Great Lakes St. Lawrence Seaway Study
Étude des Grands lacs et de la Voie maritime du Saint-Laurent

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Transport Canada / Transports Canada

U.S. Army Corps of Engineers

U.S. Department of Transportation

The St. Lawrence Seaway Management Corporation

Saint Lawrence Seaway Development Corporation

Environment Canada / Environnement Canada

U.S. Fish and Wildlife Service

AN OVERVIEW OF THE ENVIRONMENT TEAM STUDY FRAMEWORK

The Environment Team's primary task, like that of the other study teams, is to establish baseline conditions for the Great Lakes St. Lawrence Seaway area. In this case, the team will discuss what the environmental conditions in and around the waterway could be expected to be over the next 50 years will be, if no significant modifications are made to the navigation system. The team's scientists have identified key environmental components of the study area and are now beginning to analyze how they can be expected to change over time. To keep the task manageable and relevant to this study, they are focusing on environmental factors that are most potentially sensitive to navigation activities.

The team is using reports developed by various sources to summarize historic and current environmental conditions and trends throughout the system. On the basis of this data, they will project how conditions are most likely to evolve over the study period, based on future water levels, anticipated anthropogenic effects and ecological trends.

Because water levels in the Great Lakes affect both navigation and the ecology of the area, they are an important component of the study. Using results from the *International Lake Ontario-St. Lawrence River Study* currently being completed under the direction of the International Joint Commission, the team is evaluating lake level forecasts to determine how these factors may affect key environmental components over the analysis period. Currently, they have adopted four different climate scenarios on which to base projections for a range of possible future water levels for each of the Lakes. All three GLSLS study teams (Environment, Economics and Engineering) are using these lake level projections when forecasting likely future conditions on the system.

Welland Canal Exit

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Get the latest information about the Great Lakes Saint Lawrence Seaway Study at:
www.glsls-study.com

Environment Canada and the U.S. Fish and Wildlife Service are taking the lead in examining key ecosystems potentially affected by navigation-related activities. The agencies and their contractors are compiling information describing the current state of four ecosystems: Wetlands, Islands, Open Water/Main Channel, and Floodplain and Associated Uplands. Topics covered include the classification, inventory, ecology, and fish and wildlife resources of these areas. The future outlook for these habitat types and significant data gaps will also be discussed in the report. Invasive species will be addressed separately as a system-wide issue, due to the magnitude of their potential impacts.

An additional task is identifying the most effective approach to evaluating the environmental impacts of navigation. The team is currently examining cumulative effects assessment as a possible framework for evaluating impacts, through a special working group that includes personnel from organizations on both sides of the border with experience in this methodology. They are reviewing both the regulatory requirements for environmental impact assessment, and possible

A rich wildlife

impacts that could be linked to changes in the navigation system.

In terms of methodology, the approach includes a four-step scoping phase:

(1) Identifying the significant cumulative effects associated with any proposed action and defining the assessment goals

(2) Establishing the geographic scope for the analysis

(3) Establishing the time frame for the analysis

(4) Identifying the actions affecting the resources, ecosystems, and human communities of concern.

Upcoming Events

- **GLSLS Follow-up meetings with stakeholders:**
  Quebec City, Canada September 13
  Cleveland, U.S. September 20

- **Transportation Infrastructure Conference:**
  Ottawa, Canada September 19

Flowerpot Island, Ontario

This approach provides a rigorous means of identifying activities that have the potential to affect key resources, now and in the future. The focus is on potential navigation-related impacts, and the team has assembled a comprehensive list of concerns to investigate. While many of them center on project implementation activities, such as dredging and disposal of dredged material, construction and repair of facilities, and general maintenance, additional concerns include the effects of vessel operations and invasive species. The team is compiling a summary of vessel passage impacts to create a framework for the evaluation of impacts in constricted areas of the system, where ships are in close proximity to the shoreline or the bottom. The invasive species believed to have been introduced by ballast from international vessels are among the most important factors affecting the current ecology of the Great Lakes. Special attention will be paid to examining how this problem is currently being addressed and how control measures and future changes in shipping patterns may affect introduction and restraint of these species.

Topics covered include the classification, inventory, ecology, and fish and wildlife resources of these areas.

After identifying key resources and navigation-related activities that may affect them, the Environment Team will review the engineering and economic scenarios being developed by the other two teams to determine if there are significant differences in the environmental impacts of the various alternative futures. In particular, they will be looking at whether any of the navigation scenarios could be expected to have an adverse impact on the environment when compared to continuing current operations. They will examine potential future traffic levels and maintenance strategies, based on the background environmental conditions described and the potential impacts of navigation activities, using the cumulative effects framework.

As the environmental review progresses, the team will continue to identify additional data that may be needed to make projections of future conditions more complete and accurate.

Lake Erie, Ontario