

**FINAL LICENSE APPLICATION  
EXHIBIT E**

**APPENDIX V**

**FISH AND WILDLIFE MITIGATION LANDS MANAGEMENT PLAN**

**FISH AND WILDLIFE MITIGATION LANDS  
MANAGEMENT PLAN  
ANNOTATED OUTLINE**

**SKAGIT RIVER HYDROELECTRIC PROJECT  
FERC NO. 553**

**Seattle City Light**

**April 2023**

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## **List of Acronyms and Abbreviations**

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ARU .....	autonomous recording unit
BAS.....	best available science
BMP .....	best management practice
City Light.....	Seattle City Light
EBM.....	ecosystem-based management
ESA.....	Endangered Species Act
FERC.....	Federal Energy Regulatory Commission
GIS .....	Geographic Information System
HPMP.....	Historic Properties Management Plan
Mitigation lands .....	Fish and Wildlife Mitigation Lands
NPS .....	National Park Service
Project .....	Skagit River Hydroelectric Project
RTE .....	rare, threatened, or endangered
SRCC .....	Skagit Resource Coordinating Committee
USDA.....	U.S. Department of Agriculture
USFS .....	U.S. Forest Service

## **1.0 INTRODUCTION**

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This document describes Seattle City Light’s (City Light) proposed Fish and Wildlife Mitigation Lands Management Plan (Mitigation Lands Plan) for the Skagit River Hydroelectric Project (Project or Skagit River Project), Federal Energy Regulatory Commission (FERC) No. 553. This Mitigation Lands Plan will provide guidance for the management of City Light’s fish and wildlife mitigation lands (mitigation lands) within the Project Boundary secured by City Light to provide mitigation for inundation of terrestrial habitats by Project reservoirs. The goal of this Mitigation Lands Plan is to continue to mitigate for the inundation of terrestrial habitats by Project reservoirs. This Mitigation Lands Plan will be implemented in coordination with the Avian Species Protection Plan (City Light 2023a) due to the crossover of similar management practices and symbiotic relationships of the two plans. Information obtained through the implementation of the Mitigation Lands Plan will be used to inform decision-making regarding wildlife and wildlife habitats at each mitigation parcel or groupings of parcels in an adaptive management context.

City Light will coordinate the efforts required under this Mitigation Lands Plan with other license article obligations, including other Project resource management plans included in the new license.

## **2.0 PURPOSE AND SCOPE OF THE PLAN**

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City Light proposes this Mitigation Lands Plan to provide best management practices (BMP) and procedures to guide City Light's actions related to the protection and enhancement of wildlife habitat under the new license and to meet resource management goals. This plan will be effective for the term of the new license and is subject to annual reporting and periodic five (5) year review and updates in consultation with the Skagit Resource Coordinating Committee (SRCC).<sup>1</sup>

### **2.1 Goals and Objectives**

This section will present goals and objectives for managing City Light's mitigation lands to promote species and habitats affected by the Project in a manner that follows ecosystem-based management (EBM).<sup>2</sup> The primary goals of this Mitigation Lands Plan are as follows:

- Foster native biodiversity, ecological processes, ecosystem services, and climate change resiliency;
- Prioritize active management actions to protect or enhance habitat for culturally important and sensitive habitats and species;
- Protect and enhance cultural resources in coordination with City Light's Historic Properties Management Plan (HPMP; City Light 2023b);
- Promote connectivity of high-quality forest habitat and associated habitat components;
- Retain habitat connectivity with neighboring properties;
- Minimize adverse effects from Project roads and trails on aquatic and riparian habitat;
- Minimize the introduction or spread of invasive plant and animal species;
- Minimize Project-related disturbance from recreation and other human uses;
- Avoid, minimize, and mitigate effects from Project-related construction activities;
- Consistently manage across all mitigation lands owned by City Light;
- Enhance access for Indian Tribes; and
- Limit the vulnerability of mitigation lands to theft, vandalism, and resource poaching.

The implementation actions included in this plan are designed to meet the following objectives:

- Develop and implement property-specific management actions that use EBM principles to promote sustainable ecosystem functions, species and habitat diversity, connectivity, health, and resilience;
- Characterize property access issues and explore options to increase Tribal access for traditional practices;

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<sup>1</sup> The Skagit Resource Coordinating Committee includes agency representatives that will collaborate regarding implementation and monitoring of this Mitigation Lands Plan and contribute to adaptive management decisions.

<sup>2</sup> EBM is an integrated approach that incorporates entire ecosystems into resource management decisions and is guided by an adaptive management approach.

- Minimize effects of illegal activities and recreational uses on species and habitats of concern;
- Evaluate the potential of mitigation lands to support species of concern, which include culturally important species and state federally listed and other sensitive species;
- Identify potential habitat corridors between mitigation lands and other conservation lands;
- Incorporate climate change resilience and adaptation into habitat lands management; and
- Minimize effects to wildlife during habitat management projects.

## **2.2 Geographic Area**

The geographic scope of the Mitigation Lands Plan is City Light's mitigation lands within the Project Boundary.

## 3.0 PLAN IMPLEMENTATION

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Upon approval by FERC, the Mitigation Lands Plan will be implemented in consultation with the SRCC. This section will outline the implementation activities providing the framework to support EBM and integrate best available science (BAS) and BMPs. EBM is an iterative process which includes the assessment of a habitat's ecological system functional condition, weighs ecological value against human priorities (e.g., regulations or Indian Tribe/Canadian First Nation access), and culminates in management specific to the habitats assessed.

City Light will follow the EBM process by collecting data for specific ecological and societal values presented in this section. Data collection, assessment, and management considerations will be based on each measure determined during the licensing process, and will be further tailored to address specific locations based on quality habitat or connectivity, presence of wildlife species of focus and associated habitat, culturally important areas or resources, areas in need of protection from the public, or other factors. This Mitigation Lands Plan provides guidelines for following EBM, which are expected to change over time as the SRCC gains understanding of the ecological systems and stressors within the mitigation lands. Management changes will be made as needed with a formal review and update to this Mitigation Lands Plan at five (5) year intervals.

### 3.1 Baseline Data Summarization and Data Collection

Information from relicensing studies and other existing data sources will be used to describe baseline conditions for streams and wetlands, slopes, soils, vegetation, wildlife, aquatic, and other resources relevant for managing the mitigation lands. A review of the existing information may determine that additional data need to be collected to develop specific management prescriptions. This section will identify baseline data summarization and collection methods and may include the following activities at specific locations:

- Map aquatic and terrestrial plant communities, forest structure, northern spotted owl (*Strix occidentalis caurina*) habitat, marbled murrelet (*Brachyramphus marmoratus*) habitat, northern goshawk (*Accipiter gentilis*) habitat, surrounding land uses (e.g., ownership categories and juxtaposition with other City Light lands and conservation lands), roads, invasive plant species locations, etc.;
- Conduct stream assessments to identify zones important for aquatic habitat functions (e.g., shading, wood recruitment, wildlife habitat, etc.);
- Conduct forest surveys to characterize over- and understory vegetation species composition and structure, and document snags, downed wood, and other unique habitat features;
- Use camera traps to gather information on ungulate and forest carnivore (e.g., bears, fisher, wolf) occurrence/movement in select areas and document use where habitat management occurs or might be proposed;
- Deploy autonomous recording units (ARU) at strategic locations to gain more information on spotted owl and northern goshawk occurrence and monitor wetlands for bullfrog invasion;

- Develop a geographic information systems (GIS) database of locations of rare, threatened, or endangered (RTE) and culturally important plant species and update via incidental observations and phased botanical surveys;
- Identify adjacent and nearby lands that support ecosystem functions and connectivity or that have adverse effects on services on mitigation lands;
- Assess restoration opportunities and constraints, with a focus on protecting existing ecosystem functions, species and habitat diversity, connectivity, and resilience, or enhancing degraded habitat systems to meet functional capacity; and
- Track all baseline data in database and GIS maps.

### **3.2 Habitat Enhancement Methods**

This section will describe the various methods that City Light will consider during implementation of this Mitigation Lands Plan to protect or enhance habitat at mitigation lands. These may include but are not limited to the following:

- Silvicultural prescriptions;
- Shrub, grass, and forb plantings for target ecosystem functions and target species;
- Canopy gap creation or thinning;
- Prescribed burning;
- Pest and invasive species management;
- Snag and downed log creation and artificial bird nest boxes and bat boxes; and
- Riparian enhancements.

### **3.3 Habitat Connectivity**

A primary focus of the management of City Light mitigation lands will be to maximize connectivity with surrounding lands for ecosystem processes and wildlife movement. Steps and actions to identify and manage to accomplish the Mitigation Lands Plan goals include:

- Identify potential habitat corridors between mitigation lands and public or other conservation lands;
- Analyze information on wildlife movement on mitigation lands for potential barriers;
- Identify opportunities to collaborate with neighboring landowners, land managers, road infrastructure managers, and others to jointly manage habitats for connectivity and reduce risks to wildlife;
- Use camera traps to collect additional information on ungulate and forest carnivore use of corridors on the mitigation lands; and
- Remove impediments to fish and aquatic wildlife species movement using culverts to cross Project roads.

### 3.4 Species and Habitats of Management Focus

This section will provide the definition of wildlife species and associated habitats of management focus on mitigation lands. This section will include a summary of general habitat needs for each species and which wildlife mitigation land properties contain, or could contain, those habitats.

Focus species include:

- Endangered Species Act (ESA) federally listed or proposed species and candidate species.
- Washington State listed species (Washington Administrative Code 220-610-110), including endangered, threatened, sensitive, or candidate species.
- Washington Priority Habitats and Species habitats and species.
- Washington State Wildlife Action Plan species.
- U.S. Forest Service (USFS) Sensitive Species – Species on the Regional Forester’s List of Sensitive Species for the Mt. Baker-Snoqualmie National Forest (USFS 2004). The Regional Forester’s List does not include species already protected under the ESA. Sensitive species discussed below include little brown bat (*Myotis lucifugus*), common loon (*Gavia immer*), harlequin duck (*Histrionicus histrionicus*), and northern goshawk.
- National Park Service (NPS) Management Priority Species – Species that are categorized as “species that warrant particular management attention as determined by park management staff.” Select species from this extensive list are included as species of management concern, as advised in collaboration with NPS staff. Fourteen wildlife species of management concern documented are likely to occur or have potentially suitable habitat in the Project vicinity.
- Culturally important wildlife and plants – Species that are culturally important to Indian Tribes and Canadian First Nations.
- Beaver and beaver habitat (where appropriate, by retaining beaver dams and, if feasible, developing additional habitat with beaver dam analogs and vegetation plantings).
- Other potential management indicator wildlife species.

#### 3.4.1 Climate Change Considerations

City Light will incorporate climate change considerations in management actions on mitigation lands in tandem with other Mitigation Lands Plan programs. Consideration and actions that will inform climate change management measures include (but are not limited to) the following:

- Use Seedlot Selection Tool (USDA 2023) or the current BAS to choose plant provenance suitable for projected climatic conditions 30-50 years in the future.
- Consider expected changes in hydrology when evaluating management actions affecting aquatic habitats.
- Incorporate other BAS and information from City Light’s Climate Change Vulnerability Assessment and Adaptation Plan (City Light 2015).

### **3.5 Societal Protections and Enhancements**

#### **3.5.1 Culturally Valuable Resources**

This section will describe City Light's steps to collaborate with Indian Tribes and Canadian First Nations to enhance access options and identify measures to appropriately consider and manage culturally important plants or other resources or places that have cultural importance to Indian Tribes and Canadian First Nations. Development of this section will require ensuring that this section conforms with the protocols and management measures in the HPMP. City Light will provide GIS access routes for mitigation lands to inform this collaboration.

City Light will continue respectful and private communications with Indian Tribes and Canadian First Nations for the purposes of protecting traditional knowledge and sensitive information.

#### **3.5.2 Protection and Security**

City Light will implement a security and monitoring program at mitigation lands to minimize incidence and extent of wildlife and habitat effects from illegal/unauthorized activities and protect resources from lawful recreation activities on the mitigation lands. The program will include the following activities:

- Regularly monitor mitigation lands to identify locations of habitat damage, poaching, or illegal sources of disturbance from illegal and legal activities. Regular but unscheduled visits will be conducted where warranted;
- Plant and maintain native vegetation visual screens near roads;
- Maintain gates or permanent barriers to limit unauthorized motorized vehicular access;
- Coordinate with neighbors to stay informed on issues;
- Consider options to enter Memorandum of Agreements with state, county, and Tribal law enforcement to increase presence in problem areas and respond to issues; and
- Develop action plans to restore damaged habitat or to reduce or eliminate source of problems.

### **3.6 Property-Specific Management Plans**

Based on the collection of baseline data, review of habitat connectivity, and the assessment of species and habitats occurring on mitigation lands, and other opportunities and constraints, City Light will develop an individual management plan for each property. Each property-specific management plan will include the following information:

- Existing conditions of vegetation, wildlife habitat, and connectivity;
- Desired conditions of vegetation, wildlife habitat, and connectivity;
- Data gaps;
- Data acquisition methods;
- Management considerations and constraints;

- Monitoring effectiveness of habitat projects for habitat structure (linked to Vegetation Management Plan; City Light 2023c) and wildlife use (point counts, deer/elk pellet counts, camera traps); and
- Adaptive management.

## 4.0 MONITORING, REPORTING, AND COMMUNICATIONS

This section will describe the monitoring efforts that will document progress towards the Mitigation Lands Plan goals and objectives. Monitoring is an extension of City Light’s protection and enhancement implementation. The goals of monitoring are to determine the effectiveness of protection measures and habitat enhancements and to inform the EBS and adaptive management updates to this Mitigation Lands Plan.

Monitoring activities will be developed to address the implementation actions at each property, as determined by specific goals. At each property, City Light will select appropriate monitoring methods depending on habitat, management actions, and target species to include a combination of vegetation structure (habitat quality) and wildlife use. City Light will monitor sites and properties and use documented changes in site-specific response metrics and compare to target values to assess the effectiveness of management actions (see Table 4.0-1 for schedule):

- Reassess the ecosystem on mitigation lands and surrounding landscapes to map aquatic and terrestrial habitats, surrounding land uses, roads, management or restoration opportunities and constraints;
- Conduct pre- and post-treatment point count bird surveys at active management locations and amphibian visual encounter surveys (for appropriate life stages) of select wetlands;
- Deploy ARUs at strategic locations to gain more information on northern spotted owl and northern goshawk occurrence; and
- Deploy ARUs and conduct visual surveys for bullfrogs at wetlands.

**Table 4.0-1. Timeline of protection and enhancement activities.**

Timeline	Activity
Years 1-3 from license issuance	Collect baseline data and fill data gaps by which to evaluate opportunities for protection and enhancements at mitigation lands.
	Monitor land use access to determine specific security issues and locations.
	Provide GIS access routes for mitigation lands to Indian Tribes and Canadian First Nations and update throughout the license as necessary.
Years 4-5 from license issuance	Collaboratively determine property-specific protections and enhancements, associated methodologies, and timeline to work toward goals.
	Collaboratively prioritize properties or specific actions for implementation.
	Implement security precautions to prevent detrimental actions and continue monitoring for effectiveness.
Years 5-10 from license issuance	Begin implementing actions to support protection and enhancement measures as prioritized and scheduled. Monitoring of actions will be scheduled based on specific action. Implementation actions may occur prior to Year 5 in collaboration with the SRCC if appropriate baseline data and priorities are established for each property.

## **4.1 Adaptive Management**

This section will describe the application of adaptive management by which City Light will gather information, synthesize new and existing information, and assess the need to update management decisions outlined in this Mitigation Lands Plan. Adaptive management will be applied to each implementation activity through monitoring. At five (5) year intervals, City Light will collaborate with the SRCC to evaluate monitoring information to determine if new BAS, BMPs, or changes in other management decisions will increase the success of the protection and enhancement measures included in this Mitigation Lands Plan.

## **4.2 Reporting Schedule**

This section will describe the schedule and method for regular communications with the SRCC and submittals to FERC. City Light will report annually on the number of protection measures implemented, monitoring results during years when data is collected, and other pertinent issues. Every five (5) years, City Light will file a report with FERC describing implementation and any proposed modifications to the Mitigation Lands Plan based upon the results of monitoring and consultation with the SRCC.

## **4.3 Communications**

This section will describe a process for making coordinated, timely, and informed decisions while implementing the Mitigation Lands Plan, including how City Light will coordinate and communicate its Mitigation Lands Plan implementation actions with the SRCC. Because of simultaneous implementation of multiple resource management plans (e.g., cultural, wildlife, fish and aquatics), cross-resource communication will be necessary. An important goal of this communication will be to achieve a balanced integration of resource goals in the Project Boundary. Coordination processes may include:

- Clarifying resource goals, objectives, and priorities;
- Ongoing consultation with relevant resource groups and other entities;
- Sharing information used to make resource decisions; and
- Solving problems and resolving issues.

## 5.0 REFERENCES

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