



The Louisiana Regional Restoration Planning Program

DRAFT
Programmatic Environmental Impact Statement

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Louisiana Department of Environmental Quality
Louisiana Department of Natural Resources
Louisiana Department of Wildlife and Fisheries
Louisiana Oil Spill Coordinator's Office, Office of the Governor
National Oceanic and Atmospheric Administration
U.S. Department of the Interior

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EXECUTIVE SUMMARY

This document is both a Draft Programmatic Environmental Impact Statement (DPEIS) and the Louisiana RRP Program (RRP Program) (40 CFR Part 1506.4¹). The proposed action is to establish and implement the RRP Program. The PEIS is being developed pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 USC 4321 et seq., and its implementing regulations, 40 CFR Part 1500.

1.0 Introduction

Federal and Louisiana natural resource trustees have developed a statewide comprehensive RRP Program to assist the natural resource trustees in carrying out their responsibilities for discharges or substantial threats of discharges of oil (referred to as an “incident”). The RRP Program is described in this DPEIS and further defined in individual Regional Restoration Plans (RRPs) that will be prepared for each of nine regions in the State of Louisiana. The goals of this statewide program are to: expedite and potentially reduce the cost of the natural resource damage assessment (NRDA) process; provide for consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and, increase restoration of lost natural resources and services.

The Oil Pollution Act of 1990 (OPA), 33 USC 2701 et seq., and the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA), La. Rev. Stat. 30:2451 et seq. are the principal federal and state statutes, respectively, authorizing federal and state agencies and tribal officials to act as natural resource trustees for the recovery of damages for injuries to natural resources and services resulting from incidents in Louisiana. The RRP Program is being established to address incidents under OPA and OSPRA. The RRP Program does not address injuries from releases of hazardous substances under the Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA), 42 USC 9601 et seq., the Park System Resources Protection Act, 16 USC § 19jj et seq., or physical injuries to resources under the National Marine Sanctuaries Act, 16 USC 1431 et seq., should a sanctuary be designated in the State of Louisiana.

The development of the RRP Program has been a coordinated effort between state and federal natural resource agencies, local governments, and the public. The RRP Program will be jointly administered and used by the trustees to assist in carrying out their natural resource trust mandates under OPA and OSPRA.

Legal Mandates and Authorities

The RRP Program is required to be established in accordance with La. Rev. Stat. 30:2480.1, which states that:

“To assist in making the natural resource damage assessment process more efficient, the Regional Restoration Planning Program encompassing the entire geographic area of the state, is established in the office of the oil spill coordinator. The office of the oil spill coordinator shall develop and implement the program in coordination with the state natural resource trustees.”

¹ 40 CFR 1506.4 Combining documents. Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork.

Broad guidelines and the basic requirements of OPA provide the necessary direction for developing RRP. These guidelines and requirements are contained in 15 CFR 990.

NRDA Trustees

Under OPA, 33 USC 2706(b), and the National Contingency Plan (NCP), 40 CFR 300.600, certain federal and state agencies and tribal authorities are designated natural resource trustees for natural resources and services injured by an incident. Additional authority was granted to the state trustees under Louisiana's OSPRA, La. Rev. Stat. 30:2451 *et seq.* As a designated trustee, each trustee is authorized to act on behalf of the public under state and/or federal law to assess and recover natural resource damages, and to plan and implement actions to restore natural resources and resource services injured or lost as the result of an incident.

The federally designated natural resource trustees include the U. S. Department of Commerce (NOAA), U.S. Department of the Interior (DOI), U.S. Department of Agriculture (USDA), U.S. Department of Energy (DOE), U.S. Department of Defense (DOD), and the federally recognized tribes. On the state level, the natural resource trustees include: LOSCO; Louisiana Department of Natural Resources (LDNR); Louisiana Department of Environmental Quality (LDEQ); and Louisiana Department of Wildlife and Fisheries (LDWF) have been entrusted with this responsibility.

Setting

Louisiana is bordered by Texas to the west, Arkansas to the north, Mississippi to the east, and the Gulf of Mexico to the south. The statewide comprehensive RRP Program will encompass the State of Louisiana and state and federal waters extending offshore Louisiana, from the 1981 shoreline determined by the U.S. Supreme Court to the boundaries of the Federal/Louisiana territorial seas and the extent of the EEZ.

2.0 Purpose and Need for Action

Louisiana's economy traditionally has been based on the State's natural resources. Both renewable (e.g., fishing, forest products) and non-renewable (e.g., oil, natural gas) resources are important, and the industries associated with each have co-existed for years. Louisiana, and in particular its coastal and wetland regions, is of significant value to the Nation -- contributing greatly to the Nation's fisheries, wild fur and hide harvest, providing wintering grounds for migratory bird populations, and buffering the destructive impacts of hurricanes, storms, and floods. At the same time, 18% of the Nation's oil production and 24% of the gas production comes from coastal Louisiana (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation Authority of 1998, 16 USC 3951 *et seq.*).

Although Louisiana's oil and gas industry tries to avoid adverse impacts on renewable natural resources, injuries do occur as a result of incidents. Between 1991 and 2000, Louisiana had 18.65% of the total incidents in the nation and 21.1% of the volume. (U.S. Coast Guard [USCG] Spill Release Compendium at <http://www.uscg.mil/hq/g-m/nmc/response/stats/aa.htm>) The cumulative impact of these incidents on fish, wildlife and the environment can be significant and adversely affect the industries and communities depending on natural resources for commerce and recreation.

The high spill probability, both in frequency and magnitude, and wide expanse of fragile and sensitive resources that could be impacted present a true challenge to the federal and Louisiana trustees when it comes to restoring natural resources held in public trust

Purpose of the Proposed Action/Regional Restoration Planning Program

The objective of the statewide comprehensive RRP Program including RRP is to establish an institutional framework and procedures that will enable the trustees to select and implement projects that compensate the public and environment for losses of natural resources and services from incidents in an efficient and predictable manner. In addition, the RRP Program seeks to provide increased flexibility to the trustees and the Responsible Parties (RPs) relative to the mechanisms through which NRDA cases are settled. The use of RRP will help expedite the assessment, settlement and/or restoration implementation, while simultaneously minimizing associated costs. In addition, development of RRP requires the examination of restoration alternatives across an entire region and may facilitate linkages with other regional or watershed objectives. The benefits of comprehensive, region-wide planning will accrue not only to the parties involved in the assessments, but also to the communities depending on natural resources for commerce and recreation.

Specifically, the RRP Program identifies the statewide RRP Program structure, the decision-making process, and the criteria that will be used to select the restoration project(s) that restore the natural resources injured by a given incident.

As part of the RRP Program development, the trustees: 1) conducted a nexus analysis to identify one or more appropriate restoration types for each of the "potentially injured resources/services", 2) developed restoration type screening criteria to assist in the selection of the most appropriate restoration type(s) to restore resources/services injured during a given incident, and 3) developed screening criteria to select the most appropriate restoration project(s) during a given incident.

To further streamline the NRDA process, the trustees conducted an analysis of the environmental impacts associated with the implementation of the restoration types identified in the RRP Program by evaluating the impacts of the restoration techniques commonly used to implement the restoration types. The document provides an environmental analysis of the RRP Program restoration types. The discussion is necessarily broad and generalized to the technique on which the analysis has been performed, but provides the level of detail necessary to allow "tiering" from this document to subsequent environmental documentation under NEPA concerning the environmental impacts of implementing certain restoration types. The environmental impacts of specific restoration projects will be addressed specifically in subsequent NEPA documents when the projects are known.

There will be circumstances in which the trustees may do restoration planning outside of the context of the RRP Program due to the specific conditions of the incident. Additionally, there may be cases in which restoration types and the attending analysis from the RRP Program, as well as restoration projects from the RRP, will be used to address certain injuries from an incident; and restoration planning outside of the context of the RRP Program will be carried out for other injuries from the incident.

The state will be divided into nine planning regions and a RRP will be prepared for each region. The RRP will be consistent with this programmatic EIS but also will identify the natural resources and/or services that could potentially be impacted by an incident and the restoration projects that are available for implementation within a given region.

The RRP Program will be jointly administered and used by the state and federal trustees to assist in carrying out their natural resource trust mandates under OPA and OSPRA.

The first RRP will be done for Region #2.

3.0 Alternatives

The “No Action Alternative” is to continue to carry out NRDA in the State of Louisiana using the NRDA process and current practices below. The “Environmentally Preferred Alternative” is the statewide comprehensive RRP Program and its components are described in relation to the NRDA process and the goals and objectives of establishing the RRP Program.

The NRDA process as described by implementing regulations and guidance both under OPA and OSPRA will not change as a result of the RRP Program. The trustees are proposing to further institutionalize an existing process, as well as identify ways to expedite and further define the specific steps of that process, within the requirements of the OPA and OSPRA NRDA regulations.

No Action Alternative

Both state and federal NRDA regulations provide for a step-by-step process for trustees to determine injuries, assess damages, and develop and implement restoration projects that compensate the public for injuries to natural resources harmed by an incident.

The No Action Alternative is defined as continuing to implement the NRDA process without the institution of the RRP Program. The No Action Alternative is used as a basis for comparison with the RRP Program. The following are the major phases of the NRDA process:

- ♦ Pre-assessment phase;
- ♦ Restoration planning phase; and
- ♦ Restoration implementation phase.

The description below of the NRDA process is intended to provide the context for the comparison of the No Action Alternative and the RRP Program Alternative.

Pre-assessment Phase – The purpose of the Pre-assessment Phase is to determine if trustees have the jurisdiction to pursue restoration under OPA, and, if so, whether it is appropriate to do so.

Restoration Planning Phase – The purpose of the Restoration Planning Phase is to evaluate potential injuries to natural resources and service losses and use that information to determine the need for and scale of restoration actions. The Restoration Planning Phase provides the link between injury and restoration. The Restoration Planning Phase has two basic components: injury assessment, and restoration selection.

Restoration Implementation Phase – The Restoration Implementation Phase occurs after the DARP is presented to the RPs to implement or fund the trustees’ costs of implementing the DARP, therefore providing the opportunity for settlement of the damage claim without litigation. Should the RPs decide to decline to settle the claim, trustees are authorized to bring a civil action for damages in court or to present the claim² to the Federal OSLTF or the State OSCF for such damages. If the RPs choose to implement the restoration actions

² In the absence of a viable RP (e.g., where the RP is unknown, bankrupt or is not responsible due to a valid defense) or when a viable RP fails to respond to a demand letter after 90 days, the trustees have the option of going to the OSLTF and/or OSCF to seek monies to implement the restoration actions required for that case.

detailed in the DARP, then the trustees provide project oversight that is funded by the RPs. Otherwise the trustees will implement the project.

RRP Program/Environmentally Preferred Alternative

The RRP Program will define, expand, and/or refine several important components beyond the existing NRDA process. The following are the major components:

- ◆ Potentially injured resources/services;
- ◆ Restoration types (including nexus analysis, and environmental consequences analysis of implementation);
- ◆ Settlement alternatives;
- ◆ Screening criteria; and
- ◆ Regional boundaries of the RRs.

The descriptions below of the program components are programmatic and are not intended to define the case-specific actions or outcomes that may be implemented under the RRP Program.

Potentially Injured Resources/Services – The RRP Program defines those natural resources and services in Louisiana that are likely to be or are anticipated to be injured (i.e., at risk) by incidents as “potentially injured resources/services.” Identification of these “potentially injured resources/services” will facilitate the development of the RRs, provide more timely detail to the pre-assessment phase and facilitate the expedient development of restoration alternatives during the restoration planning phase. The “potentially injured resources/services” are listed under three broad categories: coastal, inland, and statewide:

- ◆ Coastal
 - ◆ Herbaceous Wetlands
 - ◆ Forested Wetlands
 - ◆ Beaches/Shorelines/Streambeds
 - ◆ Oyster Reefs (and other reefs)
 - ◆ Water Column Organisms
- ◆ Inland
 - ◆ Herbaceous Wetlands
 - ◆ Forested Wetlands
 - ◆ Beaches/Shorelines/Streambeds
 - ◆ Oyster Reefs (and other reefs)
 - ◆ Water Column Organisms
- ◆ Statewide
 - ◆ Birds
 - ◆ Wildlife
 - ◆ Recreational
 - ◆ Cultural

Restoration Types – The RRP Program identifies restoration types that are appropriate for the restoration of injuries for each identified “potentially injured resources/services” in the RRP Program. These restoration type categories are:

- ◆ Creation/Enhancement
- ◆ Physical Protection of Habitat
- ◆ Acquisition/Legal Protection

- ◆ Stocking of Fauna
- ◆ Physical Protection of Fauna
- ◆ Restoration of Recreation Resources
- ◆ Restoration of Cultural Resources

The RRP Program describes the specific restoration type(s) in each restoration type category that is appropriate for the restoration of injuries to each identified “potentially injured resources/services” in the RRP Program. This determination of the range of appropriate restoration types is based on the nexus analysis. The trustees have also conducted an environmental consequences analysis on the restoration types. Carrying out both analyses in the PEIS will result in both technical, process and NEPA compliance efficiencies at the case level during the restoration planning phase. The trustees will be able to “tier” the case specific DARPs and environmental assessments off of the PEIS.

The trustees also have developed restoration type selection criteria that will further assist in determining which of the various restoration types identified will be most appropriate to restore the injured resources/services during a given incident. It is anticipated that the criteria will also provide a level of predictability to the public and affected parties regarding restoration project selection. Projects in each RRP will be classified by restoration type in order to facilitate the determination of the nexus between injuries and selection of specific restoration projects, thereby allowing the process of evaluating and selecting preferred restoration projects to be streamlined.

Settlement Alternatives – The RRP Program describes a number of additional case settlement alternatives that will assist the trustees and RPs in negotiations to resolve RP liabilities for incidents at the end of the restoration planning phase. These additional settlement alternatives generally represent different ways of resolving liability from an incident under one or the other (or both) of the two options: RP implemented restoration; or RP cash out and trustee implemented restoration. These settlement alternatives also may provide opportunities for implementing restoration projects more quickly and cost-effectively; pooling settlements to implement larger projects than could be accomplished by using individual settlements, and potentially encompassing landscape scale efforts.

Screening Criteria – In order to improve consistency, predictability, and accountability to the NRDA decision-making process, the trustees identified and defined project selection and other screening criteria to be used in implementing the RRP Program. These criteria are for:

- ◆ Selection of restoration projects to be incorporated into each RRP;
- ◆ Selection of projects for implementation under the Non-Project-Specific Cash Out alternative; and
- ◆ Project selection/screening of specific restoration actions required for a case.

Regional Boundaries of the RRPs – The RRP Program establishes nine regions for which regional plans will be developed. There will be four coastal regions based on the Coast 2050 Plan regions and five inland regions based on LDEQ’s defined watersheds. For each region, an individual RRP will be produced. Each RRP will identify the resources and/or services that could potentially be affected by an incident and the restoration projects that are available for implementation within that region. The first RRP will be done for Region 2. Establishing regions will also provide an

administrative tool to, among other things, facilitate tracking of cases, settlement accounting, restoration, monitoring, etc.

4.0 Evaluation of Alternatives

In evaluating the programmatic aspects of the “RRP Program/Environmentally Preferred Alternative” versus the “No Action Alternative,” a comparative analysis has been done determining the relative programmatic consequences of implementing the RRP Program or not.

RRP Program/Environmentally Preferred Alternative

As described above, it is anticipated that the RRP Program will achieve the following:

- ◆ Expedite and potentially reduce the cost of the NRDA process;
- ◆ Provide greater consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and
- ◆ Increase restoration of lost natural resources and services.

To expedite and make the NRDA process more cost-effective, the RRP Program proposes to shorten the restoration planning phase of the NRDA process through the development of individual RRP, which will identify appropriate restoration projects subjected to public review prior to incidents occurring. In addition, the RRP Program will help to inform the selection of restoration projects by identifying in advance the types of restoration that may be suitable to restore those resources and services likely to be injured by incidents in Louisiana. Further, through the development of a PEIS for the RRP Program and “tiering” the RRP and case specific DARPs from the information and analysis provided in the PEIS, the NEPA process for the NRDA cases will be streamlined significantly. It is also anticipated that model documents (including DARPs, consent decrees, Notice of Intents (NOIs), etc.) will be developed under this program, to provide more efficiencies and lower the costs of carrying out NRDA. Although the RRP Program will require upfront costs to identify restoration projects in advance and develop planning documents, economies of scale will allow overall implementation costs to be lower.

Consistent application of the RRP Program project selection criteria will enhance the predictability, consistency, and accountability of the decision-making process. Flexibility will be increased through the introduction of additional settlement alternatives.

It is anticipated that describing the NRDA process in greater detail will enable the public and affected entities to participate more fully in restoration planning for incidents. First, the RRP Program identifies resources that are likely to be injured from an incident and what restoration type is appropriate to restore the resources/services that were injured or lost. It also provides the rationale for how those decisions were made. The public and affected parties will have an opportunity to review the restoration projects by restoration type that are available in a specific region to restore resources/services injured in that region prior to an incident occurring. By describing in detail each step and the criteria used in the NRDA process, the public and affected parties will understand the trustees’ roles and rationale for their decisions, thereby improving the ability of interested parties to participate in the process.

Finally, by streamlining the NRDA process and making it more efficient the costs to both the trustees and RPs will be lowered, restoration of injured resources will be increased, and most importantly, the public will be made whole more quickly.

Summary of Benefits

The RRP Program, including the RRP, will benefit the public, industry, and natural resource trustees by:

- ◆ Providing greater opportunities to make the public and the environment whole for injuries to trust resources/services;
- ◆ Expediting restoration of injured resources/services from oil incidents;
- ◆ Reducing the cost of restoration planning and implementation;
- ◆ Pooling of individual case recoveries to provide for implementation of larger, more ecologically significant restoration projects;
- ◆ Providing for more consistency and predictability through detailing the NRDA process, thereby reducing uncertainty to the public and industry;
- ◆ Improving coordination between restoration activities under the NRDA mandates and other restoration efforts in the State;
- ◆ Enhancing the capability for trustees to restore resources/services injured by oil incidents for which there is no viable RP;
- ◆ Maximizing opportunities for partnering among RPs, trustees, and other public and private restoration efforts; and
- ◆ Increasing opportunity for public participation in the NRDA process through pre-incident planning.

5.0 Environmental Consequences

The description of environmental consequences of the “No Action Alternative” compared to the “RRP Program/Environmentally Preferred Alternative” is based on the description of the programmatic benefits described above and is necessarily generalized. The exact manner in which the implementation of the “RRP Program/Environmentally Preferred Alternative” will affect the environment will be determined largely by the implementation of the program as it applies to specific cases. This analysis does not attempt to distinguish between all possibilities as to how the trustees may implement the “RRP Program/Environmentally Preferred Alternative” as it applies to specific cases. Instead this analysis simply assesses likely impacts at a statewide scale.

Under OPA and OSPRA, the selection of restoration projects to be implemented as part of a specific case is subject to NEPA and all relevant laws, regulations, etc., that are applicable. This is the case whether the No Action Alternative or the RRP Program is selected.

The number of cases and speed of their resolution through implementation of restoration will determine the actual beneficial impact of the program. On a statewide, landscape scale, substantial impacts cannot be expected for a number of years, but locally, landscape impacts may be evident sooner. In a geographic sense, the impact of the RRP Program can be expected to be most prominent and most quickly realized in Region 2 which is the region with the highest frequencies of incidents.

Direct and Indirect Impacts

The environmental resource impacts and social and economic impacts are presented below on a programmatic level. The major differences between the impacts of the No Action Alternative and the “RRP Program/Environmentally Preferred Alternative” are ones

of degree or proportion. Therefore, the beneficial environmental impacts and lack of potentially significant adverse environmental impacts and economic and social impacts are similar.

Beneficial Impacts

Compared to the No Action Alternative, it is anticipated that the amount of restoration accomplished under the “RRP Program/Environmentally Preferred Alternative” will be larger, accomplished more quickly and generally at a larger scale, with more public participation, and at a lower cost to the trustees and RPs. The “RRP Program/Environmentally Preferred Alternative” will also improve coordination with other restoration efforts in the state and maximize opportunities for partnering. Therefore the trustees expect that the beneficial impacts of the “RRP Program/Environmentally Preferred Alternative” will be greater than those of the No Action Alternative.

Direct

Both alternatives share the goal of making the public and the environment whole for injuries to trust resources/services from incidents. Restoration actions taken by the trustees to return injured resources and habitats to baseline and compensate the public for interim losses will have long-term and significant beneficial impacts on both the physical environment and biological resources impacted by incidents. Whether restoration occurs at the site of the incident or off-site, restoration under NRDA is required to create, protect, or enhance resources and habitats, and therefore it serves to directly benefit those types of resources and habitats that are the focus of restoration actions.

Restoration of resources/services that are of cultural value or support economic activities, such as recreation, tourism, commercial fishing, etc., will also be impacted in a beneficial way by the restoration of those resources/services on which they depend.

Indirect

The restoration of resources/services injured by incidents will have foreseeable indirect beneficial impacts to the other parts of the physical environment, biological resources, cultural resources, or related economic activities. For example, when addressing an injury related to one type of service flow from a resource by restoring that resource, usually all service flows related to that resource are restored or enhanced.

Potentially Significant Adverse Environmental Impacts

At a programmatic level, it is anticipated that under the “RRP Program/Environmentally Preferred Alternative” there will be more restoration of injured resources/services and restoration will be accomplished more quickly. Therefore, there appears to be less of a potential for significant adverse environmental impacts under the “RRP Program/Environmentally Preferred Alternative” as compared to the no action alternative. Under implementation of either alternative, mitigation measures are available to avoid or reduce any potentially significant adverse impacts to a less than significant level as individual restoration project(s) are reviewed and implemented. The project(s) will be scaled in such a way that the net benefits of the project compensate for injury(s) resulting from the incident(s) and collateral injury(s) (if any) from the implementation of the

compensation project(s). Specific analysis of environmental impacts, their significance, and the availability and choice of specific mitigation measures will be developed and presented in future second or third tier environmental documents prepared, as necessary, prior to the implementation of specific restoration projects.

Economic and Social Impacts

Both alternatives result in beneficial socioeconomic impacts to the public and the industries and communities that depend on the state's resources for commerce and recreation as a result of the restoration of resources/services on which they depend. At the same time, under "RRP Program/Environmentally Preferred Alternative", RPs for incidents will have a predictable and efficient way of resolving their liabilities. By implementing restoration more quickly, the time between an incident and full recovery of lost resources/services will be reduced, thereby reducing the RPs' liability.

Cumulative Impacts

The restoration of resources/services injured by incidents will contribute to avoidance or mitigation of the adverse environmental impact to those resources/services and other parts of the physical environment, biological resources, cultural resources, and related economic activities. Both alternatives will contribute to the cumulative beneficial impacts of restoration efforts that have previously been constructed and are being constructed under separate Federal and State authorities and by local and private entities.

Compared to the No Action Alternative, it is anticipated that the amount of restoration accomplished and therefore the cumulative beneficial impacts under the "RRP Program/Environmentally Preferred Alternative" will be significantly greater, will be accomplished more quickly and generally will be at a larger scale. At the same time, the "RRP Program/Environmentally Preferred Alternative" will also improve coordination with other restoration efforts in the state and maximize opportunities for partnering which will also have a cumulative beneficial impact.

Short-Term Uses vs. Long-Term Productivity

At a programmatic level under both alternatives, overall benefits to long-term productivity related to the state's physical environment, biological resources, cultural resources, and resource-dependent industries outweigh the limited short-term adverse impacts. Under the "RRP Program/Environmentally Preferred Alternative", it is anticipated that the overall long-term productivity will be greater than under the No Action Alternative.

Both alternatives may have short-term construction related impacts as a result of implementing restoration projects. However, these impacts would usually be minor and would cease when construction is complete. Avoidance and mitigation measures will be implemented to lessen the adverse impacts of any construction activities.

Irreversible and Irretrievable Commitments

As part of implementation, irreversible commitments of resources could result from restoration actions that involve construction or land conversion under either of the alternatives. Committed resources could include construction materials, labor and energy necessary for construction, operation and maintenance. Potential land conversion would commit habitat, agriculture, or other land uses to other uses, however, in many cases these land conversions could be undone if there were any unanticipated adverse impacts.

Avoidance and mitigation measures will be implemented to lessen the adverse impacts of any construction or land conversion activities to lessen impacts under either alternative.

5.0 Coordination with Other Programs, Regulatory Authorities

As a cooperative interagency effort, the RRP Program is required to comply with various state and federal environmental laws, regulations and policies. In addition to laws and regulations, the trustees must also consider existing environmental programs or plans in developing and implementing the RRP Program. Through coordination with other established programs, the trustees can ensure that the RRP Program does not duplicate other efforts, but instead leads to more effective and cost-efficient NRDA procedures. This, in turn, will add to the overall effort to protect, enhance and restore the natural resources of Louisiana.

6.0 RRP Program Development Process

The RRP Program development process included a series of RRP Program Workgroup planning meetings, informal scoping and formal scoping to develop the RRP Program/Draft PEIS.

Formal scoping for the RRP program and EIS began on June 19, 2001 with the publication and distribution of the PRD and publication of the Notice of Intent (NOI) to develop a PEIS. As part of the NOI, an Administrative Record (AR) was established. The AR is maintained at NOAA in Silver Spring, MD and duplicate copies are maintained at LOSCO, Baton Rouge, LA and on a website at <http://www.darp.noaa.gov>. Formal solicitation for appropriate restoration projects for potential inclusion in the RRP began on that date also.

Based on input from the public and further consideration by the RRP Program Workgroup, the RRP Program/Draft PEIS was completed for public review pursuant to NEPA.

7.0 NEPA Requirements

To comply with NEPA, the DPEIS includes a description of the purpose and need for action, the affected program and environment, and the proposed program action, alternatives, and their environmental consequences. To assist NEPA reviewers, the following provides a list of the NEPA requirements typically covered in a PEIS and the chapters and pages in the DPEIS where these requirements are addressed.

NEPA Requirement	Location	
	Chapter Number	Page Numbers
Purpose and Need (40 CFR 1502.14)	1.0	1-9
Affected Program and Environment (40 CFR 1502.15)	2.0 and App. B	10-25 and B1-B58
Proposed Action (40 CFR 1502.14)	3.0 and 4.0	26-85
Alternatives (40 CFR 1502.14)	5.0	86-91
Environmental Consequences (40 CFR 1502.16)	6.0	92-94
Coordination/Consultation [40 CFR 1502.25 and 1506.2 (d)]	7.0	95-106
RRP Program Development Process [40 CFR 1502.10 (i)] – Scoping	8.0	107-108
References	9.0	109-110
List of Preparers (40 CFR 1502.17)	10.0	111
List of Agencies	11.0	112

8.0 Reader's Guide to Document

The following is a guide to this document

Chapter 1, Purpose and Needs, (40 CFR 1502.14) includes an introduction to the RRP Program and its goals, including the legal mandates and authorities under which it was developed, as well as, an identification of the natural resource trustees (trustees) and their mandates. The setting is defined. Then the purpose and need for the establishment and implementation of the RRP Program and the purpose of the proposed action is described, including its goals and benefits. NEPA requirements typically covered in a PEIS and the chapters and pages in this document where these requirements are addressed are identified.

Chapter 2, Affected Program and Environment, (40 CFR 1502.15) provides a summary description of the affected program and the NRDA process, including; a definition of natural resources and services, the natural resource trustee jurisdictions, and RP liability. A summary description of the environment that is likely to be affected is provided. References to more detailed information on the affected environment in Appendix B are made.

Chapter 3, Proposed Action; Regional Restoration Planning Program, (40 CFR 1502.14) reiterates the goals of the RRP Program and describes the specific legal authorities under state and federal law for establishing it. A detailed description of the RRP Program is provided, including: the components; management structure; case implementation process; sources of restoration funding and use of the RRP Program.

Chapter 4, Regional Boundaries, provides a description of the boundaries for the nine RRP's that will be developed as part of the RRP Program.

Chapter 5, Alternatives, (40 CFR 1502.14) provides summary descriptions of the no action, preferred, and other alternative considered as part of the development of the RRP Program. An evaluation of the environmentally preferred alternative and summary of benefits is also provided.

Chapter 6, Environmental Consequences, (40 CFR 1502.16) describes for both the no action and environmentally preferred alternative the following: direct and indirect impacts, cumulative impacts and short-term uses vs. long-term productivity.

Chapter 7, Coordination with Other Programs, Regulatory Authorities, [40 CFR 1502.25 and 1506.2 (d)] describes compliance with federal and state laws and coordination and compatibility with existing federal, state and joint federal – state programs.

Chapter 8, RRP Program Development Process, [40 CFR 1502.10 (j)] describes the development process including RRP Program workgroup meetings, informal scoping and formal scoping notice and meetings that were conducted to develop the RRP Program and draft PEIS.

Chapter 9, References, Chapter 10, List of Preparers (40 CFR 1502.17) and Chapter 11, List of Agencies are self-explanatory.

There are 4 appendices (40 CFR 1502.18): **Appendix A - Acronyms and Definitions; Appendix B - Affected Environment; Appendix C - Threatened & Endangered Species and Essential Fish Habitat; Appendix D- Project Solicitation Form; Appendix E- NRDA Preliminary Assessment Worksheet; and Appendix F – Compliance.**



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Assistant Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

APR 25 2003

Dear Reviewer:

In accordance with provisions of the National Environmental Policy Act of 1969 (NEPA), we enclose for your review the Draft Programmatic Environmental Impact Statement (DPEIS) for the Louisiana Regional Restoration Planning Program (RRP Program). This document is both a DPEIS and the RRP Program description (40 CFR Part 1506.4¹). The proposed action is to establish and implement the RRP Program. The DPEIS is being developed pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 USC 4321 et seq., and its implementing regulations, 40 CFR Parts 1500-1508.

Federal and Louisiana natural resource trustees have developed a statewide comprehensive RRP Program to assist the natural resource trustees in carrying out their responsibilities for discharges or substantial threats of discharges of oil (referred to as an "incident"). The RRP Program is described in this DPEIS and further defined in individual Regional Restoration Plans (RRPs) that will be prepared for each of nine regions in the State of Louisiana. The goals of this statewide program are to: expedite and potentially reduce the cost of the natural resource damage assessment (NRDA) process; provide for consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and, increase restoration of lost natural resources and services.

This document reflects the work of the RRP Program workgroup made up of federal and state trustee which include the: National Oceanic and Atmospheric Administration; U.S. Department of the Interior (cooperating agency); Louisiana Oil Spill Coordinator's Office, Office of the Governor (cooperating agency); Louisiana Department of Natural Resources; Louisiana Department of Environmental Quality; and Louisiana Department of Wildlife and Fisheries. It also reflects the input and comments that were received during both informal and formal scoping process.

The DPEIS is also available at the following website: <http://www.darp.noaa.gov/>. Two public meetings to receive comments on the DPEIS will be held in June. Public notice will be provided as to the date, time and location for the meetings.

¹ 40 CFR 1506.4 Combining documents. Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork.



Any written comments or questions should be submitted by close of business on July 9, 2003 to:

William Conner, Chief
Damage Assessment Center,
Office of Response and Restoration/NOS
National Oceanic and Atmospheric Administration
1305 East-West Highway, SSMC#4, 10th Floor,
Silver Spring, MD 20910
or faxed to (301) 713-4389

Also, one copy of your comments should be sent to me at the U.S. Department of Commerce,
NOAA/SP, Room 6121, 14th and Constitution, NW, Washington, DC 20230.

Sincerely,

A handwritten signature in cursive script that reads "James P. Burgess III". The signature is written in black ink and includes a small flourish at the end.

James P. Burgess III
NEPA Coordinator

Enclosure

DRAFT ENVIRONMENTAL IMPACT STATEMENT

1.0 Purpose and Needs

This document is both a Draft Programmatic Environmental Impact Statement (DPEIS) and the Louisiana RRP Program (RRP Program) (40 CFR Part 1506.4³). The proposed action is to establish and implement the RRP Program. The PEIS is being developed pursuant to the National Environmental Policy Act of 1969 (NEPA), 42 USC 4321 *et seq.*, and its implementing regulations, 40 CFR Part 1500.

1.1 Introduction

Federal and Louisiana natural resource trustees have developed a statewide comprehensive RRP Program to assist the natural resource trustees in carrying out their responsibilities for discharges or substantial threats of discharges of oil (referred to as an “incident”). The RRP Program is described in this DPEIS and further defined in individual Regional Restoration Plans (RRPs) that will be prepared for each of nine regions in the State of Louisiana. The goals of this statewide program are to: expedite and potentially reduce the cost of the natural resource damage assessment (NRDA) process; provide for consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and, increase restoration of lost natural resources and services.

The Oil Pollution Act of 1990 (OPA), 33 USC 2701 *et seq.*, and the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA), La. Rev. Stat. 30:2451 *et seq.* are the principal federal and state statutes, respectively, authorizing federal and state agencies and tribal officials to act as natural resource trustees for the recovery of damages for injuries to natural resources and services resulting from incidents in Louisiana. The RRP Program is being established to address incidents under OPA and OSPRA. The RRP Program does not address injuries from releases of hazardous substances under the Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA), 42 USC 9601 *et seq.*, Park System Resources Protection Act, 16 USC § 19jj *et seq.*, or physical injuries to resources under the National Marine Sanctuaries Act, 16 USC 1431 *et seq.*, should a sanctuary be designated in the State of Louisiana.

The development of the RRP Program has been a coordinated effort between state and federal natural resource agencies, local governments, and the public. The RRP Program will be jointly administered and used by the trustees to assist in carrying out their natural resource trust mandates under OPA and OSPRA.

1.1.1 Legal Mandates and Authorities

The RRP Program is required to be established in accordance with La. Rev. Stat. 30:2480.1, which states that:

“To assist in making the natural resource damage assessment process more efficient, the Regional Restoration Planning Program encompassing the entire geographic area of the state, is established in the office of the oil spill coordinator. The office of the oil spill coordinator shall develop and implement the program in coordination with the state natural resource trustees.”

³ 40 CFR 1506.4 Combining documents. Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork.

Broad guidelines and the basic requirements of OPA provide the necessary direction for developing RRP. These guidelines and requirements are contained in 15 CFR 990.

The OPA regulations were promulgated by the U.S. Department of Commerce, acting through the National Oceanic and Atmospheric Administration (NOAA), and became effective February 5, 1996. State regulations for the NRDA process under OSPRA were promulgated by the Louisiana Oil Spill Coordinator's Office, Office of the Governor (LOSCO) in March 1999 and can be found at La. Admin. Code 43:XXIX.Chap. 1.

1.1.2 NRDA Trustees

Under OPA, 33 USC 2706(b), and the National Contingency Plan (NCP), 40 CFR 300.600, certain federal and state agencies and tribal authorities are designated natural resource trustees for natural resources and services injured by an incident. Additional authority was granted to the state trustees under Louisiana's OSPRA, La. Rev. Stat. 30:2451 *et seq.* As a designated trustee, each trustee is authorized to act on behalf of the public under state and/or federal law to assess and recover natural resource damages, and to plan and implement actions to restore natural resources and resource services injured or lost as the result of an incident.

The federally designated natural resource trustees include the U. S. Department of Commerce (NOAA), U.S. Department of the Interior (DOI), U.S. Department of Agriculture (USDA), U.S. Department of Energy (DOE), U.S. Department of Defense (DOD), and the federally recognized tribes. On the state level, the trustees include: LOSCO; Louisiana Department of Natural Resources (LDNR); Louisiana Department of Environmental Quality (LDEQ); and Louisiana Department of Wildlife and Fisheries (LDWF) have been entrusted with this responsibility.

Under the mandates of OPA, responsibility for natural resources is delegated to the federal and state trustees. At 33 USC 2706(c) those responsibilities are defined as follows:

- (1) *"Federal Trustees: The Federal officials designated under subsection (b)(2) (A) shall assess natural resource damages under section 1002(b)(2)(A) for the natural resources under their trusteeship; (B) may, upon request of reimbursement from a State or Indian tribe and at the Federal officials' discretion, assess damages for the natural resources under the State's or tribe's trusteeship; and (C) shall develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent, of the natural resources under their trusteeship.*
- (2) *State Trustees: The State and local officials designated under subsection (b)(3) (A) shall assess natural resource damages under section 1002(b)(2)(A) for the purposes of this Act for the natural resources under their trusteeship; and (B) shall develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent, of the natural resources under their trusteeship."*

Based on the legislative mandates of Louisiana's OSPRA of 1991, responsibility for natural resources is assigned to the state natural resource trustees. At L.R.S. 30:2480(A) those responsibilities are defined as follows:

“In any action to recover natural resources damages, the coordinator, in consultation with any other state trustees, shall make the determination whether to assess natural resource damages and the amount of damages. This assessment will be in accordance with the procedures and plans contained in the oil spill contingency plan of the state, and such determination shall create a rebuttable presumption for the amount of such damages.”

1.2 Setting

Louisiana is bordered by Texas to the west, Arkansas to the north, Mississippi to the east, and the Gulf of Mexico to the south. The statewide comprehensive RRP Program will encompass the State of Louisiana and state and federal waters extending offshore Louisiana, from the 1981 shoreline determined by the U.S. Supreme Court to the boundaries of the Federal/Louisiana territorial seas and the extent of the EEZ.

1.3 Purpose and Need for Action

1.3.1 Background

Louisiana's economy traditionally has been based on the State's natural resources. Both renewable (e.g., fishing, forest products) and non-renewable (e.g., oil, natural gas) resources are important, and the industries associated with each have co-existed for years. Louisiana, and in particular its coastal and wetland regions, is of significant value to the Nation -- contributing greatly to the Nation's fisheries, wild fur and hide harvest, providing wintering grounds for migratory bird populations, and buffering the destructive impacts of hurricanes, storms, and floods. At the same time, 18% of the Nation's oil production and 24% of the gas production comes from coastal Louisiana (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation Authority of 1998, 16 USC 3951 *et seq.*).

The exploration, production, transportation, and storage of large volumes of oil occurring within the state resulted in the recognition that Louisiana has a higher exposure to oil spills than any other state. Louisiana's natural resources are susceptible to oil spill injury from a variety of sources. Among them are shipping, land-based oil fields, oil platforms in state waters, oil storage facilities, oil terminals/ports, crude or refined oil pipelines, oil refineries, abandoned vessels, pits, reservoirs, and other industries using oil in their operations. In the coastal regions alone, Louisiana is crisscrossed by 1,570 miles of oil and gas pipelines (Coastal Wetlands Planning, Protection, and Restoration Act [CWPPRA] 1990). It is estimated that approximately 250,000 oil and/or gas wells exist in Louisiana. In 1996 an inventory identified approximately 800 abandoned vessels/barges of which roughly 200 were characterized as posing a potential pollution problem. Beginning in 1992, a total of approximately 25,000 abandoned facilities, pits, sumps, or reservoirs in the Louisiana coastal area have been inventoried and are being evaluated to determine if the sites pose a risk to human health and safety, environment, and wildlife habitat through actual or potential discharge of oil.

Although Louisiana's oil and gas industry tries to avoid adverse impacts on renewable natural resources, injuries do occur as a result of incidents. Between 1991 and 2000, Louisiana had 18.65% of the total incidents in the nation and 21.1% of the volume. (U.S. Coast Guard [USCG] Spill Release Compendium at <http://www.uscg.mil/hq/g-m/nmc/response/stats/aa.htm>) The cumulative impact of these incidents on fish, wildlife and the environment can be significant and adversely affect the industries and communities depending on natural resources for commerce and recreation.

1.3.2 Need

The high spill probability, both in frequency and magnitude, and wide expanse of fragile and sensitive resources that could be impacted present a true challenge to the federal and Louisiana trustees when it comes to restoring natural resources held in public trust. Since the enactment of OPA, a total of 18 incidents have resulted in the initiation of the NRDA process in the State of Louisiana. Table 1.1 provides summary information for these incidents and the status of the NRDA cases.

1.4 Purpose of the Proposed Action

1.4.1 Regional Restoration Planning Program

The objective of the statewide comprehensive RRP Program including RRP is to establish an institutional framework and procedures that will enable the trustees to select and implement projects that compensate the public and environment for losses of natural resources and services from incidents in an efficient and predictable manner. In addition, the RRP Program seeks to provide increased flexibility to the trustees and the Responsible Parties (RPs) relative to the mechanisms through which NRDA cases are settled. The use of RRP will help expedite the assessment, settlement and/or restoration implementation, while simultaneously minimizing associated costs. In addition, development of RRP requires the examination of restoration alternatives across an entire region and may facilitate linkages with other regional or watershed objectives. The benefits of comprehensive, region-wide planning will accrue not only to the parties involved in the assessments, but also to the communities depending on natural resources for commerce and recreation.

Specifically, the RRP Program identifies the statewide RRP Program structure, the decision-making process, and the criteria that will be used to select the restoration project(s) that restore the natural resources injured by a given incident.

As part of the RRP Program development, the trustees: 1) conducted a nexus analysis to identify one or more appropriate restoration types for each of the “potentially injured resources/services”, 2) developed restoration type screening criteria to assist in the selection of the most appropriate restoration type(s) to restore resources/services injured during a given incident, and 3) developed screening criteria to select the most appropriate restoration project(s) during a given incident.

To further streamline the NRDA process, the trustees conducted an analysis of the environmental impacts associated with the implementation of the restoration types identified in the RRP Program by evaluating the impacts of the restoration techniques commonly used to implement the restoration types. This document provides an environmental analysis of the RRP Program restoration types. The discussion is necessarily broad and generalized to the technique on which the analysis has been performed, but provides the level of detail necessary to allow “tiering” from this document to subsequent environmental documentation under NEPA concerning the environmental impacts of implementing certain restoration types. The environmental impacts of specific restoration projects will be addressed specifically in subsequent NEPA documents when

Table 1.1: Status of NRDA for incidents in the State of Louisiana (1990-2002)

Location	Parish	Date of Incident	Amount (bbls)	Type of Habitat Injured	Type of Incident	Preferred Alternative	Restoration Project
Duck Lake	St. Martin	12/04/02	1,000	Cypress Tupelo Swamp	Pipeline Rupture	Preassessment Phase	Preassessment Phase
North Pass	Plaquemines	09/23/02	Unknown	Brackish Marsh	Storage Tank Rupture	Preassessment Phase	Preassessment Phase
Magnolia Field	Plaquemines	08/11/02	~500	Brackish Marsh	Storage Tank Rupture	Preassessment Phase	Preassessment Phase
East Lake Palourde	Assumption	Unknown	Unknown	Cypress Tupelo Swamp	Pipeline Rupture	To be Determined	To be Determined
Little Lake	Lafourche	04/06/02	~1,800	Intermediate Marsh	Pipeline Rupture	To be Determined	To be Determined
Mosquito Bay	St. Mary	04/05/01	1,000	Salt Marsh	Pipeline Rupture	Pre-assessment Phase	To be Determined
Mississippi River	Plaquemines	11/28/00	13,500	River Bank and Levee	Vessel Grounding	Crevasse Splay	4.7 Acres of Marsh
						Public Use Enhancement	Public Dock
Four Bayou Pass	Plaquemines & Jefferson	11/24/99	850	Water Column and Barrier Islands	Pipeline Rupture	Acquisition & Enhancement	2.8 Acres of Chenier Oak-Hackberry Habitat
Lake Grande Ecaille	Plaquemines	09/22/98	500-1,500	Brackish Marsh	Well Blowout	To be Determined	To be Determined
Cravens	Vernon	08/08/97	13,000 – 19,000	Forest	Well Blowout	To be Determined	To be Determined
Freshwater City	Vermillion	06/21/97	2,000	Salt Marsh	Pipeline Rupture	Planting	2.0 Acres of California Bulrush
Lake Barre	Terrebonne	05/17/97	6,561	Salt Marsh	Pipeline Rupture	Planting	18.6 Acres of Marsh
Attakapas	St. Mary	11/26/96	4,762	Wetlands	Well Blowout	Planting	30 Acres Forested Wetlands
Blind River	St. James	05/24/96	11,308	Wetlands	Pipeline Rupture	Mitigation Bank	33 Acres Forested Wetlands
						Public Use Enhancement	Addition to Educational Center
Dixon Bay	Plaquemines	01/12/95	250-2,500	Brackish Marsh	Well Blowout	Crevasse Splay	5 Acres Marsh
Paradis	St. Charles	01/15/93	~ 800	Fresh Marsh/ Flotant	Leak in SWD System	Raking of Biological litter	1.6 Acres Primary Restoration
Timbalier Bay	Lafourche & Terrebonne	09/29/92	2,285	Salt Marsh	Well Blowout	Marsh Creation	21.7 Acres Marsh
Lake Salvador	St. Charles	02/04/91	55	Lake	Well	Shoreline Protection	835 feet breakwater pilings

the projects are known. There will be circumstances in which the trustees may do restoration planning outside of the context of the RRP Program due to the specific conditions of the incident. Additionally, there may be cases in which restoration types and the attending analysis from the RRP Program, as well as restoration projects from the RRP, will be used to address certain injuries from an incident; and restoration planning outside of the context of the RRP Program will be carried out for other injuries from the incident.

The state will be divided into nine planning regions and a RRP will be prepared for each region. The RRP will be consistent with this programmatic EIS but also will identify the natural resources and/or services that could potentially be impacted by an incident and the restoration projects that are available for implementation within a given region.

The RRP Program will be jointly administered and used by the state and federal trustees to assist in carrying out their natural resource trust mandates under OPA and OSPRA.

The first RRP will be done for Region #2.

1.4.2 Benefits of the Proposed Action

The RRP Program, including the RRP, will benefit the public, industry and natural resource trustees by:

- ◆ Providing greater opportunities to make the public and the environment whole for injuries to natural resources/services;
- ◆ Expediting restoration of injured natural resources/services from incidents;
- ◆ Potentially reducing the cost of restoration planning and implementation;
- ◆ Pooling of individual case recoveries to provide for implementation of larger, more ecologically significant restoration projects;
- ◆ Providing for more consistency and predictability through detailing the NRDA process, thereby reducing uncertainty to the public and industry;
- ◆ Improving coordination between restoration activities under the NRDA mandates and other restoration efforts in the State;
- ◆ Enhancing the capability for trustees to restore resources/services injured by incidents for which there is no viable RP;
- ◆ Maximizing opportunities for partnering among RPs, trustees, and other public and private restoration efforts; and
- ◆ Increasing opportunity for public participation in the NRDA process through pre-incident planning.

1.5 Programmatic NEPA Process

As stated above, this document is both a DPEIS and the Louisiana RRP Program (40 CFR Part 1506.4). The proposed action is to establish and implement the RRP Program.

Under 40 CFR 1500.4(i) and (k)⁴ and 40 CFR 1502.20⁵, the trustees will “tier” both the identified NRDA program and environmental analyses (found in Chapter 3) for specific incidents by preparing a PEIS on the RRP Program and referencing the appropriate parts of the PEIS in subsequent documents (i.e., RRP and Damage Assessment and Restoration Plans (DARPs)). “Tiering” is defined by 40 CFR 1508.28 as:

“Tiering” refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when the sequence of statements or analyses is:

(a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.

(b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.”

The purpose of “tiering” is to avoid repetition of the analyses of the same issues and focus on actual issues ripe for decision-making at each level of environmental review. Therefore this document describes the environmental impacts of establishing and implementing the RRP Program as a whole. The environmental consequences analysis is necessarily generalized. The exact manner in which the RRP Program will affect the environment will be determined largely by the implementation of the program as it applies to specific incidents. This analysis cannot and does not attempt to distinguish between all possibilities as to how the trustees may implement the RRP Program as it applies to specific incidents. Instead this analysis simply assesses likely impacts of implementing the RRP Program at a statewide scale.

The RRP that the trustees develop for specific regions will be “tiered” from the information in this document by both reference and incorporation of information relevant to the specific region. In addition, decisions on the selection of restoration types and

⁴ Sec. 1500.4(i) Using program, policy, or plan environmental impact statements and tiering from statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issues (Secs. 1502.4 and 1502.20). (k) Integrating NEPA requirements with other environmental review and consultation requirements (Sec. 1502.25).

⁵ Sec. 1502.20 Tiering. Agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review (Sec. 1508.28). Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available. Tiering may also be appropriate for different stages of actions. (Section 1508.28).

projects to be implemented as part of the restoration planning process for a specific incident are subject to NEPA requirements. Therefore, the trustees will reference and/or incorporate appropriate information and analyses from both the PEIS and RRP when preparing the DARP/Environmental Assessment (EA) for a specific incident or incidents.

1.5.1 NEPA Requirements

To comply with NEPA, this document includes a description of the purpose and need for action, the affected program and environment, and the proposed program action, alternatives, and their environmental consequences. To assist NEPA reviewers, Table 1.2 lists the NEPA requirements typically covered in a PEIS and the chapters and pages in this document where these requirements are addressed.

Table 1.2: NEPA Requirements

NEPA Requirement	Location	
	Chapter Number	Page Numbers
Purpose and Need (40 CFR 1502.14)	1.0	1-9
Affected Program and Environment (40 CFR 1502.15)	2.0 and App. B	10-25 and B1-B58
Proposed Action (40 CFR 1502.14)	3.0	26-85
Alternatives (40 CFR 1502.14)	5.0	86-91
Environmental Consequences (40 CFR 1502.16)	6.0	92-94
Coordination/Consultation [40 CFR 1502.25 and 1506.2 (d)]	7.0	95-106
RRP Program Development Process [40 CFR 1502.10 (i)] - Scoping	8.0	107-108
References	9.0	109-110
List of Preparers (40 CFR 1502.17)	10.0	111
List of Agencies	11.0	112

1.5.2 Reader's Guide to Document

The following is a guide to this document

Chapter 1, Purpose and Needs, (40 CFR 1502.14) includes an introduction to the RRP Program and its goals, including the legal mandates and authorities under which it was developed, as well as, an identification of the natural resource trustees (trustees) and their mandates. The setting is defined. Then the purpose and need for the establishment and implementation of the RRP Program and the purpose of the proposed action is described, including its goals and benefits. NEPA requirements typically covered in a PEIS and the chapters and pages in this document where these requirements are addressed are identified.

Chapter 2, Affected Program and Environment, (40 CFR 1502.15) provides a summary description of the affected program and the NRDA process, including; a definition of natural resources and services, the natural resource trustee jurisdictions, and RP liability.. A summary description of the environment that is likely to be affected is provided. References to more detailed information on the affected environment in Appendix B are made.

Chapter 3, Proposed Action; Regional Restoration Planning Program, (40 CFR 1502.14) reiterates the goals of the RRP Program and describes the specific legal authorities under state and federal law for establishing it. A detailed description of the RRP Program is provided, including: the components; management structure; case implementation process; sources of restoration funding and use of the RRP Program.

Chapter 4, Regional Boundaries, provides a description of the boundaries for the nine RRP that will be developed as part of the RRP Program.

Chapter 5, Alternatives, (40 CFR 1502.14) provides summary descriptions of the no action, preferred, and other alternative considered as part of the development of the RRP Program. An evaluation of the environmentally preferred alternative and summary of benefits is also provided.

Chapter 6, Environmental Consequences, (40 CFR 1502.16) describes for both the no action and environmentally preferred alternative the following: direct and indirect impacts, cumulative impacts and short-term uses vs. long-term productivity.

Chapter 7, Coordination with Other Programs, Regulatory Authorities, [40 CFR 1502.25 and 1506.2 (d)] describes compliance with federal and state laws and coordination and compatibility with existing federal, state and joint federal – state programs.

Chapter 8, RRP Program Development Process, [40 CFR 1502.10 (i)] describes the development process including RRP Program workgroup meetings, informal scoping and formal scoping notice and meetings that were conducted to develop the RRP Program and draft PEIS.

Chapter 9, References, Chapter 10, List of Preparers (40 CFR 1502.17) and Chapter 11, List of Agencies are self-explanatory.

There are 6 appendices (40 CFR 1502.18): **Appendix A - Acronyms and Definitions; Appendix B - Affected Environment; Appendix C - Threatened & Endangered Species and Essential Fish Habitat; Appendix D- Project Solicitation Form; Appendix E- NRDA Preliminary Assessment Worksheet; and Appendix F – Compliance.**

2.0 Affected Environment and Program

The goal of the NRDA provisions in OPA and OSPRA is to make the environment and public whole for injury to, loss of, or loss of use of natural resources and services caused by an incident. Under OPA, 33 USC 2706(b), and the NCP, 40 CFR 300.600, certain federal and state agencies and tribal authorities are designated natural resource trustees for natural resources injured by a discharge or substantial threat of a discharge of oil. Federal regulations governing the NRDA process under OPA can be found at 15 CFR 990. These regulations were promulgated by the U.S. Department of Commerce, acting through NOAA, and became effective February 5, 1996. Additional authority was granted to the state trustees under Louisiana's OSPRA, La. Rev. Stat. 30:2451 *et seq.* State regulations for the NRDA process under OSPRA were promulgated by the LOSCO in March 1999 and can be found at La. Admin. Code 43:XXIX.Chapter 1. Each designated trustee is authorized to act on behalf of the public under state and/or federal law to assess and recover natural resource damages from the party or parties responsible for the discharge or threat of discharge. Natural resource damages recovered are used to plan and implement actions to restore the natural resources and resource services injured or lost as the result of an incident.

The OPA and OSPRA regulations for NRDA describe the process by which trustees:

- ◆ Identify injuries to natural resources and services resulting from an incident;
- ◆ Provide for the return of injured natural resources and services to baseline conditions and compensation for interim lost services; and
- ◆ Encourage and facilitate public involvement in the restoration process.

2.1 Affected Environment

This section is intended to provide a brief summary overview of environment that may be impacted by the implementation of the RRP Program. A more detailed description of the affected environment is provided in Appendix B of this document.

2.1.1 Physical Environment

The physical environment in the State of Louisiana is characterized by geology, geography, soils, water resources, climate, air quality, and noise. A brief description of each is provided.

- ◆ **Geology** – Most of Louisiana was formed by Mississippi River sediment deposits. As sea-level rose and fell over this low-lying region, the Mississippi River was carrying vast sediment loads and sedimentary rocks from the core of the North American continent and depositing it on the rim of the Gulf of Mexico. Organic matter from highly productive marine waters has been deeply buried under the whole state and far offshore, and through various processes has turned into petroleum. Massive salt deposits, formed by evaporation of sea water during historic dry periods, provide a stable confining layer for the underlying petroleum.
- ◆ **Geography** - Louisiana is comprised of two primary geographic regions, the lowlands and the uplands. The lowlands of Louisiana can be subdivided into three major divisions: the Mississippi and Red River alluvial plain, the deltaic plain, and the chenier plain. The uplands of Louisiana are comprised of two geomorphic regions, the Tertiary hills and the Pleistocene coastwise terraces.
- ◆ **Soils** - Seven general soil regions have been identified in Louisiana. The seven soil regions of Louisiana, as described by Johnson and Yodis (1998), are: 1) Tertiary

- Upland soils; 2) Pleistocene Terrace soils; 3) Flatwoods soils; 4) Coastal Prairie soils; 5) Loess soils; 6) Alluvial soils; and 7) Gulf Coast Marsh soils.
- ◆ **Water Resources** - Louisiana's ground water supply is primarily held in 13 major aquifers and aquifer systems composed of sand and gravel and confined by clay and silt. Much of Louisiana's ground water is suitable for use with little or no treatment; however, water quality is susceptible to both natural and human induced contamination. The U.S. Environmental Protection Agency (USEPA) estimates the state to contain 66,294 miles of rivers and streams, 1,078,031 acres (1,684 square miles) of lakes and reservoirs, 5,882,070 acres (9,191 square miles) of fresh and tidal wetlands, and 4,899,840 acres (7,656 square miles) of estuaries (Louisiana Department of Environmental Quality 2000). Water quality data for the State of Louisiana are routinely collected by the Louisiana Department of Environmental Quality (LDEQ) for monitoring and evaluation purposes. The *2000 Water Quality Inventory Section 305(b)* indicated as of January 2000, 19.5% (95) of Louisiana's 476 named regulatory subsegments, or water bodies, were fully supporting their overall designated use and 4.0% (19) were fully supporting but threatened. Water bodies that were partially supporting their overall designated use accounted for 29.8% (142) of Louisiana's assessed streams, lakes, wetlands, and estuaries. Water bodies not supporting their overall designated use accounted for 10.7% (51). Water bodies not assessed because of insufficient data accounted for 35.5% (169).
 - ◆ **Climate** - The climate of Louisiana is classified as subtropical and is governed by various terrestrial and atmospheric controls.
 - ◆ **Air Quality** - The LDEQ maintains a statewide monitoring network that consists of 44 air-monitoring stations.
 - ◆ **Noise** - Noise pollution is subject to local ordinances (LaCoure, personal communication 2002).

2.1.2 Biological Resources

Louisiana has a wide and diverse array of biological resources, including:

- ◆ **Nekton** - There are more than 500 nektonic species that live in Louisiana's waters (Douglas 1974). The unique combination of fresh and saltwater habitats in Louisiana is cause for a large biological diversity and number of species.
- ◆ **Benthos** - Benthic organisms can be split into two large categories: infauna (those below the sediment surface) and epifauna (those above the sediment surface).
- ◆ **Wildlife** - There are 71 species of mammals, 130 species of reptiles and amphibians, and 430 species of birds recorded in Louisiana (Dennett 1997).
- ◆ **Habitat Types and Associated Biota** – A number of distinct habitat types are found within Louisiana, including:
 - ◆ Marsh (Salt, brackish/Intermediate, Fresh)
 - ◆ Tidal Freshwater Marsh
 - ◆ Wetland Forest (Evergreen, Deciduous, and Mixed)
 - ◆ Wetland Shrub/Scrub (Evergreen, Deciduous, and Mixed)
 - ◆ Upland Forest (Evergreen, Deciduous, and Mixed)
 - ◆ Upland Shrub/Scrub (Evergreen, Deciduous, and Mixed)
 - ◆ Dense Pine Thicket
 - ◆ Agriculture-Cropland-Grassland
 - ◆ Wetland Barren
 - ◆ Upland Barren
 - ◆ Open Water
 - ◆ Marine/Estuarine Shore
 - ◆ Freshwater Shore
 - ◆ Marine/Estuarine and Freshwater Benthic (soft-sedimentary)

- ◆ Marine/Estuarine Encrusting Community (natural/artificial substrates)
- ◆ Living Reefs
- ◆ Marine/Estuarine Submerged Aquatic Vegetation
- ◆ Freshwater Submerged Aquatic Vegetation
- ◆ Mangrove Swamp
- ◆ Batture

The Louisiana GAP Analysis Program provides technical descriptions for these habitats (see <http://sdms.nwrc.gov/gap/gap2.html>) and Appendix B provides a discussion on the occurrence of these habitats within the state.

- ◆ **Threatened and Endangered Species** - The published list for the State of Louisiana includes 23 animal and three plant species (see Appendix C) (U.S. Department of the Interior, U.S. Fish and Wildlife Service 2003). One candidate species is listed for the state (U.S. Department of the Interior, U. S. Fish and Wildlife Service 2003).
- **Essential Fish Habitat** - Essential Fish Habitat (EFH) is identified in Fishery Management Plan (FMP) amendments of the Gulf of Mexico, South Atlantic, Caribbean and Mid-Atlantic Fishery Management Councils. Geographically defined habitat areas of particular concern are found in FMP amendments affecting southeast and Caribbean areas.

2.1.3 Socioeconomic Resources

Socioeconomic resources in Louisiana include resources such as cultural resources, industry, land holdings, federal facilities, and recreation and tourism.

- ◆ **Cultural Resources** - There are 16 prehistoric and historic sites, which may also be referred to as State Commemorative Areas, within the state. Presently, the State of Louisiana has 1,161 properties listed on the National Register of Historic Places.
 - ◆ **Population** - The nationwide census of the year 2000 (U.S. Department of Commerce, Census Bureau 2000) recorded the population of the State of Louisiana at 4,468,976, indicating a 5.9% increase in growth from the 1990 census.
 - ◆ **Infrastructure and Public Services** - Louisiana has more than 60,000 miles of roads in interstate highways, U.S. highways, state highways, parish roads, and city streets. State and parish maintained bridges number greater than 13,000 and include over 150 movable bridges (swing-span, lift-span, bascule, and pontoon). Approximately 15 state and parish operated ferries provide service across water bodies. Southern Pacific, Kansas City Southern, Amtrak, Illinois Central, and Union Pacific are primary rail lines. Louisiana has approximately 450 publicly and privately owned and used airports, heliports, and seaplane bases. The privately owned Louisiana Offshore Oil Port (LOOP) and fifteen smaller ports are situated within the coastal zone. The Gulf Intracoastal Waterway (GIWW) is a critical shallow-draft transportation link between the Mississippi and Texas state lines. The preceding information was largely extracted from Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998 *Coast 2050: Towards a Sustainable Coastal Louisiana*; 1997 *Roads of Louisiana*; and Calhoun 2002 *Louisiana Almanac 2002-2003 Edition*.
- ◆ **Industry** - Many industries depend on Louisiana's natural resources and the services that they provide, including commercial fisheries and aquaculture, forestry, agriculture, oil and gas, and tourism. A brief description of each is provided below.
 - ◆ **Commercial Fisheries and Aquaculture** - The inland waters, coastal marshes, and offshore waters of Louisiana support fishing and aquaculture industries. The total take of all species combined for the year 2000 was 1,357,933,958 pounds (615,954.8 metric tons) for a value of \$418,917,774 (NOAA, National Marine

Fisheries Service [NMFS] 2000). The Louisiana Department of Wildlife and Fisheries (LDWF) issued 19,438 commercial fisherman's licenses in 2000 to 2001 (Landry, personal communication 2001). The farm value for Louisiana's aquaculture crops in the year 2000 was estimated at \$121 million (Calhoun 2002).

- ♦ **Forestry** - Forestland comprises 48% of the state's total area or approximately 13.8 million acres. The estimated 2000 value of timber resources (value received by landowners from the sale of timber) was \$654 million (University of Louisiana at Monroe 2000).
- ♦ **Agriculture** - Animal production in Louisiana produced over a billion dollars in farm income for the year 2000 and nearly a billion dollars in value added worth. The total value of animal commodities was \$2,138,714,891 for the year 2000. Plant production in Louisiana created \$2.4 billion in gross farm income for the year 2000. The gross farm income along with value added totaled \$5.1 billion. The preceding data were synthesized from the University of Louisiana at Monroe, Center for Business and Economic Research, Louisiana Electronic Assistance Program and Calhoun *2002 Louisiana Almanac 2002-2003 Edition*.
- ♦ **Oil & Gas** - Louisiana ranks second in the nation in total energy produced, second in natural gas produced, and first in crude oil production (Louisiana Mid-Continent Oil and Gas Association 2002). Excluding offshore, Louisiana ranks seventh in total energy, third in natural gas and fourth in crude oil production (Louisiana Mid-Continent Oil and Gas Association 2002). In 2000 Louisiana produced over 75 million barrels of crude oil and over 1.4 billion metric cubic feet of natural gas (Louisiana Mid-Continent Oil and Gas Association 2000). In 1996 the oil and gas industry supported \$65.2 billion in sales in Louisiana firms and over \$8 billion in household earnings (Scott, 1996).
- ♦ **Tourism** - Tourism was an \$8.7 billion industry in Louisiana in the year 2000. Approximately 23.7 million domestic and international travelers visited the state, generating \$216.6 million locally, \$397.3 million for the state, and \$627.7 million for the federal government (Louisiana Department of Culture, Recreation and Tourism 2001).
- **Land Management and Ownership** - The following is a description of the types of land holdings and/or owners of large or significant lands, including parks, refuges, large private landowners and tribal lands.
 - ♦ **Parks** - The state manages 56 sites, of which 34 are operational and include 17 State Parks, 16 Historic Sites (State Commemorative Areas), and one Preservation Area. Total state holdings approximate 38,573 acres. The Department of the Interior (DOI), National Park Service (NPS) operates three National Historical Parks/Preserves/Heritage Areas and one National Monument in Louisiana. The U.S. Army, Army Corps of Engineers (USACE) manages lakeside recreational areas that are generally moderate in size.
 - ♦ **Refuges** - The Louisiana Department of Wildlife and Fisheries presently manages 48 Wildlife Management Areas (WMAs) in seven regions,. The DOI, U.S. Fish and Wildlife Service (USFWS) manages 23 National Wildlife Refuges (NWRs) in Louisiana.
 - ♦ **Forests** - Forestland comprises 48% of the state's total area, or approximately 13.8 million acres. There are 148,000 owners of Louisiana forestland, of which private, non-industrial landowners own 62%, forest products industries own 29%, and the general public owns nine percent. The USDA, U.S. Forest Service (USFS), manages Louisiana's only National Forest (NF), the Kisatchie National Forest. Two National Wildlife Preserves (Catahoula and Red Dirt) are located within the Kisatchie National Forest.

- ♦ **Large Private Land Holdings** - Forest statistics were derived from data obtained during a 1991 inventory of the 64 parishes by Vissage et al. (1992). Of the state's 26,265,400 acres, 4,472,100 acres were owned by the forest industry. Farmer-owned lands totaled 724,900 acres. Non-industrial private land (corporate) totaled 2,064,100 acres. Nonindustrial private land (individual) totaled 5,282,800 acres.
- ♦ **Tribal Lands** - The four federally recognized American Indian Tribal Reservations are: the Chitimacha Tribe of Louisiana (Charenton); the Coushatta Tribe of Louisiana (Elton); the Jena Band of Choctaw Indians (Jena); and the Tunica-Biloxi Indians of Louisiana (Marksville). The five state recognized American Indian Tribal Service Areas are: Caddo Adai Indians of Louisiana (Robeline); the Choctaw-Apache Tribe of Ebarb (Zwolle); the Clifton Choctaw Tribe of Louisiana (Clifton); the Four-Winds Cherokee (Slagle); and the United Houma Indians (Golden Meadow). The Apalachee Tribe of Louisiana is recognized as an Indian Tribal Community.
- ♦ **Recreation and Tourism** - The following are the major recreational and tourist areas and/or activities in Louisiana:
 - ♦ **Parks, Wildlife Management Areas/Refuges, and Forests** - Louisiana's State and National Parks (State Historic Sites, State Preservation Area, and National Preserve/Heritage Areas) provide for the recreational use of and/or preservation of the state's abundant natural and cultural resources. Louisiana's WMAs and NWRs provide recreational use of habitat types located throughout the state. Approximately 75 percent of the Alexander State Forest's 8,000 acres are managed for hunting and other recreational activities. The Kisatchie National Forest is Louisiana's only National Forest.
 - ♦ **Natural and Scenic River Systems** - The LDWF manages 52 natural, undeveloped rivers and streams. Saline Bayou is Louisiana's only designated national wild and scenic river and is located within the Kisatchie National Forest unit.
 - ♦ **Hunting** - The LDWF issued 589,234 hunting licenses, 9,673 lifetime licenses, and 982 trapping licenses in 2000 to 2001 (Hinds, personal communication 2002). The number of landowners leasing land for recreational hunting, primarily of Whitetail Deer, in 2000 was 5,653 for a total of 6,872,351 acres (Calhoun 2002).
 - ♦ **Fishing** - During the 2000 to 2001 season, 815,180 recreational fishing licenses were sold in the State of Louisiana (Hinds, personal communication 2002).
 - ♦ **Bird Watching** - Bird watching is an economically important activity in coastal Louisiana. Louisiana State Park holdings, WMAs, and NWRs promote birding and conduct annual bird counts.
 - ♦ **Boating** - As of December 31, 2000, the LDWF had registered 330,293 boats (Hinds, personal communication 2002).
- ♦ **Federal Facilities** - Federal facilities are defined as lands owned, leased, held in trust or whose use is otherwise by law subject solely to the discretion of the federal government, its officers or agents. See Table B-14 in Appendix B for the location of federal facilities in Louisiana.

2.2 Affected Program

2.2.1 Trust Natural Resources and Services

Trust natural resources are defined under OPA as:

“Natural resources means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the EEZ), any State or local government or Indian Tribe, or any foreign government, as defined in section 1001(20) of OPA (33 USC 2701(20)).”

Natural resources provide various services to other natural resources and to humans. Loss of services is included in the definition of injury under the OPA regulations (15 CFR 990.30).

“Services (or natural resource services) means the functions performed by a natural resource for the benefit of another natural resource and/or the public.” (15 CFR 990.30)

Natural resource services may be classified as follows:

- ♦ Ecological services - the physical, chemical, or biological functions that one natural resource provides for another. Examples include provision of food, protection from predation, and nesting habitat, among others; and
- ♦ Human services - the human uses of natural resources or functions of natural resources that provide value to the public. Examples include fishing, hunting, nature photography, and education, among others (NOAA 1996a).

In considering both natural resources and services, trustees are addressing the physical and biological environment, and the relationship of people with that environment.

2.2.2 Trustee Jurisdictions

Federal, state and tribal trusteeship is described under Subpart G of the NCP (40 CFR 300).

2.2.2.1 Federal Trustee Jurisdictions

Under the NCP, the President designated the federal agencies to act on behalf of the public as trustees for natural resources (40 CFR 300.600). The designated agencies are to act pursuant to section 1006 of OPA. Under the NCP, “natural resources” means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to or otherwise controlled by the United States, including the resources of the EEZ. (Section 300.5)

2.2.2.1.1 National Oceanic and Atmospheric Administration

The Secretary of Commerce was designated (subsequently delegated to NOAA) as a trustee for natural resources managed or controlled by NOAA and for natural resources managed or controlled by other federal agencies and that are found in, under, or using waters navigable by deep draft vessels, tidally influenced waters or waters of the contiguous zone, the EEZ, and the outer continental shelf. Examples of NOAA’s trusteeship include the following natural resources and their supporting ecosystems: marine fishery resources; anadromous fish; endangered species and marine mammals;

and, the resources of the National Marine Sanctuaries and National Estuarine Research Reserves (40 CFR 300.600(b)(1)).

NOAA is comprised of five line offices, two of which have primary trustee responsibilities for oil spills: the National Ocean Service (NOS) and, the NMFS.

- ♦ The NOS' mission is to be the Nation's principal advocate for coastal and ocean stewardship through partnerships at all levels; and to support and provide the science, information, management, and leadership necessary to balance the environmental and economic well-being of the Nation's coastal resources and communities.
- ♦ The NMFS' mission is to rebuild and maintain sustainable fisheries; promote the recovery of protected species; and protect and maintain the health of coastal marine habitats.

2.2.2.1.2 Department of the Interior

The Secretary of the Interior is designated as trustee for natural resources managed or controlled by DOI. Examples of DOI's trusteeship include the following natural resources and their supporting ecosystems: migratory birds; anadromous fish; endangered species and marine mammals; federally owned minerals; federal lands managed by DOI; and, certain federally owned water resources (40 CFR 300.600(b)(2)).

The DOI is comprised of a number of bureaus and offices including the Bureau of Indian Affairs (BIA), the Bureau of Land Management (BLM), the Bureau of Reclamation (BR), the USFWS, the U.S. Geological Survey (USGS), the Minerals Management Service (MMS), the NPS, the Office of Surface Mining (OSM), and the Office of the Secretary.

- ♦ The BIA mission is to enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve the trust assets of American Indians, Indian tribes, and Alaska Natives.
- ♦ The BLM mission is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.
- ♦ The OSM mission is to carry out the requirements of the Surface Mining Control and Reclamation Act in cooperation with States and Tribes. The primary objectives are to:
 - ♦ ensure that coal mines are operated in a manner that protects citizens and the environment during mining;
 - ♦ assure that the land is restored to beneficial use following mining; and
 - ♦ mitigate the impacts of past mining by aggressively pursuing reclamation of abandoned coal mines.
- ♦ The MMS mission is to manage the mineral resources on the Outer Continental Shelf in an environmentally sound and safe manner and to timely collect, verify, and distribute mineral revenues from federal and Indian lands.
- ♦ The NPS mission is "...to promote and regulate the use of the...national parks...which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."
- ♦ The USFWS mission is to work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continued benefit of the American people.
- ♦ The USGS mission is to serve the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural

disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

- ♦ The BR mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

2.2.2.1.3 Federal Land Managing Agencies

Federal land managing agencies are designated as trustees for natural resources located on, over, or under land administered by the United States. The trustees for the principal land managing agencies, aside from DOI, are USDA, DOD, and DOE. These agencies are trustees for all natural resources and their supporting ecosystems that are located on their lands and facilities (40 CFR 300.600(b)(3)).

2.2.2.2 State Trustee Jurisdictions

Under the NCP, state trustees act on behalf of the public as trustees for natural resources, including their supporting ecosystems, within the boundary of a state or belonging to, managed by, controlled by, or appertaining to such state. (40 CFR 300.5)

The Louisiana state trustees participate in NRDA pursuant to the Louisiana Constitution, Article IX, Section 1; OSPRA, L.R.S. 30:2451, *et seq.*; the Louisiana Oil Spill Contingency Plan; the Louisiana Natural Resource Damage Assessment Rules, La. Admin. Code 43:XXIX, Chapter 1, Section 101, *et seq.*; the Louisiana Constitution, Article IX Section 7(A), L.R.S. 36:601, *et seq.*, L.R.S 56:1, *et seq.*; the Louisiana Environmental Quality Act (EQA), L.R.S. 30:2001, *et seq.*; the Louisiana Coastal Wetlands Conservation, Restoration, and Management Act, L.R.S. 49:213.1, *et seq.*; and any other applicable laws or authorities.

2.2.2.2.1 Louisiana Oil Spill Coordinator's Office

Pursuant to the Louisiana OSPRA, L.R.S. 30:2451, *et seq.* and La. Admin. Code 43:XXIX.Chapter 1, LOSCO acts as the lead administrative trustee for the state in fulfilling its duties to protect, conserve, and replenish the natural resources of Louisiana in the event of an actual or threatened release of oil into the environment. As Louisiana's lead administrative trustee, LOSCO coordinates the activities of the state trustees in the NRDA process and compiles and maintains the associated administrative records.

2.2.2.2.2 Louisiana Department of Environmental Quality

The EQA created the LDEQ on February 1, 1984. LDEQ is the primary agency in the state concerned with environmental protection and regulation. The powers, duties, and structure of LDEQ are legislatively described in L.R.S. 30:2011(A)(1). LDEQ has jurisdiction over matters affecting the regulation of the environment within the state, including the regulation of air quality, water pollution, solid waste disposal, protection and preservation of the scenic rivers and streams of the state, the regulation and control of radiation, the management of hazardous waste, and the regulation of those programs which encourage, assist, and result in the reduction of wastes generated within Louisiana.

2.2.2.2.3 Louisiana Department of Natural Resources

The LDNR was created in 1976 by L.R.S. 36:351. The mission of LDNR is to preserve and enhance the nonrenewable natural resources of the state, consisting of land, water, oil, gas, and other minerals, through conservation, regulation, and management/exploitation. Specifically, the LDNR "shall be responsible for the conservation, management, and development of water, minerals, and other such natural

resources of the state, including coastal restoration and management, except timber and fish and wildlife.”

2.2.2.3 Louisiana Department of Wildlife and Fisheries

The LDWF is the state agency responsible for management of the state's renewable natural resources including all wildlife and all aquatic life. The control and supervision of these resources are assigned to the department in the Constitution of the State of Louisiana of 1974, Article IX, Section 7 and in revised statutes under Title 36 and Title 56.

The L.R.S. 36:602 states that LDWF shall control and supervise all wildlife of the state, including fish and all other aquatic life, and shall execute the laws enacted for the control and supervision of programs relating to the management, protection, conservation, and replenishment of wildlife, fish, and aquatic life in the state, and the regulation of the shipping of wildlife, fish, furs, and skins.

LDWF is also responsible for the conservation and management of all renewable resources on all wildlife management areas, wildlife refuges, scenic rivers, and wildlife preserves that it may own or lease. Leasing of nonrenewable state owned resources can only be carried out on such wildlife management areas, refuges, preserves, and scenic rivers with the concurrence of LDWF.

2.2.2.4 Indian Tribes

Section 1001 of OPA (33 USC 2701 (15)) defines “Indian tribe” as any Indian tribe, band, nation, or other organized group or community (but not including any Alaska Native regional or village corporation) which is eligible for the special programs and services provided by the United States to Indians due to their status as Native Americans having unique governmental authority. In addition, an Indian tribe has governmental authority over lands belonging to or controlled by the tribe. In the case of natural resource damages, provisions for the designation and recognition of Indian Tribe Trustees are made in Section 1006 of OPA (33 USC § 2706 (b)(4)). Under the NCP, Indian tribes are designated as “trustees for the natural resources, including their supporting ecosystems, belonging to, managed by, controlled by, or appertaining to such Indian tribe, or held in trust for the benefit of such Indian tribe, or belonging to a member of such Indian tribe, if such resources are subject to a trust restriction on alienation.” (40 CFR 300.610)

Title 43, Part XXIX, Section 109 of the Louisiana Administrative Code defines and recognizes as “Trustee(s)” those officials of the federal and state governments, of Indian tribes, and foreign governments, designated under 33 USC 2706(b) of OPA.

The four federally recognized American Indian Tribal Reservations in the State of Louisiana are: the Chitimacha Tribe of Louisiana (Charenton); the Coushatta Tribe of Louisiana (Elton); the Jena Band of Choctaw Indians (Jena); and the Tunica-Biloxi Indians of Louisiana (Marksville).

2.2.3 Responsible Party Liability

2.2.3.1 Viable Responsible Parties

The RP for a vessel or a facility from which oil is discharged (or which poses the substantial threat of a discharge of oil) into or upon the navigable waters or adjoining shorelines or the EEZ, is liable for the removal costs and damages that result from such incident. RP is defined in section 1001(32) of OPA (33 USC 2701(32) as follows:

- ◆ Vessel - In the case of a vessel, the RP is defined as - any person owning, operating, or demise chartering the vessel;
- ◆ Onshore facilities - In the case of an onshore facility (other than a pipeline) the RP is defined as - any person owning or operating the facility, except a federal agency, state, municipality, commission, or political subdivision of a state, or any interstate body, that as the owner transfers possession and right to use the property to another person by lease, assignment, or permit;
- ◆ Offshore facilities - In the case of an offshore facility (other than a pipeline or a deepwater port licensed under the Deepwater Port Act of 1974 (33 USC 1501 et seq.)), the RP is defined as the following:
 - ◆ the lessee or permittee of the area in which the facility is located; or
 - ◆ the holder of a right of use and easement granted under applicable state law or the Outer Continental Shelf Lands Act (43 USC 1301-1356) for the area in which the facility is located (if the holder is a different person than the lessee or permittee), except a federal agency, state, municipality, commission, or political subdivision of a state, or any interstate body, that as owner transfers possession and right to use the property to another person by lease, assignment, or permit;
- ◆ Deepwater ports - In the case of a deepwater port, the RP is defined as – a port licensed under the Deepwater Port Act of 1974 (33 USC 1501-1524), the licensee;
- ◆ Pipelines - In the case of a pipeline, the RP is defined as - any person owning or operating the pipeline;
- ◆ Abandonment - In the case of an abandoned vessel, onshore facility, deepwater port, pipeline, or offshore facility, the RP is defined as - the persons who would have been RPs immediately prior to the abandonment of the vessel or facility, as defined in section 1001(32) of OPA (33 USC 2701(32)); and
- ◆ Third Parties - In any case in which an RP establishes that a discharge or threat of a discharge and the resulting removal costs and damages were caused solely by an act or omission of one or more third parties, the third party or parties shall be treated as the RP or RPs for purposes of determining liability.

2.2.3.2 Non-Viable Responsible Parties

In some situations it is possible that a viable RP may not exist. In such a situation the trustees may elect to submit a natural resource damage claim to the Federal Oil Spill Liability Trust Fund (OSLTF) which is further described by OPA 33 USC 2712(a)(2) or the State Oil Spill Contingency Fund (OSCF) which is further described in La. Rev. Stat. 30:2483-2490. Situations that are considered to have non-viable RPs are defined as follows:

- ◆ Mystery Incidents – incidents in which no RP can be identified. These spills can be pursued by the Trustee’s to the Federal OSLTF or the State OSCF; and
- ◆ Insolvent or Bankrupt RPs - Situations in which no financially sound RP, insurer, guarantor, or other liable party can be identified.

2.2.3.3 Excluded Incidents

The OPA of 1990 (33 USC 2701 et seq.) defines discharges from the following sources as excluded from its provisions and therefore exempt from liability:

- ◆ Discharges by a permit issued under Federal, State, or local law;
- ◆ Discharges from a Public Vessel - A public vessel means a vessel owned or bareboat chartered and operated by the United States, or by a state or political subdivision thereof, or by a foreign nation, except when the vessel is engaged in commerce, as defined in section 1001(29) of OPA (33 USC 2701(29));

- ◆ Discharges from an onshore facility which is subject to the Trans-Alaska Pipeline Authorization Act (43 USC 1651 et seq.);
- ◆ Discharges resulting from an Act of God - An act of God means an unanticipated grave natural disaster or other natural phenomenon of an exceptional, inevitable, and irresistible character the impacts of which could not have been prevented or avoided by the exercise of due care or foresight (33 USC 2701(1));
- ◆ Discharges resulting from an Act of War; and
- ◆ Acts or omission by a third party.

2.2.4 NRDA Process

Both state and federal NRDA regulations provide a step-by-step process for trustees to determine injuries, assess damages, and develop and implement restoration projects that compensate the public for injuries to natural resources impacted by an incident. This process is shown in Figure 2.1 and includes three phases:

- ◆ Pre-assessment;
- ◆ Restoration Planning; and,
- ◆ Restoration Implementation.

Each of the three phases is described in detail in Chapter 1 of the NOAA OPA guidance document (NOAA 1996a). The following sections provide an overview of the NRDA process and were largely taken from the guidance documents. Figure 2.2 further illustrates the process through which the trustees implement the NRDA regulations. It is important to note that RPs for incidents are encouraged to work cooperatively with the trustees through the NRDA process, and that trustees have a regulatory requirement to invite such cooperation.

2.2.4.1 Pre-assessment Phase

The purpose of the Pre-assessment Phase is to determine if trustees have the jurisdiction to pursue restoration under OPA, and, if so, whether it is appropriate to proceed with restoration planning (Figure 2.1). This preliminary phase begins when the trustees are notified of the incident by response agencies or other persons.

Based on early available information, trustees make a preliminary determination whether natural resources or services for which they are trustees under OPA or OSPRA may have been or are likely to be injured (see Step #1 in Figure 2.2). Through coordination with response agencies, trustees next determine whether response actions have addressed or will adequately address the injuries resulting from the incident, and if not, whether feasible primary and/or compensatory restoration alternatives exist to address such injuries. If the injuries will not be adequately addressed by response actions and feasible restoration alternatives exist to address such injuries, trustees may proceed with the NRDA process.

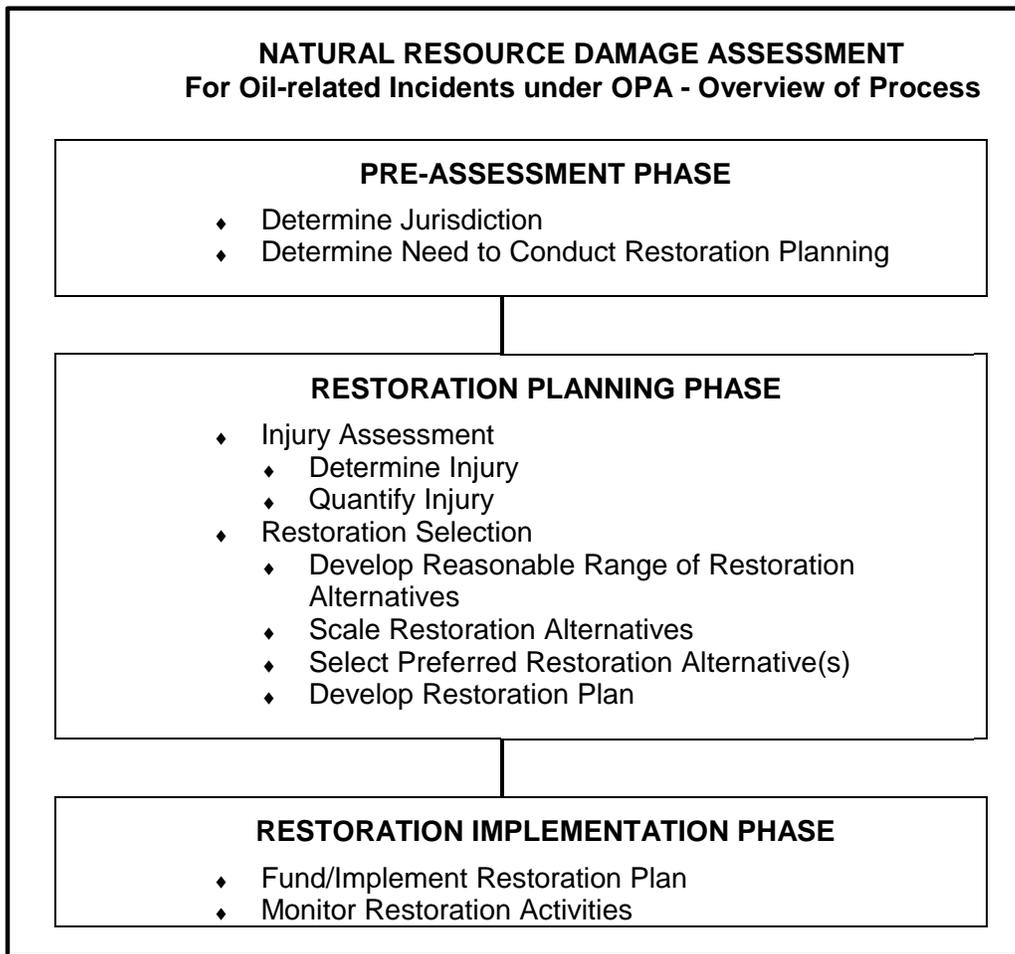


Figure 2.1: NRDA Process (adopted from NOAA 1996)

2.2.4.2 Restoration Planning Phase

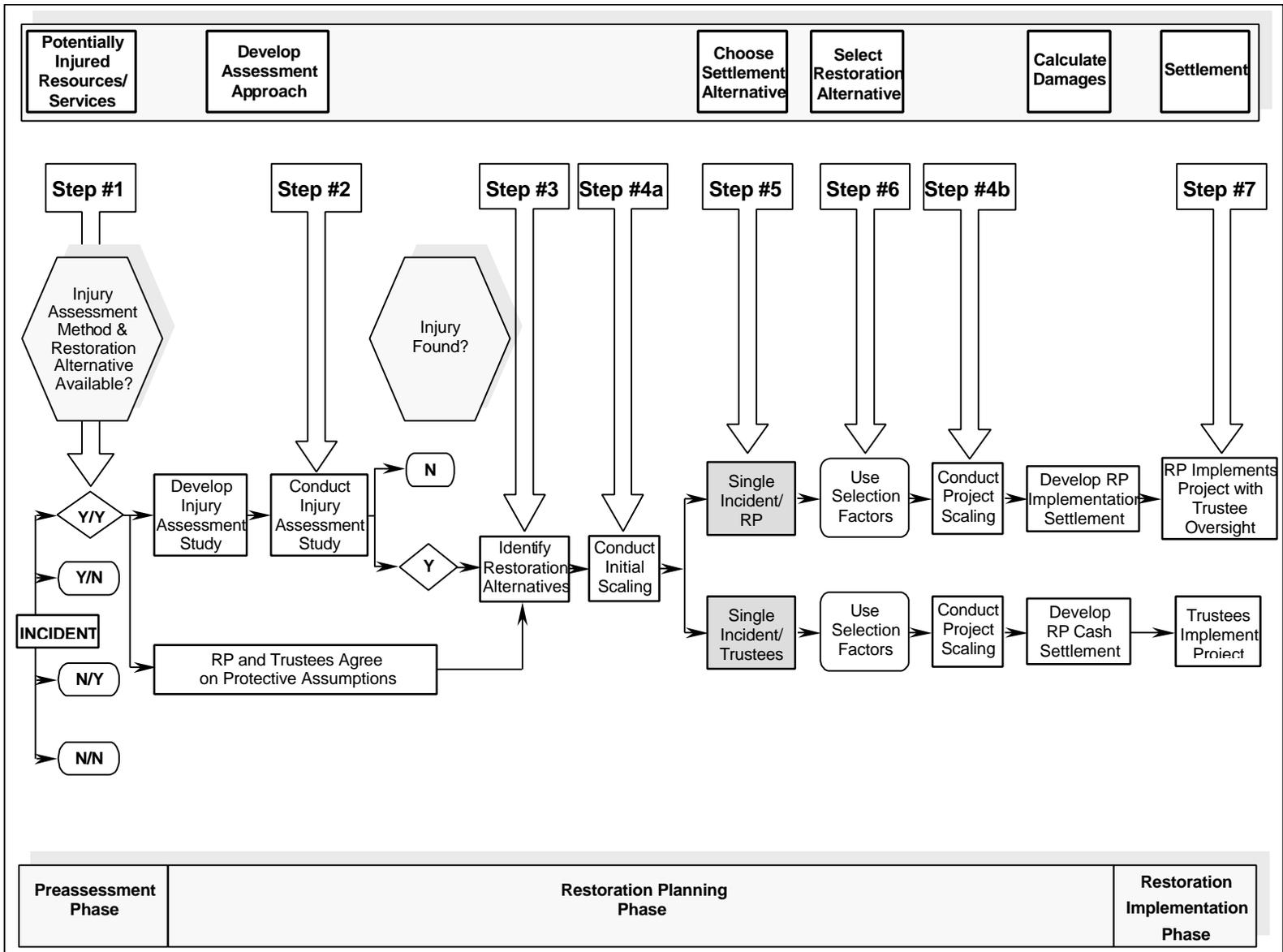
The purpose of the Restoration Planning Phase is to evaluate potential injuries to natural resources and services and use that information to determine the need for and scale of restoration actions. The Restoration Planning Phase provides the link between injury and restoration. The Restoration Planning Phase has two basic components: injury assessment and restoration selection (Figures 2.1 and 2.2).

2.2.4.2.1 Injury Assessment

The goal of injury assessment is to determine the nature, degree, and extent of injuries, if any, to natural resources and services (see Step #2 in Figure 2.2). This information is necessary to provide a technical basis for evaluating the need for, type of, and scale of restoration actions. Injury is defined as an observable or measurable adverse change in a natural resource or impairment of a natural resource service. To assess injury, trustees determine whether there is:

- ◆ Exposure, a pathway, and an adverse change to a natural resource or service as a result of an actual discharge; or

Figure 2.2: NRDA Process Implementation (PRD 2001)



To proceed with restoration planning, trustees also quantify the degree, and spatial and temporal extent of injuries. Injuries are quantified by comparing the condition of the injured natural resources or services to baseline, as necessary.

Injury assessment may be accomplished by using field observations, field studies, lab studies, literature reviews, physical/ecological models, or any combination of these methods. In cases where the RP is involved in the process, the trustees and the RP, where appropriate, may reach agreement on reasonable and protective assumptions that allow assessment of injury with less investment of time and money in assessment studies.

2.2.4.2.2 Restoration Selection

2.2.4.2.2.1 Developing Restoration Alternatives

Once injury assessment is complete or nearly complete, trustees develop a plan for restoring the injured natural resources and services. In the NRDA process, trustees identify a reasonable range of restoration alternatives (see Step #3 in Figure 2.2), evaluate and select the preferred alternative(s), and develop a Draft and Final Restoration Plan. Acceptable restoration actions include any of the actions authorized under OPA (and OSPRA): restoration, rehabilitation, replacement, or acquisition of the equivalent or some combination of those actions.

Restoration actions are either primary or compensatory. Primary restoration is action taken to return injured natural resources and services to baseline levels, including natural recovery. Compensatory restoration is action taken to compensate for the interim losses of natural resources and/or services pending recovery. Each restoration alternative will contain primary and/or compensatory restoration actions that address one or more specific injuries associated with the incident. The type and scale of compensatory restoration will depend on the nature of the primary restoration action, and the level and rate of recovery of the injured natural resources and/or services, given the primary restoration action.

When identifying the compensatory restoration components of the restoration alternatives, trustees must first consider compensatory restoration actions that provide services of the same type as those lost. If compensatory actions of the same type cannot provide a reasonable range of alternatives, trustees then consider other compensatory restoration actions that will provide services comparable to those lost.

2.2.4.2.2.2 Scaling Restoration Actions

To ensure that a restoration action appropriately addresses the injuries resulting from an incident, trustees must determine what scale of restoration is required to return injured natural resources to baseline levels and compensate for interim losses (see Step #4a and #4b in Figure 2.2). The approaches that may be used to determine the appropriate scale of restoration action are resource-to-resource (or service-to-service) and the valuation approach (see NOAA 1997 for more information on scaling of restoration actions).

2.2.4.2.2.3 Selecting a Preferred Restoration Alternative

The identified restoration alternatives are evaluated based on a number of factors (see Step #6 in Figure 2.2) that include:

- ◆ Cost to carry out the alternative;
- ◆ 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;
- ◆ Likelihood of success of each alternative;
- ◆ 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;
- ◆ Extent to which each alternative benefits more than one natural resource and/or service; and
- ◆ Effect of each alternative on public health and safety (15 CFR 990.54(a)).

If the trustees conclude that two or more alternatives are equally favorable based on the above factors, the trustees must select the most cost-effective alternative.

2.2.4.2.2.4 Developing a Restoration Plan

The trustees provide a Draft DARP to the public for review and comment. The Draft DARP describes the trustees' pre-assessment activities, as well as injury assessment activities and results, evaluates restoration alternatives, and identifies the preferred restoration alternative(s). After reviewing public comments on the Draft DARP, trustees develop a Final DARP. The Final DARP becomes the basis of a claim for damages.

2.2.5 Restoration Implementation Phase

The Final DARP is presented to the RPs to implement or fund the trustees' costs of implementing the Plan (Figure 2.1 and see Step #5 and #7 in Figure 2.2; Single Incident/RP or Single Incident/Trustees respectively), therefore providing the opportunity for settlement of the damage claim without litigation. If the RPs choose to implement the restoration actions detailed in the Final DARP, then the trustees provide project-oversight, which is funded by the RPs.

Should the RPs decline to settle the claim, trustees are authorized to bring a civil action for damages in court or to present the claim⁶ to the Federal OSLTF or the States for such damages.

2.2.5.1 Restoration Monitoring

Restoration monitoring is necessary to determine whether the restoration actions are providing the resources and/or services required to make the environment and public whole. In order to accomplish this task, trustees identify performance criteria against which project success is judged through the evaluation of project objectives. Performance criteria may include structural, functional, temporal, and/or other demonstrable factors. The monitoring component of the Final DARP may address such factors as duration and frequency of monitoring needed to gauge progress and success, and level of sampling needed to detect the attainment of objectives and goals or the need for corrective action. Monitoring is usually conducted for a portion of the project's expected lifespan, a period of time sufficient to give assurance that the project will continue to perform as expected.

⁶ In the absence of a viable RP (e.g., where the RP is unknown, bankrupt or is not responsible due to a valid defense) or when a viable RP fails to respond to a demand letter after 90 days, the trustees have the option of going to the Federal OSLTF and/or State OSCF to seek monies to implement the restoration actions required for that case.

2.2.5.2 Corrective Action

If the monitoring program shows that the restoration actions are not meeting the performance criteria, then the trustees evaluate whether actions should be undertaken to correct the deficiencies.

3.0 Proposed Action: Regional Restoration Planning Program

Federal and Louisiana natural resource trustees are developing a statewide comprehensive RRP Program and RRP for each of nine regions in the State of Louisiana to assist the natural resource trustees in carrying out their responsibilities for incidents. The goal of this planning effort is to establish a statewide program that will: expedite and potentially reduce the cost of the NRDA process; provide for consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and increase restoration of lost natural resources and services.

The RRP Program is established to expedite and make the NRDA process more cost-effective. The RRP Program is expected to shorten the restoration planning phase of the NRDA process through the development of individual RRP, which will identify appropriate restoration projects subjected to public review on a regional basis prior to incidents occurring. To further streamline the NRDA process during specific incidents, the trustees have incorporated an analysis on the environmental consequences generally associated with the implementation of those restoration projects in the RRP Program. Additionally, the RRP Program will help to inform the selection of restoration projects by identifying the types of restoration that may be suitable to restore those resources and services likely to be injured by incidents in Louisiana. Consistent application of the RRP Program project selection criteria will enhance the predictability and accountability of the decision-making process. Flexibility will be increased through the introduction of additional settlement alternatives that are unique to the RRP process.

3.1 RRP Program Introduction

As described in Chapter 1 of this document, the RRP Program is required to be established in accordance with La. Rev. Stat. 30:2480.1:

“To assist in making the natural resource damage assessment process more efficient, the Regional Restoration Planning Program encompassing the entire geographic area of the state, is established in the office of the oil spill coordinator. The office of the oil spill coordinator shall develop and implement the program in coordination with the state natural resource trustees.”

The RRP Program is being established to address incidents under OPA and OSPRA. The RRP Program does not address injuries from releases of hazardous substances under CERCLA, 42 USC § 9601 *et seq.*, or physical injuries to resources under the National Marine Sanctuaries Act, 16 USC § 1431 *et seq.*, should a sanctuary be designated in the State of Louisiana.

The Louisiana RRP Program will be jointly administered and used by the trustees to assist in carrying out their natural resource trust mandates under OPA and OSPRA.

Regional restoration planning is defined in the preamble of the OPA regulations as:

“...compiling databases that identify existing, planned, or proposed restoration projects that may provide appropriate 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) 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. In no event may the use of a regional restoration plan or other existing proposed project restoration violate OPA’s

limitation that natural resource damages must be used solely to restore, rehabilitate, replace, or acquire the equivalent of natural resources and services injured by an incident.” (OPA Regulations, Preamble Discussion, Subpart A-Introduction, VI. Considerations for Facilitating Restoration, C. Regional Restoration Planning, 60 Fed. Reg. 440 [1996]).

Further, the OPA regulations require that:

“Regional restoration plans must be developed or annotated in such a way that trustees are able to justify linking the injuries from a particular incident or set of incidents with specific restoration projects within the plan. This may be facilitated by describing the types of injuries anticipated from incidents to specific natural resources within a region,...” (OPA regulations, Preamble Discussion, Appendix A - Considerations to Facilitate the Restoration Process).

Broad guidelines and the basic requirements of OPA provide the necessary direction for developing RRP. These guidelines and requirements are contained in 15 CFR 990. In summary, the general provisions concerning RRP are that they:

- ◆ Are tools trustees should consider “as a means to enhance successful restoration planning and implementation” (Preamble to OPA Regulations, Subpart A, VI, A, 60 Fed. Reg. 440 [1996]);
- ◆ “...may consist of compiling databases that identify, on a regional or watershed basis, or otherwise as appropriate, existing, planned, or proposed restoration projects that may provide appropriate restoration alternatives for consideration in the context of specific incidents” (15 CFR 990.15);
- ◆ “...must be capable of fulfilling OPA’s intent for trustees to restore, rehabilitate, replace, or acquire the equivalent of the injured natural resources and/or services, and can be used provided that the plan
 - ◆ Was developed with public review and comment or is subject to review and comment;
 - ◆ Will adequately compensate the environment and public for injuries resulting from the incident;
 - ◆ Addresses, and is currently relevant to, the same or comparable natural resources and services as those identified as having been injured; and
 - ◆ Allows for reasonable scaling relative to the incident” (15 CFR §990.56).

It is important to note that the NRDA process as described by implementing regulations and guidance both under OPA and OSPRA does not change as a result of the RRP Program. The trustees are further institutionalizing an existing process, as well as identifying potential ways to expedite and further define the specific steps of that process, expressly within the requirements of the OPA and OSPRA NRDA regulations.

This chapter describes the RRP Program’s goals and objectives as well as its components in relation to the NRDA process and the goals and objectives of establishing the RRP Program. Each component is described specifically in terms of where it fits into the NRDA decision-making process, and how it meets the program development objectives.

The scope of the RRP Program as well as the components of the RRP Program are described in detail below and further illustrated in Figure 3.1 relative to where they would fit into the NRDA decision-making process previously shown in Figure 2.2.

3.2 RRP Program Components

3.2.1 Regional Restoration Plans

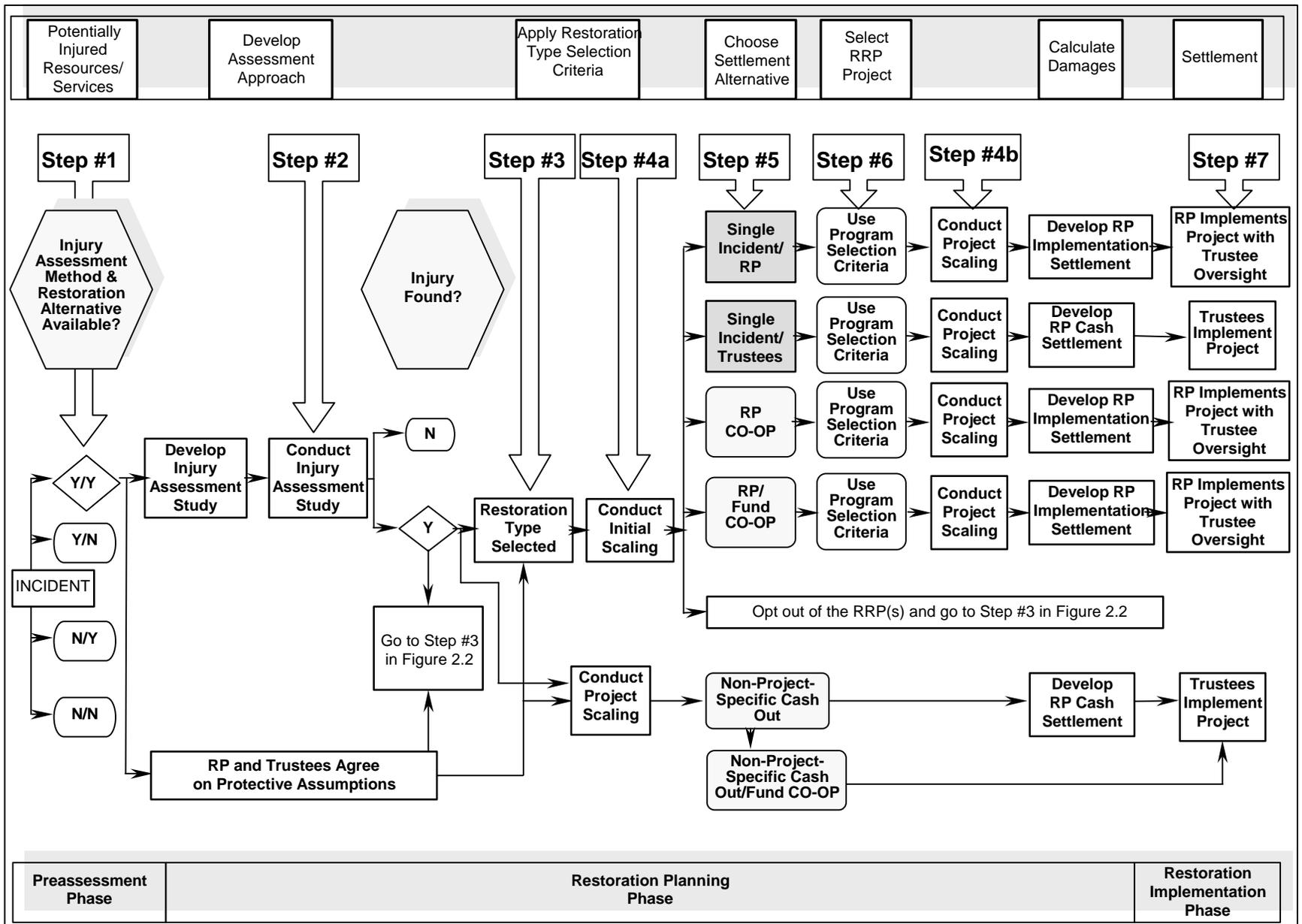
The trustees will develop specific RRP for each of the regions (see Chapter 4, *Regional Boundaries*) delineated under the RRP Program by identifying the natural resources/services in each region that are likely to be injured by an incident, the appropriate restoration types for each of the potentially injured resources/services, and the available restoration projects for each of the restoration types identified in each RRP. Restoration actions in response to an incident will typically occur in the same region where the incident took place. In some incidents, restoration actions may be selected in a region outside the region where the incident took place. Examples of such circumstances are provided in Section 3.2.4.3.

Identification of available projects will be achieved through a two-step process. The first step consists of soliciting projects from the public, government agencies, and industry. The types of restoration projects that will be incorporated into the RRP must address the restoration of natural resources and/or services that will be or are likely to be injured by an incident. (See description of Potentially Injured Resources/Services and Restoration Types below.) Therefore, trustees have developed selection criteria for determining whether a given restoration project can be included in an RRP. Application of those criteria represents the second step in the process. The following represent criteria for selection of restoration projects for incorporation into each RRP and are based in part on the OPA regulations (15 CFR 990.53(a)(2) and 990.54(a)(1-6)):

- ◆ “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;...” (15 CFR 990.54(a)(2)).
- ◆ **Strong Nexus to Injuries Included in the Applicable RRP**

Trustees must consider compensatory restoration actions that provide services of the same type and quantity, and of comparable values as those lost. Restoration projects are evaluated to determine how well the restoration would address the injuries to potentially injured resource/services that occurred as result of the potential incident in a specific region. Screening questions include: Will the project provide the same type of natural resources and services, both on site and off-site, that are lost due to the potential injury? If not, will the proposed project result in resources and services that are similar or complimentary to the potentially injured natural resources and services? Projects that come closest to restoring the same type of organisms and habitats as those injured by potential incidents are more likely to be selected than those projects where the nexus is not so close.

Figure 3.1: NRDA Process Implementation in RRP Program



- ◆ “The likelihood of success of each alternative;...” (15 CFR 990.54(a)(3)).
- ◆ **Technical Feasibility and Likelihood of Success**
Trustees consider whether a restoration project can be successfully implemented in a reasonable amount of time given available technology and expertise. Generally, the likelihood of a project’s success is evaluated based on whether the methods: 1) are proven; 2) have a high rate of success as documented in the literature; 3) are capable of being implemented in a cost-effective manner; and, 4) characterize the natural resource service gains stemming from the project. This does not preclude the use of existing technology in new and creative ways so long as there is a significant likelihood of successful implementation. Nevertheless, for new or unproven technologies, the trustees should provide technical justification demonstrating that there is a reasonable basis to believe that the project will be successful. They should also take into account project and site-specific factors that may influence project success.
- ◆ “Only those alternatives in accordance with applicable laws, regulations, or permits may be considered further under this part.” (15 CFR 990.53(a)(2)).
- ◆ **Consistency with Existing Laws and Regulations**
This criterion considers whether a given restoration project complies with applicable federal, state, and local laws, regulations, and policies.
- ◆ RRP Program specific criteria
 - ◆ **Listed as One of the Restoration Types Identified in the Applicable RRP**
The RRP’s identify those restoration types that are found to be reasonable for restoring each of the “potentially injured resources/services” within each of the RRP regions. The trustees must consider whether a proposed restoration project can be categorized as one of the restoration types identified in that RRP.
 - ◆ **Located (at least) Partially within the Boundaries of the Applicable RRP region**
This criterion considers the need for at least a portion of the project to be located within the boundaries of the applicable RRP Region.

Projects in each RRP will be classified by restoration type in order to facilitate the determination of the nexus between injuries and specific restoration projects, as well as the selection of specific restoration projects for a given NRDA.

3.2.1.1 RRP Revisions

The RRP’s will be updated through regular solicitations and the plans will be revised accordingly (see Appendix D for the *Project Solicitation Form* used in the RRP Program). It is anticipated that a formal public review and comment period on the revised RRP’s will be provided on a regular basis. The trustees will provide a public notice for this period.

3.2.2 Potentially Injured Natural Resources and Services

The RRP Program defines those natural resources and services in Louisiana that are likely to be injured (i.e., at risk) by incidents as “potentially injured resources/services.” Identification of these “potentially injured resources/services” will facilitate the development of the RRP’s and provide more detail to the pre-assessment phase in the NRDA process. (See Step #1 in Figure 3.1 where “Potentially Injured Resources/Services” were identified prior to the incident occurring and are subsequently

examined as part of the Pre-assessment Phase of the NRDA process.) This information will also assist in the coordination of response activities by informing incident response agency personnel of resources that may be of greatest concern to the trustees. The potentially injured resources/services are defined under three broad categories: coastal, inland, and statewide:

3.2.2.1 Coastal

3.2.2.1.1 Herbaceous Wetlands

Herbaceous wetlands are primarily salt, brackish/intermediate, and fresh marshes located in or near the coastal zone and alluvial basin. The Mississippi River delta complex marshes and other similar areas in Louisiana support a mix of freshwater, estuarine, and marine species. These wetlands are vital habitat for various fish, mammals, and resident and migratory birds. As considered here, this category includes marsh plants, invertebrates, bacteria, algae closely associated with the plants, and sediments, as well as all marsh habitat functions.

3.2.2.1.2 Forested Wetlands

Forested wetlands are wetland areas dominated by woody vegetation. They usually consist of an overstory of large trees, an understory of young trees or shrubs, and an herbaceous layer. As considered here, this category includes the trees, understory vegetation, soils, closely associated invertebrates, and the services that this habitat provides to other resources.

3.2.2.1.3 Beaches/Shoreline/Streambed

Unvegetated beaches and shorelines in coastal waters include the perimeters of barrier islands, estuaries and bays, tidal mudflats and river deltas. This zone begins at the lowest part of the intertidal zone and extends into the supratidal zone. As considered here, this injury category includes the invertebrates that burrow and/or live in this habitat. It encompasses all ecological functions performed by this habitat, including, among others, primary production by benthic diatoms in the intertidal zone and secondary production by grazers, but does not include human recreational services.

Streambeds include all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are partially or completely dewatered at low tide. Water regimes include the following: seasonally flooded, temporarily flooded, intermittently flooded, irregularly exposed, regularly flooded, irregularly flooded, seasonal-tidal, and temporary-tidal. As considered here, this injury category includes the substrate (soils/sediments and hard surfaces) and closely associated invertebrates, and includes all ecological functions performed by this habitat (Cowardin et. al. 1979).

3.2.2.1.4 Oyster and Other Reefs

This category considers living reefs in marine and estuarine waters. As considered here, living reefs encompass oysters, mussels, and/or other benthic organisms that make up the reef structure, and the fauna and flora that attach or are closely associated with these reefs. It also includes all ecological services this habitat provides to other natural resources.

3.2.2.1.5 Water Column Organisms

As considered here, this category consists of planktonic (including larval fish) and nektonic organisms in marine and estuarine waters, and the ecological services these

organisms provide to other resources. It also includes large mobile crustaceans, such as crabs and shrimp, and demersal fishes which live on or near the seafloor.

3.2.2.2 Inland

3.2.2.2.1 Herbaceous Wetlands

Inland herbaceous wetlands are generally those environments that experience periodic flooding and are comprised of emergent vegetation having little or no woody tissue. This definition refers specifically to the inland geographic areas where freshwater flow regimes prevail throughout the year and salt water does not typically penetrate from the coast. These wetlands support a diverse group of fish, birds and mammals. As considered here, this category includes marsh plants, invertebrates, bacteria, algae closely associated with the plants, and sediments, as well as all marsh habitat functions.

3.2.2.2.2 Forested Wetlands

Forested wetlands are characterized by woody vegetation that is at least 18.5 feet tall. They occur in palustrine systems and normally possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. Specific examples of this habitat in Louisiana are wetland forest evergreen, deciduous, mixed, and batture. As considered here, this category includes the trees, understory vegetation, soils, closely associated invertebrates, and the services that this habitat provides to other resources.

3.2.2.2.3 Beaches/Shorelines/Streambeds

Unvegetated beaches and shorelines in fresh waters include, but are not limited to, lakefronts, ponds shores, mudflats and riverbanks. As considered here, this injury category includes the invertebrates that burrow and/or live in this habitat. It encompasses all ecological functions performed by this habitat, including, among others, primary production by benthic algae in the intertidal zone and secondary production by grazers, but does not include human recreational services.

Streambeds include all wetlands contained within the intermittent subsystem of the riverine system. Water regimes are restricted to irregularly exposed, regularly flooded, irregularly flooded, seasonally flooded, temporarily flooded, and intermittently flooded. As considered here, this injury category includes the substrate (soils/sediments and rocks) and closely associated invertebrates, and includes all ecological functions performed by this habitat.

3.2.2.2.4 Upland Vegetation

As considered here, this category includes vegetated urban, agricultural-cropland-grassland, dense pine thicket, upland shrub/scrub (deciduous, evergreen, and mixed), and upland forest (deciduous, evergreen, and mixed). It encompasses trees as well as understory vegetation, soils, and invertebrates in the soil or associated with plants, and the services this habitat provides to other resources.

3.2.2.2.5 Water Column Organisms

As considered here, this category consists of both planktonic (including larval fish) and nektonic organisms, such as fish that live in fresh waters streams, ponds, swamps, and lakes. It also includes the ecological services these organisms provide to other resources.

3.2.2.3 Statewide

3.2.2.3.1 Birds

Birds located permanently or seasonally in all coastal and inland areas listed in Appendix B are included in this category. This injury category can also include the ecological services birds provide to other resources.

3.2.2.3.2 Wildlife

Mammals, reptiles, and amphibians from all habitats in all coastal and inland areas listed in Appendix B are included in this category. This injury category can also include the ecological services these organisms provide to other resources.

3.2.2.3.3 Recreational

Recreational trust resources include habitats and/or areas that provide human recreational activities throughout the state and offshore within the EEZ. Indirect activities (i.e. hiking, biking, picnicking or jogging) and direct activities (i.e. bird and wildlife viewing, hunting, fishing, boating, or swimming) are included in this category. It does not include the resources themselves that are involved in the activity.

3.2.2.3.4 Cultural

Cultural Resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Cultural resources in Louisiana include lands, buildings, monuments, travel routes, ship wrecks, burial sites, ceremonial sites, battle grounds, Indian mounds, middens and other artifacts, generally in excess of 50 years of age, that represent the history and culture of the region as perceived by the public or cultural scientists. While all state and local historic preservation groups may contribute to the list of state cultural resources, the Louisiana State Preservation Office, state Indian Tribes, and DOI are the primary designees of Louisiana's cultural resources. Natural resources can have cultural significance and values under specific conditions. As an example, a bald eagle may have spiritual/religious importance to native tribes. Its loss or injury would constitute not only natural resource injury, but cultural resource injury as well. Therefore, this category includes all state cultural resources, and the ecological services this category provides to other resources.

3.2.3 Restoration Types

As part of the RRP Program development, the trustees identified restoration types that are appropriate for the restoration of injuries for each of the "potentially injured resources/services" (discussed in Section 3.2.2) in the RRP Program. Identification of appropriate restoration types will again increase the predictability and consistency of the NRDA decision-making process. Furthermore, restoration projects in each RRP will be grouped by restoration type within each region identified in the plan which will allow the process of evaluating and selecting preferred restoration projects (Step #6 in Figure 3.1), for a particular region to be streamlined.

The restoration types in the RRP Program include the following seven broad categories and are defined below:

- ◆ Creation or enhancement of a habitat
- ◆ Physical protection of a habitat
- ◆ Acquisition or legal protection of a resource
- ◆ Stocking of fauna
- ◆ Physical protection of fauna
- ◆ Restoration of a recreational resource
- ◆ Restoration of a cultural resource

3.2.3.1 Habitat Creation/Enhancement

Creation of a habitat includes the physical construction of a habitat, such as a marsh or reef and planting of submerged aquatic vegetation (SAV) on a non-vegetated water bottom. Enhancements might also include hydrological changes to improve a habitat through the creation of a crevasse or water diversion; or any habitat manipulation that benefits a species, for example, providing nesting sites, increasing the food base, reducing predation, etc.

3.2.3.1.1 Creation/Enhancement of Coastal Herbaceous Wetlands

This restoration type consists of actions intended to create a coastal marsh or enhance the provision of marsh services from an existing marsh. There are many different methods that can be used to create a marsh, including depositing dredge material at a height suitable for marsh vegetation and then planting marsh vegetation following the dewatering or compaction of material, constructing a crevasse in a river levee allowing a marsh splay to form, and terracing to protect marsh from wave action and facilitate the increase of water bottom elevation through the deposition of sediment and organic matter. An example of an action designed to enhance marsh service flows would be increasing hydrologic flow into an existing marsh with poor circulation to augment utilization by marine organisms and growth of marsh vegetation.

3.2.3.1.2 Creation/Enhancement of Coastal Forested Wetlands

This restoration type consists of actions designed to provide additional areas of forested wetlands or enhance the provision of services from an existing forested wetland to other natural resources. Planting hardwoods along cheniers and ridges is an example of a project to create forested wetlands. An example of an action designed to enhance forested wetland service flows would be increasing hydrologic flow into an existing forested wetland with poor circulation to augment utilization by marine and estuarine water organisms, such as gapping spoil banks or introducing fresh river water to swamp.

3.2.3.1.3 Creation/Enhancement of Coastal Beach/Shoreline/Streambeds

This restoration type consists of actions designed to provide additional areas of beaches, shorelines, and streambeds or enhance the provision of services from an existing beach/shoreline/streambeds to other natural resources. Installing a hard structure to trap sediment, thus forming additional area of beach, is an example of coastal beach creation. Enhancement actions could include such methods as removing debris along the beach and/or shoreline that limit the habitat value.

Enhancement actions for streambeds could include such methods as removing debris that limit the habitat value of a streambed. Regrading or recontouring previously altered streambeds is another alternative for enhancement.

3.2.3.1.4 Creation/Enhancement of Coastal Oyster and Other Reefs

This restoration type consists of actions designed to produce reef habitat or to enhance the productivity of, and services provided by, an existing reef. A project such as the placing of hard substrates in an area suitable for oyster survival in a configuration designed to allow oysters or other reef-forming organisms to settle is an example of reef creation. A water quality improvement project that enhances the productivity of an existing oyster reef is an example of an enhancement action.

Construction of an artificial reef such as increasing hard structure on the seafloor or water column to allow colonization by encrusting organisms and provide habitat for reef fish is

an example of a project of this restoration type. Other actions designed to create artificial reefs or to increase the productivity of an existing reef are also classified in this restoration type.

3.2.3.1.5 Creation/Enhancement of Coastal Submerged Aquatic Vegetation

This restoration type consists of actions designed to create a new bed of submerged aquatic vegetation or enhance the productivity of an existing bed. Planting seagrasses in a bare area is an example of a project to create submerged aquatic vegetation. A water quality improvement project that reduces turbidity and enhances the productivity of an existing seagrass bed is an example of an enhancement action.

3.2.3.1.6 Creation/Enhancement of Inland Herbaceous Wetlands

This restoration type consists of actions to create herbaceous vegetated wetlands or enhance the provision of services from an existing wetland to other natural resources. Planting fresh marsh vegetation in a bare area is an example of a project to create herbaceous wetlands. An example of an action designed to enhance inland herbaceous vegetated wetland service flows would be increasing hydrologic flow into an existing herbaceous wetland with poor circulation to augment utilization by fresh water organisms and growth of the vegetation. Adding nutrients to herbaceous wetlands with low productivity is another method of enhancement.

3.2.3.1.7 Creation/Enhancement of Inland Forested Wetlands

This restoration type consists of actions designed to provide additional areas of forested wetlands or enhance the provision of services from an existing forested wetland to other natural resources. Planting bald cypress or overcup oak in a bare area is an example of a project to create forested wetlands. An example of an action designed to enhance forested wetland service flows would be increasing hydrologic flow into an existing forested wetland with poor circulation to augment utilization by freshwater organisms and growth of the woody vegetation.

3.2.3.1.8 Creation/Enhancement of Inland Beach/Shoreline/Streambeds

This restoration type consists of actions designed to provide additional areas of beaches, shorelines and streambeds to enhance the provision of services from an existing beach/shoreline/streambeds to other natural resources. Installing a hard structure to trap sediment and form an additional area of beach is an example of inland beach creation. Enhancement actions could include such methods as removing trash that limits the habitat value of a beach.

Enhancement actions for streambeds could include such methods as removing trash that limits the habitat value of a streambed. Regrading or recontouring previously altered streambeds, or Bendway projects are other alternatives for enhancement.

3.2.3.1.9 Creation/Enhancement of Inland Upland Vegetation

This restoration type consists of actions designed to provide additional areas of upland vegetation or enhance the provision of services from existing upland vegetation to other natural resources. Planting longleaf pine (*Pinus taeda*) in a bare area is an example of a project to create upland vegetation. Enhancement actions could include such methods as mid-story thinning to stimulate wildlife utilization and growth of the upland vegetation.

3.2.3.2 Physical Habitat Protection

Prevention of a particular organism or physical force from adversely affecting a habitat constitutes physical protection. Protection of a riparian habitat by fencing off cattle or

creating breakwaters to reduce wave energy would be examples of physical habitat protection.

3.2.3.2.1 Physical Protection of Coastal Herbaceous Wetlands

This type of restoration action involves projects designed to decrease the loss of coastal marsh. Armoring shorelines or erecting fences to exclude herbivores, or prevent excessive herbivory is one example of physical protection that may be implemented in coastal herbaceous wetlands.

3.2.3.2.2 Physical Protection of Coastal Forested Wetlands

This type of restoration action includes projects designed to decrease the loss of coastal forested wetlands. The use of tree shelters around the base of trees or exclusion fences around forest tracts to prevent herbivory are examples of physical protection that may be implemented in this habitat.

3.2.3.2.3 Physical Protection of Coastal Beach/Shoreline/Streambeds

This type of restoration action involves projects designed to decrease the loss of a coastal beach or other unvegetated shoreline. It may involve the placement of artificial structures or construction of some natural habitat adjacent to an existing shoreline that would reduce erosion of the substrate.

3.2.3.2.4 Physical Protection of Inland Herbaceous Wetlands

This type of restoration action involves projects designed to decrease the loss of herbaceous vegetated wetlands. Erecting fences to exclude herbivores or prevent excessive herbivory is one example of physical protection that may be implemented in inland herbaceous wetlands.

3.2.3.2.5 Physical Protection of Inland Forested Wetlands

This type of restoration action involves projects designed to decrease the loss of forested wetlands. The use of tree shelters around the base of trees to prevent herbivory and scouring is an example of physical protection that may be implemented in this habitat.

3.2.3.2.6 Physical Protection of Inland Beach/Shoreline/Streambeds

This type of restoration action involves projects designed to decrease the loss of a sandy beach or other unvegetated shoreline. It may involve placement of artificial structures or construction of some natural habitat adjacent to an existing shoreline that would reduce shoreline erosion of the substrate.

This type of restoration action may also involve projects designed to reduce the loss of inland streambeds. Planting fringe vegetation to reduce sedimentation into a streambed to keep it from filling in is one example of this type of restoration. Fencing off access to the streambed to prevent cattle from entering, or enhancing vegetated buffers around streambeds, would qualify as protection.

3.2.3.2.7 Physical Protection of Inland Upland Vegetation

This type of restoration action involves projects designed to decrease the loss of upland vegetation. Laying weed mats around the base of trees to alleviate excessive weed growth in the area is an example of physical protection that can be implemented in an upland vegetated habitat. Erecting deer exclusion fencing, or supporting the control of detrimental species, would provide physical protection of the habitat.

3.2.3.3 Acquisition/Legal Protection

Acquisition or servitude of land as a buffer or protection of created or enhanced habitat is an example of restoration under this type. Acquisition or preservation of existing habitat may be a potential restoration alternative, although no increase in service flows would occur through acquisition or protection alone. Acquisition will generally be used in conjunction with other restoration types, such creation or enhancement of habitat. Acquisition may be considered as a restoration alternative if, and only if, the particular habitat has 1) unique qualities, 2) its location is especially valuable, and 3) its destruction is imminent. Acquisition of a habitat or resource already afforded protection under law, such as purchase of wetlands, would not normally be considered under this restoration type. Private land owners may also be encouraged to make an easement donation to one of the many non-profit organizations in place to handle land conservation efforts. As with all restoration alternatives, trustees must first consider actions that provide services of the same type and quality, and of comparable value as those lost.

3.2.3.3.1 Acquisition/Legal Protection of Coastal Herbaceous Wetlands

As mentioned above, acquisition of a habitat or resource already afforded protection under law, such as purchase of wetlands, would not normally be considered under this restoration type. Acquisition of this type of coastal herbaceous wetlands will generally be used in conjunction with other restoration types, such creation or enhancement of the habitat. This restoration type may also include actions that meet the three requirements listed above, such as buying imperiled tracts of herbaceous wetlands or other herbaceous wetlands in jeopardy of being developed or pursuing conservation easements to remove them from consideration for development or other anthropogenic activities. While service flows would not be increased through this alternative, areas that may otherwise stop providing services to the public and environment may remain intact and contribute toward landscape continuity.

3.2.3.3.2 Acquisition/Legal Protection of Coastal Forested Wetlands

Again as mentioned above, acquisition of a habitat or resource already afforded protection under law, such as purchase of wetlands, would not normally be considered under this restoration type. Acquisition of this type of coastal forested wetlands will generally be used in conjunction with other restoration types, such creation or enhancement of the habitat. This restoration type may include actions such as purchasing tracts or pursuing conservation easements on tracts of coastal forested wetlands in jeopardy of being developed or imperiled for other reasons. While service flows would not be increased through this alternative, areas that would otherwise stop providing services to the public and environment would remain intact and continue to contribute to landscape continuity.

3.2.3.3.3 Acquisition/Legal Protection of Coastal Beaches/Shorelines/Streambeds

This restoration type would include actions such as purchasing areas adjacent to coastal beaches and shorelines (coastal beaches are public lands up to the mean high water line), or purchasing privately owned canals/streambeds. Other actions may be taken to legally protect this resource such as pursuing conservation easements, limiting access, or taking other measures deemed appropriate. While service flows would not be increased through this alternative, areas that would otherwise stop providing services to the public and environment would remain intact and contribute toward landscape continuity.

3.2.3.3.4 Acquisition/Legal Protection of Coastal Oyster (and Other Reefs)

This restoration type would include actions such as buying an existing oyster lease to provide ecological services.

3.2.3.3.5 Acquisition/Legal Protection of Inland Herbaceous Wetlands

Again as mentioned above, acquisition of a habitat or resource already afforded protection under law, such as purchase of wetlands, would not normally be considered under this restoration type. Acquisition of this type of inland herbaceous wetlands will generally be used in conjunction with other restoration types, such creation or enhancement of the habitat. This restoration type would include such actions as purchasing tracts of herbaceous vegetated wetland habitat that are not otherwise protected and are in imminent peril of loss to development.

3.2.3.3.6 Acquisition/Legal Protection of Inland Forested Wetlands

Again as mentioned above, acquisition of a habitat or resource already afforded protection under law, such as purchase of wetlands, would not normally be considered under this restoration type. Acquisition of this type of inland forested wetlands will generally be used in conjunction with other restoration types, such creation or enhancement of the habitat. This restoration type would include such actions as purchasing tracts of forested wetland habitat that is not otherwise protected and is in imminent peril of loss to development.

3.2.3.3.7 Acquisition/Legal Protection of Inland Beach/Shorelines/Streambeds

Inland beaches and shorelines, as considered in this section, include river, stream and lake edges. State law, based on the land survey of 1812, states that the public (state) owns all navigable rivers and streams in the State of Louisiana. This restoration type would include such actions as purchasing stream edges that are not otherwise protected and are in imminent peril of loss to development.

3.2.3.3.8 Acquisition/Legal Protection of Inland Upland Vegetation

This restoration type would include such actions as purchasing tracts of upland vegetation habitat that are not otherwise protected and are in imminent peril of loss to development.

3.2.3.4 Stocking of Fauna

This restoration type includes the stocking of fish, birds, or other wildlife into their native environment to replenish individuals lost or injured as a result of the incident.

3.2.3.4.1 Stocking Coastal Water Column Organisms

This restoration type is broadly defined as any action designed to directly increase the number of coastal water column organisms. Releasing fish from a hatchery to increase the wild species' population is an example of this type of restoration.

3.2.3.4.2 Stocking Oysters (and Other Reefs)

This restoration type is defined as the placement of oysters in an area suitable for their survival. Adult or seed oysters could be used in this type of restoration. The intent of this type of restoration is to provide oyster biomass and oyster services, apart from reef services in general.

3.2.3.4.3 Stocking Inland Water Column Organisms

This restoration type is broadly defined as any action designed to directly increase the number of fresh water column organisms. A project such as releasing fish from a hatchery to increase the population of that fish species is an example of this type of restoration.

3.2.3.4.4 Stocking Birds

This restoration type is broadly defined as any action designed to directly increase the number of birds in general or the number of a particular species or guild. A project such as releasing birds hatched and raised from eggs collected in the wild is an example of this type of restoration.

3.2.3.4.5 Stocking Wildlife

This restoration type is broadly defined as any action designed to directly increase the population of one or more wildlife species. Actions such as raising and releasing the species of wildlife injured are included in this restoration type.

3.2.3.5 Physical Protection of Fauna

An action such as fencing in an area where birds are nesting to keep predators out is an example of this restoration type. Another example would be to remove fishing line and other trash from trees and other vegetation to prevent bird injury due to entanglement. Use of signage to make the public aware of critical habitat and/or nesting seasons to protect fauna from injury or disturbance due to human use.

3.2.3.5.1 Physical Protection of Birds

This restoration type is broadly defined as any action designed to reduce bird mortality. An action such as installing fences to protect nests from predators qualifies as this restoration type.

3.2.3.5.2 Physical Protection of Wildlife

This restoration type is broadly defined as any action designed to physically protect wildlife to increase survival. Excluding predators from an area to reduce predation is an example of this restoration type.

3.2.3.6 Recreational Resources Restoration

The restoration of any habitat that provides to the public recreational services, direct or indirect such as fishing, hiking, hunting, nature photography, education, etc., falls under this type. This type of restoration includes actions designed to increase access to, or enhance, recreational opportunities. Stocking a lake with fish or creating an artificial reef are examples of restoration actions that would enhance the experience of recreational fishing. The construction or enhancement of structures such as fishing piers, boat ramps, wildlife viewing areas, etc., could also be considered restoration if it can be shown that the amenity would restore lost recreational services to the public.

3.2.3.7 Restoration of Cultural Resources

Restoration of natural resources that also have cultural resource value would be an example of restoration under this type. Restoring bald eagle nesting habitat or restoring historic lands such as battlegrounds, tribal land or national reserves are examples of cultural resource restorations.

3.2.4 Relationship of Resource/Services to Restoration Types/Projects

In the restoration planning phase (after the injury assessment has been conducted [Step #2 in Figure 3.1]), the trustees must identify a reasonable range of restoration alternatives. Identification of these “restoration alternatives” as defined in the OPA regulations (Step #3 in Figure 2.2) involves both the identification and selection of the appropriate “restoration types” (Step #3 in Figure 3.1) and specific “restoration projects” (Step #6 in Figure 3.1) under the RRP Program.

As part of the RRP Program development, the trustees: 1) conducted a nexus analysis to identify one or more appropriate restoration types for each of the “potentially injured resources/services”, 2) developed restoration type screening criteria to assist in the selection of the most appropriate restoration type(s) to restore resources/services injured during a given incident, and 3) developed screening criteria to select the most appropriate restoration project(s) during a given incident.

3.2.4.1 Nexus Analysis

The results of the nexus analysis are presented in Figures 3.2 and 3.3. The Figures conceptually demonstrate those restoration types that are found to be reasonable for restoring each of the “potentially injured resources/services.” Checked boxes in these Figures indicate that a restoration type is an appropriate restoration alternative for the corresponding potentially injured resource or service. The following is a general summary of the analysis that the trustees used to define appropriate restoration types for each of the “potentially injured resources/services.” The analysis began with determining which restoration types had the closest nexus with each of the “potentially injured resources/services” and moved through a logical process to those restoration types which had significantly dissimilar service flows and therefore were found not to be appropriate.

3.2.4.1.1 Resource to Resource

Resource to resource restoration has a strong nexus because it is a one-to-one relationship. The injured resource is ultimately replaced by direct restoration of the same resource. In Figures 3.2 and 3.3, any injured resource that is directly restored has been identified by the trustees as having a strong nexus and is therefore considered to be an appropriate restoration type. For example, Figure 3.2 indicates that appropriate restoration for injured coastal forested wetland would be creation/enhancement or physical protection of coastal forested wetland. Similarly, an injury to an oyster reef could be directly restored by creation/enhancement of a new oyster reef or by stocking an existing reef to increase productivity. In both cases, the same type of injured resource can be directly restored, or protected, and therefore has a strong resource-to-resource nexus. Figure 3.3 presents the results of this resource to resource analysis for the potentially injured resources in the inland regions where appropriate restoration types for a forested wetland is the creation/enhancement, physical protection, or acquisition/legal protection of a forested wetland.

COASTAL		POTENTIALLY INJURED RESOURCES/SERVICES								
		Herbaceous Wetlands	Forested Wetlands	Beach/Shoreline/Streambed	Oyster Reefs (& other)	Water Column Org.	Birds	Wildlife	Recreational	Cultural
RESTORATION TYPES	C/E ⁽¹⁾	Coastal Herbaceous Wetlands	v	v		v	v	v	v	v
		Coastal Forested Wetlands	v	v			v	v	v	v
		Coastal Beach/Shoreline/Streambed			v		v	v	v	v
		Coastal Oyster Reefs (& other)				v	v	v	v	v
		Coastal Artificial Reefs				v	v	v	v	v
		Coastal SAV	v			v	v	v	v	v
	PP ⁽²⁾	Coastal Herbaceous Wetlands	v	v		v	v	v	v	v
		Coastal Forested Wetlands	v	v			v	v	v	v
		Coastal Beach/Shoreline/Streambed			v		v	v	v	v
	Ac/LP ⁽³⁾	Coastal Herbaceous Wetlands	v	v		v	v	v	v	v
		Coastal Forested Wetlands	v	v			v	v	v	v
		Coastal Beach/Shoreline/Streambed			v		v	v	v	v
		Coastal Oyster Reefs (& other)				v	v	v	v	v
		Coastal SAV	v				v	v	v	v
	S ⁽⁴⁾	Coastal Water Column Org.					v			v
		Coastal Oyster Reefs (& other)				v	v			v
		Birds						v		v
		Wildlife							v	v
	PF ⁽⁵⁾	Birds						v		v
		Wildlife							v	v
	Recreation								v	
	Cultural								v	

- (1) Creation/Enhancement
- (2) Physical Protection of Habitat
- (3) Acquisition/Legal Protection
- (4) Stocking of Fauna
- (5) Physical Protection of Fauna

Figure 3.2: Coastal Restoration Types by Resource/Service Category

INLAND			POTENTIALLY INJURED RESOURCES/SERVICES								
			Herbaceous Wetlands	Forested Wetlands	Beach/Shoreline/Streambed	Upland Vegetation	Water Column Org.	Birds	Wildlife	Recreational	Cultural
RESTORATION TYPES	C/E ⁽¹⁾	Inland Herbaceous Wetlands	v				v	v	v	v	
		Inland Forested Wetlands		v			v	v	v	v	
		Inland Beach/Shoreline/Streambed			v		v	v	v	v	
		Inland Upland Vegetation				v	v	v	v	v	
	PP ⁽²⁾	Inland Herbaceous Wetlands	v				v	v	v	v	
		Inland Forested Wetlands		v			v	v	v	v	
		Inland Beach/Shoreline/Streambed			v		v	v	v	v	
		Inland Upland Vegetation				v	v	v	v	v	
	Ac/LP ⁽³⁾	Inland Herbaceous Wetlands	v				v	v	v	v	
		Inland Forested Wetlands		v			v	v	v	v	
		Inland Beach/Shoreline/Streambed			v		v	v	v	v	
		Inland Upland Vegetation				v	v	v	v	v	
	S ⁽⁴⁾	Inland Water Column Org.					v			v	
		Birds						v		v	
		Wildlife							v	v	
	PF ⁽⁵⁾	Birds						v		v	
		Wildlife							v	v	
			Recreation							v	
		Cultural								v	

- (1) Creation/Enhancement
- (2) Physical Protection of Habitat
- (3) Acquisition/Legal Protection
- (4) Stocking of Fauna
- (5) Physical Protection of Fauna

Figure 3.3: Inland Restoration Types by Resource/Service

3.2.4.1.2 Service to Resource

In some cases it is not possible, feasible, or desirable to replace injured resources directly. For example, some species cannot be restocked because of technical or cost limitations. In such cases, the most appropriate restoration action is often to enhance, protect, or create a habitat or resource that produces services that benefit the injured resource. This is the basis for “service-to-resource” restoration. Although the compensation in this type of restoration is indirect, a strong nexus exists because the injured resource/service is ultimately replaced through the restoration of an ecological link. In Figures 3.2 and 3.3 the following restoration types have been identified as appropriate for injuries to coastal and inland services because of a strong service-to-resource relationship:

Coastal:

- ◆ Water column organisms. Water column organisms are defined in Appendix B as plankton, nekton, large mobile crustaceans, and demersal fishes. Appropriate restoration types include:
 - ◆ Creation/enhancement or physical protection of herbaceous wetlands, forested wetlands, and beaches/shorelines/streambeds. These restoration types can increase the export of detritus (which serves as an organic food source) and essential nutrients to the estuary. Its increase will sustain greater abundance of water quality organisms. Created or enhanced herbaceous wetlands improve water quality, and increase spawning area and nursery area and habitat for adult fish. All of these actions stimulate production of water column organisms.
 - ◆ Creation or enhancement of benthic or submerged habitats such as oyster reefs, artificial reefs and SAV. These restoration types create habitat for small benthic organisms and control local turbidity through filtration (oyster reefs) or wave energy absorption (SAV). These processes benefit water column organisms by providing low-energy havens and benthic food sources for plankton and juvenile nekton that in turn promotes the sustainability of the resource.
- ◆ Birds. Birds are defined in Appendix B as both permanent and migratory species throughout Louisiana. Appropriate restoration types include:
 - ◆ Creation/enhancement or physical protection of herbaceous wetlands, and forested wetlands. These restoration types can increase bird food sources (both terrestrial and aquatic) and provide refuge and nesting and foraging habitat to birds. Thus, these restoration types benefit injuries to bird populations.
 - ◆ Creation/enhancement or physical protection of beaches/shorelines/streambeds. These restoration types can benefit injuries to shorebirds, wading birds and raptors by creating intertidal, benthic, and pelagic feeding communities.
 - ◆ Creation or enhancement of benthic or submerged habitats such as oyster reefs, artificial reefs and SAV. These restoration types can also benefit injuries to shorebirds, wading birds and raptors by creating benthic and pelagic feeding grounds.
- ◆ Wildlife. Wildlife is defined in Appendix B as mammals, reptiles, and amphibians in all habitats throughout Louisiana. Appropriate restoration types include:
 - ◆ Creation/enhancement or physical protection of herbaceous wetlands, and forested wetlands. These restoration types can increase wildlife food sources (both terrestrial and aquatic), and provide refuge and foraging habitat for wildlife. Thus, these restoration types benefit injuries to wildlife populations.
 - ◆ Creation/enhancement or physical protection of beaches/shorelines/streambeds. These restoration types can benefit injuries to wildlife by creating intertidal, benthic, and pelagic feeding communities.
 - ◆ Creation or enhancement of benthic or submerged habitats such as oyster reefs, artificial reefs and SAV. These restoration types can also benefit injuries to wildlife by creating intertidal, benthic, and pelagic feeding communities.
- ◆ Recreation. Recreational resources are defined in Appendix B as habitats and/or areas that provide human recreational activities, both direct and

indirect, throughout the state and offshore within the EEZ. Appropriate restoration types include:

- ◆ Creation/enhancement or physical protection of herbaceous wetlands and forested wetlands. These restoration types build bird and wildlife populations, increase aesthetic qualities and support juvenile fish. All of these benefits can compensate for recreational injuries such as bird watching, hunting, hiking, and fishing.
- ◆ Creation/enhancement or physical protection of beach/shoreline/streambeds. These restoration types can provide food and habitat for fish, birds and wildlife, and increase aesthetic qualities. Each of these benefits can compensate for recreational injuries, among others, to bird watching, hunting, hiking, picnicking, and fishing.
- ◆ Creation or enhancement of intertidal, benthic, or submerged habitats such as oyster reefs, artificial reefs and SAV. These restoration types can also benefit injuries to recreational fishing by creating benthic and pelagic feeding communities which attract sport fish.
- ◆ Stocking existing habitats with water column organisms (generally fish), birds, wildlife, and oyster reefs. These restoration types replenish organisms that provide human recreation and can compensate for recreational injuries such as bird watching, hunting, and fishing.
- ◆ Physical protection of existing bird and wildlife populations that have been injured. These restoration types can compensate the public for recreational losses such as bird watching and hunting.

Inland:

- ◆ Water column organisms. Water column organisms are defined in Appendix B as plankton, nekton, large mobile crustaceans, and demersal fishes. Appropriate restoration types include:
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of herbaceous wetlands, forested wetlands, beaches/shorelines/streambeds and upland vegetation. These restoration types can increase the export of detritus (which serves as an organic food source) and essential nutrients to the estuary. Its increase will sustain greater abundance of water quality organisms. Created or enhanced herbaceous wetlands improve water quality, and increase spawning and nursery area and habitat for adult fish. All of these methods stimulate production of water column organisms.
- ◆ Birds. Birds are defined in Appendix B as both permanent and migratory species throughout Louisiana. Appropriate restoration types include:
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of herbaceous wetlands, forested wetlands and upland vegetation. These restoration types can increase bird food sources (both terrestrial and aquatic), and provide birds with refuge and nesting habitat. Thus, these restoration types benefit injuries to bird populations.
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of inland beaches/shorelines/streambeds. These restoration types can benefit injuries to shorebirds, wading birds and raptors by creating benthic and pelagic feeding communities.

- ◆ Wildlife. Wildlife is defined in Appendix B as mammals, reptiles, and amphibians in all habitats throughout Louisiana. Appropriate restoration types include:
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of herbaceous wetlands, forested wetlands and upland vegetation. These restoration types can increase wildlife food sources (both terrestrial and aquatic), and provide refuge and habitat for wildlife. Thus, these restoration types benefit injuries to wildlife populations.
 - Creation/enhancement, physical protection or acquisition/legal protection of inland beaches/shorelines/streambeds. These restoration types can benefit injuries to wildlife by creating shoreline, benthic, and pelagic feeding communities and diversifying fauna by habitat diversification (e.g., pools and riffles) and improving habitat quality by improvement of stream canopy.
- ◆ Recreation. Recreational resources are defined in Appendix B as habitats and/or areas that provide to the public human recreational activities, both direct and indirect, throughout the state and offshore within the EEZ. Appropriate restoration types include:
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of herbaceous wetlands, forested wetlands and upland vegetation. These restoration types build bird and wildlife populations, increase aesthetic qualities and support juvenile fish. All of these benefits may compensate for recreational injuries such as bird watching, hunting, hiking, and fishing if the areas created, enhanced, acquired or protected are open to such use.
 - ◆ Creation/enhancement, physical protection or acquisition/legal protection of beaches/shorelines/streambeds. These restoration types may provide food and habitat for fish, birds and wildlife, and increase aesthetic qualities. Each of these benefits can compensate for recreational injuries, among others, to bird watching, hunting, hiking, picnicking, and fishing if the areas created, enhanced, acquired or protected are open to such use.
 - ◆ Stocking existing habitats with water column organisms (generally fish or zooplankton), birds, wildlife, and oyster reefs. These restoration types replenish organisms that provide human recreation can compensate for recreational injuries such as bird watching, hunting, and fishing.
 - ◆ Physical protection of existing bird and wildlife populations that have been injured. These restoration types can compensate the public for recreational losses such as bird watching and hunting.

3.2.4.1.3 Service to Service

Some restoration types will not directly restore an injured resource but will generate similar services and support the same wildlife species, and recreational and cultural activities. In cases where a restoration type generates the same or similar services as the injured resource, a strong nexus may be established even though the injured and restored resources are not the same. This is the basis for “service-to-service” restoration. In Figure 3.2 the following restoration types have been identified as appropriate for injuries to natural resource services because of a strong service-to-service relationship:

- ◆ Herbaceous wetlands. Coastal herbaceous wetlands are defined in Appendix B as primarily salt, brackish/intermediate, and fresh marshes located in or

near the coastal zone and alluvial basin. Appropriate restoration types include:

- ◆ Creation/enhancement or physical protection of coastal forested wetlands. These restoration types can compensate for injury to herbaceous wetlands since these two ecosystems are ecologically linked in the Louisiana coastal zone. The two ecosystems exchange wildlife, undergo similar biogeochemical processes, improve various water quality parameters, and retain sediments vital to nutrient cycling and productivity.
- ◆ Forested wetlands. Coastal forested wetlands are defined in Appendix B as coastal wetland areas dominated by woody vegetation that usually consists of an overstory of large trees, an understory of young trees or shrubs, and an herbaceous layer. Appropriate restoration types include:
 - ◆ Creation/enhancement or physical protection of herbaceous wetland areas. These restoration types can compensate for injury to forested wetlands since these two ecosystems are ecologically linked in the Louisiana coastal zone. The two ecosystems exchange birds, wildlife, biogeochemistry, hydrology and sediment in a symbiotic relationship.
- ◆ Oyster reefs (& other). Oyster and other reefs are defined in Appendix B as living reefs encompassing oysters, mussels, and/or other benthic organisms that make up the reef structure, and the fauna and flora that attach or are closely associated with these reefs. Appropriate restoration types include:
 - ◆ Creation/enhancement or physical protection of herbaceous wetland areas. These restoration types export detrital matter for oyster consumption, storm energy abatement, and filtration. These attributes stimulate reef production.
 - ◆ Creation/enhancement of artificial reefs and SAV. These restoration types benefit this class of service since they are closely linked in the coastal zone. These restored habitats exchange benthic and pelagic organisms with oyster reefs, provide storm abatement, and reduce turbidity; all of which promote reef productivity.
- ◆ Water column organisms. Water column organisms are defined in Appendix B as plankton, nekton, large mobile crustaceans, and demersal fishes. Appropriate restoration types include:
 - ◆ Stocking of coastal oyster reefs. This restoration type provides habitat for benthic organism that in turn provide food for water column organisms. Oyster reefs also act as highly efficient water filters that decrease turbidity and thereby promote productivity of pelagic organisms.

3.2.4.1.4 Dissimilar services

Empty cells in Figures 3.2 and 3.3 represent a weak nexus between “potentially injured resources/services” and restoration types. Many of the resources/services-restoration types relationships have a weak nexus due to significantly dissimilar services. For example, creation/enhancement or stocking of coastal oyster reefs is highly unlikely to compensate for injuries to coastal forested wetlands. Similarly, the creation/enhancement or physical protection of inland beaches, shorelines, and streambeds will not necessarily remunerate injuries to inland forested wetlands (and vice-versa) as the two habitats are not directly linked in the ecosystem.

When a restoration type has the potential, but not likelihood or certainty, to restore an injured service/resource, the nexus is also considered to be weak. For example, physical

protection or legal acquisition of SAV may compensate for injuries to a beach, shoreline, or streambed if it can be shown that the SAV has the potential to trap sediments and, hence, build beach, shoreline, or streambed. Controlling detrital export from a coastal forested wetland through enhancement, physical protection or acquisition may compensate damages to oyster reefs by reducing turbidity. In both cases, the same type of injured resource has the potential, but is not likely to be restored and therefore is generally characterized as having a weak nexus. Despite this general characterization, the empty cells in Figures 3.2 and 3.3 might, on occasion, support a viable nexus for restoration planning. Such a nexus, if applied in a given incident, will be explained on a case-by-case basis in the restoration plan for that incident.

3.2.4.1.5 Restoration Type Selection Criteria

The trustees have developed restoration type selection criteria that will further assist in determining which of the various restoration types with a strong nexus to the potentially injured resource/services identified in Figures 3.2 and 3.3 will be most appropriate to restore the injured resources/services during a given incident. Application of the restoration type selection criteria during a given incident would occur in Step #3 in Figure 3.1 (where potential "Restoration Types" were identified in the RRP Program, prior to the incident occurring.)

These restoration type selection criteria are based in part on the OPA regulations (Section 990.54(a)(1-6)) and include:

- ◆ "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;..." (Section 990.54(a)(2)).
- ◆ **Strength of Nexus to the Injury**

Trustees must consider compensatory restoration actions that provide services of the same type and quantity, and of comparable values as those lost. Restoration types are evaluated to determine how well the restoration alternative would address the injuries to potentially injured resources/services that occurred as result of the incident in a specific region. Screening questions include: Does the option provide the same type of natural resources and services, both on site and off-site, that are lost due to the injury? If not, will the proposed option result in resources and services that are similar or complimentary to the injured natural resources and services? Alternatives that come closest to restoring the same type of organisms and habitats as those injured by the incident are more likely to be selected than those where the nexus is not so close.
- ◆ **Scalability**

The compensatory restoration projects must be scaled in order to compensate for the injury. The gains in resources and/or services provided by the compensatory projects must be at least equal to the resources and/or services lost as a result of the injury. Accordingly, the trustees must consider whether the restoration projects in a restoration type category are scalable for the incident.
- ◆ "The extent to which each alternative benefits more than one natural resource and/or service;..." (Section 990.54(a)(5)).
- ◆ **Degree to Which Restoration Type Addresses Multiple Injuries**

The trustees consider the ability of a restoration type to address more than one natural resource or habitat injury or loss.

- ◆ RRP Program specific criteria
 - ◆ **Availability of Projects for this Restoration Type in RRP**

The RRP's identify those restoration types that are found to be reasonable for restoring each of the "potentially injured resources/services" within each of the RRP regions. The trustees must consider whether a restoration project(s) exists for the applicable restoration types.
- ◆ Other case specific parameters

3.2.4.2 Project Selection Screening Criteria

After selecting the appropriate restoration type(s), conducting initial scaling and selecting the settlement alternative, a specific restoration project(s) will be selected (Step #6 in Figure 3.1) and scaled, if required (Step #4b in Figure 3.1) for implementation (Step #7 in Figure 3.1). In order to provide consistency, predictability and accountability in this phase of the NRDA decision-making process, the trustees established project selection/screening criteria to assist in selecting the specific restoration action(s) required.

The trustees will use the following criteria (based in part on the OPA regulations (Section 990.54(a)(1-6)), for selecting specific restoration projects:

- ◆ "The cost to carry out the alternative;..." (Section 990.54(a)(1)).
 - ◆ **Project Cost-Effectiveness** (including ability to partner)

Trustees consider the relationship of restoration project costs to natural resource benefits. Favored projects are those that provide the most benefit for the least cost expended. Lower cost projects that provide equivalent restoration benefits are preferred over more costly, but otherwise similar projects. Factors that may influence project costs include methods and procedures for project implementation, materials, equipment, project design, permitting, oversight, maintenance (including contingency funds), monitoring, and the ability to partner.
- ◆ "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;..." (Section 990.54(a)(2)).
 - ◆ **Proximity to Affected Area**

Proximity addresses whether the restoration project is located within the area injured or is within a reasonable distance from the affected area (e.g., same watershed, ecosystem, and/or political boundary). It also considers the extent to which the project directly or indirectly benefits injured habitats or compensates for lost use within the affected area. For example, a habitat restoration project located some distance from the habitat injured may be sufficiently related to the injured resources, based on species migratory patterns, patterns of habitat use, affected life stages, or predator/prey relationships to warrant consideration. Similarly, a project in one location which is intended to restore human uses lost in another location may be reasonably related to the lost uses if there is evidence indicating that the affected user groups would likely benefit from the project.

- ♦ **Scalability**
The compensatory restoration projects must be scaled in order to compensate for the injury. The gains in resources and/or services provided by the compensatory projects must be at least equal to the resources and/or services lost as a result of the injury.
- ♦ **Extent of Benefit to Injured Resources/Services**
Trustees must consider compensatory restoration actions that provide services of the same type and quantity, and of comparable value as those lost. Restoration projects are evaluated to determine how well the restoration project would address the injuries to the injured resource/services that occurred as result of the incident in a specific region. Screening questions include: Does the project provide the same type of natural resources and services, both on site and off-site, that are lost due to the injury? If not, will the proposed project result in resources and services that are similar or complimentary to the injured natural resources and services? Projects that come closest to restoring the same type of organisms and habitats as those injured by the incident are more likely to be selected than those projects where the nexus is not as strong.
- ♦ “The likelihood of success;...” (Section 990.54(a)(3)) and “those alternatives considered technically feasible ...” (Section 990.53(a)(2)).
- ♦ **Technically Feasibility and Likelihood of Success**
Trustees consider whether a restoration project can be successfully implemented in a reasonable amount of time given available technology and expertise. Generally, the likelihood of a project’s success is evaluated based on whether the technologies: 1) are proven; 2) have a high rate of success as documented in the literature; 3) are capable of being implemented in a cost-effective manner; and, 4) characterize the natural resource service gains stemming from the project. This does not preclude the use of existing technology in new and creative ways so long as there is a significant likelihood of successful implementation. Nevertheless, for new or unproven technologies, the trustees should provide technical justification demonstrating that there is a reasonable basis to believe that the project will be successful. Also, project and site-specific factors that may influence project success.
- ♦ “The 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;...” (Section 990.54(a)(4)).
- ♦ **Avoidance of Future Additional Injury Resulting from Project**
The trustees must consider the 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. Specifically, trustees must consider the potential for a restoration project to aggravate or cause additional natural resource or habitat injuries, including to resources or habitats that could be injured as a result of implementation of the project
- ♦ “The extent to which each alternative benefits more than one natural resource and/or service;...” (Section 990.54(a)(5)).

- ◆ **Degree to Which Project Addresses Multiple Injuries**
The trustees consider the ability of a restoration project to address more than one natural resource or habitat injury or loss.
- ◆ RRP Program specific criteria
 - ◆ **Ability to Implement Project with Minimal Delay**
The trustees consider the stage of a project's development. Projects that have engineering and design and/or permitting completed or underway may be given priority when choosing among otherwise equal projects. Design or implementation flexibility, where a portion of a project may be completed more quickly, may also be considered.
 - ◆ **Degree to Which Project Supports Existing Strategies/Plans**
The trustees consider the extent to which a restoration project supports, or is consistent with, national, regional, and local restoration initiatives and mandates, local resource management plans, town ordinances, and the agendas of various community groups. The trustees may also consider if the project can "stand-alone" or could be integrated into an existing resource management program or larger project. Projects that can be integrated may leverage the environmental benefits of the existing program and realize significant administrative cost savings. However, although integration with other programmatic efforts may be beneficial, the trustees need to ensure that constraints that may be imposed by those programs do not conflict with the trustees' restoration goals under OPA.
 - ◆ **Project Urgency**
The trustees consider the window of opportunity in which it a project may be constructed. For example, the infrastructure to support the project exists but may not be present if delayed (deterioration of a feature, such as a ridge, that once gone would make project difficult or impossible) or the construction of a restoration project by another program or individual that is imminent and can be added on to may be considered.

3.2.4.3 Special Circumstances

It is possible that there may be occasions where the trustees will be applying the restoration type and/or project selection criteria described in the preceding sections to restoration type(s) and/or project(s) in more than one region for incidents that have impacted more than one region. Likewise, the trustees may find that in applying the restoration type an/or project selection criteria, the most appropriate restoration project(s) for an incident in one region is located outside that region. In both cases, in accordance with the law, regulation and criteria above, the trustees will select the restoration project(s) that will provide the closest nexus between the injuries and restoration, in the most cost-effective manner.

3.2.5 Environmental Impacts of Restoration Type Implementation

Once the preferred restoration project(s) is selected, and prior to implementation of the project(s), the trustees must, in accordance with NEPA, conduct an environmental analysis to evaluate the potential impacts of the project(s) implementation. To further streamline the NRDA process, the trustees have conducted an analysis of the environmental impacts associated with the implementation of the restoration types identified in the RRP Program by evaluating the impacts of the restoration techniques commonly used to implement the restoration types. This section provides the

environmental consequences analysis of the RRP Program Restoration types. The discussion will be necessarily broad and generalized to the technique on which the analysis has been performed, but provides the level of detail necessary to allow “tiering” from this document to subsequent environmental documentation under NEPA concerning the environmental impacts of implementing certain restoration types. The environmental impacts of specific restoration projects will be addressed specifically in subsequent NEPA documents when the projects are known. If necessary, avoidance and mitigation measures will be implemented to lessen the adverse impacts of any construction activities.

The analysis is divided into two subsections, coastal restoration techniques and inland restoration techniques.

3.2.5.1 Coastal Restoration Techniques

The coastal restoration techniques include:

- Vegetative Planting;
- Vegetative Protection;
- Hydrologic Restoration;
- Marsh Management;
- Dredge and Fill;
- Shoreline Protection;
- Faunal Stocking;
- Sediment Diversion;
- Freshwater Diversion;
- Outfall Management; and
- Nutrient and Sediment Trapping.

3.2.5.1.1 Vegetative Planting

Vegetative planting projects are often used in conjunction with dredge and fill projects, hydrologic restoration, sediment diversion, and shoreline protection projects. This technique typically involves planting nursery stock, rooted cuttings, or broadcasting seed of species found adjacent to the area being restored or created. Plantings may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beach/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
Vegetative planting will reduce soil erosion by creating frictional resistance on the substrate through its vertical and horizontal structure and the addition of organic matter. The enhancement of the soil through the addition of organic matter benefits the soil's ability to store and cycle nutrients while maintaining reasonable levels of plant productivity. Increased productivity will attract birds and wildlife, thereby increasing wildlife habitat values and maintaining landscape continuity. After plant establishment along shorelines, some additional wave-absorption benefits may be realized. Direct socioeconomic impacts of vegetative planting include increased recreational and cultural opportunity and aesthetic quality from increased productivity. However, this may have a negative socioeconomic impact on the recreational value of the areas from which stock are taken, if stocks are transplanted from one area to another.
- ◆ Indirect impacts:
There may be both positive and negative impacts of vegetative planting. On the positive side, if the planting utilizes multiple species, the area's species richness is

increased. Areas of increased species richness are typically more resistant to disturbance events such as fire, drought, herbivory and insectivory. Such resistance increases the chance of long-term sustainability. Negative impacts may occur if a monoculture or a nursery stock, rooted cuttings, or seed genotype not specific to the area, is planted. Long-term sustainability of the area may be jeopardized due to this scenario. Indirect socioeconomic impacts may occur in both cases; recreational and cultural opportunity and aesthetic quality would increase if species richness increases, and may decrease if the opposite occurs.

3.2.5.1.2 Vegetative Protection

Vegetative protection is most often used in conjunction with vegetative plantings and involves the use of materials that aid in increasing the propagule or seedling survival rates. This method can protect against herbivory and/or competition through the placement of tree shelters, exclusion fences, weed mats, and the application of herbicides, insecticides, fungicides, and mammal repellents, as well as other applications. Protective materials may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beach/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
By increasing or maintaining the rate of vegetative survival, the desired species composition and density at the time of the project is more likely to be realized. Other direct impacts vary depending on the application chosen. Moisture retention may occur due to the type or shape of material, thereby contributing to the resources the area needs to thrive. If applications of herbicides and other agents are conducted improperly, the water quality as well as fish and wildlife habitat may be negatively affected for a short period of time. A secondary direct impact is plant survival. Due to the ensured presence of the plants through the use of these materials, the area positively benefits from the direct impacts of the vegetative plantings. Vegetative protection may have positive direct socioeconomic impacts by increasing species composition and thus recreational and cultural opportunity and aesthetic quality. Additionally, if water quality and fish and wildlife habitat were adversely affected, there would be negative socioeconomic impacts on recreational and commercial fishing and other recreational activities as well as negative health impacts. Finally, shelters, mats, and exclusion devices may be aesthetically displeasing until the vegetative cover becomes more productive. They also may be targets for vandalism resulting in deposition of trash into the environment and hazards to wildlife.

- ◆ Indirect impacts:
Adverse indirect impacts stem from vegetative protection only if the technique is applied incorrectly. If, for example, excess levels of the substance(s) applied are held in the soil, the eradication of insects and animals important to the reproductive strategy of the area plants may be eradicated. Similarly, excess substances may be introduced into nearby waterways through run-off or direct application and impact aquatic plants or organisms. These impacts can be minimized through the use of trained personnel and proper chemicals scheduled for the area of concern. There are no indirect socioeconomic impacts expected from the use of this technique.

3.2.5.1.3 Hydrologic Restoration

Hydrologic restoration projects involve changing human-altered drainage patterns back to historically natural drainage patterns in an attempt to address the problems associated with excessive or reduced drainage. This may include plugging or back-filling oil and gas

canals or removing/installing water control structures. This technique may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beach/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**

Restored hydrology may cause immediate and negative direct impacts to an area through erosion if the existing vegetation is not supported or productive due to the altered water table levels. Alteration of hydrology can supply or deprive areas of sediment for marsh building and maintenance as well as help or hinder the encroachment of high salinity waters. Too much water may cause a loss of vegetation from water logging, and too little could result in excess oxidation of organic matter in the soils speeding subsidence. Another immediate impact, which could be positive or negative depending upon the site-specific conditions, is the emergence of new vegetation either through planting or natural recruitment and landscape continuity. There are also possible direct impacts on the aquatic communities in the vicinity of the restoration, especially if water control structures are utilized. Short-circuiting of drainage systems can deliver excess nutrients to open water areas causing dystrophic conditions. For example, the possibility exists for fisheries and shellfish resources and fish habitat to be either created or altered. Direct socioeconomic impacts may be increased or decreased recreational and commercial opportunities resulting from changes to fish habitat. Additionally, increased or decreased recreational and cultural opportunity and aesthetic quality may also result from changes in landscape continuity and the emergence of new vegetation. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.
- ◆ **Indirect impacts:**

To restore the hydrology of an area, water levels are either raised or lowered, or water is diverted from its current path. In the latter case, there will typically be a resource or service provided, bird and wildlife habitat for example, that may be decreased as a result of the restoration. Adjacent wetlands may receive altered inputs, thereby changing their productivity, and adjacent areas may be opened or closed to use by humans due to accessibility issues. The sustainability and proliferation of flora and fauna in adjacent areas may be affected due to shifts in resource availability. Indirect socioeconomic impacts on recreational and cultural opportunity and aesthetic quality may occur in both cases through changes of resources and services in adjacent areas.

3.2.5.1.4 Marsh Management

Marsh management projects often employ structures to alter water levels, manage hunting and fishing for recreation, manage grazing animals, control local water quality, and direct tidal flow. Structures used include dikes, natural landscape features, weirs, flap gates, and culverts. Scheduled burning is a form of marsh management that does not employ structures to alter water levels. The marsh management technique may be used in the creation/enhancement and vegetative protection of coastal herbaceous wetlands and forested wetlands, as well as the restoration of recreational, wildlife and cultural areas.

- ◆ **Direct impacts:**

Because most marsh management is dependent upon alteration of hydrology many of the benefits and detriments discussed in 3.2.5.3 are relevant. Direct impacts in areas managed by weirs or flap gates can, as intended, control water levels and salinities

inside the managed area. SAV and waterfowl often thrive within managed areas. Direct adverse impacts of marsh management can result if local hydrological conditions cause scour around the structure, or the structure is not carefully designed to accommodate changes in water levels. Areas controlled by burning will stimulate vegetative density and vigor, and organic material availability. Adverse impacts of burning may result if wildlife, vegetative type, stage of plant succession, weather patterns and burn intensity are not properly considered. Marsh management may have direct socioeconomic impacts on recreational and cultural opportunity and aesthetic quality if vegetative and land patterns are altered. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.

- ◆ Indirect impacts:
The indirect impacts of marsh management can be negative. If not planned and implemented properly, the restoration technique may restrict or reduce nutrient and sediment exchange. Loss of nutrient exchange in a managed area will degrade water column and vegetative vigor. Lack of new sediment inputs may increase the organic sediment fraction of the marsh and compromise substrate integrity. Restriction or reduction of sediment and nutrient input could lead to habitat alteration, local subsidence, and a conversion to open water within the managed area. This may have a negative socioeconomic impact on recreational and cultural opportunity and aesthetic quality. However, positive recreational socioeconomic impacts may be realized due to an increase in waterfowl inside managed areas.

3.2.5.1.5 Dredge and Fill

Dredge and fill is often used in conjunction with vegetative plantings, vegetative protection, shoreline protection, sediment diversion, outfall management, hydrologic restoration, and nutrient and sediment trapping. This technique may involve building new marshland, filling abandoned oil and gas canals, restoring historical land elevations, constructing terraces, and repairing breached levees or natural ridges. Dredge material is ideally obtained from adjacent waterways, but can be obtained elsewhere if the sediment characteristics are more desirable. This technique may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beach/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
Potential direct impacts of dredge and fill are modifications to sediment quality, water quality and water column organisms. A disruption or enhancement of flora and/or fauna, and a potential change in recreational, cultural, and aesthetic values may occur if a waterway is in the vicinity and site run-off is improperly controlled. In the short-term, newly deposited (filled) substrates will lack vital components needed for high rates of productivity and nutrient cycling/storage, such as organic matter accumulation, established benthic communities, established soil profile, and soil microtopography. In the long-term, open water areas can be returned to productive marsh habitats, and reconnect disrupted marsh linkages. In addition, returning subsided or eroded marsh to historic elevations could stimulate native plant vigor and create wildlife habitat. If water quality is affected, dredge and fill may have short-term negative socioeconomic impacts on recreational and commercial fishing. In the long-term, however, this may have positive socioeconomic impacts on recreational opportunities and aesthetic quality. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.

- ◆ Indirect impacts:
Adjacent habitats may be indirectly impacted by nearby dredge and fill projects due to possible alterations in hydrologic patterns, changes in wave fields, sediment plumes, the migration or emigration of fauna, and recreational usage. A change in marsh function is possible if the imported dredge material is not adequate in grain size and organic composition to promote the local vegetative species. Adverse indirect impacts will likely be a cumulative result of the techniques used in conjunction with dredge and fill projects. Potential direct socioeconomic impacts of these alterations to adjacent habitats include decreased recreational possibilities and aesthetic quality. Additionally, if care is not taken during the planning stages of projects using this technique, there exists a possibility that cultural resources could be affected by its implementation.

3.2.5.1.6 Shoreline Protection

Shoreline protection projects are often used in conjunction with vegetative planting, vegetative protection, dredge and fill, freshwater diversion, and outfall management techniques. Shoreline protection is designed to protect beaches, streambeds, and pond edges from exposure to flooding, wave energy, longshore transport, or wave energy. Most often, wave energy can be dissipated by employing structures such as wave mats, fences or segmented breakwaters. Flooding and wave energy is often controlled through the use of bulkheads, seawalls, revetments, riprap, or other structures directly adjacent and parallel to the shoreline. Lastly, longshore transport is generally controlled through the use of jetties that run perpendicular to the shoreline and trap sediments.

- ◆ Direct impacts:
The direct impacts of shoreline protection are variable depending on the habitat characteristics, hydrological conditions, and structure employed. Less invasive structures, those that allow partial water and sediment flow, will reduce wave energy and erosion. Bulkheads, seawalls, revetments, and riprap, if not carefully designed for the local ecosystem can alter hydrologic patterns and increase erosion, cause undercutting of the structures, and starve the protected area of new sediment and nutrient supplies. Jetties can be used to effectively control local erosion along beaches, streambeds, and shorelines, although careful design considerations must be considered for each new project. Hard surfaces may encourage the development of encrusting communities increasing habitat heterogeneity. By controlling erosion along shorelines, this restoration technique may have a direct positive socioeconomic impact on recreational and cultural opportunity, commercial construction and aesthetic quality.
- ◆ Indirect impacts:
The loss of connectivity between a water source and its adjacent habitat can be detrimental to the wildlife and plant species composition, sediment stability, and nutrient cycling. Where longshore transport is concerned, an adverse indirect and certain impact of jetties is erosion occurring downshore or downstream. Downstream erosion may have an indirect negative socioeconomic impact on recreational opportunities in that area.

3.2.5.1.7 Faunal Stocking

Faunal stocking projects are often used in conjunction with vegetative planting, vegetative protection, hydrologic restoration, and dredge and fill projects. This technique involves the stocking or re-introduction of fauna once present in the habitat or extirpated from the state entirely. Faunal stocking may be used in the creation/enhancement of coastal

herbaceous wetlands, forested wetlands, and beaches/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**

Increased species richness and diversity are the most immediate direct impacts of faunal stocking. The presence of fauna in the area has the potential to affect soil structure, vegetative composition and productivity, and faunal diversity and productivity. Negative impacts to the above may result if non-native species are introduced to the area. Additionally, if too many species are introduced too soon during the community's development, there is a chance the habitat will lack the resources to support the introduction. The result could be the natural selection of animals unable to compete for resources, or total exhaustion of those resources. In addition, hatchery stock may not be genetically diverse thus diluting the gene pool of indigenous species. Direct socioeconomic impacts of faunal stocking may include impacts on the recreational and commercial sector from altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity, as well as the introduction of non-native and undesirable species.
- ◆ **Indirect impacts:**

The potential for adverse indirect impacts exist only if an improper introduction of species occurs. Such an event will reverberate through the surrounding faunal communities and likely offset the trophic balance established in the habitat. Such imbalance could lead to changes in soil structure, water quality, vegetative composition and productivity. Positive indirect impacts are proliferation of desired fauna that emigrate to adjacent communities, possible restoration of trophic levels, and cultural enhancement to the surrounding areas. Socioeconomic impacts may include impacts on the recreational and commercial sector from altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity of surrounding areas, as well as the proliferation of non-native and undesirable species in adjacent communities.

3.2.5.1.8 Sediment Diversion

Sediment diversion projects are often used in conjunction with vegetative planting, outfall management, hydrologic restoration, and nutrient and sediment trapping. Most often, this technique involves creating a cut in a levee (crevasse splay) in order to reconnect a disconnected wetland with its historical sediment source to build land. A sediment diversion can be uncontrolled (water and sediment flow freely), partially controlled (directional jetties), or controlled (control structures), depending on the ecosystem characteristics and size of the restoration project. Sediment diversion may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beaches/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**

Land building and sediment renourishment is the main objective and direct impact of sediment diversions. The use of jetties or control structures may have adverse impacts in terms of scour at or near the structure employed as well as create navigation issues. The size of the crevasse created for uncontrolled diversions should be carefully considered in terms of water and sediment discharge versus project area carrying capacity. Creating a crevasse that is too wide will decrease flow at the outfall and sediments will settle too soon, creating a hydrologically inefficient

splay. On the other hand, a crevasse that is too small can promote hydrological turbulence and scour at the diversion outfall. Sediment diversion may cause immediate negative impacts to an area through erosion if the existing vegetation is not supported or productive due to the altered water table levels. Nutrients in association with sediments are generally a benefit if deposited in existing wetland areas but in open water may promote eutrofication. Erosion may have a direct negative socioeconomic impact on recreational and cultural opportunity, commercial construction and aesthetic quality. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.

- ◆ Indirect impacts:
Indirect impacts of sediment diversion may include local avoidance by water column organisms due to increased turbidity and decreased water column primary production. The addition of sediments into the project area will promote vegetation and wildlife habitats. There exists a possibility that non-native species will colonize newly accreted areas. If this occurs, the services provided by the created area will be altered and will likely affect flora and fauna. Indirect socioeconomic impacts may include impacts on the recreational and commercial sector from altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity.

3.2.5.1.9 Freshwater Diversion

Freshwater diversion projects are often used in conjunction with vegetative planting, outfall management and hydrologic restoration. Most often, this technique involves creating a control structure in a levee in order to reconnect a wetland with its historical freshwater source to maintain isohalines. Freshwater diversion may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beaches/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
The most significant direct impact of freshwater diversions is the decrease of salinity levels into fresh herbaceous wetlands and forested wetlands. Freshwater diversion may cause immediate negative impacts to an area through erosion if the existing vegetation is not supported or productive due to the altered water table and salinity levels. Other immediate impacts, which could be positive or negative depending upon the site-specific conditions, are the emergence of new vegetation either through planting or natural recruitment, and landscape continuity. Direct socioeconomic impacts may include impacts on recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity. Erosion may have a direct negative socioeconomic impact on recreational and cultural opportunity, commercial construction and aesthetic quality.
- ◆ Indirect impacts:
Returning a habitat to its historic salinity regime will alter the current species composition. This can have an adverse impact on the species present, but the overall services and resources gained in the estuary are a significant positive impact. These service and resource gains include species diversity, land building, seasonal pulsing, and nutrient cycling, sediment deposition, water quality improvements, and habitat creation. The sustainability and proliferation of flora and fauna in adjacent areas may be affected due to shifts in resource availability. Altering species composition and increasing habitat creation may have an indirect socioeconomic

impact on recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity. Improving conditions for land building as well as water quality may also have a positive socioeconomic impact on the recreational and commercial sectors.

3.2.5.1.10 Outfall Management

Outfall management projects are often used in conjunction with sediment diversions, freshwater diversions and hydrologic restoration. Most often, this technique involves creating structures that direct the flow of water and/or sediments through outfall areas. The managed route generally mimics historical flow routes of major estuarine arteries. Outfall management projects may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beaches/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
Outfall management may cause immediate negative impacts to an area through erosion if the existing vegetation is not supported or productive due to the altered water table levels. Other immediate impacts, which could be positive or negative depending upon the site-specific conditions, are the emergence of new vegetation either through planting or natural recruitment and landscape continuity. A direct socioeconomic impact of outfall management may be impacts to navigation resulting from the repairing of banklines, thus influencing recreational and cultural uses. Additionally, recreational and cultural opportunity and aesthetic quality may be affected due to changed vegetative composition. Erosion may also have a direct negative socioeconomic impact on recreational and cultural opportunities, commercial construction and aesthetic quality.
- ◆ Indirect impacts:
To manage the outfall of diverted sediment and/or water into an area, water levels are either raised or lowered, or water is diverted from its current path. In the latter case, there will typically be a resource or service provided, bird and wildlife habitat for example, that may be decreased as a result of the restoration. Adjacent wetlands may receive fewer inputs, nearby forests may retain less water thereby altering their productivity, and adjacent areas may be opened or closed to use by humans due to accessibility issues. The sustainability and proliferation of flora and fauna in adjacent areas may be affected due to shifts in resource availability particularly oyster beds. This may also have an indirect socioeconomic impact on recreational and cultural opportunity and aesthetic quality.

3.2.5.1.11 Nutrient and Sediment Trapping

Nutrient and sediment trapping projects are often used in conjunction with sediment diversions, dredge and fill, vegetation planting, and shoreline protection. This technique is carried out through the use of Christmas tree fences, terraces, and vegetative buffers. This project type may be used in the creation/enhancement of coastal herbaceous wetlands, forested wetlands, and beaches/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
The restored area will benefit from elevation gains due to sediment deposition, and increased productivity due to nutrient cycling. Sediment and nutrient trapping may cause immediate negative impacts to an area through accretion if the existing vegetation is not supported or productive due to the altered elevations. Other

immediate impacts, which could be positive or negative depending upon the site-specific conditions, are the emergence of new vegetation either through planting or natural recruitment and landscape continuity. Structures and deposited sediments may obstruct navigable waters and create hazards to navigation. Additionally, the increase in nutrient availability into an area will enhance microbial activity and decomposition and a reduction of oxygen in the surrounding water column may result. A direct socioeconomic impact of sediment deposition may be altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition.

- ◆ Indirect impacts:
Downstream or down river areas will be adversely affected by a reduction in sediment and nutrient supplies. The immediate area will benefit indirectly from increased bird, wildlife, and benthic habitat. The sustainability and proliferation of flora and fauna in adjacent areas may be affected due to shifts in resource availability. Therefore, there may be a positive socioeconomic impact on recreational and cultural opportunity and aesthetic quality in the immediate area.

3.2.5.2 Inland Restoration Techniques

The inland restoration techniques include:

- ◆ Vegetative Planting;
- ◆ Vegetative Protection;
- ◆ Hydrologic Restoration;
- ◆ Silvicultural Techniques
- ◆ Land/Substrate Recontouring and Rehabilitation;
- ◆ Resource Enhancement; and
- ◆ Faunal Stocking.

3.2.5.2.1 Vegetative Planting

Vegetative planting projects are often used in conjunction with hydrologic restoration, silvicultural techniques, and land/substrate recontouring and rehabilitation. This technique typically involves the planting of nursery stock, rooted cuttings, or seed found adjacent to the area being restored or created. Plantings may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
Vegetative planting will reduce soil erosion by creating frictional resistance on the substrate through its vertical and horizontal structure and the addition of organic matter. The enhancement of the soil through the addition of organic matter benefits the soils' ability to store and cycle nutrients while maintaining reasonable levels of plant productivity. Increased productivity will attract birds and wildlife. Direct socioeconomic impacts of vegetative planting include increased recreational and cultural possibility and aesthetic quality from increased productivity. However, this may have a negative socioeconomic impact on the recreational value of the areas from which stocks are taken, if stocks are transplanted from one area to another.
- ◆ Indirect impacts:
There may be both positive and negative indirect impacts of planting. On the positive side, if the planting utilizes multiple species, the area's species richness is increased. Areas of increased species richness are typically more resistant to disturbance events such as fire, drought, herbivory and insectivory. Such resistance increases the

chance of long-term sustainability. Negative impacts may occur if a monoculture or a nursery stock, rooted cuttings, or seed genotype not specific to the area, is planted. Long-term sustainability of the area may be jeopardized due to this scenario. Indirect socioeconomic impacts may occur in both cases; recreational and cultural opportunity and aesthetic quality may increase if species richness increases, and may decrease if the opposite occurs.

3.2.5.2.2 Vegetative Protection

Vegetative protection is most often used in conjunction with vegetative plantings and involves the use of materials that aid in increasing the propagule or seedling survival rates. This method can protect against herbivory and/or competition through the placement of tree shelters, exclusion fences, weed mats, and the application of herbicides, insecticides, fungicides, and mammal repellents, as well as other applications. Protective materials may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**

By increasing or maintaining the rate of vegetative survival, the desired species composition and density at the time of the project is more likely to be realized. Other direct impacts vary depending on the application chosen. Moisture retention may occur due to the type or shape of material, thereby contributing to the resources the area needs to thrive. If applications of herbicides and other agents are conducted improperly, the water quality as well as fish and wildlife habitat may be negatively affected for a short period of time. A secondary direct impact is plant survivability. Due to the ensured presence of the plants through the use of these materials, the area positively benefits from the direct impacts of the vegetative plantings. Vegetative protection may have positive direct socioeconomic impacts by increasing species composition and thus recreational and cultural opportunity and aesthetic quality. Additionally, if water quality and fish and wildlife habitat were affected, there may be negative socioeconomic impacts on recreational and commercial fishing and other recreational activities as well as negative health impacts. Finally, shelters, mats, and exclusion devices may be aesthetically displeasing until the vegetative cover becomes more productive.
- ◆ **Indirect impacts:**

Indirect impacts stem from vegetative protection only if the technique is applied incorrectly. If, for example, excess levels of the substance(s) applied are held in the soil, the eradication of insects and animals important to the reproductive strategy of the areas plants may be eradicated. Similarly, excess substances may be introduced into nearby waterways through run-off or direct application and impact aquatic plants or organisms. These impacts can be minimized through the use of trained personnel and proper chemicals scheduled for the area of concern. There are no indirect socioeconomic impacts expected from the use of this technique.

3.2.5.2.3 Hydrologic Restoration

Hydrologic restoration projects involve changing human-altered drainage patterns back to historically natural drainage patterns (USACE 1993, p. 61) or mimic natural drainage systems in an attempt to address the problems associated with excessive or reduced drainage. This may include plugging or back-filling agricultural drainage ditches or removing or installing water control structures. This technique may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland

upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**
Restored hydrology may cause immediate negative direct impacts to an area through erosion if the existing vegetation is not supported or productive due to the altered water table levels. Other immediate impacts, which could be positive or negative depending upon the site-specific conditions, are the emergence of new vegetation either through planting or natural recruitment. Direct socioeconomic impacts of this technique may be increased or decreased recreational and cultural opportunity and aesthetic quality resulting from changes in landscape continuity and the emergence of new vegetation.
- ◆ **Indirect impacts:**
To restore the hydrology of an area, water levels are either raised or lowered, or water is diverted from its current path. In the latter case, there will typically be a resource or service provided, bird and wildlife habitat for example, that may be decreased as a result of the restoration. Adjacent wetlands may receive fewer inputs, upland forests may retain less water (thereby increasing their productivity), and adjacent areas may be opened or closed to use by humans due to accessibility issues. The sustainability and proliferation of flora and fauna in adjacent areas may be affected due to shifts in resource availability. Indirect socioeconomic impacts on recreational and cultural opportunity and aesthetic quality may occur in both cases through the shifting or decline of resources and services in adjacent areas.

3.2.5.2.4 Silvicultural Techniques

Silvicultural techniques are often used in conjunction with land/substrate recontouring and rehabilitation, vegetative plantings, vegetative protection, resource enhancement, and faunal protection/stocking. Commonly used techniques are selective harvesting, shelterwood, timber stand improvement, thinning, seed tree, as well as other even and uneven-aged techniques. The use of the above techniques will contribute to increased forest health and productivity, the input of coarse woody debris to an ecosystem, the mimicking of natural disturbance, and, if desired, increased understory cover and wildlife habitat, as well as numerous other ecological benefits. This technique may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**
As a result of some silvicultural techniques, the soil temperature increases as a result of reduced canopy cover. Increases in soil temperature may contribute to increase cellulose decomposition, thereby increasing or decreasing the mobility of various nutrients essential to tree growth. Harvesting of the overstory creates gaps in the canopy, increases light availability, and typically increases percent cover of the understory and mid-story. Dense understories facilitate the trapping of sediments in riverine systems and decrease the amount of run-off in upland systems – both of which contribute to on-site and downstream water quality improvements. Slash, the bi-product of harvesting, contributes to the amount of coarse woody debris on the forest floor and aids in sediment trapping, nutrient cycling, and may add or detract from wildlife habitat values. Overall habitat values change depending on the edge to open space ratio, the management plan, and post-harvest actions. Silvicultural operations will reduce the opportunity for recreation on the site until the canopy emerges into the mid-story or provisions are made for those users. Direct

socioeconomic impacts will be felt by recreational and commercial sector by altered downstream water quality. Additionally, the aesthetic value of the area may change due to the nature of the operation. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.

- ◆ Indirect impacts:
If wood utilization is not maximized on site, slash and larger timbers may attract insects and pathogens to the area, thereby jeopardizing the health of the surrounding forests. Mechanical alterations to the substrate as a result of timber removal with a skidder may either encourage or discourage the recruitment of understory and overstory in those areas. If proper precautions are not taken during the harvest, water quality may be influenced by improper skidder crossings over waterways, skid trails on steep slopes, or incorrectly spaced waterbars. These indirect impacts may cause negative socioeconomic impacts due to decreased water quality and decreased recreational and cultural opportunity and aesthetic quality as a result of mechanical alterations.

3.2.5.2.5 Land/Substrate Recontouring and Rehabilitation

Land/substrate recontouring and rehabilitations are often used in conjunction with hydrologic restoration, vegetative plantings, vegetative protection, and silvicultural techniques. This technique may involve reworking soils to create microtopography, grading soils for proper drainage, and creation of bedding for post-harvest manipulation, as well as numerous other benefits to ecological services. This technique may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ Direct impacts:
Potential direct impacts of land/substrate recontouring and rehabilitation are modifications to water quality and water column organisms if a waterway is in the vicinity and run-off is improperly controlled, and disruption or enhancement of flora and fauna. In the short-term, newly created or manipulated substrates will lack vital components needed for high rates of productivity and nutrient cycling/storage, such as organic matter accumulation, established benthic communities, established soil profile, and soil microtopography. Direct socioeconomic impacts may be felt by the recreational and commercial sector due to water quality modifications. Additionally, the aesthetic value of the area may change due to the nature of the operation.
- ◆ Indirect impacts:
Adjacent habitats may be indirectly impacted by nearby land/substrate recontouring and rehabilitation due to possible alterations in hydrologic patterns and the migration or emigration of fauna to/from these other habitats. Adverse indirect impacts will likely be a cumulative result of the techniques used in conjunction with land/substrate recontouring and rehabilitation. These indirect impacts may cause negative socioeconomic impacts due to altered recreational and cultural opportunity and aesthetic quality of adjacent habitats.

3.2.5.2.6 Resource Enhancement

Resource enhancements are often used in conjunction with vegetative plantings, vegetative protection, and silvicultural techniques. This technique includes application of appropriate amounts of fertilizer, creation of cavities in trees for avian habitat, selective culling of trees for habitat, and application of herbicides for the manipulation of understory

and overstory vegetative components and increased agricultural/cropland/grassland production. This technique may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**

Resource enhancement produces positive and/or negative impacts. The outcome is dependent upon the skill with which the technique is applied. Positive benefits often include increases in productivity to both the understory and overstory communities, which is largely beneficial to the fauna that utilize the area, as it increases the area's utility as a foraging and nesting area. Additionally, increased productivity in different canopy levels contributes toward the addition of organic matter to the substrate, thereby contributing to the storage/cycling of nutrients and enhancement of the soil structure. Another potential positive benefit is the immediate creation of habitat. In the event of modifications to the canopy, a direct positive impact is the addition of coarse woody debris to the understory. Its benefits are two-fold: the slow release of nutrients into the system as the material decomposes and creation of habitat for herptofauna and other microfauna. Negative impacts may result due to the improper application of resource enhancement. Of major concern is water quality in the vicinity, especially after the removal of significant portions of a forest canopy, the application of various chemicals for the control of biotic elements, and the removal of habitat specific to some fauna. These direct negative impacts can be greatly minimized or eliminated with proper planning and application. Direct socioeconomic impacts of water quality modifications may be felt by the recreational and commercial sectors. Additionally, the aesthetic, cultural and recreational value and quality of the area may change due to the nature of the operation. Finally, the temporary increase in noise level during the period of restoration may be a short-term nuisance.
- ◆ **Indirect impacts:**

If the above positive direct impacts occur, indirect impacts are likely the long-term sustainability of flora and fauna, particularly the latter. Through the creation of habitat, reproductive rates will be sustained or increased until the newly created or enhanced habitat reaches its carrying capacity. Through increased productivity of the flora, the area's ability to process nutrients and various pollutants will increase, thereby improving downstream water quality through reducing turbidity and the release of excess nutrients and pollutants bound to sediments. Long-term indirect negative impacts may be continued loss of soil function if on-site erosion is not considered and addressed during the operation. In the case of both fertilizer and herbicide applications, care must be taken not to inflict collateral damage on the community this technique was meant to benefit. This injury may take the form of increased productivity of non-native or opportunistic species or the removal of all native and desirable species. This can be avoided through the application of products scheduled for use in specific areas or for specific plants, such as legumes. Indirect socioeconomic impacts may include benefits to the recreational and commercial sector from improved water quality as well as decreased recreational and cultural opportunity and aesthetic quality from the removal of native and desirable species.

3.2.5.2.7 Faunal Stocking

Faunal stocking projects are often used in conjunction with vegetative planting, vegetative protection, hydrologic restoration, silvicultural techniques, land/substrate recontouring and rehabilitation, and resource enhancement. This technique involves the stocking or re-

introduction of fauna once present in the habitat or extirpated from the state entirely. Faunal stocking may be used in the creation/enhancement of inland herbaceous wetlands, inland forested wetlands, inland upland vegetation, and inland shores/shoreline/streambeds as well as the restoration of recreational and cultural areas.

- ◆ **Direct impacts:**
Increased biomass is the most immediate direct impacts of faunal stocking. The presence of fauna in the area has the potential to affect soil structure, vegetative composition and productivity, faunal diversity and productivity. Negative impacts to the above may result if non-native species are introduced to the area. Hatchery reared stock may not be genetically diverse, potentially increasing the susceptibility of the population to disease and adverse environmental conditions. Additionally, if too many species are introduced too soon during the community's development, there is a chance the habitat will lack the resources to support the introduction. The result could be the natural selection of animals unable to compete for resources, or the total exhaustion of those resources. Direct socioeconomic impacts of faunal stocking may include impacts on the recreational and commercial sector from altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity, as well as the introduction of native and undesirable species.

- ◆ **Indirect impacts:**
The potential for adverse indirect impacts exist only if an improper introduction of species occurs. Such an event will reverberate through the surrounding faunal communities and likely offset the trophic balance established in the habitat. Such imbalance could lead to changes in soil structure, water quality, vegetative composition and productivity. Positive indirect impacts are the proliferation of desired fauna that emigrate to adjacent communities, possible restoration of trophic levels, and cultural enhancement to the surrounding areas. Socioeconomic impacts may include impacts on the recreational and commercial sector from altered recreational and cultural opportunity and aesthetic quality due to changed vegetative composition and faunal diversity/productivity of surrounding areas, as well as the proliferation of native and undesirable species in adjacent communities.

3.2.6 Settlement Alternatives

Under the RRP Program, selection of the settlement alternative to be used in a given incident (Step #5 in Figure 3.1) typically occurs after a restoration type(s) has been identified and initial scaling has been conducted (Step #4a in Figure 3.1). The latter is done to obtain a general estimate of the appropriate quantity of replacement natural resources and/or services that will compensate for the amount of injured natural resources or services.

When settling a NRDA case with an RP for a given incident, the trustees and RP generally have two options (Figure 2.2): the RP can: 1) implement the restoration actions that are required to restore the injured resources and services for the incident with trustee oversight, or 2) provide funding for the trustees to implement the required restoration actions (i.e., "project-specific cash out"). Note that an RP can also settle its NRDA liability by using both options for one case, where the RP implements a project to restore some of the injured resources and services from an incident and provides funds to the trustees to resolve the remaining liabilities for other injuries.

In the absence of a viable RP (e.g., where the RP is unknown, bankrupt or is not responsible due to a valid defense) or when a viable RP fails to respond to a demand letter after 90 days, the trustees also have the option of going to the Federal OSLTF and/or State OSCF to seek monies (similar to the “project-specific cash out” option) to implement the restoration actions required for that case. Under the NRDA process described in Chapter 2, *Natural Resource Damage Assessment (NRDA) Process* (NOAA 1996a), the required restoration action(s) in this instance generally involves a specific restoration project(s) that has (have) been selected, in part, because it (they) provide(s) the appropriate quantity of replacement natural resources and/or services to compensate for the amount of injured natural resources or services resulting from a given incident.

The RRP Program offers a number of additional case settlement alternatives to assist the trustees and RPs in negotiations to resolve RP liabilities for incidents. These settlement alternatives may provide opportunities for implementing restoration projects more quickly and cost-effectively, pooling settlements to implement larger projects than could be accomplished by using individual settlements, and potentially addressing basin-wide, ecosystem-level initiatives.

The settlement alternatives available through the RRP Program are depicted in Figure 3.1 (See step #5, “Choose Settlement Alternatives”) and are described below according to two categories: those general alternatives that already are used (Section 3.2.6.1) and those that are unique to the RRP Program (Section 3.2.6.2).

3.2.6.1 Existing Settlement Alternatives

3.2.6.1.1 Single Incident - RP Implemented Restoration Project

This settlement alternative provides for the implementation of an entire RRP restoration project(s) by a single RP who is liable for injuries resulting from a specific incident. (RP implementation of an entire restoration project is the only settlement alternative that has been used in Louisiana to resolve liability for incidents under OPA and/or OSPRA.)

3.2.6.1.2 Single Incident - Trustees Implemented Restoration Project

This settlement alternative provides for a cash settlement between a single RP and the trustees. The RP provides cash to the trustees based on the cost of implementing a specific restoration project(s) in order to resolve liability for an individual, specific incident. The trustees in turn use the settlement funds to implement a specific restoration project(s) in an RRP. (This method of resolving liability has been widely used in other states under OPA.)

3.2.6.2 Additional Settlement Alternatives

3.2.6.2.1 RP CO-OP

This settlement alternative provides an opportunity for RPs to partner with others to implement a restoration project identified in an RRP that is larger than their individual liability for a specific incident, and thereby share the implementation costs (e.g., engineering and design, permitting, mobilization, and demobilization, etc.). This alternative may allow the RPs to take advantage of economies of scale in implementing a larger project, thereby lowering their costs of resolving their specific liabilities. Specifically, RPs could potentially partner to implement a larger project in a number of ways, for example:

- ◆ A group of RPs could jointly implement a project by pooling funds based on their specific liability;
- ◆ One RP could implement a project with other RPs contributing the funds based on their specific liabilities;
- ◆ One and/or a group of RPs could implement a project that appropriately resolves the RP's OPA NRDA liability and that is carried out in conjunction with restoration needs for other purposes (e.g., Coast 2050 restoration); or
- ◆ An RP with a "partner(s)" (e.g., other state or federal restoration programs, conservation organizations, etc.) could jointly implement a project that meets the needs of both partners and still appropriately resolves the RP's liability.

Additionally, the RP CO-OP settlement alternative provides an opportunity for a single RP to use one appropriately scaled project to address its liability for two or more of its own incidents.

3.2.6.2.2 RP/Fund CO-OP

This settlement alternative provides an opportunity to the RP(s) to implement a restoration project identified in an RRP that is larger than the specific liability for a specific incident and, therefore, cost-share the implementation costs (e.g., engineering and design, permitting, mobilization and demobilization, etc.) with either Federal OSLTF or State OSCF monies received by the trustees to resolve liability from similar incidents for which there was no viable RP or a viable RP failed to respond to a demand letter after 90 days. This settlement alternative is similar to the RP CO-OP settlement alternative except that instead of the RP partnering with other parties to share the cost of a larger

project, the RP cost shares the implementation of the project with the trustees using cash settlements received from the Federal OSLTF and/or the State OSCF. A prerequisite for the potential use of this settlement alternative is the prior occurrence of an incident(s) for which the trustees have received partial monies to implement required restoration actions from the Federal OSLTF and/or the State OSCF. This alternative may allow the RP to take advantage of economies of scale in implementing a larger project and thereby may lower their costs of resolving their specific liabilities.

3.2.6.2.3 Non-Project-Specific Cash Out

This settlement alternative provides an opportunity for RPs to make a cash settlement based on the average cost of implementing certain restoration types to resolve their liability. This differs from the “Single Incident – Trustee Implemented Restoration Project” alternative in that the amount of the claim is not based on a specific project to be implemented. Rather, the cost to the RP is based on representative costs for implementing projects of a given restoration type in a region. The trustees will determine representative costs for predominant restoration type(s) in the RRP using averages of past costs, pricing for representative projects, or other appropriate methods as necessary. The trustees will use the money recovered to implement one project of the selected restoration type from an RRP or they may pool with other recoveries generated under this settlement alternative to implement a larger RRP project. In regions where representative unit costs are determined for more than one restoration type, selection of the restoration type to be used as a basis for the cash settlement for a given incident will be done using the restoration type selection criteria identified in Section 3.2.4.1.5.

The critical component to this settlement alternative is the determination of the representative unit cost to be applied to the restoration type(s). For each RRP, one or more restoration type(s) will be identified that the trustees anticipate will be used most frequently. These are the predominant habitat types by region and can provide services to natural resources most likely to be lost or injured by an incident in each region. For each of those restoration type(s), the trustees will use information where available on past project cost and performance, estimated and projected costs for existing projects, and information from restoration contractors and experts to develop estimates of representative project costs per unit of services generated. (The services would be quantified in discounted service acre-years (DSAYs) where an acre-year is the flow of services from one acre of habitat for one year.) These analyses will provide a representative dollar cost/DSAY figure for the selected restoration type(s) in each region that the trustees may use to formulate a damage claim for the oil spill. The representative costs will be explained in technical memoranda and provided for public review with the RRP. From time to time, as determined by the trustees, representative costs will be reviewed and revised if needed to reflect changing costs, new technologies, better understanding of benefits derived from projects, inflation, or other factors that would have a material influence on representative unit costs.

3.2.6.2.3.1 Project Selection Criteria under Non-Project-Specific Cash Out

Upon receipt of settlement monies, the trustees will use the following criteria (based in part on the OPA regulations (15 CFR 990.54(a)(1-6))) as the basis for determining the project to be implemented with the pooled funds under the Non-Project-Specific Cash Out settlement alternative:

- ◆ The cost to carry out the alternative (15 CFR 990.54(a)(1)).
 - ◆ **Existence of Sufficient Funds in Pooled Settlement Account**
There must be sufficient monies pooled to implement one or more of the projects in the RRP. Additionally, trustees evaluate the rate at which settlement monies are accruing relative to the cost of the project to determine whether the project can be implemented within a reasonable timeframe.
 - ◆ **Project Cost-Effectiveness** (including ability to partner)
Trustees consider the relationship between restoration project costs to natural resource benefits. Favored projects are those that provide the most benefit for the least cost expended. Lower cost projects that provide equivalent restoration benefits are preferred over more costly, but otherwise similar, projects. Factors that may influence project costs include methods and procedures for project implementation, materials, equipment, project design, permitting, oversight, maintenance (including contingency funds), monitoring, and the ability to partner.
- ◆ “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;...” (15 CFR 990.54(a)(2)).
 - ◆ **Proximity to Affected Areas**
Proximity addresses whether the restoration alternative is located within the area injured or is within a reasonable distance from the affected area (e.g., same watershed, ecosystem, and/or political boundary). It also considers the extent to which the option directly or indirectly benefits injured habitats or compensates for lost use within the affected area. For example, a habitat restoration project located some distance from the habitat injured may be sufficiently related to the injured resources, based on species migratory patterns, patterns of habitat use, affected life stages, or predator/prey relationships, to warrant consideration. Similarly, a project in one location that is intended to restore human uses lost in another location may be reasonably related to the lost uses if there is evidence indicating that the affected user groups would likely benefit from the project.
 - ◆ **Scalability**
The compensatory restoration projects must be scaled in order to compensate for the injury. The gains in resources and/or services provided by the compensatory projects must be at least equal to the resources and/or services lost as a result of the injury.
- ◆ “The extent to which each alternative benefits more than one natural resource and/or service...” (15 CFR 990.54(a)(5)).
 - ◆ **Degree to which Project Addresses Multiple Injuries**
The trustees consider the ability of a restoration project to address more than one natural resource habitat injury or loss.

- ◆ “The likelihood of success of each alternative” (15 CFR 990.54(a)(3)) and “those alternatives considered technically feasible.” (15 CFR 990.53(a)(2)).
 - ◆ **Technical Feasibility and Likelihood of Success**
Trustees consider whether a restoration project can be successfully implemented in a reasonable amount of time given available technology and expertise. Generally, the likelihood of a project’s success is evaluated based on whether the methods: 1) are proven; 2) have a high rate of success as documented in the literature; 3) are capable of being implemented in a cost-effective manner; and, 4) characterize the natural resource service gains stemming from the project. This does not preclude the use of existing technology in new and creative ways so long as there is a significant likelihood of successful implementation. Nevertheless, for new or unproven technologies, the trustees should provide technical justification demonstrating that there is a reasonable basis to believe that the project will be successful. Additionally, project and site-specific factors may influence project success.
- ◆ “The 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;...” (15 CFR 54(a)(4)).
 - ◆ **Avoidance of Future Additional Injury Resulting from Project**
The trustees must consider the 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. Specifically, trustees must consider the potential for a restoration project, or implementation of a restoration project, to aggravate or cause additional natural resource or habitat injuries.
- ◆ RRP Program Criteria
 - ◆ **Ability to Implement Project with Minimal Delay**
The trustees consider the stage of a project’s development. Projects that have engineering and design and/or permitting completed or underway may be given a higher priority when choosing between otherwise equal alternatives, since they likely will be able to be implemented more quickly and at a lower cost. Design or implementation flexibility, where a portion of a project may be completed more quickly, may also be considered.
 - ◆ **Degree to Which Project Supports Existing Strategies/Plans**
The trustees consider the extent to which a restoration project supports, or is consistent with, national, regional, and local restoration initiatives and mandates, local resource management plans, town ordinances, and the agendas of various community groups. The trustees may also consider if the project can "stand-alone" or could be integrated into an existing resource management program or larger project. Projects that can be integrated may leverage the environmental benefits of the existing program and realize significant administrative cost savings. However, although integration with other programmatic efforts may be beneficial, the trustees need to ensure that constraints that may be imposed by those programs do not conflict with the trustees’ restoration goals under OPA. Further, the trustees must determine that funding for the restoration project (or share of the project specifically

addressed by the NRDA) has not already been committed by an entity outside of the NRDA.

- ◆ **Project Urgency**

The trustees consider the window of opportunity in which it a project may be constructed. For example, the infrastructure to support the project exists but may not be present if delayed (deterioration of a feature, such as a ridge, that once gone would make project difficult or impossible) or the construction of a restoration project by another program or individual that is imminent and can be added on to may be considered.

- ◆ **Other Factors as Appropriate**

3.2.6.2.4 Non-Project-Specific Cash Out/Fund CO-OP

This settlement alternative would enable trustees to implement a project of the one of the “Non-Project-Specific Cash Out” restoration types from an RRP by using monies from a “pool” of cash settlements from the RPs (as described under the Non-Project-Specific Cash Out alternative) and cash received by trustees for specific restoration types or project(s) from the Federal OSLTF and/or the State OSCF. This alternative provides the RP with a quick mechanism of cashing out and resolving their liability for a specific incident. It also allows the trustees to implement projects identified in the RRP more quickly.

3.2.7 Restoration Project Performance Criteria

Performance criteria are measurable sets of targets, quantified through the collection of data in accordance with a prescribed monitoring protocol or methodology, that reflect the structural, functional, and/or temporal objectives of a restoration project. Performance criteria will be used by the trustees to determine when project objectives have been met and the desired restoration outcome has been achieved, and if interim corrective actions are necessary. Performance criteria may vary from project to project as the scope of monitoring conforms to the specific objectives of the restoration project. Some examples of performance criteria might include: plant coverage (i.e. canopy architecture, density), plant survival rate, species richness and composition, elevation, hydrology, and soil properties (i.e. organic matter, nutrients, salinity). Because they are used to determine when a project has achieved the desired restoration outcome (i.e. project goals), careful development of performance criteria is essential to obtaining a robust indication of goal achievement. The following guidelines will be considered fundamental to the development of performance criteria: 1) clearly define project objectives; 2) develop performance criteria prior to project implementation to avoid potential bias; and 3) conceive performance criteria with a comprehensive understanding of the target ecosystem and habitat.

3.2.8 Restoration Project Monitoring Requirements

Monitoring of implemented restoration projects will be an essential component of the RRP Program because monitoring data provide the trustees with quantitative information that is used to determine when an RP has satisfied his liability for natural resource injuries or if interim corrective action is necessary. Specifically, periodic collection and assessment of monitoring data enable the trustees to evaluate performance criteria in relation to the specific objectives of the restoration project to determine when project objectives have been met, and to quantify the trajectory of the restoration project in order to identify needs, if necessary, for implementing corrective actions in a timely manner. Prescribed monitoring protocols will be project-specific and vary by restoration type, habitat type,

project features, and the availability of cost-effective sampling techniques. Monitoring requirements for restoration projects will be specified in a monitoring plan that will be drafted prior to implementation of the project. The monitoring plan will: 1) define the project objectives that must be attained to achieve the desired outcome of the restoration project; 2) identify the performance criteria that will measure the attainment of each objective; 3) specify monitoring protocols pertaining to sampling design, sampling frequency, sampling techniques, data procurement and analysis, quality assurance and quality control of data, the schedule of site visits, report deadlines, and corrective action plans; and 4) identify a reference site(s), if determined to be necessary.

3.3 RRP Management Structure

The management framework for RRP Program implementation consists of four major components: the Authorized Officials; the Trustee Council; NRDA Case Teams (including Regional Staff); and RRP Administration and Coordination (including Administrative Staff and the Project Monitoring Team). Figures 3.4 and 3.5 depict the RRP Program Management Framework.

3.3.1 Authorized Officials

The primary role of the Authorized Officials is to provide policy oversight and guidance to their staffs involved in the management, administration and implementation of the RRP Program and to function as the authorized official (programmatic approving authority) to approve RRP Program settlements. Consistent with agency policy, authorized officials may delegate authority for approving settlements. The membership of the Authorized Officials will consist of the legally designated “authorized officials” representing each of the natural resource trustee agencies and Indian tribes that are participating in the RRP Program, or their designee.

3.3.2 Trustee Council

The membership of the Trustee Council will consist of a representative from each of the designated trustee agencies and Indian tribes that are party to the RRP Program. However, decisions on individual NRDA cases will be made by those members of the Trustee Council that have jurisdiction over the public trust resources impacted by a particular incident.

The primary role of the Trustee Council is to guide and manage the case activities of the NRDA Case Teams (see Section 3.4 for details). Trustee Council members will individually seek concurrence and direction from their respective authorized official on settlement and negotiation of cases. All decisions related to the individual NRDA cases, from case selection to restoration project implementation, will be made by the Trustee Council, as appropriate, for approval by the authorized officials to ensure statewide consistency in the cases processed through the RRP Program.

3.3.2.1 Case Teams

The primary role of the NRDA Case Teams will be to conduct the technical components of the individual NRDA cases processed through the RRP Program under the direction

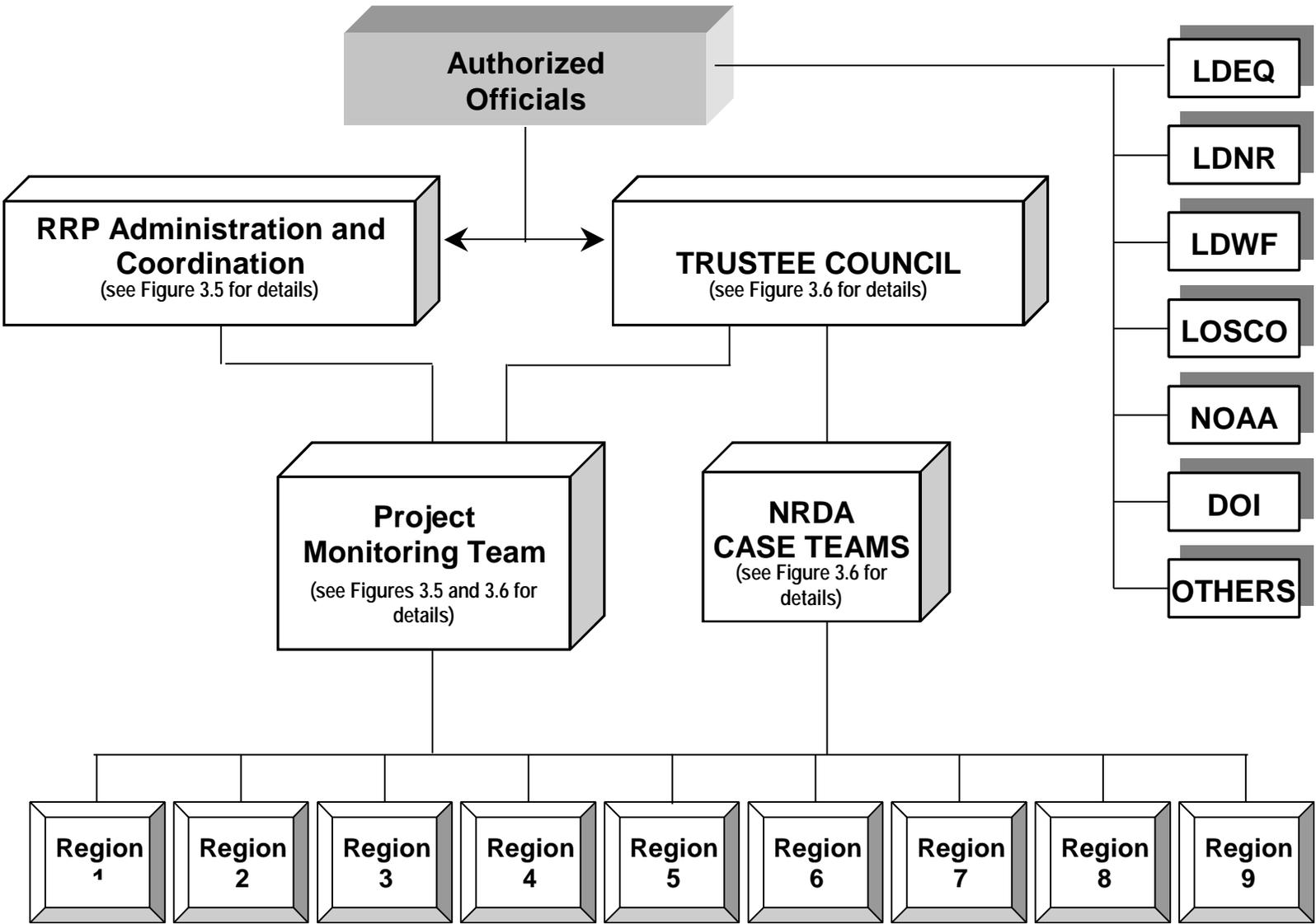


Figure 3.4: RRP Program Management Framework

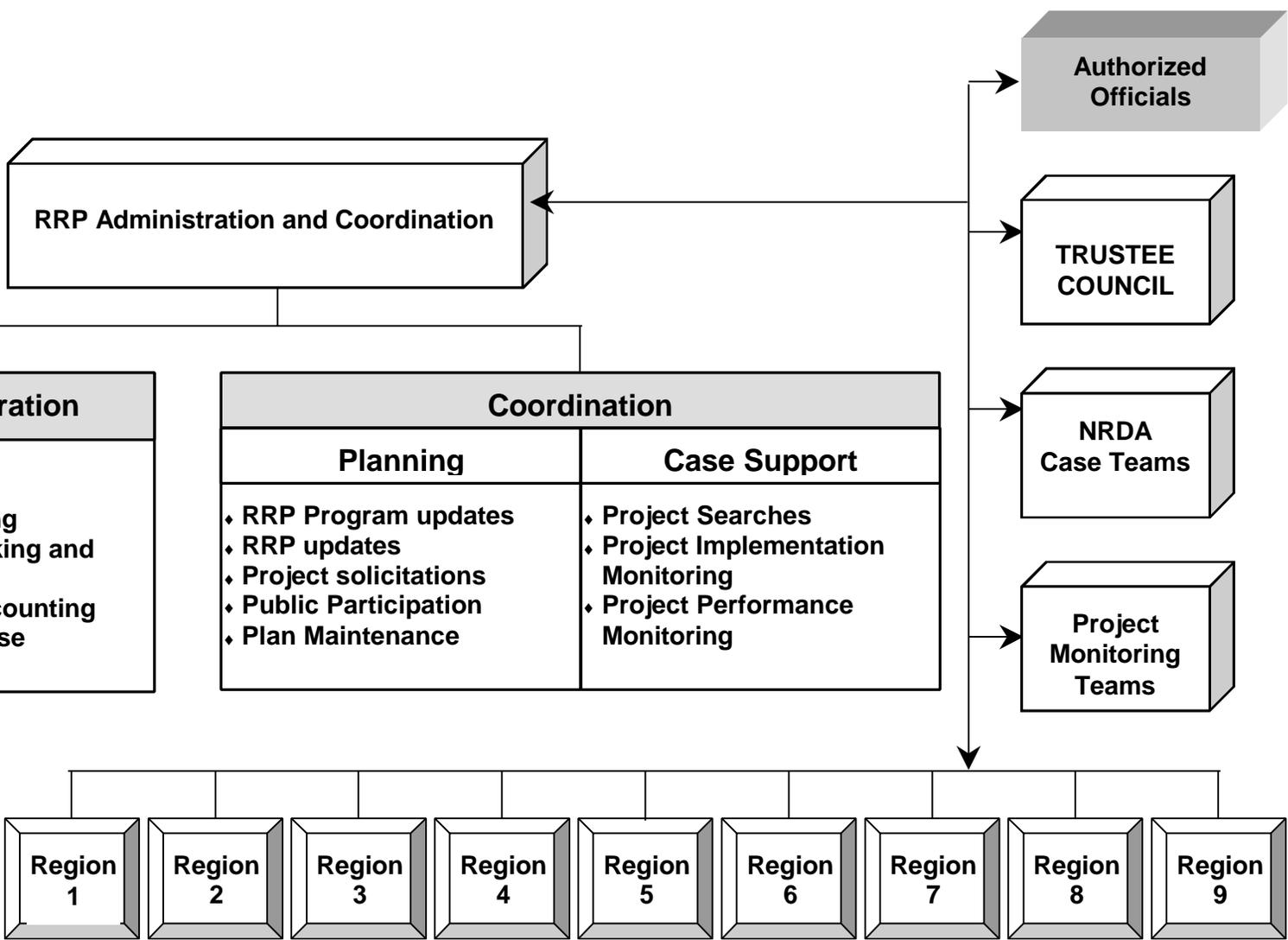


Figure 3.5: RRP Program Management Framework - Administrative

of the Trustee Council, including the NRDA pre-assessment and assessment phases of the NRDA RRP Program process.

Membership of the NRDA Pre-Assessment and/or Assessment Case Teams for a given incident will depend on the location of the incident relative to each of the trustees' jurisdictions, the resources impacted, and availability of each agency's personnel. In general, NRDA Case Team membership will be limited to those agency representatives that have jurisdiction in the area impacted by the incident or have resources impacted by the incident. However, lack of participation in a NRDA Case Team for a given incident does not preclude a trustee agency with jurisdiction from participating in the NRDA process for that incident, as it may be more efficient for some trustees to rely on the information generated by the NRDA Case Team.

Each Trustee Council member will be responsible for designating the NRDA Case Team member(s) for his or her agency. Case Teams may consist of members of the Trustee Council and/or Regional RRP field staff (or contractors with trustee oversight), as appropriate. The following is a list of some of the responsibilities/functions/products that will be carried out by the NRDA Case Teams under the direction of the Trustee Council:

- ◆ Drafting and making available for review Draft and Final DARPs;
- ◆ Drafting and publishing Notices of Intent to use the RRP, conduct restoration planning, and/or the availability of a DARP;
- ◆ Scheduling, holding and maintaining records on public meetings and public hearings; and
- ◆ Conducting the restoration planning
- ◆ Drafting and finalizing any settlement documents⁷, including administrative settlements, consent decrees, amendments to such documents, etc.

3.3.2.2 Regional Field Staff

Some of the participating trustee agencies have regional offices and field staff throughout the State of Louisiana. To maximize the cost-efficiency of RRP Program implementation, it is anticipated that agency regional field personnel will be assigned to support the implementation of the RRP Program. Specifically, it is anticipated that the assigned regional staff assist in the pre-assessment and restoration planning phase of the NRDA cases processed through the RRP Program, and in restoration project implementation oversight activities.

3.3.2.3 RRP Administration and Coordination

LOSCO, in coordination with the other trustee agencies, will be responsible for RRP Program administration and coordination functions. Administrative functions for the RRP Program include: record keeping; reporting; financial tracking and accounting; Natural Resources Restoration Trust Fund accounting; and restoration project database maintenance.

Coordination activities are related to planning and case support. Coordination of planning activities may include: coordinating revisions to the RRP Program, including updates to the RRP (e.g., solicitation of potential restoration projects, incorporation of restoration projects, etc.); RRP maintenance (e.g., project tracking); and public participation.

Coordination of case support may include: restoration project searches for cases, and coordination of the trustees' project implementation and performance monitoring.

⁷ Settlement Documents will be prepared by trustee attorneys in consultation with Case Team members.

3.3.2.4 RRP Project Monitoring Team

It is anticipated that an RRP Restoration Project Monitoring Team will be established to conduct the monitoring activities for restoration projects implemented by the trustees or, alternatively, review the monitoring results for restoration projects implemented by the RPs and submitted to the Trustee Council to determine whether restoration performance criteria have been met. The membership of the RRP Program Monitoring Team may vary depending on the location of the restoration project and will be determined by the Trustee Council.

3.4 RRP Program Case Implementation Process

The following is a description of the RRP Program Case Implementation Process beginning with the notification of an incident through completion of the oversight and monitoring of the restoration project (Figure 3.6). Specifically, it describes the general roles and responsibilities for the case implementation process including: coordination and movement of data and information, development and implementation of damage assessment; and decision-making between and among the field staff, Authorized Officials, Lead Administrative Trustee (LAT)⁸, Trustee Council, Case Teams and the Monitoring Team. It should be noted that though the steps described below are presented separately; in the case of a real incident, some of these steps would occur simultaneously. Additionally, due to the amount of information available and/or the cooperative nature of the NRDA, some of the steps may be skipped altogether.

3.4.1 Preliminary Assessment

When an incident occurs in Louisiana, state and federal response agencies are notified that an incident has occurred. Often, Louisiana state and federal NRDA trustee agencies are notified at the same time by response or other personnel. A response team⁹ made up of state and federal personnel, as appropriate, go to the site to investigate the incident and carry out their response and/or clean up responsibilities.

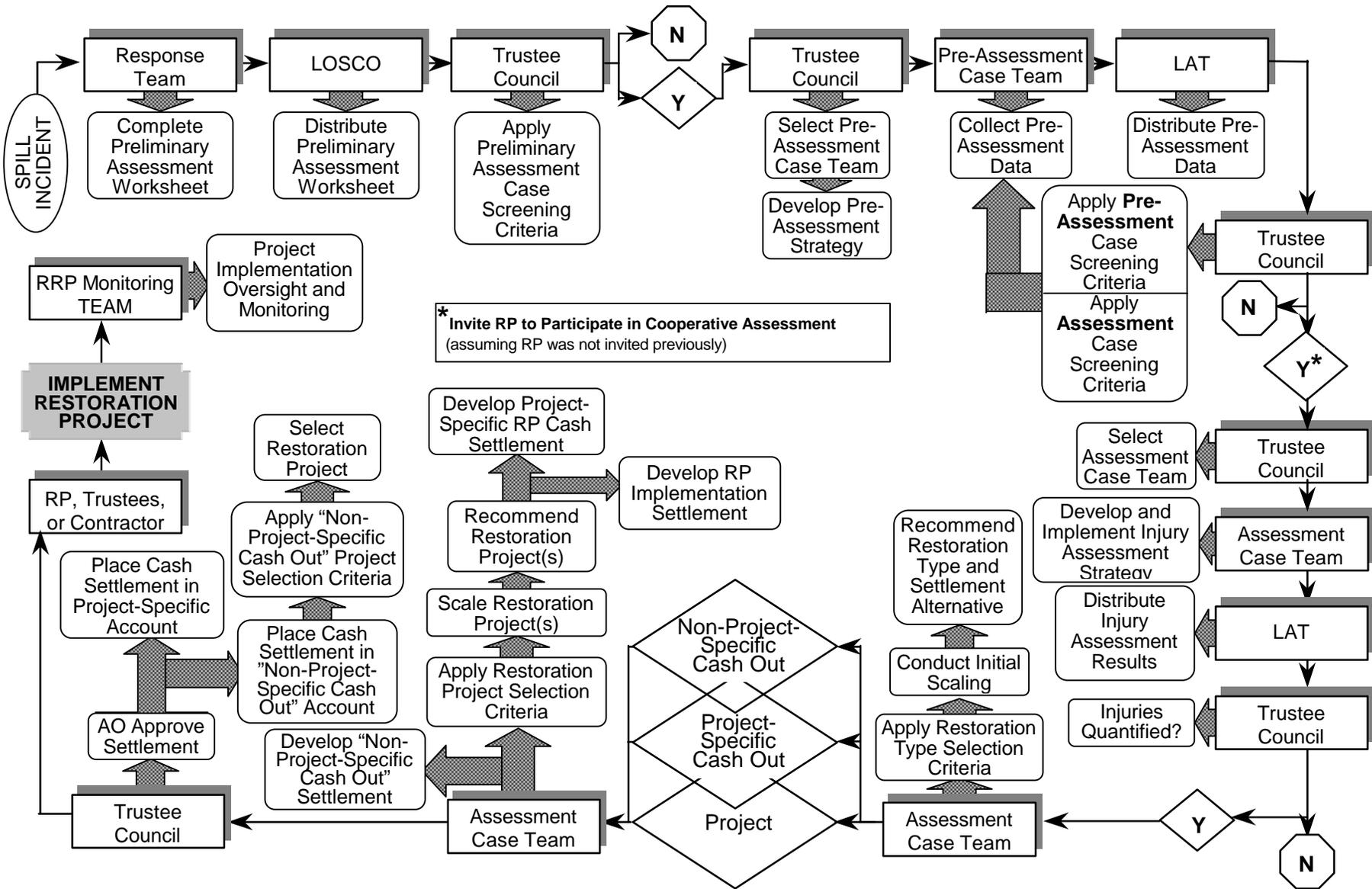
3.4.1.1 Preliminary Assessment Case Selection Screening

Under the RRP Program, a "NRDA Preliminary Assessment Worksheet" (see Appendix E for a copy of the worksheet) will usually be completed by the response field personnel when they investigate an incident. The worksheet will then be transmitted to LOSCO who will distribute it to the Trustee Council. Using the information provided in the worksheet, the Trustee Council will apply the "Preliminary Assessment Case Selection Screening Criteria" and make a preliminary determination as to whether or not "natural resources under the trusteeship of the trustee may have been, or may be, injured as a result of the incident" (15CFR 990.41(a)(3)). When the Trustee Council makes a determination of jurisdiction, they will assign a Pre-Assessment Case person or team to go to the site of the incident and initiate the Pre-Assessment Phase.

⁸ Lead Administrative Trustee means the trustee(s) who is selected by all participating trustees to coordinate natural resources damage assessment activities and maintain the Administrative Record. The LAT(s) should also facilitate communication between the OSC and other natural resource trustees regarding their activities during the response phase. (15CFR 990.30)

⁹ "Response" means containment and removal of oil or a hazardous substance from water and shorelines or the taking of other actions as may be necessary to minimize or mitigate damage to the public health or welfare, including, but not limited to, fish, shellfish, wildlife, and public and private property, shorelines, and beaches, as defined in section 1001(30) of OPA (33 USC 2701(30)).

Figure 3.6: RRP Program Case Implementation Process



3.4.2 Pre-Assessment Phase

3.4.2.1 Pre-Assessment Case Selection Screening

The Pre-Assessment Case personnel will collect pre-assessment data to confirm whether: injuries to public trust resources have resulted, or are likely to result, from the incident; response actions have not adequately addressed, or are not expected to address, the injuries resulting from the incident; and feasible primary and/or compensatory restoration actions exist to address the potential injuries (Section 990.42(a)(1-3)) (i.e., the “Pre-Assessment Case Selection Screening Criteria”). The pre-assessment data will be provided to the LAT who will distribute the data to the Trustee Council. Based on the data provided and a preliminary determination that restoration planning is feasible, the Trustee Council may decide to proceed with pre-assessment actions.

3.4.2.2 Case Selection Screening

Once the Trustee Council has decided to proceed with the Pre-Assessment Phase, the Pre-Assessment Case personnel will continue to collect pre-assessment data. The pre-assessment data will be provided to the LAT, who will distribute it to the Trustee Council. Using the information provided by the Pre-Assessment Case personnel, the Trustee Council will apply the “Case Screening Criteria” to determine whether: “potential injuries actually have occurred to trust resources, the response actions will not adequately address the injuries, injury assessment and scaling methods are available and feasible primary and/or compensatory actions exist to address the potential injuries.” If the case selection criteria are met, the Trustee Council may decide to proceed with the Restoration Planning Phase.

3.4.3 Restoration Planning Phase

If the Trustee Council decides to pursue a NRDA for this incident, an Assessment Case Team will be identified for that case, a Notice of Intent to Conduct Restoration Planning will be prepared, and the administrative record will be opened. At this time the RP will be invited to participate in a cooperative assessment, assuming they have not been invited earlier. Under the supervision of the Trustee Council, the Assessment Case Team will then carry out the technical components of the restoration planning phase, including: developing and implementing an injury assessment strategy, and providing a preliminary recommendation of a restoration type(s). This information will be provided to the LAT, who will distribute it to the Trustee Council for review. Based on that information, the Trustee Council will determine if the injuries have been adequately quantified. If so, the Case Team, under the supervision of the Trustee Council, will select an appropriate restoration type(s) (see Section 3.2.4, Relationship of Resource/Services to Restoration Types), conduct initial scaling, and begin negotiations with the RP on which settlement alternative to pursue.

3.4.3.1 Settlement Alternatives

Settlement alternatives are described in detail in Sections 3.2.6 Settlement Alternatives. Each proposed settlement will be submitted for approval to the Authorized Officials Group.

3.4.3.1.1 Cash Settlements (Trustee-Implemented-Restoration Project)

If the settlement alternative selected and approved by the Trustee Council is one in which the RP provides cash to the trustees based on the cost of implementing a specific

restoration project (Single Incident – Trustees Implemented Restoration Project), the Case Team will apply the restoration project selection criteria (see Section 3.2.4.2, Screening Criteria for Project Selection) to and with approval of the Trustee Council and Authorized Officials Group, select the restoration project(s). In the case of the “Non-Project-Specific Cash Out”, the Case Team will calculate, subject to the approval by the Trustee Council and Authorized Officials Group, the amount of the cash settlement in accordance with the RP’s liability and the unit cost/DSAY for the applicable restoration type in the region in which the incident occurred. Depending on the “cash out” settlement alternative, the cash settlement will be placed in either a “Non-Project-Specific Cash Out” restoration account for the applicable restoration type or a “Project-Specific Cash Out” account to fund future implementation of one of the RRP projects.

3.4.3.1.2 RP-Implemented-Restoration-Project Settlement

If the settlement alternative selected and approved by the Trustee Council, involves any RP(s) implemented projects, the Case Team will apply the project selection criteria (see Section 3.2.4.2, Screening Criteria for Project Selection) to and with approval of the Trustee Council and Authorized Officials Group, select the restoration project(s) to be implemented by RP(s).

3.4.3.2 Restoration Project Selection

Regardless of the specific settlement alternative selected, the restoration project selection for all project-specific settlements (i.e., Single Incident – Trustees Implemented Restoration Project; Single Incident – RP Implemented Restoration Project; RP CO-OP; RP Fund/CO-OP) will be completed using the screening criteria described in Section 3.2.4.2 of this document.

Selection of the specific restoration project to be implemented with the funds collected from the “Non-Project Specific Cash-Out” settlements will be done using the screening criteria described in Section 3.2.6.2.3.1 of this document.

3.4.3.3 Settlement Requirements

3.4.3.3.1 Restoration projects/Alternatives

As a requirement of settlement, the RP(s) or the trustees will be implementing a restoration project to compensate the public and environment for the resources and services lost as a result of an incident. In addition to the requirement to implement a project, the settlement will also include provisions for project monitoring, structural operations and maintenance, potential corrective actions, contingencies, and reimbursement of assessment costs.

3.4.3.3.2 Monitoring

The purpose of monitoring is two-fold: 1) to determine whether the project goals and objectives have been or will be met by evaluating project performance against performance criteria and, 2) to identify any mid-course corrections or adaptive management procedures that may be necessary to ensure the sustainability of a project. To fulfill these objectives, monitoring will be undertaken after project implementation. Monitoring of projects implemented under the RRP will be performed using replicable, technically sound sampling techniques and designs that measure both the structure and function of a system.

3.4.3.3.3 Operation and Maintenance

Under some circumstances, a project may involve “hard” structures that are not self-maintaining or operating such as variable-crested weirs, flap gates, etc. For these structures, an operations and maintenance plan must be developed at the time of the structure’s design. Each plan will include the design specifications of the structure, a detailed map showing structure location, permits and permit amendments, a schedule of maintenance and operation, a schedule of inspections, budget, cost-share agreement (if needed), a schedule for reports including the construction completion report, and a strategy for structure removal if at a later point in time the structure is deemed structurally unsound, e.g., a navigation hazard.

3.4.3.3.4 Corrective Actions/Project Adjustments

Corrective actions and project adjustments are any action that the Trustee Council deems necessary to ensure the success of the project after project implementation. The decision to proceed with corrective actions and/or adjustments will be made following evaluation of the monitoring data and consideration of the performance criteria. Corrective actions and/or adjustments will be considered if performance criteria goals and objectives are not met, or are progressing too slowly. As part of the settlement, the RP(s) is financially responsible for the cost of the required corrective actions and/or adjustments. In the case of a trustee-implemented project, the trustees may collect or require, as appropriate, that the RP(s) place in an escrow, a sum of money to cover possible corrective actions and/or adjustments. In cases where the RP has implemented the project, the RP(s) will be required to implement the corrective action and/or adjustment.

3.4.3.3.5 Contingencies

Trustees may collect from or require that the RP place in an escrow, a sum of money to cover unexpected costs associated with the implementation of the project. Such contingencies may also be applied to trustee oversight costs as these future costs can only be estimated at the time of settlement. Any contingency funds collected or placed in escrow, as appropriate, will be used in the manner specified in the settlement documents.

3.4.3.3.6 Assessment Costs

The financial responsibility of the RP(s) for a given incident extend(s) to the trustees’ assessment costs resulting from the incident. Assessment costs are administrative and other costs incurred by the trustees associated with the injury assessment and restoration planning phase of the NRDA.

3.4.3.4 Settlement Calculation

Regardless of the specific settlement alternative selected, the financial responsibilities of the RP include: the costs associated with injury assessment, project planning (site selection, feasibility analyses, engineering and design, permitting, conservation easements, etc.), project implementation, monitoring, operations and maintenance, trustee oversight and administrative costs, corrective actions, contingencies, and any other project-related costs that may arise throughout the life of the project.

3.4.3.4.1 RP-Implemented Restoration Project

If an RP chooses to implement a restoration project itself or through a contracted third party, the settlement calculation, will consist primarily of the cost associated with the trustees’ costs to conduct the injury assessment and restoration planning, and the required trustee oversight and administrative costs for the life of the project . Costs associated with the implementation of the project, monitoring, operations and

maintenance, potential corrective actions, and contingencies would remain the responsibility of the RP(s) as part of the settlement but would not need to be calculated. In the case of multiple RPs or the implementation of a RRP restoration project with a partnering program or organization, the settlement calculation would take into account what portion of the cost each contributing RP or program is responsible for.

3.4.3.4.2 Cash Settlement - Project-Specific Cash Out

If the RP(s) provide the trustees with the money to implement a specific restoration project in the RRP (which was selected by the trustees with input from the RP(s) by applying the RRP Program project selection criteria), the settlement calculation would include the trustees' assessment costs plus all costs to conduct the project planning and design, permitting, implementation, monitoring, operations and maintenance, oversight and administration, and contingencies. This cash settlement is paid to the trustees. If the RP's liability is such that it does not owe the full amount of the project (e.g., RP Fund/CO-OP Settlement Alternative), the RP can cash out based on the percentage of the selected restoration project for which it is liable.

3.4.3.4.3 Cash Settlement - Non-Project-Specific Cash Out

If the "Non-Project-Specific Cash Out" settlement alternative is selected as the basis for resolving an RP's liability, the settlement calculation consists of calculating the RP's liability in accordance with the unit cost/DSAY for the applicable restoration type in the region in which the incident occurred. As discussed in previously, the unit cost/DSAY by definition includes trustees' assessment costs plus all costs to conduct the project planning and design, permitting, implementation, monitoring, operations and maintenance, and contingencies. The trustees will use these types of cash settlements to implement a restoration project in the RRP based on the "Project Selection Criteria under Non-Project-Specific Cash Out" discussed in Section 3.2.6.2.3.1

3.4.4 Restoration Implementation

LOSCO will be responsible for coordinating and tracking the implementation of all restoration projects, whether carried out by the RP(s) or the trustees, and providing periodic reports on their status to the Trustee Council. As part of this responsibility and in consultation with the specific Case Teams, LOSCO will coordinate the Project Monitoring Teams in terms of scheduling, tracking, and assuring that specific implementation and performance monitoring takes place. Regular status reports, including need for corrective actions or letters of completion, will be provided to the Case Teams and Trustee Council until the case is closed.

3.5 Sources of Restoration Funding

There are three potential sources of funds for restoration of resources and services injured or lost as a result of an incident.

- ♦ RP(s), through cash settlements to resolve their liability from incidents, can/will provide funds: for a specific project, as part of pooled funding for a specific project, or as payment under the "Non-Project-Specific Cash Out" settlement alternative.
- ♦ In the absence of a viable RP (e.g., where the RP is unknown, bankrupt, or is not responsible due to a valid defense) or when a viable RP fails to respond to a demand letter after 90 days, the trustees have the option of going to the Federal OSLTF and/or State OSCF to seek monies to implement the restoration actions required for that incident.
- ♦ Funds from other programs that carry out restoration (i.e., permit mitigation, Coastal Impact Assistance Funds) may be available in conjunction with funds from cash

settlements to implement larger projects, or cash settlements may be used as matches for other restoration program projects (i.e., CWPPRA). Funds from other programs cannot be used to replace a restoration requirement associated with natural resource liability from an incident. The trustees will ensure that the public receives an appropriate increment of restoration benefit beyond that which accrues from other programs when combining a settlement for natural resource liability with programs supported by public funds.

3.6 Use of the RRP Program and RRPs

The trustees propose to use the RRP Program and RRP

s in a variety of situations, as appropriate. The trustees with jurisdiction for any given event will determine the most effective process for conducting a NRDA for that spill. In the majority of circumstances, it is anticipated that the projects in an RRP will be used by trustees as potential restoration alternatives for injuries and service losses requiring restoration during the restoration planning phase of the NRDA process, thereby minimizing the need to do more lengthy incident-specific restoration planning as part of the damage assessment process for most incidents. In some cases, there will be circumstances in which the trustees may do restoration planning outside of the context of the RRP Program due to the specific conditions of the incident. For example, the trustees may decide to follow the traditional NRDA process after injury assessment or after initial scaling of the injury (see Figure 3.1). Additionally, there may be cases in which restoration types and the attending analysis from the RRP Program, as well as restoration projects from the RRPs, will be used to address certain injuries from an incident; and restoration planning outside of the context of the RRP Program will be carried out for other injuries from the incident.

4.0 Regional Boundaries

Based on an evaluation of the existing Louisiana plans/programs, as well as other data, the state will be divided into nine RRP regions (Figure 4.1). These nine regions include the four COAST 2050¹⁰ regions along the coast, including state waters, (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation Authority 1998) plus five inland regions, created through a combination of LDEQ's defined watersheds (LDEQ 2000). The ability to show "nexus," or the ability to link potential injuries to restoration alternatives and/or projects within a region, is simplified due to habitat similarities within these boundaries. It is anticipated that dividing the state into nine regions will facilitate trustee implementation of the RRP Program and the management of the RRP.

In addition, as appropriate, the trustees intend to address impacts to the resources in federal waters off the State of Louisiana by use of restoration projects from one or more of the coastal RRP. "Federal waters" encompasses the federal waters offshore Louisiana between the boundary of the Federal/Louisiana territorial seas to the extent of the EEZ.



Figure 4.1: Regional Boundaries for the RRP Program

¹⁰ The Coast 2050 Plan is the Louisiana coastal resources management plan that was developed "to sustain a coastal ecosystem that supports and protects the environment, economy and culture of southern Louisiana, and that contributes greatly to the economy and well-being of the nation."

4.1 Definition of RRP Regional Boundaries

The RRP regional boundaries demarcate four coastal and five inland regions that encompass the entire state. The boundaries of the coastal regions correspond to regional boundaries delineated and defined in the Coast 2050 Plan (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998). The boundaries of the inland regions correspond to a conglomeration of watersheds originally delineated by the LDEQ. A description of each RRP region is provided in the following sections.

4.1.1 Region 1

This region encompasses the Lake Pontchartrain hydrologic basin and portions of the Mississippi River, Amite River, and Pearl River basins, the Pleistocene terraces, and delta plain. Bordered to the north by Interstate 12 and the St. Bernard Parish line, Region 1 extends south to the Mississippi River and Mississippi River Gulf Outlet, and from the Amite River and intermediate terraces along its western border to the Pearl River and Chandeleur Islands along its eastern border. The following parishes are located either partly or completely within Region 1: Ascension, Jefferson, Livingston, Orleans, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Tammany, and Tangipahoa.

4.1.2 Region 2

This region encompasses the Breton Sound and Barataria hydrologic basins and the lower Mississippi River basin, delta plain and modern Balize delta (Birdsfoot delta). Bordered to the north by the headwaters of Bayou Lafourche and the Mississippi River, Region 2 extends south to the Caminada-Moraueu Headland, Plaquemines barrier system, and Birdsfoot delta, and from Bayou Lafourche along its western border to the Mississippi River and Mississippi River Gulf Outlet along its eastern border. The following parishes are located either partly or completely within Region 2: Ascension, Assumption, Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, and St. John the Baptist.

4.1.3 Region 3

This region encompasses the Terrebonne, Atchafalaya, and Teche/Vermilion hydrologic basins, and portions of the alluvial valley and delta plain. Bordered to the north by intermediate and prairie terraces and natural levees, Region 3 extends south from the landward extent of coastal wetlands, as defined by the Louisiana Coastal Wetlands Conservation Plan (LDNR 1997), to the Timbalier and Isle Dernieres barrier island chains and Atchafalaya Delta, and from Freshwater Bayou Canal along its western border to Bayou Lafourche along its eastern border. The following parishes are located either partly or completely within Region 3: Assumption, Iberia, Lafourche, St. Martin, St. Mary, Terrebonne, and Vermilion.

4.1.4 Region 4

This region encompasses the Calcasieu River, Sabine River, and Mermentau River hydrologic basins, and portions of the Chenier plain and Pleistocene terraces. Bordered to the north by the Prairie terraces, Region 4 extends south from the landward extent of the Chenier Plain to the Gulf of Mexico and from the Louisiana/Texas border along its western border to Freshwater Bayou Canal along its eastern border. The following parishes are located either partly or completely within Region 4: Calcasieu, Cameron, and Vermilion.

4.1.5 Region 5

This region encompasses a majority of the Pearl River, Bogue Chitto River, Tangipahoa River, and Amite River drainage basins and portions of the Mississippi River basin and Pleistocene terraces. Bordered to the north by the Louisiana/Mississippi border, the eastern boundary of Region 5 extends south along the Pearl River to Interstate 12 near Slidell, Louisiana. The southern boundary extends west from the Pearl River along Interstate 12 to the Amite River. The eastern boundary of Region 5 follows the Amite River south to near Port Vincent and then extends southwest along the western margin of St. Amant Swamp and the Pleistocene terrace to the Mississippi River near Burnside, Louisiana. The following parishes are located either partly or completely within Region 5: Ascension, Concordia, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, St. Tammany, Tangipahoa, Washington, West Baton Rouge, and West Feliciana.

4.1.6 Region 6

This region encompasses portions of the Red River, Atchafalaya River, Mississippi River, and Teche/Vermilion basins and the alluvial valley. The northern boundary of Region 6 extends east from the confluence of the Red River and Calcasieu River basins, near the town of Otis, Louisiana, to the Louisiana/Mississippi border north of the town of Point Breeze, Louisiana. The boundary follows the Red River east to Bayou Choctaw and then cuts south to the town of Bunkie, Louisiana where it turns east and follows Bayou Des Glaises and the Outflow Channel to the Mississippi River in Concordia Parish. The eastern boundary of Region 6 extends south to the northern boundary of the coastal wetlands, as defined in the Louisiana Coastal Wetlands Conservation Plan (LDNR 1997). The southern boundary of Region 6 extends along the coastal wetlands from Bayou Lafourche near Donaldsonville, Louisiana to Freshwater Bayou Canal on the west. The western boundary of Region 6 extends north from Freshwater Bayou Canal and continues along the western boundary of the Teche/Vermilion River basin to the confluence of the Red River, and Calcasieu River basins near the town of Otis, Louisiana. Along its eastern border, Region 6 is bounded by the Mississippi River from just north of Point Breeze, Louisiana to Donaldsonville, Louisiana. The following parishes are located either partly or completely within Region 6: Acadia, Allen, Ascension, Assumption, Avoyelles, Concordia, Evangeline, Iberia, Iberville, Lafayette, Pointe Coupee, Rapides, St. Landry, St. Martin, St. Mary, Vermilion, West Baton Rouge, and West Feliciana.

4.1.7 Region 7

This region encompasses portions of the Calcasieu River, Mermentau River and Sabine River basins. The western boundary extends from the confluence of the Louisiana/Texas border and the Red River and Sabine River basins, just south of the town of Bethany, Louisiana, to the marsh areas just north of the Gulf Intracoastal Waterway and the Louisiana/Texas border. The eastern boundary extends southeast from the confluence of the Louisiana/Texas border and the Red River and Sabine River basins, just south of the town of Bethany, Louisiana, to the western bank of Freshwater Bayou Canal. The southern boundary extends from the western bank of Freshwater Bayou Canal westward to the Louisiana/Texas border, along the northern extent of the Chenier Plain. On the west, Region 7 follows the Louisiana/Texas border from the marsh areas just north of the Gulf Intracoastal Waterway north to the confluence of the Louisiana/Texas border, the Red River and the Sabine River basins, approximately three miles south of the town of Bethany, Louisiana. The eastern boundary follows the eastern edge of the Sabine, Calcasieu and Mermentau basins inclusively. The following parishes are located either partly or completely within Region 7: Acadia, Allen, Beauregard, Caddo, Calcasieu,

Cameron, De Soto, Evangeline, Jefferson Davis, Lafayette, Natchitoches, Rapides, Sabine, St. Landry, Vermilion, and Vernon.

4.1.8 Region 8

This region encompasses the Little River, Tensas River, and Ouachita River basins and a portion of the Mississippi River basin. Bordered to the north by the Louisiana/Arkansas border and to the east by the Louisiana/Mississippi border, Region 8 extends southwest from the state line approximately six miles northeast of the town of Waterproof, Louisiana (located along the Mississippi River) to the Tensas River where it extends west and south to the Black River and then south to the Catahoula Lake Diversion Canal. The boundary continues west along the southern margin of Catahoula Lake to the westward margin of the Little River drainage basin. The western boundary of Region 8 extends north along the western margin of the Little River and Ouachita River drainage basins to the Louisiana/ Arkansas border. The following parishes are located either partly or completely within Region 8: Bienville, Caldwell, Catahoula, Claiborne, Concordia, East Carroll, Franklin, Grant, Jackson, La Salle, Lincoln, Madison, Morehouse, Ouachita, Rapides, Richland, Tensas, Union, West Carroll, and Winn.

4.1.9 Region 9

This region encompasses portions of the Red River and Mississippi River basins. Bordered to the north by the Louisiana/Arkansas border, Region 9 extends south from the state line along the Louisiana/Texas border to the confluence of the Red River and Sabine River drainage basins, just north of the town of Bethany, Louisiana, and then southeast to the confluence of the Calcasieu River and Red River drainage basins, near the town of Otis, Louisiana. The boundary follows the Red River east to Bayou Choctaw and then cuts south to the town of Bunkie, Louisiana where it turns east and follows Bayou Des Glaises and the Outflow Channel to the Mississippi River in Concordia Parish. The western boundary of Region 9 extends south from the Louisiana/Arkansas border along the western margin of the Ouachita River and Little River drainage basins to the southern margin of Catahoula Lake and east to the Catahoula Lake Diversion Canal. The boundary continues north along the Black River and Tensas River and then northeast to the Mississippi River approximately six miles north of the town of Waterproof, Louisiana. The eastern boundary follows the Louisiana/Mississippi border from the point north of Waterproof, Louisiana to just north of the Outflow Channel near Point Breeze, Louisiana. The following parishes are located either partly or completely within Region 9: Avoyelles, Bienville, Bossier, Caddo, Catahoula, Claiborne, Concordia, De Soto, Grant, La Salle, Lincoln, Natchitoches, Rapides, Red River, Sabine, Tensas, Vernon, Webster, and Winn.

5.0 Alternatives

This chapter describes the alternatives considered, outlines the process that was used to generate and evaluate the alternatives to achieve the purpose and needs for the program, and provides a programmatic basis for the choice of the preferred alternative. The “No Action Alternative” is described first. The “RRP Program/Environmentally Preferred Alternative” is then described. The other programmatic alternative that was considered prior to formal scoping (but not carried forward) is noted, along with the rationale for eliminating it from further consideration.

The “No Action Alternative” is to continue to carry out NRDA in the State of Louisiana using the NRDA process and current practices described in Chapter 2.

The “Environmentally Preferred Alternative” is the statewide comprehensive RRP Program described in detail in Chapters 3 and 4 of this document. These chapters describe the RRP Program components in relation to the NRDA process and the goals and objectives of establishing the RRP Program.

The NRDA process as described by implementing regulations and guidance both under OPA and OSPRA will not change as a result of the RRP Program. The trustees are proposing to further institutionalize an existing process, as well as identify ways to expedite and further define the specific steps of that process, within the requirements of the OPA and OSPRA NRDA regulations.

To expedite the NRDA process and make it more cost-effective, the RRP Program proposes to shorten the restoration planning phase of the process through the development of individual RRPs, which will identify and subject to public review appropriate restoration projects prior to incidents. In addition, the RRP Program will aid the selection of restoration projects by identifying in advance the types of restoration that may be suitable to restore those resources and services likely to be injured by incidents in Louisiana. The RRP Program/PEIS will also streamline the NEPA process for case specific documents and decision-making by “tiering” the programmatic and environmental analysis for both the project selection and implementation from the PEIS and RRPs. Consistent application of the RRP Program project selection criteria will enhance the predictability and accountability of the decision-making process. Flexibility will be increased through the introduction of additional settlement alternatives.

5.1 No Action Alternative

5.1.1 Summary

Both state and federal NRDA regulations provide for a step-by-step process for trustees to determine injuries, assess damages, and develop and implement restoration projects that compensate the public for injuries to natural resources harmed by an incident.

The No Action Alternative is defined as continuing to implement the NRDA process without the institution of the RRP Program. The No Action Alternative is used as a basis for comparison with the RRP Program. The affected environment and existing NRDA process are described in Chapter 2, Affected Environment and Program and in Appendix B, Affected Environment. The following are the major phases of the NRDA process:

- ◆ Pre-assessment phase;
- ◆ Restoration planning phase; and
- ◆ Restoration implementation phase.

5.1.2 Overview of the NRDA Process

The description below of the NRDA process is intended to provide the context for the comparison of the No Action Alternative and the RRP Program Alternative.

Pre-assessment Phase – The purpose of the Pre-assessment Phase is to determine if trustees have the jurisdiction to pursue restoration under OPA, and, if so, whether it is appropriate to do so.

Restoration Planning Phase – The purpose of the Restoration Planning Phase is to evaluate potential injuries to natural resources and service losses and use that information to determine the need for and scale of restoration actions. The Restoration Planning Phase provides the link between injury and restoration. The Restoration Planning Phase has two basic components: injury assessment, and restoration selection.

Restoration Implementation Phase – The Restoration Implementation Phase occurs after the DARP is presented to the RPs to implement or fund the trustees' costs of implementing the DARP, therefore providing the opportunity for settlement of the damage claim without litigation. Should the RPs decide to decline to settle the claim, trustees are authorized to bring a civil action for damages in court or to present the claim to the Federal OSLTF or the State OSCF for such damages. If the RPs choose to implement the restoration actions detailed in the DARP, then the trustees provide project oversight that is funded by the RPs. Otherwise the trustees will implement the project.

5.2 RRP Program/Preferred Alternative

5.2.1 Summary

The RRP Program is described in its entirety in Chapters 3 and 4 of this document. The RRP Program will define, expand, and/or refine several important components beyond the existing NRDA process. The following are the major components:

- ◆ Potentially injured resources/services;
- ◆ Restoration types (including nexus analysis, and environmental consequences analysis of implementation);
- ◆ Settlement alternatives;
- ◆ Screening criteria; and
- ◆ Regional boundaries of the RRP.

5.2.2 Overview of Program Components

The descriptions below of the program components are programmatic and are not intended to define the case-specific actions or outcomes that may be implemented under the RRP Program.

Potentially Injured Resources/Services – The RRP Program defines those natural resources and services in Louisiana that are likely to be or are anticipated to be injured (i.e., at risk) by incidents as “potentially injured resources/services.” Identification of these “potentially injured resources/services” will facilitate the development of the RRP, provide more timely detail to the pre-assessment phase and facilitate the expedient development of restoration alternatives during the restoration planning phase. The

¹¹ In the absence of a viable RP (e.g., where the RP is unknown, bankrupt or not responsible due to a valid defense) or when a viable RP fails to respond to a demand letter after 90 days, the trustees have the option of going to the OSLTF and/or OSCF to seek monies to implement the restoration actions required for that case.

“potentially injured resources/services” are listed under three broad categories: coastal, inland, and statewide in Chapter 3:

- ◆ Coastal
 - ◆ Herbaceous Wetlands
 - ◆ Forested Wetlands
 - ◆ Beaches/Shorelines/Streambeds
 - ◆ Oyster Reefs (and other reefs)
 - ◆ Water Column Organisms
- ◆ Inland
 - ◆ Herbaceous Wetlands
 - ◆ Forested Wetlands
 - ◆ Beaches/Shorelines/Streambeds
 - ◆ Oyster Reefs (and other reefs)
 - ◆ Water Column Organisms
- ◆ Statewide
 - ◆ Birds
 - ◆ Wildlife
 - ◆ Recreational
 - ◆ Cultural

Restoration Types – The RRP Program identifies restoration types that are appropriate for the restoration of injuries for each identified “potentially injured resources/services” in the RRP Program. These restoration type categories are:

- ◆ Creation/Enhancement
- ◆ Physical Protection of Habitat
- ◆ Acquisition/Legal Protection
- ◆ Stocking of Fauna
- ◆ Physical Protection of Fauna
- ◆ Restoration of Recreation Resources
- ◆ Restoration of Cultural Resources

Figures 3.2 and 3.3 summarize the specific restoration type(s) in each restoration type category that is appropriate for the restoration of injuries to each identified “potentially injured resources/services” in the RRP Program. This determination of the range of appropriate restoration types is based on the nexus analysis that is described in Chapter 3. The trustees have also conducted an environmental consequences analysis on the restoration types. Carrying out both analyses in the PEIS will result in both technical, process and NEPA compliance efficiencies at the case level during the restoration planning phase. The trustees will be able to “tier” the case specific DARPs and environmental assessments off of the PEIS.

The trustees also have developed restoration type selection criteria that will further assist in determining which of the various restoration types identified in Figures 3.2 and 3.3 will be most appropriate to restore the injured resources/services during a given incident. It is anticipated that the criteria will also provide a level of predictability to the public and affected parties regarding restoration project selection. Projects in each RRP will be classified by restoration type in order to facilitate the determination of the nexus between injuries and selection of specific restoration projects, thereby allowing the process of evaluating and selecting preferred restoration projects to be streamlined.

Settlement Alternatives – The RRP Program describes a number of additional case settlement alternatives that will assist the trustees and RPs in negotiations to resolve RP liabilities for incidents at the end of the restoration planning phase. These additional settlement alternatives generally represent different ways of resolving liability from an incident under one or the other (or both) of the two options: RP implemented restoration; or RP cash out and trustee implemented restoration. These settlement alternatives also may provide opportunities for implementing restoration projects more quickly and cost-effectively; pooling settlements to implement larger projects than could be accomplished by using individual settlements, and potentially encompassing landscape scale efforts.

Screening Criteria – In order to improve consistency, predictability, and accountability to the NRDA decision-making process, the trustees identified and defined project selection and other screening criteria to be used in implementing the RRP Program. These criteria are for:

- ◆ Selection of restoration projects to be incorporated into each RRP;
- ◆ Selection of projects for implementation under the Non-Project-Specific Cash Out alternative; and
- ◆ Project selection/screening of specific restoration actions required for a case.

Regional Boundaries of the RRPs – The RRP Program establishes nine regions for which regional plans will be developed. There will be four coastal regions based on the Coast 2050 Plan regions and five inland regions based on LDEQ's defined watersheds. For each region, an individual RRP will be produced. Each RRP will identify the resources and/or services that could potentially be affected by an incident and the restoration projects that are available for implementation within that region. The first RRP will be done for Region 2. Establishing regions will also provide an administrative tool to, among other things, facilitate tracking of cases, settlement accounting, restoration, monitoring, etc.

5.3 Other Programmatic Alternative Considered

Prior to the commencement of the formal scoping process for this PEIS on the RRP Program, the trustees considered one other alternative. This alternative consisted of developing RRP's with databases that identify existing, planned, or proposed restoration projects that may provide appropriate restoration alternatives for consideration in the context of specific incidents. It was determined that this alternative did not meet the objectives of providing greater consistency and predictability of the NRDA process by detailing how that process would work, thereby minimizing uncertainty to the public and industry. Also, it did not meet the state legislative mandate to establish a program. Therefore, this alternative was not carried forward. Instead, a more comprehensive alternative, embodied in the RRP Program, was developed for review by the public.

5.4 Evaluation of Alternatives

In evaluating the programmatic aspects of the "RRP Program/Environmentally Preferred Alternative" versus the "No Action Alternative," a comparative analysis has been done determining the relative programmatic consequences of implementing the RRP Program or not. The analysis of the relative environmental consequences of the two alternatives is provided in Chapter 6.

5.4.1 RRP Program/Environmentally Preferred Alternative

As described above, it is anticipated that the RRP Program will achieve the following:

- ◆ Expedite and potentially reduce the cost of the NRDA process;

- ◆ Provide greater consistency and predictability by detailing the NRDA process, thereby minimizing uncertainty to the public and industry; and
- ◆ Increase restoration of lost natural resources and services.

To expedite and make the NRDA process more cost-effective, the RRP Program proposes to shorten the restoration planning phase of the NRDA process through the development of individual RRPs, which will identify appropriate restoration projects subjected to public review prior to incidents occurring. In addition, the RRP Program will help to inform the selection of restoration projects by identifying in advance the types of restoration that may be suitable to restore those resources and services likely to be injured by incidents in Louisiana. Further, through the development of a PEIS for the RRP Program and “tiering” the RRPs and case specific DARPs from the information and analysis provided in the PEIS, the NEPA process for the NRDA cases will be streamlined significantly. It is also anticipated that model documents (including DARPs, consent decrees, Notice of Intents (NOIs), etc.) will be developed under this program, to provide more efficiencies and lower the costs of carrying out NRDA. Although the RRP Program will require upfront costs to identify restoration projects in advance and develop planning documents, economies of scale will allow overall implementation costs to be lower.

Consistent application of the RRP Program project selection criteria will enhance the predictability, consistency, and accountability of the decision-making process. Flexibility will be increased through the introduction of additional settlement alternatives.

It is anticipated that describing the NRDA process in greater detail will enable the public and affected entities to participate more fully in restoration planning for incidents. First, the RRP Program identifies resources that are likely to be injured from an incident and what restoration type is appropriate to restore the resources/services that were injured or lost. It also provides the rationale for how those decisions were made. The public and affected parties will have an opportunity to review the restoration projects by restoration type that are available in a specific region to restore resources/services injured in that region prior to an incident occurring. By describing in detail each step and the criteria used in the NRDA process, the public and affected parties will understand the trustees’ roles and rationale for their decisions, thereby improving the ability of interested parties to participate in the process.

Finally, by streamlining the NRDA process and making it more efficient: the costs to both the trustees and RPs will be lowered; restoration of injured resources will be increased; and most importantly, the public will be made whole more quickly.

5.4.2 Summary of Benefits

The RRP Program, including the RRPs, will benefit the public, industry, and natural resource trustees by:

- ◆ Providing greater opportunities to make the public and the environment whole for injuries to trust resources/services;
- ◆ Expediting restoration of injured resources/services from oil incidents;
- ◆ Potentially reducing the cost of restoration planning and implementation;
- ◆ Pooling of individual case recoveries to provide for implementation of larger, more ecologically significant restoration projects;

- ◆ Providing for more consistency and predictability through detailing the NRDA process, thereby reducing uncertainty to the public and industry;
- ◆ Improving coordination between restoration activities under the NRDA mandates and other restoration efforts in the State;
- ◆ Enhancing the capability for trustees to restore resources/services injured by oil incidents for which there is no viable RP;
- ◆ Maximizing opportunities for partnering among RPs, trustees, and other public and private restoration efforts; and
- ◆ Increasing opportunity for public participation in the NRDA process through pre-incident planning.

6.0 Environmental Consequences

This chapter discusses the environmental consequences of the “No Action Alternative” compared to the “RRP Program/Environmentally Preferred Alternative” based on the description of the programmatic benefits described in Chapter 5. Section 6.1 will describe the direct and indirect impacts of the alternatives; section 6.2 will describe the cumulative impacts of the alternatives; section 6.3 will summarize the balance between short-term uses versus long-term productivity; and, section 6.4 will list the irreversible and irretrievable commitments of resources.

The environmental consequences analysis is necessarily generalized. The exact manner in which the implementation of the “RRP Program/Environmentally Preferred Alternative” will affect the environment will be determined largely by the implementation of the program as it applies to specific cases. This analysis does not attempt to distinguish between all possibilities as to how the trustees may implement the “RRP Program/Environmentally Preferred Alternative” as it applies to specific cases. Instead this analysis simply assesses likely impacts at a statewide scale.

Under OPA and OSPRA, the selection of restoration projects to be implemented as part of a specific case is subject to NEPA and all relevant laws, regulations, etc., that are applicable. This is the case whether the No Action Alternative or the RRP Program is selected.

The number of cases and speed of their resolution through implementation of restoration will determine the actual beneficial impact of the program. On a statewide, landscape scale, substantial impacts cannot be expected for a number of years, but locally, landscape impacts may be evident sooner. In a geographic sense, the impact of the RRP Program can be expected to be most prominent and most quickly realized in Region 2 which is the region with the highest frequencies of incidents.

This DPEIS can only anticipate what might be the cumulative impacts of the statewide implementation of the RRP Program as cumulative impacts are those, that result from the incremental consequences of an action when added to past, present, and reasonably foreseeable future actions.

6.1 Direct and Indirect Impacts

The environmental resource impacts and social and economic impacts are presented below on a programmatic level. The major differences between the impacts of the No Action Alternative and the “RRP Program/Environmentally Preferred Alternative” are ones of degree or proportion. Therefore, the beneficial environmental impacts and lack of potentially significant adverse environmental impacts and economic and social impacts are similar.

6.1.1 Beneficial Impacts

Compared to the No Action Alternative, it is anticipated that the amount of restoration accomplished under the “RRP Program/Environmentally Preferred Alternative” will be larger, accomplished more quickly and generally at a larger scale, with more public participation, and at a lower cost to the trustees and RPs. The “RRP Program/Environmentally Preferred Alternative” will also improve coordination with other restoration efforts in the state and maximize opportunities for partnering. Therefore the trustees expect that the beneficial impacts of the “RRP Program/Environmentally Preferred Alternative” will be greater than those of the No Action Alternative.

6.1.1.1 Direct

Both alternatives share the goal of making the public and the environment whole for injuries to trust resources/services from incidents. Restoration actions taken by the trustees to return injured resources and habitats to baseline and compensate the public for interim losses will have long-term and significant beneficial impacts on both the physical environment and biological resources impacted by incidents. Whether restoration occurs at the site of the incident or off-site, restoration under NRDA is required to create, protect, or enhance resources and habitats, and therefore it serves to directly benefit those types of resources and habitats that are the focus of restoration actions.

For example, in the case of threatened and endangered species, many species have been listed in that status because of population declines due to the loss of their primary habitats. Likewise, the intent of identifying and protecting essential fish habitat in the coastal area is to prevent the decline of fish populations. Therefore restoration of habitat, in general, and specifically habitat for threatened and endangered species, will assist in the maintenance and possibly the recovery of populations of threatened and endangered species. Restoration of habitat will benefit essential fish habitat when habitat restoration is in the coastal area.

Restoration of resources/services that are of cultural value or support economic activities, such as recreation, tourism, commercial fishing, etc., will also be impacted in a beneficial way by the restoration of those resources/services on which they depend.

6.1.1.2 Indirect

The restoration of resources/services injured by incidents will have foreseeable indirect beneficial impacts to the other parts of the physical environment, biological resources, cultural resources, or related economic activities. For example, when addressing an injury related to one type of service flow from a resource by restoring that resource, usually all service flows related to that resource are restored or enhanced.

6.1.2 Potentially Significant Adverse Environmental Impacts

At a programmatic level, it is anticipated that under the "RRP Program/Environmentally Preferred Alternative" there will be more restoration of injured resources/services and restoration will be accomplished more quickly. Therefore, there appears to be less of a potential for significant adverse environmental impacts under the "RRP Program/Environmentally Preferred Alternative" as compared to the no action alternative. Under implementation of either alternative, mitigation measures are available to avoid or reduce any potentially significant adverse impacts to a less than significant level as individual restoration project(s) are reviewed and implemented. The project(s) will be scaled in such a way that the net benefits of the project compensate for injury(s) resulting from the incident(s) and collateral injury(s) (if any) from the implementation of the compensation project(s). Specific analysis of environmental impacts, their significance, and the availability and choice of specific mitigation measures will be developed and presented in future second or third tier environmental documents prepared, as necessary, prior to the implementation of specific restoration projects.

6.1.3 Economic and Social Impacts

Both alternatives result in beneficial socioeconomic impacts to the public and the industries and communities that depend on the state's resources for commerce and recreation as a result of the restoration of resources/services on which they depend. At the same time, under "RRP Program/Environmentally Preferred Alternative", RPs for

incidents will have a predictable and efficient way of resolving their liabilities. By implementing restoration more quickly, the time between an incident and full recovery of lost resources/services will be reduced, thereby reducing the RPs' liability.

6.2 Cumulative Impacts

The restoration of resources/services injured by incidents will contribute to avoidance or mitigation of the adverse environmental impact to those resources/services and other parts of the physical environment, biological resources, cultural resources, and related economic activities. Both alternatives will contribute to the cumulative beneficial impacts of restoration efforts that have previously been constructed and are being constructed under separate Federal and State authorities and by local and private entities.

Compared to the No Action Alternative, it is anticipated that the amount of restoration accomplished and therefore the cumulative beneficial impacts under the "RRP Program/Environmentally Preferred Alternative" will be significantly greater, will be accomplished more quickly and generally will be at a larger scale. At the same time, the "RRP Program/Environmentally Preferred Alternative" will also improve coordination with other restoration efforts in the state and maximize opportunities for partnering which will also have a cumulative beneficial impact.

6.3 Short-Term Uses vs. Long-Term Productivity

At a programmatic level under both alternatives, overall benefits to long-term productivity related to the state's physical environment, biological resources, cultural resources, and resource-dependent industries outweigh the limited short-term adverse impacts. Under the "RRP Program/Environmentally Preferred Alternative", it is anticipated that the overall long-term productivity will be greater than under the No Action Alternative.

Both alternatives may have short-term construction related impacts as a result of implementing restoration projects. However, these impacts would usually be minor and would cease when construction is complete. Avoidance and mitigation measures will be implemented to lessen the adverse impacts of any construction activities.

6.4 Irreversible and Irrecoverable Commitments

As part of implementation, irreversible commitments of resources could result from restoration actions that involve construction or land conversion under either of the alternatives. Committed resources could include construction materials, labor and energy necessary for construction, operation and maintenance. Potential land conversion would commit habitat, agriculture, or other land uses to other uses, however, in many cases these land conversions could be undone if there were any unanticipated adverse impacts. Avoidance and mitigation measures will be implemented to lessen the adverse impacts of any construction or land conversion activities to lessen impacts under either alternative.

7.0 Coordination with Other Programs, Regulatory Authorities

7.1 Overview

As a cooperative interagency effort, the RRP Program is required to comply with various state and federal environmental laws, regulations and policies. This chapter, not necessarily exhaustive, provides a general overview of the regulatory and programmatic environment in which NRDA restoration activities will be conducted under the RRP Program. Federal environmental laws and regulations to which the RRP Program is subject are outlined in Sections 7.2.1 (“Program Compliance with Federal Laws”) and 7.2.2 (“Program Compliance with Federal Regulations”). Louisiana state environmental laws and regulations to which the RRP Program is subject are discussed in Section 7.2.3 (“State Laws”) and 7.2.4 (“State Regulations”).

In addition to laws and regulations, the trustees must also consider existing environmental programs or plans in developing and implementing the RRP Program. Through coordination with other established programs, the trustees can ensure that the RRP Program does not duplicate other efforts, but instead leads to more effective and cost-efficient NRDA procedures. This, in turn, will add to the overall effort to protect, enhance and restore the natural resources of Louisiana. Major state, federal, and joint state-federal partnership programs that the RRP Program will seek to complement are listed below.

Appendix F provides a table that summarizes the current state of the RRP Program’s compliance and coordination with local, state and federal environmental laws, regulations, and existing programs.

7.2 Program Compliance with Environmental Laws and Regulations

7.2.1 Program Compliance with Federal Laws

Anadromous Fish Conservation Act (AFCA), 16 USC §757a et seq.

The AFCA authorizes the Secretaries of Commerce and/or the Interior to enter into cooperative agreements with the states for the conservation, development, and enhancement of the Nation’s anadromous fishery resources. Pursuant to such agreements, the federal government may undertake studies and activities to restore, enhance, or manage anadromous fish, fish habitat and passages. The Act authorizes federal grants to the states or other non-federal entities to improve spawning areas, install fishways, construct fish protection devices and hatcheries, conduct research to improve management, and otherwise increase anadromous fish resources. The trustees will carefully consider the provisions of the AFCA when making any site-specific restoration choice, and may be able to take advantage of the provisions and funding of AFCA in order to enhance anadromous fish restoration plans and projects within the State of Louisiana.

Clean Water Act (CWA) (Federal Water Pollution Control Act), 33 USC §1251 et seq.

The CWA is the principal law governing pollution control and water quality of the Nation’s waterways. Section 404 establishes a permit program for the disposal of dredged or fill material into national waters and is administered by the USACE. In general, restoration projects which move dredged or filled material into or out of navigable waters or wetlands – for example, hydrologic restoration of salt marshes or the placement of artificial reefs – require 404 permits.

Under the 404 program, NRDA restoration projects arising from court decisions, consent decrees, settlement agreements, or non-judicial settlement agreements are authorized under Nationwide Permit 32, Completed Enforcement Actions (iii).

Under Section 401 of the CWA, restoration projects that entail discharge or fill to wetlands or waters within federal jurisdiction must obtain certification of compliance with state water quality standards. In general, restoration projects with minor wetlands impacts (i.e. a project covered by an USACE Programmatic General Permit) are not required to obtain certification under Section 401, while projects with potentially large or cumulative impacts to critical areas require certification.

It is probable that some of the RRP Program's restoration projects will require permits. However, since project-specific restoration sites have not yet been selected, no Section 404 permits or 401 certifications will need to be issued at this time. Through coordination with the USACE, the trustees will ensure that any site-specific restoration project is properly permitted under both Sections 401 and 404 of the CWA.

Coastal Wetlands Planning, Protection and Restoration Act of 1990 (CWPPRA), P.O. 101-646

Through implementation of this Act, the federal government funds wetland enhancement projects nationwide, with approximately \$50 million appropriated for restoration activities in Louisiana alone. A Taskforce initiated under the authority of the CWPPRA annually develops a list of high-priority projects for implementation. The projects targeted by CWPPRA focus on marsh creation, wetland restoration, and various other modes of protection and enhancement of these valuable resources. The trustees hope to be able to partner with the Taskforce by contributing funding to appropriate restoration projects that meet both the CWPPRA and OPA mandates.

Coastal Zone Management Act (CZMA), 16 USC §1451 et seq.

The CZMA establishes a policy to preserve, protect, develop and, where possible, restore and enhance the Nation's coastal resources. The federal government provides matching grants to states for the realization of these goals through the development and implementation of state coastal zone management programs. Section 1456 of the CZMA requires federal actions in the coastal zone to be consistent, to the maximum extent practicable, with approved state programs. It stipulates that no federal licenses or permits be granted without giving the state the opportunity to concur that the project is consistent with the state's coastal policies. Other provisions of the CZMA provide for the development of special area management plans for areas of the coastal zone of particular importance (16 USC §1456b(6)). In addition, Section 6217 of P.L. 101-508, codified at 16 USC §1455b, requires states with federally approved coastal zone management programs to develop programs for the control of coastal non-point pollution control.

In order to comply with the CZMA, the trustees will forward a copy of this DPEIS to the LDNR, Coastal Management Program for their review and determination of programmatic consistency. Once a particular site-specific restoration project is selected, a further determination of consistency will likely be necessary.

Endangered Species Act of 1973 (ESA), 16 USC §1531 et seq.

The ESA requires that all federal departments and agencies seek to conserve endangered and threatened species and their habitats and encourages those departments and agencies to utilize their authorities to further these purposes. Under the ESA, the Departments of Commerce and/or Interior publish lists of endangered or threatened species. Specifically, Section 7 of the ESA charges federal agencies with aiding in the conservation of listed species (section 7(a)(1)); and requires federal agencies to ensure that their activities will not jeopardize the continued existence of listed species or adversely modify designated critical habitats (section 7(a)(2)). Section 7 of the ESA further requires that federal agencies and departments consult with the Departments of Commerce and/or Interior to minimize the impacts of federal actions on endangered and threatened species. The concurrence of the appropriate agencies is necessary for this determination.

The trustees have performed an analysis of the potential impacts of RRP Program implementation to threatened and endangered species and have determined that RRP Program activities will promote, not jeopardize, the continued existence of listed species and designated critical habitat in Louisiana. This determination, along with a copy of this DPEIS, has been forwarded to the NMFS and the USFWS for their concurrence. See the list of Threatened and Endangered Species in Appendix C.

In addition, the trustees will carefully consider the status and needs of endangered species and designated critical habitat when evaluating site-specific restoration plans. Once a site-specific restoration project is chosen, another Section 7 consultation will be undertaken as necessary.

Essential Fish Habitat (EFH), Section 303(a)(7) of the amended Magnuson-Stevens Act

In Section 303(a)(7) of the amended Magnuson-Stevens Act, Congress directs the NMFS and the eight regional Fishery Management Councils, under the authority of the Secretary of Commerce, to: 1) describe EFH and identify EFH in each fishery management plan; 2) minimize to the extent practicable the adverse impacts of fishing on EFH; and 3) identify other actions to encourage the conservation and enhancement of EFH. Essential Fish Habitat consultation can be combined with existing environmental review procedures, such as those used under the NEPA and the ESA to streamline these requirements. A programmatic evaluation of EFH concerns within the Louisiana region has been performed, and is included in the analysis forwarded to federal trustees in satisfaction of the Section 7 consultation requirements of the ESA (see above).

Additionally, the trustees will carefully consider all potential impacts to EFH when making site-specific restoration project selections, and will seek a determination of consistency with the provisions of the EFH when more site-specific details become available. (See Appendix C)

Fish and Wildlife Coordination Act (FWCA), 16 USC §661 et seq.

FWCA Subsection 2(a) requires that federal agencies consult with the USFWS, the NMFS, and state wildlife agencies for activities that affect, control, or modify waters of any stream or body of water in order to conserve and protect these resources. FWCA Subsection 2(b) requires the USFWS and NMFS to: 1) report its recommendation for wildlife conservation and development, and the expected results; and 2) describe the damage to wildlife attributable to the project and the measures proposed for mitigating or compensating for these damages. This consultation is generally incorporated into the

process of complying with the Section 404 (see Clean Water Act, above) permitting process or other review requirements. In addition, the FWCA provides NMFS and USFWS with grant-making authority which may be useful in disbursing funds for specific restoration projects, or for leveraging restoration projects with additional federal funding.

The fact that the three consulting agencies of the FWCA are represented by the RRP Program trustees means that FWCA compliance will generally be inherent in the Trustee's decision-making process. However, a further assessment of compliance with the FWCA will be made at the time of selection of site-specific restoration projects.

Information Quality Guidelines issued pursuant to Public Law 106-554

Information disseminated by federal agencies to the public after October 1, 2002, is subject to information quality guidelines developed by each agency pursuant to Section 515 of Public Law 106-554 that are intended to ensure and maximize the quality of such information (i.e., the objectivity, utility and integrity of such information). The DPEIS, upon release as a draft, is an information product covered by information quality guidelines established by NOAA and DOI for this purpose. The information contained herein complies with applicable guidelines.

National Environmental Policy Act (NEPA), 42 USC §4321 et seq.

NEPA is the basic national charter for protection of the environment. It requires the government to consider the consequences of major federal actions on humans and the natural environment in order to minimize, where possible, adverse impacts. Equally important, NEPA establishes a process of environmental review and public notification for federal planning and decision-making. A presidentially appointed Council on Environmental Quality (CEQ) has developed specific implementing regulations for NEPA (see "Regulations" below).

The trustees have fully integrated their planning and development with the requirements of NEPA through production of this DPEIS which outlines the anticipated benefits and possible adverse impacts of the RRP Program. Implementation of specific restoration projects, once selected by the trustees, will likely require additional NEPA documentation, probably in the form of project-specific Environmental Assessments.

Moreover, public involvement in the RRP Program's planning process has been even greater than that required by NEPA compliance alone. The trustees have produced a Public Review Document, published various public notices, and held several public meetings in order to maximize the opportunity for public review of and comment on the RRP Program. The trustees envision continued public involvement in the RRP Program, whereby the public will be involved in helping to develop, shape and comment on site-specific restoration planning and implementation.

The National Historic Preservation Act of 1966 (NHPA), 16 USC § 470 et seq.

Section 106 of the NHPA requires federal agencies, or federally funded entities, to consider the impacts of their projects on historic properties. NHPA regulations require that federal agencies take the lead in this process, and outline procedures to allow the Advisory Council on Historic Preservation to comment on any proposed federal action. The trustees have already undertaken the process of surveying the important cultural and historic resources that exist within Louisiana (see Section 5.3.3.8?). At the time of selection of a site-specific restoration project, a further evaluation of possible impacts to historic properties will be made in order to ensure compliance with the NHPA.

Oil Pollution Act of 1990 (OPA), 33 USC §2701 et seq.

The OPA is the main statute detailing procedures for contingency planning for, prevention of, and response to oil spills within the United States. The OPA identifies which governmental departments and authorities have Trustee authority. Additionally, a major goal of OPA is to make the environment and public whole for injury to or loss of natural resources and services as a result of a discharge or substantial threat of a discharge of oil. The trustees have striven to ensure full compliance with all of the dictates of OPA and will coordinate closely with all of the authorities and programs delineated in OPA which relate to oil spill planning, response and restoration.

Rivers and Harbors Act, 33 USC §401 et seq.

The Rivers and Harbors Act regulates development and use of the Nation's navigable waterways. Section 10 of the Act prohibits unauthorized obstruction or alteration of navigable waters and invests the USACE with the authority to regulate discharges of fill and other materials into such waters. Restoration actions that require Section 404 permits (see Clean Water Act, above) are also likely to require permits under Section 10 of the Rivers and Harbors Act -- however, a single permit generally serves for both. Once a site-specific restoration project is chosen, the trustees will ensure full compliance with the Rivers and Harbors Act either through Section 404 permitting procedures or through a separate Section 10 permit, as necessary.

Other Potentially Applicable Federal Laws

- ♦ Americans With Disabilities Act
- ♦ Clean Air Act, 42 USC §7401 et seq.
- ♦ Emergency Wetlands Resources Act, 16 USC §3901
- ♦ Estuarine Protection Act, 16 USC §1221 et seq.
- ♦ Marine Protection, Research, and Sanctuaries Act, 33 USC §1401 et seq.
- ♦ Marine Mammal Protection Act, 16 USC § 1361 et seq.
- ♦ Migratory Bird Treaty Act, 16 USC §703 et seq.

7.2.2 Program Compliance with Federal Regulations

Council on Environmental Quality's (CEQ's) Implementing Regulations, 40 CFR §1500 et seq.

The Presidentially appointed CEQ developed specific implementing regulations for NEPA (see "NEPA" discussion above). These regulations address, among other topics, the overall structure, purpose and format to which Environmental Impact Statements should adhere. The trustees have carefully considered the CEQ implementing regulations in formatting this DPEIS.

NOAA's 1996 Final Rule on Natural Resource Damage Assessments: (61 Fed. Reg. 440 (January 5, 1996) and 15 CFR Part 990.

As discussed in Section 1 of this DPEIS, the federal regulations which govern NRDA in response to incidents can be found at 15 CFR Part 990. Under the authority of the OPA (see above), the U.S. Department of Commerce, acting through the NOAA, issued final regulations which provide an approach that trustees may use when conducting NRDA assessments. Potential establishment of RRP's, and procedures for conducting Regional Restoration Planning and Restoration, are also discussed in these regulations. The trustees have striven to ensure that all Programmatic elements are in full compliance with these NOAA regulations. They will also strive to incorporate the NRDA regulations into site-specific restoration project selection and implementation.

Executive Order 12898 – "Environmental Justice"

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, requires federal agencies to identify and address disproportionately high and adverse human health or environmental impacts of programs, policies, and activities on minority or low-income populations. Where disproportionate adverse impacts on minority and low-income populations are identified, federal agencies are tasked with addressing those impacts. The trustees sought input from “Environmental Justice” interest groups during the formal scoping process by sending copies to their members. The trustees will review the potential for disproportionate adverse impacts on minority and low-income populations at the time of site-specific restoration project selection.

Executive Order 11988 – “Floodplain Management”

Executive Order 11988 is a flood-hazard policy for federal agencies, requiring them to take action to reduce the risks of flood losses; to restore and preserve the natural and beneficial values served by floodplains; and to minimize flood impacts on human safety, health, and welfare. The trustees will comply with Executive Order 11988 by considering the potential impacts of any site-specific project and minimizing, to the farthest extent practicable, any flooding impacts that might result.

Executive Order 11990 – “Protection of Wetlands”

Executive Order 11990 is an overall wetlands policy covering all agencies charged with managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. This Order requires federal agencies to follow avoidance, mitigation, and preservation procedures before proposing new construction in wetlands. It also provides mechanisms for public input into the decision process. Executive Order 11990 can restrict the sale of federal land containing wetlands. However, it does not apply to federal discretionary authority for non-federal projects (other than funding) on non-federal land. The trustees believe that the RRP Program will add greatly to the protection and wetlands. The trustees will additionally comply with Executive Order 11990 by considering all impacts to wetlands when evaluating site-specific restoration projects.

Executive Order 13007 – “Indian Sacred Sites”; and Executive Order 13175 – “Consultation and Coordination with Indian Tribal Governments”

Executive Order 13007 describes federal policy for accommodating sacred Indian sites. This Order requires federal agencies with statutory or administrative responsibility for managing federal lands to: 1) accommodate access to and ceremonial use of Indian sacred sites by Indian religions practitioners; 2) avoid adversely affecting the physical integrity of such sacred sites and; where appropriate, 3) maintain the confidentiality of these sacred sites.

Executive Order 13175 exists to: 1) promote regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications; 2) strengthen the United States government-to-government relationships with Indian tribes; and 3) reduce the imposition of unfounded mandates upon Indian tribes.

A list of tribal treaties throughout the nation can be found at www.envirotext.eh.doe.gov. Federally recognized Indian tribes are natural resource trustees (see Section 2.2.2.4). The trustees will carefully consider the potential impacts of any site-specific restoration project on sacred Indian sites, and the need for consultation and collaboration with Indian tribal officials will be evaluated at the time of project selection.

7.2.3 Program Compliance with State Laws

Management of State Lands L.R.S. 41:1701.1 et seq.

This statute provides authority for the management of state lands to the LDNR and State Lands Office (LA SLO). This statute creates provisions regarding permitting, land reclamation, and usage of land and waterbottoms belonging to the state. The trustees will coordinate with these agencies as necessary regarding the construction of RRP projects on state owned lands and waterbottoms.

Archaeological Finds on State Lands L.R.S. 41:1605

This statute provides for the permitting of all activities that fall within sites of archaeological importance on state lands. No activity shall commence within these sites without obtaining a permit from the LA Dept. of Culture, Recreation and Tourism. The trustees will require the acquisition of such permits where required.

Coastal Wetlands Conservation and Restoration Authority L.R.S. 49:213.1

This statute establishes the restoration authority which is comprised of state agency leaders and is located within the Office of the Governor. Their main purpose is to govern the State Wetlands Trust Fund, as well as provide direction and development of the state's Coastal Vegetated Wetlands Conservation and Restoration Plan. The RRP Program trustees will coordinate with the authority on matters regarding coastal restoration priorities, and will plan restoration activities consistent with overall state strategies.

Coastal Wetlands Conservation and Restoration Plan L.R.S. 49:213.6

The above-mentioned authority is tasked on an annual basis to develop a plan that serves as the state's overall strategy for conducting coastal restoration activities and management of restoration projects. This plan specifies the funding requirements of that year in regards to the state Wetlands Trust Fund. The plan is presented to the public and ultimately, the legislative natural resources committees for ultimate approval. The trustees will review the plan to ensure RRP projects are consistent with the state's overall planning strategies.

Louisiana State and Local Coastal Resources Management Act L.R.S. 49:214 et seq. (also, Louisiana Coastal Resources Program).

This program was established in coordination with state, federal and local advisory and regulatory agencies, as well as Louisiana citizens, to preserve, restore, and enhance Louisiana's coastal resources. This program establishes the guidelines for the Coastal Management and Restoration Divisions of the LDNR to manage and restore coastal resources. Under this statute, the following guidelines are of particular interest to project planning and construction within the coastal zone:

- ◆ **Governor's Advisory Commission on Coastal Restoration and Conservation L.R.S. 49:214.11**

This provides for the creation of an advisory committee to provide input for developing restoration strategies. The commission represents a broad range of people and groups that are critical to the efforts of coastal restoration. The RRP trustees will coordinate with this commission in so that restoration planning will compliment their efforts.

- ◆ **Special Areas, Projects, and Programs L.R.S. 49:214.29**

Special areas are designations by the LDNR that have unique or valuable characteristics requiring special management practices. Special areas may

include beaches, barrier islands, shell deposits, salt domes, or other geological areas of interest both to coastal habitat and infrastructure. The LDNR may set priorities to these areas, specifically for funding available under Section 308 of the Federal Coastal Zone Management Act (PL 92-583 as amended by PL 94-370). The RRP trustees will, to the maximum extent practicable, identify these sites for special consideration as they may pertain to the RRP Program.

- ◆ **Coastal Use Permit (CUP) L.R.S. 49:214.30**

This statute stipulates that no entity shall commence a coastal use of state or local concern without acquiring a coastal use permit through the Coastal Management Division (CMD). Applications for a local use may be submitted to the local government. The permit process is a means to ensure that project activities, especially dredging and filling, are done in accordance with the Louisiana Coastal Resources Program. Like most permits, the CUP provides for a public notice and hearing period. The RRP trustees will require a CUP for all projects being constructed as part of the RRP Program.

- ◆ **Consistency Determination L.R.S. 49:214.32**

This statute provides for the regulation of projects constructed within the coastal zone to be consistent with guidelines established under the Coastal Zone Management Act (16 USC §1451 et seq.) and the Louisiana State and Local Coastal Resources Management Act (L.R.S. 49:214 et seq.). Consistency determinations are provided by the LDNR/CMD. The trustees will ensure that all restoration projects receive a favorable consistency determination, and comply with approved federal, state, and local coastal zone programs.

Title 56 L.R.S. 56

This title outlines the duties and authorities of the LDWF. In addition, the Wildlife and Fisheries Commission is created within the Executive Branch, and is responsible for determining policy and rules governing the wildlife and fisheries populations throughout the state.

- ◆ **Fish Restoration and Management Projects L.R.S. 56:25**

Provides that the State of Louisiana adhere to the provisions of 16 USCA § 777 et seq. which requires the federal government to aid states in fish restoration and management projects. Furthermore, the Louisiana Wildlife and Fisheries Commission is authorized, empowered, and directed to perform such acts as may be necessary to conduct fish restoration projects as defined and stipulated by the act. The trustees will conduct restoration planning in accordance with this act.

- ◆ **Civil Penalties for Restitution of Value of Wildlife and Aquatic Life L.R.S. 56:40 et seq**

This statute provides that the LDWF may impose penalties on parties responsible for injury to or unlawful capture of wildlife and aquatic life. Furthermore, the Louisiana Wildlife and Fisheries Commission shall create procedures for determining the value of said injuries. The trustees will ensure, to the greatest extent practicable, that RRP projects do not inflict injury on surrounding wildlife and aquatic life.

- ◆ **Wildlife Management Areas L.R.S. 56:109**
This statute provides that the LDWF establish, manage, and regulate use of wildlife management areas, preserves, refuges, and sanctuaries. Commercial activities and project construction within these areas are allowed at the consent of the department. The trustees will coordinate with the department regarding any project activities that may fall within these designated areas.
- ◆ **Oysters and Oyster Industry L.R.S. 56:421 et seq.**
This section establishes the Oyster Task Force and regulations of the industry. In addition, this section establishes authority under the LDWF to create a private leasing program within state waterbottoms for the purpose of oyster cultivation. Lessee notification is required for any coastal activity located in close proximity to leased waterbottom. The trustees will coordinate with the LDWF and/or private lessees regarding any RRP project that may impact private or public oyster grounds.
- ◆ **Management of Natural and Scenic River Systems L.R.S. 56:1841 et seq.**
This statute provides for the establishment of the Natural and Scenic Rivers System under the authority of the LDWF. This system is administered for the purposes of preserving, protecting, developing, reclaiming, and enhancing the wilderness qualities, scenic beauties, and ecological diversity of certain free-flowing streams. This statute provides criteria for classifying a scenic river system, and calls for the creation of a management plan for each system. The LDWF is responsible for plan implementation, and for reviewing permit requests to determine consistency with management objectives. The trustees will coordinate with the LDWF in regards to project planning in the vicinity of designated scenic river systems.
- ◆ **Threatened or Endangered Species Conservation L.R.S. 56:1901 et seq.**
This section provides for the LDWF to designate and conserve endangered or threatened species pursuant to the Federal Endangered Species Act (16 USC §1531 et seq.). Species listed under this act are federally and state protected from unlawful sale, trade, or capture. Furthermore, the state has the authority to draft regulations regarding the permitting of such activities that may be harmful to listed species or their habitat. As stated above, the impacts of the RRP on endangered or threatened species have been studied, and are anticipated to benefit these species by restoring and enhancing ecological habitat.

Water Quality Control L.R.S. 30:2074 et seq.

The LDEQ is provided, under this statute, the authority to manage and regulate discharges of waste materials and pollutants into any waters within the state. Furthermore, the LDEQ provides water quality certifications for all activities involving discharge of sediments into state waters. This certification is required prior to construction and is granted in accordance with Section 404 of the federal Clean Water Act. Other water permits may be required for project construction depending upon the nature of the activity. The regulations governing the permitting process through LDEQ are provided under La. Admin. Code 33.I.1701. The trustees will ensure that all appropriate permits are obtained prior to project construction.

7.2.4 Program Compliance with State Regulations

Management of Archaeological and Historical Sites 1 La. Reg. 375

These regulations were created pursuant to L.R.S. 41:1605 regarding the preservation of archaeological sites located on state lands. Permits are required prior to conducting any project activities located within these sites. The trustees will seek such permits where required.

Louisiana Surface Water Quality Standards La. Admin. Code 33.IX, Chapter 11

These regulations establish the procedures that the LDEQ follows regarding the permitting of wastewater discharge into state waters. These follow general permitting guidelines stated under La. Admin. Code 33.I.1701, and are pursuant to L.R.S. 30:2074 et seq. The trustees will ensure that all appropriate permits are obtained prior to project construction.

Louisiana Coastal Resources Program v 43:700 et seq.

As discussed above, these regulations were promulgated pursuant to L.R.S. 49:214 et seq. These regulations provide guidelines for establishing the coastal program, including coastal guidelines, CUP process, mitigation, and consistency review. The RRP trustees will ensure that these state provisions are adhered to and that the appropriate permits and determinations are acquired.

Oyster Lease Relocation Program La. Admin. Code 43:I, 850-859, Subchapter B.

The purpose of this Program is to reduce conflict between public coastal restoration projects and private oyster leases that may be impacted by the projects. The program is voluntary and establishes four options from which the lessee may choose. A matrix determines relocation costs and the lease is reverted back to the State. The trustees will investigate these regulations for its pertinence to the RRP Program, and will consider any conflicts that may arise with private oyster leases as a result of restoration projects.

7.3 Program Coordination and Compatibility with Existing Federal, State, and Joint Federal-State Programs

The Barataria-Terrebonne National Estuary Program (BTNEP)

The Barataria-Terrebonne estuary basins encompass over 4.1 million acres, bounded by the Mississippi River to the east, the Atchafalaya basin to the west, the town of Morganza, Louisiana in the north and the town of Grand Isle, Louisiana to the south. The Barataria-Terrebonne National Estuary Program has identified seven priority issues which affect this important area. They are: changes in water flow; sediment reduction; habitat loss; eutrophication; pathogen contamination; toxic substances; and changes in living resources. The Louisiana RRP Program trustees will evaluate the information provided by BTNEP and consider the priority issues identified when making site-specific restoration implementation decisions.

Caernarvon and Davis Pond Freshwater Diversion Projects

This project was authorized by the Flood Control Act of 1965 and has been in operation since 1991. The Caernarvon Freshwater Diversion is located on the eastern bank of the Mississippi River near the boundary line dividing St. Bernard and Plaquemines Parishes. The project diverts freshwater from the Mississippi River to surrounding estuarine and coastal areas of Breton Sound in an effort to promote historic environmental and ecological conditions. The Davis Pond Freshwater Diversion Project is a \$119.6 million project that was opened in early 2002 and is the world's largest freshwater diversion project. Davis Pond is designed to reintroduce freshwater and the associated nutrients and sediments into the Barataria estuary. The USACE was responsible for construction of these projects and the LDNR is responsible for the ongoing operation. The RRP Program trustees will strive to coordinate their activities with those of the Caernarvon and Davis Pond Freshwater Diversion Projects.

Coast 2050

Coast 2050 is a joint planning initiative of state and federal agencies, and includes members of the Louisiana Wetland Conservation Restoration Authority, the CWPRA Task Force, and the LDNR Coastal Zone Management Authority. This coalition of agencies is currently developing a strategic plan to provide enhanced protection of the state's coastal resources.

Coast 2050 aims to "maximize the diversity and extent of coastal habitats, while minimizing impacts to coastal users". The Coast 2050 initiative also strives to involve fishers, hunters, industry, and other regulatory agencies in its planning structure. The trustees will strive to coordinate with and complement the activities of the Coast 2050 initiative. In an effort to further this complementary relationship, the trustees established the boundaries in the four coastal regions identified in the RRP Program to be the same four regions delineated in the Coast 2050 plan.

Louisiana North American Waterfowl Management Plan

The North American Waterfowl Management Plan was established as a joint venture between the Canadian and United States governments in 1985, with the goal of conserving waterfowl populations through habitat protection and restoration. The government of Mexico also joined the partnership in 1994. This international program is managed in units of "Joint Ventures" at the local level. The Louisiana Joint Venture includes representatives from the LDWF and the USFWS, private landowners, and conservation groups, among others. The RRP Program trustees will strive to coordinate their activities, as much as practicable, with those of the Louisiana North American Waterfowl Management Plan.

Tensas River Basin Initiative

In an effort to restore and conserve the Tensas River Basin, the U.S. Environmental Protection Agency made Section 104(b) and 319 grants to the LDEQ, in order that a watershed model of the system could be developed. In addition, the U.S. Department of Agriculture participated in identifying and developing potential restoration sites in the Tensas River Basin. The Nature Conservancy has also been an important partner in this effort. The RRP Program trustees will strive to coordinate their activities, as much as practicable, with those of the Tensas River Basin Initiative.

Wetlands Reserve Program

The Wetlands Reserve Program is an effort to encourage, and establish formal procedures for, voluntary conservation and restoration of wetlands on privately held properties. This Program is administered by the Natural Resources Conservation Service, a division of the U.S. Department of Agriculture. The Program offers participating landowners three possible options to conserve and protect wetlands on their property: 1) establishment of 30-year conservation easements; 2) establishment of permanent conservation easements; or 3) entry into a restoration cost-share agreement of at least 10-years duration. The RRP Program trustees will strive to coordinate with and complement, to the fullest extent practicable, the goals and efforts of the Wetlands Reserve Program.

Other Potentially Applicable Federal, State and Joint State-Federal Programs

- ◆ Conservation Reserve Program (USDA)
- ◆ Louisiana Comprehensive Historic Preservation Plan
- ◆ Wildlife Habitat Incentives Program (USDA - NRCS)
- ◆ Farm Service Agency Conservation Reserve Program (USDA)
- ◆ Environmental Quality Incentives Program (USDA)

State Only:

- ◆ Atchafalaya Basin Program (LDNR)
- ◆ Small Dredge Program (LDNR)
- ◆ (Parish) Coastal Zone Management Program (LDNR)
- ◆ Louisiana Comprehensive Water Management Plan (LDNR)
- ◆ 2002 Water Quality Inventory Section 305(b) (LDEQ)
- ◆ Nonpoint Source Pollution Program, Water Quality Management Plan (LDEQ)
- ◆ Ozone Alert Action Plan/Ozone Action Program (LDEQ)
- ◆ General Forest Management Plan (LDWF)
- ◆ Louisiana Natural Areas Registry Program (with the Nature Conservancy) (LDWF)
- ◆ Forest Stewardship Program (LDAF)
- ◆ Louisiana Statewide Transportation Plan (LDOTD)
- ◆ Louisiana's Comprehensive Archeological Plan (CRT)

Also:

- ◆ Ducks Unlimited
- ◆ Lake Pontchartrain Basin Foundation
- ◆ The Nature Conservancy
- ◆ Partners for Wildlife

8.0 RRP Program Development Process

This Chapter describes the RRP Program development process. The process included a series of RRP Program Workgroup planning meetings, informal scoping and formal scoping to develop the RRP Program/Draft PEIS.

8.1 RRP Program Workgroup Meetings

The RRP Program Workgroup includes trustee representatives from the following federal and state trustee agencies: NOAA, DOI, LOSCO, LDNR, LDEQ, and LDWF. This workgroup began meeting in January 2000 to develop the RRP Program. Twenty-eight (28) planning meetings were held by the workgroup since that date.

8.2 Informal Scoping

Between October, 2000 and through the Spring, 2001, more than 15 informal scoping meetings and presentations were made to regulatory agencies, environmental and conservation groups, parishes, landowners, industry and the public. The purpose of these scoping meetings and presentations was to describe the concepts that form the various components of the RRP Program and to request input and comments from the public and effected parties on these Program components. The input provided was used to assist in the finalization of a draft proposal that was entitled, "Louisiana's Proposed Regional Restoration Planning Program, Public Review Document, June, 2001" (PRD). This document described the:

- ♦ Purpose and need for the RRP Program;
- ♦ Proposed RRP Program, including the concepts for RRP's (and boundaries), Potentially Injured Resources/Services, Restoration Types; and Settlement Alternatives; and
- ♦ Benefits of the proposed RRP Program.

8.3 Formal Scoping

Formal scoping for the RRP program and EIS began on June 19, 2001 with the publication and distribution of the PRD and publication of the Notice of Intent (NOI) to develop a PEIS. As part of the NOI, an Administrative Record (AR) was established. The AR is maintained at NOAA in Silver Spring, MD and duplicate copies are maintained at LOSCO, Baton Rouge, LA and on a website at <http://www.darp.noaa.gov>. Formal solicitation for appropriate restoration projects for potential inclusion in the RRP's began on that date also.

As part of the formal scoping process, over 1000 copies of the PRD were distributed to the public and affected parties on or before July 2, 2001. Six (6) public meeting were held through out the State of Louisiana on the following dates, at the following locations:

July 17, 2001
State Office Building
1525 Fairfield Avenue, Room 205
Shreveport, Louisiana

July 18, 2001
Monroe City Hall, Council Chamber
400 Lea Joyner Expressway
Monroe, Louisiana

July 19, 2001

Louisiana Convention Centre
2225 N. MacArthur Drive
Alexandria, Louisiana

July 24, 2001
Joseph S. Yenni Bldg.
1221 Elmwood Park Blvd.
Jefferson Parish Council Chamber
Jefferson/New Orleans, Louisiana

July 25, 2001
Burton Business Center
McNeese State University
350 Lawton Drive
Lake Charles, Louisiana

July 26, 2001
Louisiana Department of Wildlife & Fisheries
2000 Quail Drive, 1st Floor
Louisiana Room
Baton Rouge, Louisiana

All public comments provided at the public meeting or sent are summarized in the AR.

8.4 Development of the Draft PEIS

Based on input from the public and further consideration by the RRP Program Workgroup, the RRP Program/Draft PEIS was completed for public review pursuant to NEPA.

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11.0 List of Agencies

Office of the Governor

Louisiana Oil Spill Coordinator's Office (LOSCO)

United States Department of Commerce (USDOC)

National Oceanic and Atmospheric Administration (NOAA)

United States Department of the Interior (USDOI)

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