2002 ROUGE RIVER MYSTERY SPILL ASSESSMENT CLAIM

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONT'D)

ATTACHMENTS

LIST OF TABLES

ACRONYMS

Acronym	Definition
AO	Authorized Official
ASA	Applied Science Associates
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
COTP	Commander Patrick Garrity, Captain of the Port
DRP/EA	Draft Restoration Plan/Environmental Assessment
ELFO	East Lansing Field Office
FBI	Federal Bureau of Investigation
FOSC	Federal On-Scene Coordinator
FPN	Federal Project Number
FRP/EA	Final Restoration Plan/Environmental Assessment
GIS	Geographical Information System
LAT	Lead Administrative Trustee
LC_{50}	Toxicity data (Lethal Concentration resulting in 50% mortality rate)
LEMP	Lake Erie Metropark
LTCI	Lighthouse Technical Consultants, Incorporated
MBTA	Migratory Bird Treaty Act
MDAG	Michigan Department of Attorney General
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MSO	Marine Safety Office
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRD	Natural Resource Damage
NRDA	Natural Resource Damage Assessment
NRDAM/GLE	NRDA Model for Great Lakes Environments
OPA	Oil Pollution Act of 1990
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Response Organization
PAH	Polycyclic Aromatic Hydrocarbons
RP	Responsible Party
SIMAP	Spill Impact Model Analysis Package
SOL	Statute of Limitations
U.S. EPA	United States Environmental Protection Agency
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service

1.0 INTRODUCTION

1.1 Assessment Claim

This document is a claim for prospective (upfront) funding of a natural resource damage assessment (NRDA) for the April 2002 Rouge River Mystery Spill (henceforth, the "Spill"). The goals of this NRDA are to:

1. Determine the nature, degree and extent (both spatial and temporal) of injuries to natural resources resulting from the April 2002 unlawful release of petroleum substances into the Rouge and Detroit Rivers (just south of Detroit, Michigan); and

2. Develop a Final Restoration Plan/Environmental Assessment (FRP/EA) that effectively restores, rehabilitates, replaces, or acquires the equivalent natural resources to compensate for injured natural resources resulting from the Spill. [The FRP/EA developed as a part of this assessment effort is intended to be the subject of a subsequent restoration claim to be submitted to National Pollution Funds Center (NPFC) in the future, assuming no responsible party (RP) is found.]

The claimants for this assessment claim include the United States Fish and Wildlife Service (USFWS), state of Michigan Department of Attorney General (MDAG), Michigan Department of Environmental Quality (MDEQ), and Michigan Department of Natural Resources (MDNR). The Claimants, as trustees of natural resources injured by the spill, are pleased to submit this assessment claim to the National Pollution Funds Center's Natural Resource Damage (NRD) Claims Division for payment by the Oil Spill Liability Trust Fund (OSLTF).

The USFWS, as Lead Administrative Trustee (LAT), looks forward to working productively with NPFC to ensure that any and all claim questions and issues are appropriately addressed in order to expedite funding of this important assessment effort.

Lighthouse Technical Consultants, Incorporated (LTCI), prepared this assessment plan/claim for the natural resource trustees under the direction of the USFWS. LTCI, and its nationally-focused consortium of experts, is a leading environmental consulting firm specializing in natural resource damage assessments, oil spill modeling, injury assessments, restoration planning, and successful natural resource damage claim development and implementation. LTCI welcomes the opportunity to assist USFWS and the state of Michigan on assessment claim implementation. For additional information regarding the preparation of this claim and LTCI's NRD claim support services, please contact:

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1.2 Assessment Claim Contents

This assessment claim addresses information requirements described in the May 7, 2002 *Natural Resource Damage Funding Guidelines* developed by the NPFC NRD Claims Division (available on the NPFC website at: http://www.uscg.mil/hq/npfc/NRD/nrd_docs.htm). Claimants have used available information to address all assessment claim information requirements found in the *Guidelines*.

To facilitate clarity and comprehensiveness within this claim, some of the information provided is not in the same order as assessment claim information requirements listed in the *Guidelines* (e.g., cost documentation has its own chapter within this claim rather than part of "Claim Information" as it appears in the *Guidelines*).

The contents of this claim are as follows:

- **Executive Summary** – Summarizes the Spill incident and major components of the assessment claim;
- **Chapter 1** – Introduces the claim and describes claim contents.
- **Chapter 2** – Provides major claim information and proposed assessment procedures.
- **Chapter 3** – Describes how the 15 CFR 990 damage assessment regulations guide the proposed NRDA.
- **Chapter 4** – Introduces and describes roles of senior federal and state personnel managing the NRDA, and contracted NRDA experts to assist in the assessments implementation.
- **Chapter 5** – Provides a schedule of proposed assessment activities.
- **Chapter 6** – Details the financial resources required to execute the proposed assessment.
- **Chapter 7** – Provides requisite certifications and signatures for the claim.
- **Chapter 8** – Provides references to literature cited in the claim document.

2.0 ASSESSMENT CLAIM OVERVIEW

2.1 Claim Information

2.1.1 Claimant Information

Lead Administrative Trustee: USFWS

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Trustee designation documentation can be found in Attachment 1.0 to this claim document.

2.1.2 Incident Information

2.1.2.1 Known Incident Information

Following a heavy rain event, a mixture of (approximately 30%) diesel fuel and (approximately 70%) lube waste oil was observed the morning of April 9, 2002, in the Rouge River, south of Detroit, Michigan. The Rouge River is a tributary of the Detroit River, which flows from Lake Saint Clair southward to Lake Erie. This oil swept down the Rouge River into the Detroit River and into Lake Erie. An image of the area of impact from this incident can be found at the following Web Link: http://www.freep.com/pdf/2004/04/05/oilspill.pdf .

Since the RP was not identified (See Section 2.1.3 below.), the United States Environmental Protection Agency (U.S. EPA) and the United States Coast Guard (USCG) met and decided that USCG should be the Federal On-Scene Coordinator (FOSC) for this spill. Commander Patrick Garrity, Captain of the Port (COTP) Detroit, acted as FOSC. Initial actions in response to this spill included:

- FOSC opened a Federal Project Number (FPN) under the OSLTF (FPN: G02AAA from 4/10/2002 – 4/19/2002; after 4/19/2002 the FPN was E02503).

- Marine Pollution Control was hired by FOSC as the Oil Spill Response Organization (OSRO).

- The Unified Command was assembled, consisting of agency representatives from USFWS, U.S. EPA, National Oceanic and Atmospheric Administration (NOAA), Michigan State Police, MDEQ, and Michigan Department of Fish and Wildlife (MDFW).

- USCG personnel from the Atlantic and Gulf Strike Teams, Marine Safety Office (MSO) Toledo, MSO Cleveland, MSO Milwaukee and Ninth District Staff supplemented the crew of MSO Detroit. Coast Guard Group Detroit and USCG Air Station Detroit also provided assets and personnel to assist the FOSC.

- USCG personnel provided updates to state and local community leaders regarding spill response activities.

- In an effort to identify a RP, ships transiting the Detroit River 24 hours before the spill was observed were identified, boarded and oil samples were collected. No chemical match was found.

- Shortly after observing the spill, River Rouge was closed to all vessel traffic. River was reopened to commercial traffic on Friday, April 19, at 1200, but only between the hours of 0700-1900. River Rouge was opened to 24-hour continuous operations on May 3, 2002.

- A series of collection and containment booms were set across River Rouge mouth.

- Alerted Canada of the spill and exchanged Liaison Officers from each country to monitor spill response activities. Invoked CANUSLAK in accordance with the "Boundary Waters Treaty" and the" Great Lakes Water Quality Agreement". In accordance with the Treaty and follow-on agreements, the United States is paying for all Canadian clean-up costs since the oil emanated from the United States (Detroit/Rouge River Oil Spill Unified Command, 2002).

In the late evening of April 12, 2002, or the early morning of April 13th, another oil spill occurred after a heavy rainfall. It appeared the oil came from one of the combined sewer outfalls on the River Rouge (Baby Creek Outfall). This release was trapped in the River Rouge due to booming at the mouth, preventing further releases oil into the Detroit River. This spill was significantly greater than the first release. The following actions occurred in response to this spill:

- All free-floating oil was corralled into containment boom and then removed by vacuum truck.
- A crane removed all oiled debris from the Rouge.
- The Rouge shoreline was cleaned by high volume deluge system.
- A criminal investigation was launched by the Southeast Michigan Environmental Crimes Task Force that consists of special agents from the Federal Bureau of Investigations (FBI), USCG, U.S. EPA, MDEQ, and United States Customs Service under the direction of the Assistant United States Attorney in Detroit.

- Numerous oil samples were taken from various locations including from facilities and inside sewer lines. These samples were sent to the USCG Marine Safety Laboratory (formerly, COIL) in Groton (CT) to provide a means to match the oil in the River with the oil from one of the sample location
- Laboratory analysis confirmed the oil spilled during the first release was the same as the oil spilled during the second release.

2.1.2.2 Known Natural Resource Impacts

Oil released during the first spill impacted approximately 17 miles of shoreline in the United States and about 16 kilometers (almost 10 miles) on the Canadian side of the Detroit River. Oil dispersed from much of the impacted shoreline by the second or third day of the spill. Prompt booming of several coastal marshes (Humbug, Point Mouillee) prevented severe impacts in those locations, although approximately 1 mile of shoreline at the Lake Erie Metropark (LEMP) was badly oiled (see impact area at the following web link: http://www.freep.com/pdf/2004/04/05/oilspill.pdf). Oil persisted at LEMP and crews were dispatched on April 18, 2002, to manually cut and remove oiled marsh vegetation and remove oiled debris from shorelines at this park.

Over the course of the spill, oiled birds and reptiles were observed. USFWS retrieved 9 dead birds under the Migratory Bird Treaty Act (MBTA) and had additional reports of 2 more dead for a total of 11 dead. Three live birds protected by MBTA were rehabilitated and released. An additional 44 birds with varying degrees of oiling were observed and catalogued. USFWS strived to eliminate double counting through detailed interviews as to time and location of observations and included only the maximum observed number of any species in a specific location that were clearly described as oiled. Species of birds impacted included ruddy ducks, buffleheads, mergansers, scaup, coots, mallards, and Canada geese. The total number of birds protected by MBTA on the United States side of the spill that were either dead, rehabilitated or observed oiled was 58 (Williams 2002a).

Other wildlife directly observed to be impacted on the United States side included one dead and two rehabilitated turtles, 12 observed oiled but not captured white ducks and geese, and four rehabilitated and released white ducks and geese.

Gary McCullough (Canadian Wildlife Service) reported observations of impacted waterfowl on the Canadian side of the spill. He reported one ruddy duck that died after capture, one dead oiled Canada goose, and possibly 12 additional dead, oiled Canada geese that had been reported to him. He also reported observing live, oiled waterfowl that were not retrieved: nine Canada geese, one duck, and one mute swan. Two scaup were rehabilitated in Canada. The total number of birds from the Canadian side that would be protected by MBTA that were either dead, rehabilitated, or observed oiled was 27. Additionally, Laird Shutt (Environment Canada) reported to USFWS that he observed gulls on Fighting Island that showed a lack of motor control in wings and legs at the time when oil residue was present on vegetation along the island (Williams 2002a).

Williams (2002a) notes that the number of reportedly impacted birds and reptiles here significantly underestimate the actual number of birds and reptiles impacted. Specifically, many dead birds were likely not retrieved because of a number of factors commonly observed at other spills:

- They died and sank or were washed away prior to observation by wildlife response personnel;
- Impacted animals hid before dying;
- Wildlife response personnel were unable to search all shorelines even once;
- Wildlife response personnel did not initiate surveys until several days after the start of the spill;
- Response personnel were unable to catch all observed oiled birds (e.g., on one occasion 12 oiled ruddy ducks had come ashore and were preening, but fled to the water immediately as biologists approached, and, likely did not survive); and
- Losses due to scavenging (e.g., one of the carcasses found was partially eaten and one of the carcasses reported to wildlife response personnel disappeared before it could be retrieved, and may have been removed by a scavenger).

Accordingly, proposed injury assessment efforts for impacted animals shall employ appropriate methodologies to reconcile these underestimates in order to quantify actual losses (e.g., through use of modeling and multiplier approaches as appropriate, see Sections 2.3.1, Proposed Assessment Methods, and Section 2.3.6, Quantification of Injury, below).

In addition to bird and reptile impacts, it is likely that snakes and amphibians were impacted directly by the spill, but were not discovered by field surveys.

No fish were reported dead as a result of the oil spills. MDNR fisheries biologists state that northern pike had already spawned in shallow wetlands impacted by the spill. Accordingly, MDNR is concerned that the oil may have injured eggs or fry. Likewise, minnows and other small fish dependent on the shallow marshes that were covered with oil may have been impacted, but not readily observed. Lake sturgeon that had entered the Detroit River prior to spawning left the area immediately following the spill and later returned, but it is unknown if this movement was related to the spill or harmed their spawning.

Accordingly, additional injury assessment work is necessary to determine and quantify impacts, as appropriate, to water column organisms.

No state or federally listed threatened or endangered species are conclusively known to have been impacted by the spill at this time, but adverse effects to them may have occurred. For example, one pair of bald eagles was nesting in the area of the spill in the United States, and one large raptor was observed that may have been oiled, but visibility was poor and the bird was not conclusively determined to be either an eagle or significantly oiled. Additionally, the eastern fox snake, listed as endangered by the state of Michigan, is known to inhabit impacted marshes, but

no oiled individuals were observed. The American lotus, a plant listed as threatened by the state of Michigan, is common in the area of LEMP. One of the most heavily oiled portions of the shoreline contained numerous seedpods from the previous year, which were removed as part of shoreline cleaning operations. Some reproduction by seed may have been lost, but the lotus plants themselves had not yet emerged at the time of the spill and were not oiled (Williams 2002a).

Losses to the public's use of natural resources resulting from this incident included (but is not limited to):

- Closures to the Detroit and Rouge Rivers to boating traffic following the incident;
- Reduced or lost use of LEMP;
- Reduced or lost use of Wyandote National Wildlife Refuge;
- Loss of shoreline fishing opportunity; and
- Cancellation of fishing tournament regional significance.

Injury assessment strategies are presented in Section 2.3 that addresses these potential injuries categories.

2.1.2.3 Incident Information to be Determined

Certain incident-specific information associated with the April 2002 River Rouge/Detroit River oil spill remains to be determined, specifically:

- RP for this incident;
- Volume of the petroleum products released during the spills; and
- Spill source and release conditions.

Issues related to identifying the RP for this incident are discussed in Section 2.1.3, Responsible Party Information, below. Issues related to past estimates of spill volume and spill source/release conditions are presented below in this section.

According to the NOAA Scientific Support Coordinator, LCDR Jason Maddox, following the first spill (i.e., as of April 10, 2002), an estimated 34,090.8 gallons of petroleum were released (28,409 gallons on the United States side, 5681.8 gallons on the Canadian side). Following the second release, the USCG estimated that the entire spill volume (i.e., cumulative volume from both releases) to be between 55,000 and 65,000 gallons (Williams 2002b), making the release volume for the second incident between 20,909 – 30,909 gallons. However, contractors for the U.S. EPA calculate that the cumulative spill volume for both incidents was at least 255,544 gallons (McDiarmid Jr. 2004). Given this significant range in estimated release volume (55,000 gallons – 255,544 gallons), the injury assessment for this damage assessment shall determine the "most reasonable" spill estimate volume from this incident. This is described further in Section 2.3 below.

According to U.S. EPA, the release point of this spill was a sewer pipe outfall called Baby Creek just upstream from the I-75 Bridge on the banks of the Rouge River. It is believed by U.S. EPA that heavy rainwaters washed oil from the Baby Creek Outfall into the Rouge River during both oil releases. In fact, during the spill investigation an additional 771,000 gallons of oily water – with an oil fingerprint signature close to that found in the river following the release – was found in a sewer line leading to the Baby Creek Outfall drain (McDiarmid Jr. 2004). This outfall connects to hundreds of miles of storm sewers used by hundreds of industries and can be accessed through numerous manholes. However, according to the Detroit Free Press (McDiarmid Jr. 2004), the state of Michigan does not necessarily share U.S. EPA's certitude regarding the oil release point in the Rouge River. For example, the state points to a report prepared by the Detroit Water and Sewerage Department that at least 15 oil samples collected from three different companies also matched the spilled oil and other promising leads were not followed up after the spill (McDiarmid Jr. 2004). Also, the state has not ruled out the possibility that the releases occurred from a vessel, a theory ruled out early by federal investigators.

Further, though the USCG reports that the spill occurred on April 8 or 9, 2002, MDEQ believes that the spill began earlier on April 2, 2002 (McDiarmid Jr. 2004).

Spill release location and duration will have marked impact on injury determination and quantification studies conducted as part of this proposed injury assessment. Accordingly, further research into spill incident specifics will be conducted as part of the assessment studies proposed in this claim. Additional information regarding this assessment work is found in Section 2.3 of this claim.

2.1.3 Responsible Party Information

The U.S. EPA, MDEQ, USCG, and the United States Attorney's Office investigated the April 2002 Rouge River Mystery Spill for over 2 years following the spill. Intensive investigation of all leads and possible sources for the spill did not develop sufficient evidence to charge a RP or parties, and no party has acknowledged responsibility. Having exhausted all known leads, the investigation has closed pending receipt of new information. In fact, in a July 14, 2005, email from Kris Dighe, Assistant Section Chief for the United States Department of Justice to Mark Matus, Michigan Assistant Attorney General, Kris Dighe states that "the United States Department of Justice has closed its investigation into the Rouge River Oil Spill of April 2002." A copy of this email has been included in Attachment 2.0 to this claim. According to state and federal trustees, if credible new information were received, the investigation would resume.

Because no RP has been found, trustees are submitting the present upfront assessment claim to the USCG NPFC for payment. In fact, the rationale for submitting this claim to NPFC due to its current "mystery spill" status is corroborated in a September 10, 2004, email sent by Mr. Chris Abrams, Chief of the NPFC NRD Claims Division (See Attachment 2.0.) to Dr. Lisa Williams, Contaminants Specialist at the USFWS East Lansing Field Office. According to Mr. Abrams, if the ongoing grand jury investigation does identify a RP prior to claim submission, then the claim

should go first to the RP for payment. If after 90 days, the claim is not paid, then it can be submitted to NPFC for adjudication and payment, as appropriate.

2.1.4 Claim Elements and Amount of Costs and Damages Claimed

This document is a claim for upfront funding necessary to conduct a natural resource damage assessment for the April 2002 Rouge River Mystery Oil Spill incident. This claim includes the background, rationale, description and corresponding costs for proposed assessment procedures.

The total claimed cost for this upfront assessment claim is_____. A detailed breakdown of the costs claimed can be found in Section 6.0 of this claim (Cost Documentation).

It is anticipated that this proposed assessment will culminate in the development of a FRP/EA. Further, once promulgated, the FRP/EA shall serve as the basis for a subsequent restoration-based natural resource damage claim for this incident.

2.1.5 Statute of Limitations

The Statute of Limitations (SOL) under OPA for the filing of NRD claims with the NPFC is the later of the following:

1. Three (3) years from the date the injury and connection with the discharge was reasonably discoverable with due care; or

2. Three (3) years from the date of completion of the natural resource damage assessment under the damage assessment regulations published by the NOAA at 15 CFR Part 990.

In the case of the present upfront assessment claim, claimants will use the latter assessment strategy, i.e., use of the damage assessment regulations at 15 CFR Part 990. Use of these damage assessment regulations confers a less stringent time constraint with respects to completing the NRDA.

Specifically, in this claim, no NRDA has been initiated for the Rouge River Mystery Oil Spill. Accordingly, it is presumed by Claimants that the 3-year statute of limitations will not begin tolling until the proposed assessment is completed. NRDA completion is defined in this context as the date of promulgation of the FRP/EA.

2.2 Adherence to Damage Assessment Regulations

The Claimant (on behalf of self and other involved trustees) certifies that the NRDA will be conducted using the Damage Assessment Regulations at 15 CFR Part 990. Full certifications for this claim are found in Section 7.2.

2.3 Proposed Assessment Procedures

2.3.1 Proposed Assessment Methods

Given the period of time that has passed since the incident (over 2.5 years) and the fact that a number of incident specific facts regarding the Rouge River Mystery Spill remain unknown, it is not reasonable to undertake aggressive field or laboratory studies to determine the nature, degree and extent of injuries to biological resources resulting from this incident (as briefly introduced in Section 2.1.2.2). Further, since a comprehensive assessment of injuries has not been conducted, literature-based studies may only address portions of the proposed NRDA. Consequently, a comprehensive and cost-effective approach to conducting biological injury assessment studies for this incident is to use oil spill impact modeling. Due to the fact that several unknowns exist regarding this incident, upfront research is required to develop reasonable and defensible modeling inputs.

Losses to public use, described briefly in Section 2.1.2.2, shall also be determined and quantified.

Accordingly, assessment procedures proposed for the Rouge River Mystery Spill NRDA include the following:

- Research and review information on the incident;
- Develop input data for oil spill impact modeling;
- Conduct oil spill impact modeling; and
- Conduct a lost public (recreational) use assessment.

Each of these proposed assessment activities are described below.

Research and Review Incident Information: As described in Section 2.1.2.3 of this document, incident-specific information that may have a material affect on the nature, degree and spatial/temporal extent of natural resource injuries, hence requiring additional investigation. This information includes (but is not limited to) the following:

- Volume of spill;
- Chemical analysis of spilled oils;
- Release conditions, including:
  - Release location;
  - Date of first release; and
  - Duration of releases (i.e., instantaneous versus continuous).

As discussed above, incident-specific data have been the subject of considerable debate. Working with federal, state, and Dominion of Canada representatives involved with the incident, and

collected spill response information, the trustees shall develop a reasonable and defensible set of release circumstances with which to base injury impact modeling studies.

The work product for this effort will be a report that provides the methods, assumption, results and discussion of Rouge River Mystery Spill incident specific information.

Develop Oil Spill Impact Modeling Input Data: In addition to the collection and derivation of defensible incident-specific data, environmental and biological data sets must be compiled for modeling spill impacts. Specifically, trustees will develop habitat data using available databases for the areas of impact within the Rouge and Detroit Rivers. River current and riverbed depth data, as well as biological assemblage databases, also will be collected for modeling input.

Work products from this task will be described and compiled in the modeling report described below.

Conduct Oil Spill Impact Modeling: Trustees propose the use of an oil spill fate and effects model to screen, determine and quantify injuries to natural resources. Specifically, trustees propose using the Spill Impact Model Analysis Package (SIMAP) model developed by Applied Science Associates (ASA), which is a revision of the Type A model (i.e., the NRDA Model for Great Lakes Environments, NRDAM/GLE) that allows the use of site-specific data and modifications. SIMAP has been successfully used to quantify invertebrate, fish, bird, reptile and mammal natural resource injuries from dozens of past oil spills, and is considered the current industry standard for modeling biological natural resource damages. For example, SIMAP was used successfully to model natural resource injuries resulting from the August 2000 Fort Lauderdale Mystery Spill. Federal and state trustees used this application of SIMAP as substantive supporting documentation for an NRD claim that was submitted to the NPFC and paid in full.

SIMAP provides detailed predictions of the three-dimensional trajectory, fate, impacts and biological effects of spilled oil. These fates and effects of the oil releases are predicted by SIMAP through the interactive use of a number of submodels, including:

- Physical fates model;
- Biological exposure and effects model;
- Stochastic model (to predict frequency and range of concentrations and probability of exceeding threshold concentrations of concern);
- Interactive Geographic Information System (GIS); and
- Environmental, oil and biological databases.

SIMAP is proposed for use in modeling Rouge River Mystery Spill fate and effects over the NRDAM/GLE for a number of reasons, including:

- The spills may have been released from a subsurface outfall. The Type A model cannot simulate a subsurface release. However, SIMAP can be readily modified to address such subsurface releases.

- SIMAP includes algorithms in its code that are needed for restoration scaling. The Type A model only outputs catch loss of fish and invertebrates. SIMAP automatically calculates:
  - The total biomass loss of all age classes of fish and invertebrates; and
  - The lost future growth of those organisms had they not been killed (i.e., production foregone).

- The toxicity data (LC_{50}) can be readily modeled in SIMAP to reflect updated information.

- The user interface tools of SIMAP are much more "user-friendly", significantly reducing modeling labor costs relative to the use of the Type A model.

Trustees shall perform modeling of the trajectory of surface oil, concentrations of toxic components (polyaromatic hydrocarbons, PAHs) in water and sediments over time, and biological injuries resulting from the spill using the SIMAP model. Specific modeling tasks include the following:

- Develop toxicity data (LC_{50}) for source oil based on PAH content;

- Incorporate site-specific wildlife data;

- Develop current data file based on on-scene observations (as available) and literature information;

- Run the oil trajectory and fates model, varying unknown parameters to evaluate sensitivity and calibrate model to observed oil locations, as available;

- Run the biological model to show best estimate and range of injuries resulting from acute toxic exposure (i.e., minimum, mean and maximum LC_{50});

- Draft and final reports will be prepared containing incident-specific, environmental, physical, biological, chemical, and toxicological data inputs, assumptions, and outputs of model runs; and

- Injuries will be quantified as numbers of biomass lost via acute toxicity and production foregone (i.e., lost future growth).

The resulting work products of these proposed modeling procedures would be a report that quantifies the nature, degree and extent of modeled injuries resulting from the Rouge River Mystery Spill.

Conduct an Assessment of Lost Public Use: Closures of waterfront recreational areas and activities, as outlined in Section 2.1.2.2 and Table 2-1, due to the spills shall be assessed through documentation review, interviews with impacted parties (e.g., harbormasters, park personnel, refuge personnel, and recreational fishing interests such as bait and tackle retailers). Lost and diminished quality of public use resulting from this lost use survey effort shall be scaled using a benefit's transfer approach.

The work product from this lost public use analysis will be a report that details the nature, degree and spatial/temporal extent of public use losses resulting from the Rouge River Mystery Spill, including a monetized valuation of these losses.

2.3.2 Use of Derived Assessment Data

The following summarizes intended uses of data collected and analyzed during Rouge River Mystery Spill injury assessment activities:

- Incident specific information collected (i.e., spill volume, chemical constituents, and release conditions) will be used as data inputs to the SIMAP oil spill impacts model;
- Environmental, physical, biological, chemical and toxicological data collected also will be used as data inputs to the SIMAP oil spill impacts model;
- SIMAP Model outputs (quantified injuries as numbers or biomass lost via acute toxicity and production foregone) shall be directly used in scaling restoration projects to compensate for biological losses resulting from the incident, likely using resource-to-resource and service-to-service scaling approaches;
- Lost public use (monetized by lost or diminished recreational activity) shall be used in scaling restoration projects identified to compensate for the nature, degree and extent of lost recreational activities, likely using a value to cost scaling approach.

2.3.3 Quality Assurance and Chain of Custody

Data generating activities shall be audited. It is anticipated that these audits shall include:

- System audits conducted to qualitatively evaluate operational details; and
- Performance audits conducted to evaluate data quality, adequacy of documentation, and technical performance characteristics.

Field-collected samples (such as petroleum samples collected during response operations) shall be checked for chain of custody. Laboratories having analyzed oil samples shall demonstrate conformance to Good Laboratory Practice Standards (GLPS), and/or other standards during period of analysis, as appropriate.

2.3.4 Nature and Scope of of Injured Resources

Based on initial surveys conducted during the response phase of the incident, a number of injuries resulting from the oil releases were observed. These injuries are briefly described in Section 2.1.2.2 (Known Natural Resource Impacts) of this document and summarized in Table 2-1 below.

Table 2-1: Potential Nature and Scope of Rouge River Mystery Spill Natural Resource Injuries

Injury Class	Nature of Injuries
Plants	Shoreline vegetation at time of spill was dormant/senescent (i.e., pre-green up vegetative state). Much of this vegetation was moderately to heavily oil-contaminated from incident. Emergent oiled cattails, a type of red winged blackbird habitat, were removed to prevent continuing oil contamination. Similarly, the American lotus (*Nelumbo lutea*), a state listed threatened plant species, was oiled. Removal of oiled lotus seedpods to prevent continuing contamination resulted in reduced seed propagation for this threatened species.
Invertebrates	Northern Riffleshell (*Epioblasma torulosa*), a member of the pearly mussel family, is a federally and state listed endangered species. This mussel species exists in the Detroit River within the area of impact. Additionally, other invertebrates that are important forage base for fish and birds – such as worms and mayflies may have been harmed and should be investigated.
Fish	Northern pike, an important regional gamefish, are believed to have spawned at the time of the incident. Further, possible spawning by a number of additional species may have been coincident with the spill and require further investigation: sturgeon (a state threatened species), walleye pike, yellow perch, etc.
Reptiles and Amphibians	Impacted coastal wetlands along the Detroit River provide habitats for rare species of reptiles including the Eastern fox snake, Eastern massasauga rattlesnake, queen snake, spotted turtle Eastern spiny soft-shell turtle, bullfrogs and chorus frogs. Post-incident response activities did confirm one dead turtle on the United States side of the Detroit River. However, due to significant vulnerabilities to petroleum exposure and injury for amphibians and reptiles, it is reasonable that additional impacts occurred over observed injuries. Given difficulties in accessing the areas impacted following the incident, it is feasible that moribund or dead reptiles and amphibians were not observed; further losses of injured species due to predation or river currents may have occurred. Accordingly, additional investigation regarding specific distribution and impacts is indicated in this assessment.

Injury Class	Nature of Injuries
Birds	USFWS retrieved 9 dead birds under the MBTA and had additional reports of 2 more dead for a total of 11 dead. Three live birds protected by MBTA were rehabilitated and released. An additional 44 birds with varying degrees of oiling were observed and catalogued. Species of birds impacted included ruddy ducks, buffleheads, mergansers, scaup, coots, mallards, and Canada geese. The total number of birds protected by MBTA on the United States side of the spill that were either dead, rehabilitated or observed oiled was 58 (Williams, 2002a).
Lost Public Use	Losses to the public's use of natural resources resulting from this incident included (but is not limited to): Closures to the Detroit and Rouge Rivers to boating traffic following the incident; Reduced or lost use of Lake Erie Metro Park (LEMP); Reduced or lost use of Wyandote National Wildlife Refuge; Loss of shoreline fishing opportunity; and Cancellation of fishing tournament regional significance.

The proposed injury assessment seeks to further investigate the nature, degree and extent of the potential injury categories in Table 2-1. Collectively, these injury categories comprise the preliminary scope of injury assessment activities for the Rouge River Mystery Spill NRDA. Additional discussion with resource experts, literature review and screening of impacts using SIMAP oil spill modeling software shall be used by trustees to finalize the scope and nature of natural resource injuries.

2.3.5 Determination of Injury

As described in Section 2.3.1 above, injuries to biological resources will be determined (i.e., linked to the spill incident) using SIMAP oil spill modeling software in combination with expert modeling data interpretation and reporting. SIMAP uses incident specific information, oil chemistry and toxicity, and local environmental and biological databases to establish a direct link between the source, pathway, (biological) receptors and manifested injurious effects (i.e., through exceeding doses of PAH that cause acute toxicity to organisms.

Additional specific information regarding SIMAP's oil spill fate and effects modeling capability can be found at the following web link: http://www.appsci.com/simap/simap.htm .

Public use injuries will be determined through documentation review and interviews to determine causation of public use losses.

2.3.6 Quantification of Injury

As described in Section 2.3.1 above, injuries to biological resources resulting from the Rouge River Mystery Spill will be quantified using SIMAP oil spill modeling software, local populations of biological assemblages of interest and expert modeling data interpretation and reporting.

Biological injury is calculated by SIMAP with the following data outputs:

- The total biomass loss of all age classes of fish and invertebrates;
- The lost future growth of those organisms had they not been killed (i.e., production foregone); and
- The total biomass of wildlife (mainly bird) injuries experienced due to the spill.

The spatial extent of injury is determined in SIMAP via the identification of discreet locations where injury occurs. This is recorded and reported using the ARCGIS function within SIMAP.

From a temporal perspective, the biological effects model computes reduction of fish and shellfish population size and catch in the present and future years using standard fisheries models. The injury includes losses due to mortality of adults, juveniles and young-of-the-year due to the spill.

Wildlife losses due to the spill are calculated using accepted algorithms that integrate population of wildlife exposed to spilled oil with risk of mortality upon exposure. Anticipated future losses due to mortalities at the time of the spill are modeled using expected biomass losses due to future growth. Alternative lines of evidence that address extent of wildlife mortalities such as using a multiplier approach (i.e., relative to collected/observed mortalities at the time of the Rouge River mystery spill) shall be considered, as appropriate.

Additional specific information regarding SIMAP's oil spill fate and effects modeling capability can be found at the following Web Link: http://www.appsci.com/simap/simap.htm .

Public use injuries will be quantified by determining the number (units) of recreational activity losses attributable to the incident and the duration of these losses.

2.3.7 Natural Recovery Estimation

Natural recovery estimation of biological resources is an important issue in this incident since it defines the temporal extent of interim lost services for which natural resource damage compensation is sought. The SIMAP model implicitly estimates the time period required for natural recovery to occur by determining the level of interim lost services. Calculation of interim lost services is described below.

Interim losses are injuries sustained in future years (pending recovery to baseline abundance) resulting from the direct kill at the time of the spill. Interim losses potentially include the following:

- Lost future uses (ecological and human services) of the killed organisms themselves;
- Lost future (somatic) growth of the killed organisms (i.e., production foregone, which provides additional services); and
- Lost future reproduction, which would otherwise recruit to the next generation.

The approach used by SIMAP is that the injury includes the direct kill and its future services, plus the lost somatic growth of the killed organisms, which would have provided additional services. Because the impact on each species, while locally significant, currently is presumed to be small compared to the scale of the total population in the area, it is assumed that density-dependent changes in survival rate are negligible, i.e., changes in natural and fishing mortality of surviving animals are assumed not to compensate for the killed animals during the natural life span of the animals killed.

The services provided by the injured organisms are measured in terms of production, i.e., biomass (kilogram [kg] wet weight) directly lost or not produced. Among other factors, services of biological systems are related to the productivity of the resources, i.e., to the amount of food produced, the usage of other resources (as food and nutrients), the production and recycling of wastes, etc. Particularly in aquatic ecosystems, the rate of turnover (production) is a better measure of ecological services than standing biomass (Odum 1971).

Thus, the sum of the standing stock killed (which resulted from production previous to the spill) plus lost future production (providing an estimation of natural resource recovery) provides a more accurate estimation of interim losses resulting from the incident, as opposed to standing stock alone (as number or kg), for measuring ecological services.

Trustees shall develop natural resource recovery estimations for lost public use through the use of literature searches, documentation review and interviews with impacted parties (e.g., harbormasters, park personnel, refuge personnel, and recreational fishing interests such as bait and tackle retailers). Public use recovery estimates shall focus on the following issues:

1. At what point following the incident did each impacted recreational activity resume (i.e., period of lost public use); and

2. Once a recreational activity resumed, was there any period of time where the public's enjoyment of the resource/activity reduced (i.e., period of diminished public use).

2.3.8 Assessment of Public Lost Use

As described in Section 2.3.1 of this document, closures of waterfront recreational areas and activities (outlined in Section 2.1.2.2) due to the spills shall be assessed through documentation

review, and interviews with impacted parties (e.g., harbormasters, park personnel, refuge personnel, and recreational fishing interests such as bait and tackle retailers). Lost and diminished quality of public use resulting from this lost use survey effort shall be quantified using a benefit's transfer approach.

Specifically, the number of lost or diminished recreational activities resulting from the spill (i.e., boating trips, park visits, fishing, etc.) will be quantified. To scale the loss of public use, the unit consumer surplus value of these lost or diminished recreational activities will be developed from the recreational economics literature and transferred to the location and year of the incident (benefits transfer). Losses will be monetized through a multiplication of number of lost/diminished units of a given recreational activity by consumer surplus unit value.

The work product from this lost public use analysis will be a report that details the nature, degree and spatial/temporal extent of public use losses resulting from the Rouge River Mystery Spill, including a monetized valuation of these losses.

2.4 Avoidance or Minimization of Injuries

The trustees strived to avoid or minimize injuries to natural resources during response operations. Example injury avoidance and minimization strategies included:

- Cutting and removing oiled vegetation at LEMP to reduce continued petroleum contamination of surrounding riparian habitat; and

- Leaving sensitive riparian areas for natural oil attenuation (e.g., Detroit River islands) since active response actions could be more environmentally harmful than beneficial.

3.0 USE OF DAMAGE ASSESSMENT REGULATIONS AT 15 CFR 990 TO GUIDE CLAIMANT PROPOSED ASSESSMENT PROCESS

3.1 Jurisdiction to Pursue Oil Pollution Act of 1990 (OPA)

Trustees have jurisdiction to pursue a NRDA for the Rouge River Mystery Spill under OPA:

1. An incident has occurred, as defined in15 CFR 990, § 990.30 (i.e., discharges of oil products entered a navigable waterway (Rouge River and Detroit River) within the Exclusive Economic Zone);

2. The incident is not:

   a. Permitted under a permit issued under federal, state, or local law; or

   b. From a public vessel; or

   c. From an onshore facility subject to the Trans-Alaska Pipeline Authority Act, 43 U.S.C. 1651, *et seq*.; and

3. Natural resources under the trusteeship of the trustees may have been, or may be, injured as a result of the incident (i.e., fish and wildlife appear to have been killed/injured by this incident, and coastal habitat was contaminated by oil with vegetative communities removed during response actions).

3.2 Conditions for Collection of Preassessment Data

The present claim described in this document is for injury assessment and restoration planning activities only, not preassessment data collection actions. Therefore, this set of conditions is not applicable for this claim.

3.3 Conditions for Proceeding with Assessment

Trustees have determined that there is jurisdiction to pursue restoration under OPA, for the following reasons:

1. Injuries have resulted, or are likely to result, from the incident: known natural resource injuries resulting from the incident are summarized in Table 2-1, Nature and Scope of Injuries, in Section 2.3.4.

2. Response actions have not adequately addressed, or are not expected to address, the injuries resulting from the incident: it is concluded that response actions did not address all injuries since wildlife mortalities resulting from the incident were observed; and continued contamination of sensitive coastal habitat following response actions resulted in degradation of critical habitat.

3. Feasible primary and/or compensatory restoration actions exist to address the potential injuries: Reasonable primary and compensatory candidate restoration actions exist that could either accelerate resource recovery to baseline condition or compensate for interim ecological or public use service losses. These options include (but are not limited to) projects such as wetland restoration, improvement/expansion of park or refuge facilities, etc. (See Section 3.13 for additional discussion of candidate restoration actions.).

Accordingly, trustees determine that there is jurisdiction to pursue restoration under OPA for the Rouge River Mystery Spill.

3.4 Findings and Conditions for conducting Emergency Restoration

The present claim described in this document is for injury assessment and restoration planning activities only, not emergency restoration actions. Therefore, these findings and conditions are not applicable for this claim.

3.5 Notice of Intent to Conduct Restoration Planning

Trustees have determined that all conditions for proceeding with restoration planning have been met (per 15 CFR 990, § 990.42(a)). Accordingly, trustees shall draft and promulgate a Notice of Intent (NOI) to Conduct Restoration Planning as required under 15 CFR 990, § 990.44. The NOI likely shall include the following information:

1. The facts of the incident;
2. Trustee authority to proceed with the assessment;
3. Natural resources and services that are, or are likely to be, injured as a result of the incident;
4. Potential restoration actions relevant to the expected injuries; and
5. Where known, the potential assessment procedures to evaluate the injuries and definition of the appropriate type and scale of restoration for the injured natural resources and services.

Trustees shall make a copy of the NOI to Conduct Restoration Planning publicly available. Further, if a RP is ever identified for the Rouge River Mystery Spill, then trustees shall send a copy of the notice to the responsible parties, to the extent known, in such a way as will establish the date of receipt, and invite responsible parties' participation in the conduct of restoration planning.

3.6 Establishment of Administrative Record

Trustees shall open a publicly available administrative record to document the basis for their decisions pertaining to restoration. The administrative record shall be opened concurrently with the publication of the NOI to Conduct Restoration Planning. As appropriate, the administrative record shall include documents relied upon during the assessment, such as:

1. Any notice, draft and final restoration plans, and public comments;

2. Any relevant data, investigation reports, scientific studies, work plans, quality assurance plans, and literature; and

3. Any agreements, not otherwise privileged, among the participating trustees or with the responsible parties (if identified).

It is anticipated that the administrative record shall be maintained in a manner consistent with the Administrative Procedure Act, 5 U.S.C. 551-59, 701-06.

3.7 Designation of Lead Administrative Trustee

The incident affected state of Michigan and federal trustee jurisdictions. The USFWS is designated as the LAT for the Rouge River Mystery Spill NRDA. Lead administrative Trustee contact information can be found in Section 2.1.1 of this claim document.

3.8 Documentation of Coordination between Trustees, Public and Responsible Party

The USFWS has invited the following state and federal trustees (no tribal interests within the area of impact have been identified):

- Michigan Attorney's General (MAG);
- Michigan Department of Natural Resources (MDNR);
- Michigan Department of Environmental Quality (MDEQ); and
- National Oceanic and Atmospheric Administration (NOAA).

Invitation letters to these trustees may be found in Attachment 3.0 to this claim document. State trustees have voiced interest in participating in this NRDA with USFWS as the LAT. NOAA has stated that it does not plan to become an active trustee unless USFWS requests their participation (per Lisa Williams, USFWS discussion with Tom Brosnan, NOAA Damage Assessment Center, October 2004).

3.9 Use of Pre-Rule Assessment Procedures

Since this spill occurred after January 1996, trustees cannot elect to complete the Rouge River Mystery Spill NRDA using the pre-rule assessment approaches under either Comprehensive Environmental Response Compensation and Liability Act (CERCLA) or OPA. Thus, this consideration does not apply to the current upfront assessment claim.

3.10 Injury Determination

Trustees pursuant to 15 CFR 990, § 990.51 Injury assessment - injury determination, shall determine natural resource injuries. Specifically, trustees shall evaluate if:

1. The definition of injury has been met, as defined in 15 CFR 990, § 990.30; and
2. An injured natural resource has been exposed to the discharged oil, and a pathway can be established from the discharge to the exposed natural resource.

Table 2-1 provides a preliminary scope of natural resource injuries trustees intend to further assess. Collectively, these injury categories comprise the preliminary scope of injury assessment activities for the Rouge River Mystery Spill NRDA.

Additional discussion with resource experts, literature review and screening of impacts using SIMAP oil spill modeling software shall be used by trustees to finalize the scope and nature of natural resource injuries requiring intensive assessment and analysis.

When finalizing injury categories to assess, trustees shall consider a number of factors including:

- The natural resources and services of concern;
- The procedures available to evaluate and quantify injury and associated time and cost requirements;
- The evidence indicating exposure;
- The pathway from the incident to the natural resource and/or service of concern;
- The adverse change or impairment that constitutes injury;
- The evidence indicating injury;
- The mechanism by which injury occurred;
- The potential degree, and spatial and temporal extent of the injury;
- The potential natural recovery period; and
- The kinds of primary and/or compensatory restoration actions; that are feasible.

Methods proposed for determining biological and public use injuries from the Rouge River Mystery Spill are described further in Sections 2.3.1, 2.3.5 and 2.3.8.

3.11 Injury Quantification

Trustees shall quantify natural resource injuries shown in Table 2-1 in terms of the degree, and spatial and temporal extent of the injury to injured natural resources. To quantify spatial and temporal extent of biological injuries, SIMAP shall be used.

For public use injury quantification, documentation review and interviews with impacted parties (e.g., harbormasters, park personnel, refuge personnel, and recreational fishing interests such as bait and tackle retailers) shall be used.

Methods proposed for quantifying biological and public use injuries from the Rouge River Mystery Spill are described further in Sections 2.3.1, 2.3.6 and 2.3.8.

3.12 Natural Recovery Analysis

As part of injury quantification activities, trustees shall estimate the temporal extent of injuries, including a quantitative or qualitative estimate of the time required for natural recovery to occur without restoration, but including any response actions that occurred following the incident. SIMAP will be used to determine the period required for natural recovery of biological resources as described in Section 2.3.7.

Trustees shall develop natural resource recovery estimations for lost public use through the use of literature searches, documentation review and interviews with impacted parties (e.g., harbormasters, park personnel, refuge personnel, and recreational fishing interests such as bait and tackle retailers) as described in Section 2.3.7.

3.13 Identification of Range of Feasible Restoration Alternatives

If the results of injury determination and quantification activities justify restoration, trustees shall proceed with restoration planning. Otherwise, trustees will not take additional action on the Rouge River NRDA. However, trustees shall submit cost documentation to NPFC for all reasonable assessment costs incurred up to this point, and return unspent assessment funds to NPFC.

If injury determination and quantification justifies restoration planning, trustees shall consider a reasonable range of restoration alternatives before selecting the preferred alternative(s). Each restoration alternative shall be comprised of primary and/or compensatory restoration components that address specific injuries associated with the incident. Each alternative shall be designed so that, as a package of one or more actions, the alternative would make the environment and public whole. Only those alternatives considered technically feasible and in accordance with applicable laws, regulations, or permits shall be considered.

Natural recovery of injured resources shall also be considered.

Appropriate restoration alternatives will be identified through literature reviews and discussions with trustees, resource management units and local watershed improvement consortia, including (but not limited to):

- USFWS:
  - East Lansing Field Office;
  - Grosse Isle Office; and
  - Detroit River International Wildlife Refuge.
- MDNR;
- MDEQ;
- Michigan Natural Features Inventory;
- LEMP;
- City of Detroit;
- City of Rouge River; and
- Wayne County Department of Environment Watershed Management Division (e.g., with respect to the Rouge River National Wet Weather Demonstration Project, an EPA-sponsored demonstration of a watershed approach to pollution management).

Preliminary considerations for candidate restoration projects are described below. Identification of candidate restoration projects is subject to significant amendment as more injury assessment and candidate restoration data and information are identified through the course of the Rouge River Mystery Spill NRDA.

3.13.1 Primary Restoration

Primary restoration alternatives will be identified for further consideration from *inter alia*, the trustees and resource management entities listed above. For example, trustees may consider managing continuing inputs of petroleum contamination from Baby Creek Outfall, an ongoing source of petroleum contamination, especially following precipitation events.

3.13.2 Compensatory Restoration

Compensatory restoration alternatives will be identified for further consideration from *inter alia*, the trustees and resource management entities listed above. Preliminary compensatory restoration concepts include the following:

- *Phragmites* management at LEMP to increase bird nesting potential in pre-existing wetlands;
- Wetland restoration and/or creation (may include on- and/or off-site work, depending on project feasibility and scale);

- Shoreline softening (i.e., a method of removing hard, often impervious, manmade shoreline structure and replacing with appropriate geomorphological feature (e.g., wetlands, unconsolidated muds, etc.). Uses include improvement of shoreline and aquatic habitat and establish a biotic buffer for non-point source run-off contaminant attenuation);
- Predation control (i.e., raccoon control);
- Road crossing for wildlife (e.g., turtles);
- Spawning area development;
- Protection, easements of sensitive properties; and
- Park enhancements, fishing enhancements, interpretive signage, and resource availability outreach for lost or diminished public use.

3.14 Description of Restoration Scaling

After the types of candidate restoration actions are identified, the scale of those actions that will make the environment and public whole shall be determined. For primary restoration actions, scaling generally applies to actions involving replacement and/or acquisition of equivalent of natural resources and/or services.

For scaling determined and quantified biological injuries to restoration alternatives, trustees likely shall employ resource-to-resource and service-to-service scaling approaches using SIMAP modeling outputs (biological injuries quantified as numbers or biomass lost via acute toxicity and production foregone over time) to determine the appropriate scale of restoration projects. Specifically, trustees determine the scale of restoration actions that will provide natural resources and/or services equal in quantity, type and quality, and of comparable value as those lost as determined through SIMAP modeling studies.

For scaling lost public use restoration projects, trustees likely shall employ a valuation scaling approach. Given the anticipated magnitude of public use losses resulting from the Rouge River Mystery Spill, it is believed that a valuation scaling approach is more expeditious and cost-effective than resource-to-resource or service-to-service scaling. Though valuation of the lost services is practicable, valuation of the replacement natural resources and/or services cannot be performed within a reasonable time frame or at a reasonable cost. Accordingly, trustees propose to estimate the dollar value of the lost services and select the scale of the restoration action that has a cost equivalent to the lost value. Benefits transfer is proposed as a cost effective approach to implement this proposed value-to-cost scaling stratagem. The benefits transfer method is commonly used in oil spill natural resource damage assessments.

Where appropriate and feasible uncertainties associated with scaling restoration actions will be addressed and described.

Finally, restoration actions will be discounted to the date the restoration claim is presented to NPFC (or the RP, if one is found) for payment per 15 CFR 990, § 990.53.

3.15 Use of a Regional Restoration Plan or Other Existing Plan(s)

Trustees shall consider use of a regional restoration plan, or other appropriate existing restoration plans, for restoration planning as available. If such plans are identified for application to Rouge River restoration planning, they shall be appropriate to the particular restoration needs to adequately address determined and quantified injuries.

3.16 Restoration Evaluation and Selection of Preferred Alternative

Once a reasonable range of restoration alternatives has been developed, they shall be evaluated for selection of a preferred alternative. At minimum, selection criteria shall be based on the following:

1. The cost to carry out the alternative;
2. 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;
3. The likelihood of success of each alternative;
4. 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;
5. The extent to which each alternative benefits more than one natural resource and/or service; and
6. The effect of each alternative on public health and safety.

Based on these evaluation factors, trustees shall select a preferred restoration alternative(s). If two or more alternatives are equally preferable based on these factors, the most cost-effective alternative shall be selected.

If additional information is needed to identify and evaluate the feasibility and likelihood of success of restoration alternatives, trustees may consider conducting restoration pilot projects. Pilot projects would only be undertaken when these projects are likely to provide the information that allows for adequate alternative evaluation, and can be conducted at a reasonable cost and in a reasonable time frame. If a pilot project were necessary, trustees would request additional funding from NPFC to address this unique requirement and provide appropriate supplementary documentation, as prescribed by NPFC, to support the claim for this additional restoration planning need.

3.17 Development of Draft and Final Restoration Plan/Environmental Assessments (DRP/EA)

OPA requires that damages be based upon a plan developed with opportunity for public review and comment. To meet this requirement, trustees propose to develop a Draft and Final

Restoration Plan/Environmental Assessment, with an opportunity for public review of and comment on the draft plan, as part of the present Rouge River Mystery Spill upfront funded assessment claim.

The DRP/EA shall include:

1. A summary of injury assessment procedures used;
2. A description of the nature, degree, and spatial and temporal extent of injuries resulting from the incident;
3. The goals and objectives of restoration;
4. The range of restoration alternatives considered, and a discussion of how such alternatives were developed and evaluated;
5. Identification of the trustees' tentative preferred alternative(s);
6. A description of past and proposed involvement of the responsible parties in the assessment; and
7. A description of monitoring for documenting restoration effectiveness, including performance criteria that will be used to determine the success of restoration or need for interim corrective action.

When developing the DRP/EA, trustees shall establish restoration objectives that are specific to the injuries. These objectives should clearly specify the desired outcome, and the performance criteria by which successful restoration will be judged. Performance criteria may include structural, functional, temporal, and/or other demonstrable factors. Trustees shall determine what criteria will:

1. Constitute success, such that responsible parties, if found, are relieved of responsibility for further restoration actions; or
2. Necessitate corrective actions in order to comply with the terms of a restoration plan or settlement agreement.

The DRP/EA shall include a monitoring component that addresses such factors as duration and frequency of monitoring needed to gauge progress and success, level of sampling needed to detect success or the need for corrective action, and whether monitoring of a reference or control site is needed to determine progress and success. Reasonable monitoring and oversight costs shall be a cost component of the subsequent restoration claim, and cover those activities necessary to gauge the progress, performance, and success of the restoration actions developed under the plan.

Public review and comment on the Draft and Final Restoration Plans will be conducted in a manner that complies with applicable federal trustee National Environmental Protection Agency

(NEPA) requirements. The specific strategies for facilitating public review and comments are to be determined, but shall address (but not be limited to) the following actions:

- Advertising availability of the draft and final restoration plans for review;
- Providing public access for review of the plans; and
- Providing venues for soliciting and collecting comments.

Pending receipt of public comments on the DRP/EA, trustees shall develop a Final Restoration Plan/Environmental Assessment (FRP/EA) that includes information required in the DRP/EA, responses to public comments, if applicable, and an indication of any changes made to the DRP.

It is presumed that the FRP/EA will serve as the basis for a subsequent restoration claim to be submitted to the NPFC, if no RP is found.

3.18 Satisfaction of Assessment Methodological Standards

Any procedures used pursuant to the damage assessment regulations at 15 CFR 990 must comply with the following standards (per § 990.27):

1. The procedure must be capable of providing assessment information of use in determining the type and scale of restoration appropriate for a particular injury;

2. The additional cost of a more complex procedure must be reasonably related to the expected increase in the quantity and/or quality of relevant information provided by the more complex procedure; and

3. The procedure must be reliable and valid for the particular incident.

Compliance of proposed assessment procedures with each of these standards is described below.

Proposed ecological assessment procedures (i.e., development of oil spill impact modeling data inputs and using these inputs to run the SIMAP model) will yield assessment information that result in a determination and quantification of the nature, degree and spatial/temporal extent of injuries. These modeling results can be directly used to scale restoration projects that compensate for discovered biological injuries. Implementation of proposed public use loss assessment procedures (i.e., literature search, document review and interviews with impacted parties) will yield data that determines and quantifies the publics lost and diminished use of restoration projects. Using a benefits transfer approach, data yielded from the public use loss injury study can be valued and, accordingly, used in public use restoration project scaling efforts.

Use of modeling for assessing biological injuries and literature search and point interviews to assess public use loss are industry-accepted cost effective approaches that heavily leverage existing information. Additional (and more costly) field and laboratory-based studies are not considered at this time to provide additional useful information and data that would substantively

inform injury assessment and restoration planning efforts. Accordingly, these more costly procedures are not being proposed in the present upfront funded assessment claim.

From a reliability (i.e., consistency or repeatability) and validity (i.e., ability to approximate a "true" value) perspective, use of SIMAP to determine and quantify biological injuries uses a statistically robust stochastic approach to derive resource impacts. Such repeated simulations have been shown in past SIMAP applications to be repeatable and consistent. Further, SIMAP modeling results have been shown in many past incidents to be coincident with real world spill impact observations, demonstrating model algorithm validity. Public use impact interviews and surveys to determine quantify public use losses, and the use of benefits transfer to scale these losses, are accepted natural resource economics injury assessment procedures that have been repeatedly used for valuing public use losses in similar assessments and are well-accepted by the natural resource economics community.

3.19 Certification of Assessment Cost Reasonableness

Trustees certify that claimed assessment costs are cost reasonable. These certifications may be found in Section 7.2 of this document.

3.20 Documentation of Demand to Responsible Party for Payment

As stated in Section 2.1.3 of this document, no RP has been found for this incident. If a RP is found, then trustees will submit the Demand for assessment (and, subsequently, restoration) claim payment to the RP with documentation supporting this presentment.

However, if a RP is not found, then the Demand for assessment (and, subsequently, restoration) claim payment shall be made directly to the NRD Claims Division of the NPFC for payment from the OSLTF.

4.0 SENIOR ASSESSMENT PERSONNEL AND RESPONSIBILITIES

The following identifies agencies and senior personnel participating in the Rouge River Mystery Spill NRDA. Major roles and responsibilities for these participating interests also are included. This section outlines senior personnel only; it is anticipated that additional technical and administrative support personnel shall be required to implement the proposed NRDA in a cost-effective and timely manner.

4.1 USFWS

The USFWS shall serve as the LAT on the Rouge River Mystery Spill NRDA. As the LAT, USFWS shall execute the following actions:

- Ensure that the NRDA is implemented in a manner consistent with applicable statutes and regulations;
- Coordinate activities and interactions with NRDA participants, including:
  - Trustees;
  - Public;
  - Contractors; and
  - RP (if identified).
- Serve as primary point of contact to NPFC on NRD claim matters; and
- Cost documentation.

Senior USFWS personnel participating in the Rouge River Mystery Spill NRDA include:

- *Robyn Thorson:* Authorized Official to bring claim for NRDs (See Attachment 1.0.);
- *Lisa Williams:* Contaminant Specialist and point of contact on all technical claim matters. Lisa will supervise the NRDA;
- *Craig Czarnecki*: Field Supervisor, providing overall technical and administrative support on NRDA;
- *Niccole Wandelear:* Fisheries Biologist, providing overall technical and administrative support on NRDA;
- *Stephanie Milsap:* Contaminants Specialist, providing technical support on injury assessment and restoration alternative identification and analysis;
- *Dave Best*: Contaminants Specialist, providing technical support on injury assessment and restoration alternative identification and analysis; and

- *John Hartig:* Refuge Manager for the Detroit River International Wildlife Refuge, providing technical support on injury assessment and restoration alternative identification and analysis.

4.2 State of Michigan

The state of Michigan shall participate in the present NRDA as natural resource trustees. Designated state trustees include the following:

- MDAG;
- MDEQ; and
- MDNR.

It is anticipated that state trustees will support and participate the LAT's efforts in the following NRDA activities:

- Finalization of injured resource categories,
- Participation in planning injury assessment studies,
- Information/data sharing (e.g., incident and resource information),
- Technical and administrative review of interim reports and memoranda described in Table 5-1 (minimally, the DRP and FRP);
- Participation in identifying and analyzing restoration alternatives; and
- Support LAT in developing and implementing a robust public review process for DRP.

To date, the following state trustee agency representatives have been identified:

- Peter Manning, Assistant Attorney General, MDAG;
- William Creal, Chief, Permit Section, MDEQ; and
- Timothy Payne, Wildlife Division Supervisor, MDNR.

Contact information for these state (and federal) trustee representatives can be found in Section 2.1.1; trustee designation documentation can be found in Attachment 1.0.

4.3 Contracted Personnel

USFWS intends to use contracted expert support to assist in the implementation of the proposed Rouge River Mystery Spill NRDA. Contracted staff shall be hired by the LAT pending receipt of funding for the NRDA from NPFC. The LAT shall use contracted staff to produce interim and final NRDA-associated work products and services to inform and expedite trustee actions.

Specifically, it is envisioned that contract support would assist with the following actions:

- Development of NOI to Conduct Restoration Planning;
- Establish and maintain Administrative Record;
- Collect information and develop the Incident Information Interim Report;
- Collect data for SIMAP oil spill modeling;
- Conduct screening of candidate biological resource injuries to inform development of final biological injury categories, and produce the SIMAP Model Screening Interim Report;
- Conduct oil spill impact modeling using SIMAP and develop the SIMAP Oil Spill Impacts Interim Report;
- Conduct a study of public use losses and develop the Lost and Diminished Public Use Impacts Interim Report;
- Develop a number of interim memoranda to inform restoration planning actions, including:
  - Natural Recovery Memorandum;
  - Range of Feasible Restoration Alternatives Memorandum;
  - Restoration Scaling Memorandum;
  - Evaluation and Selection of Preferred Alternative Memorandum; and
  - Compilation of Public Comments and Responses Memorandum.
- Development of DRP/EA;
- Development of FRP/EA;
- Miscellaneous case management support (e.g., scheduling trustee meetings and recording minutes); and
- Cost documentation support.

To execute the Rouge River Mystery Spill NRDA in an efficient, cost-effective and comprehensive manner, the LAT shall seek a contracting group/consortium with expertise in the following areas:

- NPFC natural resource damage claim requirements;
- 15 CFR 990 and OPA oil spill NRDA requirements;
- Oil spill injury assessment and restoration planning procedures and processes;
- Federal and state natural resource trustees oil spill NRD claim support;
- Known (and potential) natural resource impacts from the Rouge River Mystery Spill;
- SIMAP oil spill modeling and interpretation;

- Conducting public use loss studies;
- Restoration alternative analysis and scaling;
- Developing Restoration plans;
- NRDA study quality assurance;
- Case management;
- Administrative record management; and
- Cost Documentation experience.

Ideally, to minimize administrative contracting burden, the LAT shall consider contracting with a lead contractor with expertise in successfully executing oil spill NRDA and the NPFC claims processes and procedures, and has the direct ability to subcontract with appropriate resource experts (e.g., SIMAP modelers and natural resource economists).

5.0 SCHEDULE OF ASSESSMENT ACTIONS

The schedule for major actions proposed in the Rouge River Mystery Spill assessment claim is provided in Table 5-1 below. This schedule is based on calendar months from NPFC's notification to USFWS, the LAT, that funding will be provided from the OSLTF as requested in this claim for proposed assessment activities. This schedule presumes a 30-calendar day review time of interim work products. Where memorandums and reports are referenced in Table 5-1, the schedule pertains to the final version of the report/memorandum. Draft reports and memorandums generally will be submitted two months prior to completion of the final version, hence, allowing adequate time for trustee review and incorporation of trustee comments into the finalized memorandum or report. Specific draft report and memorandum dates shall be finalized on a document-specific basis. Finally, this schedule presumes that USFWS will hire a consulting firm to support Rouge River NRDA actions.

Table 5-1: Preliminary Schedule of Rouge River NRDA Proposed Activities

Proposed NRDA Action	Calendar Months After NPFC Notification of Claim Payment
NPFC Notification to LAT of Claim Payment from OSLTF	0
LAT Procures Consulting Support for Rouge River NRDA	2
Promulgation of NOI to Conduct Restoration Planning	3
Incident Information Interim Report	5
SIMAP Model Screening Interim Report	7
SIMAP Oil Spill Impacts Interim Report	9
Lost and Diminished Public Use Impacts Interim Report	10
Natural Recovery Memorandum	11
Range of Feasible Restoration Alternatives Memorandum	12
Restoration Scaling Memorandum	14
Evaluation and Selection of Preferred Alternative Memorandum	17
Development of DRP/EA	20
30 Day DRP Public Review Coordination	21
Compilation of Public Comments and Responses Memorandum	23
Development of FRP/EA	26
Submission of Restoration Claim to NPFC*	28
Administrative Record Establishment and Maintenance	Ongoing throughout NRDA
Case Management	Ongoing throughout NRDA
Restoration Implementation	Pending Restoration Claim Funding

* Presumes no RP has been identified. If identified, claim will be submitted to RP.

6.0 COST DOCUMENTATION

Redacted

7.0 POINTS OF CONTACT AND CERTIFICATIONS

7.1 Points of Contact

The USFWS, serving as the LAT, will be the point of contact for this upfront-funded assessment claim. The official point of contact for the claim is the designated Authorized Official (AO) for the LAT, Robyn Thorson. Additionally, Dr. Lisa Williams, USFWS Contaminants Specialist at the East Lansing Field Office (ELFO), shall serve as the point of contact for claim-specific technical and financial issues. Contact information for the LAT is provided below:

Lead Administrative Trustee: USFWS

Designated Authorized Official (See Attachment 1.0)

Robyn Thorson
Regional Director
U.S. Fish and Wildlife Service
Region Three
1 Federal Drive
Ft. Snelling, MN 55111
Phone: (612) 713-5360
Fax: (612) 713-5280
email: robyn_thorson@fws.gov

Technical Contact:

Lisa L. Williams, PhD
Contaminants Specialist
U.S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road, Suite 101
East Lansing, MI 48823
Telephone: (517) 351-8324
Fax: (517) 351-1443
Email: lisa_williams@fws.gov

7.2 Certifications and Signature

The following certifications and signature are required when submitting a NRD claim to the USCG NPFC:

Certifications and Signature

I, the undersigned, certify the accuracy and integrity of this claim and certify that actions taken or proposed were or will be conducted in accordance with the OPA and consistent with all applicable laws and regulations.

I, the undersigned, certify that, to the best of my knowledge and belief, no trustee(s) other than those identified in this claim has the right to present a claim for the same natural resource injuries and that payment of any subpart of this claim would not constitute double recovery for the same natural resource injuries.

I, the undersigned, agree that upon acceptance of any compensation from the Fund, I will cooperate fully with the United States in any claim or action by the United States to recover the compensation. The cooperation shall include, but is not limited to, immediately reimbursing to the Fund any compensation received from any other source for the same costs and/or damages and, providing any documentation, evidence, testimony, and other support, as may be necessary for the Fund to recover such compensation.

I, the undersigned, certify that, to the best of my knowledge and belief, the information contained in this claim represents all material facts and is true. I understand that misrepresentation of facts is subject to prosecution under Federal law (including but not limited to 18 U.S.C. 287 and 1001).

I, the undersigned, certify that the assessment was conducted in accordance with the Damage Assessment Regulations at 15 CFR 990 (promulgated by NOAA) –

No __ Yes __

_____ _____

Claimant's Authorized Representative Date

7.3 Claim Mailing Address and Inquiries

The mailing address for the assessment claim is provided below:

National Pollution Funds Center
Natural Resource Damage Claims Division
4200 Wilson Blvd., Suite 1000
Arlington, VA 22203-1804
Phone: (202) 493-6860
Fax: (202) 493-6939

Inquiries regarding claim questions and issues for discussion with NPFC may be directed to either of the following:

Mr. Chris Abrams,
Chief, Natural Resource Damage Claims Division
Phone: (202) 493-6865
Email: CAbrams@ballston.uscg.mil

8.0 REFERENCES

Detroit/Rouge River Oil Spill Unified Command. 2002. Detroit River and River Rouge Oil Spill Synopsis. Detroit/Rouge River Oil Spill Unified Command News Release [Document 101, page 25].

Maddox, J. 2002. NOAA's SSC Report on Oil Volume Estimate of the Rouge/Detroit River Mystery Spill. IN: Garrity, P.G. Estimate of Volume of Oil Spilled on the Detroit River on April 10, 2002. Memorandum to File. United States Coast Guard. Detroit Michigan. 11 pp.

McDiarmid Jr., H. 2004. Metro Detroit's Troubled Waters: Oil Spill Standoff. Detroit Free Press. April 5, 2004. Detroit, Michigan. 2 pp.

Odum, E.P., 1971. Fundamentals of Ecology, W.B. Saunders Co., Philadelphia, 574 p.

USCG. Marine Safety Office Detroit. 2002. Vacuum Truck Photograph (Vactruckgood.jpg).

Williams, L.L. 2002a. Preliminary Summary of Impacts to Fish and Wildlife from the Rouge/Detroit Rivers Oil Spill of April 2002. Memorandum form Lisa L. Williams, USFWS East Lansing Field Office to Robert Lumadue, USFWS Law Enforcement, dated June 13, 2002. 5pp.

Williams, L.L. 2002b. Accomplishments Report: Mystery Oil Spill Impacts Wildlife in the Detroit River. Filed on May 10, 2002. USFWS, East Lansing Field Office. East Lansing, Michigan. 4 pp.

ATTACHMENTS

ATTACHMENT 1.0

REDACTED

ATTACHMENT 2.0

CORRESPONDENCES: JULY 14, 2005, CORRESPONDENCE FROM KRIS DIGHE, USDOJ, TO MARK MATUS, MDAG, REGARDING CLOSURE OF RESPONSIBLE PARTY INVESTIGATION; AND SEPTEMBER 10, 2004, CORRESPONDENCE FROM CHRIS ABRAMS, NPFC, TO LISA WILLIAMS, USFWS REGARDING STATUS OF UNIDENTIFIED RESPONSIBLE PARTY

From: Kris.Dighe@usdoj.gov

Sent: Thursday, July 14, 2005 4:36 PM

To: matusm@michigan.gov

Subject: FW: 2002 ROUGE RIVER MYSTERY SPILL ASSESSMENT CLAIM

Mr. Matus

This will confirm that the U.S. Department of Justice has closed its investigation into the Rouge River Oil Spill of April 2002.

Kris Dighe

Assistant Section Chief

U.S. Department of Justice

From: Abrams, Christopher [CAbrams@ballston.uscg.mil]
Sent: Friday, September 10, 2004 8:39 AM
To: 'Lisa_Williams@fws.gov'
Cc: 'Timothy Reilly'
Subject: Upfront Assessment Claim--Unidentified RP (Rouge River Spill)

Morning Lisa,
Tim Reilly called yesterday about potential issues surrounding your Rouge River Upfront Assessment Claim. It is the position of the NPFC-NRD that an upfront assessment claim may be submitted regardless of the current Grand Jury investigation. To date, no RP has been identified, and, as such, this spill is still classified as a "Mystery Spill". If an RP is identified previous to the submission of your claim to us, it will need to be presented to the RP. However, if no action occurs within 90 days or if payment is denied within 90 days by the RP, then the claim can be submitted to us.

In a discussion with LCDR Moon at MSO Detroit, I don't believe that an RP will be identified immediately, if at all. If we make payment on an upfront assessment claim and later a RP is identified, we will assume the responsibility for recovering our costs.

I hope this addresses your concern. Please feel free to contact me if you need any further clarification.

Look forward to working with you in the future,
Chris

Christopher W. Abrams
Claims Manager (Economist/Ecologist)
Natural Resource Damage Claims Division
National Pollution Funds Center
U.S. Coast Guard
Tel: (202)493-6865
Fax: (202)493-6939

ATTACHMENT 3.0

REDACTED

ATTACHMENT 4.0

REDACTED