

### 3. METHODOLOGY

The SOW for this study set out 6 tasks to accomplish the process of identifying and evaluating options, and recommending a strategy for an MVCIMP IMS. These included:

- Identifying the potential nodes of a Cumulative Impact IMS;
- Developing an interview protocol for consulting representatives of the potential nodes;
- Interviewing representatives of the potential nodes;
- Reviewing Hub models suggested by the Working Group;
- Developing initial options for an MVCIMP IMS, and analyzing each option; and
- Identifying a preferred option.

The following sections outline the steps undertaken by the Project Team to accomplish these 6 tasks.

#### 3.1 Identify the Potential Nodes of an MVCIMP IMS

The goal of this task was to identify potential nodes for an MVCIMP IMS based on existing environmental information sources and management activities in the NWT.

The Working Group used the list of participants surveyed at the January 23-25, 2001 CEAMF-MVCIMP Information Management Workshop in Yellowknife as a starting point for this task. The Working Group used that initial list to develop a more comprehensive list of potential respondents (i.e. nodes) that the survey could be administered to. This final list included all of the major stakeholders within the Mackenzie Valley that had an interest in CIM:

- The Government of Canada (Department of Indian Affairs and Northern Development; Department of Fisheries and Oceans; Environment Canada; Natural Resources Canada);
- The Government of the NWT (Resources Wildlife and Economic Development; Health and Social Services – Contaminants Unit);
- Aboriginal governments (including Akaitcho Treaty 8; the Deh Cho First Nations; Dogrib Treaty 11; the Gwich'in; the Inuvialuit; the North Slave Metis; the Sahtu; and the South Slave Metis);
- Co-management boards (in the Gwich'in, Inuvialuit, and Sahtu land claims regions);
- Territorial environmental permitting and review boards (Mackenzie Valley Land & Water Board; Mackenzie Valley Environmental Impact Review Board);

- Non-governmental environmental agencies (Canadian Parks and Wilderness Society; Canadian Nature Federation; Canadian Arctic Resources Committee; Ecology North; Global Forest Watch; World Wildlife Fund)
- The mining industry (NWT Chamber of Mines; BHP; Diavik);
- The oil and gas industry (Canadian Association of Petroleum Producers; Trans-Canada Pipelines); and
- Other important stakeholders (Aurora Research Institute; West Kitikmeot Slave Study).

Additionally, the respondent organizations were specifically asked (i.e., Survey Question # 33) whether they knew of other organizations which would be interested in an MVCIMP IMS and who should be sent the survey. This procedure resulted in an additional 6 surveys being received for consideration.

The full list of organizations (and specific divisions/units within those organizations) that were sent the survey is included as Appendix III.

### **3.2 Develop an Interview Protocol for Consulting the Potential Nodes**

This goal of this task was to “identify the protocols, methods, and challenges of participating in a Cumulative Impact IMS”.

The survey conducted for the January 23-25, 2001 CEAMF-MVCIMP Information Management Workshop served as the starting point for this task. The questions contained in that survey were used as the basis for the development of the Nodes Survey that was used for this study. The Nodes Survey – which was developed with input from the Working Group - consisted of 33 questions, which were divided into three sections:

- organization information (e.g. organization demographics; the amount of time spent on environmental monitoring activities; the importance of CIM to the organization; the importance of contributing to an MVCIMP IMS; Information Technology (IT), Geographic Information Systems (GIS), and Library personnel employed by the organization; and whether the organization was computer networked );
- CIM information use with the organization (e.g. the types of CIM information used/produced; information formats; the scope of CIM information; computer software program types; the amount of metadata associated with the organizations CIM information); and
- information sharing and costs (e.g. organizational access to the Internet; organization willingness to share CIM information; examples of information that could be shared or not shared; the major reasons for not sharing CIM information; organization capacity to share CIM information; resources needed to contribute to a CIM IMS, etc.).

A copy of the Nodes Survey is attached as Appendix I. The Nodes Survey was vetted by the MVCIMP Working Group, piloted (i.e. tested), and then revised before being administered to the potential nodes.

### **3.3 Interview Representatives of the Potential Nodes**

The goal of this task was to – using the list developed in Step 1 and the protocol developed in Step 2 - interview representatives of the potential nodes.

The surveys were administered by fax and e-mail in late November 2001, with a suggested turnaround time for completion of approximately 3 weeks. Due to the nearness to the holiday season, however, some organizations requested additional time to respond. The surveying period was thus extended until mid-January, 2002.

By the end of the first week of January 2002, only 19 responses had been received by the Project Team. The Project Team followed-up with the potential nodes who had not yet responded (via e-mails, faxes and phone-calls) to try to improve the response rate. Additionally, Working Group members actively participated by reminding members within their organizations to respond to the survey. Seventeen (17) more responses were received as a direct result of the follow-up by the Project Team and the Working Group members.

The unit of analysis for the survey was the organization/department/section as a whole; respondents were advised to consult within their organizations before submitting completed surveys so as to improve the accuracy of the results.

### **3.4 Review Hub Approaches Suggested by the Working Group**

The goal of this task was to review Hub approaches suggested by the Working Group, and note any required modifications for their applicability to the MVCIMP and the Cumulative Impact IMS. The suggested approaches for a model of a territorial Hub - which would facilitate the information flow between the nodes - included:

- 1) the Arctic Borderlands Ecological Knowledge Co-operative;
- 2) the Quebec Local Integrated Knowledge System (QLINKS); and
- 3) the Ecological Monitoring and Assessment Network (EMAN) North - Information Centre.

A second survey – to be administered to possible Hub examples - was designed by the Project Team. The Hub Survey consisted of the same 33 questions as the Nodes Survey, plus an additional 4 questions relating to website information costs and maintenance (e.g., budgetary and personnel costs for development; the length of time required to compile CIM information for the Website; whether any difficulties were encountered during the set-up of the Website; and, if so, a description of those difficulties). A copy of the Hubs Survey is attached as Appendix II.

In addition to the Arctic Borderlands Ecological Knowledge Co-operative and the EMAN-North organizations, the Hubs Survey was administered to:

- the Canadian Environmental Assessment Agency;
- Environment Canada’s Canadian Information System for the Environment (CISE); and
- two other Websites currently under development which the Working Group thought might serve as useful models (the Fish & Wildlife Division of the Government of Alberta; Environment Canada – Alberta Region).

All attempts by the Project Team to contact the QLINKS site failed. The site has either moved or is defunct; and all links generated by web searches proved to be inactive. And although the EMAN-North organization were not able to return a completed survey within the suggested timeframe, a Project Team member later interviewed the Technical Co-ordinator of that site to obtain valuable input on the development of a Hub model. That interview data is included later in this report (see Section 4.1.4).

The full review of the EMAN North and Arctic Borderlands sites in regards to their applicability as possible hub models is outlined later in Section 5.

### **3.5 Develop Options for an MVCIMP IMS and Analyze Each Option**

The goal of this task was to develop initial options for an MVCIMP IMS and analyze each option according to its:

- cost of development and implementation;
- time for implementation;
- potential to build community capacity;
- ability to provide information to users without internet access and meet the communications needs of communities;
- ability to provide territorial-level information; and
- roles, responsibilities, support structure and service expectations for the territorial hub.

Four (4) options for an MVCIMP IMS were developed, and each option was analysed according to the above-listed criteria. See Sections 5.2 through 5.5 (later in this report) for a full description of each option, as well as the required analysis.

### **3.6 Identify a Preferred Option**

The goal of this task was to identify a preferred option for an MVCIMP IMS.

Of the four options developed and analysed, one was identified as the preferred option. See Section 5.6 (later in this report) for this identification.