedule for monitoring and reporting.
- A long-term management plan to ensure continued performance of the site after all performance standards have been met, which must include provision for long-term financing mechanism and identification of the party responsible for long-term management.
- An adaptive management strategy to address unforeseen changes in site conditions or other components of the project, including identification of the party or parties responsible for implementing adaptation measures and responses.
- Financial assurances, including their type and sufficiency to ensure a “high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards.”

When ILF programs secure sites and develop a site-specific mitigation plan, they must do so consistent with a “compensation planning framework” that was developed as part of their approved ILF program instrument.⁶⁸ The compensation planning framework must contain the following elements:

- Geographic service areas for the ILF, including a watershed-based rationale for the delineation of each service area;
- Description of the threats to aquatic resources in the service area(s), including how the ILF program will help offset impacts resulting from those threats;
- Analysis of historic aquatic resource losses in the service area(s);
- Analysis of current aquatic resource conditions;
- Statement of aquatic resources goals and objectives for each service area, including a description of the general amounts, types, and locations of aquatic resources the program will seek to provide;
- A prioritization strategy for selecting and implementing compensatory mitigation activities;
- Explanation of how any preservation objectives satisfy criteria limiting the use of preservation as a compensatory mitigation tool;
- Description of public and private stakeholder involvement in the ILF planning and implementation;
- Long-term protection strategies for activities conducted by the ILF sponsor; and

- Strategy for periodic evaluation and reporting on progress, and process for revising the compensation planning framework as necessary.⁶⁹

ILFs may make a “limited number” of advance credits available to trustees when the instrument is approved. The number of advance credits is determined by the Corps, in consultation with the IRT, taking into account the compensation planning framework, the sponsor’s past performance, and the projected financing necessary to begin planning and implementation of ILF projects. As released credits are produced by ILF projects, they must be used first to fulfill any advance credits that have been sold before any other credits become available to permittees.⁷⁰

The Compensatory Mitigation Rule has produced a regularized approach to §404 compensatory mitigation, and arguably has stimulated the creation of a number of §404 mitigation banks and ILF programs as expectations of mitigation creators and purchasers have become standardized.

Many state and some tribal wetland programs operate their own regulatory programs with requirements for compensatory mitigation; these are often coordinated with the Corps via instruments like “state programmatic general permits.” State and tribal representatives also serve on IRTs across the country, and have gained experience in providing approval and oversight of §404 mitigation banking and ILF programs. This experience may help in coordinating such compensatory mitigation mechanisms with NRDA actions and decisions.

C. Conservation Banking

Although this Article focuses chiefly on integration of CWA compensatory *mitigation* with NRD processes, we also briefly address conservation *banking*—a parallel approach in which habitats are restored and conserved to meet federal and state requirements related to conservation of threatened and endangered species.

In this context, it is worth noting that the CWA Compensatory Mitigation Rule provides that the projects it governs (including §404 mitigation banks and ILF programs) may be used to “satisfy the requirements of other programs,” so long as they comply with the terms and requirements of those other programs.⁷¹ These programs expressly include compensatory mitigation under the federal Endangered Species Act (ESA).⁷² Under no circumstances, however, may credits used to satisfy §404 compensatory mitigation obligations also be used to provide mitigation for another permitted activity; nevertheless, compensatory mitigation projects may be designed to “holistically” address requirements under multiple programs and authorities for a single activity.⁷³

68. 33 C.F.R. §332.8(c); 40 C.F.R. §230.98(c). The compensation planning framework supports the “watershed approach.”

69. *Id.*

70. 33 C.F.R. §332.8(n); 40 C.F.R. §230.98(n).

71. 33 C.F.R. §332.3(j); 40 C.F.R. §230.93(j).

72. 16 U.S.C. §§1531-1544, ELR STAT. ESA §§2-18.

73. 33 C.F.R. §332.3(j); 40 C.F.R. §230.93(j).

The ESA provides the basis for mitigation activities to protect listed threatened and endangered species and their critical habitats.⁷⁴ Section 7 requires consultation with FWS or NOAA (depending on which agency has jurisdiction over a particular species) when a federal activity (including federal funding activities) may have a direct or indirect adverse impact on a listed species or critical habitat. And §10 provides an opportunity for a nonfederal actor to obtain an “incidental take permit” in connection with activities that may otherwise result in a take of listed species, in exchange for certain affirmative conservation activities including a habitat conservation plan (HCP).⁷⁵

Conservation banking is the practice of restoring, enhancing, or preserving habitat in perpetuity to compensate for adverse impacts to listed species or their habitats. The concept was first formally introduced at the state level in California, which released its policy on conservation banking in conjunction with the Carlsbad Highlands Conservation Bank. The California Legislature enacted the Natural Community Conservation Planning Act (NCCPA) of 1991, amended in 2003.⁷⁶ The NCCPA implemented a large-scale regional planning process to protect entire biological communities, as opposed to focusing on a single species.⁷⁷ Similar to HCPs, but on a larger scale, the development of natural community conservation plans are required under the NCCPA in order to authorize incidental take permits under California’s ESA.⁷⁸

The first federal policy on conservation banking was issued in 2003, as an FWS memorandum, *Guidance for the Establishment, Use, and Operation of Conservation Banks*. This document guides FWS and applicants through the conservation bank development, management, and monitoring processes.⁷⁹ A total of 154 conservation banks have been approved by FWS in 15 states (Arizona, California, Colorado, Florida, Georgia, Kansas, Maryland, Mississippi, Oklahoma, Oregon, South Carolina, Texas, Utah, Washington, and Wyoming) and Saipan.⁸⁰

Generally, conservation banks are used to mitigate for activities regulated under the ESA §7 and §10, but they can also be used to satisfy state and local programs. They are created through the acquisition or protection of existing

habitat, restoration or enhancement of disturbed habitat, creation of new habitat, or the management of habitat for specific biological characteristics. To establish a conservation bank, a legally binding agreement is required between the property owner and the regulatory agency or agencies authorizing the impacts or takes. The conservation bank agreement includes specific information on the property, management activities, funding sources, and long-term stewardship of the bank. It also governs the responsibilities and duration of involvement for all concerned parties.

The main components of a bank agreement include:

- Conservation bank name, property location, legal description, and global positioning satellite (GPS) coordinates;
- A map of the property on a minimum scale of seven minutes, a U.S. Geological Survey quad map, or finer scale if available;
- Name of the person(s)/organization(s) to hold fee title to the conservation bank;
- Name of the person(s)/organization(s) to hold site protection instrument (e.g., conservation easement);
- Name of the person(s)/organization(s) to hold those who will have management responsibilities and time frame of management;
- A preliminary title report on any preexisting easements or encumbrances on the property, including any mineral, water, hunting, or prescriptive rights associated with the property;
- A list of compatible activities or land uses possible on the property, such as public access;
- A description of the biological value of the property, including information on the types of habitats and species present on the land;
- The number and types of credits to be generated by the conservation bank and the methodology used in this determination;
- Accounting system to track credits, funding, and reporting requirements;
- A description of the conservation bank’s service area, to be determined in conjunction with the Services;
- The performance standards that must be achieved;
- If the conservation bank will be implemented in phases, a description and delineation of each phase is required, in addition to an explanation for the use of phases and the process for terminating the bank prior to implementation of all the phases;
- Explanation of compliance with any applicable state and federal laws;
- Results of Phase I Hazardous Materials Survey for the property and any plans to remove trash, struc-

74. 16 U.S.C. §§1531-1544.

75. DOI OFFICE OF POLICY ANALYSIS, A PRELIMINARY ANALYSIS OF THE CONSERVATION BANKING PROGRAM AND RESULTS FROM A SURVEY OF USFWS STAFF (2013). Mitigation may also occur under a candidate conservation agreement for species not yet listed.

76. PAUL CYLINDER ET AL., UNDERSTANDING THE HABITAT CONSERVATION PLANNING PROCESS IN CALIFORNIA: A GUIDEBOOK FOR PROJECT AND REGIONAL CONSERVATION PLANNING (2004), available at http://www.ca-ilg.org/sites/main/files/file-attachments/resources__HCP_book_2004_final.pdf.

77. Natural Community Conservation Planning Act, Stat. 2002, ch. 4, §2 (2003).

78. California Endangered Species Act, CAL. FISH & GAME CODE §§2050-2069.

79. Memorandum From FWS on Guidance for the Establishment, Use, and Operation of Conservation Banks (May 8, 2003) [hereinafter FWS Guidance], available at <https://www.fws.gov/policy/library/2003/03-11458.html>; 68 Fed. Reg. 24753 (May 8, 2003).

80. Regulatory In-lieu Fee and Bank Information Tracking System (RIBITS), Reports: Approved and Sold-Out Conservation Banks, <https://ribits.usace.army.mil/> (last visited Oct. 4, 2018).

tures, or other items that reduce the conservation value of the property;

- Provisions allowing the regulatory agency to enter the property for inspections, assurances, or other duties; and
- Contingency plans and a dispute resolution process to be used if the conservation bank owner/manager fails to comply with the provisions outlined in the agreement.⁸¹

A management plan is also a required element in a conservation bank agreement.⁸² At a minimum, a management plan should contain the following information:

- Property description, biological resources, cultural/historical features, surrounding land uses, and proximity to open spaces or conservation lands;
- Identification of biological goals and objectives and how to implement them;
- Authorized and prohibited activities on the property;
- Management needs of the property, including control of public access/use, restoration and enhancement of habitats, and maintenance of facilities;
- Budget and necessary endowment funds;
- Monitoring schedule and reporting requirements; and
- Adaptive management practices, decision trees, or other future management structures.⁸³

On December 27, 2016, FWS issued a new ESA Compensatory Mitigation Policy.⁸⁴ The Compensatory Mitigation Policy established compensatory mitigation standards for threatened and endangered species and critical habitats and clarified previous guidance documents on mitigation mechanisms and conservation banking.⁸⁵ In January 2017, FWS then issued Interim Guidance on Implementing the Final Endangered Species Act Compensatory Mitigation Policy.⁸⁶ The Interim Guidance replaced the 2003 conser-

vation banking guidance, and updated many aspects of that guidance including consideration of landscape-scale plans and strategies.

However, Secretarial Order No. 3349, issued on March 29, 2017 by Secretary of the Interior Ryan Zinke, placed the Compensatory Mitigation Policy and Interim Guidance under review as posing possible obstacles to energy development.⁸⁷ Following this review, on July 30, 2018, the FWS withdrew the Compensatory Mitigation Policy, after notice and comment, citing its view that elements of the policy were unconstitutional or exceeded FWS authority, or were contrary to current executive branch policy.⁸⁸ Consequently, the prior 2003 conservation banking approach will govern.

II. Existing Guidance on NRDA Banking

In 2015, a Presidential Memorandum directed each federal natural resource trustee agency to “develop guidance for its agency’s trustee representatives describing the considerations for evaluating whether, where, and when restoration banking or advance restoration projects would be appropriate as components of a restoration plan adopted by trustees.”⁸⁹ The responsive guidance documents were issued by DOI and NOAA in December 2016.

However, the 2015 Presidential Memorandum was revoked by the succeeding administration in 2017.⁹⁰ This leaves the status of these guidance documents uncertain. DOI has removed its guidance document from its website.⁹¹ In August 2018, DOI solicited comment on its NRDA regulations, including whether to provide any guidance on “the use of advance restoration and restoration banking techniques.”⁹²

Under the 2016 guidance documents, and reflecting recent practice, DOI and NOAA allow trustees to approve the use of restoration banks to offset or fully satisfy NRD liability under their regulatory frameworks. DOI imposes the same requirements on restoration banking as it does for any restoration alternative in its NRDA process, and its guidance discusses factors likely to be affected by NRDA restoration banking. In contrast, the NOAA guidance

81. FWS Guidance, *supra* note 79, at 16-17.

82. *Id.* at 15.

83. *Id.*

84. Endangered Species Act Compensatory Mitigation Policy [hereinafter Compensatory Mitigation Policy], 81 Fed. Reg. 95316 (Dec. 27, 2016).

85. *Id.* §§1, 3. The policy does not apply retroactively. It “clarifies” guidance given in the 2003 Conservation Banking Guidance and the 2008 Recovery Crediting Guidance. 81 Fed. Reg. 95316. However, both the 2003 and 2008 guidance documents were expressly “replaced” just three weeks later by the FWS Interim Guidance on Implementing the Final Endangered Species Act Compensatory Mitigation Policy (Jan. 17, 2017) [hereinafter Interim Guidance], https://www.fws.gov/endangered/improving_ESA/pdf/Interim_Guidance_for_Implementing_the_Endangered%20Species%20Act%20Jan%202017.pdf.

86. Interim Guidance, *supra* note 85. The Interim Guidance was issued without its own notice and comment, but was constructed in large part from detailed provisions that had been in the *proposed* Compensatory Mitigation Policy in September 2016 that were moved to the Interim Guidance when the final Compensatory Mitigation Policy was adopted. *See* 81 Fed. Reg. at 95319-20 (“We have removed these elements from this policy and will address them in the implementation guidance.”).

87. DOI, Secretarial Order No. 3349, American Energy Independence (Mar. 29, 2017).

88. DOI, FWS, Endangered and Threatened Wildlife and Plants; Endangered Species Act Compensatory Mitigation Policy Withdrawal, 83 Fed. Reg. 36469 (July 30, 2018).

89. Presidential Memorandum, Mitigating Impacts on Natural Resources From Development and Encouraging Related Private Investment, 80 Fed. Reg. 68743 (Nov. 6, 2015).

90. Exec. Order No. 13783, Promoting Energy Independence and Economic Growth, 82 Fed. Reg. 16093 (Mar. 31, 2017).

91. DOI Secretarial Order No. 3360, Rescinding Authorities Inconsistent With Secretary’s Order 3349, “America’s Energy Independence” (Dec. 22, 2017), does not expressly revoke the DOI NRDA guidance but continues the process begun in Secretarial Order No. 3349 (Mar. 29, 2017) of all DOI bureaus and agencies reconsidering, modifying, or rescinding documents and policies arising from the prior Presidential Memorandum and the previous DOI secretary’s now-revoked Order No. 3330 on mitigation policy. NOAA’s guidance document is still available.

92. 83 Fed. Reg. 43611, 43612-13 (Aug. 27, 2018).

defines 11 requirements for a trustee's using a restoration bank as a restoration alternative.

A. DOI Guidance

The DOI memorandum describes how to apply restoration banking as a component of restoration plans under DOI's NRD assessment and restoration (NRDAR) framework.⁹³ Various restoration banking tools may be applicable to NRD claims, such as "existing CWA Section 404 mitigation and ESA conservation banks with the ability to flexibly use their credits . . . and potential future NRDAR-specific bank entities."⁹⁴ However, while existing mitigation banking methods may be applicable to restoration banking, mitigation banking is not given preferred status in NRD cases.⁹⁵

DOI detailed four general categories of restoration banking that would be applicable in the NRDAR context⁹⁶:

1. Restoration undertaken in advance of potential impacts, which includes banks for CWA §404 mitigation, ESA conservation, or NRDAR-specific banks set up *before* the injury;
2. Restoration undertaken after injury occurs, but *before* a completed assessment;
3. Restoration undertaken after a completed assessment, but *before* a final settlement; and
4. Restoration projects undertaken after a final settlement; these provide the "potential to combine settlements with common resources needing to be restored within a geographical location."

Categories 1-3 expressly include third-party restoration banks that market credits to PRPs at NRD sites. These restoration banks are subject to the same requirements that apply to all NRDAR restoration alternatives.⁹⁷ For example, such restoration banks must have a nexus to the natural resource injury, be of a scale proportionate to the injury, be considered among a reasonable range of alternative restoration actions, and be presented to the public for comment. Category 4 includes banks and other third-party projects that can meet the needs for restoration using recovered funds, and would necessarily meet these same standards.⁹⁸

The DOI guidance does not expressly discuss ILF programs because it focuses on "advance restoration," but it does include restoration activities undertaken in advance of final settlement (funded by PRPs), so pre-

sumably ILF credits could be accepted both at that stage and at final settlement.⁹⁹

Like all NRDAR restoration projects, restoration banks are evaluated "within the criteria established by the CERCLA, CWA, OPA, environmental compliance statutes . . . and their corresponding regulations."¹⁰⁰ However, the "unique temporal nature of restoration banks" will affect evaluation of some criteria, including "nexus to injury, cost-effectiveness, feasibility; and the relationship of expected costs to expected benefits."¹⁰¹ To satisfy the nexus requirement, restoration bank projects "must address and be 'currently relevant to, the same or comparable natural resources and services as those identified as having been injured.'"¹⁰²

When considering cost-effectiveness, trustees can consider the potential reduction in "opportunity costs related to implementation timelines" that banking offers.¹⁰³ Trustees can also quickly move to consider the long-term feasibility of a restoration bank project because evaluating feasibility is more easily done when the project is already completed or nearing completion.¹⁰⁴ Finally, in evaluating the cost-benefit relationship for a restoration bank, trustees can consider factors such as the increased certainty of a known banking approach, a more straightforward estimation of restoration cost, and the benefits portfolio approach taken by many restoration banks that often allows projects to leverage benefits to multiple resources.¹⁰⁵

DOI recommends that trustees consider additional factors when evaluating restoration banks as an alternative in NRDAR cases.¹⁰⁶ Trustees should ensure that each bank may use its credits for NRDAR purposes,¹⁰⁷ and that credits are not double-counted under other programs.¹⁰⁸ Trustees should determine how preexisting bank credits are valued and applied to NRDAR cases; and they need to show that projects represent additional restoration rather than a part of the baseline conditions.¹⁰⁹ Specifically, the DOI guidance allows trustees to utilize preexisting bank restoration credits to address NRDAR liabilities, but it advises trustees to be "prepared to discuss" public concerns that such preexisting credits already exist and so might be considered part of the "baseline" rather than restoration. The guidance suggests that a suitable response explains that such projects were undertaken with "advance restoration" in mind.¹¹⁰

93. DOI OFFICE OF RESTORATION AND DAMAGE ASSESSMENT, DOI NRDAR GUIDANCE FOR PRESIDENTIAL MEMORANDUM ON MITIGATING IMPACTS ON NATURAL RESOURCES FROM DEVELOPMENT AND ENCOURAGING RELATED PRIVATE INVESTMENT 1 (2016) [hereinafter DOI NRDAR GUIDANCE].

94. *Id.* at 3.

95. *See id.* n.2.

96. *See id.* at 4 tbl.1.

97. *Id.* at 3.

98. *See id.*

99. *Id.* at 2.

100. *Id.* at 4.

101. *Id.* at 5.

102. *See id.* at 6 (citing 15 C.F.R. §990.56(b)(iii)).

103. *Id.*

104. *See id.* at 7. In cases of lengthy remedial activities, trustees may also consider planning for new restoration banks to be considered among the restoration alternatives. *See id.*

105. *Id.*

106. *See id.* Because NRDAR is so case-specific, the considerations in this guidance are not an exhaustive list. *See id.* at 9.

107. Regulations concerning CWA §404 mitigation banks provide them the flexibility to use their credits to satisfy other programs. *See id.* at 7 n.11.

108. *See id.* at 8.

109. *See id.*

110. *Id.*

The DOI guidance briefly mentions other considerations, including

the length of time of land protection, the compatible and non-compatible uses described in the bank instrument or prospectus, the performance history of the bank, the extent of financial assurances, whether the monitoring and maintenance program is consistent with the Trustees' goals, whether anticipated long-term management activities have been adequately described and funded, whether there are additional planned restoration efforts, and the nature of any adaptive management plan.¹¹¹

B. NOAA Guidance

The NOAA guidance lays out specific requirements for using restoration banking in its Damage Assessment, Remediation, and Restoration Program (DARRP).¹¹² Under this guidance, restoration banking covers any arrangement where trustees agree to recognize and accept from a PRP restoration credits produced by a third party to offset the PRP's NRD liability, as well as situations where trustees directly purchase those credits using funds recovered from PRPs.¹¹³ Further, restoration bank projects include those developed by a PRP or group of PRPs who produce more credits than required to satisfy their own liability, and projects developed by third parties as part of a profit-making venture or to serve other goals.¹¹⁴

The NOAA guidance observes that restoration banking may be "particularly useful" in cases where there are multiple PRPs or where suitable restoration opportunities are limited because of constraints on the availability of land.¹¹⁵ In addition, this approach may be useful where the damage is to species that benefit from larger, intact habitats, and makes it easier to pool liability to support larger restoration projects.¹¹⁶

To use restoration banks under the DARRP framework, trustees must recognize and accept the restoration bank and the credits the bank produces.¹¹⁷ The NOAA guidance details specific items necessary for trustees to satisfy the recognition and acceptance requirements. Trustees may provide technical assistance to bank developers, provided the developers or RPs agree to reimburse the costs of providing assistance.¹¹⁸

To be recognized, restoration banks must meet trustee goals for the site, and bank projects must be selected

according to applicable selection criteria and procedures. Trustees must provide notice to PRPs and the public of any agreement to recognize restoration bank credits.¹¹⁹ Trustees must retain responsibility for determining and measuring restoration credits. Credits must have a "demonstrable reasonable nexus" to the natural resource injury.

Trustees will accept credits only where they have a legally enforceable agreement with the restoration bank developer (or with the settling party or parties who will guarantee the performance of the developer). Significantly, under the NOAA guidance, *trustees will only accept credits that are produced under trustee oversight*. This means that trustees will not recognize credits generated by a bank prior to the injury, nor credits produced by a bank after the injury but before an agreement with the trustees.¹²⁰

Thus, unlike the DOI guidance, the NOAA guidance provides that where the credits are from a preexisting bank, the trustee will only accept credits generated by the bank *after* the injury has occurred and generated *after* an agreement with the trustees is in place. Under the NOAA guidance, conservation banks or §404 mitigation banks that have previously generated an inventory of credits cannot sell those credits to satisfy NRDA liability.¹²¹ ILFs may be able to sell credits (as many of these are generated *after* receipt of funds), but will not be able to sell from their existing inventories.

Where an agreement is in place, trustees may permit advance *release* of credits in satisfaction of liability, provided specific conditions are met; but a significant share of the total project credits shall not be sold before "full achievement of ecological performance standards."¹²²

Agreements by trustees to recognize banks, provide technical assistance to developers, and accept credits must be made in writing, signed by the parties, and submitted to the trustee management team for approval. The bank recognition agreement must include terms addressing:

- the relevant bank service area;
- the protection of bank property;
- the project design, performance criteria, and credit calculations and projections;
- the credit release schedule;
- financial assurances;
- funding for long-term stewardship of the site;
- credit sales accounting and transparency; and
- non-exclusivity of using bank credits to resolve NRDA liability.¹²³

111. *Id.* at 9.

112. The December 1, 2016, guidance supersedes and replaces NOAA's 2007 Restoration Banking Preliminary Working Policy. NOAA DAMAGE ASSESSMENT, REMEDIATION, AND RESTORATION PROGRAM, GUIDANCE FOR RECOGNITION AND USE OF RESTORATION BANKS IN NATURAL RESOURCE DAMAGE ASSESSMENTS 1, 2 (2016) [hereinafter NOAA GUIDANCE], available at <https://www.darrp.noaa.gov/sites/default/files/NOAA%20NRDA%20Restoration%20Banking%20Guidance%202016%20Final.pdf>.

113. *See id.*

114. *See id.*

115. *Id.* at 3.

116. *Id.*

117. *See id.* at 3-7.

118. *See id.* at 5, No. 3.

119. *See id.* at 4, 7, Nos. 1, 9.

120. *See id.* at 5, Nos. 4, 5, 6, 7.

121. *Id.* No. 7 ("Trustees will agree to accept only those restoration credits generated by the bank after an agreement is in place with the restoration bank developer. Trustees also will not agree to accept any NRDA restoration bank credits that are generated prior in time to the injuries to which they are intended to apply.")

122. *See id.* at 7, No. 10.

123. *See id.* at 4-7, Nos. 2, 8.

Trustees “should indicate” that even where a bank is available, purchase of credits is not the only or preferred means to resolve NRD liability.¹²⁴

Finally, trustees must ensure that all restoration bank credits sold are retired and not made available for resale or double-counted under another regulatory scheme. Trustees may recognize and accept credits from banks previously authorized under another regulatory scheme if: (1) the project has a “demonstrable reasonable nexus” to the natural resource injury; (2) the project meets all standards and requirements imposed on other NRDA projects recognized by the trustees; and (3) the credits were generated after an agreement is in place with the bank developer.¹²⁵

C. Current Experience With NRDA Banking

NOAA’s trustee management teams have approved restoration bank projects at several NRD sites, even before the 2016 guidance was issued.¹²⁶ NOAA’s regulations can even be interpreted as envisioning restoration banks. One provision states that “[t]rustees may select a component of a Regional Restoration Plan or an existing restoration project” that (1) adequately compensates the environment and public for injuries; and (2) relates to the same or comparable natural resources and services.¹²⁷ However, as noted above, the 2016 NOAA guidance places limits on what credits can be recognized from existing projects.

I. Elliott Bay—Bluefield Site 1 and Site 2 Restoration Banks

In Washington State, the Elliott Bay Trustee Council and Bluefield Holdings (a private restoration provider) defined an approach to restoration banking in the trustee council’s “Natural Resource Restoration and Enhancement Credit Protocol.”¹²⁸ This document specified that creation of NRD credits at a designated site (including properties owned by the city of Seattle) “may be one alternative available” to all PRPs to address liabilities for natural resource injuries. It recognizes conditional projects under development and collaborated on by the parties, and constructed projects—both with calculated NRD credits (interim and as-built).

The protocol also provides that trustees may select NRD credits as a viable settlement alternative for a settling PRP; but, in order to be consistent with NRDA regulations, specified that trustees could make no final determination to accept a project or its associated credits without approval of the U.S. attorney general, and subject to public comment and court approval (at the discretion of the United States). PRPs can save time and avoid difficulty by using the approach structured by the protocol, subject to approval of credits and credit sales by the trustee council.

The protocol provides for identification of proposed habitat restoration projects jointly by the parties, the good-faith determination of the interim NRD credit for each such project as designed, and recognition of these by the trustees, provided financial assurances are in place. Trustees recognize no more than 50% of any interim NRD credit until the project is constructed; on completion of construction, the trustees will determine the “as-built NRD credit” (these may subsequently be adjusted up or down as determined by performance monitoring).¹²⁹

The Bluefield—Site 1 restoration bank was established in 2012 under this protocol, with oversight by the Elliott Bay Trustee Council. It is sponsored by Bluefield Holdings, Inc. with the purpose of generating and selling restoration credits.¹³⁰ The Site 1 project resulted in 1.01 acres of habitat, and serves the Lower Duwamish River Superfund site.¹³¹ Restoration credits generated by Site 1 are valued using an HEA. The HEA calculated the “amount of ecological services lost as a result of contamination, and the amount of ecological services that would be gained from restoration projects, making past and future losses and gains comparable by applying a discounting factor.”¹³² Credits are in units of discounted service-acre-years (DSAYs).¹³³ Site 1 habitats were valued by “how well they support juvenile Chinook salmon, four bird assemblages representative of avian species occurring in the area, and juvenile English sole.”¹³⁴ A total of 46 restoration credits generated by Site 1 have been sold.¹³⁵

On September 22, 2016, trustees and the city of Seattle entered into another consent decree covering the

124. *Id.* at 7, No. 8.

125. *See id.* No. 11.

126. NOAA’s 2016 guidance replaced its February 6, 2007, Restoration Banking Preliminary Working Policy. According to NOAA’s 2016 guidance, “restoration banking” comprises “any arrangement under which natural resource trustees agree to recognize and accept from a settling party restoration credits produced by a third party in lieu of payments of funds by the settling party or promises by the settling party to perform work.” This includes “situations in which trustees directly purchase restoration credits generated by third party projects using funds separately recovered from PRPs.” This may be particularly useful in NRDA cases where there are multiple PRPs and/or where restoration opportunities are limited due to availability of suitable land. NOAA GUIDANCE, *supra* note 113, at 3.

127. 15 C.F.R. §990.56 (b)(1). The regulations do not explicitly define “restoration project.”

128. ELLIOTT BAY TRUSTEE COUNCIL, NATURAL RESOURCE RESTORATION AND ENHANCEMENT CREDIT PROTOCOL (2009).

129. *Id.*

130. *See* Bluefield Holdings, *Home Page*, <http://bluefieldholdings.com/> (last visited Sept. 14, 2018).

131. *See id.*; NOAA, Damage Assessment, Remediation, and Restoration Program, *Lower Duwamish River*, <https://darrp.noaa.gov/hazardous-waste/lower-duwamish-river> (last updated July 31, 2018).

132. *See* NOAA, FINAL LOWER DUWAMISH RIVER NRDA RESTORATION PLAN AND PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT 1, 28 (2013), <https://casedocuments.darrp.noaa.gov/northwest/lowerduwamishriver/pdf/Final%20Duwamish%20River%20NRDA%20PEIS%20and%20Restoration%20Plan.pdf>.

133. “A DSAY represents the value of all of the ecosystem services provided by one acre of the habitat in one year.” NOAA, Damage Assessment, Remediation, and Restoration Program, *Habitat Equivalency Analysis*, <https://darrp.noaa.gov/economics/habitat-equivalency-analysis> (last visited Sept. 14, 2018).

134. *See* NOAA, FINAL LOWER DUWAMISH RIVER NRDA RESTORATION PLAN AND PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT app. d at 1 (2013), <https://casedocuments.darrp.noaa.gov/northwest/lowerduwamishriver/pdf/Appendix%20D%20Habitat%20Valuation%20in%20the%20Lower%20Duwamish%20River.pdf>.

135. *See* Bluefield Holdings, *supra* note 130.

city's liability for NRD not addressed in a prior consent decree. This settlement constitutes an instance where an RP purchased restoration credits that were financed and constructed by the restoration development company on 2.91 acres (Site 2). Using recovered funds, the trustee council will purchase 30 discounted service acre-year credits for \$3 million from Bluefield Holdings.¹³⁶ The trustee council consists of NOAA, DOI (represented by FWS), Washington Department of Ecology, Washington Department of Natural Resources, Washington Department of Fish and Wildlife, and the Muckleshoot and Suquamish Tribes.

The Elliott Bay Trustee Council completed an environmental review for the credit purchase, resulting in a finding of no significant impact (FONSI).¹³⁷ As described in the EA, "Site 2 is a NRDA restoration bank project that Bluefield will build with the intent to sell the balance of the restoration credits to potentially responsible parties (PRPs) for the PRPs to use to resolve their liability for injury to natural resources in the Lower Duwamish." The Site 2 project is projected to generate 112 credits, of which 30 are already sold.¹³⁸

2. Portland Harbor—Alder Creek Restoration Project and Other Activities (Linnton Mill Site)

The Alder Creek Restoration Project was established by Wildlands, Inc. with the purpose of offsetting NRD liability resulting from past industrial use along the Willamette River in Portland, Oregon.¹³⁹ The Portland Harbor Natural Resources Trustee Council provided technical assistance and has recognized credits produced by the project. This 52-acre project site is intended to provide restoration in the vicinity of the Portland Harbor Superfund site.¹⁴⁰ The Alder Creek project was implemented at a site formerly occupied by a lumber mill. The Portland Harbor Natural Resource Trustee Council and PRPs may purchase credits from the Alder Creek Restoration Project.¹⁴¹ Restoration credits generated by Alder Creek were calculated using an

HEA and are in DSAY units.¹⁴² The initial credit release was approved in 2015. At least 35 credits have been purchased for \$75,000 per credit.¹⁴³

The trustees have developed a form of "memorandum of agreement" (MOA) to provide technical assistance in appropriate circumstances to develop restoration projects that may be "potentially usable" by PRPs to offset some or all of their NRD liabilities.¹⁴⁴ It provides for reimbursement of trustee costs by the developer, and for the trustees to determine forecast and final settlement credits values for "covered projects."

The trustees are also providing technical assistance to a proposed NRD restoration bank at the Linnton Mill site. This project is being developed by RestorCap.¹⁴⁵ This proposed bank project is seeking to operate as a dual-purpose bank so that its credits can be used for NRD liability and credits can be sold alternatively as \$404 compensatory mitigation credits; the latter use is described as the "secondary purpose" of the project. The developer has applied to the Corps and the Oregon Department of State Lands for approval of its prospectus to operate as a stream and wetland mitigation bank under the 2008 Mitigation Rule.¹⁴⁶

The final Portland Harbor Programmatic EIS and Restoration Plan, released May 2017, explicitly recognizes "purchase of restoration credits from a restoration bank" as one approach that may be used to address liability. The programmatic EIS states: "[u]nder this approach, a PRP purchases restoration credits from a restoration project implemented by another entity that has previously undergone suitability review by the Trustee Council." In order for a restoration bank to be considered by the trustee council, the council must evaluate whether:

- The project meets OPA/CERCLA suitability criteria;
- The project is consistent with the restoration objectives and priorities outlined in the Portland Harbor restoration plan; and

136. Elliot Bay Trustee Council Lower Duwamish River Resolution 2017-01 (Mar. 15, 2017), https://casedocuments.darrp.noaa.gov/northwest/lower-duwamishriver/pdf/EBTC_resolution_2017_01%20signed.pdf.

137. BRIAN D. ISRAEL, ARNOLD & PORTER KAYE SCHOLER LLP, STATE-BY-STATE GUIDE TO NRD PROGRAMS IN ALL 50 STATES AND PUERTO RICO (2017); see also NOAA, ENVIRONMENTAL ASSESSMENT FOR THE BLUEFIELD HOLDINGS, INC., SITE 2 SHORELINE RESTORATION PROJECT CREDITS PURCHASE (2016), available at https://casedocuments.darrp.noaa.gov/northwest/lowerduwamishriver/pdf/Public_Draft_EA_Purchasing_Credits_in_Site_%202.pdf.

138. Bluefield Holdings, *supra* note 130.

139. See Wildlands Inc., *Alder Creek Restoration Project*, <https://www.wildlandsinc.com/alder-creek-restoration-project/> (last visited Sept. 14, 2018).

140. See *Restoration Along Oregon's Willamette River Opens Up New Opportunities for Business and Wildlife*, NOAA OFF. RESPONSE & RESTORATION, Sept. 30, 2015, <http://response.restoration.noaa.gov/about/media/restoration-along-oregons-willamette-river-opens-new-opportunities-business-and-wildlife>.

141. FWS, Oregon Fish and Wildlife Office, *Portland Harbor Natural Resource Trustee Council*, <https://www.fws.gov/oregonfwo/Contaminants/Portland-Harbor/> (last updated Aug. 13, 2018).

142. See PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL, ECOLOGICAL RESTORATION PORTFOLIO 1, 2, 7 (2012), https://www.fws.gov/oregonfwo/Contaminants/PortlandHarbor/Documents/RestorationPort_AppA.pdf.

143. See Agreement for Purchase and Sale of Discounted Service Acre-Year Credits and Escrow Instructions Between Portland Harbor Holdings II, LLC and the City of Portland (on file with the Portland Auditor's Office), <http://efiles.portlandoregon.gov/Record/7102810>; purchase agreement was approved by the Portland City Council in 2014. See City of Portland, Environmental Services, *What We've Done in Portland Harbor*, <https://www.portlandoregon.gov/bes/article/565102> (last visited Sept. 14, 2018).

144. Memorandum of Agreement Between the Natural Resource Trustees and [Developer] for Providing Technical Assistance Related to Habitat Restoration Projects Toward Future Settlement of Natural Resource Damage Claims at the Portland Harbor CERCLA Site, <https://www.fws.gov/oregonfwo/Contaminants/PortlandHarbor/Documents/DeveloperMOATemplate07-30-13.pdf>.

145. RestorCap, *Portland Harbor NRD Mitigation Bank, Oregon*, <http://www.restorcap.net/portland-harbor/> (last visited Sept. 14, 2018).

146. U.S. Army Corps of Engineers Portland District & Oregon Department of State Lands, Joint Public Notice: Proposed Wetland Mitigation Bank—Linnton Mill Restoration Site Mitigation Bank, Multnomah County, Oregon (Dec. 28, 2016), http://www.nwp.usace.army.mil/Portals/24/docs/regulatory/publicnotices/NWP-2014-477_PN.pdf.

- The project developer has offered sufficient long-term protection “to ensure that the project will provide restoration benefits in perpetuity.”¹⁴⁷

The trustee council announced a pause in its support for additional third-party restoration projects in order to focus its efforts, and also in recognizing a need to encourage a balance between NRD restoration credit supply and potential demand. Current projects continue, and have the following elements in place:

- a site-specific MOA between the Trustee Council and restoration proponent in place;
- a conceptual design for the restoration project received by the Trustee Council;
- a project-specific scope of work and budget developed by the Trustee Council and restoration proponent providing for Trustee Council technical assistance for the design of the restoration project.¹⁴⁸

3. Louisiana NRDA Banking

Louisiana established its Natural Resource Damage Banking Program in July 2017 to incentivize private investors to undertake restoration projects and generate restoration credits PRPs could purchase to resolve liabilities under both the OPA and the Louisiana Oil Spill Prevention and Response Act of 1991.¹⁴⁹

NRD restoration banks must be consistent with the Louisiana coastal master plan. Banks that are increments, add-ons, or enhancements of master plan projects are given preference. The recently adopted regulations¹⁵⁰ instruct the Coastal Protection and Restoration Authority to convene a banking review team (BRT)¹⁵¹ to facilitate and oversee the NRD Restoration Banking Program. This structure is evidently modeled on the IRT used in the \$404 program for approval of compensatory mitigation banks and ILFs. The BRT functions include determining the eligibility of a proposed bank, establishing restoration release credits, and monitoring the operation of the NRD restoration banks. The cost of NRD credits will be negotiated by the RP and the restoration bank sponsor.

The process of bank approval includes submittal and review by the BRT of a bank prospectus, preparation of a restoration bank plan subject to public review and com-

ment and adoption as a final plan, and the preparation of a restoration banking instrument (including plan, legal requirements, financial guarantees), which will be made available to the public.¹⁵² Existing “already-constructed” restoration projects that are in use as a bank pursuant to another regulatory scheme (such as the CWA, or conservation banking) are allowed, but must provide information on actual bank performance, as well as detailed information on remaining available credits, and include means to prevent double-counting of credits and credit use.¹⁵³ Bank restoration credits are anticipated to be measured in acres, reflecting “habitat type and minimum performance criteria.” However, the BRT may consider other units of credit on a case-by-case basis.¹⁵⁴

The terms of release of credits are finalized after review of public comment on the restoration plan, and must be clearly stated in the final banking instrument. Advance credit sale may include no more than 20% of bank credits. All credit sales must be approved by the BRT.

It is not currently clear whether and to what extent federal trustees will recognize or use Louisiana-approved restoration banks. However, the detailed regulations and review processes are generally congruent with federal guidance—while open to broader use of banks and to previously generated compensatory mitigation or restoration credits.¹⁵⁵

D. Current References to NRDA Activities in State and Tribal Wetlands Plans

There are few references to NRDA and NRDA banking in existing state and tribal wetlands programs. EPA promotes the development of wetland program plans by states and tribes in order to advance performance in four “core” elements of such programs: monitoring and assessment; regulation; voluntary restoration and protection; and water quality standards.¹⁵⁶

According to EPA, wetland program plans are “voluntary plans developed and implemented by state agencies and tribes which articulate what these entities want to accomplish with their wetland programs over time. [These plans] describe overall program goals along with broad-based actions and more specific activities that will help achieve the goals.” We examined the plans EPA makes available online, with the goal of identifying provisions supporting coordination with NRD goals/requirements.

147. NOAA, FINAL PORTLAND HARBOR PROGRAMMATIC EIS AND RESTORATION PLAN vol. 1, at 7-15 (2017), https://www.fws.gov/oregonfwo/Contaminants/PortlandHarbor/Documents/201706_FINAL_PEIS.pdf.

148. PORTLAND HARBOR NATURAL RESOURCE TRUSTEE COUNCIL, IMPORTANT MESSAGE REGARDING NEW THIRD-PARTY RESTORATION PROJECTS, <https://www.fws.gov/oregonfwo/Contaminants/PortlandHarbor/Documents/Restoration%20Message.pdf>. Third-party developers may continue at their own risk, and PRPs currently working collaboratively with the trustee council for settlement of their liabilities are not affected by the pause.

149. Authorized by 2016 La. Acts 362; 43 La. Reg. 1354 (July 2017).

150. LA. ADMIN. CODE tit. 43, §§115-119.

151. The BRT includes the state trustee agencies and is chaired by the Coastal Protection and Restoration Authority. The BRT may consult or invite other state or federal agencies, including federal NRDA trustees, as appropriate for review and certification of specific NRDA banks.

152. LA. ADMIN. CODE tit. 43, §§115-119.

153. *Id.* §115C.

154. *Id.* §121.

155. The Water Infrastructure Improvements for the Nation Act, Pub. L. No. 114-322, 130 Stat. 1628 (2016), authorizes “environmental banks” in Louisiana, with siting criteria, financial assurances, legally enforceable protections, to be used “to satisfy existing liability under Federal environmental laws.” *Id.* §309(b), (c).

156. U.S. EPA, *Developing a State or Tribal Wetland Program Plan*, <https://www.epa.gov/wetlands/developing-wetland-program-plan> (last updated July 5, 2018); U.S. EPA, *State and Tribal Wetland Program Plans*, <https://www.epa.gov/wetlands/state-and-tribal-wetland-program-plans#r1> (last updated Mar. 30, 2018).

Three wetland program plans include elements specifically related to integration of wetland activities with NRDA processes: those developed by the states of Idaho and New Jersey, and by the St. Regis Mohawk tribe.¹⁵⁷ The New Jersey plan notes:

Natural Resource Restoration is administered by the [New Jersey Department of Environmental Protection's] NJDEP's Office of Natural Resource Restoration, which was established in the 1990's to restore for environmental injury caused by multiple oil spills and discharges. . . . Examples of recent and on-going wetlands restoration, creation and enhancement efforts by the NJDEP Office of Natural Resource Restoration include the removal of landfill material and recreation of a salt marsh in Hudson County, dam removals that have the effect of increasing water quality and wetlands quality along the Raritan River, and stream restoration work.¹⁵⁸

Idaho's plan says that the state will "form strong working relationships with all stakeholders to develop, fund, and implement riparian and wetland management (e.g., agricultural practices), protection, and restoration/remediation plans for watersheds (e.g., Hecla Settlement Restoration Partnership in Coeur d'Alene River Basin where future conservation work is guided by the "Partnership" and the CDA Basin Natural Resource Restoration Plan)."¹⁵⁹ It will "identify, evaluate, remediate, and restore wetlands in the Lower Coeur d'Alene River Basin contaminated by metals for the purpose of reducing waterfowl mortality and improving wetland condition" including a plan to "submit wetland remediation and restoration project proposals to EPA and the Natural Resources Trustees for funding."¹⁶⁰

The St. Regis Mohawk Tribe (located in New York along the St. Lawrence River) is deeply involved in NRDA restoration activities. Its wetlands program plan¹⁶¹ specifically references integration of wetlands activities into these restoration measures under its Objective #1: "Clearly and consistently define restoration and protection goals throughout tribal territory." The action items for this objective include:

Action (a): Establish goals that are consistent or compatible across relevant agencies (e.g. NRDA/ACR).¹⁶²

Coordinate with relevant agencies that outline restoration/protection goals and strategies and timeframes.

Develop a multi-agency body to coordinate restoration/protection efforts.

Gather information on wetland location, class, and condition/functions.

Set restoration goals based on agency objectives and available information.

Action (b): Consider watershed planning, wildlife habitat, and other objectives when selecting restoration/protection sites.

Identify rare, vulnerable, or important wetlands and prioritize for restoration/protection.

Apply tools (GIS, color-infrared photography, mapping, modeling, field inspection of soil, vegetation, and hydrologic conditions) to identify and prioritize restorable wetlands.

Integrate restoration/protection efforts on a watershed or landscape scale (e.g., prioritize restoration sites within a watershed).

Share priorities with other organizations involved in wetland protection and restoration (e.g., wildlife bureaus, agriculture/conservation agencies, land trusts, and mitigation banks).

Share priorities with other water quality protection programs (e.g., identify riparian restoration projects that would reduce sediment and nutrient loadings to streams and implement [total maximum daily loads]).

Action (c): Provide clear guidance on appropriate restoration and management techniques and success measures.

Develop restoration and management guidance specific to wetland types and location (e.g., urban vs. rural).

Establish measures of restoration success (e.g., adopt functional and/or condition indicators and field methods).

Establish performance standards based on reference wetland sites in a relatively undisturbed condition.

Through guidance, encourage restoration outcomes that recreate natural self-sustaining systems and reduce the need for ongoing management.

Verify restoration techniques with site visits and adapt as necessary.

Train restoration partners to use guidance techniques.¹⁶³

Several other state or tribally administered wetland program plans make reference to NRDA activities. The Confederated Tribes of the Colville Reservation's plan states: "In the future, it is anticipated that the monitoring data may support the associated Upper Columbia Site natural resource damage assessment (NRDA) and CERCLA

157. *Id.*

158. NJDEP, NEW JERSEY WETLAND PROGRAM PLAN 2014-2018, at 6 (2013), https://www.epa.gov/sites/production/files/2015-10/documents/njdep-wpp_2014-2018.pdf.

159. CHRIS MURPHY, IDAHO DEPARTMENT OF FISH AND GAME, IDAHO'S WETLAND PROGRAM PLAN 28 (2014), <https://www.epa.gov/sites/production/files/2015-10/documents/idfg-wetland-program-plan-2015.pdf>.

160. *Id.*

161. ST. REGIS MOHAWK TRIBE, WETLAND PROGRAM PLAN FOR THE SAINT REGIS MOHAWK INDIAN RESERVATION JANUARY 2014-DECEMBER 2018, https://www.epa.gov/sites/production/files/2016-03/documents/srmt_wetland_program_plan-final.pdf.

162. ACR is the Akwesasne Cultural Restoration Program, which is a component of the settlement of NRDA claims arising out the contamination of the St. Lawrence River and the loss of culturally important resources and activities for the tribe and its members resulting from the contamination.

163. ST. REGIS MOHAWK TRIBE, *supra* note 161, at 14-15.

remedial investigation and feasibility study.”¹⁶⁴ Missouri’s state wetland plan merely notes: “[Missouri Department of Natural Resources] supports Natural Resource Damages (NRD) wetland restoration activities.”¹⁶⁵

Other states have used information developed by wetland programs to inform NRDA activities. However, formal wetland program planning documents show little current integration of these programs from the wetlands side.

III. Challenges to Integrating Other Compensatory Mitigation With NRDA

NRD recoveries may be used only to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources.¹⁶⁶ *Restoration* or *rehabilitation* actions return injured resources to their baseline conditions, as measured in terms of the injured resource’s physical, chemical, or biological properties or the services it previously provided.¹⁶⁷ *Replacement* or *acquisition of the equivalent* substitutes the injured resources with resources that provide the same or substantially similar services.¹⁶⁸ Damages also include, at the trustees’ discretion, the compensable value of all or a portion of the *services lost to the public in the interim*, as well as assessment costs.

NRDA trustees face at least six potential challenges to using credits generated by §404 mitigation banks, ILFs, and conservation banks to meet NRD claims. These include:

- Proving a sufficient nexus between the advance restoration project and specific injuries;
- Meeting procedural requirements;
- Justifying restoration bank credits as the preferred alternative;
- Responding to public comment;
- Timing; and
- Ensuring long-term monitoring and maintenance.

A. Proving Nexus Between Advance Restoration Project and Specific NRD Injuries

Trustees must demonstrate a “nexus” between an advance restoration project and the particular injury to resources and services caused by hazardous substance release or oil discharge. They are charged with developing restora-

tion projects that provide “the same or comparable natural resources and services as those identified as having been injured.”¹⁶⁹ The scope of the restoration project must address both the type/kind and the scale of ecological services lost. Trustees must be satisfied that the quantity and quality of the restoration received compensates for the injury in question.

This poses a challenge to trustees in determining the value of restoration bank credits, to ensure the number of credits retired is equivalent to the measure of the damages assessed. Trustees take a functional rather than a spatial approach to quantifying ecological losses, based on the loss of services rather than, for example, lost acreage or number of species. OPA regulations prioritize the different approaches to determining the scale of restoration actions, based on what restoration actions are feasible.¹⁷⁰

Both DOI and NOAA have considered how trustees for a particular case can determine how to value available advance restoration credits and apply them to offset NRDA liability. DOI suggests trustees enter into prospective agreements with third-party restoration bank developers to determine how advance restoration credits will be valued and applied to a particular case.¹⁷¹ NOAA, which has experience in making this determination, discusses scaling NRD liability in some form of ecological currency, such as DSAYs, using methodologies like HEA.¹⁷² Ideally, trustees will settle on valuation early in the process, by taking the formal steps of both recognition and acceptance of the restoration bank and the nature and value of the credits it produces.¹⁷³

Ex ante recognition is typically granted through an agreement between the trustees and the bank developer. Ex post acceptance may occur when the trustees and the PRPs enter into a settlement agreement under which the trustees accept and retire a specified number of credits in return for granting a covenant not to sue. However, NOAA expressly will not recognize credits generated before the *later* of the injury or the agreement.

Under the §404 Compensatory Mitigation Rule for mitigation banks and ILFs, the credits are defined at the time of approval of the instruments authorizing the programs. Conservation bank credits are also defined in the banking agreement (and the underlying HCP in many instances). This is done with understanding of the kinds

164. CONFEDERATED TRIBES OF THE COLVILLE RESERVATION, WETLAND PROGRAM PLAN 10, https://www.epa.gov/sites/production/files/2017-02/documents/wpp_2018_final.pdf.

165. MISSOURI DEPARTMENT OF NATURAL RESOURCES, MISSOURI WETLAND PROGRAM PLAN 2013-2018, at 11, https://www.epa.gov/sites/production/files/2016-03/documents/missouri_wetland_program_plan_final_updates_9-17-2014.pdf.

166. CERCLA §107(f)(1), 42 U.S.C. §9607(f)(1); OPA §1006, 33 U.S.C. §2706(d)(1).

167. CERCLA, 43 C.F.R. §11.82(b)(i) (1994), *id.* §11.14(II) (1994).

168. CERCLA, 43 C.F.R. §11.82(b)(ii) (1994), *id.* §11.14(a) (1994).

169. OPA, 15 C.F.R. §990.56(b)(iii).

170. OPA, 15 C.F.R. §990.53(d)(2), (3). The first priority is to provide natural resources/services of the same type and quality, and requires using a resource-to-resource or service-to-service scaling approach. When these approaches are inappropriate, trustees may then use the valuation scaling approach to determine the natural resources and/or services that must be provided to produce the same value lost to the public. If the valuation approach is not reasonable under the circumstances, trustees may estimate the dollar value of the lost services and select the scale of the restoration action that has a cost equivalent to the lost value.

171. DOI NRDA GUIDANCE, *supra* note 93, at 8.

172. NOAA GUIDANCE, *supra* note 112, at 3.

173. Recognition and acceptance can be identified prior to an incident, where the trustees in an area enter into an agreement with a bank. This can occur in locations where future, similar incidents can be expected. *Id.* app. E (scenario 2).

of impacts (to particular aquatic resource types, or species habitats) that will be offset by the credits. There is then a subsequent regulatory approval of the credit release and sale to meet compensatory mitigation obligations.

In general, credits are defined for §404 compensatory mitigation in terms of acres of specific aquatic resource types or linear feet of streams. Issues of condition and temporal replacement are addressed by setting different compensation ratios based on the activity used to generate the compensatory mitigation (e.g., higher ratios generally required for enhancement or preservation), on the type of impact, and on the timing of credit usage. The unit of measure under the Compensatory Mitigation Rule is generally described as a “functional” measure, representing the accrual or attainment of aquatic functions at a compensatory mitigation site.¹⁷⁴ Conservation banking often uses some form of functional methodology, but FWS recognizes that units are often expressed as “a measure of surface area (e.g., an acre or hectare), linear distance of constant width (e.g., stream miles), number of individuals or mating pairs of a particular species, habitat function (e.g., habitat suitability index), or other appropriate metric.”¹⁷⁵

In contrast, in the NRDA setting, recognition and acceptance of restoration credits relies on a number of techniques, but the key is a functional assessment (often using HEA), and then expressed as DSAYs in order to account for interim losses and timing issues relating to when the restoration occurs relative to the injury.¹⁷⁶ The NOAA guidance specifies that trustees must “scale natural resource liability in some form of ecological currency” such as DSAYs.¹⁷⁷

While both of these approaches to measurement are at bottom based on functional assessment methods, they are not the same. Trustees will need to determine how to assess credits generated under these other systems and may need to reassess them (or assess them prospectively where they will be generated after entering into an agreement with trustees, as NOAA requires).

NOAA has, in Portland Harbor, recognized an approach using “forecast settlement credits value” at the time the trustees provide technical assistance to a restoration project or bank, with readjustment to “final settlement credits value” at the time credits are accepted in settlement of a party’s liability claim.¹⁷⁸ This is analogous to the §404 process of approving “credit release” upon the meeting of milestones in the §404 banking or ILF instrument. However, the §404 process occurs irrespective of a compensation transaction. The NRDA approach seems to create more risk for the developer that credits may not have the value anticipated. However, it also contemplates the possibility of an upward adjustment if the project produces more value.

Use of §404 compensatory mitigation credits for NRD liability will likely require engagement by the trustees, the bank or ILF, and the IRT and the Corps district. The latter entities may have concerns about the effect of such transactions on the likely future inventory of credits potentially available for §404 purposes in their watersheds. They are responsible for overseeing the credit ledgers. Similar credit usage concerns may arise with conservation banks, involving FWS or state wildlife agencies.

B. Meeting Procedural Requirements Under Other Environmental Statutory Regimes

NRDA restoration banks are sponsored by private third parties, but the decision of trustees to recognize and retire restoration bank credits as an NRDA decision constitutes government agency action. Acceptance of restoration bank credits to meet NRD liability must be completed in compliance with other applicable environmental statutes.

The most significant is NEPA. Trustees must ensure compliance with any applicable consultation, permitting, or review requirements, including but not limited to the ESA, National Historic Preservation Act, Coastal Zone Management Act, National Marine Sanctuaries Act, Marine Mammal Protection Act, and Archaeological Resources Protection Act.¹⁷⁹ NOAA’s OPA regulations provide detailed guidance on integrating NRDA with NEPA and its associated regulations.¹⁸⁰ The regulations note that federal trustees can tier their NEPA analysis for existing restoration projects to an existing EIS.¹⁸¹ DOI’s CERCLA regulations provide no explicit instructions.¹⁸²

Under current practice under both regimes, the decision to accept credits in satisfaction of NRD liability is analyzed among the “alternatives” considered in the EA or EIS for the NRD decision. Thus, if an existing mitigation bank, ILF, or conservation bank is under consideration to meet NRD liabilities, it will be highly desirable to have an agreement with the trustees in place. If a proposed bank or ILF, the prospectus and terms of the instrument should be outlined in the NEPA documents. Use of “watershed plans,” including those used in the “watershed approach” by the Corps in addressing locally relevant §404 compensatory mitigation decisions (or establishing the service areas of banks and ILFs), can also be referenced in the NRDA NEPA documents.

C. Justifying Restoration Bank Credits as the Preferred Alternative

Trustees must evaluate a reasonable number of possible alternatives to restoration in their RCDP (CERCLA) or

174. 33 C.F.R. §320.2; 40 C.F.R. §230.92. FWS uses a similar definition in its ESA Compensatory Mitigation Policy, Appendix B (“accrual or attainment of ecological functions and/or services for a species at a mitigation site”).

175. Compensatory Mitigation Policy, *supra* note 84, §6.4.

176. Jones & DiPinto, *supra* note 41.

177. NOAA GUIDANCE, *supra* note 112, at 3.

178. Memorandum of Agreement, *supra* note 144.

179. 15 C.F.R. §990.24(b).

180. *Id.* §990.23.

181. *Id.*

182. DOI’s Advance Notice of Proposed Rulemaking solicits comment on the NEPA issue, and particularly on whether to consider adoption of categorical exclusion for NRDA activities. 83 Fed. Reg. at 43613 (Aug. 27, 2018).

DRP (OPA), and select an alternative or alternatives.¹⁸³ Trustees must therefore evaluate a non-advance-restoration option as part of their alternatives analysis; however, restoration banks (and §404 banks, ILFs, and conservation banks) may also be in a position to provide credits generated after the injury.

The range of alternatives covers the spectrum from zero-action “natural recovery” to intensive action focused on returning the natural resources and services to baseline conditions on an accelerated time frame.¹⁸⁴ Restoration banks may fall toward the more intensive action end of the spectrum of alternatives under consideration. At the same time, they may also be an important component of addressing the “compensatory” or “interim” loss dimension of an NRDA claim even if on-site activities do not involve a great deal of intervention.

Trustees evaluate each alternative against several factors. The 10 factors prescribed by CERCLA include technical feasibility, the relationship of the expected costs of the proposed actions to the expected benefits, and cost-effectiveness.¹⁸⁵ The six criteria prescribed by the OPA include the cost to carry out the alternative and the extent to which each alternative is expected to meet the trustees’ goals and objectives in returning the injured natural resources and services to baseline and/or compensating for interim losses.¹⁸⁶

The regulations do not specify a preference among the categories of action: restoration, rehabilitation, replacement, or acquisition of the equivalent resources. However, the legislative history associated with the OPA indicates that Congress listed the four in order of preference. The U.S. House of Representatives Conference Report states: “The alternative of acquiring equivalent resources should be chosen only when the other alternatives are not possible, or when the cost of those alternatives would, in the judgment of the trustee, be grossly disproportionate to the value of the resources involved.”¹⁸⁷ The OPA regulations themselves state that incident-specific restoration plan development is preferred,¹⁸⁸ and that trustees may consider using an existing restoration project *when it is determined to be the preferred alternative*.¹⁸⁹

D. Responding to Public Comment

Trustees must provide the public with an opportunity to review and comment on various stages during the NRDA process. Under the DOI CERCLA regulations, trustees are required to provide opportunities for public review on the assessment plan, the RCDP, the restoration plan, and any significant modifications to the restoration plan. Under

NOAA OPA regulations, trustees are required to provide opportunities for public review on the notice of intent to conduct restoration planning and the DRP.¹⁹⁰

Public comment opportunities are coordinated with public comment required under NEPA. Particularly important are the requirements that the trustees seek public comment on the proposed alternatives. Trustees must include responses to comments in their FRPs.¹⁹¹ Public comments introducing substantive objections to meeting NRD goals with restoration bank credits could lead the trustees to select another alternative.

Current approaches to NRDA restoration banking preserve the opportunity for public participation. However, trustees in their interactions with the public should address the potential for using a restoration bank (or a trustee MOA that contemplates using a bank) as early in the process as possible. This is also particularly important if state or tribal trustees contemplate using either proposed or existing wetland banks or ILFs to address NRD restoration for future spills and releases.¹⁹² If an NRD process is conducted by a state entirely under state laws, its own public comment procedures will need to be followed and coordinated.

E. Timing

Timing presents many challenges to use of §404 mechanisms and conservation banking mechanisms in the NRDA context—mostly arising out of the issues discussed above. The NRDA process is focused throughout on restoration of services and resources to baseline, and compensation for interim losses (temporary or permanent) to achievement of baseline. This means that trustees may be reluctant to accept credits (restoration activities) before the full damage assessment process has run its course. The current best practice by NOAA and DOI is to base the NRD claim on the restoration plan. However, because the plan requires evaluation of alternatives, it can be difficult for trustees to accept credits by way of settlement early in the time line, except in an “advance” restoration agreement context where it is understood that there will be additional future liability determinations.

Nevertheless, it should be possible for state and tribal trustees to identify whether certain approaches to restoration (including existing §404 and conservation bank mechanisms) might be acceptable in certain geographic areas for known resources (e.g., salmon habitat, listed species habitat, specific wetland types). This may facilitate the entering into of agreements (involving all the trustees) to approach at least this component of restoration in a timely way.

183. CERCLA, 43 C.F.R. §11.81; OPA, 15 C.F.R. §990.53(a)(2).

184. 43 C.F.R. §11.82(c); 15 C.F.R. §990.53(b)(3).

185. 43 C.F.R. §11.82(d).

186. 15 C.F.R. §990.54.

187. H.R. REP. NO. 101-653, at 108 (1990), *reprinted in* 1990 U.S.C.C.A.N. 779, 786-87.

188. 15 C.F.R. §990.15(b).

189. *Id.* §990.56(a).

190. DOI NRDA PRIMER, *supra* note 12.

191. CERCLA, 43 C.F.R. §11.81(d)(2)-(4); OPA, 15 C.F.R. §990.55(c).

192. Both the Compensatory Mitigation Rule and Conservation Banking Interim Guidance provide for opportunity for public comment on proposed instruments. 33 C.F.R. §332.8(d)(4); 40 C.F.R. §230.98(d)(4).

F. Ensuring Long-Term Monitoring and Maintenance

Trustees must ensure long-term stewardship over and monitoring of restoration projects implemented under CERCLA and the OPA. NOAA and DOI recommend taking specific steps to ensure that the restoration project is completed and monitored so as to fully compensate for injured resources. One protective option is a permanent easement.¹⁹³ Another is to include, in agreements with restoration banks, provisions for implementing and funding long-term stewardship of the site, and explicitly defining trustee control and oversight. Louisiana's NRD Banking Program requires restoration bank sponsors provide financial assurance to cover construction and long-term operation, monitoring, and maintenance. Financial assurance may be in the form of a trust fund, letter of credit, or a surety bond.

Both the requirements of the Corps-EPA Compensatory Mitigation Rule and the FWS Guidelines for Conservation Banks cover these elements, meaning it should be relatively straightforward for trustees to approve restoration banks operating under these regimes.

G. Summary

State and tribal trustees have incentives to adhere to the NRDA regulations, due to the rebuttable presumption both CERCLA and the OPA grant them.¹⁹⁴ As members of trustee councils, they must reach agreements on approaches to NRDA that can efficiently meet their needs as well as address obligations they have for stewardship of the environment. Most of the challenges can be readily overcome. However, the credit valuation issue and timing issues related to trustees' use of previously generated credits (not allowed by NOAA guidance) pose some complexities.

Trustees should consider how best to provide opportunity for public comment if they are considering recognition of §404 mitigation banks or ILFs, or conservation banks, for later satisfaction of NRD liability. The proper design of an outreach approach will improve the likelihood that appropriate kinds of credits will be generated and that providers will have enough confidence in a future market to justify expenses in site acquisition, planning, and restoration activities. Trustees must still, at the appropriate time, justify selecting restoration bank credits among possible alternatives, and respond to public comments on that selection.

IV. Expert Feedback on NRDA/Watershed Approach Integration

The authors interviewed knowledgeable participants in the NRDA process to gain insight into advantages and

obstacles related to integrating NRDA with other types of compensatory mitigation. These included federal trustees, state trustees and state NRDA programs, tribal trustees, consultants, law firms, and mitigation/restoration providers. Observations are reported below without attribution to individual respondents.

A. Advantages of Integration

Respondents observed that integrating §404 banking and ILF programs (and the watershed approach) with the NRDA process offers three potential advantages:

- It may reduce the time period until active restoration occurs.
- It provides for potential efficiencies in evaluating ecosystem services, identifying restoration options, and implementing needed actions.
- Coordination may produce a more regionally oriented outcome by identifying sites that can serve multiple ecosystem goals in a regional context.

The willingness of PRPs to enter into early settlements might be expedited, chiefly because known restoration activities and known costs would create greater certainty for PRPs.¹⁹⁵ Some respondents suggested that based on state "small spill" experiences, the option of a PRP to pay money toward an aggregation account with a plan for restoration may lead to rapid recoveries in instances where full-scale NRDA processes would be too costly or time-consuming and where a small one-time restoration action alone might not generate much ecological value.

B. Obstacles for Restoration Providers

Mitigation and conservation bankers and restoration providers emphasized the difficulty of achieving a predictable, timely return on investment (ROI) in most hypothetical NRDA banking situations. Unlike current §404 banking and conservation banking, in which a reasonable credit demand per year can be projected, NRDA cases often involve single incidents with lengthy time periods before restoration alternatives are identified and assessed, let alone approved by all the trustees.

The risk of ultimately having no market for credits—or having such demand deferred for periods of many years—makes NRDA banking an unattractive investment opportunity in many settings. Up-front investments in activities that will not generate any return for years is not competitive with other forms of ecosystem banking and ecological service activities. While ILF programs do not have exactly the same concerns, their ability to participate at an early

193. NOAA GUIDANCE, *supra* note 112, at 5.

194. CERCLA §107(f)(2)(C), 42 U.S.C. §9607(f)(2)(C); OPA §1006(e)(2), 33 U.S.C. §2706(e)(2).

195. See also Nate Stenstrom, *The "Restoration Up-Front" Approach to Satisfying Natural Resource Damage Claims: An Analysis of the Elliott Bay Trustee Council's Up-Front Protocol*, SUPERFUND & NAT. RESOURCE DAMAGES LITIG. COMMITTEE NEWSL. (ABA), Dec. 2011, at 14 (citing economies of scale, speeded process, predictable time line, existing settlement structure available to PRPs, and efficiency).

stage is also constrained by lack of funds to support planning and related activities in these markets.

One provider noted that it is hard to raise capital with such a speculative ROI proposition. Even with a well-sited NRDA bank with appropriate credits, the risk is fairly high that a trustee council may not approve their use or that a PRP may not agree to utilize the credits to satisfy a liability.¹⁹⁶

Regulatory approval was also a concern. Section 404 compensatory mitigation is subject to fairly straightforward approval processes. Although it involves typically one federal agency (the Corps) and a state agency where it has regulatory authority over dredge and fill activities, the use of a §404 mitigation bank or ILF also involves interactions with an IRT. The IRT, however, will have already approved the banking or ILF instrument, the credit calculations, and other requirements, with the Corps making the final decision. In contrast, NRDA trustee councils include multiple actors often with competing (or even inconsistent) objectives. Many of these agencies have very different determinants in terms of their tolerance for delay, their preferences for restoration activities and interests in particular resources, and their desire to support or conduct long-term tailored scientific assessment activities.

A restoration provider observed that where there is an existing NRDA process because of a release of oil or hazardous substances, there is also the risk of entering the market too late. The PRPs may already be negotiating with different kinds of expectations as to the outcome.

A corollary to these observations is that restoration providers that already are invested in ongoing §404 and conservation banks, for purposes of meeting foreseeable regulatory demand for credits, would like to have the opportunity to sell excess or additional credits into the NRDA market where appropriate. This treats potential NRDA demand as an add-on or supplemental income stream rather than as the purpose for establishing a bank.

Several respondents suggested that ILF models may, in some circumstances, better accommodate NRDA restoration goals and requirements than §404 mitigation banks. Typically, ILFs accumulate funds through the sale of advance credits prior to selecting and acquiring sites and undertaking site construction activities. Site selection under a pre-approved compensation planning framework can also *follow* the collection of funds. This framework is intended to assure that a site is appropriate given the ecological and hydrological needs anticipated in the region. This timing difference can change the risk calculation that seriously affects wetland mitigation banks (which have more up-front expenditures, site acquisition, and construction of credits). It can also help overcome the trustees' objections,

where trustees prefer construction of credits only after the NRD event.

The approaches are not entirely analogous. Indeed, one respondent contended that ILF compensatory mitigation frameworks aim chiefly at restoration for the most important (or best opportunities) regionally in a watershed related to a particular type of wetland or aquatic resource. In contrast, NRDA aims chiefly at restoring the damaged resources, whatever they may be, in place to the maximum and then determines compensation for interim losses, and sites restoration activities as closely as possible to the damaged sites.

The §404 Compensatory Mitigation Rule expresses a preference first for consideration of mitigation banks, followed by ILFs, followed by permittee-responsible mitigation. This preference is not consistent with the NRDA approach. However, the NRDA framework does not preclude use of these off-site mechanisms, particularly as *part* of a restoration plan that has multiple components.

A number of public and private respondents suggested that the greatest opportunity might lie with nonbank third-party restoration, in many settings (either where some advance restoration is being funded by RPs before completion of the NRDA process, or where third-party sites are identified relatively early in collaboration with the trustees). The recent Bluefield Holdings NRDA restoration sites in Washington State hew closely to this model, although operated by a for-profit entity.¹⁹⁷ The level of certainty helps overcome the concern otherwise expressed above concerning acceptable risk for investors.

C. Bank Location

Respondents noted that for site management purposes, co-locating NRDA banks with §404 banks, ILF projects, and conservation banks can provide efficiencies and add to ecological function. A number of existing §404 and conservation banks have proposed co-location or adjacency of proposed NRDA banks. One approved tidal wetlands bank in Louisiana advertises that “[s]ignificant portions of the property not currently included in the 404 mitigation bank will be developed as a Natural Resource Damage (NRD) mitigation bank for use as offsets to natural resource damage assessments under the Oil Pollution Act and CERCLA.”¹⁹⁸

Another provider in the Pacific Northwest notes the relationship between approved mitigation banks and habitat conservation banks, highlighting the possibility of servicing outstanding NRD claims in specific watersheds in both Oregon and Washington.¹⁹⁹ This may be the easiest

196. An additional issue is the opposition of various trustees to recognize credits generated in advance of the NRD incident to satisfy NRDA liability. The NOAA guidance document expressly does not allow this, and even some DOI offices and agencies have been reported as not favoring this practice (regarding it as part of the baseline rather than as restoration). Differing viewpoints among trustees can increase the perceived risk to investors in banks.

197. See NOAA ET AL., NATURAL RESOURCE RESTORATION AND ENHANCEMENT CREDIT PROTOCOL (2009).

198. ECOSYSTEM INVESTMENT PARTNERS, CHEF MENTEUR PASS WETLAND MITIGATION BANK (2016).

199. Wildlands, NRDA and Conservation Banks (2016) (slide presentation identifying five examples of “NRDA impacts within active and in-process conservation bank service areas” in the Pacific Northwest), https://www.cerc.usgs.gov/nrdar/2009_Wkshp_Docs/Res_Bank/3-White.pdf.

to bring about if the two types of credits are generated on different parcels, in order to aid in approval and tracking by the regulators and trustees, respectively, while still gaining management efficiencies. A recent prospectus for a wetland mitigation bank in Louisiana proposes the establishment of a §404 mitigation bank on a 517-acre site adjacent to a 230-acre NRDA restoration site established 20 years earlier.²⁰⁰

One respondent noted that co-location may be particularly beneficial in instances where trustees need upland habitats to meet NRD claims. These areas may be owned or maintained by §404 mitigation banks or ILF programs, but typically receive very little credit in §404 compensation decisions. Thus, a developer may hold, or have access to, upland parcels that contribute ecological value in the overall project, but that can best be marketed as NRD credits.

D. Credit Definition

Credit definition and approval for NRDA purposes differ substantially from the §404 model. While §404 credits are typically defined by aquatic resource type and counted in fractions of acres or linear feet, the NRDA process often requires a more complex set of evaluations in order to ensure restoration and compensation for interim losses that meet the NRD standards. The adoption of HEA does provide some basis for translation of measurements, but can vary substantially by resource type. And the trustee councils that make the relevant determinations may not function as uniformly as would a single Corps district or even an IRT defining compensatory mitigation for prospective providers in the §404 context. This may complicate widespread adoption of §404 banks and ILFs as providers of NRDA restoration—especially in complex environments or impacts to specific species.

There is, however, a closer analogy between multispecies conservation banks and NRDA, as each typically addresses an array of resources and interdependent habitats, resources, and species when defining credit types and valuations. Trustee councils can make these credit determinations. Moreover, there is already some experience integrating §404 banks and ILF programs with conservation banking; the multiple types of credits that are generated and managed suggests that, in specific settings, these credit definition and valuation approaches can be harmonized.

Placed against these concerns is the strong preference of commercial providers to produce a truly multi-resource, multi-value credit that could be sold into numerous types of markets (NRDA, ESA, §404, carbon). These providers embrace uniformity on site management, financial assurance, adaptive management, and mitigation planning, but are uncomfortable with the difficulty and risk of trying to maintain numerous separate product lines that

may not find a market. For their part, trustees are very concerned with avoiding double-counting of credits—which is not permitted under either the NRDA guidance documents, the Corps/EPA compensatory mitigation regulations for §404 mitigation, or the FWS conservation banking policy.

Section 404 mitigation banks and ILF programs produce very much an off-the-rack type of credit product designed for use by multiple permittees, while each NRDA process more often generates its own custom-designed restoration product. If the two are to converge, the critical need is a road map to ensure that NRDA regulations are satisfied, trustee needs are met, and approval processes are streamlined and clear. Otherwise, investment is unlikely to occur except as incidental sales opportunities sustained mostly by investment in existing forms of §404 banking and conservation banking.

This credit definition, recognition, and acceptance issue is the most challenging of the issues for integration of these systems. And it influences the investment risk calculation—which for mitigation bankers is the most challenging of the financial issues. Federal, state, and tribal trustees can simplify these processes if they define what they will accept early and clearly in the NRDA process.

E. Experiences Integrating NRDA Processes and Other Restoration/Compensation Approaches

Some “small spill” programs in a few specific states have adopted standardized approaches for determining liability amounts. These states then use or consider using the collected amounts for restoration/compensation activities in the same watershed area(s) that are determined in various ways. These offer useful models for integration of banking/ILF approaches with NRDA restoration.

Massachusetts is developing a “standard method” for small oil spills, which will become part of a regulatory package. This would be used chiefly for spills that are handled under state NRDA law. The state has not used a restoration banking approach. However, in determining the equivalency amounts for determining the loss and calculating the liability amount, it has drawn on experience of the state wetlands program in determining to what extent constructed wetlands meet the ecological services of destroyed wetlands, and uses dollar figures/acre derived from the ILF program operated by Massachusetts Fish and Game in accordance with the §404 Compensatory Mitigation Rule.

Very few respondents indicated that there was much use made of regional restoration plans in NRDA processes. However, the newly adopted Louisiana NRDA banking regulations require consistency of the proposed banks with “the goals and objectives of the [state’s] coastal master plan.”²⁰¹ Massachusetts notes that, on several occasions, the relationship has operated in the opposite

200. Prospectus for Hyppolyte Coulee Mitigation Bank, Calcasieu Parish (public notice Oct. 2, 2017).

201. LA. ADMIN. CODE tit. 43, §111.

direction, with proposed responsive NRDA restoration projects (identified by the NRDA program) being co-opted by other state programs as targets for §404 permittee-responsible compensatory mitigation projects (making them unusable as NRDA projects).

In the California small spill program, the collected funds are directed to a small spills habitat account, targeted to the county of the damages; funds are then pooled and used for habitat restoration needs (e.g., salmonid and fish passage activities). California notes that, in many cases, damages are in urban environments where restoration opportunities and available land areas present few options; it can be helpful if there are ongoing restoration targets that can use the funding. HCPs in California can help identify suitable projects in some instances.

Oil spills may be better candidates for banking approaches, according to one federal respondent. Injuries are often more standardized than chemical/hazardous substance release and, in many instances, the number of PRPs is lower (or limited to a single PRP), making it easier to reach agreement on an approach including advance/interim restoration or use of banking credits as part of the settlement.

In some instances, banks are not a good option at a watershed scale because the injury is to migratory species/marine mammals. However, they can be part of a larger NRDA restoration effort that includes numerous restoration sites.

F. Tribal Trustees

Indian tribal trustees can confront additional issues in the context of considering when and whether to accept NRDA restoration banking or use of the watershed approach borrowed from §404 compensatory mitigation. Respondents noted that many tribes do not have repeat experiences with NRDA processes, and so may need to address a different learning curve than state and federal trustees that manage multiple cases and the expectation of repeat oil spills and other events.

Respondents noted that there are often very distinct and differing expectations of tribe members and tribal trustees related to the damages and restoration plans for impacts on treaty rights lands and reservation lands. A proposed restoration plan (such as restoration of a salmon fishery versus addressing impact upon waterfront reservation lands) may present distinct choices and trade offs. Also, where there is more than one tribe involved in the NRDA process, their interests may not coincide.

In some cases, where agreement is reached, the trustees could agree to allocate funds to restoration of resources elsewhere within the watershed that would benefit all tribes and other trustees. But the trusteeship over the resource varies (such as treaty access to particular waters for fishing, hunting, traditional uses), contrasting with plenary jurisdiction of trustees over a damaged resource. In some cases,

fishery rights and tribal traditions are different, so one project cannot address all losses.

Differences in the effects of injury can make these decisions difficult. In one instance, a tribe had historic and cultural use of reed grasses, but restoration on-site could not meet the need because of residual and ongoing contamination affecting the reeds. The settlement promoted, among other actions, apprenticeship in traditional basket weaving using reed grasses.

Context is critical. Respondents working with or for tribal trustees emphasized the importance of “listening first” to understand the underlying stories in order to understand the loss. This makes it possible to determine what restoration should consist of; understanding these values may lead to a greater emphasis on direct restoration rather than assigning dollar values to loss and/or DSAYs.

One respondent noted that contingent valuation is also very problematic as a technique for tribal cultural resources. The restoration action should reflect traditional concepts important to tribal trustees, often relating the people to the land and water. This may be a reciprocal relationship of respect, not merely a utilitarian concept of lost value. Off-site banking is very problematic for tribal trustees who have a specific land area and deep natural/cultural connections to the resource. This means that fungibility using banking approaches may be less appealing to tribal trustees than to state trustees aiming at broader watershed or habitat objectives.

One consultant respondent emphasized that tribes prefer nearby restoration for additional reasons. They do not like to see the value of reservation/treaty lands whittled away by injuries, so they emphasize restoration of those lands. Tribes are sometimes, as a result, less interested in compensatory restoration for interim losses, but much more concerned with restoration of the damaged resource in place. Another respondent said that banking should never be more than part of the restoration plan in a tribal trustee situation, as restoration needs to be closely geographically focused on the area of injury to meet the needs of the tribes.

On the other hand, tribes have accepted off-reservation projects on lands that are historically/culturally important to their people. But it is not always easy to identify these ahead of time, as might be helpful in establishing banking opportunities.

V. Conclusion

States and tribes play key roles in compensatory mitigation for aquatic resources and conservation of species and habitats, both in administering their own programs and coordinating with federal permitting agencies. They also wield significant influence as NRDA trustees, as members of trustee councils determining restoration for injured natural resources.

While NRDA restoration and §404 compensatory mitigation or habitat compensatory mitigation mechanisms function similarly to offset impacts to protected resources, the differences between the applicable processes are meaningful.²⁰²

The NRDA process seeks to achieve full restoration or replacement of resources and services from unpermitted injuries caused by the release of hazardous substances and oil. Trustees typically pursue detailed determinations of baseline conditions and assessment of restoration alternatives (including both primary restoration and compensation for interim losses in services and resources) over a period of years. NRDA also often involves conducting new and specific scientific studies to support these determinations—studies chargeable to PRPs. Timing issues are generally dealt with through accounting mechanisms that incorporate temporal considerations into the measure of restoration (such as DSAYs).

In contrast, the §404 and ESA compensatory mitigation processes focus on rapidly identifying, and in many cases supplying, actions to offset the impacts of permit-

ted activities *before* the impacts occur. In the case of §404 banks and conservation banks, the credits are generated in advance. There is substantial relevant ecological information in hand. And in areas where there are already authorized §404 mitigation banks, ILFs, or conservation banks, there will also be preexisting watershed information or regional habitat data that support approval of these entities and credits for future use.

Despite the differing frameworks, there are places where §404 compensatory mitigation mechanisms and conservation bank mechanisms offer advantages for the resolution of NRDA claims. State and tribal trustees can affirmatively identify areas and instances in which §404 and conservation banking approaches can be used to fulfill or complement NRDA processes. They can cultivate the development of these mechanisms in appropriate places—by identifying these areas early with federal trustee agencies, and by adopting laws and policies expressed in state/tribal laws and regulations that define terms and conditions for accepting banking-type actions as NRD alternatives.

202. The 2016 DOI NRDAR guidance identified the difference in goals between these programs (satisfying NRD liability versus compensating for authorized impacts) as a reason that the (now-revoked) Presidential Memorandum did not extend a “preference” to advance forms of compensation in NRDA cases.