

1.0 INTRODUCTION

On October 23, 2003, the Federal Energy Regulatory Commission (“Commission” or “FERC”) issued a new license to the New York Power Authority (“NYPA”) for the St. Lawrence-FDR Power Project (“Project”) on the St. Lawrence River in New York. On November 25, 2003 NYPA accepted the license. The Project includes the portion of the International St. Lawrence Power Project owned by NYPA, encompassing all or portions of four dams, associated generating facilities, dikes, and the U.S. portion of Lake St. Lawrence. The Project lands encompass approximately 8,760 acres in the towns of Waddington, Louisville and Massena, and the Village of Waddington and approximately 200 miles of shoreline including the mainland, tributaries and islands within the Project boundary.

In accordance with the Project license, NYPA is required to control lands necessary for the operation of the Project and to provide for public recreation and the protection of environmental, cultural and aesthetic resources associated with the Project. NYPA has developed this Land Management Plan to establish the guidelines and procedures that will enable the Authority to meet these requirements.

1.1 Scope and Content of the Plan

The Land Management Plan for the St. Lawrence – FDR Power Project is founded on a series of goals and objectives governing the use of Project lands and responsibilities regarding continued operation and maintenance of the Project facilities, public access to Project lands, recreation, and protection of natural and cultural resources. The Land Management Plan provides an inventory and description of Project lands and resources and presents guidance for the management and use of Project lands, including lands managed by other state agencies, municipalities, and commercial entities. This Plan identifies those activities and uses that require permits from NYPA and describes the process through which those permits can be obtained. This Plan also identifies prohibited uses and activities. Finally, the Land Management Plan summarizes the various natural resource, cultural resource and recreation management plans prepared by NYPA to implement the requirements of the license and describes how these plans relate to the Land Management Plan. Local zoning and development codes and coastal management plans are also summarized and discussed relative to NYPA’s Land Management Plan.

The preparation and content of this Land Management Plan adheres to the requirements of the Project license as well as to the policies and guidance of FERC with regard to land management activities for FERC-licensed hydroelectric projects.

1.1.1 Requirements of the Project License

Article 413 of the Project license requires NYPA to develop a Land Management Plan for Project lands (see Appendix A). According to Article 413, the Land Management Plan shall “identify Project lands and all associated buffer zones, and shall establish guidelines for the use of these lands, including public access, construction activities, the protection and preservation of wildlife habitats and scenic and cultural resources, and commercial uses.” Article 413 also provides that NYPA shall “have the authority to issue permits to the public or to State or Federal agencies for proposed Project land uses that are consistent with the guidelines of the Land Management Plan, and that cover, at a minimum, construction, maintenance, and operation of water-dependent structures, and any existing structures and uses.”

Article 413 of the Project license specifies the consultation process that is required as part of the preparation of the Land Management Plan, including the documentation of comments received during the consultation process and the resolution of those comments. Article 413 also specifies compliance reporting requirements for land management activities and sets forth the responsibilities of NYPA with regard to the issuance, monitoring and enforcement of any land use permits that are issued in accordance with the Land Management Plan.

Other articles of the Project license also include requirements that relate to land management activities on Project lands. Article 401 requires the preparation of a Shoreline Stabilization Plan and defines the consultation process to be undertaken for the preparation of that plan. Article 409 requires the implementation and maintenance of the Habitat Improvement Projects identified in the Ecological Settlement Agreement and outlines public consultation and compliance reporting requirements. Article 411 requires the preparation of an implementation plan for the design, construction, monitoring, operation, and maintenance of the Wilson Hill Wildlife Management Area (Wilson Hill WMA) improvement projects. Article 422 pertains to the implementation of a Historic Properties Management Plan. These other plans and their relationship to this Land Management Plan are discussed further in Section 5 of this document.

1.1.2 FERC Policies Regarding Use of Project Lands and Waters

FERC has long recognized the need to manage lands associated with hydroelectric projects to protect non-power resources, including fish and wildlife resources, aesthetics, historic properties, water quality, and recreation. Section 4(e) of the Federal Power Act, as amended by the Electric Consumers Protection Act of 1986, requires that FERC, when issuing a license for hydroelectric projects, give “equal consideration to the purposes of energy conservation, the protection, mitigation of, damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality.”

FERC encourages licensees to manage shoreline areas through the incorporation of specific license provisions, and has issued a guidance document titled: *Guidance for Shoreline Management Planning at Hydropower Projects (April 2001)* to assist licensees in the preparation of management plans. That document has been consulted in the preparation of this Plan.

Article 423 of the Project license (included in Appendix A) authorizes the Authority to grant permission, without prior Commission approval, for certain types of use and occupancy of Project lands as long as “the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational and other environmental values of the Project.” The specified types of use and occupancy for which the Authority may grant permission are landscape plantings, non-commercial docks or similar structures intended to serve single family dwellings, erosion control structures, and food plots or other wildlife enhancement. Article 423 also outlines the responsibilities of the Authority with regard to supervision and control of any permitted use and occupancy, including the right to cancel the permission and require the removal of any non-complying structures and facilities.

1.2 Public Participation in the Development of the Plan

This Land Management Plan reflects extensive public involvement that was initiated in 1996 as part of NYPA’s relicensing effort for the St. Lawrence-FDR Power Project. As mandated in License Article 413, public involvement efforts continued through the preparation and filing of this Plan. The following sections describe the public involvement process that was undertaken during the preparation of this Plan.

1.2.1 Relationship to the Comprehensive Relicensing Settlement Accord

The public involvement process culminated in the filing of a Comprehensive Relicensing Settlement Accord (“Comprehensive Accord”) with FERC on February 6, 2003. In its October 23, 2003 Order issuing NYPA the new license, FERC approved the Comprehensive Accord (with minor modifications not relevant to this Plan). The Comprehensive Accord was signed by the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), the New York State Department of Environmental Conservation (DEC), the New York State Department of State (DOS), the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), the St. Lawrence Aquarium and Ecological Center Inc., and New York Rivers United. The Comprehensive Accord was also signed by the St. Lawrence Local Government Task Force, an association comprised of the following member entities:

- St. Lawrence County
- Town of Louisville

- Town of Lisbon
- Town of Massena
- Town of Waddington
- Village of Massena
- Village of Waddington
- Lisbon Central School District
- Madrid Waddington Central School District
- Massena Central School District

In the Comprehensive Accord, NYPA agreed to develop a Land Management Plan that would “establish guidelines for public access to Project lands, construction activities within the Project boundary, use of motorized recreational vehicles on Project lands and use of Project lands for appropriate commercial activities that are dependant upon either access to or proximity of Project waters.”^[1] Specific minimum provisions for the Land Management Plan were included in the Local Government Task Force Agreement^[2], one of five individual agreements between NYPA and the signatories to the Comprehensive Accord. The land management provisions of the Comprehensive Accord are reflected in Article 413 of the Project license. This Plan reflects the principles for management of Project lands and associated resources developed through the relicensing, and satisfies the obligations of NYPA with regard to the preparation of a Land Management Plan as required by the Project license and consistent with the Comprehensive Accord.

The Land Management and Recreation Subcommittee was organized during the relicensing effort to facilitate resolution of land management issues related to the relicensing and continued operation of the Project. The Land Management and Recreation Subcommittee addressed issues pertaining to interests of adjoining landowners, shoreline erosion, and general land management principles that were eventually incorporated in the Comprehensive Accord.

1.2.2 Involvement of State and Federal Agencies

State and federal agencies with a management interest in the Project lands were consulted throughout the preparation of the Land Management Plan. These agencies included the following:

- New York State Department of Environmental Conservation
- New York State Office of Parks, Recreation and Historic Preservation
- New York State Department of State, Division of Coastal Resources
- U. S. Fish and Wildlife Service
- U. S. Department of the Interior, Bureau of Indian Affairs
- National Park Service

An initial draft of the Land Management Plan was distributed to federal, state and local agencies in July 2004 to solicit their comments. Written comments were received from several agencies, and revisions to incorporate these comments were reflected in the subsequent draft of the Land

Management Plan. A complete draft of the Land Management Plan, including all appendices and figures, was distributed to these agencies again in August 2004.

1.2.3 Public Consultation Process

Members of the local communities and the general public were afforded the opportunity to review and comment on the Land Management Plan. Specific outreach efforts were directed to adjoining landowners and others who may be directly affected by land management activities associated with the operation and maintenance of the Project. Copies of the Draft Land Management Plan were provided for review at convenient public locations, and public meetings were held to provide a forum for the dissemination of information and receipt of public comments.

Beginning in January 2004, NYPA held a series of meetings in the towns of Louisville, Waddington and Massena. Initially, these meetings consisted of informal briefings for local elected officials to develop the process for preparing the Land Management Plan and to organize groups of officials and interested citizens to provide focused feedback throughout the development of the Land Management Plan. Subsequent meetings with these land management committees were held in April and May to review the Land Management Plan outline and initial drafts of the Plan. In June, a series of meetings were held in each of the towns to review a draft of the Vegetation Management Plan. Copies of draft documents were distributed in advance of these meetings in order to garner meaningful feedback and comments. A complete draft of the Land Management Plan, including all appendices and figures, was made available in August for review at convenient public locations (i.e., local town hall), and a series of public meetings were subsequently held to provide local residents and public officials the opportunity to present their comments. Residents and local officials were also afforded the opportunity to provide written comments to NYPA during a 30-day public review period.

In accordance with Article 413 of the license, the Land Management Plan is accompanied by a Public Consultation Package, which provides documentation of the public consultation process, including copies of the comments received during the consultation process. In response to each specific comment, NYPA has identified in its filing to FERC how the comments are addressed in the Land Management Plan.

2.0 LAND MANAGEMENT PLAN GOALS AND OBJECTIVES

This Land Management Plan provides a framework for managing Project lands in a manner consistent with the FERC license, resource agency requirements and the Comprehensive Accord while balancing the needs of the Project and the interests of adjoining landowners and the general public. The following Goals and Objectives provide the rationale for specific policies and the

direction for specific actions, and together can be viewed as the foundation for this Land Management Plan.

2.1 Use of Project Lands

Goal: To establish the appropriate use of Project lands and provide a comprehensive land management strategy that protects the integrity of the Project, including environmental, historic, aesthetic and recreational resources, while recognizing specific resource values, public access requirements and the interests of adjoining landowners.

Objective: Prepare and periodically update a land use inventory and establish appropriate land management activities in accordance with resource characteristics and existing uses.

Objective: Establish guidelines for the approval of new and reconstructed docks, boathouses, shoreline stabilization measures and utilities by adjoining landowners and others.

Objective: Define allowable, permitted and prohibited uses of Project lands and continue a permit program to implement land management policies.

Objective: Implement an enforcement program to ensure compliance with the established permit programs.

2.2 Public Access and Recreation

Goal: To ensure appropriate public access to and recreation activities on Project lands in accordance with FERC license requirements and public policies while protecting the interests of adjoining land owners and the general public.

Objective: Implement measures to enable appropriate public access along the shoreline including Areas of Dense Residential Development

Objective: Recognize and adhere to management responsibilities for recreational facilities through agreements with other entities in accordance with the Recreation Plan.

2.3 Protection of Natural Resources

Goal: To establish land management policies and strategies that recognize and protect natural resources.

Objective: Implement site-specific land management policies and activities for identified management areas and other natural resource areas, consistent with other resource plans, to protect and enhance natural habitats.

Objective: Implement site-specific land management policies and activities for protecting High Quality Viewscapes from inappropriate development or land management activities.

Objective: Develop and implement a Vegetation Management Plan.

Objective: Develop and implement a Shoreline Stabilization Plan.

Objective: Develop and implement a Wildlife Protection and Management Plan

2.4 Protection of Historic Properties

Goal: To establish land management policies and strategies that recognize and protect historic properties.

Objective: Coordinate land management policies and activities with the Historic Properties Management Plan.

2.5 Project Operation, Maintenance and Security

Goal: To implement an integrated approach to land management activities that provides for the safe operation and maintenance of the Project and accommodates other resources plan

Objective: Implement a Vegetation Management Plan that balances the operation and maintenance requirements of the Project with other recognized functions and uses of Project land.

Objective: Coordinate land management policies and activities with the Shoreline Stabilization Plan.

Objective: Coordinate with the U.S. Coast Guard, the U.S. Border Patrol and the New York State Police on security operations so that they may maintain the integrity of the international border.

3.0 DESCRIPTION OF PROJECT LANDS AND RESOURCES

This section of the Land Management Plan provides a general description of the Project lands and associated resources including recreational, aesthetic, natural and cultural resources.

3.1 Project Facilities and Operations

3.1.1 Project Boundary

The Project license reflects a Project boundary located 25-feet-horizontal of the Normal Maximum Water Surface Elevation (NMSE) downstream of the Project terminus (2,300 feet upstream of Iroquois Dam) or 100-feet horizontal of the NMSE in sensitive resource areas (i.e., Significant Coastal Fish and Wildlife Habitat). NMSE is defined as elevation (El) 246 feet (U.S. Lake Survey 1935 datum) for the area of Waddington from Iroquois Dam to Sucker Brook and as El 245 feet from Sucker Brook to the Moses-Saunders Power Dam (including a portion of Waddington and all of Louisville and Massena). The Project boundary as defined by the FERC-issued license is generally illustrated in Figures 3-1a through 3-1c and more precisely shown in Appendix B (originally provided as Exhibit G of NYPA's License Application).

3.1.2 Project Facilities

a. Dams

There are four dams included within the Project: the Robert Moses Power Dam, the Long Sault Dam, the Massena Intake, and the United States portion of the Iroquois Dam.

Robert Moses Power Dam is the United States portion of the international power dam. The international power dam, referred to as the Moses-Saunders Power Dam, extends 3,200 feet across the St. Lawrence River between Barnhart Island in Massena, New York and Cornwall, Ontario. The Robert Moses Power Dam is a 1,600-foot-long reinforced concrete dam. The dam is located approximately six miles northeast of the Village of Massena, and just upstream of the City of Cornwall (see Figure 3-1c). Generating facilities associated with the Robert Moses Power Dam include the intake structures, turbine/generator units, and appurtenant equipment. The Project also includes an 18-acre switchyard on Barnhart Island. This yard collects and meters the power produced by the Robert Moses Power Dam and distributes it to various transmission lines.

Long Sault Dam is a 2,960-foot-long curved concrete gravity overflow structure located entirely within the United States in the Town of Massena, approximately 3.9 miles west and upstream of the Moses-Saunders Power Dam (see Figure 3-1c). Long Sault Dam extends from the mainland to the western end of Barnhart Island. The Dam is the spillway for the International Power Project and passes St. Lawrence River flows on the infrequent occasions when IJC-regulated outflow of Lake Ontario exceeds the capacity of the available turbine/generator units at the Moses-Saunders Power Dam.

Massena Intake is a reinforced concrete gravity structure, approximately 721 feet in length, located at the head of the Massena Power Canal, entirely within the United States in the Town of Massena (see Figure 3-1c). State Highway 131 crosses the structure. The power canal was originally built in 1903 to divert flow from the St. Lawrence River to the former ALCOA Hydroelectric Power Plant in the Village of Massena. Massena Intake helps impound Lake St.

Lawrence. A water intake at this structure provides process water to the ALCOA plant in Massena and potable water for the Town and Village of Massena.

Iroquois Dam is located in the Town of Waddington approximately 28 miles upstream of the Moses-Saunders Power Dam (see Figure 3-1a). Iroquois Dam extends approximately 1,980 feet across the St. Lawrence River, from Waddington to Iroquois Point in Iroquois, Ontario. Most (1,790 feet) of Iroquois Dam is within the United States. Iroquois Dam is operated under the direction of the International Joint Commission's (IJC) International St. Lawrence River Board of Control to provide auxiliary control of levels in Lake St. Lawrence and to assist in ice cover development upstream of the dam.

b. Dikes

The Project includes 10.9 miles of dikes constructed across low-lying areas along the southern shore of the St. Lawrence River (see Figures 3-1a through 3-1c). Lakeside slopes were riprapped, and landward slopes were covered with topsoil and seeded after construction for stability. With the exception of Coles Creek Dike, which is not adjacent to Lake St. Lawrence and has a height of only two to three feet, the minimum design elevation for the top of the dikes provides 5.5 feet of freeboard above the maximum design water level (El 249 feet) and approximately 10.5 feet above normal maximum water level.

South Forebay Dike extends 8,400 feet westerly from the Moses-Saunders Power Dam. Average and maximum heights are 50 feet and 145 feet, respectively.

Long Sault North Dike extends approximately 4,300 feet easterly from the north abutment of the Long Sault Dam. Average and maximum heights are about 15 feet and 95 feet, respectively.

Long Sault Dike extends approximately 21,400 feet westerly from the Eisenhower Lock on the St. Lawrence Seaway. Average and maximum heights are approximately 25 feet and 45 feet, respectively.

Richard's Landing Dike extends approximately 11,300 feet westerly from the Massena Intake. Average and maximum heights are about 25 feet and 50 feet, respectively.

Mutton Ridge Dike is approximately 9,500 feet in length and is located approximately 12 miles upstream of the Moses-Saunders Power Dam. Highway 131 is built atop Mutton Ridge Dike. Average and maximum heights are 10 feet and 20 feet, respectively.

Wilson Road Dike is also located approximately 12 miles upstream of the Moses-Saunders Power Dam and is approximately 1,200 feet in length. Average and maximum heights are about 10 feet and 15 feet, respectively.

Coles Creek Dike is located approximately 1.5 miles east of the mouth of Coles Creek and is 1,330 feet long. The Coles Creek Dike is the only dike that does not normally impound Lake St. Lawrence. The dike was built to contain Coles Creek in the event of high water. Average and maximum heights are 2 feet and 3 feet, respectively.

3.1.3 Project Operations

The operation of the Project to pass flow in the St. Lawrence River is regulated by the IJC through its International St. Lawrence River Board of Control in accordance with its Plan of Regulation for Lake Ontario. The Plan of Regulation is intended to balance the many interests (e.g., navigation, hydropower generation, riparian property owners) who use the St. Lawrence River and Lake Ontario for various purposes and who are affected by water levels from Lake Ontario to areas downstream of Montreal. Typically, all flow through the International St. Lawrence Power Project passes through the turbine/generator units in the Moses-Saunders Power Dam. Historically, the monthly outflow from the Project is lowest during January when flow is reduced to assist in formation of a stable ice cover on Lake St. Lawrence. The maximum monthly outflow typically occurs during early summer with flows gradually decreasing throughout the summer and fall.

3.1.4 Project Security

Public access to the main Project facilities is controlled to ensure the secure operation of the Project. For security reasons, barriers are maintained at both ends of the Moses-Saunders Power Dam to prohibit unauthorized access across the dam. The Security Complex at the main Project entrance is staffed 24-hours a day, and all vehicles entering or leaving the main Project area are checked. The majority of the Project boundary is contiguous with the international border with Canada, and NYPA maintains regular contact with the U.S. Coast Guard, the U.S. Border Patrol and the New York State Police to coordinate security operations and maintain the integrity of the international border.

3.2 Land Use

The Project encompasses approximately 28 miles of the St. Lawrence River from approximately 2,300 feet upstream of the Iroquois Dam to approximately two miles below the Moses-Saunders Power Dam. The Project encompasses approximately 29,260 acres, of which approximately 20,500 acres are water and approximately 8,760 acres are land. Islands, not including Barnhart and Wilson Hill islands, which are connected to the mainland, comprise approximately 1,915 acres of the Project lands.

3.2.1 Project Lands

Land cover types and land uses within the Project are predominantly forest and wetlands, and outdoor recreation. Forest land (approximately 72 percent natural forest and 28 percent brush cover) is concentrated in the Wilson Hill WMA, on Long Sault and Croil islands, and in Coles Creek and Robert Moses State Parks. Wetlands occur in greatest abundance in Coles Creek State Park, Wilson Hill WMA, Robinson Bay, and along some of the tributaries. Agricultural uses of Project land (primarily pasture and cropland) occur on some of the islands, but the largest such usage is west of the Village of Waddington. The Town of Waddington, through an agreement with NYPA, issues permits to individuals for agricultural activities on these lands, although active agriculture, other than for use as pasture, is not prevalent within the Project. General land use and land cover within the Project boundary are shown on Figures 3-1a through 3-1c.

3.2.2 Adjoining Lands

The majority of privately owned lands near or abutting the Project consists of single-family residential, agricultural, forest, or undeveloped lands. Residential areas abut the Project boundary in the Town of Waddington, Village of Waddington, on Wilson Hill Island, and along Route 131 in the Town of Louisville. Commercial and industrial land uses occur near the Project in several locations, particularly in the Town of Massena and the Village of Waddington.

Specifically defined “Areas of Dense Residential Development,” as set forth in the Comprehensive Accord, are located immediately adjacent to the Project boundary. These areas, illustrated on Figures 3-2a and 3-2b and identified below, are subject to specific management policies.

a. Town and Village of Waddington

The Areas of Dense Residential Development adjoining the Project boundary in the Town and Village of Waddington are specifically defined as follows:

The existing residences on the St. Lawrence River shoreline, from the municipal beach east to Pine Street (except for the Waddington Mooring Area, Island View Park and Whittaker Park). The existing residences on the following portions of the shoreline of Big Sucker Brook: a) adjacent to Brookview Drive; b) adjacent to Linden Street between the Cemetery and Route 345; and c) adjacent to Route 345 for a distance of approximately 1,100 feet south of the bridge over the brook, and adjacent to Nell Manor Drive.

The Project land in the Village of Waddington between the residences and the St. Lawrence River between Pine Street and Maple Street has been leased to the Village of Waddington for use as a public park (i.e., Island View Park) through 2019. Waddington has expressed their desire to maintain this as a public park; therefore, this area is not considered an Area of Dense Residential Development.

b. Town of Louisville

The Areas of Dense Residential Development within the Project boundary in the Town of Louisville are specifically defined as follows:

The existing residences on the north shore of Wilson Hill Island from the westernmost residential lot east to all residences adjacent to Wilson Hill Road on the eastern end of the island. The existing five residences from the Wilson Hill Boat Launch to the western end of Mutton Ridge.

3.3 Recreational Resources

A diversity of formal and informal recreation opportunities exists at the Project. A total of 19 formal parks and other recreation sites are located within the Project boundary. Through various agreements with NYPA, many of these recreation areas are operated and maintained by the OPRHP or local municipalities. Table 3-1 identifies these recreation areas on Project lands (see also Figures 3-3a through 3-3c).

The formal recreation areas are actively managed and offer water-related facilities and opportunities such as marinas, boat launches, swimming, fishing, and scenic viewing areas as well as a range of non-water-related facilities and opportunities such as ballfields, golf courses, trails, playgrounds, picnic areas, nature viewing, and winter recreation activities. These multi-purpose sites include two state parks - Robert Moses State Park and Coles Creek State Park - and five municipal parks in Waddington, Louisville, and Massena. Camping is offered at Coles Creek State Park and Robert Moses State Park. A golf course at the Massena Country Club in Louisville is located within the Project boundary.

Informal recreational sites consist of unmarked, unmanaged areas where recreational opportunities have been established over time through regular use. Informal recreation sites within the Project boundary include unmanaged portions of Robert Moses and Coles Creek state parks; Clark Point Beach, and several undeveloped islands, such as the Croil Islands State Park, Ogden Island, Murphy Island and the Long Sault Islands.

Table 3-1: Recreational Sites and Facilities within the Project Boundary

Location	Facility Name	Type	Approximate Size	Management/ Maintenance Entity
Waddington	Waddington Town Beach (Howard Park)	Multi-purpose park	13 acres	Town of Waddington
Waddington	Waddington Mooring Facility	Boat Mooring (shoreline docking)	2.5 acres	Village of Waddington
Waddington	Island View Park, (Waterfront Park)	Multi-purpose park	1.5 acres	Village of Waddington
Waddington	Whittaker Park	Multi-purpose park	10 acres	Village of Waddington
Waddington	Little Sucker Brook Park	Picnic/fishing	6.5 acres	Town of Waddington
Waddington	Brandy Brook Boat Launch	Boat Launch	Within Coles Creek State Park	OPRHP, Town of Waddington
Louisville/ Waddington	Coles Creek State Park	Multi-Purpose	1,800 acres	OPRHP
Louisville	Wilson Hill Wildlife Management Area	Wildlife Management	3,450 acres (including 1,800 acres of open water habitat)	DEC
Louisville	Wilson Hill Boat Launch	Boat Launch	8 acres	OPRHP
Louisville	Lake St. Lawrence Yacht Club	Boat Launch, Slips, clubhouse	2.5 acres	Private, leased from NYPA
Louisville	Whalen Park (Louisville Town Park)	Multi-purpose park	33 acres	Town of Louisville
Louisville	Louisville Mooring Facility	Boat Mooring (shoreline docking)	1.2 acres	Town of Louisville (starting in 2005)
Louisville	Massena Country Club	Golf Course Country Club	202 acres	Private, leased from NYPA
Louisville	Massena Town Beach	Multi-purpose park	30 acres	Town of Massena
Louisville	Croil Islands State Park	Undeveloped	660 acres	OPRHP
Massena	Richard's Landing Dike Trail	Hiking Trail	Dike Trail ~3 mi. long	Maintained by NYPA
Massena	Massena Intake Boat Launch	Boat Launch	2.3 acres	Town of Massena
Massena	Robert Moses State Park	Multi-Purpose	2,400 acres	OPRHP
Massena	Hawkins Point Boat Launch	Boat Launch	Within Robert Moses State Park	Town of Massena

Source: New York Power Authority, 2004.

3.3.1 Robert Moses State Park

Robert Moses State Park, located in the Town of Massena, is the second largest park in the Thousand Islands Region of the New York State Park system. Robert Moses State Park has been designated as a “scenic park” by OPRHP, reflecting the fact that more than 75 percent of the 2,400-acre park is undeveloped and the current management direction is to preserve the existing natural areas of the park. The park occupies the land between and around the Robert Moses Power Dam and the Long Sault Dam. The park provides camping, picnicking opportunities, a marina and boat launch facilities, and scenic viewpoints.

3.3.2 Coles Creek State Park

Coles Creek State Park is located in the Towns of Waddington and Louisville. The park has been designated as a “scenic park” by OPRHP, reflecting the fact that more than 95 percent of the 1,800-acre park is undeveloped and that the current management direction is to preserve the existing natural areas of the park. Facilities within Coles Creek State Park are fairly concentrated in a centralized area. The park provides camping, picnicking opportunities, a swimming beach, a playground, a one-mile hiking trail, and scenic viewpoints. The Brandy Brook Boat Launch is located within the park boundaries and provides small-boat access. The Coles Creek State Park Marina is separate from other facilities at the park and has boat slips, a fuel dock, a boat launch, and boat maintenance facilities.

3.3.3 Wilson Hill Wildlife Management Area

The Wilson Hill WMA includes approximately 1,650 acres of land and 1,800 acres of open water habitat in Louisville on the south side of Wilson Hill Island. Although managed by DEC with the primary objective of providing habitat to benefit diverse wildlife species, the Wilson Hill WMA also provides recreational opportunities including hunting, trapping, wildlife viewing and hiking. The Wilson Hill WMA consists primarily of extensive wetlands with a series of pools created by several dikes and wooded, upland property. The Wilson Hill Causeway separates the East Pool of the wildlife management area from the St. Lawrence River and provides access to Wilson Hill Island. The Wilson Hill Causeway is not considered a Project dike since it does not impound Lake St. Lawrence.

Specific recreation facilities include a hiking trail approximately 1.5 miles long and two wildlife viewing towers. The Wilson Hill Boat Launch, managed by OPRHP, is located adjacent to the Wilson Hill WMA and provides river access for small and medium size watercraft.

3.3.4 Local Recreational Facilities

A number of smaller, locally oriented parks and recreational facilities are located within the Project boundary, totaling approximately 110 acres. These facilities, which are managed by the local municipalities under agreement with NYPA, are identified on Figures 3-3a through 3-3c and in Table 3-1. In addition, a golf course is located within the Project boundary – the Massena Country Club.

3.4 Aesthetic Resources

The Project area, including lands abutting the Project's boundary, consists of various landscape settings, or viewscapes, that an individual may experience while traveling in and around the area by land or by water.

A previous study evaluated the visual resources in the Project area using a set of standard criteria and identified 23 high quality viewscapes within the Project area, which include extensive areas of Project shorelines and waters (see Figures 3-4a through 3-4c and Table 3-2). Viewscapes within the Project area include both views from the land towards the river (land to water) and views from the river towards the shoreline (water to land). Though the area contains a mix of land uses, the high quality viewscapes are dominated by views of the St. Lawrence River, its tributaries, or wetlands. Characteristics common to high quality land-to-water viewscapes include:

- Extensive water visibility;
- Presence of inlets or tributaries in the foreground;
- Presence of minimal edge vegetation obstructing views of the river;
- Limited land use affecting views of the river;
- Vegetation framing river views;
- Landscapes of unique character; and
- Little or no human influence.

Characteristics common to high quality water-to-land viewscapes include:

- Little or no human influence;
- Landscape of unique character emphasized by unusual tree formations, rock formations, pronounced inlets, bays, tributaries, or wetlands;
- Visibility of small islands;
- Shoreline irregularity;
- Large amount of dense vegetation extending to the water's edge;
- Presence of livestock or wildlife;

- Water-related features such as buoys, lights, shipping, or boating, and
- Land features, such as marinas, docks, or golf courses.

Table 3-2: High Quality Viewscapes within the St. Lawrence-FDR Power Project Area

Town	Orientation	Viewscape Area
Waddington	Land to Water View	<ul style="list-style-type: none"> • East of Clark Point • Brandy Brook area • Coles Creek area
	Water to Land View	<ul style="list-style-type: none"> • Whitehouse Bay • West end of Ogden Island • East end of Ogden Island • Brandy Brook/Murphy Islands area • Coles Creek area
Louisville	Land to Water View	<ul style="list-style-type: none"> • Wilson Hill area • Mutton Ridge area • Tucker Terrace area
	Water to Land View	<ul style="list-style-type: none"> • Nichols Hill/Bradford Island area • East end of Wilson Hill Island • Mutton Ridge area • Massena Country Club area • East end of Croil Island
Massena	Land to Water View	<ul style="list-style-type: none"> • Massena Intake area • Hopsons Bay area • Route 131 at Robinson Creek
	Water to Land View	<ul style="list-style-type: none"> • Long Sault Islands area • South Channel (Barnhart Island) • Barnhart Island, vicinity of Robert Moses State Park

Source: St. Lawrence River Scenic Quality Study prepared by S. Shannon et al., 1990.

3.5 Natural Resources

The Project encompasses diverse natural resources including open water, emergent wetlands, grasslands and forests that provide significant habitat areas for fish and wildlife. A number of these areas are actively managed to enhance their habitat value while other areas have been recognized and protected for their importance to specific species.

3.5.1 Management Areas

a. Wilson Hill Wildlife Management Area

The Wilson Hill WMA, totaling approximately 3,450 acres, includes roughly 1,800 acres of open water habitat – large, shallow freshwater impoundments and shallow water areas of Lake St. Lawrence. A series of dikes connects Bradford and Wilson Hill islands with the mainland, isolating the interior pools from Lake St. Lawrence. These dikes form stable pools of shallow water, submerged aquatic vegetation beds, and emergent wetlands that provide highly productive habitats for various species.

The Wilson Hill WMA also encompasses upland fields and forests and many small islands within the interior pools. DEC manages this area to promote a variety of species, protect and manage waterfowl habitat, and provide waterfowl hunting opportunities. Wetlands and open water habitats provide highly productive nesting and feeding habitats for waterfowl, waterbirds, and passerine bird species. DEC also maintains several grassland communities for waterfowl nesting and foraging habitat. These grassland areas are also valuable to an array of migratory ground-nesting songbirds, raptors, reptiles, and small mammals that use this habitat for breeding, nesting, and/or foraging. The wetlands and open water habitats of Wilson Hill WMA also provide habitat for fur bearing mammals.

b. Habitat Improvement Projects

Ten Habitat Improvement Projects (HIPs) are proposed as part of the Comprehensive Accord that was approved by FERC. Details of the HIPs are set forth in Tables 3-3 and 3-4. In general, these projects will enhance existing habitat for species that are of interest in the Project area. The HIPs will be constructed over the next decade and monitored and managed thereafter.

Table 3-3: Summary of Proposed HIPs to Primarily Benefit Aquatic Species

Project	Target Habitat/Area	Species that Will Benefit	Potential Location(s)
1. Lake Sturgeon Spawning Beds	Shallow, rocky shelves or shoals in riverine areas - fish spawning substrate	<ul style="list-style-type: none"> • Lake Sturgeon • Walleye • Shorthead redhorse 	<ul style="list-style-type: none"> • Iroquois Dam area • Below Moses-Saunders Power Dam
2. Brandy Brook Phase 1 – Watershed Management Partnership	Brandy Brook Watershed	<ul style="list-style-type: none"> • Walleye • Smallmouth bass • Suckers • Native Cyprinids • Aquatic invertebrates 	<ul style="list-style-type: none"> • Brandy Brook
Brandy Brook Phase 2 – Shoreline Erosion Control on Project Lands	Project lands along Brandy Brook		
Brandy Brook Phase 3 – Walleye Spawning Enhancement	Open water zones – fish spawning substrate		
3. Coles Creek Controlled Level Pool	Open water and emergent wetlands – fish spawning and nursery habitats	<ul style="list-style-type: none"> • Northern pike • Centrarchids • Percids • Native Cyprinids • Wetland birds • Pond breeding amphibians, turtles and aquatic mammals 	<ul style="list-style-type: none"> • Downstream end of Coles Creek
4. Nichols Hill Island Controlled Level Pool	Open water and emergent wetlands – fish spawning and nursery habitat	<ul style="list-style-type: none"> • Northern pike • Other spring spawning fish • Various other fish • Wetland birds • Pond breeding amphibians, turtles, and aquatic mammals 	<ul style="list-style-type: none"> • Western end of WHWMA
5. Little Sucker Brook Controlled Level Pool	Open water and emergent wetlands – fish spawning and nursery habitat	<ul style="list-style-type: none"> • Northern pike • Centrarchids • Percids • Native Cyprinids • Wetland birds • Pond breeding amphibians, turtles, and aquatic mammals 	<ul style="list-style-type: none"> • Downstream portion of Little Sucker Brook
6. Blanding’s Turtle Nesting Habitat	Upland and/gravel shorelines areas – turtle nesting habitat	<ul style="list-style-type: none"> • Blanding’s turtle • Other turtles 	<ul style="list-style-type: none"> • Coles Creek • WHWMA

Table 3-4: Summary of Proposed HIPs to Primarily Benefit Wildlife Species

Project	Target Habitat/Area	Species that Will Benefit	Potential Location(s)
1. Shortgrass Habitat Enhancement	Project pastureland, hayfields and other early successional habitats – nesting habitat for grassland birds	<ul style="list-style-type: none"> • Northern Harrier • Upland Sandpiper • Various other grassland nesting birds • Nesting waterfowl 	<ul style="list-style-type: none"> • Whitehouse Point • Ogden Island
2. Osprey Nesting Platforms	Artificial nesting structures in emergent marsh and open water habitats	<ul style="list-style-type: none"> • Osprey 	<ul style="list-style-type: none"> • Abandoned navigation aids on Whitehouse Point • Whitehouse Bay • Little Sucker Brook Pond • Brandy Brook • Coles Creek • WHWMA • Sand Islands
3. Common Tern Nesting Program	Existing and new artificial structures in open water and/or enhanced islands	<ul style="list-style-type: none"> • Common Tern 	<ul style="list-style-type: none"> • Various navigation cells • Little Sucker Brook Pond • WHWMA • Massena Town Beach area • Robert Moses State Park campground area • Northeast Long Sault Island
4. Common Loon Nesting Rafts	New artificial structures in open water adjacent to shoreline	<ul style="list-style-type: none"> • Common Loon 	<ul style="list-style-type: none"> • Little Sucker Brook Pond • Murphy Islands • Coles Creek • Goose Neck Island shoals • WHWMA • Sand Islands • Long Sault Island

3.5.2 Other Natural Resource Areas

a. Significant Coastal Fish and Wildlife Habitat

The New York State Department of State (DOS), under the Coastal Zone Management Program, identifies and delineates areas that have significant habitat value for fish and wildlife. Seven DOS-designated Significant Coastal Fish and Wildlife Habitats, including the Wilson Hill WMA, occur within Project lands and waters (Figure 3-4a through 3-4c).

The significant habitat at the ***Whitehouse-Ogden Island Bays*** encompasses approximately 600 acres in three shallow bays along the southern shore of Ogden Island, the bay east and west of Leishman's Point, and Whitehouse Bay. The area is generally characterized by large, shallow open water areas with little emergent vegetation. Warmwater fish species utilize these areas as spawning and nursery habitat. These bays are especially significant as spawning and nursery habitat for muskellunge.

The significant habitat area of ***Brandy Brook***, a tributary of Lake St. Lawrence, consists of a segment of the stream that was flooded with the impoundment of Lake St. Lawrence, forming a freshwater "estuary" (DOS, 1994). Brandy Brook provides important habitat for brown bullhead, black crappie, and northern pike (DOS, 1994). This area contains dense beds of submerged aquatic vegetation and a fringe of emergent marsh vegetation. The presence of productive littoral zones, freshwater inflows, shoreline wetland areas, and undeveloped adjacent lands provide quality breeding and foraging habitat for a diverse assemblage of birds, mammals, reptiles, and amphibians.

The ***Coles Creek*** area is another sheltered shallow water habitat along the St. Lawrence River shoreline. This area includes a segment of Coles Creek that has been impounded by the Route 37 causeway, forming a shallow freshwater lake. This area also contains extensive beds of submerged aquatic vegetation with a fringe of emergent marsh vegetation that provide valuable nursery habitat for fish. The area between the mouth of the creek to approximately 2.5 miles upstream was identified by the DEC as an important warmwater fish concentration area (DEC, 2003). The presence of productive littoral zones, freshwater inflows, shoreline wetland areas, and undeveloped adjacent lands provide quality breeding and foraging habitat for a diverse assemblage of birds, mammals, reptiles, and amphibians. Large concentrations of waterfowl and shorebirds use this area as a feeding and resting area during migration.

The ***Wilson Hill-Tucker Terrace*** is a 500-acre shallow water area located east of Wilson Hill WMA, including the Sand Islands. The productive, shallow waters provide important spawning and nursery habitat for various warmwater fish species. The area is located adjacent to several common tern (*Sterna hirundo*) nesting sites and provides valuable feeding habitat for this species as well. Canada Goose and other waterfowl nest and feed in the Sand Islands area. The productive shallow waters provide valuable feeding habitat for large concentrations of waterfowl during spring and fall migration.

The ***Moses-Saunders Power Dam tailwaters*** encompass 500 acres of deep, open water in the St. Lawrence River, extending about two miles from the Moses-Saunders Power Dam downstream to the confluence with the St. Lawrence Seaway channel southwest of Cornwall Island. This area is considered significant for fish because of its use by

juvenile and adult lake sturgeon. In addition, operation of the dam maintains open water even in winter months, which provides critical winter fishing habitat for bald eagles, waterbirds, and waterfowl. Migratory birds also use this habitat for loafing and feeding during fall and spring migrations, making this area one of the most popular birding spots in the St. Lawrence River region.

Lake St. Lawrence Common Tern Colonies. The Lake St. Lawrence tern colonies occur on man-made navigational structures and several small islands, with nearly all of the successful colonies occurring on the navigational structures (Harper and Harper, 1997). These navigational structures have become important nesting sites for this species since the mid-1970s when many of their historic island nesting sites were taken over by gulls. The most important features of the structures are isolation from mammalian predators and human disturbance and protection from waves and fluctuating water levels. The hatching success and fledging success of common terns on these structures are among the highest recorded on the inland waters of New York State (Harper, 1999).

b. Significant Ecological Communities

The New York Natural Heritage Program (NHP), in cooperation with DEC, maintains inventories of significant natural communities in New York State. The NHP identified eight significant occurrences of four natural communities within the Project boundary: 1) cobble shore wet meadow, 2) maple-basswood rich mesic forest, 3) red maple-hardwood swamp, 4) silver maple-ash swamp (NHP, 1996).

The cobble shore wet meadow community occurs on the cobble shores of lakes and streams where the substrate is moist from seepage or intermittent flooding (Reschke, 1990). This community occurs in five small patches of 2 to 9 acres, totaling 19 acres, within the Project boundary (Harper, 1999). The NHP considers each of these patches a significant occurrence of this community in the State of New York, including one that is recognized as an exemplary community, meaning it received a high quality ranking when compared to other known occurrences of this community in the State (Harper et al., 1996).

Maple-basswood rich mesic forest typically occurs on middle to low elevation, concave slopes with north or east aspects (Reschke, 1990). Dominant vegetation includes sugar maple and white ash in the overstory and sugar maple, white ash, basswood, dogwood, and blackberry in the understory. This community is found at one site within the Project boundary, encompassing 140 acres (Harper et al., 1996). This site is considered significant by NHP because of its size, vegetation composition, stand age, and low degree of disturbance (Harper et al., 1996).

Red maple-hardwood swamp communities typically occur in poorly drained depressions and are generally vegetated by red maple, grey dogwood, balsam fir, winterberry, starflower, and sphagnum species (Reschke, 1990). One large (250 acres) occurrence of this community is found on Project lands. This community received a high quality ranking from NHP because of its size, low degree of disturbance and habitat degradation, and the long-term prospects for the continued existence of this community at this site (Harper et al., 1996).

The silver maple-ash swamp community is an uncommon forested wetland community found in one location on Project lands, encompassing only 15 acres. This community is characterized by a dense overstory of silver maple, green ash, and red maple and a sparse understory of birch and elm. Within the Project boundary, this community is found within a mosaic of upland forest and scrub-shrub and forested wetlands, buffering it from disturbance. This community is considered significant by NHP because of its vegetation composition, low degree of disturbance, and the long-term prospects for the continued existence of this community at this site (Harper et al., 1996).

c. Potential Local Wildlife Corridors

Local wildlife corridors connect small habitat patches and are used by small to medium-sized mammals, amphibians, and reptiles for localized daily or seasonal movements. Four potential local corridors have been identified on Project lands in the general areas of Coles Creek and Wilson Hill WMA, the Croil and Long Sault Islands, Ogden Island to Leishman Point, and the Sand Islands (Woodlot Alternatives, 1999). These areas generally consist of relatively contiguous forest habitat adjacent to the river, which allows for access to the river and to islands located near shore. These areas, in addition to providing resident wildlife habitat, may provide cover and food for animals such as deer and fox attempting to cross the river or move between forests outside the Project boundary. Water flow and ice conditions of the St. Lawrence River may seasonally limit wildlife use of some of the corridors.

d. Rare, Threatened and Endangered Wildlife Habitat

The only federally listed threatened or endangered wildlife species documented to occur within the Project boundary is the bald eagle (*Haliaeetus leucocephalus*).^[3] DEC lists or has proposed listing eight other wildlife species that occur within the Project boundary as threatened or endangered, and five bird species that may occur within the Project boundary as special concern species. These species and their current status are listed in Table 3-5.

The bald eagle is most common at the Project during winter months, but can be observed at the Project during post-nesting movements and fall migration as well. Non-breeding immature bald eagles are known to forage over large distances and have been observed

at the Project during all seasons (Harper, 1996). As of 1999, no nest sites are known to occur within 25 miles of the Project (Harper, 1999). In 2004, a single Bald eagle nest has been identified within 25 miles of the Project boundary. Wintering eagles often feed and roost communally and require large areas of undisturbed habitat. On the St. Lawrence River, wintering eagles commonly perch in white pines on islands near open water feeding areas (Harper, 1995). Within the Project boundary, wintering eagles are known to use Long Sault Island, Croil Island, and Wilson Hill WMA (Harper, 1995). Areas of the river near the tailrace of the Project that are used annually by wintering bald eagles have been designated as Significant Coastal Fish and Wildlife Habitat by the DOS (1994).

The black tern (*Chlidonias niger*) uses freshwater marshes, sloughs, and wet meadows for breeding from May through July. Optimal breeding habitat consists of areas with a mix of open water and emergent vegetation, usually reeds, cattails, rushes, and burreed (Harper, 1999). Historical records indicate black terns nested on one of the Long Sault Islands and at Wilson Hill WMA, but no confirmed black tern nests occur within the Project. Recent surveys documented black terns over Delany Shoal between Long Sault and Croil Island during the breeding season and in the vicinity of Wilson Hill WMA after the breeding season (Harper, 1996). Within the Project boundary, only Wilson Hill WMA appears to contain appropriate breeding habitat for the black tern.

Table 3-5: Threatened, Endangered, and Special Concern Wildlife Species at the St. Lawrence-FDR Power Project

Common Name	Scientific Name	Listing Agency	Status
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	USFWS, DEC	Threatened
Black tern	<i>Chlidonias niger</i>	DEC	Endangered
Short-eared owl*	<i>Asio flammensis</i>	DEC	Endangered
Common tern	<i>Sterna hirundo</i>	DEC	Threatened
Least bittern	<i>Ixobrychus exilis</i>	DEC	Threatened
Northern harrier	<i>Circus cyaneus</i>	DEC	Threatened
Pied billed grebe	<i>Podilymbus podiceps</i>	DEC	Threatened
Upland sandpiper	<i>Bartramia longicauda</i>	DEC	Threatened
American bittern	<i>Botaurus lentiginosus</i>	DEC	Special Concern
Common loon	<i>Gavia immer</i>	DEC	Special Concern
Common nighthawks	<i>Chordeiles minor</i>	DEC	Special Concern
Osprey	<i>Pandion haliaetus</i>	DEC	Special Concern
Red-shouldered hawk	<i>Buteo lineatus</i>	DEC	Special Concern
<i>Continue next page</i>			

Common Name	Scientific Name	Listing Agency	Status
Reptiles			
Blanding's turtle	<i>Emydoidea blandingii</i>	DEC	Threatened

Note: *located adjacent to Project lands
Source: DEC, 2003.

Common terns have nesting colonies at navigational structures and several islands in Lake St. Lawrence. In late summer, common terns stage in pre-migration concentrations in the vicinity of the Moses-Saunders Power Dam tailrace.

Although breeding activity has not been confirmed (DEC, 2003), short-eared owls (*Asio flammensis*) have been observed during the breeding season in grasslands adjacent to Project lands along the Wiley Dondero Canal, the navigation channel (part of the St. Lawrence Seaway) that allows ships to bypass the Long Sault Dam and Moses Saunders Power Dam. Short-eared owls opportunistically inhabit areas where small mammals, especially meadow voles, are abundant. Breeding habitat includes open marshes or grasslands where nests are placed on the ground, and open grasslands along the Wiley Dondero Canal provide potential breeding habitat for this species. In winter short-eared owls gather in open habitats that support large numbers of voles; however, no wintering concentrations of short-eared owls are known to occur in the vicinity of the Project (DEC, 2003).

The least bittern (*Ixobrychus exilis*) uses dense marshes and low elevation emergent wetlands for breeding from April through August. Their preferred habitat consists of a mixture of dense emergent and woody vegetation and open water. Eight such areas are found within the Project boundary.

The northern harrier (*Circus cyaneus*) is common on Project lands from late winter through summer and may utilize marshes, wet meadows, or upland fields at Robinson Bay, Wilson Hill WMA, and Whitehouse Point for breeding. Other important sites for harriers include open grassland habitats on Ogden Island and Massena Point, where they often forage for small mammals and small birds (Harper, 1996). During migration, this species uses shoreline and island habitats within the Project boundary extensively (Harper, 1999).

Pied-billed grebes (*Podilymbus podiceps*) use open water wetlands of the Project for breeding during early spring and summer. They require open water and emergent and aquatic (floating and submergent) vegetation for nesting, foraging, and cover. This species is area-dependent; minimum occupied wetland size is approximately 12 acres. Eight sites within the Project boundary appear to provide optimal breeding habitat for pied-billed grebes, especially in the area of Wilson Hill WMA (Harper, 1999).

The upland sandpiper (*Bartramia longicauda*) breeds on Project lands in agricultural pastures and old fields. This species is area-sensitive and requires large grasslands (usually over 100 acres) for nesting (Harper, 1999). Optimal habitat consists of areas of short grasses for feeding and areas with taller grasses for nesting and cover (Carter, 1992). Potential breeding habitats for upland sandpipers on Project lands include Ogden Island and Whitehouse Point.

American bittern (*Botaurus lentiginosus*) nest in emergent wetlands at Wilson Hill WMA (Andrle and Carroll, 1988). This species is highly reclusive and prefers undisturbed habitats lacking human intrusion for nesting.

Common loons (*Gavia immer*) nest in emergent wetlands in quiet backwater portions of Wilson Hill WMA and Coles Creek (DEC, 2001a). This species also likely nests at Long Sault Island and Murphy Island; however, no recent surveys have been conducted to confirm this. Both Long Sault Island and Murphy Island are historic nesting sites for this species (Andrle and Carroll, 1998). Common loons are highly sensitive to human disturbance and nests are typically located in areas that are isolated from human intrusion. Brood-rearing areas are shallow, sheltered coves and may be independent of nest location (Strong, 1985). Harper et al. (1996) documented adult and immature common loons foraging over Goose Neck Island Shoals off Coles Creek and in the vicinity of Wilson Hill WMA.

Common nighthawks (*Chordeiles minor*) nest on rooftops of buildings and other man-made structures in Massena and Massena Springs (Andrle and Carroll, 1988) and are regularly observed at the Project during the breeding season (DEC, 2001a,b). Common nighthawks have not been observed to nest on the roof of the Moses-Saunders Power Dam Powerhouse or other Project structures. Comprehensive surveys of these structures have not been conducted to date (DEC, 2001a,b).

The osprey (*Pandion haliaetus*) has become increasingly common on the St. Lawrence River in recent years and is regularly observed over Project lands and waters. Ospreys have been sighted at Croil Island, Wilson Hill WMA, Long Sault Island, and Coles Creek during the breeding season, although no active nest sites are known to occur within the Project boundary.

The red-shouldered hawk (*Buteo lineatus*) breeds in large tracts of wetland and upland forest. This species is area-dependent, requiring large tracts of undisturbed forest for nesting. It has been observed to nest at two sites near, but outside, the Project boundary, and may occur in the Wilson Hill WMA.

The Blanding's turtle (*Emydoidea blandingii*) typically inhabits marshes, bogs, small streams, or lakes and has been observed within the Project boundary at Coles Creek and, historically, Barnhart Island adjacent to Robinson Bay (Woodlot Alternatives, 1996a). Suitable habitat also exists for this species at Wilson Hill WMA. Optimal habitat for this species consists of watercourses with

large pools and channels, one to four feet deep, with a wooded tree fringe, tall shrubs, basking logs, and a thick floating layer of living and dead plants, algae and detritus (Kiviat, 1993). Blanding's turtles are present at Coles Creek year-round. Blanding's turtles typically overwinter under or near water, in mud, vegetation, or debris (DEC, 2001).

e. Rare, Threatened or Endangered Plant Habitat

No federally listed threatened or endangered plant species are currently known to occur within the Project boundary. Past studies, however, documented five state-listed plant species within the Project boundary (Harper et al., 1996). These include three state listed threatened plants, wiry panic grass (*Panicum flexile*), white camas (*Zigadenus elegans*), and balsam willow (*Salix pyrifolia*), and two state listed endangered plants, lesser fringed gentian (*Gentianopsis procera*) and slender bulrush (*Scirpus heterochaetus*).

HIPs proposed for the Coles Creek and Nichols Hill Island areas include creation of controlled-level ponds that would minimize water level fluctuations and enhance emergent wetland communities, providing additional potential habitat for the slender bulrush. The locations of these species within Robert Moses State Park afford these species protection from activities that would impact their continued existence. Project activities that occur in the park are evaluated for their potential impacts on rare, threatened, or endangered species and sensitive ecological communities. Where significant negative impacts may result, the subject activity is modified or may be permitted.

3.6 Historic Properties

Historic properties listed or potentially eligible for listing in the National Register of Historic Places include certain Project facilities, such as the dams, powerhouse and dikes; some of the buildings and structures associated with state and local parks (e.g., recreational facility structures); pre-contact and historic period archeological sites; and properties of traditional religious and cultural significance to the Mohawk Community of Akwesasne.

Many of the facilities associated with Project hydropower operations have been identified as potentially eligible for listing on the National Register of Historic Places. This is because of their important contributions to hydropower development in the United States and New York State from 1880 to the present and to their 1950s expansive approach to engineering, as well as the facilities' association with the lives of persons significant to the past of the St. Lawrence River. These facilities include Robert Moses Power Dam, Long Sault Dam, Iroquois Dam, the administration building, switchyard, dikes, and other associated facilities.

Searches of archeological databases and archeological field surveys conducted during or before Project relicensing identified several archeological sites within the Project boundary, including a site that is listed on the National Register. A number of these other sites are potentially eligible for listing on the National Register. Considering the sensitive nature of these resources, the precise locations of these archeological sites are not publicly divulged.

Members of the Mohawk Community of Akwesasne report that the Mohawks have used Project lands, waters, and lands inundated by construction of the St. Lawrence Seaway and the International St. Lawrence Power Project. They have stated that these lands contain properties of traditional religious and cultural significance to the Mohawks. Present Akwesasne lands and waters are located along the River downstream of the Project; the St. Regis Mohawk Tribe's reservations lands are approximately three miles downstream.

In accordance with Article 422 of the Project license, NYPA will implement the Historic Properties Management Plan (HPMP), as approved by the Commission. The HPMP includes:

- A description of the historic properties in the Project's Area of Potential Effect;
- A listing of Project activities categorically excluded from further review;
- A description of the process by which NYPA would take historic properties into consideration; and
- A description of procedures NYPA would use if presently unknown historic properties are discovered or inadvertently disturbed during Project activities.

4.0 MANAGEMENT OF PROJECT LANDS

FERC requires NYPA to maintain the use and occupancy of Project lands consistent with the obligations of the Project license with respect to Project purposes, including maintaining Project facilities in good condition, insuring public safety, providing the public access to Project waters and lands, and protecting the scenic, recreational, historic and environmental values of the Project. Certain federal and state regulatory requirements guide NYPA in managing Project lands. Actions concerning these lands are subject to FERC oversight, with some actions requiring FERC approval.

All Project lands and waters are under the control of NYPA although some Project lands are managed for NYPA by other entities in accordance with land management or lease agreements with NYPA. Land management policies and practices for Project lands and waters directly managed by NYPA, including non-Project use of Project lands by adjoining landowners, are discussed in this section of the Land Management Plan. This section also presents guidelines for shoreline improvements and describes the permit program administered by NYPA for certain facilities and improvements such as docks, boathouses, shoreline protection and utilities.

4.1 Project Lands Managed by Other Entities

NYPA has delegated management responsibility for certain Project lands to several other state, local, corporate and commercial entities (see Figures 3-3a through 3-3c). Specific responsibilities are defined through management or lease agreements between the individual entity and NYPA.

4.1.1 NYS Department of Environmental Conservation

The Wilson Hill Wildlife Management Area was constructed by NYPA in 1959 on Project lands as mitigation for waterfowl habitat affected by the construction of the Project. The New York State Department of Environmental Conservation (DEC) manages this area under agreement with NYPA. The primary management objective is the protection and management of waterfowl habitat, but the area also provides recreation opportunities in the form of hunting (waterfowl, small game and deer), trapping, wildlife viewing and hiking. The approximate 1,800 acres of wetland and open water habitat are managed by controlling the water level in the shallow water pools created by a series of dikes. The grassland habitats in Wilson Hill WMA are maintained by periodic mowing to provide nesting and foraging habitat for waterfowl and upland game birds. Cutting of firewood is permitted to maintain woodlands in early successional stages to improve their habitat value for small game and deer. Management activities also include the annual banding of ducks and Canada geese and the release of ring-necked pheasants prior to hunting season.

Through the Project relicensing process, an Ecological Mitigation and Enhancement Measures Settlement Agreement was developed and included in the Comprehensive Accord. In accordance with that agreement, NYPA and the DEC will develop a Wilson Hill WMA Management Plan to achieve the stated goals for water control, habitat management, recreation and maintenance of Wilson Hill WMA facilities. The specific parameters of that plan are discussed further in Section 5.1.4 of this document.

4.1.2 NYS Office of Parks, Recreation and Historic Preservation

Under agreement with NYPA, OPRHP manages specific developed and undeveloped recreation facilities encompassing approximately 4,900 acres of Project lands, including two large state parks with developed facilities: Coles Creek State Park and Robert Moses State Park. Each of these parks is designated as a “scenic park” by OPRHP reflecting the fact that much of the park is undeveloped and that the management direction is to preserve the existing natural areas of the park. OPRHP also manages the Wilson Hill Boat Launch, located adjacent to the Wilson Hill WMA.

The Croil Islands State Park, a group of islands encompassing approximately 660 acres located in Lake St. Lawrence between Wilson Hill and Long Sault islands, is an undeveloped recreational area managed by OPRHP. The islands have gently rolling grassy hills with hardwood growth and some wetland areas; the shoreline is generally sandy with some rocky outcrops. The Croil Islands

are undeveloped and are accessible only by watercraft. The islands provide opportunities for mooring, camping, picnicking and swimming.

NYPA has entered into an operation and maintenance agreement with the Thousand Island State Park Commission, the regional representative of OPRHP, that establishes their responsibility for the operation and management of Coles Creek State Park including Brandy Brook boat launch; Robert Moses State Park; Wilson Hill Boat Launch; and Croil Islands State Park. NYPA intends to enter into new agreements with OPRHP for the design, construction (or rehabilitation), operation and maintenance of recreational facilities at these recreation sites.

4.1.3 St. Lawrence Seaway Development Corporation

Most of the land owned by the St. Lawrence Seaway Development Corporation (SLSDC) is outside of the Project boundary; however, the Project boundary encompasses certain SLSDC-owned lands that are occupied by Project dikes (i.e., Long Sault Dike) and the Barnhart Island access road. These areas are subject to a management agreement between NYPA and the SLSDC regarding maintenance responsibilities and access.

4.1.4 Municipalities (Local Recreation Areas)

Under agreements with NYPA, local municipalities manage many recreation facilities within the Project boundary. The Town of Waddington manages Waddington Town Beach (also known as Howard Park) and Little Sucker Brook Park. The Village of Waddington manages the Waddington Mooring Facility, Island View Park, and Whittaker Park. The Town of Louisville manages Whalen Park, including nearby Sand Islands. The Town of Massena manages the Massena Town Beach, the Massena Intake Boat Launch, and the Hawkins Point Boat Launch (located within Robert Moses State Park).

4.1.5 Commercial Entities

The Lake St. Lawrence Yacht Club, Inc. operates the Lake St. Lawrence Yacht Club, located in Louisville. Massena Country Club is also located in Louisville and is operated by the Massena Country Club, Inc. These areas are subject to long-term lease agreements with NYPA regarding operation and maintenance responsibilities.

4.1.6 Right-of-Way Management by Others

Several other entities maintain limited electric transmission line and natural gas pipeline rights-of-way that traverse Project lands. NYPA has granted a permanent easement to the Iroquois Gas Transmission System for a natural gas pipeline, which crosses Project land in the Town of Waddington. This right-of-way, which encompasses approximately 2 acres, supports open upland

vegetation. The pipeline and its management are regulated by FERC, and the FERC certificate issued for this pipeline specifies that no herbicides will be used for right-of-way maintenance and that mowing may only be conducted every five to seven years.

Aluminum Company of America (ALCOA) maintains two electric transmission line rights-of-way on Project lands. These rights-of-way, which total approximately 10 acres, consist primarily of a palustrine scrub-shrub/emergent cover. ALCOA also maintains the area adjoining the Massena Intake and Canal, including a portion of the electric distribution line right-of-way, by mowing. The access road right-of-way shared with NYPA is also mowed periodically. Under an agricultural lease from NYPA, ALCOA manages 180 acres of land north of State Route 131.

The Massena Electric Department maintains several electric distribution lines on Project lands. Maintenance activities are limited to minor tree trimming done on a three-year rotation (except in emergencies). These rights-of-way are not mowed or treated with herbicides.

4.2 Project Lands Managed By the New York Power Authority

All lands within the Project boundary, including numerous islands (i.e., Ogden Island, Long Sault Islands) that are not subject to management and lease agreements with other entities are subject to the land management policies and practices of NYPA. Project lands managed by NYPA encompass a broad range of land uses and resources including Project structures and facilities, shoreline areas adjacent to Significant Coastal Fish and Wildlife Habitat, vacant land in various successional stages, Habitat Improvement Projects, and Project lands adjacent to existing Areas of Dense Residential Development. The land management activities directly undertaken by NYPA as part of the operation of the Project, as well as activities of others that are subject to permits from NYPA, are detailed in the following sections.

4.2.1 Project Structures and Facilities

NYPA manages limited portions of Project lands primarily to protect and maintain Project facilities in the vicinity of the Robert Moses Power Dam, the Long Sault Dam, Iroquois Dam, the Massena Intake and the Project dikes in the Towns of Massena, Louisville, and Waddington. NYPA's activities and land management practices include vegetation maintenance (e.g., mowing along access roads), dike maintenance, shoreline stabilization, and nuisance wildlife management.

a. Project Lands with Restricted Access

Public access to certain areas and facilities is restricted for reasons of public safety and Project security. These restricted areas, primarily concentrated at the eastern end of Barnhart Island, include the Robert Moses Power Dam, the Power Dam forebay and tailwater, the Project administration building, and the switchyard. Access to Long Sault Dam, Massena Intake and

Iroquois Dam is also restricted. Lawns maintained by NYPA cover the areas inside the security fence surrounding the Robert Moses Power Dam. Typical lawn maintenance activities include mowing, seeding, fertilizing, irrigation, and, when necessary, pesticide applications.

b. Dikes

The 10.9 miles of Project dikes are inspected annually and maintained as necessary to ensure their integrity. With the exception of Coles Creek Dike, which is not immediately adjacent to Lake St. Lawrence, the riverside portions of the dikes are protected by riprap. The above water portions of the riprap on the dikes are maintained in a sparsely vegetated condition with herbicides to ensure that their integrity is not compromised.

The upper portion of the landward side of the dikes is open upland habitat, typically mowed grasses. The dike crests consist of either mowed grass or gravel recreational trails/access lanes. State Highway 131, which is maintained by New York State Department of Transportation, is built atop Mutton Ridge Dike in the Town of Louisville. Public access to the South Forebay Dike is restricted.

c. Rights-of-Way Maintenance

NYPA manages electric transmission line rights-of-way that originate at the Project's Robert Moses Switchyard, cross Project property, and exit the Project boundary approximately one mile south to SLSDC property as well as a section of another line that originates in Canada. Typical right-of-way maintenance activities include mowing and herbicide applications to control the growth of woody (tree) species and encourage the growth of low-growing shrubs and herbaceous vegetation.

Grass-covered areas along the shoulders of the access roads beyond the security gate are typically mowed several times throughout the summer.

4.2.2 Project Lands Subject to Special Considerations

In certain areas, lands within the Project boundary include either a 100-foot or a 25-foot buffer, measured horizontally from the Normal Maximum Water Surface Elevation (NMSE). The following sections identify these areas, which are subject to specific restrictions.

a. Significant Coastal Fish and Wildlife Habitat

A 100-foot buffer from the shoreline landward is located along the Project boundary adjacent to Significant Coastal Fish and Wildlife Habitats located at: 1) the shoreline of Whitehouse Bay; 2)

the shoreline between Whitehouse Bay and Leishman Point; 3) the bay east of Leishman Point; 4) the shoreline of Brandy Brook; 5) the shoreline between the eastern end of Wilson Hill Island and the Lake St. Lawrence Yacht Club; and 6) the shoreline west of the Louisville Mooring Area opposite Sand Islands (see Figures 3-4a through 3-4c). To protect these coastal resources and significant habitats and pursuant to the Comprehensive Relicensing Settlement Accord, specific restrictions apply within the 100-foot buffer along these shoreline areas, as follows:

- No new structures (i.e., boathouses, private docks, sheds, etc.) or septic system components;
- No off-season storage of docks;
- No dredging in waters adjacent to shore; and
- Cutting of vegetation only in accordance with the Vegetation Management Plan (Appendix C).

New floating docks will only be permitted in Whitehouse Bay if the structure, use and location are approved by the DEC and DOS. The docks must be located away from sensitive areas (e.g., cattail marshes). Along the shoreline between Whitehouse Bay and Leishman Point, individual private docks will not be permitted; this area is limited to two seasonal community docks, each with capacity for 10 boats.

b. Rare, Threatened, or Endangered Species Habitat

Project activities and activities by others that are proposed to occur in areas that have been identified as supporting rare, threatened, or endangered species are evaluated to ascertain what impacts, if any may result. Activities are designed to avoid or minimize negative effects on those species.

c. Areas of Dense Residential Development

Pursuant to the Comprehensive Accord, existing Areas of Dense Residential Development are defined as those lands adjacent to the Project boundary in specific areas of the Town of Waddington, the Village of Waddington and the Town of Louisville (see Figures 3-2a and 3-2b). In these areas, Project lands typically provide a 25-foot buffer between the Normal Maximum Water Surface Elevation and the adjoining private lands. In several locations, these Areas of Dense Residential Development are located adjacent to Significant Coastal Fish and Wildlife Habitat; accordingly, a 100-foot buffer has been established in these areas.

Public Use and Access Zone. Within Areas of Dense Residential Development there will be a 25-foot wide public use and access zone between the adjoining property and Lake St. Lawrence. Public recreation improvements will not be constructed in these buffer areas, but passive recreation use (e.g., walking, nature observation) will be allowed during daylight hours. No residential development or utilities (structures, septic systems or wells) will be allowed in this public use and

access zone, but necessary elements of water dependent structures (i.e., docks, boathouses, utilities and shoreline stabilization) would be allowable with a permit issued by NYPA.

Residential Security Zone. Within existing Areas of Dense Residential Development that include a 100-foot buffer (i.e., areas located adjacent to Significant Coastal Fish and Wildlife Habitat), there will be a residential security zone extending from the Project boundary toward the shoreline for a distance of up to 75 feet. In no case, however, will the residential security zone encroach on the 25-foot area for public use and access. No recreational improvements will be constructed by NYPA or other state agencies in the residential security zone. No public access will be allowed in this zone except in emergency situations.

Adjoining landowners may obtain a “privilege permit” from NYPA for certain residential landscaping uses in the residential security zone adjacent to their property. Allowable residential landscaping uses include lawns, shrubs, gardens, benches, picnic tables, birdhouses, flagpoles, swing sets, lawn chairs, and other similar, typical residential landscaping uses. Boathouses, docks, and shoreline stabilization are not covered under the privilege permit; these types of structures and activities require a General Permit (see Section 4.6.1.b)

4.3 Non-Project Use of Project Lands

In accordance with Article 423 of the Project license, NYPA has the authority to permit certain types of use and occupancy of Project lands, without prior Commission approval. Such non-Project use of Project lands must be consistent with the purposes of protecting and enhancing the scenic, recreational, historic and environmental values of the Project. Some of the adjoining landowners have a right of access to the St. Lawrence River, sometimes referred to as “Parcel A Rights,” that was reserved to these owners when NYPA acquired the lands for the Project.^[4]

4.3.1 Permitted Uses

The types of use and occupancy of Project lands for which NYPA may grant permission include:

- Landscape planting;
- Non-commercial piers, landings, boat docks or similar structures;
- Embankments, bulkheads, retaining walls, or similar structures for erosion control; and
- Food plots (i.e., gardens) and wildlife habitat enhancement.

4.3.2 Prohibited Uses

Certain uses and activities are prohibited on Project lands to protect environmental resources and assure public access to Project lands while protecting the interests of adjoining landowners. In general, structures or activities that would interfere with public use and access, significantly increase the potential for flood damage, hinder NYPA’s operational or license requirements,

impede river views of adjacent landowners, be unsafe, or pose unacceptable risk of environmental damage would not be permitted on Project lands. Specific uses and activities that are prohibited on Project lands include the following:

- Private use structures except boat docks, boathouses, shoreline stabilization or utilities by permit.
- Septic systems, including tanks or leach fields;
- Removal of vegetation (except in accordance with the NYPA Vegetation Management Plan);
- Grading, excavation, change of contours or placement of fill (unless expressly authorized by NYPA permit);
- Use of motorized recreational vehicles (i.e., all-terrain vehicles);
- Trespassing on privately owned docks except in cases of marine emergency;
- Bulk fuel storage tanks or fuel dispensing facilities; and
- Fences, walls or other barriers (including hedges) within the 25-foot buffer that would impede public access along the shoreline.

4.4 Guidelines for Private Shoreline Improvements

NYPA is authorized under the Project license to issue permits for certain private structures to be constructed on Project lands. The following guidelines are provided to assist adjoining landowners in the design and location of allowable shoreline improvements and thereby facilitate review of required permit applications by DEC/USACE and DOS, as applicable, and NYPA (see Section 4.6.2). The intent of these guidelines is to minimize the impact of shoreline improvements on the environmental and scenic quality of the shoreline and to avoid construction in areas that would entail excessive disturbance of the shoreline, existing vegetation and other environmental resources. In any case, NYPA reserves the right to limit the size, configuration, or location of any and all structures or to not allow construction in certain locations.

4.4.1 Boathouses

New boathouses should be sited, designed, and constructed with consideration for aesthetics, including water views from adjacent properties as well as views from the water toward the land. Boathouses should reflect the following locational criteria and construction guidelines:

New boathouses should be located:

- So as to minimize shoreline disturbance, shoreline erosion and vegetation clearing;
- So as not to interfere with the public's access to and use of Project lands or other public resources in shoreline buffer areas; and
- So as not to interfere with Project operations.

New boathouse design and construction should reflect:

- Colors and materials that blend with or complement surrounding landscape;
- One-story in height; and
- Installation of electrical fixtures and service in accordance with the National Electrical Safety Code.

The following features will not be permitted as part of a boathouse:

- Plumbing facilities, kitchen facilities or other living quarters;
- Wood treated with creosote, pentachlorophenol, chromated copper arsenate (CCA) or similar chemicals;
- Rooftop decks or platforms; and
- Bulk fuel storage and/or dispensing facilities.

4.4.2 Private Docks

Individual, private docks, floating platforms and community docks may be permitted to provide recreational access to the water and mooring accommodations for boats or personal watercraft. NYPA permits will require complete removal of floating docks from the water for the period between December 1 and April 15; docks shall be sufficiently removed from the shoreline so as not to impede public access. Adjacent residential property owners are encouraged to develop community docks to reduce the number of docks on the shoreline and limit congestion in dense residential areas. Generally, only one dock structure shall be permitted per residence. To limit the size and the number of boats permitted for private docks, each dock structure approved by NYPA will be limited to accommodating the boat(s) of the Permittee and their immediate family. These docks may not be used for rental or other commercial purposes. New docks should reflect the following locational criteria and construction guidelines:

Private docks should be located:

- Perpendicular from the shoreline;
- So as to minimize shoreline disturbance, shoreline erosion and vegetation clearing; and
- So as to avoid the need for excavation or placement of fill within Project waters.

Dock design and construction should reflect:

- A properly sized and designed anchoring system to avoid drift;
- Installation of electrical fixtures and service in accordance with the National Electrical Safety Code;
- Safety reflectors on the sides and end of the dock to enhance visibility for boaters;
- Aluminum or other deck materials made specifically for docks; and
- Only plastic-encased floatation devices manufactured for marine use.

The following structures and features will not be permitted as part of a dock:

- Bulk fuel or oil storage;
- Plumbing; and
- Pressure-treated lumber or wood treated with creosote, pentachlorophenol, CCA or similar chemicals.

4.4.3 *Shoreline Stabilization*

Erosion of the shoreline is a natural phenomenon resulting from wave and ice action upon the land, and some amount of shoreline erosion is to be expected over time. NYPA policies regarding the maintenance of shoreline vegetation and restrictions regarding grading, filling and excavation within the Project lands and waters have been developed, in part, to avoid or minimize excessive shoreline erosion. Nevertheless, in instances of erosion, adjoining landowners may receive permits from NYPA to install shoreline stabilization.

Article 401 of the Project license requires NYPA to develop a Shoreline Stabilization Plan to address eroding shorelines within the Project boundary. The Shoreline Stabilization Plan will be developed in consultation with the Land Management and Recreation Committee or its successor as referenced in the Local Government Agreement included in the Comprehensive Accord. In addition to identifying existing sites to be stabilized, the Plan will provide general criteria and guidance to assist landowners in designing and obtaining approval for shoreline stabilization projects. In accordance with Article 401 of the Project license, funding will be available for adjoining landowners to perform small stabilization projects consistent with NYPA-issued permits.

4.4.4 *Other Improvements*

Generally, new private use structures (except for boat docks, boathouses, shoreline stabilization or utilities by permit) are not allowed on Project lands. Landscaping activities, including removal and/or planting of trees and vegetation on all Project lands by adjoining landowners will be allowed by NYPA in accordance with the Vegetation Management Plan. Existing residential landscaping uses, such as lawns, shrubs, gardens, benches, picnic tables, birdhouses, flagpoles, and similar residential landscaping uses will be evaluated by NYPA and approved if these uses do not impede public use of and access to Project lands.

4.5 *Guidelines for Commercial Uses*

In accordance with the Local Government Task Force Agreement, NYPA will provide for commercial use of Project lands that involve and are dependent on access or proximity to Project

waters. Such uses could include but are not limited to marinas, boat service facilities, and charter operations. The commercial use must not impede public use and access on Project lands and must be authorized by permit from NYPA, subject to the following conditions:

- Use of the permitted facility will not interfere with the public's right to free navigation or the public's access to the Project waters;
- The NYS Department of State concurs that the project is consistent with the New York State Coastal Management Program;
- A copy of a DEC Protection of Waters Permit and U.S. Army Corps of Engineers (USACE) individual or nationwide permit are provided to NYPA;
- Applicant must fully indemnify and hold harmless NYPA and the State of New York; and
- All electrical installations must meet or exceed minimum National Electrical Safety Code standards and other applicable building codes.

Upon receipt of a complete application for a commercial use, NYPA will prepare any necessary environmental assessment and will review the plans for safety and compliance with applicable construction guidelines. NYPA will consult with other environmental resource agencies (i.e., DEC, OPRHP, and DOS) and local municipalities and will notify and/or apply for approval from FERC as required by the Project license.

Under the Comprehensive Accord, NYPA will work with the Local Government Task Force and appropriate state agencies to identify potential sites for commercial marina development that could be marketed by local communities to marina developers. Commercial marinas that can accommodate no more than 10 watercraft at a time may be permitted by NYPA for an initial term of up to five years (subject to renewal).

Marinas that accommodate more than 10 watercraft must meet all of the above conditions and, in addition, must provide with the application a complete set of plans stamped by a New York State-licensed Professional Engineer. Pursuant to Article 423 of the Project license, marinas that accommodate more than 10 watercraft would also require specific review and approval by FERC in addition to the permit from NYPA.

4.6 Permits and Enforcement

Adjoining landowners desiring to construct an individual water-dependant facility (i.e., dock, boathouse, or shoreline stabilization) must obtain a permit from NYPA prior to beginning any construction activities within the Project boundary. Facilities constructed in accordance with a

NYPA-issued permit must also comply with all applicable state and federal regulations, and some activities may also require state and federal governmental permits or approvals.

Certain structures and improvements were constructed and/or permitted by NYPA prior to the issuance of the Project license on October 23, 2003. These facilities may not be consistent with the guidance and policies presented in this Land Management Plan. Use of these existing structures and improvements may continue without modification to the structures and improvements as long as they are properly maintained; however, when it becomes necessary to replace these structures or improvements, they must comply with the Plan's guidelines in effect at the time of replacement.

4.6.1 Permits Administered by the New York Power Authority

a. Privilege Permits

Owners of land in Areas of Dense Residential Development adjacent to Significant Coastal Fish and Wildlife Habitat may obtain a "Privilege Permit" for certain residential landscaping uses in the residential security zone adjoining his/her property. Allowable residential landscaping uses are lawns, shrubs, gardens, benches, picnic tables, birdhouses, flagpoles, swing sets, lawn chairs, and other similar typical residential landscaping uses. Any vegetation clearing and/or planting authorized through the issuance of a privilege permit must also be consistent with the Vegetation Management Plan. The term of the privilege permit will be for the life of the Project license. Privilege permits will be transferable with the adjoining property, provided that the new owner notifies NYPA of the change in ownership and meets with NYPA to review the terms of the permit and receive information about the permit program. NYPA will inspect the property on a periodic basis, but not less than once every five years, to ensure that the terms of the permit are being observed. The privilege permit will be revocable if the permit holder violates its terms and refuses to correct the violation within a reasonable time period. Any other uses of Project lands by adjoining owners that are permissible under this Land Management Plan (i.e., boathouses, docks, shoreline stabilization) will require a General Permit from NYPA.

b. General Permits

A General Permit is required from NYPA for all shoreline improvements on Project lands, including boathouses, docks and shoreline stabilization. General permits are issued for a term of five years. General permits are issued with a series of standard conditions that describe the rights of NYPA and the responsibilities of the permit holder. A form of the general permit is provided in Appendix E of this document.

c. Mooring Area Permits

NYPA currently administers the mooring permit program for the Louisville Mooring Area, issuing permits to the general public for a five-year term on a first come-first serve basis. These permits

convey boat mooring and access rights to designated spaces along the shoreline and allow for the installation of individual, private floating docks. The terms of the permit requires the removal of floating docks from the water for the period between December 1 and April 15. The Town of Louisville has agreed to assume responsibility for this program starting in 2005.

The Village of Waddington issues the permits for the Waddington Mooring Area. Permit holders are allowed to renew their permits annually, and the Village retains the annual permit fees and maintains a waiting list for mooring spaces as they become available. As with the Louisville Mooring Area, permits at the Waddington Mooring Area convey boat mooring and access rights to designated spaces along the shoreline and allow for the installation of individual, private floating docks.

d. Agricultural Permits

NYPA agricultural permits allow farmers to use Project lands for growing and harvesting crops and pasturing livestock. NYPA agricultural permits contain restrictions on these activities. While fencing and utility installation is allowed, permit holders are required not to damage the property and to remove all trash, equipment and crop debris. Permit holders are responsible for adhering to all applicable state and federal regulations and acquiring any additional permits required for their activities. Permit holders are prohibited from using or bringing any hazardous, toxic, restricted or illegal materials onto the property and are also not allowed to sublet the property.

e. Permit Requiring Insurance

This permit is used for temporary events, including activities where construction is being performed by, or for the benefit of, a third party and in cases where the use of construction equipment poses a potential liability.

4.6.2 Permitting Process

In accordance with Article 423 of the Project license, NYPA will implement the permit programs described above in authorizing certain types of use and occupancy of Project lands. The permitting process will be readily accessible to adjoining landowners and others requiring NYPA permits. The following framework will guide the preparation, submittal and review of permit applications:

- An adjoining landowner or other entity desiring a permit from NYPA initiates the process by contacting NYPA and providing the following information:
 - Applicant’s name, phone number and address;
 - General description of the proposed activity or improvement; and
 - General location of the proposed activity or improvement.

- NYPA determines whether any restrictions would preclude the proposed activity or improvement, including the sensitivity of the property for historic properties.
- If the proposed activity or improvement is not permissible, NYPA will so notify the inquiring person or entity.
- If the proposed activity or improvement is permissible, a NYPA permit application form is forwarded to the applicant. If the proposed activity or improvement requires a DEC/USACE permit, a copy of their Joint Permit Application form is also forwarded to the applicant. The applicant is responsible for applying directly to the DEC and USACE for any necessary permits, and the applicant must also submit a consistency certification with application materials to the New York Department of State, Division of Coastal Resources.
- The applicant completes NYPA's permit application form and returns it to NYPA, along with the requested information, which will include but is not necessarily limited to:
 - A copy of the DEC/USACE permit, if applicable
 - Sketch or drawing including the dimensions of the proposed activity or improvement;
 - Site plan showing approximate shoreline, side lot lines, and location of the proposed activity or improvement;
 - Brief description of the proposed activity or improvement including materials to be used;
 - Estimate of any excavation or fill required, including disposal plans for excavated material and/or the source of fill material; and
 - Schedule for construction including estimated start and completion date.
- NYPA reviews the application materials for completeness and conformance with the Land Management Plan's guidelines. For new facilities, NYPA will require that the applicant notify neighbors and local municipalities of a pending permit application for docks, boathouses and shoreline stabilization to afford them an opportunity to provide written comments. Proof of notification will be required. NYPA will work in conjunction with the municipality in an attempt to resolve disputes among adjoining landowners concerning NYPA lands.
- NYPA schedules a meeting with the applicant. At the meeting, any required additional information or revisions to the proposed plans or activities would be discussed.
- If the proposed activity or improvement cannot be permitted as proposed, the applicant will be informed, the reason for the denial will be explained, and necessary revisions to the activity or improvement will be discussed.
- If appropriate, NYPA will prepare and issue the permit in a timely fashion. NYPA's standard permit contains requirements that the Permittee will need to comply with as a condition of the permit. For example, the permit will require immediate cessation of work and notification to NYPA should human skeletal remains, funerary goods or archeological resources be discovered while undertaking the work authorized by the permit. Such

notification will allow NYPA to follow the Procedures for Unanticipated Discovery of Human Remains and Archeological Resources set forth in the Historic Properties Management Plan.

- During construction and within 60 days following the completion of construction, NYPA will conduct interim and a final inspection of the subject property to ensure that the facility or improvement is constructed and installed in accordance with the proposed plans and permit. NYPA will notify and, if necessary, issue a notice of violation if any changes are required to bring the facility into compliance with the guidelines or permit.

General permits are issued for a term of five years, as per the Comprehensive Relicensing Settlement Accord and Article 413 of the Project license. However, NYPA recognizes the importance of permit renewals to adjoining landowners who construct substantial private facilities such as boathouses and docks that require a NYPA permit. Generally, permits will be renewed by NYPA provided the permitted use remains consistent with FERC requirements and NYPA land management policies and the permit holder has no unresolved permit violations. The general permit renewal process will be as follows:

- NYPA will notify the permit holder of the upcoming permit expiration date by forwarding two copies of the renewed permit.
- Upon receipt of the renewed permit, the permit holder shall sign both copies and return them to NYPA, thereby certifying that all permitted facilities are in good repair, structurally sound, and in compliance with the original permit and any other state or federal permits.
- NYPA reserves the right to inspect the permitted facilities prior to permit renewal and to require any repairs or modifications needed to bring the facilities into compliance with the permit.
- NYPA will return a copy of the fully executed, renewed permit to the permit holder, following verification that any required repairs or modifications have been completed.
- A permit may be cancelled by NYPA for default by the permit holder in the performance or observance of any of the conditions of the permit, or if NYPA determines that any of the structures erected or maintained by the permit holder pursuant to the permit, or the continued use of the land for such structures, is no longer consistent with the proper operation of the Project. A permit holder will be given a reasonable amount of time to correct conditions that would result in a cancellation of a permit. NYPA will give 60 days notice of any such cancellation of a permit.
- If a general permit is not renewed or is cancelled by NYPA, the permit holder, at its sole expense, must remove any and all structures and any other materials associated with the permitted facility and restore the Project lands to acceptable condition.

4.6.3 Enforcement and Penalties

Pursuant to Article 423 of the Project license, NYPA has the responsibility to supervise and control the uses and occupancies of Project lands that have been permitted and to ensure compliance with the conditions of permits that are issued. If a use or occupancy violates any condition of the permit issued, NYPA will take any lawful action necessary to correct the violation. This action includes, if necessary: 1) canceling permission to use and occupy Project lands or waters; 2) requiring the removal, at the landowner's expense, of any non-complying structures and facilities; and 3) restoring Project lands and waters to acceptable condition at the landowner's expense.

4.6.4 Compliance Reporting

In accordance with Article 413 the Project license, NYPA will prepare and submit to the Commission a Land Management Plan compliance report every five years. The compliance report will list and describe the land management activities performed during the previous five calendar years and identify any land management activities scheduled or anticipated to be conducted during the next five years. The compliance report will also list the status of any land management or lease agreements with other state, municipal or commercial entities and will provide a summary of permits issued and enforcement actions taken.

5.0 RELATIONSHIP OF LAND MANAGEMENT PLAN TO OTHER PLANS

5.1 Other New York Power Authority Plans

In accordance with the Comprehensive Accord and the Project license, NYPA has prepared and periodically updates several resource-specific plans. These plans describe the activities undertaken by NYPA to implement specific provisions of the Project license and also provide guidance for the use of Project lands by adjoining landowners. This section summarizes the content of these resource plans and describes how each relates to the Land Management Plan.

5.1.1 Shoreline Stabilization Plan

Article 401 of the Project license requires NYPA to develop a Shoreline Stabilization Plan in consultation with local interest groups. The purpose of the Shoreline Stabilization Plan is to address the eroding shorelines within the Project boundary. The Plan also identifies the sites and establishes the criteria, method and preliminary schedule for accomplishing the stabilization. NYPA will make available a portion of the funds to be provided for shoreline stabilization to adjoining landowners to perform small stabilization projects.

The Shoreline Stabilization Plan reflects the land management goals and objectives for the recognition and protection of historic properties, natural resources, and high quality, natural views. Stabilization techniques have been identified to protect eroding shoreline, and the

Shoreline Stabilization Plan provides the guidelines for individual landowners to select an appropriate technique for their shoreline location, consistent with the Land Management Plan.

5.1.2 Vegetation Management Plan

The Land Management Plan outlines general maintenance activities undertaken by NYPA on certain Project lands and also restricts removal and/or planting of vegetation on Project lands by adjoining landowners. Existing residential landscaping uses that do not impede public use and access to Project lands will be grandfathered; however, additional vegetation removal and/or planting by adjoining landowners are subject to written permission by NYPA.

In accordance with Article 413 of the Project license, NYPA has developed a Vegetation Management Plan as part of this Land Management Plan. The Vegetation Management Plan, included as Appendix C of this document, describes seasonal and periodic vegetation management activities undertaken by NYPA in conjunction with the operation and maintenance of the Project facilities. Vegetation management activities related to the Wilson Hill WMA and the various Habitat Improvement Projects are described in management plans for these facilities. The Vegetation Management Plan also establishes criteria and guidelines to be followed by adjoining landowners when proposing plantings or conducting landscaping activities on Project land. The Vegetation Management Plan has been developed consistent with the management objectives of protecting natural habitats, historic properties, and public access to Project lands.

5.1.3 Wildlife Protection and Management Plan

Article 413 of the Project license provides for the preparation of a Wildlife Protection and Management Plan as part of the Land Management Plan. The Wildlife Protection and Management Plan, included as Appendix D of this document, focuses on those portions of the Project lands not covered by management agreements with other state or local entities and management plans for the WHWMA and Habitat Improvement Projects. The Wildlife Protection and Management Plan addresses game and non-game species and other natural resource areas (i.e., Significant Coastal Fish and Wildlife Habitat, potential local wildlife corridors, and rare, threatened and endangered species habitat).

5.1.4 Wilson Hill Wildlife Management Area Plan

Appendix B of the Ecological Mitigation and Enhancement Measures Settlement Agreement, included in the Comprehensive Accord, provides a detailed description of planned improvements to the Wilson Hill WMA. This agreement, which is incorporated in Article 411 of the Project license, provides for an overall Wilson Hill WMA Management Plan to ensure management of the Wilson Hill WMA achieves the goals for water control, habitat management, recreation, and maintenance of Project structures. Preparation of the Wilson Hill WMA Management Plan will be

coordinated with the Recreation Plan and Historic Properties Management Plan. Specific components of the planned improvements reflected in the Wilson Hill WMA Management Plan include:

- Rehabilitation of the existing dikes and provision of enhancements that would improve management of water levels and habitats in the Wilson Hill WMA pools, including provisions to equip, manage and monitor pool levels and the Wilson Hill WMA lands;
- Design and construction of an emergency access road to the community on Wilson Hill Island on the new dike separating the East and West pools of the Wilson Hill WMA; and
- Rehabilitation of existing recreational facilities and provision of new recreational facilities, including trails and wildlife viewing platforms

5.1.5 *Habitat Improvement Projects*

Appendix A of the Ecological Mitigation and Enhancement Measures Settlement Agreement, included in the Comprehensive Accord, provides for the design, construction, operation and maintenance of 10 Habitat Improvement Projects (HIPs) within the Project boundary. This Agreement is incorporated in Article 409 of the Project license.

Many of the HIPs are located in open water and emergent wetlands within Significant Coastal Fish and Wildlife Habitats, and the guidelines and restrictions included in the Land Management Plan for these shoreline areas (e.g., prohibitions regarding boathouses and private docks) will help support the management activities outlined for these HIPs. In several instances, the HIPs are located in areas covered by management agreements with other entities (i.e., Coles Creek State Park and Wilson Hill WMA). In these areas, the management agreements with the entity managing the area incorporate any provisions needed to support the HIPs. In other areas where the Land Management Plan does not establish any specific restrictions, NYPA will consider any nearby HIPs when making a determination regarding an application for a permit. If necessary, the permit will include special conditions related to the HIP. If a proposed activity is not consistent with the operation of the HIP, the permit will not be issued.

One HIP, grassland habitat enhancement on Whitehouse Point and Ogden Island, will consider coordination of the HIP Management Plan with any agricultural activities that are authorized by permit. For agricultural permits issued in these areas, NYPA will include special permit conditions as necessary to protect and support the objectives of this HIP.

5.1.6 *Recreation Plan*

In accordance with Article 415 of the Project license, NYPA maintains a Recreation Plan that outlines the rehabilitation and enhancement of existing public recreational facilities and the

development of new public recreational facilities within the Project boundary. That Plan was prepared in consultation with parties to the Comprehensive Accord, and reflects the Local Government Task Force Agreement between NYPA and the Towns of Massena and Louisville and the Town and Village of Waddington.

The Land Management Plan identifies public recreational facilities within the Project boundary. Most of these facilities are operated and maintained by other state, local or commercial entities in accordance with the operation and maintenance agreements with NYPA.

The Recreation Plan does not address private recreational facilities (i.e., private docks belonging to adjoining landowners) or the St. Lawrence Yacht Club, a private facility that is subject to a lease agreement with NYPA. The Land Management Plan includes guidelines for the design and placement of private docks as well as guidelines for similar elements of potential commercial marinas.

5.1.7 Historic Properties Management Plan

NYPA has prepared a Historic Properties Management Plan for the Project in accordance with the Programmatic Agreement among the FERC, the Advisory Council on Historic Preservation, and the New York State Historic Preservation Officer, with NYPA concurring, which was incorporated in Article 422 of the Project license. The Historic Properties Management Plan specifies how historic properties will be managed in the Project's Area of Potential Effect.

NYPA will consider the Historic Properties Management Plan when making determinations regarding Project-related activities and applications for permits and will include special permit conditions or deny the permit if the requested facility or activity would be detrimental to any identified or potentially significant historic properties. Project-related activities that could affect historic properties include construction of proposed recreational improvements; construction of proposed ecological improvements (HIPs and enhancements to the Wilson Hill WMA); and shoreline stabilization efforts. NYPA will ensure that the Recreation Plan, the Shoreline Stabilization Plan, and the Land Management Plan are implemented consistent with the Historic Properties Management Plan.

5.2 Consistency with Local Plans

The towns of Louisville and Massena and the Town and Village of Waddington have comprehensive land use plans. Although local planning and zoning authority is not binding on the State of New York or agencies of the state such as NYPA, local zoning and development codes have been reviewed for consistency with the guidelines and restrictions presented in this Land Management Plan.

5.2.1 Zoning and Subdivision Regulations

a. Town of Waddington Development Code

The Town of Waddington Development Code establishes Development Suitability Areas according to suitability for development or land use based upon the natural and community resources criteria set forth in the Town's master plan (Town of Waddington Development Code, Section 1.21). The specific Development Suitability Areas are Natural Resource Areas, Limited Development Areas, and Rural Development Areas. In each of these areas, private water-dependent recreation facilities including, but not limited to, docks, boathouses and bathhouses are considered Special Uses that require approval from the Planning Board. The Town of Waddington Development Code also establishes a Waterfront Area Overlay, encompassing all lands and waters of the Town lying within the New York State Coastal Area Boundary as identified in the Town of Waddington/Village of Waddington Joint Local Waterfront Revitalization Program (LWRP; see Section 6.2.1.b). Establishment of this overlay area is meant to ensure that Planning Board approval of all new development proposals within the Waterfront Area are consistent with the policies and purposes of the LWRP.

In all Development Suitability Areas, the minimum required setback from the shoreline of the St. Lawrence River (mean high water level) is 100 feet for new buildings and structures, excluding structures solely for the storage, docking, launching or other use of watercraft. This required setback is consistent with the buffers established by NYPA for protection of public use and access zones as well as Significant Coastal Fish and Wildlife Habitat.

b. Village of Waddington

Within the Village of Waddington, no building or structure can be erected, added to or structurally altered until a permit has been issued by the Code Enforcement Officer in accordance with the Zoning and Subdivision Local Law. This law establishes a Waterfront Overlay District to provide for development that is consistent with the Town of Waddington/Village of Waddington Joint Local Waterfront Revitalization Program. Within the Waterfront Overlay District, one and two family dwellings, including accessory buildings and uses, do not require Planning Board approval and the corresponding consistency review with the Local Waterfront Revitalization Plan. This local law does not establish minimum setbacks from the shoreline.

c. Town of Louisville

The Town of Louisville Land Use and Development Code establishes comprehensive zoning regulations in accordance with a comprehensive plan, together with construction standards. This local law establishes a Scenic Preservation District, which includes that area 200 feet on either side of the shoreline. All development within the Scenic Preservation District requires Planning

Board approval in addition to a building/use permit issued by the Enforcement Officer or by the Board of Appeals. According to the regulations, no permanent building or structure should be located within 75 feet of the shoreline except for a single-story service or water-related building as permitted by the Planning Board. Permitted uses within the remaining 125 feet include one-family dwellings and accessory buildings or uses, among other seasonal and recreational uses.

A large portion of the St. Lawrence River shoreline in the Town of Louisville is located adjacent to the Wilson Hill WMA and other Significant Coastal Fish and Wildlife Habitats. In these areas, the 100-foot buffer established by the Project boundary would be more restrictive than the local development code.

d. Town of Massena

The Town of Massena has enacted a Zoning Code that establishes zoning districts along with permitted uses and development standards within each district. No special provisions, setbacks or restrictions apply to waterfront or shoreline areas, but only a small portion of the St. Lawrence River shoreline in the Town of Massena is open to development; Project dikes restrict development along the majority of the shoreline in the Town of Massena. One-family dwellings and accessory uses are permitted in each of the zoning districts along the shoreline.

5.2.2 Local Waterfront Revitalization Plan (Waddington)

Article 42 of the Executive Law in New York State requires state agency actions within the coastal zone to be undertaken in a manner that is consistent with the state's coastal area policies and any state approved Local Waterfront Revitalization Program (LWRP). A LWRP is a refinement of the state's coastal policies, developed jointly by the state and a municipality. The Town and Village of Waddington adopted a joint Town and Village Local Waterfront Revitalization Program (LWRP), which was approved by the DOS in 1991. The Town and Village of Waddington are the only communities in the Project area that have prepared a LWRP. NYPA reviewed the 24 policies contained in Waddington's LWRP and determined that the Project is consistent with those policies (NYPA Coastal Policies Consistency Statement, October 2001). Since this Land Management Plan serves to implement conditions of the Project license, this Plan is also consistent with Waddington's LWRP.

5.3 New York State Coastal Management Program

The Project is within New York's designated Coastal Zone Management Area. NYPA's application to FERC provided certification that the Project is consistent with the New York State Coastal Management Program (CMP), and NYPA submitted a certification to the DOS on October 31, 2001. By letter dated October 30, 2003, the DOS concurred with the consistency certification provided by NYPA, subject to the following conditions:

- Measures will be employed in buffer areas ensuring security between residences and accessways, as described in the Land Management Plan.
- A 100-foot buffer restricting development will surround each Department of State-designated significant coastal fish and wildlife habitat situated within the Project boundary.

The guidelines and policies reflected in this Land Management Plan address the conditions established by the DOS and ensure consistency with the New York State CMP.

GLOSSARY

Adjoining Landowner – Individuals who own property that adjoins either the Project boundary or the NYPA-owned shoreline buffer.

Area of Dense Residential Development – specifically delineated areas adjacent to the shoreline in the towns of Waddington and Louisville, within which certain restrictions and privileges apply.

Boathouse – a covered or enclosed structure with direct access to Lake St. Lawrence which: 1) is used only for the storage of boats and associated equipment; 2) does not contain bathroom facilities, sanitary plumbing, or sanitary drains of any kind; 3) does not contain kitchen facilities of any kind; 4) does not contain beds or sleeping quarters of any kind; and 5) does not exceed a single story.

Comprehensive Accord – the Comprehensive Relicensing Settlement Accord filed with FERC on February 6, 2003 as part of the relicensing process for the St. Lawrence-FDR Power Project in settlement of all issues among the signing parties, which included NYPA, federal and state resource agencies, local governmental entities including the towns of Massena and Louisville and the Town and Village of Waddington, and non-governmental organizations.

Dock – a floating, removable structure that: 1) extends into Lake St. Lawrence from only that portion of the immediate shoreline or boathouse necessary to attach the structure to the shoreline or boathouse; 2) is built and seasonally used for the purposes of securing and/or loading or unloading water craft and/or swimming, fishing or other water-related recreation.

General Permit – Permit issued by NYPA to owners of adjoining land to allow development of certain shoreline improvements such as boathouses, docks and shoreline stabilization.

Normal Maximum Water Surface Elevation - Based on normal Project operations, the maximum elevation of the water surface of Lake St. Lawrence, determined to be approximately 245 feet from the Robert Moses Power Dam to Sucker Brook and 246 feet from Sucker Brook to Iroquois Dam

(in U.S. Lake Survey 1935 datum). These elevations were used in large part to define the Project boundary.

Parcel "A" Rights – a limited right of access to the St. Lawrence River that was reserved to certain adjoining landowners in those instances where the State acquired a portion, but not all, of a parcel of property during Project construction that bordered on the St. Lawrence River or one of its tributaries.

Privilege Permit – Permit issued by NYPA to owners of adjoining land in Areas of Dense Residential Development adjacent to Significant Coastal Fish and Wildlife Habitat for certain residential landscaping uses of the residential security zone adjacent to his/her property.

Public Use and Access Zone – the area extending 25 feet upland from the normal maximum water surface elevation within Areas of Dense Residential Development.

Residential landscaping uses – typical residential landscaping activities and ancillary structures including: lawns, shrubs, gardens, benches, picnic tables, birdhouses, flagpoles, swing sets, and lawn chairs.

Residential Security Zone – the area that extends from the Project boundary toward the shoreline for a distance of up to 75 feet within Areas of Dense Residential Development that include a 100-foot buffer (i.e., located adjacent to Significant Coastal Fish and Wildlife Habitat).

Shoreline stabilization – any permanent measure or engineered structure used to prevent or minimize shoreline erosion including, but not limited to rip-rap, seawalls, bulkheads, and vegetative plantings.

Significant Coastal Fish and Wildlife Habitat – Specific coastal areas formally designated by the New York State Department of State for protection under the Coastal Management Program. A habitat is significant if it serves one or more of the following functions: 1) is essential to the survival of large portion of a particular fish or wildlife population; 2) supports populations of species which are endangered, threatened or of special concern; 3) supports populations having significant commercial, recreational or educational value; and 4) exemplifies a habitat type which is not commonly found in the state or in a coastal region.

APPENDIX A

LICENSE ARTICLES REGARDING LAND MANGEMENT (Article 413 and Article 423)

Article 413. Land Management Plan. (a) The Licensee, in consultation with appropriate parties with interest in land management issues, including, at a minimum, all parties to the Relicensing Settlement Agreement, executed February 22, 2002, by and among the Licensee, St. Lawrence County, Town and Village of Massena, Town of Louisville, Town and Village of Waddington, Town of Lisbon, Massena Central School District, Madrid-Waddington School District, and Lisbon School District (hereinafter "Local Government Agreement"), the U.S. Fish and Wildlife Service, and the New York State Department of Environmental Conservation, any other Party to the Comprehensive Relicensing Settlement Accord executed on January 15, 2003, that notifies the Power Authority of its interest in such consultation, and the SRMT ("Consulted Parties"), shall develop and implement a Land Management Plan for Project lands, consistent with Attachment 1, Section V of the Local Government Agreement.

(b) The Land Management Plan shall identify Project lands and all associated buffer zones, and shall establish guidelines for the use of these lands, including public access, construction activities, the protection and preservation of wildlife habitats and scenic and cultural resources, and commercial uses, in accordance with Attachment 1, Section V.A of the Local Government Agreement. The Land Management Plan shall also establish a vegetation management plan, in accordance with Attachment 1, Section V.B of the Local Government Agreement. Finally, the Licensee shall, in accordance with Attachment 1, Section V.C of the Local Government Agreement, have the authority to issue permits to the public or to State or Federal agencies for proposed Project land uses that are consistent with the guidelines of the Land Management Plan, and that cover, at a minimum, construction, maintenance, and operation of water dependent structures, and any existing structures and uses.

(c) Within one year following the effective date of this license, the Licensee shall file the Land Management Plan with the Commission for approval. Prior to filing with the Commission, the Licensee shall allow a minimum of 30 days for all Consulted Parties to comment on the Land Management Plan. When filing the Land Management Plan with the Commission, the Licensee shall include documentation of its consultation with the Consulted Parties, including copies of the comments on the proposed plan received during the consultation. Further, the Licensee should identify in its filing how the comments are addressed by the proposed plan. The Commission reserves the right to require changes to the Land Management Plan, and the Licensee shall not commence land management activities until the Commission has approved the Land Management Plan.

(d) Following Commission approval of the Land Management Plan, the Licensee shall prepare and submit to the Commission a Land Management Plan compliance report every five years. The Land Management Plan compliance report shall list and describe the land management activities performed during the previous five calendar year and identify any land management activities scheduled or anticipated to be conducted during the next five years.

(f) Following issuance of any permits pursuant to the Land Management Plan, the Licensee shall have continuing responsibility to supervise, monitor, and control the use and occupancies for which the Permits were issued. If a permitted use and occupancy violates any condition of this article, guideline established in the Land Management Plan, or any other

condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, cultural or other environmental resources, the Licensee shall take any lawful action necessary to correct the violation, including, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(g) All specific-use permits issued by the Licensee under the Land Management Plan shall have a 5-year term and may be assigned or amended with the Licensee's consent. The Licensee shall not issue any permits for any construction or other activities that would interfere with public access to and use of Project lands, significantly increase flood damage liability, impede river views of adjacent landowners, or pose an unacceptable risk of damage to environmental, scenic, and cultural resources.

(h) As part of the Land Management Plan required in this article, the Licensee shall include a Wildlife Protection and Management Plan. The Licensee shall also include the St. Regis Mohawk Tribe as a consulted party in the development of the LMP.

Article 423. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article.

If a permitted use and occupancy violates any condition this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use and occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are:

- (1) landscape plantings;

- (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single family type dwellings;
- (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and
- (4) food plots and other wildlife enhancement.

To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall:

- (1) inspect the site of the proposed construction;
- (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site; and
- (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline.

To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of the standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or right-of-way across, or leases of, project lands for:

- (1) replacement, expansion, realignment, or maintenance of bridges or roads there all necessary state and federal approvals have been obtained;
- (2) storm drains and water mains;
- (3) sewers that do not discharge into project waters;
- (4) minor access roads;
- (5) telephone, gas, and electric utility distribution lines;
- (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary;
- (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69 kV or less); and

- (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir.

No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for:

- (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained;
- (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained;
- (3) other pipelines that cross project lands or waters but do not discharge into project waters;
- (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained.
- (5) private or public marines that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina;
- (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and
- (7) other uses, if:
 - (i) the amount of land conveyed for a particular use is five acres or less;
 - (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and
 - (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year.

At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

- (1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.
- (2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.
- (3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project, and (iii) the grantee shall not unduly restrict public access to project waters.
- (4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be change to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposal to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

APPENDIX B: PROJECT BOUNDARY MAPS (EXHIBIT G)

Appendix B - Project Boundary Maps - St. Lawrence-FDR Power Project

See the PDF links in the Land Management Plan web section for maps including:

Town of Louisville - Areas of Dense Residential Development

Town of Louisville - Areas of Environmental Sensitivity

Town of Louisville - Land Use and Land Cover Map

Town of Louisville - Recreation Resources Map

Town of Massena - Areas of Environmental Sensitivity

Town of Massena - Land Use and Land Cover Map

Town of Massena - Recreation Resources Map

Town of Waddington - Areas of Dense Residential Development

Town of Waddington - Areas of Environmental Sensitivity

Town of Waddington - Land Use and Land Cover Map

Town of Waddington - Recreation Resources Map

APPENDIX C: VEGETATION MANAGEMENT PLAN

1.0 INTRODUCTION

Shoreline vegetation serves many functions. It is important to protect and preserve a healthy vegetative buffer along the shoreline to maintain and enhance the natural and aesthetic resources of the St. Lawrence River.

Vegetation can help stabilize the shoreline, prevent erosion, and protect water quality. The root systems of established trees and shrubs along the shoreline help hold soils in place. A natural vegetation buffer also improves water quality by filtering and trapping organics and chemical pollutants.

A vegetative buffer can enhance the natural appearance of the shoreline, particularly views from the water toward the land. Protection of natural shoreline vegetation is particularly important to preserve identified high-quality views.

This vegetation management plan provides the objectives for maintaining NYPA property as required by the FERC license. It provides guidelines for adjoining property owners who will need to obtain a permit to clear certain vegetation or add landscape plantings to the NYPA-owned shoreline buffer. This plan also provides property owners with guidance for protection of aquatic vegetation in the St. Lawrence River and vegetation maintenance on NYPA property. Also described are vegetation management practices undertaken by NYPA and others on Project lands.

2.0 GUIDELINES FOR VEGETATION MANAGEMENT ON NYPA PROPERTY

2.1 Buffer Zone Management

Vegetation management and maintenance in the buffer zones (i.e., Public Use and Access Zone and Residential Security Zone) includes vegetation removal, planting, trimming and lawn maintenance activities.

2.1.1 Vegetation Removal

The removal of trees, stumps, brush, or any other form of vegetation, living or dead, below the normal shoreline is only allowed with written permission from NYPA. No vegetation of any type overhanging the water or within the water may be removed without specific, written permission from NYPA.

Adjoining property owners may remove some vegetation in the Public Use and Access Zone and the Residential Security Zone without written permission. Generally, vegetation less than 5 feet in height may be removed. Fallen trees, fallen limbs, and fallen branches may also be removed. However, no living vegetation or dead vegetation root structure may be removed within 25 feet of tributaries, ditches, swales or drainage ways that drain into Lake St. Lawrence.

No tree greater than 4 inches in diameter (measured 4.5 feet above the ground level) may be removed without written permission from NYPA. Adjoining property owners may request that NYPA remove vegetation in the Public Use and Access Zone and Residential Security Zone.

Any tree that poses an imminent threat to life or property may be removed, subject to approval by NYPA. Landowners are requested to contact NYPA by telephone to inform NYPA of such conditions. NYPA will assess the situation and may elect to remove the tree(s) using NYPA personnel.

Open burning of landscape waste (i.e., trees, branches, brush piles, leaves, etc.) is not permitted on Project lands. Open burning on adjoining property, when conducted in accordance with local restrictions, must be controlled so as not to jeopardize Project land and vegetation buffers. Chipping and disposal of chipped material resulting from removal of vegetation is permitted on NYPA property.

2.1.2 Landscape Planting

Planting of any woody vegetation – including but not limited to trees, shrubs, and hedges – is allowed along the shoreline within the Project boundary with written permission from

NYPA. Non-woody vegetation may be planted without permission. However, invasive plant species may not be planted. Adjoining landowners seeking additional advice on landscape planting are encouraged to contact NYPA and/or the local conservation district office.

Where landscape planting is permitted on Project lands, NYPA encourages landscaping with native plants. Native plants are preferred because they reduce maintenance, are best adapted to the area, are usually less invasive, and can eliminate the need for herbicides and fertilizers. Table 1 of this document lists recommended, beneficial plants suitable for landscaping in the Project area.

Landscape planting of non-native, invasive species can have a detrimental effect on natural landscapes by displacing native plants which are better suited to local habitats. Unfortunately, a number of species that have been documented as invasive in New York continue to be available through commercial nurseries and garden centers. Table 2 of this document lists several invasive species that remain commercially available and provides native, non-invasive alternatives that are suitable for use in the Project area.

Landscaping plantings, including gardens and the use of hedges cannot impede public access along the shoreline in the Public Use and Access Zone.

NYPA reserves the right to plant or require planting of vegetative materials within the buffer zone where vegetation has been removed without permission or where vegetation is a cost-effective means of shoreline stabilization.

2.1.3 Lawn Maintenance

Within the buffer zones, NYPA discourages the establishment of new lawns that would require the clearing of existing, natural vegetation, particularly mature trees. Nevertheless, NYPA recognizes that many adjoining property owners maintain existing lawns on Project lands. The following guidance is provided to assist adjoining property owners. Adjoining landowners seeking additional advice on lawn maintenance are encouraged to contact NYPA and/or the local conservation district office.

A properly maintained lawn is less susceptible to weeds, insects, and diseases. Pest problems will decrease over the years as biological activity is improved in the soil (for example by adding organic fertilizers), and an ecological maintenance program is developed. The following recommended practices are part of a sound routine lawn care system.

Dethatching: Thatch is an undecomposed layer of roots and stems that accumulates at the soil surface. It prevents water and fertilizer from reaching the soil. If this condition exists, it may indicate acid soil. Thatch can be removed, preferably in the fall, with a dethatching rake, and the pH can be corrected with an appropriate application of lime.

Aeration: Soil compaction from heavy foot or vehicle traffic reduces the pore spaces between the soil particles. This impedes drainage and prevents the roots of the plant from "breathing." A manual or power "coring tool" can be used to remove a small core of soil, which will allow the air to penetrate. This step should be followed by overseeding and a top dressing of sieved organic fertilizer.

Overseeding: This is the process of introducing competitive, desirable grass species that will grow in the openings created by dethatching and aerating. It is best done in the fall when conditions are cool and moist. A mixture of locally adaptable, competitive seed varieties, sieved compost, and sand can be broadcast over the lawn. Finally, the seeded area should be raked and well watered to insure proper seed germination.

Fertilizing: Environmentally sound lawn maintenance relies on slow release organic and crushed rock fertilizers and avoids the highly soluble synthetic formulations. Slow release, organic fertilizers provide nutrients over a longer period of time and are less likely to be transported into the water than higher concentration fertilizers. Bags with numbers on them like 20-10-20 are likely to include the latter, whereas those with lower numbers such as 1-3-2 are more likely to be based on organic materials.

Mowing: Mowing can promote a healthy lawn with few weeds and other pests. Mower blades should be sharp to prevent tearing of the grass. Mowing height should be seasonally adjusted to minimize stressing the grass. During the summer months, the recommended height is 3 inches, to enable the grass to continue to shade out the weeds and protect the soil. In the spring and fall, grass may be cut shorter (no shorter than 1 ½ inches) to stimulate root growth.

Watering: Shallow, frequent watering causes poor root growth and increases nutrient leaching. Deep, infrequent watering, on the other hand, will promote deep root growth. Water in the early morning to allow the lawn to dry before the evening. Excessive moisture during the night may encourage fungal growth.

2.2 Aquatic Vegetation

Aquatic vegetation consists of those plants that grow in and above the water with their roots in the water or in the sediments under the water. This vegetation provides many, valuable benefits, such as habitat for fish and other organisms, and should be conserved and encouraged.

2.2.1 Protection of Submerged and Emergent Aquatic Vegetation

The removal or destruction of aquatic vegetation growing in Lake St. Lawrence or along the immediate shoreline of the buffer zone within the Project boundary is not allowed without required

regulatory approvals and/or written permission from NYPA. Removal of aquatic vegetation from public beach areas using manual or mechanical methods is allowable as part of park maintenance without written permission from NYPA, but other regulatory approvals may still be required.

In shoreline areas where aquatic vegetation is present, docks may be permitted so long as the dock is consistent with DEC and other regulatory (Corps of Engineers and Department of State) requirements and conforms to the specifications set forth in the General Permit.

2.2.2 *Shoreline cleanup*

The removal of dead trees, stumps, or other woody or natural debris that exists in Lake St. Lawrence, along the shoreline or in the buffer zones is only allowed with written permission from NYPA. NYPA may grant permission for woody debris removal for purposes of recreational access on a case-by-case basis.

The removal of garbage and other human-produced debris may be done at any time.

2.3 Prescribed Fires for Vegetation Management

Prescribed (i.e., controlled) burning for vegetation management can achieve multiple benefits including increased forage production for grazing, improved wildlife habitat, and reduction of wildfire hazard. Improper burning can result in inadvertent damage to adjacent properties, wildlife impacts (e.g., burning during nesting season for grassland birds), ineffective results, and inadequate smoke management. Considering the configuration of Project lands (i.e., the generally narrow buffer areas along the shoreline), the proximity of residences, and the extent of recreation areas, the majority of Project lands is considered unsuitable for prescribed burning. Accordingly, the intentional setting of fires on Project lands for vegetation management by adjoining landowners, leaseholders or permit holders is prohibited.

NYPA reserves the option to conduct prescribed burns for vegetation management on specific Project lands, namely Ogden Island and Whitehouse Point. In accordance with Article 409 of the Project license, NYPA will develop and implement a Habitat Improvement Project (HIP) for the enhancement and maintenance of grassland habitats on Ogden Island and Whitehouse Point. Controlled grazing will be the primary management practice for these grassland areas, but where grazing is not possible, alternative management techniques, including prescribed burning, will be used to maintain grassland conditions. The specific circumstances and conditions under which prescribed burning will be used will be detailed in the specific HIP management plan for Ogden Island and Whitehouse Point.

2.4 Permits

Owners of land in Areas of Dense Residential Development adjacent to Significant Coastal Fish and Wildlife Habitat may obtain a "Privilege Permit" for certain residential landscaping activities such as lawns, trees, shrubs and gardens in the residential security zone adjoining his/her property. The permitting process is described in the body of the Land Management Plan.

"General Permits" are available to adjoining landowners and are required for all shoreline improvements on Project lands. Applications for General Permits for shoreline improvements on Project lands, including boathouses, docks and shoreline stabilization, must identify any vegetation removal necessary as well as proposed landscaping in conjunction with the proposed project. Cutting of trees in preparation for a project requiring a General Permit from NYPA may not begin until the permit is obtained. Applications for General Permits will be evaluated in terms of consistency with the criteria for vegetation removal and planting discussed above.

3.0 VEGETATION MANAGEMENT ACTIVITIES BY NYPA

NYPA allows natural vegetation to grow unmanaged on most NYPA property to maintain the natural character of the shoreline to enhance environmental benefits and where there is no other reason or objective to be achieved by actively managing vegetation. NYPA actively manages the vegetation on selected portions of Project lands, primarily to protect and maintain Project facilities. Activities include vegetation maintenance such as mowing along access roads, periodic right-of-way maintenance along transmission lines and the control of woody vegetation along Project dikes. NYPA will also perform specific vegetation management activities as part of various habitat improvement projects.

3.1 Lawn Maintenance

Grass-covered areas along the shoulders of the access roads beyond the security gate at Robert Moses Power Dam are mowed periodically during the growing season. Other lawn areas inside the security fence are also periodically mowed. Additional lawn maintenance activities include application of fertilizers and irrigation, as needed. Herbicides are applied very infrequently and only when necessary as discussed in the Project's Integrated Pest Management Plan.

3.2 Vegetation Maintenance Within Transmission Line Rights-of-Way

Within the FERC Project boundary NYPA manages electric transmission line rights-of-way that originate at the Project switchyard and proceed approximately one mile south where they exit the Project boundary and continue onto the St. Lawrence Seaway Development Corporation property as well as a section of another line that originates in Canada and traverses the Project property. Typical right-of-way maintenance activities include mowing, cutting individual trees, and

herbicide applications to control the growth of woody (tree) species and to encourage the growth of low-growing shrubs and herbaceous vegetation.

Vegetation management within the electric transmission line rights-of-way is conducted in accordance with the criteria and procedures presented in NYPA's Right-of-Way Management Plan. Herbicide application is applied by herbicide applicators operating ground-based equipment. Only individual, undesirable trees with the potential to interfere with the electric lines or towers are treated. Low-growing tree and shrub species are not treated to encourage their continued growth and to reduce future maintenance requirements.

3.3 Vegetation Maintenance Along Project Dikes

The 10.9 miles of Project dikes are inspected annually and maintained as necessary to ensure their integrity. The riverside portions of the dikes are protected by riprap with the exception of Coles Creek Dike, which is not immediately adjacent to Lake St. Lawrence. The riprap above the water line on the dikes is maintained free of woody vegetation by the application of herbicides, on an as-needed basis and within the Federal and State registered uses of the product, to ensure that the dikes' integrity is not compromised. The upper portion of the landward side of the dikes typically consists of grasses, and the dike crests mostly consist of either grass or gravel recreational trails/access lanes. The grass-covered areas are mowed seasonally to enable the visual inspection of the dikes and to prevent encroachment by woody vegetation. Fertilizer is applied annually to promote healthy grass cover.

3.4 Vegetation Management on Islands

With the exception of Wilson Hill Island and Barnhart Island, the islands within Lake St. Lawrence are generally remote from the mainland and only accessible across open water by boat or by other vehicles (i.e., snowmobile) after ice formation. Accordingly, passive management of existing vegetation is most appropriate for the smaller islands as well as several of the major islands. Active management of vegetation for a specific purpose is planned for only a few of the larger islands within Lake St. Lawrence.

Long Sault Islands receive some informal recreation and hunting use, and no active management of vegetation is necessary or planned in order for those uses to continue.

Croil Islands are an undeveloped state park that is managed by NYS OPRHP primarily for informal recreation activities. OPRHP does not actively manage vegetation on these islands.

On Sand Islands, NYPA plans to construct a trail system around the main island with a small picnic area and seasonal dock on the northwest portion of the island. Clearing of vegetation will be required to construct these facilities. Beyond this initial clearing, only periodic vegetation control

will be needed to ensure continued use of these recreation facilities and to maintain the navigation aids of the St. Lawrence Seaway Development Corporation that are located on these islands.

On Ogden Island, NYPA plans to implement a habitat improvement project (HIP) to enhance nesting habitat for grassland birds. This HIP will involve the active management of vegetation to maintain existing grassland and other habitats and convert certain habitats to other vegetation types to enhance nesting habitat for certain species. Vegetation management will be conducted in accordance with a management plan for this HIP.

3.5 Vegetation Components of Habitat Improvement Projects

Several of the Habitat Improvement Projects (HIPs) provided for in License Article 409 include vegetation management components to enhance existing habitats for the species of interest. Individual management plans will be prepared for each of the HIPs, which will include site-specific vegetation management activities; general vegetation management concepts are described below.

Aquatic, emergent and upland vegetation will be inventoried to provide the basis for site-specific management plans for the proposed controlled level ponds as part of the Coles Creek, Nichols Island and Little Sucker Brook HIPs. Following construction of these HIPs, vegetation communities will be monitored to assess the effectiveness of the projects. Water level control and other measures may be used to promote desirable vegetation and to manage invasive and undesirable vegetation.

Improvement of selected areas within the Project boundary to create or enhance habitats for Blanding's Turtle may include cutting of selected trees in wetlands to open the tree canopy and provide logs for basking. Periodic tilling of nesting areas may also be conducted to loosen the soil and limit vegetation encroachment in these areas.

Grassland habitats on Ogden Island and Whitehouse Point will be enhanced and maintained through active vegetation management for the benefit of various grassland birds. Vegetation management activities may include selective fertilizing to promote herbaceous growth; controlled grazing or alternative management techniques (e.g., mowing, prescribed burning) to maintain grassland conditions; and planting of thorny trees and shrubs (e.g., hawthorne and hedge apple) to provide habitat for selected species.

3.6 Invasive Plant Species Occurrence and Management

Certain plant species, when introduced outside their native or original range, become invasive. The term "invasive plant" is used to describe plants that aggressively compete with and displace locally adapted native plant communities. Considerable effort has been made in New York to increase awareness of invasive plants and to develop control measures to halt their spread. The students

and staff of the Ecology and Management of Invasive Plants Program at Cornell University (<http://www.invasiveplants.net>) have conducted extensive research in New York regarding the distribution and ecological impacts of invasive plants and the efficacy of various control methods. In addition, the Invasive Plant Council of New York State (<http://www.ipcnys.org>) was incorporated in 1999 to develop a partnership among public and private organizations, including the Nature Conservancy, to promote management efforts, compile and facilitate access to information, and to define policies and goals for the management of invasive plants in New York. The DEC has also conducted research and implemented demonstration projects for biological control of invasive plants.

Approximately 20 plant species, including Japanese knotweed (*Polygonum cuspidatum*), water chestnut (*Trapa natans*), purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*), have become widespread and invasive throughout New York State. Some of these species occur in the Project area. Once established, invasive species outcompete native plants, alter ecosystem functions, and decrease native biodiversity and quality of habitats. As part of its land stewardship responsibilities, NYPA will develop and implement a program to identify, monitor and, when and where appropriate, control invasive plant populations. Cost effectiveness will be considered when determining when and where control is appropriate.

Considering the extensive shoreline within the Project boundary and the importance of aquatic and wetland habitats, the two invasive plant species of most concern at the St. Lawrence-FDR Power Project are purple loosestrife (*Lythrum salicaria*) and common reed (*Phragmites australis*). Further discussion of these two species is provided below.

3.6.1 Purple Loosestrife

Purple loosestrife is a herbaceous, wetland perennial that quickly spreads to create large monotypic stands that lack native plants and natural ecological diversity. Established plants can tolerate a wide range of growing conditions including permanent flooding, low water and nutrient levels, low pH, and diverse soil types, including gravel, sand, clay and organic soils. As it spreads, purple loosestrife alters wetland functions and hydrological processes thereby reducing the habitat value for certain species. Research has identified a number of threatened or endangered birds, including least bittern and American bittern that avoid nesting and foraging in purple loosestrife.

Purple loosestrife has a woody rootstock that provides resources for growth in the spring and regrowth if the aboveground shoots are cut or damaged. Plants are long-lived and mature plants may produce more than 2.5 million seeds annually, which are readily dispersed by water and remain viable for many years. Established populations persist for decades and are not easily controlled by conventional techniques (i.e., mowing or cutting, burning or herbicide application). Research has focused on biological control of purple loosestrife, and the U.S. Department of Agriculture has approved four host-specific insect species for release in the U.S.

The DEC has reported promising results using biological controls for purple loosestrife. In 1996, a leaf-eating beetle (*Galerucella* sp.) was released on four Wildlife Management Areas (WMAs) in DEC Region 6, including the Wilson Hill WMA. Field observations in the spring of 2000 indicated that beetle populations had been established at each of the release sites and were feeding heavily on the purple loosestrife. The long-term goal of this program is to establish a natural control mechanism that will reduce the dominance of this plant in wetland ecosystems. [Note: this information is based on a DEC press release date August 28, 2000; NYPA is checking with DEC to determine the current status of these efforts at Wilson Hill WMA].

3.6.2 *Common Reed*

Common reed, generally known as *Phragmites*, is a perennial grass species, which typically grows from 5 to 15 feet in height. *Phragmites* grows in a wide variety of natural and disturbed habitats but is most often found at the wetland-upland interface. Seed set occurs in the fall and winter and may be important in colonizing new areas, but vegetative reproduction by below ground rhizomes is the primary means by which *Phragmites* spreads. The build up of litter from aboveground shoots and the dense mats of rhizomes discourage competitors and lead to the formation of dense monotypic stands. These dense stands decrease native biodiversity and habitat quality, particularly for migrating wading birds and waterfowl species. Fire hazards are created by dense stands when the aboveground stalks die back during the winter.

Extensive research has been conducted to determine cost-effective control measures for *Phragmites*, particularly at National Wildlife Refuges throughout the northeast U.S. The most widespread and successful approach involves the application of herbicide (typically herbicides with the active ingredient glyphosate) late in the growing season (i.e., after the tassels form) followed by prescribed burning or mechanical removal of dead stalks (The Nature Conservancy, 1993). However, the herbicide typically used is not selective for only *Phragmites* and is difficult to employ where rare plants or communities are present. Prescribed burning alone can sometimes promote the growth and spread of *Phragmites*, as can simple cutting, mowing and disking. Biological control does not appear to be a viable option at this time and as of 2002, no deliberate introductions of biological control agents have occurred in the U.S. (Cornell University)

3.6.3 *Management Plan for Invasive Plants*

Vegetation management plans will be presented for implementation in conjunction with the Wilson Hill WMA Plan and the individual HIPs Management Plans, as applicable. The general components of the Management Plan for Invasive Plants are as follow:

- Management Goals and Objectives
- Survey and Mapping
- Identify appropriate control methods - determine when control is necessary

- Develop and implement management strategy
- Monitor and assess effectiveness

4.0 VEGETATION MANAGEMENT BY OTHER ENTITIES

4.1 Wilson Hill Wildlife Management Area

The Wilson Hill Wildlife Management Area (Wilson Hill WMA) was constructed by NYPA in 1959 on Project lands as mitigation for waterfowl habitat affected by the construction of the Project. DEC manages this wetland-upland-forest area under agreement with NYPA. The grassland habitats in Wilson Hill WMA are maintained by periodic mowing to provide nesting and foraging habitat for waterfowl and upland game birds. Cutting of firewood is permitted to maintain woodlands in early successional stages to improve their habitat value for small game and deer. The maintenance of dikes within the Wilson Hill WMA includes annual cutting of brush and mowing. Herbicides have been applied rarely in the past and may be used in the future for specific vegetation management purposes.

Improvements to the Wilson Hill WMA that will be implemented by NYPA are included in the Ecological Settlement Agreement and Article 411 of NYPA's Project license. These improvements entail the rehabilitation of the WMA dikes and new water control structures to improve water management, which will enhance the wetlands and wetland vegetation of the area.

Article 411 of the Project license also requires the preparation of a Management Plan for Wilson Hill WMA to improve water-level control, habitat management, recreation, and maintenance of dike structures. Vegetation surveys of the Wilson Hill WMA will be performed to provide the basis for the control of nuisance aquatic and wetland vegetation, encourage desirable wetland vegetation, and manage upland vegetation. Periodic drawdown of the refuge pools may be conducted (e.g., every five to ten years) to promote the growth and diversity of aquatic vegetation and to control invasive and nuisance vegetation.

4.2 Recreational Facilities

Robert Moses State Park has been designated as a "scenic park" by OPRHP, reflecting the fact that more than 75 percent of the 2,400-acre park is undeveloped, and the current management direction is to preserve the existing natural areas of the park. Coles Creek State Park is also designated as a "scenic park" by OPRHP, reflecting the fact that more than 95 percent of the 1,800-acre park is undeveloped. Vegetation management by OPRHP in these state parks only occurs within the developed portions of these parks and includes maintenance activities such as removal of fallen trees and limbs, as necessary, and lawn mowing along roadways and within the campgrounds, playgrounds and picnic areas.

The towns of Waddington, Louisville and Massena maintain local recreational facilities and parks. Vegetation management in these areas primarily consists of periodic lawn mowing and removal of aquatic vegetation at beach areas. Vegetation management is more intense at the Massena Golf Course with maintenance of the greens and fairways, landscaping, tree maintenance and application of fertilizers and pesticides.

4.3 Utility Rights-of-Way

Several other entities maintain limited electric transmission line and natural gas pipeline rights-of-way that traverse Project lands. Aluminum Company of America (ALCOA) maintains two electric transmission line rights-of-way on Project lands. These rights-of-way, which total approximately 10 acres, consist primarily of a palustrine scrub-shrub/emergent cover. ALCOA also maintains the area adjoining the Massena Intake and Canal, including a portion of the electric distribution line right-of-way, by mowing. Under an agricultural lease from NYPA, ALCOA manages 180 acres of land north of State Route 131.

The Massena Electric Department maintains several electric distribution lines on Project lands. Maintenance activities are limited to minor tree trimming done on a three-year rotation (except in emergencies). These rights-of-way are not mowed or treated with herbicides

NYPA has granted a permanent easement to the Iroquois Gas Transmission System for a natural gas pipeline, which crosses Project land in the Town of Waddington. This right-of-way, which encompasses approximately two acres, supports open upland vegetation. The pipeline and its management are regulated by FERC, and the FERC certificate issued for this pipeline specifies that no herbicides will be used for right-of-way maintenance and that mowing may only be conducted every five to seven years.

Table 1: Beneficial Trees and Plants Recommended for Use by Adjoining Property Owners in Landscaping and in Establishing a Vegetated Shoreline

Type	Species Name	Height	Characteristics/Benefits
Large Deciduous Trees	Red Maple <i>Acer rubrum</i>	40-60'	Fast growing; early red blossom; globular; prefers wet but tolerates dry soil; outstanding fall color
	Sugar Maple <i>Acer saccharum</i>	50-70'	Fast growing; prefers sand, loam soil, needs sun; beautiful fall color
	Common Alder <i>Alnus glutinosa</i>	40-60'	Oval; purple catkins spring; prefers sun and moist soils; flood tolerant; wildlife value
	Red or Green Ash <i>Fraxinus pennsylvanica</i>	50-60'	Fast growing; oval; prefers rich, well-drained soil
	Honey Locust <i>Gledistia triacanthos</i>	30-70'	Fast growing; tolerates any soil type; excellent for lawns and understory plants requiring partial shade

Type	Species Name	Height	Characteristics/Benefits
	Blackgum, Tupelo <i>Nyssa sylvatica</i>	30-50'	Horizontal branches; wildlife value; brilliant fall color; tolerates moist soil
	Black Cherry <i>Prunus serotonia</i>	50-60'	Abundant fruit; wildlife value; white fragrant flowers
	White Oak <i>Quercus alba</i>	50-80'	Largest of oaks; round-headed; wildlife value; tolerates a range of soils; slow growing
	Black Oak <i>Quercus velutina</i>	50-60'	Large ovoid oak; drought tolerant; shade tolerant; wildlife value
Small Deciduous Trees	Shadblow Serviceberry <i>Amelanchier canadensis</i>	6-20'	Oval; light grey bark; attractive white blossoms in early spring; red fruit in summer; wildlife value
	American Hornbeam (Ironwood) <i>Carpinus caroliniana</i>	20-30'	Oval; smooth grey bark; zig-zag branches; wing fruit; wildlife value; tolerates moist or dry soil; some sun
	Fringetree <i>Chionanthus virginicus</i>	12-20'	Pyramidal; slow growing fragrant June flower; wildlife value; needs deep; moist soil; shade tolerant
	Cockspur Hawthorn <i>Crataegus crusgalli</i>	20-30'	Thorny branches with dense habit; persistent red fruit; wildlife value; tolerates poor soil, some shade
	Washington Hawthorn <i>Crataegus phaenopyrum</i>	25-30'	Thorny branches with dense habit; brilliant fall color; June flower; bright red berry in fall/winter; wildlife value; tolerates poor soil, light shade
	Witch hazel <i>Hammamelis virginiana</i>	20-30'	Yellow fall color; native shrub valuable in a naturalized setting; fragrant flowers
	American Mountain Ash <i>Sorbus Americana</i>	20-30'	Attractive to wildlife; clusters of deep orange berries through early winter; fall color
Evergreen Trees	Eastern Redcedar <i>Juniperus virginiana</i>	40-50'	Pyramidal; wildlife value; thick branches, dense foliage; tolerates poor soils; useful for windbreaks
	Norway Spruce <i>Picea abies</i>	40-60'	Very hardy and fast growing; prefers moderately moist, sandy, acidic, well-drained soil
	Colorado Spruce <i>Picea pungens</i>	30-60'	Foliage bluish green; prefers rich, moist soil in full sun although it is drought tolerant
	Eastern White Pine <i>Pinus strobes</i>	50-80'	Soft texture and long silvery green needles; prefers moist, well-drained soils
Evergreen Shrubs	Common Juniper <i>Juniperus communis</i>	5-10'	Oval; bluish gray; tolerates dry, poor soil; useful for undergrowth and naturalized plantings
	PJM Rhododendron "Elite" <i>Rhododendron "Elite"</i>	3-6'	Purple to pink flowers; moderate to well-drained soil
	Great Laurel, Rosebay <i>Rhododendron maximum</i>	4-15'	June flower; large waxy leaves; needs acid, moist soil; some shade
Deciduous Shrubs	Black Chokeberry <i>Aronia melanocarpa</i>	3-6'	Oval, black berry; wildlife value; tolerates wet acid or dry soil
	Sweet Pepperbrush <i>Clethra alnifolia</i>	3-8'	Oval; fragrant summer flower; wildlife value; tolerates acid, wet or dry soil and some shade
	Redosier Dogwood <i>Cornus sericea</i>	7-9'	Upright spreading red-purple stems provide winter color; flood tolerant; wildlife value

Type	Species Name	Height	Characteristics/Benefits
	Winterberry <i>Ilex verticillata</i>	6-10'	Oval; small flower in spring, bright red berry; wildlife value; tolerates any soil and some shade
	Northern Bayberry <i>Myrica pennsylvania</i>	5-12'	Interesting winter form with persistent fruits; thrives in poor, sterile, sandy soils; clonal shrub
	Pink Pinxter Azalea <i>Rhododendron nudiflorum</i>	6'	Oval; April-May pink flower; needs moist, acid soil; tolerates light sun
	Swamp Azalea <i>Rhododendron viscosum</i>	2-8'	Oval; needs moist, acid soil; tolerates light sun
	Fragrant Sumac <i>Rhus aromatica</i>	2-6'	Wildlife value; good fall color; tolerates full sun to part shade; useful for bank stabilization
	Smooth Sumac <i>Rhus glabra</i>	9-15'	Globular; summer flower; red fruit; wildlife value; needs deep, well-drained soil and some shade
	Elderberry <i>Sambucus canadensis</i>	6-12'	Oval; flat flower cluster early summer; wildlife value; needs deep, well-drained soil and sun
	Coralberry Indian Currant <i>Symphoricarpos orbiculatus</i>	3-6'	Small pale oval leaves; curving branches; wildlife value; tolerates poor soil and some shade
	Common Lilac <i>Syringa vulgaris</i>	8-15'	Fragrant, pale purple flower cluster
	Mapleleaf Viburnum <i>Viburnum acerifolium</i>	4-6'	Ovoid; small shrub; maple shaped leaves; shade tolerant; wildlife value
	Black Haw <i>Viburnum prunifolium</i>	12-15'	Attractive flower clusters; wildlife value; bluish-black fruit; oval leaf; tolerates range of soils
	Yellowroot <i>Xanthorhiza simplicissima</i>	2-3'	Yellow bark and root; small flower; tolerates moist or dry soil; thrives along streams and moist banks
	Highbush blueberry (<i>Vaccinium corymbosum</i>)	6-12'	Prefers acid soils; wildlife value: fruit; excellent fall color
Hardy Ground Cover	Japanese Painted Fern <i>Athyrium niponicum</i>	2-3'	Nice texture; tolerates shade and wet soil
	Prairie Blazing Star <i>Liatrus pycnostachya</i>	2-5'	Rose-purple flowers in late summer; hairy stem, full sun, wildlife value, dry to medium wet soil
	Woolly Blue Violet <i>Viola sororia</i>	.5-1"	Purple flowers; tolerates some shade, medium-wet soil
Ornamental Grasses	Prairie Dropseed <i>Sporobolus heterolepis</i>	2-3'	Low maintenance; showy flowers; good fall color, dry to medium soil; full sun
	Tufted Hair Grass <i>Deschampsia cespitosa</i>	20-36"	Low maintenance; showy flowers; part shade, medium wet soil
	Sweetgrass <i>Hierochloe odorata</i>	1-2'	Vanilla-like fragrance; prefers moist soil and full or partial shade; traditional use by Native Americans for ceremonies and basket making
Flowering Perennials	Butterfly Weed <i>Asclepias tuberosa</i>	2-3'	Attracts butterflies; brilliant orange flower; needs sun; tolerates dry soil and drought
	Threadleaf Coreopsis <i>Coreopsis verticillata</i>	1-2'	Airy texture; yellow, star-shaped flower; needs sun; tolerates dry soil and drought

Type	Species Name	Height	Characteristics/Benefits
	Queen Anne's Lace <i>Daucus carota</i>	2-3'	Delicate texture; white bloom; needs sun; tolerates dry soil and drought
	Blazing Star <i>Liatris scariosa</i>	1-5'	Erect, bushy habit; bold color; needs sun; tolerates dry soil and drought
	Wild Sweet William <i>Phlox divaricata</i>	1-2'	Small, crowded flowers that bloom all summer; needs sun; tolerates dry soil and drought
	Black-eyed Susan <i>Rudbeckia hirta</i> var. <i>Pulcherrima</i>	1-3'	Yellow, daisy-like flower; upright habit; needs sun; tolerates dry soil and drought
	Culver's Root <i>Veronica virginica</i>	3-6'	Background planting; upright habit; needs sun; tolerates dry soil and drought
	Bee balm <i>Monarda fistulosa</i>	3'	Lilac to purple flowers; prefers dry soils; excellent perennial herb
	Cardinal Flower <i>Lobelia cardinalis</i>	2-3'	Bright scarlet flowers; prefers moist soil, partial shade; effect perennial
	Wild Columbine <i>Aquilegia Canadensis</i>	1-2'	Excellent garden selection; yellow and red flowers; prefers loamy soil, partial shade
	Fire Pink <i>Silene virginica</i>	6-10'	Deep crimson petals; prefers well-drained sandy soil; flowers in loose cluster

Source: Michael A. Dirr, Manual of Woody Landscape Plants, 1983.

Table 2: Invasive Plants and Native Alternatives

Invasive Species	Alternative	Attributes/Uses
Black Locust (<i>Robinia pseudoacacia</i>)	White pine (<i>Pinus strobus</i>) Eastern Redcedar (<i>Juniperus virginiana</i>) Hawthorns (<i>Crataegus sp.</i>) Sumacs (<i>Rhus glabra</i>)	Nutrient-poor soils, drought tolerant Dry, open sites; deer resistant Thorny, spring-flowering Nutrient-poor soils; drought tolerant
Buckthorns (<i>Rhamnus cathartica</i> & <i>R. frangula</i>)	Chokeberry (<i>Aronia melanocarpa</i>) Ironwood (<i>Carpinus caroliniana</i>) Shadbush (<i>Amelanchier canadensis</i>) Witch hazel (<i>Hammamelis virginiana</i>) American Mountain Ash (<i>Sorbus americana</i>)	Small tree, wildlife use: fruit Understory tree, shade tolerant Small tree, wildlife use: fruit Small tree/large shrub Small tree, wildlife use: fruit
Ornamental Olives (<i>Elaeagnus angustifolia</i>)	Bayberry (<i>Myrica pennsylvanica</i>) Highbush blueberry (<i>Vaccinium corymbosum</i>)	Nitrogen fixer, clonal shrub Acid soils, wildlife use: fruit
Shrub Honeysuckles (<i>Lonicera morrowii</i> & <i>L. tatarica</i>)	Shrub viburnums (<i>Viburnum acerifolium</i> , <i>V. prunifolium</i>) Elderberry (<i>Sambucus Canadensis</i>)	Spring-flowering, understory shrubs, wildlife value: fruit, thicket-forming Attractive flowering shrub, wildlife value: fruit
Norway Maple (<i>Acer platanoides</i>)	Oaks: black and white (<i>Quercus velutina</i> , <i>Q. alba</i>) Maples: red and sugar (<i>Acer rubrum</i> , <i>A. sacchrum</i>)	Canopy tree, attractive fall foliage, wildlife value: nuts Canopy/shade tree, fall foliage

<p>Purple Loosestrife<i>(Lythrum salicaria)</i></p>	<p>Cardinal flower (<i>Lobelia cardinalis</i>) Bee balm (<i>Monarda fistulosa</i>)</p>	<p>Tall, long-lasting red blooms, wet tolerant Tall, red-magenta blooms</p>
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Source: Invasive Plant Council of New York, <http://www.ipcnys.org>.

APPENDIX D: WILDLIFE PROTECTION AND MANAGEMENT PLAN

1.0 INTRODUCTION

Article 413 of the Project license requires that the Land Management Plan include a Wildlife Protection and Management Plan. This plan identifies the major habitats present within the Project boundary and the wildlife resources typically associated with each of those habitats. This plan also identifies special habitat areas within the Project boundary. Site-specific wildlife management activities on Project lands such as the Wilson Hill Wildlife Management Area and the planned habitat improvement projects are also summarized in this document.

Considering the multiple uses of Project lands, wildlife resources are considered as part of a comprehensive approach to management of Project lands rather than as the focus of management activities for particular parcels. Wildlife management activities on Project lands must consider the limitations and constraints posed by the configuration of Project lands, the proximity and influence of conflicting land uses, and the extent of human disturbance.

2.0 WILDLIFE RESOURCES WITHIN THE PROJECT BOUNDARY

A Wildlife Resource Assessment conducted as part of the Project relicensing studies identified 17 habitat types within three major habitat systems: wetlands and deepwater habitats, open uplands, and forested uplands (Woodlot Alternatives, 1996). The habitats within the Project boundary reflect past, intensive agricultural uses and the subsequent abandonment of farmland, resulting in extensive areas of successional old fields and successional shrub land.

Open habitats, including agricultural land and successional old field and shrub land, dominate the Project area. Open grassland communities provide breeding and feeding habitat for ground-nesting songbirds, waterfowl, raptors, mammals and reptiles. Forest stands exist as small fragments of successional hardwoods, pine-northern hardwoods, mature upland forests, and forested wetlands. Palustrine wetlands and open water habitats are important to a variety of wildlife species, particularly migratory waterfowl, wading birds, and shorebirds.

The wildlife community is dominated by species tolerant of fragmented and edge habitats and human disturbance. Project lands provide habitat for most major groups of animals with the exception of large mammals. White-tailed deer and coyotes are the only large mammals common to most habitats on Project lands. The fragmented nature of forested habitats within the Project boundary generally precludes the use of these areas by other large mammals such as moose, which are infrequently observed.

3.0 SPECIAL WILDLIFE HABITAT AREAS

Special wildlife habitat areas are those portions of the Project lands and waters that possess characteristics or conditions that fulfill the life requirements of particular wildlife species, represent unique or uncommon habitats in the Project region, or support species protected by law, regulation, or treaty.

3.1 Significant Coastal Fish and Wildlife Habitats

The New York State Department of State (DOS), under the Coastal Zone Management Program, identifies and delineates areas that are especially valuable for fish and wildlife. The DOS has designated seven Significant Coastal Fish and Wildlife Habitats within Project lands and waters. These areas, described in greater detail in Section 3.5.2 of the Land Management Plan, include the following:

- Whitehouse-Ogden Island Bays
- Brandy Brook
- Coles Creek
- Wilson Hill-Tucker Terrace
- Wilson Hill Wildlife Management Area
- Moses-Saunders Power Dam tailwaters
- Lake St. Lawrence Common Tern Colonies

Activities occurring within these designated habitat areas within the Project Boundary will be considered against the New York State coastal policies to determine the compatibility of those activities with the protection of the natural resources in those areas. Significant habitats within the Project boundary are managed consistent with New York's coastal policies through land use controls and permits. Section 4.2.2 of the Land Management Plan also provides specific restrictions within the 100-foot buffer along the shoreline in these areas.

3.2 Local Wildlife Corridors

The concept of wildlife corridors is described as the existence and use by wildlife species of land between two, separate habitats that meet a wildlife specie's life requirements except that each parcel does not contain enough area to sustain that species but by linking them with that land between the two parcels sufficient cover is provided to regularly move between them. Local wildlife corridors connect patches of habitat and are used by small to medium-sized mammals, amphibians, and reptiles for localized daily or seasonal movements. Four potential local corridors have been identified on Project lands. The largest contiguous area includes lands in the vicinity of Coles Creek and lands in Wilson Hill WMA. Smaller areas include the Croil and Long Sault Islands, the vicinity of Ogden Island and Leishman Point, and the Sand Islands (Woodlot Alternatives, 1999).

NYPA has identified each of these potential corridors on maps so that any future uses or modification of these areas can be evaluated in order for them to continue to serve as wildlife corridors.

3.3 Rare, Threatened and Endangered Species Habitats

Habitats that meet the requirements of rare, threatened or endangered species have been delineated on Project lands and waters. Proposed activities for these locations will be evaluated to determine any potential effect on their value as habitats for the respective species.

The only federally listed threatened or endangered wildlife species documented to occur within the Project boundary is the bald eagle (*Haliaeetus leucocephalus*).^[1] DEC lists or has proposed listing eight other wildlife species that occur within the Project boundary as threatened or endangered, and five bird species that may occur within the Project boundary as special concern species. These species and their current status are described in detail in Section 3.5.2 of the Land Management Plan.

Activities on all Project lands are evaluated for their impacts on rare, threatened, or endangered species and sensitive ecological communities. Where significant negative impacts may result, the subject activity is modified or may be permitted.

3.4 Deer Winter Concentration Areas

Although no deer winter concentration areas have been officially acknowledged on Project lands, certain conifer stands within the Project boundary probably serve that function for resident white-tailed deer. During winter storms, lower snow levels beneath conifer stands provide important cover and resting areas for deer.

4.0 WILDLIFE MANAGEMENT ACTIVITIES ON PROJECT LANDS

Most Project lands, including the buffer areas along the shoreline of Lake St. Lawrence, islands within the Project boundary, and large portions of Robert Moses State Park and Coles Creek State Park, are passively managed to minimize human disturbance and allow natural ecological succession. These areas constitute the majority of available wildlife habitat within the Project boundary. A number of other specific areas, however, are actively managed or manipulated to maintain habitat for specific wildlife populations. These areas, which are subject to specific management plans, are identified and briefly described below.

4.1 Wilson Hill Wildlife Management Area

The Wilson Hill WMA, totaling approximately 3,450 acres, includes roughly 1,800 acres of open water habitat including large, shallow freshwater impoundments and shallow water areas of Lake St. Lawrence. A series of dikes connects Bradford and Wilson Hill islands with the mainland, isolating the interior pools from Lake St. Lawrence. These dikes form stable pools that create an expanse of shallow water, submerged aquatic vegetation beds, and emergent wetlands that provide highly productive habitats for various species.

The Wilson Hill WMA also encompasses upland fields and forests and many small islands within the pools. DEC manages this area under an agreement with the Power Authority to promote a variety of species, protect and manage waterfowl habitat, and provide waterfowl hunting opportunities. Wetlands and open water reaches provide highly productive nesting and feeding habitats for waterfowl, waterbirds, and passerine bird species. DEC also maintains several grassland communities in the Wilson Hill WMA to provide waterfowl nesting and foraging habitats. These grassland areas are also valuable to an array of migratory ground-nesting songbirds, raptors, reptiles, and small mammals that use this habitat for breeding and/or foraging. The wetlands and open water areas of Wilson Hill WMA also provide habitat for fur bearing mammals.

The primary activity that is permitted within the WMA is waterfowl hunting. This is regulated by the DEC consistent with their authority throughout New York State. Limited areas are also open for bowhunting for white-tailed deer. Trapping for furbearing mammals is permitted. Hunters and trappers are required to register with the DEC upon entry into and exit from the WMA. Two observation towers and public trails provide opportunities for wildlife viewing in the Wilson Hill WMA.

Article 411 of the Project license requires NYPA to design, construct, monitor, operate and maintain various improvement projects to the Wilson Hill WMA. NYPA, in consultation with DEC, will prepare an implementation plan for these improvements, which will enhance the ability to control water levels and manage habitat conditions within the Wilson Hill WMA. The planned improvement projects include the rehabilitation of existing dikes and construction of new dikes and water level control facilities. NYPA and DEC will also update and expand the management plan for Wilson Hill WMA to incorporate these added projects and features. DEC will continue to manage this wildlife management area in the future.

4.2 Habitat Improvement Projects

Article 409 of the Project license requires the implementation of ten Habitat Improvement Projects (HIPs). Four of these HIPs are planned primarily to benefit wildlife species, including grassland nesting birds, osprey (*Pandionidae hiliaetus*), common tern (*Sterna hirundo*) and common loon (*Gavia immer*). In accordance with the Project license, NYPA has prepared an HIP implementation plan for the design, construction and effectiveness monitoring of each of the ten HIPs. The HIP implementation plan is subject to FERC approval. The HIPs will be constructed over the next decade and monitored and managed thereafter.

Article 410 of the Project license establishes the Future Habitat Improvement Fund, which may be used to provide funding for future Habitat Improvement Projects to be located on Project lands. These future HIPs will be selected by the Technical Advisory Council established under License Article 408; selection of any such HIP in the future will involve consultation with St. Lawrence County and the local community in which the HIP would be located.

¹¹ On September 1, 1999, the USFWS proposed to remove the bald eagle from the Federal list of endangered and threatened wildlife in the lower 48 states. The action to remove the bald eagle from the list is pending.

APPENDIX E: GENERAL PERMIT FORM

POWER AUTHORITY

OF THE STATE OF NEW YORK

ST. LAWRENCE-FRANKLIN DELANO ROOSEVELT POWER PROJECT

GENERAL PERMIT

Permission is hereby granted to «**First_Name**» «**Last_Name**» (hereinafter called Permittee) residing at «**Address1**», «**Address2**» to construct, operate, and maintain certain facilities or improvements (hereinafter called Facilities), as described in Permittee's application and sketch (consisting of **pages** pages) attached hereto, on property owned by or under the jurisdiction of Power Authority of the State of New York (hereinafter the Authority) shown on Map No. «**Map**», Parcel No. «**Parcel**», which was filed in the St. Lawrence County Clerk's office on «**Map_Filed_Date**».

CONDITIONS

1. Permittee will comply with all applicable state and federal laws and regulations and with the terms of all applicable codes and required governmental or other Permits or consents.
2. Any assignment or transfer of this Permit without the written consent of the Authority is void.
3. The Facilities hereby authorized shall be used only for the benefit of the present owner of the upland property described above for the purpose of «**Purpose**» and for no other purpose whatsoever. No other facility or improvement or activity such as gas pumping or boat repairing is authorized.
4. This Permit shall expire on «**Expiration_Date**» unless terminated sooner as provided herein.
5. This Permit may be canceled by the Authority for default by Permittee in the performance or observance of any of the conditions of the Permit, or if the Authority shall determine that any part of

the Facilities or any activities undertaken pursuant to this Permit are no longer consistent with the proper operation of the St. Lawrence-FDR Power Project or the Authority's license to operate the Project. The Authority will give 60 days written notice of any such cancellation of this Permit.

6. The Authority will not be liable to Permittee for any damage whatsoever to the Facilities, or for any future operations undertaken by the Authority in the reservoir or within the project boundary which might affect the Facilities.

7. The Permittee shall maintain the Facilities in good and safe condition at all times. The Facilities and Permittee's use and occupancy of the Authority's property shall be consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the St. Lawrence-FDR Power Project as determined solely by the Authority.

8. The Facilities shall be and remain the property of the Permittee and shall be subject to taxation by local political entities as provided by law. Upon the termination or cancellation of this Permit, the Permittee shall remove the Facilities within 60 days. In the event the Facilities are not removed within this time, the Authority shall have the right to dispose of the Facilities at the expense of the Permittee.

9. The Authority's officers, employees and agents shall have the right to use the Facilities temporarily for project purposes.

10. Removable docks and other removable facilities shall not be placed in the water before April 15 and shall be removed from the water on or before December 1 of each year.

11. No representation has been made to Permittee as to the maintenance of the water level of Lake St. Lawrence at any particular elevation. Permittee hereby releases and discharges the Authority from all actions, causes of actions, claims or demands for, upon, or by reason of damage, loss or injury caused by or resulting from the existence, operation or maintenance of the reservoir at any water level as may be determined by the International Joint Commission or its agents, or the Authority or its agents.

12. The Authority may at any time (without prior notice to the Permittee) remove all or any portion of any of the Facilities which in its judgment might at that time or potentially be a hazard to navigation or to safe operation of the St. Lawrence-FDR Power Project.

13. Permittee assumes all risk of and indemnifies, protects and saves harmless the Authority, its officers, trustees, employees, successors and assigns, and The People of the State of New York from all loss, damage or injury to persons (including personal injuries resulting in death) or property (including property of the Authority) and from all claims, demands, suits, liabilities, obligations and expenses arising therefrom, including reasonable legal fees and expenses, caused by or in any way connected with the exercise of the rights granted hereunder, including but not limited to costs associated with environmental contamination, response and cleanup, and notwithstanding any review or approval by the Authority of Permittee's actions or its exercise of the rights granted hereunder.

14. The Permittee shall not use or bring on the property covered by this Permit any material listed as hazardous, toxic, or dangerous or of restricted use, as classified or defined by any federal or New York State law, regulation or agency policy, without prior written permission from Director - Environmental Division of the Authority, provided however, Permittee is granted use of the materials necessary and common for the recreational use of the facilities. If Permittee generates hazardous waste on Authority's property, Permittee will promptly remove such waste to a licensed waste disposal facility.

15. If the Permittee discovers human skeletal remains, funerary goods (such as cloth and leather products buried with people), or an archeological resources (such as arrowheads, stone tools, earthenware, or charcoal stained soil below the topsoil) while doing any work authorized by this Permit, Permittee shall immediately cease the work and notify the Authority of such discovery.

16. If the Facilities are to be used for business/commercial purposes, the Permittee shall procure and maintain throughout the time this permit or any extension of it remains in force general liability insurance in the amount of at least \$300,000 covering the activities undertaken under this permit, which insurance shall name as additional insureds the Power Authority of the State of New York and the State of New York. Permittee shall deliver to the Authority before April 15 of each year a certificate showing proof of such insurance.

17. This Permit does not grant Permittee exclusive use of the Authority's property except to the extent it is occupied by the Facilities permitted hereunder.

18. No cancellation or termination of this Permit shall affect a liability herein assumed by Permittee or any indemnity herein given to the Authority in respect of acts or things which shall have been done or have happened before the date fixed for such cancellation or termination.

19. In the event the property affected by this Permit ceases to be owned by or to be under the jurisdiction of the Authority, this Permit shall thereupon terminate and the Permittee will be required to obtain any Permits, license or consents which may be required by law to accomplish or continue the

purposes set forth herein as though this Permit had not been granted. If the Permit is terminated pursuant to this clause, Permittee shall be entitled to a pro-rata refund of the fee for each full year by which the term is shortened.

20. Special Provisions: **special conditions.**

Dated at Massena, New York, this ___ day of _____, _____ .

POWER AUTHORITY OF THE
STATE OF NEW YORK

BY: _____

Regional Manager - Northern New York

**POWER AUTHORITY
OF THE STATE OF NEW YORK
ST. LAWRENCE-FRANKLIN DELANO ROOSEVELT POWER PROJECT
GENERAL PERMIT**

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CONDITIONS

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Special Provisions: **special conditions.**

Dated at Massena, New York, this__day of _____, _____ .

POWER AUTHORITY OF THE
STATE OF NEW YORK

BY:

Regional Manager - Northern New York

The undersigned Permittee(s) hereby accept(s) this Permit subject to the conditions set forth above.

Dated this __ day of _____, _____ .

Permittee

Permittee

The undersigned Permittee(s) hereby accept(s) this Permit subject to the conditions set forth above.

Dated this _____ day of _____, _____.

Permittee

Permittee