Plan Formulation and Evaluation

Objective

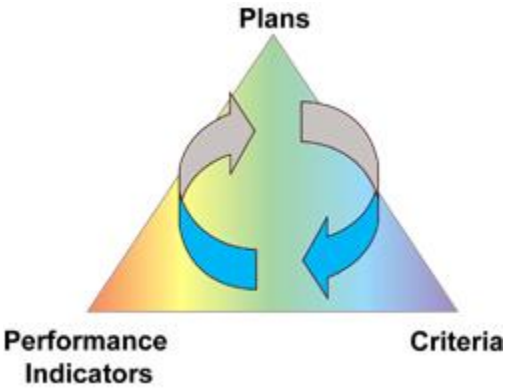
The Plan Formulation and Evaluation Group (PFEG) brings it all together by building a "shared vision" computer model that lets the Study Board assess the effects of new regulation plans on the things that are important to stakeholders. To do this successfully the PFEG has to determine what factors the Study Board will take into account in its decisions, and must make sure that the Coastal, Municipal & Industrial Water Supplies, Hydropower, Commercial Navigation, Recreational Boating and Environmental Technical Working Groups are providing the information needed to answer the Board's questions. PFEG also has to work closely with the Public Interest Advisory Group (PIAG) and of course the Study Board itself to make sure the model will give them the information they are looking for.

Shared Vision Model

Ideally, every stakeholder would be able to see how a proposed regulation plan is likely to affect them. In reality, even the experts have trouble understanding what the wealth of information that comes from a large study like this means. The "Shared Vision Model" approach tries to combine all the study information in a single computer model in such a way that decision makers and stakeholders can ask "what if" questions and get answers about how the things that are important to them are affected. The Shared Vision approach has been used since about 1990, typically when nothing else has resolved conflicts over water use. For the Lake Ontario-St. Lawrence River Study, the PFEG will attempt to use the latest advances in technology to make the shared vision model even more effective. Before the end of the study, PFEG will have a version of this model available on the internet. All you will need to run this version of the model will be an internet connection and a computer with a browser, like Internet Explorer or Netscape Navigator. If this works, it means that members of the public will be able to test different regulation plans at home.

Using the shared vision approach does more than just present the effects of different plans to the public; the need to write programs that connect every study to every concern makes it more likely that information gaps will be noticed sooner, that concerns will be expressed most clearly, and that studies will be redirected, if necessary, to answer the right questions.

The Triangulation Approach



At its March 2003 meeting, Study Board members agreed on a strategy that will allow them to simultaneously evaluate regulations plans and the criteria used to judge the plans. The current written plan (1958-D) was approved in 1962 after the levels and flows the plan would produce were compared to set criteria. The criteria had been established in the 1950s as part of the Orders of Approval for the regulation project. The Orders of Approval criteria (in PDF format) are objectives expressed in terms of desired water levels and flows. For example, criteria "d" has the objective of protecting riparian interests around Lac St. Louis, Montreal and downstream areas, but it is framed in terms of flow levels released upstream:

d. The regulated outflow from Lake Ontario during the annual flood discharge from the Ottawa River shall not be greater than would have occurred assuming supplies of the past as adjusted

Plan 1958-D was selected to replace Plan 1958-C because '58-D met the Orders of Approval Criteria like (d) more consistently than '58-C.

Fast forward to present day. This IJC asked this Study Board to examine the plan and the criteria. The strategy the Study Board decided to use to do this is illustrated by the triangle shown below. The three vertices of the triangle include the regulation plans, the criteria and a third component called performance indicators. The performance indicators are numerical measures of the things society cares about that are affected by regulation (for example, economic benefits related to boating or changes in the area or quality of wetlands). The relationships between water levels and flows and the indicators are being developed from studies conducted by the Technical Work Groups.

How will the Board use the triangular approach? For example, suppose experts want to consider replacing criterion "d" (above) that now protects riparian interests on Lac St. Louis and Montreal indirectly (by limiting releases from Lake Ontario). Perhaps it would be better to have a criterion expressed directly as a maximum level of Lac St. Louis. A next generation shared vision model is being built that will combine suggested plans, criteria and performance indicators. If the simulation of plans shows that the plans that meet the new criteria produce lower flood and erosion losses around Lac St. Louis, then the new criterion is good. But if flood and erosion damages are high even with plans that meet the criterion, then the criterion needs to be fixed. This will be an iterative process and we will go around the triangle a number of times.

PFEG Year 3 Objectives:

PFEG's number one priority in year 3 will be the building of the Shared Vision Model. In doing so, PFEG will work with the TWGs, Study Board and PIAG in developing revised criteria, in identifying and faithfully capturing the detailed performance indicators produced by the TWG into the SVM and by developing a number of alternative regulation plans to evaluate. In addition, PFEG is working with an Economics Advisory Committee made up of four economic experts to finalize a set of economic standards and guidelines for the study. This committee provides advice and feedback to ensure adequacy of economic analyses.

PFEG will host a study-wide workshop in March 2004 to run through the evaluation and decision process with a working version of the SVM. All information gathered to date will be presented and reflected upon in the context of the SVM. This iteration of the process will guide the study team into the fourth year of the study and towards developing options for alternative regulation plans.

Three corners of the Triangle:

1. **Regulation Plans** are written rules for making releases to regulate Lake Ontario and the St. Lawrence River. There will be numerous alternative regulation plans developed and evaluated. Plans will be tested using three different hydrologic datasets representing the water available to be regulated. The first is based on the actual supply conditions in the 20th century. The second is based on an assumption that climate change has occurred. The third is based on the historic data (like the first) but is extended using statistical methods to cover periods wetter and drier than have occurred in the last 100 years.

2. **The Criteria** are conditions or standards for judging how well regulation plans meet a variety of objectives. This study will use the existing "Orders of Approval Criteria" developed in 1962, but will also begin to develop a revised set based on what we learn from our studies on the performance indicators.

3. **Performance Indicators** are measures that describe the impacts (economic, environmental, social, cultural, etc.) that result from a particular level/flow or series of levels/flows. They are based on something that can be measured and must have units (e.g. dollars, wetland area etc.) associated with them. An example of a performance indicator would be 'economic damages to marinas', or 'muskrat winter survival rates'.

Economic Advisory Committee

The role of the Economic Advisory Committee is to provide expertise on the economic approaches to be used in the Plan Formulation and Evaluation process. This Team will determine the degree to which economic models and metrics can be used to rank plans, and advise in overview as to which methods and metrics would be most suitable and what antecedent procedures would be necessary to support them. In addition, the Team will be required to review the various economic evaluation strategies and provide guidance and expertise in order to ensure that an unbiased and consistent approach is used.

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