RESTORATION PLAN AND ENVIRONMENTAL ASSESSMENT FOR THE LOVE CANAL, 102ND STREET, AND FOREST GLEN MOBILE HOME SUBDIVISION SUPERFUND SITES

Prepared by:

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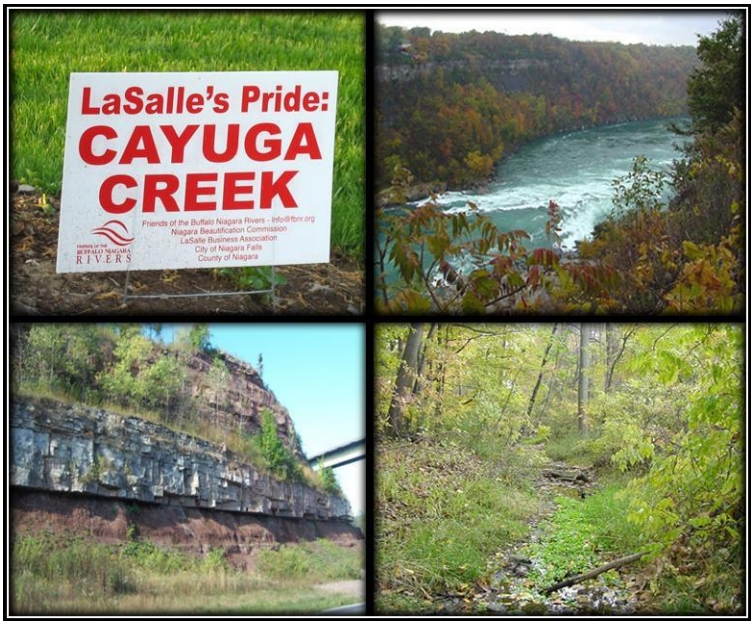

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Section 1. Introduction

This Restoration Plan (RP) and Environmental Assessment (EA) for ecological injuries and service losses has been prepared by State and Federal natural resource Trustees to address restoration for the Love Canal, 102nd Street, and Forest Glen Mobile Home Subdivision Superfund Sites. The Department of the Interior (DOI), including the U.S. Fish and Wildlife Service (USFWS), along with State, Tribal, and other Federal partners, act as Trustees for natural resources. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Clean Water Act (CWA) provide that natural resource trustees may assess damages to natural resources resulting from a release of a hazardous substance covered under CERCLA or the CWA and may seek to recover damages from the parties responsible for the releases.

During the period of March 1996 through December 2000, natural resource damage settlements were achieved for the Love Canal, 102nd Street, and Forest Glen Mobile Home Subdivision Superfund Sites (Sites), all located within the City of Niagara Falls, Niagara County, New York. All settlements were sought as compensation for impacts to natural resources as a result of contamination or subsequent remedial activities at the sites. Such monies recovered by Trustees must be used to restore, replace, or acquire natural resources or services equivalent to those lost (42 U.S.C. 9607(f)(1)).

1.1 Compliance with NEPA and CERCLA

The CERCLA requires that before settlement funds can be used to compensate for impacts to natural resources, the Trustees must develop and adopt a Restoration Plan (RP). The Draft RP must be made publicly available, with adequate public notice and opportunity for hearing and consideration of all public comments. The Draft RP was published in the Federal Register on December 29, 2004 and comments were accepted through February 15, 2005. This constitutes the Final RP for restoration to be accomplished with the damage settlements for the Love Canal, 102nd Street, and Forest Glen Mobile Home Subdivision Superfund Sites.

Any restoration of natural resources under CERCLA must comply with the National Environmental Policy Act (NEPA, 42 U.S.C. Section 4321 et seq.). Under NEPA, the Trustees must also assess the potential environmental impacts associated with each of the proposed restoration actions. This Final RP/EA integrates NEPA requirements by describing the affected environment, describing the purpose and need for action, identifying alternative actions and assessing their applicability and environmental consequences, and summarizing opportunities for public participation. This document constitutes the environmental assessment for the proposed restoration of natural resources as defined under the NEPA (40 CFR Part 1502.10). This Final RP/EA presents the selected restoration actions. The EA integrated in this plan supports a determination that the identified restoration actions do not meet the threshold requiring an Environmental Impact Statement. The NEPA process for these restoration actions concludes with a Finding of No Significant Impact (FONSI) by NOAA and DOI, the Federal agencies participating in restoration of these Sites.

1.2 Purpose and Need

The purpose of the proposed action is to restore, replace, or acquire the equivalent of natural resources injured as a result of contaminant releases from the three Sites. The underlying need for the action is to ensure recovery of natural resources injured as a result of contaminant releases

from the three Sites. The primary injuries resulting from Site contamination are associated with chemical and physical impairment of stream, wetland, upland, riverine, and other aquatic habitats used by Trust resources.

1.3 Public Notification and Review

Under CERCLA and NEPA, the Trustees must notify the public and any Federal, State, or local agencies with special expertise relating to the RP/EA. In soliciting restoration projects, the Trustees sent a letter to a large number of Federal, State, City, and County agencies, private groups, the Tuscarora Nation, and the Tonawanda Band of the Seneca Nation. We published a request for proposals on the U.S. Fish and Wildlife Service, New York Field Office website. We considered restoration projects brought to our attention through other USFWS programs. We have also considered restoration projects being proposed as part of the relicensing of the Niagara Power Project (Appendix A).

The Draft RP/EA was also published in the Buffalo News, 1 News Plaza, Buffalo, New York 14203 and the Niagara Gazette, 310 Niagara Street, Tonawanda, New York 14150, with copies sent to all previously identified interested parties and copies available at the Niagara Falls Public Library, 1425 Main Street, Niagara Falls, New York 14305. A copy was made available at the following U.S. Fish and Wildlife Service website:

http://nyfo.fws.gov.

Copies of the Draft RP/EA were also available from:

U.S. Fish and Wildlife Service
3817 Luker Road
Cortland, NY 13045

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Section 2. Review of Natural Resource Damage Settlements

2.1 Forest Glen Mobile Home Subdivision Site

2.1.1 Background

The Forest Glen Mobile Home Subdivision Site consists of 39 acres located in the City of Niagara Falls, Niagara County, New York (Figure 1). The Site includes a currently vacant residential subdivision of about 8.5 acres in size with 51 mobile and two permanent residences, 2.2 acres of undeveloped upland, and 28.3 acres of forested, shrub-scrub, and emergent wetland. East Gill Creek flows across the Site, dividing it into a northern portion (18 acres) and a southern portion (21 acres). East Gill Creek flows into Gill Creek, which in turn, flows into Hyde Park Lake. The outlet of Hyde Park Lake flows to the Niagara River. The Niagara River is located approximately 4 miles downstream of the Site (USEPA 1999).

In 1958, the Site was a forested wetland divided by East Gill Creek. During the early 1960s, the area was partially cleared and East Gill Creek was relocated about 400 feet to the north to form

the northern boundary of the future subdivision. Industrial wastes were disposed at the Site from the early 1950s through the early 1970s, with the northern portion of the Site used as a landfill for these waste materials. In 1973, the Site was purchased by Niagara Falls USA Campsites Corporation for subsequent development into a mobile home subdivision known as the Forest Glen Subdivision. Evidence of waste disposal activities was discovered in 1973 during the installation of utility lines. At that time, workers discovered resinous and powder-like wastes, drums, and battery casing parts. It is believed that regrading of the Site into mobile home lots re-distributed waste materials that were originally placed in low-lying areas of the Site (USEPA 1999).

The U.S. Environmental Protection Agency (USEPA) conducted an initial investigation of the Site in 1987, at the request of the Niagara County Health Department and New York State Department of Environmental Conservation (NYSDEC). Sampling indicated the presence of volatile organic compounds, semi-volatile organic compounds, and metals in on-site soils. Additional site investigation was performed in 1988 and 1989. Contaminants detected in on-site soils and sediments and sediments from East Gill Creek included high concentrations of organic compounds such as benzothiazole, 2(3H)benzothiazole, 2(3H)benzothiazolethione, aniline, phenothiazine, perylene, diphenylamine, 2-mercaptan-zothiazole, benzo(a)pyrene, chrysene, benzo(a)anthracene, phenol, benzo(k)fluoranthene, and polychlorinated biphenyls (PCBs). Inorganic substances, including aluminum, arsenic, cadmium, chromium, copper, iron, lead, zinc, and mercury, were also found in surface soil and sediment (USEPA 1999).

East Gill Creek receives stormwater from the site and surface soil contaminants have reached the creek. Groundwater flow is generally toward the west. Groundwater is contaminated with volatile organic compounds and inorganic substances. The extent of downstream contamination in East Gill Creek, Hyde Park Lake, Gill Creek, and the Niagara River have not been fully assessed, although sampling in East Gill Creek indicated that off-site transport of contaminants had occurred.

The 1989 Record of Decision (ROD) called for permanent relocation of all residents as the action for Operable Unit #1 (OU1). A ROD for OU2 was issued in 1998 and was designed to contain the source area and prevent further migration of contaminants into the groundwater. The major components of the OU2 remedy are excavation of about 190,200 cubic yards of contaminated soils from the southern portion of the Site, and dredging of about 190 cubic yards of contaminated sediment from East Gill Creek. Excavated and dredged materials would be consolidated at the northern portion of the Site and capped. The cap would encompass approximately 8.5 acres of the Site. Also, 1.5 acres of forested wetland would be capped with 6 inches of clean sediment (USEPA 1999).

2.1.2 Impacts to Fish and Wildlife Resources

East Gill Creek and Gill Creek support warmwater fish species such as minnows (*Pimephales* spp.), shiners (*Notropis* spp.), chubs (*Semotilus* spp.), and suckers (*Catastomus* spp.). Birds observed at the site include the American robin (*Turdus migratorius*), black-capped chickadee (*Parus atricapillus*), blue jay (*Cyanocitta cristata*), eastern meadowlark (*Sturnella magna*), European starling (*Sturnus vulgaris*), gray catbird (*Dumetella carolinensis*), hairy woodpecker (*Picoides villosus*), herring gull (*Larus argentatus*), killdeer (*Charadrius vociferous*), northern cardinal (*Cardinalis cardinalus*), red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), and tufted titmouse (*Parus bicolor*). Bird species and aquatic species have been exposed to contaminants from the Site. Severe effects levels of substances such as

chromium, copper, lead, mercury, nickel, and zinc were exceeded in sediments from on-site wetlands and East Gill Creek. Severe effects levels are concentrations above which pronounced disturbance of the sediment-dwelling community can be expected (NYSDEC 1999).

The downstream Niagara River supports a wide range of species including muskellunge (*Esox masquinongy*), northern pike (*Esox lucius*), smallmouth bass (*Micropterus dolomieui),* largemouth bass (*Micropterus salmoides),* American eel *(Anguilla rostrata*), coho salmon (*Oncorhynchus kisutch*), steelhead (*Salmo gairdneri*), and lake sturgeon (*Acipenser fulvescens*). The lake sturgeon is a New York State listed threatened species. A variety of fish consumption advisories exists for the Niagara River due to high levels of PCBs, mirex, and dioxin (NYSDOH 2000-2001). Niagara River fish and wildlife resources may have been adversely impacted by site-related contaminants.

In addition to impacts to fish and wildlife resources described above, the remediation of the Forest Glen Site resulted in the loss of about 8.5 acres of wetland. This wetland provided a number of services to fish and wildlife resources including habitat for a variety of migratory birds and filtration of contaminants and nutrients from source waters.

2.1.3 Natural Resource Damage Settlement

The RD/RA settling defendants (The Goodyear Tire and Rubber Company and other defendants) paid $445,000 to the Trustees, per the 2001 Consent Decree (CD). The DOI was provided with $20,370 of this settlement to reimburse the agency for costs of assessing injury to natural resources. The U.S. Department of Justice retained 3% ($13,350) of the $445,000. The remaining funds ($411,280) have been held in a DOI interest-bearing account to be spent for "restoration, including restoration planning, and other allowable expenditures associated with the site, consistent with the natural resource damages provisions of CERCLA." Approximately $428,000 is currently available for restoration. The DOI proposes to use slightly less than 5% of these funds or $21,000 for restoration oversight and monitoring. **Approximately $407,000 is available for restoration projects.**

The Trustee's claim for the Forest Glen Site included compensation for injuries to migratory birds associated with impacted uplands and wetlands on-site and habitats along East Gill Creek. Certain restoration projects or concepts were proposed as part of settlement negotiations and in a subsequent Memorandum of Agreement (MOA) developed among the DOI, National Oceanic and Atmospheric Administration (NOAA), and State of New York. The Trustees determined that one restoration focus should be on creation/restoration and maintenance of grassland habitat. According to the MOA, a minimum of 15 acres of grassland habitat should be restored or created in the Niagara River corridor to enhance/create habitat for grassland nesting and foraging passerines such as the eastern meadowlark, bobolink (*Dolichonyx oryzivorus*), red-tailed hawk, and harrier (*Circus cyaneus*). A preference was stated for projects(s) on land already publicly owned or owned by a conservation group where the owner is amenable to a project being done on its property and protected through a conservation easement or other binding agreement and where the owner is willing to accept responsibility for future maintenance of the project. The Trustees are proposing that funds not committed to the Klydel wetland acquisition and additional sampling (described below) will be used to restore grasslands.

A second restoration focus was the acquisition and protection of forested wetland habitat in the site vicinity. Priority was to be given to acquisition and protection of the Klydel wetland or a similar wetland in North Tonawanda, New York. Approximately $60,000 was identified for

wetland acquisition and protection. The third component of the settlement was further characterization of contamination in and emanating from East Gill Creek, at a cost of up to $150,000.

A range of projects is being proposed in this RP that are consistent with the above recommendations. The Trustees have made determinations about what types of projects should be implemented to be consistent with settlement negotiations and the Trustee MOA.

2.2 102nd Street Landfill Superfund Site

2.2.1 Background

The 102nd Street Landfill Site is a 22.1-acre property owned by Occidental Chemical (OCC) and Olin Corporation (Figure 1). A 42-inch storm sewer crosses the property from its origin near the Love Canal Site to its discharge point into the Niagara River. The Site was operated as separate landfills by OCC, Olin Corporation, and their predecessors (Companies) from approximately 1943 through 1970. The landfills have been closed since 1970. While operational, at least 159,000 tons of liquid and solid waste were deposited into the landfill. These deposits included at least 4,600 tons of benzene, chlorobenzene, chlorophenols, and hexachlorocyclohexanes (Conestoga-Rovers & Associates and Woodward-Clyde Consultants 1990).

Chemicals of concern detected in on-site soil, groundwater, and adjacent sediment in the Niagara River include arsenic, cadmium, mercury, benzene, benzo(b)fluoranthene, benzo(k)fluoranthene, chlorobenzene, chloronaphthalene, chlorophenols, chlorotoluenes, dichloroanilines, dichlorobenzenes, dichlorophenols, hexachlorobenzene, hexachlorocyclohexanes, lindane, mirex, PCBs, PCDDs (including 2,3,7,8-tetrachlorodibenzo-p-dioxin), pentachlorophenol, phenol, tetrachlorobenzenes, toluene, trichlorobenzenes, trichloroethylene, and trichlorophenols.

Chemicals have migrated from the site into the Niagara River both in groundwater and transported by surface water. A ROD was signed by the USEPA on September 26, 1990. The major components of the remedy were capping the site, construction of a slurry wall to contain the plume of non-aqueous phase liquid (NAPL), recovery and treatment of groundwater and NAPL, and dredging and off-site incineration of contaminated Niagara River sediments. The USEPA later determined to consolidate dredged sediments on the landfill site rather than incinerate them off-site (USEPA 1990; USEPA 1995).

As mitigation for impacts from remedial activities, the Companies provided funding for habitat restoration projects on the Niagara River. These projects included the creation of 0.9 acre of vegetated shallow water riverine habitat at the Cherry Farm site and enhancement of 2 acres of marsh habitat at Buckhorn Island State Park.

2.2.2 Impacts to Fish and Wildlife Resources

The Upper Niagara River, in the vicinity of the 102nd Street Site, is one of the most important waterfowl wintering habitats in the northeastern United States, especially for diving ducks. The Niagara River corridor has been designated a “Globally Significant Important Bird Area” by cooperating groups in the United States and Canada, including the National Audubon Society, the Canadian Nature Federation, American Bird Conservancy, and Bird Studies Canada. On average, more than 14,000 waterfowl are found on the Upper Niagara River in mid-winter (Audubon Society 2001).

Winter NYSDEC surveys along the Niagara River have shown a 22-year average of 2,808 canvasbacks (*Aythya valisneria*) {31.5% of State wintering population}, 7,527 common mergansers (*Mergus merganser*) {31% of state wintering population}, 2,015 common goldeneyes (*Bucephala clangula*) {29% of state wintering population}, and 2369 scaup *(Athya affinis, marila*) {6% of state wintering population}. The Niagara River supports significant concentrations of migrating and wintering gulls. Nineteen gull species have been recorded, including one-day counts of Bonaparte's gulls (*Larus philadelphia*) as high as 10,000-50,000 individuals (2-10% of world population). The river supports breeding colonies of common terns (*Sterna hirundo*), herring gulls (*Larus argentatus*), ring-billed gulls (*Larus delawarensis*), black-crowned night herons (*Nycticorax nycticorax*), great blue herons (*Ardea herodias*), common egrets (*Casmerodius albus*), and double-crested cormorants (*Phalacrocorax auritus*) (Audubon Society 2001).

The river edge habitat supports migratory songbirds during migration, as well as some nesting. Remaining emergent wetlands support breeding by species such as least bittern *(Ixobrychus exilis*), northern harrier, and sedge wren (*Cistothorus platensis*). State-listed breeding species include the least bittern, northern harrier, upland sandpiper *(Bartramia longicauda*), common tern, sedge wren, and grasshopper sparrow (*Ammodramus savannarum*). State-listed migrants include the bald eagle (*Haliaeetus leucocephalus*), pied-billed grebe (*Podilymbus podiceps*), least bittern, northern harrier, common tern, sedge wren, common loon (*Gavia immer*), and osprey (*Pandion haliaeetus*) (Audubon Society 2001). Other bird species documented to use habitat along the Upper Niagara River include the mallard *(Aix sponsa*), gadwall (*Anas strepera*), American black duck (*Anas rubripes*), bufflehead *(Bucephala albeola*), ring-necked duck (*Aythya collaris*), American wigeon (*Anas americana*), and great black-backed gull (*Larus marinus*). The embayment adjacent to the 102nd Street Site has been known to provide habitat for large numbers of waterfowl, including canvasbacks *(Aythya valisineria*).

The Upper Niagara River also provides important fish habitat for species such as muskellunge, northern pike, walleye (*Sander vitreus*), largemouth bass, smallmouth bass, carp (*Cyprinus carpio*), brown bullhead (*Ameirus nebulosus*), yellow perch (*Perca flavescens*), white sucker (*Catostomus commersonii*), and various warmwater forage species. The Niagara River is considered by many to be one of the top three muskellunge fisheries in New York State. The embayment adjacent to the 102nd Street Site provides important shallow water nursery habitat for muskellunge as well as smallmouth bass, largemouth bass, northern pike, redhorse sucker (*Moxostoma* spp.), white sucker, rock bass (*Ambloplites rupestris*), banded killifish (*Fundulus diaphanous*), carp, bluntnose minnow (*Pimephales notatus*), and black crappie (*Pomoxis nigromaculatus*) (Roblee and Wilkinson 1993).

The Trustees determined that mercury was present in sediments of the embayment in excess of the NYSDEC severe effects level, indicating that a significant impairment of sediment-dwelling organisms can be expected (NYSDEC 1999). These high concentrations of mercury may also pose a risk of harm to birds and fish that use the embayment as a food source. Concentrations of lindane and hexachlorobenzene in sediments were also determined to be at levels toxic to a number of benthic organisms, as well as higher trophic level organisms. PCB concentrations in fish in the embayment may adversely affect sensitive fish species and pose a risk to piscivorous wildlife that use them as a food source. Measured 2,3,7,8-TCDD concentrations in fish from the embayment exceeded reproductive effect levels for piscivorous mammalian and avian wildlife. Histopathological lesions found on brown bullhead and carp from the embayment may be related

to high concentrations of polycyclic aromatic hydrocarbons in embayment sediments (Hickey et al. 1990).

Studies at the site have also demonstrated that contaminants from the embayment bioaccumulate readily. American eels (Anguilla rostrata) have been found to accumulate high contaminant body burdens during their adult life in Lake Ontario and the Great Lakes system (Hodson et al. 1994). Migrating eels from the Niagara River and Lake Ontario carry their high contaminant body burdens to the St. Lawrence estuary, where they serve as prey for beluga whales (*Delphinapterus leucas*).

Organochlorine contamination from the site is believed to be contributing to the reproductive impairment and suppressed immune function in the St. Lawrence beluga population. The occurrence of healthy beluga whales in U.S. Atlantic coast waters is likely contingent upon the health and reproductive success of the St. Lawrence beluga population.

2.2.3 Natural Resource Damage Settlement

Our settlement pertaining to natural resource injuries at this site focused on lost ecological services in the 102nd Street embayment of the Niagara River and in the emergent wetland at the Site. As discussed above, concentrations of some contaminants in the embayment, particularly mercury, lindane, hexachlorobenzene, PCBs, 2,3,7,8-TCDD, and PAHs, exceeded concentrations associated with adverse ecological effects in aquatic plants, benthic invertebrates, fish, and piscivorous wildlife.

The 1999 CD was between the United States of America, the State of New York, and OCC and Olin Corporation. Olin and OCC provided funding for two habitat restoration projects on the Upper Niagara River in close proximity to the Site – Cherry Farm and Buckhorn Island. The companies also agreed to plant shallow-rooted grasses and other wildlife food and cover plants on the landfill cap. Olin and OCC provided $10,962.95 as reimbursement for New York's past assessment costs, $39,643 as reimbursement for DOI's past assessment costs, and $468,258.71 for Trustee natural resource damages. The Trustee MOA between NOAA, DOI, and the NYSDEC was developed in 2000. All monies are joint Federal/State funds and are to be spent in accordance with an MOA between DOI, NOAA, and the State. The settlement funds are to be used for habitat restoration, enhancement, and creation projects that, according to the CD, "may include preferential review of projects for restoration or enhancement of Niagara River habitat or habitat in Niagara or Erie County." The Trustees have further determined that it is appropriate to use the restoration funds for creation of emergent wetland in the Niagara River watershed. As the settlement included approximately $55,000 in damages for potential injuries to beluga whales occurring in U.S. Atlantic coast waters, these funds are to be used to complement the "St. Lawrence Beluga Recovery Plan" for beluga whale restoration. With interest accruals, the balance in this account is currently approximately $531,000. Slightly less than 5% or $28,000 will be used by DOI for restoration oversight and monitoring. **Approximately $503,000 is available for restoration projects.**

2.3 Love Canal Superfund Site

2.3.1 Background

The Love Canal Site is a 16-acre landfill located in an abandoned power canal originally excavated in about 1894 by William T. Love (Figure 1). From 1942 until 1953, Hooker

Chemicals and Plastics Corporation (now OCC) disposed of over 21,000 tons of various chemicals in the canal. These chemicals included acids, chlorides, mercaptans, phenols, toluenes, pesticides (including lindane), chlorophenols (including dioxin-tainted trichlorophenol), chlorobenzenes, and sulfides. The area was then covered and deeded to the Niagara Falls Board of Education in 1953. From the mid-1950s through the early 1970s, the area was extensively developed for residences and a public school. Development included construction of sanitary and storm sewer lines across the waste-laden canal. These storm sewer lines would later be implicated as a primary pathway of contaminant transport from the Site to streams adjacent to the site and the Niagara River (Malcolm Pirnie Inc. 1983; USEPA 1988).

As a result of unusually high precipitation in 1975 and 1976, a very high groundwater level apparently developed in the Love Canal area, causing drums to surface and contaminated water to appear in backyards and basements of homes. In August of 1978, the Commissioner of the New York State Department of Health (NYSDOH) declared a health emergency at Love Canal and about 950 families were evacuated from their homes. Remedial activities at the Love Canal Site have included construction of a perimeter drainage system to collect contaminated leachate, capping of 40 acres of the landfill and adjacent area, cleaning 65,000 linear feet of storm and sanitary sewers, and dredging 3,000 meters of Black and Bergholtz Creeks to remove about 14,000 cubic yards of sediment contaminated with 2,3,7,8-TCDD (USEPA 1997).

2.3.2 Impacts to Fish and Wildlife Resources

The Love Canal Site is bordered on the north by Black Creek and Bergholtz Creek and on the west by Cayuga Creek. Black Creek is a tributary to Bergholtz Creek, which flows into Cayuga Creek. Cayuga Creek flows to the Little River which joins the Niagara River.

Black, Bergholtz, and Cayuga Creeks support a warmwater fishery that includes species such as largemouth bass, rock bass, sunfish (*Lepomis* sp.), minnows, stickleback (*Gasterostreus* sp.), and shiners. Brown bullhead, yellow perch, northern pike, smallmouth bass, carp, white sucker, and redhorse sucker also inhabit Cayuga Creek. Various fish consumption advisories exist for Cayuga Creek and the Niagara River, including an “eat no fish species” in Cayuga Creek due to dioxin contamination (NYSDOH 2000-2001).

The habitat adjacent to these creeks can be expected to support a variety of passerine bird species, such as red-winged blackbirds, as well as water birds such as great blue herons and black-crowned night herons. Waterfowl, particularly dabbling ducks like the mallard and black duck, use these creek habitats for feeding. Waterfowl known to occur on Cayuga Creek include the mallard, scaup, common goldeneye, bufflehead, Canada goose (*Branta canadensis*), and red-breasted merganser (*Mergus serrator*).

Black, Bergholtz, and Cayuga Creeks were all contaminated as a result of releases from the Love Canal Site. The chemical 2,3,7,8-TCDD was considered characteristic of Love Canal contamination and high concentrations (up to 46 ppb) were found in sediment of Black, Bergholtz, and Cayuga Creeks. 2,3,7,8-TCDD was also detected in crayfish (*Euastacus* sp.) from Bergholtz Creek and spottail shiners (*Notropis hudsonius*) from Bergholtz Creek, Cayuga Creek, and the Niagara River near the 102nd Street storm sewer (Malcolm Pirnie Inc. 1983; CH2M Hill and Ecology and Environment Inc. 1985; NYSDOH 1981; Kuzia 1985). Concentrations of 2,3,7,8-TCDD may have caused mortality of embryos and young fish of certain species that are sensitive to planar chlorinated hydrocarbons, such as 2,3,7,8-TCDD. Concentrations of 2,3,7,8-TCDD in sediments and forage fish may also have adversely impacted reproduction in birds and

mammals at higher trophic levels within the ecosystem. The dredging of Black and Bergholtz Creeks to remediate contamination also adversely affected natural resources. Remediation eliminated all vegetation within and along the creeks and caused downstream turbidity.

2.3.3 Natural Resource Damage Settlement

The 1996 CD between the United States of America and OCC determined that OCC would pay $375,000 for natural resource damages. A subsequent MOA was developed between the DOI and NOAA, in accordance with the CD, which provides for DOI to undertake activities authorized by the CD upon the advice and consent of NOAA. Funds paid pursuant to the CD shall be utilized for restoration and assessment of trust resources at or affected by the Site as determined by the Supervisor, USFWS, New York Field Office. DOI will undertake a restoration project or projects with preference given to a creek restoration or enhancement project in Niagara County. The natural resource damage assessment and restoration settlement for this site was negotiated by the Service and NOAA. The DOI used $22,200 of these settlement funds for the development of this RP; we do not anticipate that additional funds will be used for restoration oversight and monitoring. Interest has accrued on the balance of these funds and **approximately $430,000 is available for restoration projects.**

2.4 Natural Resource Restoration Planning

The three Trustee MOAs developed for the Forest Glen, 102nd Street, and Love Canal Sites establish a framework for developing restoration projects that restore, replace, and/or acquire the equivalent natural resources that were injured by releases of hazardous substances from these three Sites. The Trustees developed a list of potential restoration projects that compensate for injured natural resources and comply with specific restoration provisions in the MOAs or CDs.

Section 3. Proposed Restoration Actions and Alternatives

In developing the RP, the Trustees are required to consider a reasonable number of possible restoration alternatives (43 CFR, Section 11.81, DOI Natural Resource Damage Assessment Regulations). This section of the Restoration Plan describes the alternatives and explains the considerations and criteria for identifying and evaluating alternatives.

3.1 General Restoration Alternatives Considered for Each Injury

The goal of the Trustees is to select restoration projects that best serve to restore resources and/or services that were impacted by contamination or remedial activities associated with the sites. At the Forest Glen Mobile Home Subdivision Site, injured resources included migratory birds dependent on grassland, forested wetland, and stream corridor habitat, and warmwater fish and other aquatic resources of East Gill Creek, Gill Creek, Hyde Park Lake, and the Niagara River. The 102nd Street Site contributed to injuries to migratory birds and warmwater fish of the Niagara River. Contaminants and remedial activities associated with the Love Canal Site injured migratory birds and warmwater fish along the Niagara River, Bergholtz Creek, Black Creek, and Cayuga Creek. In addition to the above ecological service losses, recreational use of the fisheries in the Niagara River and Cayuga Creek have been impaired due to fish consumption advisories. Physical and chemical habitat degradation associated with these sites has also affected human use services such as bird watching, hiking, and water-based recreation.

The following matrix describes the general categories of restoration considered by the Trustees for each injured resource or service. The injured resources and services are described in Sections 2.1.2, 2.2.2, and 2.3.2 of this document. Restoration alternatives were developed based on the Trustees' views of appropriate restoration options including options that were presented in CDs or MOAs developed for these three sites.

Table 1. Injured Resources and General Restoration Alternatives.

Injured Resource/Service	Restoration Alternative
Forested wetland habitat [1]	Acquire/protect forested wetland
Grassland habitat [1]	Restore/protect grassland
Warmwater stream habitat [1,3]	Restore warmwater stream and riparian habitat
	Enhance recreational use of fish and wildlife
	Restore trust resources affected by Site
	Contaminant characterization of East Gill Creek
Niagara River habitat [1,2,3]	Restore Niagara River and riparian habitat
	Enhance recreational use of Niagara River fish and wildlife
	Restore habitat in Niagara or Erie Counties
	Create emergent wetland in Niagara River watershed
	Restore trust resources affected by Site
Beluga Whales [2]	Complement the "St. Lawrence Beluga Recovery Plan"

1 Forest Glen: According to the MOA, a minimum of 15 acres of grassland habitat should be restored or created in the Niagara River corridor to enhance/create habitat for grassland nesting and foraging passerines such as the eastern meadowlark, bobolink, red-tailed hawk, and harrier. A second restoration focus is acquisition and protection of forested wetland habitat in the site vicinity. Priority will be given to acquisition and protection of the Klydel wetland or a similar wetland in North Tonawanda, New York.
2 102nd Street: The agreed-upon settlement funds are intended to be used for habitat restoration, enhancement, and creation projects that, according to the 1999 CD, "may include preferential review of projects for restoration or enhancement of Niagara River habitat or habitat in Niagara or Erie County." The Trustees have further determined that it is appropriate to use the restoration funds for creation of emergent wetland in the Niagara River watershed. Settlement funds are also to be used to complement the "St. Lawrence Beluga Recovery Plan".
3 Love Canal: Funds paid pursuant to the CD shall be utilized for restoration and assessment of trust resources at or affected by the Site as determined by the Supervisor, USFWS, New York Field Office. DOI will undertake a restoration project or projects with preference given to a creek restoration or enhancement project in Niagara County.

3.2 Criteria for Evaluating the Proposed Restoration Actions and Evaluation Process

Criteria for Evaluating the Proposed Restoration Actions

As noted above, in developing the RP, the Trustees are required to consider a reasonable number of possible restoration alternatives. We are required to evaluate each restoration alternative according to all relevant considerations, including the following factors (listed in 43 CFR, Section 11.82, DOI NRDA Regulations): technical feasibility; the relationship of the expected

costs of the proposed actions to the expected benefits; cost-effectiveness; the results of any actual or planned response actions; the potential for additional injury resulting from the proposed actions, including long-term and indirect impacts; the natural recovery period of the injured resources; the ability of the resources to recover with or without alternative actions; the potential effects of the action on human health and safety; consistency with relevant Federal, State, and Tribal policies; and compliance with applicable Federal, State, and Tribal laws.

We have established the following selection criteria to help us evaluate proposals and ensure that they meet our objective to replace, restore, and/or acquire the equivalent natural resources of those that were injured by releases of contaminants from the three sites:

- Link to injured resources. The extent to which the alternative restores, replaces, or acquires the equivalent natural resources that were injured. Priority will be given to projects that most closely restore, replace, enhance, or protect resources identified in the above restoration categories.

- Proximity to injured resources. Priority will be given to projects in Niagara County or Erie County, with the exception of the beluga whale project.

- Cost effectiveness. Priority will be given to projects that provide the greatest environmental benefit for the least cost in comparison to other proposed projects.

- Extent to which the restoration project will enhance the public's ability to use, enjoy, or benefit from the natural resources.

- Extent to which the project is expected to be successful. Priority will be given to projects with identified objectives and methodologies, with sponsors that have experience in the restoration methodology, and assurances to provide long-term support and maintenance of the project once completed.

- Compliance with applicable Federal, State, Tribal, and local laws and policies.

- Extent to which the proposed project may be affected by actual or planned remedial or response actions. Proposed projects that are likely to be enhanced or augmented by remedial/response actions may be preferred for selection, whereas proposed projects that are likely to be adversely impacted by response/remedial actions may not be preferred.

- The natural recovery period. Projects to restore natural resources that will experience natural restoration within a reasonable period of time in the absence of active restoration efforts may not be preferred as part of this restoration planning effort.

- Ability of resources to recover with or without restoration project.

- Potential effects of the project on human health and safety.

- Potential for additional injury resulting from the proposed restoration activities.

The first five of these – link to injured resources, proximity to injured resources, cost effectiveness, public value, and likelihood of success – were determined by the Trustees to be primary selection criteria.

Evaluation Process

Projects were initially reviewed for compliance with the general restoration alternatives of Table 1. A number of projects or portions of projects were screened out in this initial review because they did not comply with the general restoration alternatives of Table 1 and were, therefore, determined to be unlikely to result in the restoration, replacement, enhancement, or protection of resources that were injured by contaminant releases from the three Sites. For the most part, these projects consisted of the development of management plans or models, biological inventories or monitoring, or they were not sufficiently developed for further consideration. These projects which were not considered further are described in Section 3.5 of this RP/EA.

All projects which remained after the initial screening were evaluated with regard to the five primary selection criteria noted above - link to injured resources, proximity to injured resources, cost-effectiveness, public value, and likelihood of success. Projects were scored on each criterion as follows:

1. Link to injured resources – Restoration projects that are likely to restore resources or services known to be injured received a score of 3. If the proposed restoration project would restore resources that may have been injured, it was given a score of 2 and if there was uncertainty regarding the relationship between the proposed project and injuries, a score of 1 was assigned.
2. Proximity to injured resources – Proposed restoration projects within Niagara and Erie Counties received scores of 2 or 3 because of their proximity to injured resources, with a 2 assigned to those projects for which their greater distance from the location of injured resources may reduce their likelihood of more direct restoration of injured resources. A score of 1 indicates that the project is located at a greater distance from the injuries, generally outside Niagara and Erie Counties.
3. Cost effectiveness – Proposed projects that supplied adequate cost documentation to support a conclusion that the project will restore injured resources at a reasonable cost were assigned a score of 3. Projects that, in our judgment, may have a somewhat higher cost/benefit relationship were assigned a score of 2.
4. Public value – Projects that are likely to provide significant value to the public in terms of enhanced resources or improved natural resource services were assigned a score of 3. If the public values were not deemed as great or were unclear, a score of 2 was assigned.
5. Likelihood of success – If the project has a high likelihood of successfully achieving its objectives, a score of 3 was assigned. A score of 2 was assigned if there is less certainty about project success.

Based on the results of this evaluation, taking into consideration the available funds, projects were divided into two groups:

- Selected: these are projects which are proposed, pursuant to this RP/EA, to be funded and implemented; these projects are discussed further in section 3.3 of this RP/EA; together these projects comprise the Preferred Alternative; and,
- Not Selected: these are projects which are not proposed to be funded nor implemented pursuant to this RP/EA; these projects are discussed further in section 3.4 of this RP/EA.

Table 2. Restoration Projects Evaluated (See Figure 2).

Restoration Category	Project	Link to Injuries	Proximity	Cost Effectiveness	Public Value	Likely Success	Summary Score	Cost
Forested Wetland [1]								
Selected	Audubon Wetland Acquisition (Klydel)	3	3	3	3	3	15	**$60,000**
Grassland Restoration [1]								
Selected	Niagara County Grassland	3	3	3	3	3	15	**$103,000**
Selected	Tuscarora Grassland	3	3	3	3	3	15	**$94,000**
Further Contaminant Characterization[1]								
Selected	East Gill Creek Contaminant Characterization	3	3	2	2	3	13	**$150,000**
General Restoration with Preference for Restoration of Niagara River Habitat or Habitat in Niagara or Erie County (including emergent wetland)[2]								
Selected	Common Tern Restoration #1	3	3	3	3	2	14	**$14,000**
Selected	Common Tern Restoration #2	3	3	3	3	2	14	**$60,000**
Selected	Buffalo River Walleye Management Project	2	3	2	3	3	13	**$35,000** (+80,000: see below)
Selected	Niagara Escarpment Grassland and Oak Savannah	3	2	3	3	3	14	**$119,000**

1 Forest Glen
2 102nd Street
3 Love Canal

Selected	Joseph Davis State Park Habitat Restoration	3	3	3	3	3	15	**$220,000**
Beluga Whale Restoration[2]								
Selected	Beluga Whale Investigation	2	2	3	3	2	12	**$55,000**
General Restoration with Preference for Creek Restoration or Enhancement[3]								
Selected	Fish Creek Restoration	3	3	3	3	3	15	**$130,000**
Selected	Cayuga Creek Restoration	3	3	2	3	2	13	**$220,000**
Selected	Buffalo River Walleye Restoration Project	2	3	2	3	3	13	**$80,000**
Not Selected	Elton Creek Restoration	2	1	2	3	3	11	$250,000
Not Selected	Scajaquada Creek	1	2	2	2	2	9	$39,060
Not Selected	Springville Dam	2	1	2	2	2	9	No Cost
Not Selected	Cattaraugus Creek	2	1	2	2	2	9	$60,360

1 Forest Glen
2 102nd Street
3 Love Canal

3.3 Description of Proposed Projects

Based upon the evaluation process described in Section 3.2 of this RP/EA, a number of projects have been selected for implementation. These are identified on Table 2 as "Selected" and, in total, comprise the Trustees' Preferred Alternative. The locations of these projects are shown on Figure 2. Specific information on each project follows.

Wetland Acquisition and Enhancement (Klydel or Similar Acreage). Submitted by Buffalo Audubon Society. Estimated Total Cost: $60,000.

The North Tonawanda Audubon Nature Preserve (Klydel Wetland) project focuses on protecting a unique 70-acre remnant forest block. The forested wetland/upland complex provides important ecological functions and social values. The Klydel Wetland provides habitat for as many as 100 species of migratory birds including possible, probable, or confirmed breeding by the American woodcock (*Scolopax minor*), hooded warbler (*Wilsonia citrina*), wood thrush (*Hylocichla mustelina*), veery (*Catharus fuscescens*), black-billed cuckoo (*Coccyzus erythropthalmus*), and yellow-billed cuckoo (*Coccyzus americanus*). Many developments have been proposed in this wetland complex and piecemeal development has occurred. The objective of the Buffalo Audubon Society is to establish an urban nature preserve that will ensure protection in perpetuity of this pristine forested wetland. All land acquired at this nature preserve will be owned by the Buffalo Audubon Society, with conservation easements held by the Western New York Land Conservancy. In the event that proposed land acquisition occurs prior to the availability of this funding, Buffalo Audubon may purchase a similar acreage/type of wetland for protection. Urban wetlands are on the NYSDEC, Region 9 Priority "A" List of the Open Space Plan because they provide valuable wildlife habitat, wildlife viewing, and teaching opportunities.

This specific project was identified in the Trustee MOA for the Forest Glen Mobile Home Subdivision settlement. Acquisition and protection of forested wetland habitat will compensate for injuries to this type of habitat as a result of chemical contamination and remedial activities associated with the Forest Glen Site.

Grassland Habitat Restoration in Niagara County. **Submitted by Niagara County Soil and Water Conservation District (SWCD). Estimated Total Cost for 800 Acres: $340,000. $103,000 to be Funded (240 acres).**

The Niagara County SWCD, in conjunction with the Natural Resources Conservation Service (NRCS), proposes to create 800 acres of grassland habitat. The Trustees propose to partially fund this project, with 240 acres of grassland restored for a total of $103,000. Over the course of four years, Niagara SWCD will work with the Tuscarora Nation, Pheasants Forever of Western New York, and the U.S. Department of Agriculture's NRCS in site identification and coordination with other habitat projects.

Approximately half of the acreage of cool and warm season grasses would be planted in Year One with the remaining acreage planted in Year Two. Mowing and maintenance would occur over two to three years to establish warm season grasses.

The main species of grasses to be planted are switchgrass, big bluestem, little bluestem, side oats grama grass, and Indian grass. In the interest of creating varied habitat in some wet locations, cold season grass, such as reed canary grass, may be planted (NRCS and Ducks Unlimited

Canada 1997). To prepare the sites for planting, they may need to be plowed and disked, and herbicide may be used.

The Trustees are proposing to fund $103,000 of the grassland restoration work, with the understanding that Niagara County SWCD may also be involved in other grassland restoration activities with the Tuscarora Nation and the Western New York Land Conservancy at the Niagara Escarpment Project. This grassland restoration and the Tuscarora Nation grassland restoration (below) will directly benefit avian resources injured as a result of chemical contamination or remedial activities associated with the Forest Glen Mobile Home Subdivision Site.

Tuscarora Nation Grassland Restoration. Submitted by the Tuscarora Nation. Estimated Total Cost for 200 Acres: $94,000.

The Tuscarora Environment Program has been promoting the restoration of warm season grasslands as a way to maintain open space, restore soil quality, and provide wildlife habitat in existing cropland, shrub-scrub field complexes, and fallow land at the Tuscarora Nation. This project is proposed in conjunction with the above Niagara County SWCD grassland restoration project. The Niagara County SWCD can provide technical expertise, staff, and equipment to establish these grassland sites.

The Tuscarora Habitat Coordinator will work with the Niagara County SWCD to initiate and manage habitat restoration projects on Nation lands in consideration of cultural and traditional needs and best management practices. The efforts of the Habitat Coordinator will be directly overseen by the Tuscarora Environment Program through consultation with the Tuscarora Nation Council of Chiefs and Clanmothers. Other technical support may come from the Haudenosaunee Task Force, NYSDEC, USFWS, and other Tribal and environmental organizations.

Two hundred acres of land on the Nation will be identified for grassland restoration. The Council of Chiefs and Clanmothers, as well as any affected property owners, will approve each available parcel for restoration activities. The requested funds will be used to plant the 200 acres over a 2-year period and mow and maintain the grasslands for 2-3 subsequent years.
This grassland restoration and the Niagara County SWCD grassland restoration project (above) will directly benefit avian resources injured as a result of chemical contamination or remedial activities associated with the Forest Glen Mobile Home Subdivision Site.

East Gill and Gill Creek Contaminant Characterization, Estimated Cost: $150,000.

NOAA is currently in the planning stages of this project. Work should be completed in 2005. The contaminant characterization will involve the collection of sediment samples from East Gill Creek and Hyde Park Lake for sediment chemistry analysis and sediment toxicity testing and the collection of fish from these areas for tissue chemistry analysis. NOAA anticipates that sampling and analysis will cost up to $150,000, with any residual funds available for additional restoration planning and restoration projects.

Common Tern Restoration #1: Common Tern Recolonization at a Traditional Nesting Site in the Niagara River. Submitted by Ralph Morris of Fenwick, Ontario. Estimated Total Cost: $14,000.

The common tern population on the lower Great Lakes has undergone a decline since the early 1970s (Morris and Hunter 1976; Courtney and Blokpoel 1983). Two possible reasons for this decline are loss of suitable nesting sites to ring-billed gulls and vegetative changes at nesting sites. This project proposes to utilize methods employed near Port Colborne, Lake Erie, and Hamilton Harbour, Lake Ontario, to preserve nesting sites for common terns.

Work would be performed at a 2.5-acre site about one mile upstream of Niagara Falls in the Niagara River. Various reports indicate that hundreds of pairs of common terns may have nested there as recently as the 1970s. The site has supported nesting ring-billed gulls since the early 1980s. The proposed project includes a combination of vegetation removal, raptor placement to discourage ring-billed gulls, and removal of ring-billed gull eggs.

This project will serve to address injuries to migratory birds of the Niagara River as a result of chemical contamination from the Forest Glen Mobile Home Subdivision Site, Love Canal Site, and 102nd Street Site.

Common Tern Restoration #2: Niagara Frontier Common Tern Habitat Enhancement (Black Rock Canal and Niagara River). Submitted by Riveredge Associates, LLC. Estimated Total Cost: $60,000.

Similar to the above project, the objective of this project is to provide high quality breeding habitat for the common tern, a New York State threatened species. This proposal indicates that the decline in New York's inland tern population can be attributed to the loss of nesting habitat and low reproductive rates due to predation, low quality nesting substrate, and human disturbance. The project proponents indicate that on the Niagara River, the number of terns has dropped from 518 nesting pairs in 1977 to 92 pairs in 2003. Nesting sites may have low productivity because coarse rock or cement nesting substrate cause egg breakage during incubation.

The proposed project would provide high quality breeding habitat for terns on the Niagara River by (1) adding pea gravel nesting substrate to two existing nesting sites, and (2) providing additional nesting habitat for breeding terns through the installation of a floating tern nesting raft.

This project will serve to address injuries to migratory birds of the Niagara River as a result of chemical contamination from the Forest Glen Mobile Home Subdivision Site, Love Canal Site and 102nd Street Site.

Niagara Escarpment Legacy Project. Submitted by Western New York Land Conservancy. Estimated Total Cost: $995,350. $119,000 to be Funded.

The objective of the Legacy Project is to maintain the Niagara Escarpment landscape and its vicinity as a contiguous natural environment. Specifically, the project is designed to restore and protect ecologically- and geologically-significant landscapes, create/enhance public access to natural resources, and provide opportunities to teach young people about escarpment geology and ecosystems. The Western New York Land Conservancy will work cooperatively with the City and Town of Lockport, the State University of New York at Buffalo, the NYSDEC, Pheasants Forever, Niagara County SWCD, Niagara County, Friends of the Buffalo-Niagara Rivers, and other community groups. The Niagara Escarpment is considered a unique area and significant ecological area by the NYSDEC and is listed on the NYSDEC Region 9 "B" List of the Open Space Conservation Plan.

Project components consistent with restoration plan objectives are as follows:

- Approximately 110 acres of project area would be restored to native grassland. Approximately 30 acres of the 49 acres of the City of Lockport sanitary landfill would be restored to grassland to attract a more diverse variety of insects, birds, and mammals. An additional four acres of roadside bordering Eighteenmile Creek and the Escarpment along Stone Road would also be restored with native wildflowers and grasses. Sutliff Rotary Park supports two to three acres of existing grassland that would be restored to native grassland as part of park renovation by the Lockport Rotary Club. Some portion of the 80-acre composting facility owned by the City of Lockport would be restored to native grassland. The City has indicated a willingness to allow the Western New York Land Conservancy to restore some part of the 80-acre site. The exact acreage has not yet been determined. Additional grassland habitat would be restored on the Escarpment plateau adjacent to the City of Lockport composting facility. This aspect of the project involves four parcels of private land totaling 40 acres. Acquisition funds would be used to acquire fee title in all or some of these properties or a combination of fee title and conservation easements. Total costs for this portion of the project are $47,000 for restoration of 110 acres of grassland habitat (70 acres publicly owned) and up to $52,000 for the fee title acquisition or establishment of conservation easements at 40 acres of privately owned land.

- Oak savannah was once more abundant along the sandy shorelines of the Great Lakes. This proposal would restore an oak savannah ecosystem on top of the Escarpment at the City of Lockport composting facility. A ten-acre oak savannah ecosystem on top of the Escarpment would be created in which grasses and trees will be planted to mimic a savannah-like landscape. The cost of this proposed project is $20,000.

The Trustees believe that the grassland and oak savannah development portions of this proposed project will restore avian habitat and services injured by chemical releases and remedial activities associated with all three sites.

Joseph Davis State Park Habitat Restoration. Submitted by Buffalo Audubon Society. Estimated Total Cost: $220,000.

Joseph Davis State Park lies on the northern border of the Town of Lewiston, adjacent to the Niagara River and Niagara River Important Bird Area. The majority of the undeveloped area within the 360-acre park has been designated a New York State Bird Conservation Area and the New York State Office of Parks, Recreation and Historic Preservation Master Plan has designated much of the park as a natural area. Two wetland restoration/enhancement projects are proposed. The Western Pond project involves the expansion of an existing wetland to create a mixed wetland of emergent marsh, mudflat, potholes, and a scalloped edge. Native wetland herbs and shrubs will be planted along sections of the shoreline. Turtle sunning logs, bird perches, and nest boxes will be placed in and adjacent to the wetland. This project will be constructed by the Audubon Society at a cost of $102,000.

The Eastern Pond Project consists of restoring and enhancing approximately ten acres of wetland. Ditches will be plugged to restore hydrology, areas adjacent to existing ponded areas will be excavated, potholes will be excavated, and wetland areas will be planted. In addition, 20 acres of

native grassland areas will be restored. This project will be constructed by the U.S. Fish and Wildlife Service, in consultation with the Buffalo Audubon Society, at a cost of $118,000.

These projects will restore wetland and grassland habitat, benefiting birds, amphibians, reptiles, mammals, and other resources injured by chemical contamination from all three sites.

Beluga Whale Investigations. Estimated Cost: $55,000.

The Trustees have agreed that approximately $55,000 for beluga whale restoration will be transferred to NOAA and used to complement the "St. Lawrence Beluga Recovery Plan."

Buffalo River Walleye Management Project. Submitted by Erie County, in cooperation with NYSDEC, the Erie County Fisheries Advisory Board, Southtown's Walleye Association of WNY, Inc., and the Town of Cheektowaga. Estimated Total Cost: $357,416. $115,000 to be Funded.

This project proposes to restore a naturally reproducing, self-sustaining, stream spawning walleye population in the Buffalo River system by rearing walleye fingerlings in artificial ponds constructed in proximity to Cayuga Creek (Town of Cheektowaga, Erie County). The project hopes to expand the stream spawning walleye population in the Buffalo River system to 5,000 adults by 2012 by stocking approximately 25,000-50,000 walleye fingerlings annually from a local genetic source into the Buffalo River system at the Cayuga Creek project site.

The restoration of walleye is an appropriate project to compensate for injuries to warmwater fish as a result of chemical contamination and remedial activities at all three Sites. This project will also restore recreational fishing opportunities in the Buffalo and Niagara Rivers.

Fish Creek Restoration, Submitted by Tuscarora Nation and U.S. Fish and Wildlife Service, Cortland, NY. Estimated Cost: $130,000.

Fish Creek, on the Tuscarora Nation, has been channelized, filled for roads, culverted, and redirected around the Lewiston Reservoir. In addition, adjacent wetlands have been filled or drained and the connection between the stream and its floodplain has been disrupted by this manipulation. A restoration project that utilizes natural channel design principles could restore approximately 1,000 feet of Fish Creek into the pattern, profile, and dimensions that would form a stable stream. Costs of such projects can range from $50 to $250 per linear foot, with this project expected to cost about $120 per linear foot. The design work would entail calculating flows, pattern, and dimensions of stream width, depth, and slope. The development of pools, riffles, and habitat features involving woody debris would be part of the project. The pattern would be changed from the present straight, channelized form.

A wetland will also be created adjacent to the Tuscarora School to provide educational benefits, as well as serve to re-attach the stream to its floodplain. When the stream/floodplain configuration is stabilized, the energy of the stream will be dissipated into the floodplain. The combination of wetland and stream improvements will enhance nutrient cycling and biotic flow while creating a more stable and naturally functioning environment.

The wetland component of this project will consist primarily of excavation and will cost approximately $1,200 per acre. Additional costs would be incurred for planting disturbed soils

along the new stream corridor. The Tuscarora Nation will provide technical assistance in the design and construction of these projects at a cost of $5,000.

The restoration of stream habitat and creation of wetland habitat will compensate for injuries to these types of habitats associated with all three sites. The Love Canal CD specifically promoted consideration of stream restoration projects and pursuant to the 102nd Street settlement, the Trustees agreed to consider the use of funds for creation of emergent wetland in the Niagara River watershed.

Cayuga Creek Restoration. Submitted by City of Niagara Falls. Estimated Cost: $220,000.

Cayuga Creek is a low gradient, warm water stream located in an urban, residential area. With proper care, the stream and riparian corridor should support a warmwater fishery and riparian wildlife species. Components of the proposed project submitted in 1998 were: (1) testing of sediments to determine levels of contaminants ($22,300); (2) a site survey to determine streambank stabilization needed (riprap, concrete mattresses, gabions, bio-engineering) ($193,800); (3) habitat restoration (in-stream cover, plantings, timber cribs, riparian vegetation, nest boxes) ($56,400); and (4) neighborhood recreation and corridor beautification (small park) ($52,500). The City has also expressed an interest in habitat restoration of Black and Bergholtz Creeks, tributaries to Cayuga Creek, and the Little River.

The City of Niagara Falls has more recently been reconsidering additional restoration options and is proposing to work with Niagara County, area residents, and the Friends of the Buffalo-Niagara Rivers to develop a stewardship program for this creek. Specific projects, such as debris removal ($32,500), an urban canoe trail ($5,000), and public information/stewardship program ($12,500), are being proposed.

Cayuga Creek, Black Creek, Bergholtz Creek, and the Little River were directly and significantly impacted by releases from the Love Canal site, as well as remedial activities. The Love Canal CD specifically promoted the consideration of stream restoration projects. Some of the projects proposed by the City of Niagara Falls are not consistent with our restoration objectives (e.g. corridor beautification), while others are consistent with those objectives, but additional planning is needed to fully develop the project (habitat restoration). In light of the significant impacts sustained by Cayuga Creek, Bergholtz Creek, Black Creek, and the Little River as a result of contamination and remedial activities associated with the Love Canal Site, the Trustees propose to allocate $220,000 to be used for habitat restoration activities in these waterways that may include physical habitat improvement, recreational enhancements, and development of an environmental stewardship program. We propose that the precise nature of these projects be determined after the City develops a habitat restoration plan in coordination with the Trustees and partners such as Niagara County and Friends of the Buffalo-Niagara Rivers. Ten percent of these funds may be leveraged with other funds to develop this plan.

3.4 Projects Considered but Not Selected

As noted in Section 3.2 of this RP/EA, some projects were considered but not selected for funding and implementation pursuant to this RP/EA. Specific information regarding each such project follows.

Cattaraugus Creek Streambank Stabilization and Habitat Restoration. **Submitted by Erie County SWCD. Estimated Cost: $60,360.**

The Cattaraugus Creek watershed drains about 147,000 acres of Erie County. The watershed is primarily agricultural and forested. The creek flows through the Cattaraugus Indian Reservation. Cattaraugus Creek and most of its tributaries are classified by NYSDEC as C(T) or higher. Cattaraugus Creek is stocked annually with trout and supports significant migratory runs. These streams also support natural populations of rainbow trout (*Oncorhynchus mykiss*) and native brook trout (*Salvelinus fontinalis*).

The 1996 NYSDEC Priority Waterbodies List designates Cattaraugus Creek as a stressed watercourse, with the primary pollutants listed as sediments, pesticides, pathogens, and nutrients from streambank erosion and agricultural runoff. The Great Lakes Management Plan cites contaminated sediments and agricultural runoff as a source of pollution contributing to the degradation of fish and wildlife populations. The Local Working Group and Water Quality Coordinating Committee have identified Cattaraugus Creek as the second highest priority waterbody within the county.

Erie County SWCD received grant money from the Great Lakes Coastal Watershed Restoration Program to complete a streambank inspection of the upper Cattaraugus Creek and its tributaries during the summer of 2003. This project was intended to identify and map areas of high silt/sediment loading and thermal stress as a result of streambank erosion and lack of riparian vegetation. The SWCD is proposing to design and implement two additional streambank restoration projects in areas yet to be determined. Approximately 250-350 linear feet of stream would be re-shaped to a stable slope and the bank would be covered with erosion control fabric and biotechnical plantings to include, but not be limited to, willow wattles, live stakes, and bare root seedlings. The SWCD also proposes to design and install LUNKER structures to enhance aquatic habitat. Work would be performed in conjunction with Trout Unlimited. Cattaraugus Creek and its tributaries are on the NYSDEC, Region 9 Priority "A" List of the Open Space Plan due to recreational opportunities and significant ecological areas.

Although the Trustees regard this as a project that could serve to restore resources injured as a result of chemicals or remedial activities associated with the three Sites, the Trustees did not rank it as highly as some other projects, largely because of distance from injured resources.

Elton Creek In-Stream Restoration Project. Submitted by the NRCS. Estimated Cost: $250,000.

This project is located in Cattaraugus County and consists of restoring 5,000 feet of Elton Creek, a wild trout stream. Project components include streambank stabilization, old bridge removal, stream channel improvements, and placement of instream structures. Although the Trustees regard this as a project that could serve to restore resources injured as a result of chemicals or remedial activities associated with the three Sites, the Trustees did not rank it as highly as some other projects, largely because of distance from injured resources.

Scajaquada Creek Streambank Restoration for Water Quality and Aquatic Habitat Enhancement. Submitted by Erie County SWCD. Estimated Cost: $39,060.

Increased development in the Scajaquada watershed (29 square miles) has led to decreased baseflow and increased peak storm flow discharge, and subsequently, higher streambank erosion and downstream sedimentation. The lower portion of this creek flows underground and may receive discharges of raw sewage. In the 1970s and 1980s, the creek was channelized and managed for flood control for nearly four miles.

The creek is a class B stream. Pollutants include sediment, nutrients, salts, pathogens, thermal changes, organics, oxygen demand, and water level/flow. Sources of pollutants are contaminated sediments, combined sewer overflows, storm sewers, streambank erosion, hydromodification, land disposal, construction, chemical leaks, and spills. It is considered a major contributor of pollution to the Niagara River.

The SWCD received funding from the Erie County legislature to develop a watershed management plan. They identified impairments such as sewer overflows and sediment erosion, leading to poor water quality and aquatic habitat. The SWCD has received funding to install biotechnical erosion controls at four priority sites.

This proposed project is an extension of the above erosion control projects. The SWCD proposes to use traditional rock riprap and biotechnical techniques including, but not limited to, willow wattles and rooted cuttings of a variety of shrubs and trees to stabilize approximately 250 feet of severely eroding streambank east of Warner Road in the Village of Depew. The SWCD will use the assistance of Earth Team volunteers for plantings. They will also strategically place cobbles and boulders and excavate silt from silt-choked areas to enhance riffle-run-pool-glide patterns. The SWCD will subcontract the installation of environmentally sensitive rock riprap.

The Trustees did not select this project because, upon inspection, it did not appear that the proposed restoration activities would serve to restore resources or services injured by chemical contamination or remedial activities associated with the three sites.

Cattaraugus Creek Fish Passage at Springville Dam. No Estimated Cost.

The Springville Dam was built in 1922 for production of electrical energy. It was never subject to licensing by the Federal Energy Regulatory Commission probably due to its construction date. The project operated up until three or four years ago. The dam was subsequently purchased by Erie County and is now used as a small riverside park.

In the late 1920s, Cattaraugus Creek was polluted by wastes from tannery and glue factories. The assimilation of these wastes severely depleted the water's dissolved oxygen, thus limiting its fishery resources. Water quality has greatly improved since that time and a viable fishery has developed. Steelhead trout from Lake Erie enter the creek from August through May providing angling opportunities downstream of the dam. The Seneca Indian Tribe has rights to approximately 20 miles of stream in this area. It is approximately 34 stream miles from the Springville Dam to Lake Erie and there are about 55 stream miles upstream of the dam (approximately 25 of the 55 miles are in tributaries). Spring angling for naturalized rainbow and stocked brown trout is popular upstream of the dam with a significant amount of water open for public access.

The NYSDEC wishes to evaluate the options for providing passage for lake-run steelhead trout at the Springville Dam. Successful upstream spawning and reproduction could reduce the need for annual stocking. Passage for other riverine species could also be considered. Upstream movement of parasitic sea lampreys (*Petromyzon marinus*) should be precluded.

The Great Lakes Fishery Commission (GLFC) treats Cattaraugus Creek with lampricides and is interested in providing a focused flow from the dam (as opposed to a large veil of water over the spillway) in order to conduct lamprey trapping for monitoring purposes. The U.S. Army Corps of Engineers is in the early planning stages for this project and is open to expanding discussions to include fish passage. Cattaraugus Creek and its tributaries are on the NYSDEC, Region 9 Priority "A" List of the Open Space Plan due to recreational opportunities and significant ecological areas.

The Trustees did not rank this proposal as high as some others because of its distance from injured resources and services and limited available information on design specifications and project cost.

3.5 Projects Not Consistent with Restoration Objectives

Niagara Escarpment Legacy Project.

Components of the Niagara Escarpment Legacy Project not meeting the Trustee requirements include stream restoration, wetland restoration, woodlands restoration, trail development, land acquisition, outreach, and plan development. These project components were either not sufficiently developed or adequately linked with natural resource injuries.

Tonawanda Creek Watershed Management for Habitat Protection and Restoration on Tonawanda Creek. Submitted by Friends of the Buffalo-Niagara Rivers.

Tonawanda Creek is one of the Niagara River's largest sub-basins with major tributaries – Ellicott Creek, Ransom Creek, Mud Creek, and Murder Creek. This creek supports a variety of freshwater mussels, the NYS threatened longear sunfish (*Lepomis megalotis*) and NYS species of special concern, the brindled madtom (*Noturus miurus*). Significant fish species include walleye, northern pike, and pickerel (*Esox* sp.). Tonawanda Creek is threatened by historic pollutants, loss of habitat, invasive species, and nonpoint source pollution. Water quality impairments include sediment from streambank erosion, iron, and coliform bacteria. In 1999, the NYSDOH issued a fish consumption advisory for carp due to the presence of PCBs. Tonawanda Creek tributaries have also experienced fish kills due to silage leachate discharges from farms.

The proposed project is to develop a Watershed Management Plan to identify impairments and strategies to protect resources, set resource priorities, educate stakeholders, and create a coalition of community members committed to creek restoration. Funding is requested to collect data, conduct stream surveys, outreach, prepare a watershed management plan, and prepare grant applications for implementation of the Tonawanda Creek Management Plan. The Tonawanda Creek Corridor is on the NYSDEC, Region 9 Priority "B" Open Space Plan with the objective of water resource protection.

This project was not considered because development of plans, without a solid framework for implementation that would result in restoration, is not consistent with the objective to replace,

restore, and/or acquire the equivalent natural resources of those that were injured by releases of contaminants.

USFWS Fish Habitat Projects. Submitted by USFWS, Amherst, New York. Estimated Cost: $560,000.

Project components are as follows:

- Survey several suspected lake sturgeon spawning locations in the Lower Niagara River (Red Cliffs, Coast Guard Station, bar at confluence to Lake Ontario) to find eggs and larvae and determine whether New York Power Authority (NYPA) operations can mitigate any adverse impacts associated with dewatering.

- Model effects of Niagara River flow fluctuations on persistence of lake sturgeon.

- Create lake sturgeon habitat in Upper and Lower Niagara River, in partnership with NYSDEC, U.S. Geological Survey, and NYPA (no specific plans currently available).

- Develop method for non-invasive sampling of lake sturgeon for contaminants or train people in existing method.

- Assess shoreline for spawning potential for lake sturgeon. Assess current use, habitat suitability, and possibilities for restoration/rehabilitation.

- Conduct a long-term study to determine the age at which lake sturgeon imprint to habitat and the rate of return to natal water.

- Satellite tracking of adult lake sturgeon to determine range, timing of migration.

- Adopt-a-sturgeon education and outreach program.

The majority of these proposals focus on studies, monitoring, modeling, or sampling. As such, they are not consistent with the objective to replace, restore, and/or acquire the equivalent natural resources of those that were injured by releases of contaminants, and thus were not considered by the Trustees. The one project which may entail restoration – the creation of lake sturgeon habitat in the Upper and Lower Niagara River – had no specific plans currently available, and thus was not sufficiently developed to be able to be considered further by the Trustees at this time.

Ellicott Creek Riparian Corridor Improvement. Submitted by Erie County NRCS. No Estimated Cost.

The Upper Ellicott Creek Riparian Corridor Improvement Project would focus on streambank protection and restoration in the upper reaches of Ellicott Creek and its major tributaries within Erie County, New York. Funds would be used for construction of fences for livestock exclusion, planting of appropriate bioengineering and habitat improvement vegetation, and restoration of riparian wetlands. Funds will also be used to construct or develop alternate water supplies in order to eliminate the perceived need for livestock access to streams for drinking water. The project would provide protection treatment on a minimum of 3,000 feet with priority to projects that minimize earth moving requirements. The Ellicott Creek Corridor is on the NYSDEC, Region 9 Priority “B” List of the Open Space Plan with an objective of water resource protection.

The Trustees did not consider this proposal because it lacked specificity and a link to restoration of injured resources or services.

Habitat Improvement Projects Submitted for Niagara Power Project Relicensing Process.

A large number of projects were submitted as part of the relicensing process for NYPA's Niagara Power Project (Appendix A). We made inquiries of several of the project proponents to determine whether any detailed project plans are available. For the most part, we found that the projects are in the very early stages of planning with insufficient detail regarding technical specifications, project cost, or sponsors to allow us to evaluate them as part of this process.

3.6 Summary of Preferred Alternative

The following restoration projects are proposed in the Preferred Alternative:

Project	**County**	**Cost**
Audubon Wetland Acquisition	Niagara County	$60,000
Niagara Co. Grassland Restoration	Niagara County	$103,000
Tuscarora Nation Grassland Restoration	Niagara County	$94,000
Common Tern Restoration #1	Niagara County	$14,000
Common Tern Restoration #2	Niagara/Erie County	$60,000
Buffalo River Walleye Restoration	Erie County	$115,000
Niagara Escarpment Grassland & Oak Savannah Restoration	Niagara County	$119,000
Joseph Davis State Park Habitat Restoration	Niagara County	$220,000
Fish Creek Restoration	Niagara County	$130,000
Cayuga Creek Restoration	Niagara County	$220,000
Beluga Whale Restoration		$55,000
East Gill Creek Chemical Characterization	Niagara County	$150,000
	TOTAL	**$1,340,000**

Upon release of this Final Restoration Plan, project proponents will be required to submit detailed plans identifying project specifications including project location(s), acreage, project designs, entities responsible for restoration activities, timetable for restoration, monitoring plan, and relevant conservation easements, deed restrictions, landowner agreements, or other protective land covenants. These plans shall be submitted to and approved by the Trustees prior to fund allocation.

3.7 No-Action Alternative

Federal regulations require us to consider this option. The Trustees considered the no action alternative under which no action would be taken to restore resources injured due to contamination or remedial activities associated with the Sites. We would rely entirely on the natural recovery of the resources from the sustained injuries.

Section 4. Analysis of Environmental Consequences

4.1 Federally Listed Threatened and Endangered Species

The Preferred Alternative was examined for its probable impact on biological resources, including effects on water quality, fish and wildlife and their habitat, including Federally and State listed threatened or endangered species. Except for occasional transient individuals, no Federally listed or proposed endangered or threatened species under our jurisdiction are known to exist in the project impact area. In addition, no habitat in the project area is currently designated or proposed "critical habitat" in accordance with provisions of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 661 et seq.).

4.2 Environmental Effects of Proposed Projects

The Preferred Alternative is anticipated to have a positive impact on biological resources. The acquisition and protection of forested wetland at or near Klydel will provide habitat for a variety of birds including potentially the American woodcock, hooded warbler, wood thrush, veery, black-billed cuckoo, and yellow-billed cuckoo. Restoration and protection of grasslands and oak savannah will benefit grassland nesting birds such as the State listed as threatened northern harrier, upland sandpiper, and Henslow's sparrow (*Ammodramus henslowii*), and State listed as Special Concern vesper sparrow (*Pooecetes gramineus*), and grasshopper sparrow. The common tern is a State listed as threatened species that is intended to benefit from the common tern restoration projects. In the case of Fish Creek and Cayuga Creek, habitat will be enhanced for warmwater fish and riparian corridor birds. Water quality will be improved and recreational opportunities enhanced. Wetlands restored or created at the Joseph Davis State Park or as part of the Fish Creek project will provide habitat for migratory birds, amphibians, and reptiles. The stocking of walleye will restore angling opportunities in the assessment area. Further contaminant characterization in East Gill Creek will identify any ecological risks to resources in this ecosystem.

4.3 Compliance with Other Regulations

Projects that do not involve ground disturbance, such as grassland restoration, oak savannah restoration, common tern restoration, and land acquisition, are not likely to affect historic, cultural, and aesthetic resources. The Erie County Department of Environment and Planning has agreed to ensure that the proposed walleye stocking project will not affect historic, cultural, or aesthetic resources. The Erie County Sewer District Number 1 had extensive archaeological work done in the project area in 1994 that may facilitate this evaluation. The City of Niagara Falls and partners would assume responsibility for ensuring that activities occurring along Cayuga Creek, Black Creek, Bergholtz Creek, or the Little River are consistent with historic, cultural, and aesthetic guidelines. If land is disturbed for creation of a wetland adjacent to Fish Creek, the Tuscarora Nation would be responsible for ensuring consistency with any applicable Tribal and other regulations.

4.4 Effects of No Action Alternative

Under the no action alternative, injuries to wetlands, streams, rivers, migratory birds, and fish would be uncompensated. Given sufficient time and without additional injury, natural processes may enable some natural resources to recover to pre-injury levels. However, the time frame for such natural recovery has been estimated to be in terms of decades. This alternative was

determined to be unacceptable because it fails to restore injured resources in a timely manner and does not comply with the obligations set forth in consent decrees for these Sites.

Section 5. Monitoring and Site Protection

Each project proponent is responsible for developing monitoring plans and performing monitoring to record the status of their project. The specific performance criteria, monitoring period, frequency of monitoring, and associated reports will vary depending on the type of project, and will be determined on a case-by-case basis. Draft monitoring plans will be submitted to the USFWS, as Lead Administrative Trustee, for review and approval prior to the transfer of funding. Monitoring reports will be submitted to the USFWS, as Lead Administrative Trustee, upon completion of the project or various components of the project.

Prior to receiving funding, each project proponent must ensure that the restoration project will be maintained and protected for a length of time commensurate with the funding and project purpose. For example, the Trustees anticipate that wetland acquisition and restoration projects, as well, as all other land acquisition projects, will be placed under a protective land covenant (e.g., conservation easement, deed restriction) in perpetuity. Lesser terms of maintenance and protection may be appropriate for other projects and will be determined on a case by case basis.

Section 6. List of Preparers

This RP/EA was prepared by the USFWS, New York Field Office (Anne Secord, Kathryn Jahn, David Stilwell), NOAA (Lisa Rosman, Todd Goeks), and the NYSDEC (Sharon Brooks, Steven Sanford).

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FIGURES

APPENDIX A

DRAFT LIST OF RESTORATION PROJECTS EVALUATED AS PART OF RELICENSING OF NIAGARA POWER PROJECT

Draft List of Habitat Improvement Projects Submitted as Part of Niagara Power Project Relicensing

1. Tifft Nature Preserve – replace culvert connecting Lake Erie and Lake Kristy.
2. Tifft Nature Preserve – nesting platforms for raptors
3. Bell slip – muskellunge nursery habitat
4. Shoreline between Bell Slip and Seaway Piers – scallop edges to create diverse habitat and break wave action
5. NYPA ice boom land access
6. Outer harbor breakwall "islands"
7. Times Beach wetland/upland
8. Outer harbor sturgeon spawning areas enhancements
9. South Park/Lake Erie connection through wetland restoration
10. Altiff property improvements – removal of lime pile
11. LTV Site – restoration of riverine shoreline
12. Concrete central peninsula habitat protection and enhancement
13. Katherine Street peninsula habitat protection
14. Donnolly wall protection for common terns
15. Bird Island submerged vegetation protection
16. North end Squaw Island habitat enhancements
17. Strawberry Island – east arm wetland cell
18. Motor Island shoreline enhancement
19. Shallows between Strawberry and Motor Island
20. North of Riverside Park shallows area
21. Beaver Island State Park boat wake reduction
22. Beaver Island State Park coastal wetland
23. Beaver Island State Park Sled Hill meadow mitigation
24. Spicer Creek culvert repair
25. Ferry Landing public access
26. Gun Creek protection/improvement
27. South Grand Island Bridge – access
28. Grass Island protection zone
29. Buckhorn Island State Park spawning areas
30. Buckhorn Island State Park management and weir maintenance
31. West River Parkway riparian habitat
32. Big Sixmile Creek invert lowering
33. Big Sixmile Creek nature trail
34. Eco-island connection
35. North of South Grand Island Access Point in Tonawanda
36. Klydell wetland
37. Ellicott Creek diversion channel
38. Ellicott Creek Park island enhancements
39. Flood conversion cross-over, Tonawanda to Ellicott Creek, Ellicott Park
40. Ellicott Creek – Convert Cannel to wetland
41. Nine Mile Island, Tonawanda Creek protection
42. Mudd Creek Former Channel Enhancement and Protection (40 acres)
43. Mudd Creek / Tonawanda Creek Peninsula protection

Draft List of Habitat Improvement Projects Submitted as Part of Niagara Power Project Relicensing

44. Upper Reaches of Mudd Creek Protection
45. Tonawanda Creek riffles
46. Tonawanda and Ellicott Creek Canoe Trail/Launch Site
47. Northern tip of Tonawanda Island access and restoration
48. 102 Street Landfill Shoreline Restoration
49. 102 Street Landfill Grassland Management
50. Cayuga/Bergholtz Creek confluence enhancement
51. Southern Robert Moses Parkway Shoreline Improvements
52. Southern Moses Parkway Intakes enhancement
53. Adams Beck Intake "current break" enhancements
54. Gill Creek
55. Hyde Park Shoreline Restoration and Management
56. Spoils Pile Habitat Protection
57. Aqueduct Linear Habitat Improvements
58. Goat Island Habitat Restoration
59. Niagara Escarpment Protection Project
60. Niagara Gorge Protection: buffer along rim
61. Niagara Gorge and Escarpment Invasive Species Eradication
62. Niagara Gorge Native Plant enhancement
63. Niagara River Plant Erosion Tolerant Species Experimentation
64. Lower Niagara Gorge Trail Improvements
65. DeVeaux Campus Old Growth Forest Protection
66. Fish Creek Channelization
67. Reservoir-Fish Preservation
68. Identification/Preservation of Sturgeon spawning habitat
69. NYPA Intakes
70. Art Park Escarpment Restoration and Enhancement
71. Art Park Fishing Access near Lewiston
72. HoJack RR Line Protection
73. Stella Niagara Waterfront Property and Lewiston Pumping Station
74. Joseph Davis State Park River Improvement
75. Joseph Davis State Park Wetland Connection Project
76. Bond's Lake Protection – Shoreline Restoration
77. Ponds along RMP, Porter
78. Spotted Turtle Habitat Preservation
79. O'Connor Farm grassland