# <mark>APPENDIX A</mark> STRUCTURED DECISION-MAKING (SDM) IN A PAGE

Many of the decisions we face at BC Hydro are complex: the problems we work on can be approached from many different angles; the things we wish to achieve with our decisions can conflict; and the trade-offs we face can be difficult to reconcile.

The PrOACT (Problem, Objectives and Measures, Alternatives, Consequences, and Trade-offs) Structured Decision-Making framework\* is a method for creating a clear and concise summary of a problem and the possible solutions to it so that you—or a senior decision-maker—can clearly see the consequences of each choice. The framework helps you define the problem under consideration, determine who needs to be involved in the process of developing alternatives (which also helps create a shared understanding of how people with different interests and perspectives view different options), and compare the trade-offs created by each alternative solution to the problem.

# Pr A C

**DECIDE** 

# Step 1: Define the Problem

The first step in good decision-making is to define exactly what the problem or opportunity is that requires a decision and who needs to be involved in developing solutions to it—this is the "decision context." Ask yourself such questions as: What is the problem? How big is the problem (what is its scope)? Why does this problem need to be addressed? What kind of decision does this problem require? What are the key assumptions and constraints? Who needs to be involved and how?

# Step 2: Specify the Objectives and Measures

Specifying objectives and measures helps you (1) focus and prioritize information and (2) make the risk and uncertainty of each alternative both explicit and comparable. "Objectives" define what really matters in this decision; they are the foundation of your search for creative alternatives. "Measures" describe the degree to which each alternative meets your objectives.

## Step 3: Create Imaginative Alternatives

Good decisions are not possible without good alternatives. Develop your alternatives to address what really matters, as defined by your objectives and measures. Your alternatives should reflect substantially different approaches to the problem, and present decision-makers with realistic options.

# Step 4: Identify the Consequences

Every alternative creates its own set of consequences. A colour-coded consequence table is a useful way to summarize the essential elements of the decision problem, including levels of uncertainty about predicted future impacts. The table makes it easier to compare options and narrow your objectives to those where critical trade-offs lie and, once you have received general agreement from everyone involved, it can also be used as a succinct snapshot or reference document to help you (or the decision maker) make an informed decision.

Objectives	Measures	Option A	Option B	Option C
Maximize financial return	Net present value (\$)	\$1,000,000	\$1,250,000	\$850,000
Minimize area of disturbed wetland	Area impacted wetland (ha)	10 ha (+/- 2 ha)	6 ha (+/- 1 ha)	4 ha (+/- 1 ha)
Minimize risk of contaminated soil	Max. potential soil contamination (index)	Medium	Medium	High
Maximize reliability to customers	Length of line near tall trees (km)	14 km	16 km	22 km

Note: In this example, we are comparing Options B and C to Option A. The colours highlight the trade-offs.

# Step 5: Clarify the Trade-offs

Trade-offs are difficult but may be unavoidable. Structured decision-making requires the person responsible for making the decision to make explicit choices about which alternative is best. The decision-maker therefore must be able to consider each trade-off carefully and compare what will be gained or lost by each option. Once you have clearly defined each trade-off and its relative benefits, you—or whoever is responsible for the decision—should be ready to make a decision and move on. If you or the decision maker are not ready to decide, return to the previous steps to further refine your objectives, measures or alternatives.



<sup>\*</sup> Hammond, Keeney and Raiffa (Smart Choices: A Practical Guide to Making Better Decisions, 1998)

# APPENDIX A KEY QUESTIONS FOR DECISION MAKERS

Structured decision-making helps to ensure that BC Hydro's decisions are well-informed and consistent and that they all:

- align to our purpose, values, guiding principles and short-term priorities
- integrate financial, environmental and social objectives
- consider short- and long-term implications
- · address risk and uncertainty
- · clarify trade-offs, and
- are documented in a succinct and accessible way.

Good decisions are made possible by sound reasoning based on an understanding of multiple objectives and the trade-offs inherent in choosing one option over the others. The following questions have been designed as a mental checklist for decision makers to consult when they are reviewing a summary developed using the PrOACT (Problem, Objectives and Measures, Alternatives, Consequences and Trade-offs) Structured Decision-Making framework.

### 1. Is the decision context well defined?

- Is the problem clearly stated in a form broad enough to challenge assumptions, get at the root of the issue, break down perceived constraints, identify and avoid unintended consequences and generate long-lasting solutions?
- Were the appropriate people (e.g., subject matter experts, people who could influence the outcome of the project) involved in the process?

# 2. Do the objectives and measures define what really matters and help me decide among alternatives?

- · Do they take into account BC Hydro's purpose, values, guiding principles and short-term priorities?
- Do they address other issues as required, such as TBL (financial, environmental and social considerations), or safety and energy efficiency/conservation through the project and asset life cycle?
- Would all relevant parties within/outside BC Hydro see some objectives that reflect what matters to them when comparing alternatives?
- Do the measures help to determine how the alternatives perform against the objectives—i.e., do they measure the right things in the right way, over the right time frame (which may include upstream, in-use and disposal impacts)?
- Are the measures unambiguous and understandable, and explicit about uncertainty so that they expose differences in the range of possible outcomes (differences in risk associated with different alternatives)?

# 3. Do the alternatives offer truly different mixes of desired outcomes and ensure that we have not limited our options in the future?

- Are the proposed options realistic?
- Have they been designed to address the objectives identified?
- Do they include creative solutions, challenging perceived constraints and combining elements in thoughtful ways?

# 4. Is there a consequence table?

- Does the decision analysis summarize how each of the final (best) alternatives performs against the stated objectives relative to each other through a consequence table?
- Am I comfortable with the quality of the information and level of analysis captured in the consequence table?

# 5. Are the trade-offs and their relative upsides and downsides clearly enough stated that I can make an informed choice among options?

- If the trade-offs are setting precedent, is it a good precedent for BC Hydro?
- · Is there enough information on which to base a decision, or is it necessary to go back and revisit the objectives and measures?
- Do the trade-offs suggest a new alternative?

