

4.2.4 Terrestrial Resources: Williams River Estuary and Commissary Brook Estuary, Upper Meadows;
– surveying TransCanada properties to document and locate where there are no buffers – (Upper Meadows) – federally endangered species – protection of the Northeastern Bullrush

Goals and Objectives

5.9 (b)(1) – Describe the goals and objectives of each study proposal and the information to be obtained.

The goal of this study is to evaluate the effects of project operations, project recreation and maintenance (including fluctuations in water levels and flow releases) of the project reservoir and stream reaches especially the Commissary Brook Estuary and Williams River Estuary, Herricks Cove, and Upper Meadows on:

- Riparian, wetland, and littoral vegetation community types and the spread of invasive species as a result project operations along the shoreline,
- Wildlife Habitat and Wildlife,
- Riverbank integrity and shoreline erosion and potential effects on riparian vegetation,
- (including frequency, timing, amplitude and duration of reservoir fluctuations) On waterfowl and on riparian and wetland habitats,
- On Bald Eagles and their habitaA

First Objective – survey TransCanada properties to document and locate where there are no buffers with particular attention to the specified areas

Second Objective is to attend to federally endangered species – protection of the Northeastern Bullrush

Third Objective is to identify Invasive species issues particularly at Herrick’s Cove, and develop an Invasive species control plan

Fourth Objective is to lookat Eagle Habitat and nesting trees –encourage resources there and that size along the riverbank and enhancing those buffers

Fifth objective of this proposed study is to define a baseline condition that will provide for a better understanding of the potential for project-related effects, and the impact of mitigation measures drafted in 2007 and possible further mitigation strategies.

The objectives of this study include evaluating the success of the following mitigation strategies on the issues listed in the above goals and identify if further mitigation is required:

draft 4/12/07 CT River Joint Commissions

4. Pay more attention to soil conditions, including varves, and to erosion. Towns should work with state geologists to map varves in their towns, to be sure major construction does not take place on unsafe soils. State and federal agencies should examine the severe erosion involving varves at

Commissary Brook, identify its causes, and fund a means to halt the surge of sediment into the Connecticut River mainstem.

5. Retain, protect, and enhance riparian buffers. Towns should require developers and landowners to establish and/or maintain buffers of native vegetation along rivers and streams for privacy and pollution control. Landowners should encourage native plants on their riverbanks and remove invasives.

6. Continue and enhance good river stewardship by TransCanada. Other riparian landowners should follow TransCanada's example of riparian buffer planting on riverfront lands. The Federal Energy Regulatory Commission should include best management practices such as moderated ramping rates in the 2018 license for Wilder and Bellows Falls Dams.

7. Examine culverts to ensure proper drainage. The Cold River flood experience suggests that towns should ask regional planning commissions for help with culvert and bridge surveys to identify those that are undersized. State agencies should assist towns with engineering costs for sizing culverts and bridges. State and local highway departments should ensure that culverts are properly sized when replacing them

during road work, and that culverts for perennial streams do not impede fish movement.

8. Improve stormwater management. Towns should look at ways to include "low impact development" ideas as they review projects, and at how to change existing development to reduce runoff and promote stormwater infiltration.

5.9 (b)(2) – If Applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

Not applicable.

5.9 (b)(3) – If the requestor is not a resource agency, explain any relevant public interest consideration in regard to the proposed study.

Sections 4(e) and 10(a) of the Federal Power Act (FPA) require the Commission to give equal consideration to all uses of the waterway on which a project is located. When reviewing a proposed

action, the Commission must consider the environmental, recreational, fish and wildlife, and other non-developmental values of the project, as well as power and developmental values. Any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.

Adequate protection of terrestrial resources are essential to the integrity and sustainability of a healthy ecosystem. Describing the project effects on these resources is necessary to fulfill the Commission's responsibilities under NEPA. Ensuring that environmental measures pertaining to these resources are considered in a reasoned way is relevant to the Commission's public interest determination.

Background and Existing Information

5.9 (b)(4) – Describe existing information concerning the subject of the study proposal, and the need for additional information.

- Current information is not sufficiently available in the Pre-Application Document on the baseline measurements or monitoring programs associated with these terrestrial resources. Issues and mitigation plans have been identified as necessary in the past, and sufficient updated information on mitigation success or continued necessity is not available.

Project Nexus

5.9 (b)(5) – Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

Project related activities impact the terrestrial resources along the shoreline in the project area. A profile of the riparian buffers and wetlands and erosion along the shoreline, in the project reservoir and impoundment area is considered necessary to develop a more complete understanding of potential project-related effects.

The requested study would help establish a baseline condition for the system in question, and form the basis for inclusion of potential license requirement to protect the terrestrial resources of the project area.

Proposed Methodology

5.9 (b)(6) – Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

Proposed methods include:

- Using a qualified biologist knowledgeable in area vegetation and wildlife, riparian buffers, wetlands and invasive species; identify, classify and delineate on a map major riparian vegetation, wildlife, and invasive species with special focus on the riparian buffers and wetlands, and especially impacts of erosion along the shoreline; You may make use of recent existing aerial photography and ground surveys.
- Ground-truth any remote-sensing mapping efforts, record all wildlife observed (directly or indirectly) and any invasive species observed during survey efforts.
- Describe each riparian vegetation type by species, composition, successional stage, and aerial extent within the survey area.
- Record and map the extent of all wetlands identified during survey efforts. Wetland classifications should distinguish the degree of inundation (seasonally flooded, permanently flooded).
- Based on existing literature and opportunistic observations during the vegetation surveys, identify wildlife species that may inhabit or use the identified habitats.
- Prepare a report that includes an analytical summary and graphical representations of the data from the above studies, includes the above mapping effort and identifies, describes, and assesses the extent to which project-related actions and activities may affect the identified habitats and wildlife species dependent on these habitats. All data points used to develop the report (including date and time of collection), should be included within an appendix to the report.

Level of Effort and Cost

5.9 (b)(7) – Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The estimated cost of this work is: \$50,000. The study may be completed in one study season (12 months). 1 or 2 technicians would be expected to spend 1 or 2 days to gather and review existing maps and surveys, 10 days to complete field work, Report preparation should take a biologist x work days and technicians 3 days to finalize and refine maps.