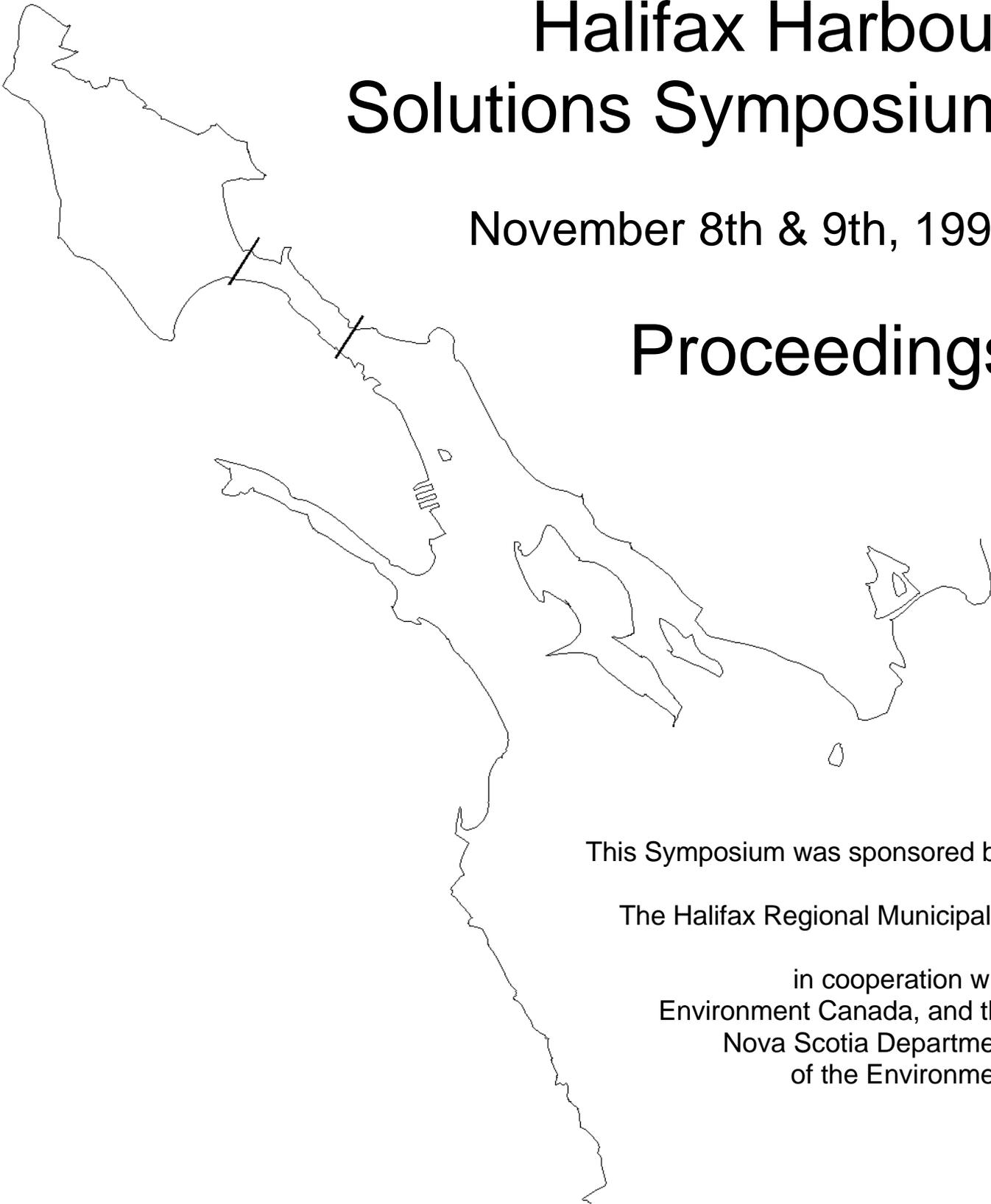


# Halifax Harbour Solutions Symposium

November 8th & 9th, 1996

## Proceedings



This Symposium was sponsored by:

The Halifax Regional Municipality

in cooperation with  
Environment Canada, and the  
Nova Scotia Department  
of the Environment

*Halifax Harbour Solutions Symposium  
Proceedings*

**Foreword**

The Halifax Harbour Solutions Symposium took place at Dalhousie University on November 8th and 9th, 1996. The basic purpose was to renew the long-standing efforts of government and the greater Halifax community to develop a comprehensive waste water management system for Halifax Harbour. The Symposium was sponsored by the Halifax Regional Municipality in cooperation with Environment Canada and the Nova Scotia Department of the Environment.

This document contains the proceedings of the Symposium. It begins with the Executive Summary which describes the Symposium goals and the agenda, and summarizes the general points of agreement that were developed by the participants.

Following the executive summary, the actual proceedings of the Symposium are presented. These include summaries of expert presentations and commentaries by guest speakers and the Symposium co-chairs. As well, reports from the small group sessions are presented in their original format.

There were some 170 participants at the symposium representing a wide range of government agencies, community, business and environmental groups, and other stakeholders. To achieve the in-depth discussion and debate demanded by such a complex subject matter, the participants were divided into eight small groups, each with a facilitator to guide the work of the group. Although basic agendas were provided to the groups, they tended to take different approaches and to address different priorities reflecting the varying interests of group members. As a result, the reports from the groups are not uniform in form or content.

Readers of these *Proceedings* may therefore have occasional difficulties in understanding some of these small group reports. However, the participants asked that these reports be included in the Symposium report so that their specific ideas and proposals would not get lost in the effort to draw out the more general points of agreement.

In particular, the individual group reports from the third small group session contain detailed proposals on implementation strategies, further community consultations and timetable issues. They are a valuable resource both for community organizations who are actively involved in matters relating to the quality of the harbour and for the government officials who are responsible for the ongoing development of the Halifax Harbour waste water management system.

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## Executive Summary

On April 26th, 1996 the Halifax Regional Municipality (HRM) Council passed a motion directing its staff to develop plans for a “consensus symposium” to contribute to the “general design for an approach to harbour clean-up”.

One of the first steps in planning the Symposium was to appoint two co-chairs from the wider community, Prof. Ray Coté, Director of the School of Resource and Environmental Studies at Dalhousie University, and Ms. Lesley Griffiths of Griffiths Muecke Associates. HRM staff also conducted focus group meetings with key stakeholder representatives prior to the event to identify appropriate goals and approaches for the symposium.

Following these initial steps the co-chairs and HRM staff set out goals and objectives for the Harbour Solutions Symposium. The overall goal was *to put the Harbour Cleanup Project back on track*. The specific objectives were to:

1. Bring together a cross section of stakeholders to develop basic principles and objectives for the Halifax Harbour project which will be:
  - practical in terms of cost and time,
  - environmentally sound,
  - responsive to community needs,
  - achievable;
2. Recommend a funding strategy and timetable;
3. Recommend an ongoing stakeholder involvement process.

The Symposium was held at the Student Union Building at Dalhousie University on November 8th and 9th, 1996. It was attended by some 170 participants, including representatives of the federal, provincial and municipal levels of government, the business community, community organizations, the engineering and consulting professions, environmental groups, harbour users, and other interest groups. (See Appendix 1 for a list of participants).

In opening the Symposium, HRM Mayor Walter Fitzgerald expressed the commitment of the HRM Council to taking direct action in the near future to put in place an effective and affordable waste water management system for Halifax Harbour. He asked the Symposium participants to give the Council clear and realistic proposals on ways and means to achieve this goal.

The Symposium then proceeded to work through a process with the following six steps:

1. Information sharing;
2. Identification of decision issues;
3. Drafting of principles and objectives;

4. Discussion and debate;
5. Revision of the principles and objectives and identification of issues where more research and consultation are needed;
6. Identification of implementation steps.

Information sharing was accomplished through distribution of a background document which provided historical perspectives on harbour clean-up efforts, and through panel presentations by the following people:

- **Mr. Larry Corrigan**, HRM Commissioner of Corporate Services, provided an overview on the financing options for building a comprehensive waste water management system;
- **Mr. Bob Parker**, architect and a member of the 1992-93 federal-provincial environmental assessment panel on harbour cleanup, reviewed technical aspects of waste water management, building and landscape design and site selection;
- **Ms Kate Moir**, Manager of Eco-systems and Risk Management in the Nova Scotia Department of Environment, outlined the roles of the different levels of government in decision-making and regulation, and identified the opportunities for citizen input to the decision-making process.

Summaries of these presentations are included in this report.

Following this panel the participants divided into eight small groups with facilitators to develop questions for the panel and to identify their most pressing concerns and issues with regard to the development of the waste water management system. In a second plenary session the groups posed the questions of greatest concern to them to an expanded panel.

In a second round of small group sessions the participants set out practical objectives for a new waste water management system and principles to govern decision-making on financial, technical and site selection issues.

The eight small groups took quite different approaches to this task, some concentrating on decision-making and public participation processes, and others going into detail on technical or financial issues. The Symposium facilitation team then went through the small group reports to draw out the points of shared concern and the common approaches, and to identify areas where there seemed to be little agreement and where further planning and research would therefore be needed.

The Symposium co-chairs were then able to present to plenary a draft list of 14 points of apparent agreement on principles and objectives for harbour clean-up, and then spelled out the additional areas where more research and consultation beyond the Symposium would be required.

In a third small group session, the participants worked through the 14 points and suggested ways to improve them or to sharpen their focus. They also discussed timetable, public participation and financial issues.

As a result of these deliberations, the draft set of 14 principles and objectives was developed into the following 12 “general directions” for the development of a comprehensive waste water management system in Halifax Harbour.

### **General Principles**

1. There should be an immediate start on the planning and public participation process.
2. There should be development of a flexible, comprehensive vision and a long-term strategy with links to other development planning.
3. Proceed on a step-by-step incremental approach, building on past successes and considering innovation and small scale approaches.
4. HRM is the lead agency responsible for achieving a Harbour solution.
5. The “user pay” principle should be implemented on an equitable basis.
6. An on-going informed public participation process is needed and decision-making must be transparent and open.
7. Source control is an integral part of the system.
8. Move forward on the basis of the established water use objectives revised as necessary.
9. Citizens need to be educated about their roles and responsibilities within the overall waste water and management system.
10. Architectural design for new facilities should be appropriate to neighborhoods and the environments and be aesthetically pleasing.
11. Develop a sludge management strategy which will consider sludge as a resource.
12. There should be integration of legislation and regulations, with effective enforcement and monitoring.

The following were areas where the Symposium participants did not have common views, and where more research and public consultation would therefore be needed:

- \* Northwest Arm classification needs discussion
- \* Mainland South/Herring Cove issues
- \* extent of consolidation of outfalls
- \* should the process be cost-driven or goal-driven?
- \* need for innovation and alternative treatments and technologies
- \* number of plants, size of plants

- \* siting criteria, selection, and process
- \* cost-sharing which includes the federal and provincial governments
- \* whether to integrate water utility and waste water utility
- \* public/private partnerships.

At the close of the Symposium these points were presented to a plenary session with comments by the co-chairs. The floor was then opened for discussion, and there were indications that the participants were satisfied with the list of 12 points as a basis for moving forward with the next steps in the development of the waste water management system. Following this the facilitators summarized the more detailed proposals from each of the eight small groups on timetable, consultation strategies and funding options for implementation of the new waste water management system. As well there was a report from a special voluntary group which met during the Symposium to discuss Herring Cove/Mainland South issues. These reports along with the results of the earlier small group sessions are included in the body of this report. They contain valuable insights and ideas for planning further consultations and the implementation process.

The Symposium was brought to a conclusion by HRM Deputy Mayor Jack Greenough, Ken Meech, HRM Chief Administrative Officer, and Valerie Spencer, HRM Commissioner of Policy and Planning. They expressed satisfaction with the results of the Symposium and committed themselves to moving forward with planning and implementation as soon as possible. They also thanked the participants for their valuable contributions to the planning process, and expressed confidence that their ideas and concerns would have a significant impact on the development of a comprehensive waste water management system for Halifax Harbour.

## **2. Symposium Agenda**

The following is the agenda for the symposium. The subsequent sections provide detail on the agenda items, such as the results of the small group sessions and the plenary reports. It should be noted that day 2 of the agenda was revised in response to the activities and feedback from the first day (see Section 9.1).

# **Agenda Harbour Symposium**

## **Friday, November 8**

### **0900 Opening**

- Call to order (Co-chairs)
- Welcome by the Mayor
- Introduction to the Symposium (Co-chairs)
  - Introduction of facilitators, and their role
  - Role of HRM staff participants
  - Explanation/description of participants
  - Review of goals and objectives
  - Review of agenda and 6-step Symposium process
    1. Information sharing
    2. Identification of decision issues
    3. Draft principles and objectives for Harbour Clean-up
    4. Discussion and debate
    5. Revise principles and objectives and identify issues where more research and consultation is needed
    6. Identify next steps
- Identification of Symposium “products”

### **0935 The Vision and the Challenges**

- Presentation by Lesley Griffiths and Ray Coté
  - Review past efforts and achievements re Harbour clean-up
  - Define concepts - integrated harbour management and harbour centered approach
  - Identify current and future challenges, and goals for the Symposium

### **0950 Critical Issues for Next Steps**

- Panel to identify the critical issues and the “givens”
  1. Costs and financing options
  2. Treatment methods, sites selection, technical options
  3. Decision-making systems

- Questions from floor - clarification

**1045 Refreshment Break**

**1100 First Small Group Session**

- Review of Critical Issues from 0950 panel presentation
- Each group develops one statement and one question on each of the three topics from panel presentation

**1230 Lunch Break**

**1345 Summary of Group Statements**

- Report by Co-chairs
  - areas of apparent agreement
  - areas of apparent disagreement
- Comments/questions from the floor

**1415 Questions to Panel** (presenters from 0950 panel and supplementary resource personnel)

- Questions from groups directed to expert panel members
- Discussion and questions from floor

**1500 Refreshment Break**

**1515 Second Small Group Session**

- Groups to discuss and if possible agree upon objectives and principles to govern the Harbour Solutions

**1645 Plenary Evaluation**

- One identified spokesperson from each group to comment on the process, work of the day.

**1700 Wine and Cheese Reception**

**Saturday, November 8th**

**0900 Summary of Small Group Reports**

- Presentation of Draft Principles and Objectives by facilitators

- Points of disagreement and gaps
- Comments and questions of clarification

**0930 Response Panel # 1**

- Panel of Stakeholders to Comment on Draft Principles and Objectives for Harbour Solutions

**1045 Refreshment Break**

**1100 Third Small Group Session**

- Review and revise draft principles and objectives

**1200 LUNCH**

**1300 Third Small Group Session (continued)**

- Recommended strategy
- Recommended timetable

**1345 Experience in Another Harbour**

- Presentation by visiting expert on Harbour Clean-up in another setting

**1415 Group Photo**

**1430 Refreshment Break**

**1445 Summary of Small Group Reports: Action Steps**

- Presentation by Co-chairs
  - Draft principles and objectives
  - Recommended strategy and timetable
  - Areas of disagreement
  - Priorities for further research and consultation

**1515 Reaction Panel: Action Steps**

- Response to draft principles and objectives in terms of next steps in planning and implementation
- Questions and comment from the floor

**1540 Thanks to participants and resource people, etc.**

**1545 Closure**

### 3. Opening Comments

Ray Coté opened the Symposium, welcoming participants and introducing His Worship, Mayor Walter Fitzgerald, who made some introductory remarks to the plenary session..

#### 3.1. Opening Remarks by Co-chairs Ray Coté and Lesley Griffiths

- Welcomed participants and asked them to please participate both days
- Stated that recommendations from the symposium will be submitted to HRM Council who have the decision-making authority to act on them; confident that Council would give the views of the participants very serious consideration.
- Explained the role of the facilitators, HRM staff and other government officials.
- Explained the selection of participants to the symposium -- participants were selected as representatives of groups concerned about the development of HRM and the future of the harbour in particular. It was the intent of the organizers that they brought the views of these groups to bear on the discussions and would return the information gathered and directions agreed upon back to the group in an effort to achieve a broader consensus. (A list of participants is included in an appendix to this report.)
- Reviewed the goals and objectives of the symposium
- The goal of the symposium is to put the Halifax harbour project back on track
  - To accomplish this goal the symposium will:
    1. Bring together a cross-section of stakeholders to develop basic principles and objectives for the Halifax Harbour project which will be
      - practical in terms of cost and time
      - environmentally sound
      - responsive to community needs
      - achievable
    2. Recommend a funding strategy and timetable
    3. Recommend an ongoing stakeholder involvement process
- This Symposium is not intended to be a conference in the traditional format, but as a working session for you, the participants. We therefore hope to minimize talking from the podium, and maximize individual input through small group sessions.
- To get there, the Agenda will take us through six basic steps
  1. Information sharing (*remarks by the co-chairs and the first panel*).
  2. Identification of decision issues (*the first panel and small groups*)
  3. Scope out first ideas for principles and objectives(*small groups*)
  4. Discussion and debate (*first panel, small groups, then stakeholder panel*)
  5. Revise the principles and objectives, identify areas of non-agreement and what to do about them (*small groups and throughout process*)
  6. Identify next steps and a timetable (*small groups and reaction panel*)

- The Symposium is intended to be product-oriented the product will be a set of principles and objectives, a strategy, and a time line. This will be presented to Council.

We have been discharging raw sewage and other wastes into the harbour since the city was founded in 1749. The first reports of pollution of harbour waters came from Huntsman of the Fisheries Research Board in 1924. Serious attempts to address the problem were first taken in 1971 with the construction of a sewage treatment plant at Mill Cove and then later with a second treatment plant in Eastern Passage in 1974. Both Halifax and Dartmouth continued to discharge raw sewage into the Harbour through 41 outfalls. During the seventies and eighties, several efforts were promoted to deal comprehensively with the issue. As early as 1971, a single regional facility was proposed and eventually a site was selected at Sandwich Point in the outer harbour. Water quality models and sampling continued to identify pollution and suggested that the situation would worsen if not addressed. In 1989, the Halifax Harbour Task Force was commissioned by the Province to make recommendations on principles, environmental quality objectives, a level of treatment and an outfall site. The Task Force report led to the creation of Halifax Harbour Cleanup Inc. (HHCI) and its proposal for a regional facility. This proposal was reviewed by a Federal-Provincial Environmental Assessment Panel. Following public hearings, the Panel recommended that the project could proceed subject to conditions. During this period, the cost of the project escalated from approximately \$200 million to \$400 million. In 1995, funding agreements for the project expired and it “died on the vine”.

## **3.2. The Vision and Challenge by Ray Coté and Lesley Griffiths**

### **3.2.1 Why Are We Here Now?**

There are three answers to this question:

1. We are here today in large part because of the persistence and initiative of the Metro Coalition for Harbour Clean-up, a group of citizens who refused to let the clean-up project die when it appeared that there was not enough money to carry out the HHCI solution. It was primarily their idea to gather together a congress of residents and elected representatives to develop a new and achievable vision for this project.
2. We still have millions of liters of raw sewage pouring into the harbour; we’re presumably moving by degrees towards a situation where we’ll start to lose even more of the recreational and esthetic amenity; and we’re getting bad press.
3. We are also here today also because of limitations in the way we have tackled the harbour question in the past. There have always been four key requirements, emphasized differently at different times:
  - willingness to collaborate
  - money
  - environmental knowledge about the harbour
  - political and public will to complete the project.

During the last round with HHCI it appeared that we had all the pieces. Of course it was the money issue that sank the project, but in a deeper sense I believe it sank because the project had no real support base. The main players were the Province, the federal government, HHCI and the engineering community. The municipalities were conspicuous by their absence, and the project died with hardly a whimper from the general public.

We are here today to start building that support base, by recasting the Harbour sewage treatment issue in a way that a broad range of stakeholders can support it: not just as a construction project, but as an environmental project, an economic development project, a recreational project, and as a key component in starting to see our Harbour as the resource it really is one that requires a whole new integrated management and development approach.

### **3.2.2. Starting Point**

We would like to put the proposition to you that there is considerable consensus on four key issues. We are suggesting that at the beginning of the small group work, this assumption should be checked out. If we are right we would like you to more or less take these issues off the table for the duration of the Symposium and spend your time on the issues where we don't have agreement yet. If however we are wrong we will need to know this.

The first issue is water use and environmental quality objectives for the Harbour. A set of objectives were established by the Harbour Task Force. They recognized the limitations set by existing environmental conditions which were not going to be changed by sewage treatment, namely the presence of contaminated sediments. Through the environmental assessment process, these objectives were essentially confirmed.

Three classes of water quality were related to desired water uses. Highest priority would be placed on the harbour waters beyond McNabs Island. The next priority would be placed on environmental protection of Bedford Basin and the waters around McNabs Island which would be expected to support all main recreational uses, and finally the Inner Harbour would support certain recreational uses with some limitations.

The second issue is the primary importance of source controls: the many programs and mechanisms to prevent contaminants getting into sewers in the first place. Both the Task Force and the Panel made strong recommendations on source controls as an integral part of a wastewater management system, and HRM is currently in the process of developing a source control program. It appears that the main issue is now not whether source control is required, but how to ensure that an adequate level of ongoing support will be available.

The third issue is the principle of containment. Even after source controls and treatment have been applied there will be persistent contaminants discharged into the Harbour. The Harbour Task Force, after much discussion, proposed that the most responsible approach would be to design a system that would maximize the chances that those persistent contaminants would remain in the Inner Harbour if discharged into the sewers and would settle out on top of the already contaminated sediments, rather than be exported out to cleaner areas. We are suggesting that this principle still largely holds although how completely it needs to be observed is, I think, still an issue for discussion, particularly with respect to the Mainland South/Herring Cove question.

## 4. Critical Issues for Next Steps

### 4.1 Larry Corrigan

# Halifax Regional Municipality Financing for Harbour Solutions

## Discussion of Financing Issues

Lawrence T. Corrigan, BComm, CGA  
Commissioner of Corporate Services  
1841 Argyle Street  
PO Box 1749  
Halifax, NS B3J 3A5

Telephone: 902-490-4120

Fax: 902-490-4044

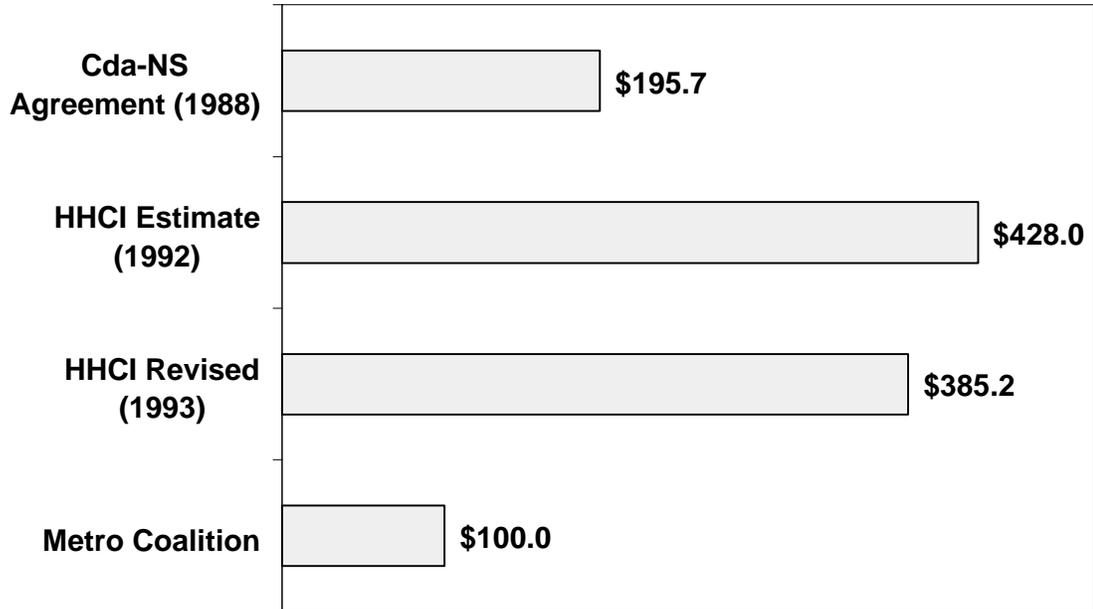
email: [corrigl@region.halifax.ns.ca](mailto:corrigl@region.halifax.ns.ca)

**Options for financing**

- **Pollution control charges based on water consumption**
- **General tax levy**
- **Public/Private Partnerships**
- **Other?**

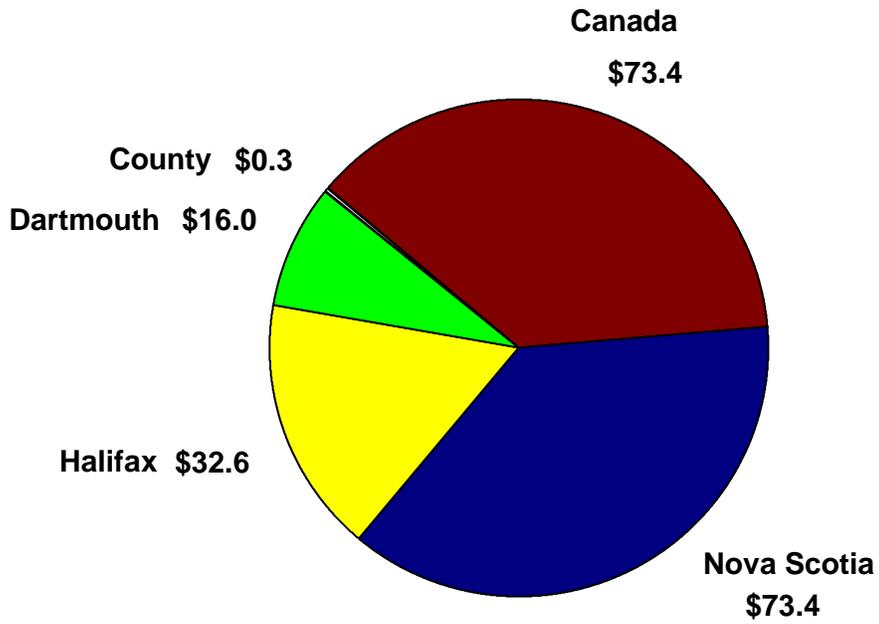
# Halifax Regional Municipality Financing for Harbour Solutions

## Possible cost of harbour clean-up solutions??



# Halifax Regional Municipality Financing for Harbour Solutions

## Canada - Nova Scotia Subsidiary Agreement 1988



**Halifax Regional Municipality  
Financing for Harbour Solutions**

**Pollution Control Fund - Pros**

- higher users pay more
- responsive to conservation efforts

**Pollution Control Fund - Cons**

- water usage not equal to waste created
- some manufacturing processes consume large amount of water

**Halifax Regional Municipality  
Financing for Harbour Solutions**

**General Tax Rate - Pros**

- **easy to implement**
- **predictable amount of revenue**

**General Tax Rate - Cons**

- **charges not related to waste created**
- **not responsive to individual efforts to conserve**

## Halifax Regional Municipality Financing for Harbour Solutions

### Public Private Partnerships - Pros

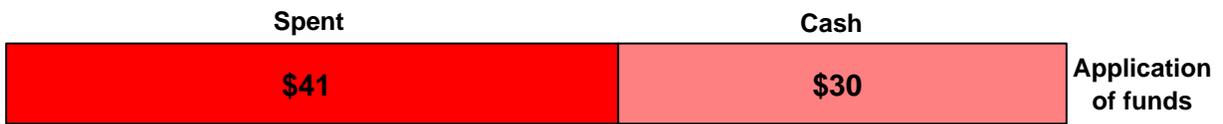
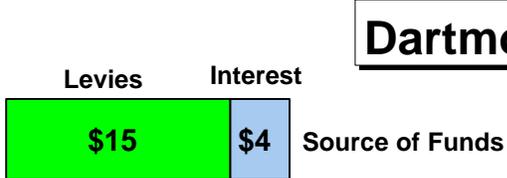
- increased capital cost effectiveness
- increased operating effectiveness
- shared risk

### Public Private Partnerships - Cons

- loss of public control
- savings questionable; profit motive seen as extra cost
- requires complex negotiations

# Halifax Regional Municipality Financing for Harbour Solutions

## Source and Application of Funds (Dartmouth since 1990, Halifax since 1974)



Project Cost **\$100,000,000**

Harbour Solution Impact on Assessment Tax Rate

Municipal Unit	Tax Rates	Average Assessment	Average Tax Bill	1997/98	
				PC Tax Rate	Increase Billing
Halifax	\$1.48	103,300	\$1,534	\$0.02	\$20.41
Dartmouth	\$1.55	91,600	\$1,420	\$0.02	\$18.10
County	\$1.57	85,700	\$1,345	\$0.02	\$16.93
Bedford	\$1.36	111,700	\$1,521	\$0.02	\$22.07

**Project Cost**

**\$100,000,000**

**Harbour Solution Impact on Pollution Control Charge**

Annual Average Household User Charges - Pollution Control & Waste Water  
Average Household consumes 56,000 gallons annually

	1996/97			1997/98	
	Pollution Control Charge	Waste Water Charge	Total	Annual Variance Halifax & Dartmouth	Annual Variance All
Halifax	\$28.00	\$45.36	\$73.36	\$23.99	\$27.85
Dartmouth	\$16.80	\$56.56	\$73.36	\$23.99	\$27.85
County	\$0.00	\$112.00	\$112.00	\$0.00	(\$10.79)
Bedford	\$0.00	\$118.72	\$118.72	\$0.00	(\$17.51)

4.2 Discussion by KATE MOIR

**NOVA SCOTIA  
DEPARTMENT OF THE ENVIRONMENT**

**FORMAL PUBLIC INVOLVEMENT PROVISIONS**

	LEGISLATION	PROVISIONS
Canada	Canada Environmental Assessment Act  Ministerial Decision	<ul style="list-style-type: none"> <li>• Public Notice</li> <li>• Written Submission</li> <li>• Panel Review/Mediation</li> <li>• Joint Hearing</li> </ul>
Nova Scotia	Environment Act  Ministerial Decision	<ul style="list-style-type: none"> <li>• Public Notice</li> <li>• Written Submissions</li> <li>• Panel Review/Hearing (Environmental Assessment Board)</li> <li>• Joint Hearing</li> </ul>
Halifax Regional Municipality	Municipal Planning Strategy  Council Decision	<ul style="list-style-type: none"> <li>• Public Participation in Plan Development</li> <li>• Public Notice</li> <li>• Public Hearing at Adoption</li> <li>• Ongoing Provisions for Public Hearings Related to Change of Use</li> </ul>

**HRM  
CANADA**

**NOVA SCOTIA**

<p><b>ROLE:</b> Proponent/Operator/Regulator</p>	<p>Regular/Technical Info/Support/Advice</p>	<p>Regulator/Technical Inform/Support/Advice</p>
<p><b>REGULATORY: HRM CHARTER</b></p> <ul style="list-style-type: none"> <li>• Bylaw respecting W/W discharge</li> <li>• Bylaw sewer hook-up</li> </ul> <p><b>PLANNING ACT</b></p> <ul style="list-style-type: none"> <li>• Subdivision by law</li> <li>• Municipal planning strategy</li> <li>• Land use bylaws</li> </ul>	<p><b>ENVIRONMENT ACT 1995:</b></p> <ul style="list-style-type: none"> <li>• Activities Designation Regs</li> <li>• Approval to construct and operate</li> <li>• Wastewater Facilities Regulations</li> <li>• Operators Certification</li> </ul>	<ul style="list-style-type: none"> <li>• <b>NAVIGABLE WATERS PROTECTION ACT</b></li> <li>• <b>FISHERIES ACT</b></li> <li>• <b>CANADIAN ENVIRONMENTAL PROTECTION ACT</b></li> <li>• <b>CANADIAN ENVIRONMENTAL ASSESSMENT ACT</b></li> </ul>
<p><b>PROPONENT:</b></p> <ul style="list-style-type: none"> <li>• Project Management</li> <li>• Satisfy Regulatory Requirements</li> <li>• Finance</li> </ul>		
<p><b>OPERATOR:</b></p> <ul style="list-style-type: none"> <li>• Operate &amp; Maintain</li> </ul>		
<p><b>TECHNICAL INFORMATION &amp; ADVICE:</b></p>	<p>DOE - Pollution Prevention DOE - System Design &amp; Operation DOE - Env. Technologies DHMA - Planning/Financial Advice</p>	<ul style="list-style-type: none"> <li>• Environment Canada - Pollution Prevention</li> <li>• Environment Canada - System Design &amp; Operation</li> <li>• Environment Canada - Environmental Technologies</li> </ul>

4.3

Discussion by **ROBERT PARKER**

**Robert Parker Associates Architects and Planners**

## **ASSUMPTIONS**

### **1. Water Quality Objectives of Fournier Task Force and Environmental Review Panel are still valid:**

Outer Harbour and Approaches: contact recreation and direct shellfish consumption

Middle Harbour: contact recreation and shellfish consumption after cleansing

Inner Harbour: boating and industrial cooling use

High aesthetic value and good wildlife and fish habitat

Advanced Primary Treatment achieves water quality objectives

Provincial Guidelines 30 MG/L BODs and SS - Coastal Discharges; 20 MG/L BODs and SS - Estuary Discharges

### **2. Water Conservation and Effective Sewage Treatment is best achieved through an Integrated Water-Wastewater Utility:**

conservation reduces consumption and flow rate of wastewater into sewer and burdens on treatment

reduces costs for chemicals on treatment and disinfection

tightens loop of sustainability

water users help pay for sewage treatment

flow rates = 4000 m<sup>3</sup>/Day Total

### **3. Containment Principle (in general) is responsible way to handle effluent:**

in support of Montreal guidelines

Halifax Harbour offers several containment options

dispersal at sea for some effluent?

### **4. At Source Controls for toxins and hazardous wastes are part of Wastewater Management System:**

Municipal and Provincial Strategies are underway

reduces impacts on treatment, technology and receiving waters for toxic organics and metals

places responsibility for management at source of origin

**5. Collection System is basic to any options of treatment:**

underground pipes must be in place to carry dry weather flows and portions of stormwater  
collection system is a big fixed cost of any system  
consolidation of 40 harbour outfalls underway (30 Munic. & 10 Munic.. overflows)  
storm water retention in main collection pipes  
rehabilitation of existing collection system reduces extraneous flows

**6. CSO's are integral component of a Wastewater Management System:**

level of treatment-screening and disinfectant  
combined storm and sanitary sewers are a reality for foreseeable future  
reduce number of CSO's - consolidation  
land dispersal of stormwater from development viable option in some cases

**7. Sludge Management is major component of any Wastewater Management System:**

sludge has to be treated (toxins and pathogens), transported and disposed  
existing septage and sludge for other plants may have to be handled - MC, EP, L  
use as a resource, close loop of sustainability-composting, land spread, OFS, other

**8. Design and Landscaping of Sewage Treatment Plant goes a long way toward siting and plant acceptance location:**

STP can look like a botanical gardens  
technology can control odours effectively - enclosure  
educational and tourism benefits  
STP can be a community resource and asset  
accepts responsibility at community level

**9. \$40 million in pollution control fund is a valuable resource**

use to leverage other monies and financing options  
"down payment on a mortgage"  
get on with the job

## RELATIONSHIP OF GOVERNMENT TO HARBOUR SOLUTIONS

	HRM (Municipal)	NOVA SCOTIA (PROVINCIAL)	CANADA (FEDERAL)
<b>ROLE</b>	Proponent Operator Regulator	Regulator/Technical Info/Support/Advice	Regulator/Technical Inform/Support/Advice
<b>REGULATORY</b>	<ul style="list-style-type: none"> <li>• Bylaw respecting W/W discharge</li> <li>• By law sewer hook-up</li> <li>• (5) land use by laws</li> </ul>	<ul style="list-style-type: none"> <li>• Environment Act 1995 Activities Designation Regs</li> <li>• Approval to construct and operate</li> <li>• Wastewater Facilities Regulations Operators Certification</li> </ul>	<ul style="list-style-type: none"> <li>• Navigable Waters Act</li> <li>• Fish Act</li> <li>• C. Environmental Protection Act</li> </ul>
<b>PROPONENT</b>	<ul style="list-style-type: none"> <li>• Project Management</li> <li>• Satisfy Regulatory Requirements</li> <li>• Finance</li> <li>• Operate &amp; Maintain</li> </ul>	N/A	N/A
<b>TECHNICAL INFORMATION &amp; ADVICE</b>	N/A	DOE - Pollution Prevention DOE - System Design & Operation DOE - Env. Technologies DHMA - Planning/Finance Controls	<ul style="list-style-type: none"> <li>• Pollution Prevention</li> </ul>
<b>OPERATIONS</b>	On-going Operations Management	Monitor for legislative compliance	Monitor for legislative compliance

## Wastewater Management System

### Element

### Siting Criteria

**At Source Controls**

- toxic organics
- metals

- at home, institution, commerce, industry
- proximity to disposal depots, recycle centres

**Collection System**

- outfall consolidation
- main collectors to STP/s

- harbour edge consolidation pipes
- distance to STP, cost efficiency
- land physiography, geology
- ownership

**CSO's**

- consolidation
- treatment
- discharge
- screenings disposal

- land suitability
- access-trucks, boats, rail
- ownership/costs
- receiving waters' characteristics to maintain water quality objectives
- outfall impacts
- disposal options of screenings

### HARBOUR

**Sewage Treatment Plant/s**

- advanced primary or higher
- screenings and grit (ss) removal from STP

- type of technologies
- single or multiple plants, capital, operating costs, replacement costs
- land suitability-area, access, physiography, ownership/costs
- proximity to other uses
- design aesthetics and landscaping
- outfall proximity
- elevation (pumping/gravity flow)
- archaeological and cultural resources
- disposal options
- municipal services

**Effluent  
Discharge**

- treatment

- location of diffuser - containment or dispersal
- dispersal to water column
- navigable water criteria-shipping, anchorage
- access for maintenance

**HARBOUR/ESTUARY**

**Sludge Management**

- drying
- transport
- re-use

- proximity to STP/s
- method of transport-pipes, trucks, boats
- proximity to resource re-use facility-composting, land spread, OFS, other

## **5. First Small Group Session** (Friday morning)

The participants were randomly assigned to one of eight groups in order to reflect various stakeholder perspectives. In the first small group session participants were asked to state any issues and concerns they have coming into the symposium or which were raised during the opening session. They were also asked to formulate a clear set of questions for the expert panel in the afternoon.

The following is a detailed report from each small group on their issues/concerns and questions.

### **5.1 Group 1**

#### **5.1.1. Issues**

##### **! Do It**

- How to ensure that the project goes ahead in the agreed form
- Lack of action due to a minority group of voices
- Complete agreement to do something, even if it's just a beach clean-up
- An implementation schedule be adopted which will ensure a reasonable phasing of the work to be done in keeping with resources
- When can we take this off the committee conferences and into action (positive) with a time table committed
- The ability to make a decision and stick to it, regardless of source, no matter how vocal, opposition
- How to ensure that the project scope is fixed at an early stage (& not changed) and the project proceeds to closing expeditiously
- Solid time line for completion, whether in stages or otherwise
- Implementation schedule.....determination of priorities

##### **! Source Control**

- Good source control
- With good source control and diffusers all outfalls into a discharge pipe that discharges well out to sea, why do we need any treatment plants?
- Combined sewer outfalls

##### **! Regulatory Requirements & Their Impact on Design & Cost**

- What will be the regulatory standard. i.e.. what will be legal
- Secondary treatment system designed for chlorinating vs. 'wetland' or other emerging technology
- Provincial treatment requirements
- How clean is clean for the harbour? i.e.. the degree of clean-up which is acceptable

##### **! Multi Plants Location: Siting and System design**

- NIMBY

##### **! Containment -Barriers in place in case of malfunction of treatment facility**

- ! Containment - What does it mean? How does it apply? Inner Harbour vs. Outer Harbour. i.e.. dealing with waste close to home
- ! Public Information and Participation
  - Implementation of Symposium follow up formation of an action committee formed of interest groups, stakeholders, etc.
  - Insurance that process is not interfered with for political or personal gain
  - Delineation of real issues and impediments as opposed to perceived problems
  - Control over the system to ensure the public's interest is served
- ! Project Impact on Future Development
  - A significant issue will be to design the infrastructure of any clean up project such that future development is not jeopardized. In some way it is crystal balling what developments are likely to occur in the future. This is particularly important in regard to industrial development potential as opposed to residential development.
- ! Funding & Costs
  - Funding - How? and ensuring that the funds stay in the correct pot. (not dipped into)
  - An affordable, cost effective method be developed
  - Determination of cost responsibilities
  - Funding, Federal/Provincial/municipal split
  - Taxation for construction/operation of infrastructure and/or STP vs. user fees
  - When will we have commitments from Federal and Provincial governments in place.
  - Now, before federal and provincial elections is the time to ensure those commitments
  - Letting the Federal and Provincial governments off the hook, financially

### 5.1.2 Questions

- ! Source
  - Can source control proceed without full agreement on the rest of the project
  - When will it begin and how will it be implemented? How will provincial and federal legislation affect it?
  - Wish to know of implementation strategy, funding sources, by-laws regulation, enforcement structure, monitoring activities, time lines for source control management
  - Can source control activities start immediately and can we establish a time line for implementation?
  - How much worse will the harbour get polluted in the next 10 - 20 years if nothing is done, except for vigorous source control?
  - Why has little action been taken on source control?
  - Can source control activities proceed independently of the planning/building/operation of an STP?
  - Some immediate steps could be taken to clean up the beaches from (floatable) waste e.g., plastic tampon applicators. Could the Mayor show his leadership now by putting a immediate ban on the use of these types of pollutants

- Will the new Oceans Act have any impact on the project? In particular if the existing acts are being complied with will the Oceans Act over ride any decisions made pursuant to the existing acts. If not, financial institutions may be reluctant to underwrite the cost of project development
- Does provincial legislation enable HRM to require source controls & or pre-treatments at source (i.e.. industrial discharge)

#### ! Site Selection/Treatment Type

- What comes first - Decision on type of technology to be used or the site or sites of the treatment areas
- What level of sewage treatment is being proposed
- Will sewage generated by an area be treated & discharged in close proximity to that area
- Has there been any decision on the # or placements of sewage treatment plants

#### ! Process

- Why do you think the public will be interested in the restart of the project when unemployment, education and health issues are on most people's minds
- How many more times are we going to revisit, redesign the project, because we don't like source of the aspects of it.
- What was the reason that the Halifax Harbour clean up of the early 90's failed? Was it simply the cost? If not, what were the key objections?
- What differentiates the present initiative from the previously unsuccessful ones. Why did the others fail and have the lessons been learned? Does the present process itself introduce more possible barriers to success.
- What will happen to all of the findings of the previous 140+ reports and studies conducted in the last 30 years and which cost \$50 million + . Do we have to re-plan our plan of action?
- What form will the process take to develop consensus among citizens on an acceptable project?
- The political process in NS has often led to friends of the politicians (consultants) making money from projects such as the harbour clean up without necessarily addressing the publics best interest. How can we ensure the public interest is ensured?

#### ! Funding

- Will other areas that now treat their sewage be part of the paying process of the overall harbour cleanup
- Is it proposed that the Fed and Provincial governments will be full funding partners in this project
- What is considered a reasonable price/household to have to pay for a completed waste water management system.
- Is public/private partnership being considered
- Is it the intention of HRM to ask the private sector to become involved in the process
- Has there been a comparison of the cost to the home owners of the harbour clean up with other municipalities
- Have the federal and provincial governments given any indication of a willingness to participated in the project
- Has a discussion been made on the organization that will own and operate the treatment plants: HRM, HRWC, Public/Private partner

- To what degree will public control be lost in a public private financing partnership? How important is this if it accomplishes effectively the goal?
- If partnership arrangements are to be pursued with vigour will the standards/regulations be defined well enough for the private sector to adequately determine future cost implications in order to secure long term financing
- Is cost the primary consideration to the environment, socio-economic and public needs criteria?
- What kind of system is generated at each cost scale?
- As a community our regional government has accepted the findings of the Fournier Report and the Federal/Provincial Environmental Assessment Review Panel, can we just budget our implementation of these studies?

**! Technical**

- Difference between solar aquatics and rotating biological contractors. A variety of new tech should be considered - how will their effectiveness be evaluated?
- If the decision that more than one treatment facility is chosen wouldn't it be sensible to choose the technology according to the needs of that region and what are type of system would be most suitable. i.e.. Engineered wet lands in one area, tertiary treatment in another
- Will there be different technologies for different areas.
- It has already been stated that some effluent will have to be discharged. We should work toward zero discharge? How can this be done?

**5.2 Group 2**

The following points are not meant to represent any consensus from the group, but rather, document the initial issues/concerns and questions of the individuals in the group.

**5.2.1. Issues/Concerns:**

- !** Concern whether we should design a system around a single facility of many smaller treatment plants, and concern over type of technology used:
- Because of tunnel costs, Herring Cove should have its own secondary plant, but should the inner harbour have 1, 2 or many plants? The cost saving for 1 plant is significant.
  - Should we be pursuing one large plant or several smaller ones?
  - Many small solar plants are better than one large treatment centre.
  - Keep it simple -- the construction of a primary sewage treatment facility will address many of the issues of environmental quality; fancy, new technologies are expensive, difficult to operate and cost considerably more over time.
  - Should have advanced secondary or tertiary treatment for Mainland South (with either conventional or alternative systems)
  - Suggestions to use innovative technologies are a concern. Are these systems proven at this scale? Technology selection is an early, critical step.

- !** Concerns over toxins included:

- At source removal of toxins makes imperative the passage of a city bylaw banning the use of landscape pesticides (herbicides, insecticides, fungicides) in the Halifax Regional Municipality.
  - Chlorination as disinfection of wastewater should be firmly and finally rejected so alternative disinfection methods can be focused on. Let's not waste more time considering chlorination when superior alternatives are available.
  - The status of chlorinated discharge is currently under review worldwide; we should not commit ourselves to costly chlorination of wastes to be discharged into saline water (a chemically useless process in any case)
  - Toxins are the single most persistent and serious problem in the long-term, and should be given dramatic priority.
  - Sludge should be toxic free and used as a resource
- ! Concerns about financing included:
- Financing of project should be based on an increased taxation rate geared toward higher users (user-pay)
  - Residents have already "paid" \$45 million as part of the pollution control fund. Should we also be considering alternative sources of financing.
- ! Issues/concerns over technology, integrated sewage treatment systems and siting included:
- The Halifax Harbour Task Force basic principle #4 (...focus on protecting those areas of the harbour where the quality is currently good) be accepted and interpreted to mean no sewage treatment plant in, on or near McNab's Island Regional Park.
  - Siting of Outfalls: the HHTF recommended one large outfall -- if multiple plants are constructed with new, larger, deeper outfalls, the fate of the particles (with their attached contaminants) must be studied to determine where the particles are likely to settle.
  - Sludge management raises a number of concerns -- how to do it; where; how to minimize it (i.e., solar aquatics); how to make it a resource instead of a waste.
  - Rethink predicted quantities of sewage sludge based on models keeping particles in suspension for maximizing biological breakdown and uptake by plants and animals (as in solar aquatic systems), rather than on models encouraging rapid settling of waste products.
  - Source control is a societal large problem -- should any of the money for a sewage treatment facility be spent on this?
  - Source control is the highest priority -- it must be effective, but how much money and from what budget?
  - That on the principle of minimizing capital costs of construction and operation of a sewage treatment plant, that it not be placed in a location lacking basic amenities (roads, rail, electric power, etc.) because these provisions will increase the cost further.
  - Planning of land use in the Williams Lake/Purcells Cove Wildlands and implications of a tunnel on the future land use is a key issue -- current land use is wildlife habitat and nature recreation. No development should be allowed to compromise these current uses.
  - There must be protection of the environmental integrity of the Williams Lake/Purcells Cove Wildlands (Mainland South) -- a sensitive granite based landscape of heath barrens, acid bogs, Jackpine stands, lakes, streams, and ponds.

- Herring Cove treatment plant issues and concerns -- if located close to the outfall I am concerned about the destruction of a historic village (the village road would have to be widened for construction and later sludge removal and maintenance); the village character would be destroyed; I am worried that the money will run out to do proper landscaping.

! Principles and long-term visions included:

- Citizen control -- the “citizen-led, multi-stakeholder consensus decision-making process developed by the National Round Table on the Environment and Economy should be adhered to for all aspects of this process -- including long-term management.
- All stakeholders consensus decision-making is inefficient if not impossible. Political decision-making by elected representatives is established by historically very poor with respect to environmental concerns.
- We should consider this “resource Management”, not waste management.
- We should mandate demonstrable sustainability
- There is a lack of public confidence around this issue
- There has been mis-directed and mis-allocated funds since the early 1970s.
- “NIMBY” Not In My BackYard is still a dividing issue.
- Long term Vision -- add a specific process to make certain this is in place for long-term planning . Make certain this citizen-led, especially including environmentalists who have shown vision.
- We must provide for a process that is affordable, sustainable and will provide for the incremental recovery harbour ecological system.
- No matter what we do it should NOT make the harbour or surroundings worse off over the long-term.
- People should be made aware of the underground system of sewage collection and its treatment, and what is required for these processes.
- At Source Public Education: e.g. apply a fish stencil over storm drains to remind residents that living systems are affected by what is placed in street drains.

### 5.2.2 Questions

! What are the criteria for and who will make decisions on:

- location of sewage treatment plant(s)
- location of sewage pipes and tunnels
- location of outfalls

! What is the purpose of this symposium? (rubber stamp?) Have decisions been made on any of the following:

- Sites for the plants
- plan to ensure public input for all levels of the process and eventually long-term monitoring/management of the treatment systems
- Communications strategy to ensure public participation

! Treatment Options: Primary treatment shouldn't be the only treatment level -- wouldn't some communities (and the harbour) be better served with advanced treatment (tertiary) through conventional or alternative systems

- ! Water Quality: Why must we always assume discharge to the harbour? What would our water quality objectives, treatment options and final water quality be if we considered other discharge and effluent options?
- ! Public Awareness: How can we make the public aware of the urgency to clean-up the harbour and get their support?
- ! Planning: how can we integrate planning land use and housing developments into part of the overall treatment strategy?
- ! Do we have any viable solutions to evaluate now?
- ! What is the time frame for the entire strategy? When will it start?
- ! What kind of strategy can we devise to finance the project -- capital costs and maintenance/operating costs? Can we ensure a better return on the funds being set aside?
- ! How would you implement a water conservation program?

### 5.3 Group 3

#### 5.3.1. Issues (consensus was achieved regarding the following priorities)

- ! Move forward (do something) immediately, in a full, planned and prioritized manner.
- ! Cost to take into account public expectations and considered use of alternative technologies
- ! Adopt some form of user-pay system which is equitable and provides incentives to conserve
- ! Identify contaminant sources with adequate controls at source
- ! Stratify levels of treatment in accord with nature of contaminants
- ! Public treatment system must not be in conflict with law/regulations

#### 5.3.2 Questions

- ! How to control waste water problem at source?
- ! How to implement a phased approach to treatment where higher-cost solutions are applied only as needed?
- ! Why are Federal and Provincial governments not part of the funding solution?
- ! Why can't a range of solutions be used, as appropriate, for respective areas?

### 5.4 Group 4

#### 5.4.1. Issues

##### ! Financing Issues

Summary: Major concerns are whether costs of projects and tax impacts will be too great -- create public opposition to project. There is interest in a phased project to control costs. With regard to implementation, there is concern about implementation process and what do we mean by "ownership".

- Issues identified by individual participants:
  - Public ownership through the Water Commission would be preferred. The Commission has expertise and the sewage system is water based.

- Private sector involvement is not needed either for a source of capital nor for shared risks, and is not appropriate in an essential service/ natural monopoly situation.
- Cost is a major concern regarding the impacts on taxes and on feasibility of the process actually moving forward.
- What should the size of the project be? \$100m ?, \$200 m ?
- Who should be the partners in the project funding and at what level?
- What should be the timeframe for project start and finish?
- It appears clear that a single plant option is too costly in part because of collection system (tunnel) costs. There however needs to be an optimization of the number and location of plants/ facilities considering at all times life cycle costs, sustainability, improvements to water quality, etc.
- I am truly concerned that HRM is heading towards another mega-project - i.e., one plant. We just can't afford that.
- What level of water quality is acceptable? Can we relate to costs of relationships.

## ! Technology and Siting Issues

Summary: There is a need to define the level of technology and the scale, and the phasing of implementation (preference for a balance between new and proven technologies, implemented on a smaller scale to allow for some trial and error without high costs.)

There is also a need for a long-term data base for water quality (DO, nutrients, SS) to assist in performance evaluation.

- Issues identified by individual participants:
  - How can we use our imaginations, and state of the art technology and design, to create waste water treatment facilities that provide communities with beautiful, vibrant centres of research and education, monitoring and community decision-making that will support and sustain community employment and enhanced environmental quality that is measurable?
  - Emphasizing source controls, the opportunity exists to promote stewardship as follows: the HRM owned industrial parks should have their own treatment systems (perhaps solar aquatics).
  - New sub-divisions or new large developments should also be required to treat their own sewage.
  - There needs to be acceptance of a phased approach to clean-up. It does not have to all be done at once. It's a big and likely expensive task, but we can start one step at a time to accomplish our goals, and see real advancement in the process.
  - There is a need for a balance between new and proven technologies.
  - I do not agree with the water quality objectives/containment goals or with allowing these outcomes to drive the process. I believe the real constraints to action are political - specifically, costs and siting/ technology/ design (which are bound up together). Improvement in water quality is the goal we can all agree on -- how much improvement depends on the various trade-offs with cost/ technology/ siting/ design.
  - [Concerned about] NIMBY for siting of STPs.

- Why is primary and secondary treatment seen as necessary? Surely preliminary screening -- with monitoring -- would be a useful and affordable first step. (Always assuming that the plants could be converted later if necessary).
- What is the merit of simply extending the outfalls with diffusers such as Dartmouth Cove and Historic Properties -- as an interim of permanent solution?
- Oil from sludge or any incineration technology should be rejected now and not resurrected. The sludge product should be used as compost.
- The emphasis should be on small scale technologies located at consolidated outfalls.
- What studies, that have already been completed, will form part of any solution?
- Major concern: no long-term data base of water quality observations exists for any location in Halifax Harbour. It is therefore not possible to “measure” improvements after construction of a sewage treatment facility. Requirement to establish monitoring stations for dissolved oxygen, nutrients and suspended solids as soon as possible.

## ! Decision-making

Summary: Need to promote individual ownership and responsibility to move process forward in a timely fashion and to implement the solution. There is concern to promote public participation in effective decision-making.

- Issues identified by individual participants:
  - Follow-up [to symposium] should be on a public, consensus model based on the type of consultation used for the solid waste (garbage) issue.
  - The push to have an extensive public consultation process before proceeding to identify solutions and implement.
  - We need all members of the community to accept responsibility for waste management and reduction.
  - There is difficulty in reaching consensus. The process requires some degree of flexibility but needs to move forward, rather than be derailed again.
  - We need an integrated watershed management policy and framework that ensures that issues such as sewage treatment are addressed.
  - The whole process of environmental assessment needs to be reviewed and revamped -- the current system invites bias and inaccuracy.
  - I am not convinced that HRM has the interests of the areas outside the former city of Halifax at heart. (Note the picture of Halifax used as a backdrop for the plenary.)

### 5.4.2. Summary Questions to Expert Panel

#### ! Financing

- Can we agree as a community how much we can afford to put into the project?
- Can we afford the project if neither the federal nor provincial levels of government agree to participate?
- In any even, could the project be phased-in [over several years] to control costs?

- Is it possible to cost a range of options which could be decided upon and acted upon in a phased manner?

! Technical Systems and Site Selection

- How can we achieve a successful site identification and selection process?
- What are our goals for water quality?
- Can we use a phased-in approach to achieve these goals?
- How do we monitor water quality in an on-going fashion to measure improvement and future needs?
- How will decision-makers select the appropriate technologies?

! Decision-making Structures and Processes

- To what degree do we need public involvement, and how can we design a process to allow effective involvement?
- What are the implications with respect to different decision making structures, and with respect to accountability?

**5.5. Group 5**

**5.5.1. Summary of Issues and Related Questions**

- ! Too much time spent searching for solutions as opposed to implementation
- ! Overall planning of the shoreline on the total harbour; i.e. industrial if and where
- ! How to best deal with the NIMBY syndrome. This is critical to location of multiple STP's
- ! Given the project is planned, funded, etc., will a responsible group monitor publicly its work in progress?
- ! Why are we not enforcing current regulations?
- ! When do we intend to implement "at source" controls?
- ! Why not legislation to prevent pollution control fund from being used for any other use but harbour clean up?
- ! How do we ensure that we understand public attitudes toward the issue and develop a strategy to change attitudes as necessary to achieve public acceptance of the solution?
- ! What's the relationship between conservation and source control..., and the overall clean up solution?
- ! No incentives for resource conservation
- ! The project must not lose the focus on conservation and source controls.
- ! Concern: that the overall clean-up project will not include environmental monitoring to ensure that the objectives of a clean harbour (water, sediments, etc) are being met as project develops and continues.
- ! What's the process to determine the affordability of the project?
- ! How will we (stakeholders) finance the project?
- ! Project budget? Total \$ - # of years?
- ! I am concerned that the project may be further delayed due to high costs because some have the view that we need the Cadillac solution
- ! Funding of capital, operating and source controls: dedicated charge, or general revenues?

- ! Cost effective approaches to control of CSO's
- ! Need to establish total project budget up front
- ! No new taxes of any sort!
- ! Public buy-in to funding options very necessary. How will this be addressed?
- ! How will the treatment options be selected?
- ! Would like to see cost comparison between solar treatment and non- solar treatment
- ! Is the treatment of all wastewater necessary?
- ! Is the degree of treatment recommended in the task force report the objective to be achieved?
- ! Application and interpretation of the "containment principle"
- ! Sludge management is often overlooked. It is a significant issue to deal with.
- ! Removal of toxins/hazardous materials from wastewater should be a priority.
- ! Pollution control fund is now 45 million. What is annual rate of growth?

## **5.6 Group 6**

### **5.6.1 Issues**

When the group brainstormed on issues they came up with the following key areas:

All of the following statements have not been tested for agreement or disagreement; some represent the views of just one person.

- ! Project Management should be based on the following principles:
  - thoroughly planned with a long term vision
  - the whole management process must be accountable and transparent
  - there must be a balance between treatment and cost
  - source reduction should be an important part of the overall planning
  - there should be a focusable vision that people can gather around
  - one person felt that the plan must be for the absolute end of the discharge of persistent toxic substances by a defined date (say 2005)
  
- ! Technical Issues
  - Solutions must be technologically valid, not economically expedient for selected "pet" proponents.
  - an advanced primary treatment system is the best
  - there must be versatile secondary benefits
  - the technology must be up-gradable, safe, sustainable, while minimizing risks
  - systems must be manageable, affordable, and effective
  - there must be a set of criteria to ensure all of the above bullets
  - there should be some validity done of basic scientific assumptions (i.e. containment principles); there may be a need for more baseline data
  - there must be systematic technical configuration (i.e. location, types of pumps, appropriate infrastructure)
  - there must be a systematic sludge management plan

- industrial technology should not be the sole driver of a good solution
- there should be some examination of alternative technologies taking into account different harbour uses
- plan must treat sewage as a resource not a waste product
- need discussion of alternate treatment processes and costs beyond the traditional primary advanced primary, secondary, tertiary.
- need a broad philosophy of technology - i.e. what is the breadth, security, versatility, cost, and secondary benefits?

#### ! Public Involvement and Decision-Making

- the process should be holistic involving open discussion with a myriad of solutions
- the process must be accountable and transparent at all times and at all steps of the process
- there must be involvement of groups outside the technical circles
- there must be real community input
- there must be consensus-building
- HRM should look at a variety of models for coming to a decision which is not only consensus building in a consultation format
- there should be a way to involve people in future solutions
- there should be a high priority given to this issues to ensure that there is on-going two- way communication
- group overseeing this symposium should make a commitment to making sure recommendations are listened to and looked after

#### ! Costs and Financing

- only do as much as can be afforded based on the most benefit first
- all costs must be included
- it must be affordable
- should be an incremental approach possibly
- all costs should be borne equitably throughout metro
- polluter should pay
- all people are polluters
- costs should include ecosystem health and in-kind benefits
- there must be a full costs analysis

#### ! Education

- education is a cost but also a source of revenue
- education avoids costs and promotes future solutions
- is needed to gather public input and raise acceptance of forthcoming solutions
- can increase positive public perception
- long term education is needed now and in the future to insure commitment and accountability
- an education strategy should be formulated ASAP. It should be comprehensive in its format to engage the public and ICI users
- appropriate resources should be allocated for this process

- education will also help to ensure that the public who participate in the decision-making are informed
- education processes should be interactive

! Water Quality

- Group # 6 is in general agreement with the water quality objectives with the following exception. This group would like to have as an objective to move the NorthWest Arm classification from inner to middle harbour

## 5.6.2 Questions

The following questions were generated from individuals for the panel. These questions are listed in order of importance according to voting carried out by the group.

- ! What is the planned educational strategy for the public and the ICI sector?
- ! What assurances can you give to those people who view this symposium process as an artificial exercise that recommendations from these two days will be taken seriously? Please be specific.
- ! Will the HRM accept the Polluter Pays principle and stop asking other levels of government (and therefore other taxpayers) to cover the cost of a harbour solution?
- ! Considering the fact that home grown technologies carry long-term benefits in terms of employment and generated by further marketing of the technology and considering the fact that we're also in a considerable hurry, can a modest fund be created to allow credible local ideas to get up to scratch and compete in the selection process?
- ! Have we lost sight of the larger picture? We need to understand the implications of any technological solution on the larger environment. Asking the question "what really makes sense in the larger picture?" often puts things back into perspective and points to natural processes which have always made sense and have been simple in principle and have not led to dangerous concentrations of the problems we have encountered.
- ! The question mark surrounding the containment principle (as offered by Lesley) may be well founded. The effects of raw sewage are not necessarily well known (along with the associated contaminants). Before assuming too much in this regard, should it not be appropriate to adequately deal with associated questions first?
- ! Is the city going to prepare a full cost analysis of costs including social, environmental, technology, sustainability, and in-kind resources so we can get a better picture of spin-off costs?
- ! The mayor, acting on behalf of HRM, has stated that he will drive something through if we do not come to a consensus solution. What will he do?
- ! Does this symposium approve the essential role of community-based citizens groups in developing, organizing, and implementing a harbour clean-up?
- ! What is the technical configuration of the project, i.e. its validity (must be scientific, practical, and honest)? Versatile? Economical? Effective? Manageable?
- ! Should rain water be flushed through underground pipes? Reduce the costs generated from this infrastructure by allowing natural processes to occur, i.e. allowing rain water to seep into the ground to maintain water table and to evaporate to replenish the rain cycle, collection of rainwater for water use at home.

The group also requested a table of tax and rates (average amount, average dollars/year) for 100 million, 150 million, 200 million, 300 million which was supplied by HRM.

## **5.7 Group 7**

### **5.7.1 Issues** (not listed in order of priority)

- ! Ownership/Public Private
  - The solution is mired in politics and financing concerns. The problem is not technical. We should define the deliverables required, the incentives offered and allow the private sector bid on the solution.
  - Public private partnership v. Municipally owned.
  
- ! Infrastructure
  - Separation of stormwater and sewer lines.
  - Implementation of at-source control measures/programs
  - Natural treatment systems.
  - Level of treatment required.
  
- ! Long Range
  - Sustainable and long range plan of waste water management.
  - Time lines: how long until we see results?
  
- ! Money
  - Capital v. Operating costs.
  - Payment: increase in taxes v. Increase in pollution control charge.
  - Financing: some element of user pay to encourage conservation.
  - Issue of who benefits from the harbour cleanup, and who should pay.
  
- ! Sites
  - Bylaw consolidation to ensure effective water use and take advantage of new technologies.
  - NIMBY - location of plant or plants.
  - Treating of Mainland South sewage in Mainland South.
  - Neighbourhoods to assume local responsibility for wastewater treatment.
  - Several site treatment options.
  
- ! Public Input Method(s) - Ongoing
  - Political interference.
  - Role of staff v. Politicians v. Public.
  - How can we ensure community input?

### **5.7.2 Questions** (The categories are listed in order of priority according to the group)

- ! Legislation: What legislation applies to the Harbour solution?

- Should the containment issue be fully opened?
  - Is HRM prepared to harmonize and re-write by-laws/regulations affecting wastewater treatment?
  - How can we ensure that our laws are enforced or changed?
  - Can we move the municipal/provincial planning legislation to permits or performance base?
  - What level of treatment is required? Do we know?
- ! Legislation: Will the various levels of government harmonize legislation?
- ! Legislation: Will HRM commit to compliance?
- ! Costing: How will funding decisions be based on full life cycle costing or lowest cost to HRM taxpayer?
- To what extent has the public - private partnership funding option been investigated?
  - Are we really open to the adoption of a fully privatized approach?
  - Is a sustainable, long range plan affordable, manageable and desirable?
  - Can we stage implementation over 10-20 years?
- ! Costing: How much are we prepared to pay?
- ! Public Input: How do we ensure effective public participation?
- How do we educate the public?
  - What input will general public have in location of facilities?
  - How often will we have these types of meetings?
- ! Technology(talent): How can we maximize the involvement of local talent
- ! Other technology questions:
- Can we use a variety of technologies in the implementation?
  - Is it preferable to have one large treatment plant or a series of them?

## **5.8 Group 8**

**5.8.1 Issues/Concerns** [note: many expressed in question form; \* indicates issues that group felt were particularly important]

- ! Public Participation
- Best methods of involving the public in all aspects of the issue including location of plants. \*
  - Low tech solutions can involve the public in concrete ways (eg: high school and university students, community groups)
  - How can we ensure that Council will be reasonable in following concerns of symposium?
  - Community involvement is not a legislated involvement but an involvement of a natural process (eg: other programmatic uses that co-exist with sewage treatment.
  - Establish public support for project or proposals.

## ! Siting

- Ways to ensure plants can be integrated into existing neighbourhoods, either residential or commercial. \*
- Location of outfall pipes.
- Location of treatment plants.
- Public support for project and siting is essential for success.
- Siting of facility - use of technology to establish non-offensive, compatible facilities with existing development.
- Siting criteria - single/multiple/locational.

## ! CSO Separation

- Bob Parkers assumption that one could not separate storm water and sanitary sewage is surely wrong. Do we not agree that the HRM should develop a long-term (eg: 50-year) plan and that each combined sewer when replaced be replaced in the same ditch with both storm and sanitary sewers? \*
- Parker assumed that the same agency for water treatment and water supply would promote water conservation. Can not this be achieved better by building code requirements?

## ! Treatment

- What level of treatment is required? Develop agreement on what has been established for both Bedford Basin and the inner and outer harbour. \*
- Do we not agree that oil from sludge which requires all the sludge to be at a single, very expensive plant is not now the best way to handle sludge? \*

## ! Multiple/Single Plant

- Can we not agree that multiple plants are better than a single one? \*
- Can we not now agree that a single plant, or any STP on McNab's Island, which requires incredibly expensive tunnels and pumps, etc. etc. is not acceptable?
- Do we need to wait for a single mega-project or develop a phased program with several plants?
- Can we not agree that a single plant requiring all the money up front is not now practical and that we should start now to address part of the problem?
- A decentralized system would be a very interesting urban challenge.

## ! Cost/Funding

- Funding - user fees or taxation? Private partnerships or municipal utility? \*
- Can we agree on a reasonable cost per household for the building and maintenance of the treatment plants? \*
- Project costs vs. objectives: The federal and provincial governments must accept that the balance between risk and reason must be discussed, keeping in mind that \$ may dictate 'go' or 'no go'.
- How much are we willing to pay?
- Cost/Financing - reasonable/affordable.
- How much land and people will the new Halifax Harbour clean-up be used for? - 250,000/350,000/500,000/1,000,000?

- ! Herring Cove
  - Should or could a plant for Mainland South be separated from that for Herring Cove waste? \*
  - Can a plant for the Tribune Head outfall be inland on currently undeveloped lands west of Herring Cove Road?
  
- ! Inland/County/Watershed STPs
  - Watershed management of and STPs on rivers and brooks that flow into Halifax Harbour. \*
  - What about mineral drinking water capacity (eg: Five Mile Lake - big lake behind Pockwock).
  - Dealing with new development away from the Harbour (This can be more than a Harbour issue (ie: Sackville River Watershed management).
  
- ! At- Source Control
  - Source controls; identify problems and solutions. \*
  - Elimination of waster materials at source through independent treatment facilities.
  - Industrial Park sewage plants - each plant and park must have one before discharge into main sewage system.
  
- ! Planning/Implementation/Timing
  - Time required to implement: \*
    - Much of the necessary studying complete.
    - Situation worsening
    - Crucial to put initial steps/phase into place immediately while future moves developed.
  - Incremental cleanup or big fix? \*
  - Do we agree that the Dartmouth Cove combination of 4 sewers with 75% of Dartmouth's sewage should be first priority for proper treatment? \*
  - Establish program approval re development of proposed solution.
  - Civic solution to move on from here with monitoring of results.
  - Sewage treatment cannot be seen as an isolated activity with to urban and social impact.
  - Development of long-range goals to enhance, upgrade, redesign existing system once in place.

## 5.8.2 Questions

- ! Siting and Location
  - Aesthetics - residential? ( eg: Eastern Passage and Herring Cove) - expansion in relation to site capacity?
  - Location - integration/water's edge or up the line?
  - Control development growth using siting?
  
- ! Technology
  - What level of treatment?
  - Carrying capacity of Harbour?
  - Can we use previous research?
  - Technological precedents (eg: other cities)?
  - New systems or combined sewers (infrastructure)?

- Can we combine technologies?
- Treating first flush?
- Seal pipes from infiltration
- Can we accommodate changes in capacity and technology in the future?

! Water Quality

- Individual user must come into the solution (eg: boat clubs, fishers, etc.)
- Increasing user responsibility (eg: large apartments; industry, etc.)
- Response to new subdivisions.
- Road salt, pesticides, silt, oil, etc.

## **6. Summary of Group Statements** (from Friday morning)

Based on the issues and concerns raised from all eight groups, the facilitators and co-chairs developed the following summary.

### **PLENARY SUMMARY ISSUES EMERGING FROM FIRST GROUP SESSIONS (FRIDAY AM)**

1. Water quality objectives developed by the Fournier Task Force and adopted by the federal-provincial environmental assessment panel may have to be fine-tuned depending on sites selected for treatment plants and outfalls as well as updated water quality standards.
2. Sludge management will require further consideration, in particular emphasizing how to make it as clean as possible. There is a relationship between sludge quality and source controls.
3. The technology issues include the best vs. affordable; small scale vs. large high tech; alternatives vs. tried and true; local expertise vs. imported; phasing.
4. There is a large interest in the source control program under development including how it is implemented; what can be achieved; how polluters are to be educated.
5. Participants are interested in confirmation that treatment plants can be designed to fit into neighbourhoods; impacts can be mitigated; whether single or multiple plants are more easily sited; how Herring Cove and Mainland South are to be addressed. Herring Cove wants to be treated fairly.
6. There remains a debate about financing from an affordability point of view or an environmental point of view. What should come first? There was also discussion over whether capital costs or life-cycle costs should be the basis of the decision.
7. The “user pay” principle received attention as a possible strategy as long as there were incentives for conservation.
8. There is concern about the public participation and community involvement process that will follow. Participants want to be kept informed; they want the decision-making process to be transparent; and many want a reasonable balance between too much consultation and inadequate participation.
9. Participants want clarification of federal and provincial regulatory and assessment roles relevant to sewage contamination and treatment in Halifax Harbour. For example, some people want to know if the municipality is contravening existing regulations.
10. Some people were concerned that pollution control funds could be used for purposes other than for which they have been collected.
11. Many participants see an ongoing education program regarding the role of citizens, institutions, businesses, etc., as consumers and polluters as important in addressing the Harbour.

12. There is a sense on the part of many participants that action must be taken as long as it is done within a context of public participation and communication.

## 7. Second Small Group Session (Friday afternoon)

In the second small group session (Friday afternoon) participants were asked to consider the issues and concerns raised from their group as well as the summary from all groups. From this they were asked to develop principles and objects for the Harbour solutions that would address these issues.

### 7.1 Group 1

#### ! Methods of financing

- the term funding should have been used instead of financing
- start from the last cost-sharing agreement
- develop a cost sharing formula that includes municipal/federal/provincial/ private or some combination of these
- release a report that indicates what the taxpayer has received to date for the dollars that have already been put towards this project
- this will indicate how much more people are willing to pay... it may depend on ability to pay.. there may be those who can not afford to pay more
- in regards to funding .. is it split sewersheds vs. one project. e.g. mainland south
- polluters pay.. this is either based on water use or sewer use

#### ! Technical and Target Criteria and Siting Arrangements

- use the existing information. For eg. HHCI has siting criteria that has been accepted by the public. Therefore adopt them.
- the Fournier report and the panel report in the spring of 1986 are other examples
- technocrats or experts have to advise regarding siting arrangements
- establish options that are then taken to the public.
- the existing development has certain constraints. They must be outlined further
- ministerial order under the panel says mainland south will be reconsidered. This should be reviewed
- there will be some hard decisions that have to be made that will not be agreeable to all involved. The jurisdiction that has the authority to make the decisions must make the responsible decision whether or not total agreement has been arrived at, in order for the process to continue. The residents must be willing to accept this
- all of the above have to be done with on-going public consultation that includes meaningful public participation which means adequate information being disseminated
- the tendering for engineers etc. had to public and an open process

#### ! Legislation and Regulations

- existing legislation must be clarified and enforced. If this had been done years ago perhaps we would actually have a system in place

- there are existing laws that are not being enforced, this must be done. The enforcement must be realistic and thoughtful. This could be in form of fines being levied, newspaper reporting of offenders etc.
- sewer charge by-laws are a key element to this process. This will include who pays, what it is used for, what are the source controls, what are the enforcements that will be put into place and what is the ability to make these enforcements a reality
- Dartmouth has by-laws, and has money towards this fund. It has to be assured that these moneys will be used only for sewer clean-up
- watershed management has to be put into place as a basic principle to the whole process
- if you prevent the pollution there will be no need for control of the problem
- with all of the above, a time limit must be put on the achievement of the regulations and legislation in order to go forward

## 7.2 Group 2

During this session, Group 2 discussed the general principles of Source Control, Water Quality Objectives and Containment, as well as many issues identified by the group in the morning session.

- ! Have a goal of “Zero” Discharge in the long run (i.e. fresh water quality effluent)
  - Process: Implement in stages so all new development, etc., conforms.
  - Objection: zero discharge is not realistic: humans exhale, urinate & defecate; stormwater will runoff from paved areas, towns & enter receiving waters. We cannot get this to zero. There are more useful principles, such as: meet a discharge standard, or flow of X per person or household etc.
- ! Any system must be environmentally and financially sustainable.
- ! Community (stakeholder) involvement in design and development as well as decision making process.
  - “Citizen Control” - the citizen-led multi stakeholder consensus decision-making process a developed by National Round table on Environment and Economy should be adhered to for all aspects of process, including long term arrangement.
- ! Integrated Resource Management Plan, of which sewage treatment is one part.
- ! Technology
  - Principle/Objective - say NO to oil-from-sludge.
  - Don’t chlorinate wastewater going into saline water (waste of money!)
  - Chlorination - no need to do so if waste stream is going into marine system. Also alternative to PVC pipes need to be identified.
- ! Phase in new technology using the money we have, so possibly multiple, small scale facilities will be best route.
  - Options - To encourage a gradual phase-in of treatment systems, provide an apparatus of choice for sub-regions of the Halifax Municipality that may elect to build small alternative treatment sites - with an associated reduction in utility charges paid to the city as a whole.

- Need to be creative and resourceful, not rehash earlier approaches. For example, underground treatment plants. Above ground: could have parks, community centre, etc. on same site! This would mean communities would be positively, not negatively impacted by presence of a plant.
- !
- ! Need to emphasize: source control; effluent control; treatment of the harbour itself. Deliverables, if any, should be identified for each of these and well-publicized. Then no one expects “clean-up”. Mitigations can be put in place to ameliorate the situation in the harbour.
  - ! Source control is one part of an overall strategy, but must get buy-in and money from other sources, not just the waste treatment budget.
    - Disagreement on Statement: “...don’t jeopardize sewage treatment by spending on SC for public education, etc. when true “source” not being addressed, and SC just one part of waste management.”
    - Source control is necessary.
    - It can and should start now.
    - It must include some element of enforcement.
    - should not be part of the costs associated with construction of a sewage treatment plant.
    - perhaps 5% of waste management spending could be devoted.
    - must identify what toxins exist and where they are from - sediments vs. water.
    - this is the greatest possible return for money spent for solving waste stream management.
    - source control should be addressed nationally and provincially and must be part of municipality funded program for Halifax Harbour solution.
    - Reduce input/output
    - educate public on conservation benefits.
    - SC must be part of a larger municipal wide waste management strategy. SC will contribute to our goal of improving the condition of the Harbour, but can & should be achieved through strategies (& Moneys) linked to other industrial initiatives, polluter pay principles.).
    - SC should include control of the volume of water (I calculate 140 l/per/day domestic usage) that is a problem in itself. The simplest way is to make water more expensive, then people would conserve it more.
    - SC is important to include in the budget for sewage treatment (approx. 15% of the total cost)
- !
- ! Water Quality
    - WC objectives - agree, but upgraded to current regulations and keep flexibility to accommodate future needs.
    - If we insist on discharging mildly treated effluent to the Harbour, then we can be satisfied with the WQ objectives.
    - If we want to look at other treatment and discharge options, we need more stringent effluent quality objectives and we can increase our WQ objectives.
    - Do not revisit - OK as defined in Task Force report.
    - Standards proposed are accepted on the assumption that effluent discharge into the Harbour is part of the plan.
    - The effluent from sewage treatment installations can and should approach drinking water standards using a sequential series of biological filters and cleansers (eg. Solar Aquatic Systems).

- All new subdivisions/institutions such as industrial parks should approach drinking water standards before it reaches any older collection system already in place in HRM.

! Containmentment

- can only accept the principle as stated at opening if one accepts notion of discharging still contaminated effluent to the Harbour.
- do not need the containmentment principle if we have higher effluent quality objectives. Treatment of the effluent to fresh water quality discharge levels opens opportunity to examine the decentralized treatment options.
- great idea - best approach
- to me means keeping the dirtiest stuff in the dirtiest parts of the harbour and not dispersing it into the clean parts of the harbour. That is a good idea.
- not happy with the implications of containmentment:
- source elimination of toxins may render it unnecessary
- drinking water standards for effluents may render it unnecessary
- toxic layers already on the bottom of the harbour should be protected from all avoidable forms of turbulence (anchorage) and possibly covered with barrier sediments (not necessarily from more sewage effluent)

! Public Education (Qualifiers and Questions)

- The benefits of this project should be presented to the public, but real benefits only. Be honest with telling the public about what they get for 100 or 200 million.
- What does the HRM (staff & council) think about the “true cost of water” principle?
- What has been done so far to familiarize the general public of the project?
- Is there not a link between people consultation/involvement and increase of sensitivity from the public?
- How could the people receive incentives for reducing their water consumption? I agree they would pay less but how could they be encouraged to pursue their efforts?
- Build a primary sewage treatment plant and most of your problems with aesthetics, metals, organic containments will be greatly minimized.

! Fair treatment of all sites in selection process - don't just “dump” problem on the periphery.

Locations should be environmentally and planned, not political.

! Long-run plan should be developed, not just short-term solution.

! Any sewage treatment system must not make any area worse off.

! Set realistic, achievable, goals. Be informed before decision and truthful of its outcomes.

! Reduce volume of waste going into systems. This might be accomplished by:

- public education
- incentives by rewarding true cost
- user pay
- polluter pay
- conserver save

### 7.3 Group 3

#### ! Principles

- To have an informed public process which employs the findings of the Fournier Report.
- To endorse that portion of the Fournier Report which refers to water use and quality objectives.
- Public concerns require corresponding strategies (for example, water use objectives from the Fournier Report refer to: preservation, halting the degradation process; public health, reducing pathogens; aesthetics, implications of primary treatment.
- Sustain an open examination of how to best achieve water quality objectives (for example, number of plants and consolidation of treatment processes; relate source to quality of treatment processes; relate to source to quality of treatment -let treatment fit the need.
- Communities have say in the way objective is achieved beyond certain minimal level.
- Public wants an acceptable level of water quality.
- Require phased approach to match technologies and infrastructure to future demands.
- Specify the sources (example, a list of metals) that ought to be controlled; for example, industrial sources, buried sources, in addition to sewage outfalls. Note: be cautious about emphasis on source without attention to efficiency.
- Treatment plant efficiency is assisted by source control i.e., attention to source is necessary but not sufficient.
- Cost is not the only important criterion; include such others as environmental integrity.
- Design for future expansion and for upgrading of quality of treatment.
- On-going processes to keep up with changing demands; for example, with respect to toxins, technologies, public information, plant standards, new industrial demands/requirements.
- Regional Control over location of new development.
- Take a more comprehensive approach to the area/domain of Sewage Systems; for example a “sewershed” perspective.
- Maintain the principle of containment such that; for example, contamination at Herring Cove not to increase but higher treatment levels can apply.
- Sewer separation can be achieved over the long term (not unanimously agreed).
- Establish siting criteria including public input, and hold to those criteria.
- Siting decisions benefit entire neighbourhood, with plant-design criteria being monitored and sanctions imposed.
- User pay, with attention to equity and incentives, employed to promote conservation.

### 7.4 Group 4

#### ! There is agreement that:

- HRM is in control - must move it forward.
- There is a will to start real work.
- Take a step-by-step approach to build an integrated system.
- Work within a large plan/vision that can be implemented over time.

#### ! Water Quality Standards

- Agree: Fournier Task Force and Env Review Panel objectives are still valid.

- Qualifiers: Appropriate treatment levels to achieve water quality objectives. (Remove Bob's last 2 bullets).
- Disagree: on issue of combined water/wastewater utility.
- Needs more study.
- Could be separate waste water utility.
- ! Agree: with principle of user pay.
- ! Agree (with qualifiers) on containment principles as responsible way to handle effluent.
  - May still want to put non-toxic, neutralized effluent for outer harbour dispersal.
- ! Agree: At Source Controls to toxins and hazardous waste are part of wastewater management system.
- ! Agree with appropriate strategies, consolidation of outfalls.
- ! Agree separation of storm and wastewater should take place over long term on an attrition basis.
- ! Agree with introduction of treatment screening and disinfection.
- ! Agree don't try oil-from-sludge.
- ! Agree sludge management is a major component of the wastewater management system.
- ! Agree with appropriate architectural design standards and siting.
- ! Agree immediate start, source control, planning, development vision/framework.

## 7.5 Group 5

The group agreed on five(5) primary decision-making areas within which principles could be identified and agreed to. They were:

- ! Methods of financing
- ! Technical systems and siting arrangements and considerations
- ! HRM related legislation, regulations and management
- ! Public involvement in decision making
- ! Information and education

Further, group #5 identified the following principles as representing areas of strong agreement by group members.

- ! Methods of Financing
  - Decisions concerning the design and management of the project should be water quality objectives drivers.
  - A "phased in" approach to construction and financing should be entertained, if necessary, to achieve desired objectives.
  - Financing should be "user pay" based.
  - Costing should be "pay as you go" based.
  - The financing formula should reflect the principles of source control and conservation.
- ! Technical systems and siting arrangements and considerations
  - Adoption of the Fournier task force water usage objectives.
  - Treatment plant siting arrangements should be based on finding cost effective solutions that meet the overall objectives.

- HRM should adhere to stringent planning and design principles when siting any facility.
  - Explore the potential of alternate technologies.
  - Source control and conservation methods should be implemented regardless of other treatment options.
- ! HRM related legislation, regulation and management
- Needs to be a monitoring and compliance system
- ! Public involvement
- Essential that HRM develop and actively implement a process that will assure public involvement in decisions related to water quality management for Halifax Harbour.
- ! Information and Education
- There needs to be a process (educational) to encourage/enable public acceptance of planning and design decisions that are based on sound principles and produced through meaningful public consultation.

## **7.6 Group 6**

### **Guiding Principles for Community Involvement and Decision-Making**

- ! Mission statement: To achieve community ownership by:
- open, participatory decision-making
  - interactive community-based education
  - neighbourhood meetings
  - round tables
  - workshops
  - project team should include stakeholders
- ! The structure for ensuring that this mission will be met will be a central team made up of people from many diverse sectors and stakeholders. The team (there were many ideas about what this team should be called) would engage in two-way communications on a regular basis between working groups which would be set up.
- ! Each working group would be represented on the central Project Team. The working groups would be responsible for making sure that the issues are brought to the Project Team who would coordinate all work and decision-making. As an example of some of the areas that could be addresses Group Six began addressing issues in the following areas.

### **Guiding Principles for Education**

- ! There should be a well-developed strategy for educating about:
- control at source
  - community process

- water conservation
- how the system works, what kinds of treatment systems there are
- ! The public should be involved in developing a creative, interesting mediums that engage the learners.

### **Guiding Principles for Project Management**

- ! Objective: There must be integrated planning for the future
  - The needs of each actual site area should be considered then brought together overall
  - It might be necessary to implement the project in phases
  - Public support might be best created by a phasing in process
  - Do the projects first which show the most tangible benefits
  - Planning for future/incremental installation of separate lines for stormwater and sewer
  - There should be clear ecological criteria and the ability to meet the water quality objectives
  - Each site be treated on its own for the selection of technology
  - Separate and complete selection process for each site.

### **Guiding Principles on Technical Matters**

- ! Objective: Integrated Land Use Planning
  - Look at each site and see what level of treatment is required
  - Certain areas of treatment call for specific treatments . Need to look at land use patterns with specific site characteristics and establishment of criteria
  - Force manufacturers to compete for required services
  - This approach would allow for more community involvement and jobs
  - Need decisions on what happens to existing plants
  - Separate the lines for sewage and stormwater

## **7.7 Group 7**

- ! Financing/Costing
  - User pay.
  - Maximize contribution from federal and provincial governments.
- ! Decision Making
  - Council to take quick action on source control; collection systems and plant(s) --Put in place firm timelines for implementation.
  - Council to make decisions with community input and ideally with community “buy-in”. -- Transparent and open process.
  - Establish clear regulatory requirements (rules) of both federal and provincial bodies. -- Council to get commitment on the rules to apply to this project.
- ! Technology
  - Implement source controls now.
  - Keep option open for several small plants.

- Look at the feasibility of separating storm and sanitary systems over time.

## **7.8 Group 8**

### **Public participation**

- ! Building real innovative public participation is a fundamental component for any strategy/process.
  - addresses public apathy and rejection (NIMBY).
  - must be consistent throughout
  - look for models that work (e.g. landfill process)
  - aim for consensus
  - recruit broad base - creative and future oriented (youth/senior/etc.)
  - provide appropriate public funding for participation
  - beware tied funding
- ! Try demonstration initiatives at selected sites (Dartmouth Cove, etc.)
  - utilize appropriate technologies
  - use creative incentives (e.g. composter experience)

### **Siting**

- ! Must focus on multi and micro initiatives
  - need overall strategic plan with specific tactics
  - each site requires ecological assessment
  - each site requires expansion projections and strategies
- ! Must solve problems as close to home as possible.
  - links with control at source approaches
- ! Must build community acceptance
  - aesthetic component is essential
  - community asset
  - design and landscaping
  - underground where feasible

### **Cost**

- ! Comprehensive but phased strategy
  - clear public information and education component
  - links to port planning, transportation planning and economic growth strategy
  - must emphasize costs of inaction
  - must emphasize necessity of wise spending the first time as cheapest option
  - likely target; \$100-200 million over 10 years

- ! Priorities
  - first; we design what we want
  - second; estimate what it will cost

### **Finances**

- ! Pragmatic approach; utilize all options as appropriate to accomplish goals
  - differentiated user-pay (volume/pollution)
  - tax assessment (\$20/\$100 million)
  - public/private partnership when appropriate

## **8. Summary of Small Group Reports** (from Friday afternoon)

### **General Principles for Management of the Halifax Harbour** (synthesis of ideas from Friday afternoon)

1. There should be an immediate start.
2. Have a flexible, adaptable comprehensive vision and a long-term strategy with links to other development planning, ensuring a specific time-line.
3. HRM is the lead agency.
4. There should be a step-by-step incremental approach which builds on past successes using innovation and small-scale approaches.
5. There should be cost-sharing which includes the federal and provincial governments.
6. The user pay principle is important. Incentives and conservation must be considered.
7. An on-going informed public consultation process is needed that is transparent and open.
8. Source control is important as part of the system.
9. Move forward based on the established Fournier Report water quality objectives.
10. Separation of storm and wastewater should take place by attrition and over the long-term.
11. Education is essential for an informed citizenry.
12. Support for aesthetically-pleasing architectural design for new facilities which are community assets.
13. Need for a sludge management system.
14. Harmonization and integration of legislation and regulations, with consistent, effective enforcement.

### **Areas requiring further discussion:**

- ! Siting criteria, selection, and process
- ! public/private partnerships
- ! whether to integrate water utility and waste water utility
- ! extent of consolidation of outfalls
- ! # of plants, size of plants
- ! need for innovation and alternative treatments and technologies
- ! Mainland South/Herring Cove
- ! should the process be cost-driven or goal-driven?

## **9. Plenary Evaluation**

Based on a plenary evaluation of the process and work of the day for Friday and on comments to facilitators in the small group sessions, the agenda for day 2 of the symposium was revised as follows:

### **9.1 Revised Agenda for Saturday, November 9, 1996**

#### **0900 Report to Plenary**

- synopsis
- challenge from chair
- comments from floor

#### **0945 Small Groups**

Presentation of Points of Agreement from Friday Afternoon

- endorse/reject/modify
- planning process ]
- consultation process ] 2 of 3
- financial/funding process ]

#### **1140 Action Steps/Next Step**

#### **1200 LUNCH**

#### **1300 Guest Speaker on Hamilton Harbour - Leo Gohier**

#### **1330 Plenary Report**

- Revised Points of Agreement
- 3 Strategies
  - planning
  - consultation
  - funding

#### **1415 Reaction from HRM**

#### **1500 Closure**

## **10. Third Small Group Session** (Saturday morning)

In this final small group session, participants were asked to review the draft principles and objectives, and to work on a strategy/action plan for a planning process, a consultation process and a financial/funding process.

### **10.1 Group 1**

#### **10.1.1 Revised edition of general principles**

1. HRM to develop an action plan with time lines.
2. Have a flexible, adaptable comprehensive vision and a long-term strategy with links to other development planning
3. HRM is the lead responsible agency
4. The implementation of the action plan could incorporate a step-by-step approach. Innovation and small scale approaches should be encouraged
5. Accepted as written
6. Accepted as written
7. Accepted as written
8. Source control is an important first part of the system
9. Move forward based on the established Fournier Report Harbour use objectives
10. Rejected
11. Public involvement and hands on education is essential for an informed citizenry
12. Design the facility as a community asset
13. Accepted as written
14. Integration of legislation and regulation, with consistent, effective enforcement

## 10.1.2 Action plan

### ! Comprehensive Vision

- Step 1: Provide a plain language summary to the public within 60 days. This report incorporates all relevant information
- Step 2: Use this summary to serve as a baseline to establish the vision based on the following principles: quality of life; enhancement of economic growth and development; address environmental concerns; ensure that societal needs are reflected/ via the democratic process.
- Step 3: HRM appoints a knowledgeable and responsible person(s) to ensure that the process moves forward

### ! Education Of And Consultation With The Public

- Lay out an educational program that will develop and informed and involved public
- Indicate a time frame for this program
- An appropriate structure, framework be established to collect appropriate public input
- Final decision making is a function of the municipal council
- Community councils (HRM) serve as the forum for local and general citizen involvement/interaction and education. This includes publicized meetings with dates and locations; the provision of community resources where necessary

### ! Next Step

- Appoint a project coordinator within 30 days to implement (step 1) the provision of a plain language summary to the public
- The community councils will be the means by which continuous local and general public consultation will be coordinated
- Work begins **now** to establish an action plan for a preliminary report due in 90 days
- The above plan must include a time line for the completion of the action plan.

## 10.2 Group 2

### 10.2.1 Conclusions/strategy

In the Saturday, November 9th small group session, Group 2 made the following conclusions:

- ! We must remember that the when we talk about the harbour, we are referring to an ecological system. We must understand the ecology of that system, and integrate our uses (including waste uses) around the functioning of that system.
- ! The community (and by this we mean more than HRM or the council, but the entire community of stakeholders) are the true owners of the process and the project.
- ! HRM is the initiating agency and must act in a swift and responsible manner to get waste management and solutions re-focused.
- ! There should be an immediate start to the planning and design by forming a “Waste Authority” with “working groups” for specific issues and current task areas.

- ! The “Waste Authority” and its “working groups” should be based on the principles in *Building Consensus for a Sustainable Future: An initiative undertaken by the Canadian Round Table on Environment and Economy, 1993* (As all members of the group were not familiar with this document, it was stressed that the principles of accountability and responsibility must be contained and enforced.)
- ! Planning, consultation and financing are not separate strategies, but must be all considered holistically, and integrated with a public consensus building process.
- ! Citizens are part of the problem and must be part of the solution. They must be educated with respect to their responsibility.
- ! Bring money to the table (whether federal, provincial or private funds) must not undermine the planning and decision-making principles. That is, non-fiduciaries don’t get control.
- ! The long-term goal should be Zero Harmful Discharge: zero harm to the ecological system.

There was disagreement on whether we should “... remove the harbour from being part of the waste management system” or whether “... the harbour is a complex system that has the capacity to process some materials, and ceasing to utilize the harbour now may lead to worse short term harm”.

- ! “User-pay” and “Conserver-save” are important principles to be adopted in the waste management strategy. The project should finance its operating and maintenance costs on this principle.

### **10.2.2 Revised principles**

These conclusions were based on the detailed discussion of the fourteen draft principles presented from the combined group work from the previous day. The following articulates the response by Group 2 on the draft principles:

1. There should be an immediate start to consultations for the planning and design for the waste management system to get the Harbour Solutions back on track. Where feasible, there should be immediate formation of working groups to tackle problems that can be immediately addressed.
2. Regarding the draft principle “*Have a flexible, adaptable comprehensive vision and long term strategy with links to other development planning, ensuring a specific time-line*” it was felt that this was a “vacuous statement that doesn’t cover anything...” It was agreed that there must be long-term planning. Most of the group supported a model where citizens (stakeholders) would play an equal role in the process and decision-making. Politicians and bureaucrats must be supportive of the stakeholder’s role, working with them to form consensus decisions. Time frames should be established, but a truly flexible plan cannot ‘ensure’ specific time-lines.
3. Halifax Regional Municipality (HRM) is the initiating level of government. The community own the process and the project.
4. There should be a step-by-step incremental approach which builds on past successes using innovation (where appropriate). These steps must be an overall long-term strategy.

5. Attempts should be made to secure provincial and federal funding to support the initial capital costs of waste management systems. This must not undermine any of the principles established, as bringing money to the table (whether it is federal, provincial or private partnership funding) will not alter the control and decision-making of the project.
6. “User-pay’ for all users must be mandatory. Project operating and maintenance is financed through the user pay principle, thus will be financially sustainable in the long-run. The positive side of “user-pay” is “conserver-save”, and this must be hi-lighted to assist in long-term waste-reduction.
7. Stakeholders must share the responsibility for planning and decision-making in the waste management strategy.
8. Source Control is an integral part of the long-term waste management strategy. The group had diverging opinions on the specifics of source control, and these are documented in notes from November 8th afternoon small group session.
9. There was agreement that we should move forward initially on the water Quality objectives from the Halifax Harbour Task Force Report, but with the long term goal of “Zero Harmful Discharge”. “Zero Harmful Discharge” means zero harm to the system: the effluent entering the harbour will not harm the ecological workings of the harbour. It was also noted that the water quality objectives of the North West Arm must be specified clearly based on its recreational use.
10. On the draft principle “*Separation of storm and wastewater should take place by attrition and over the long-term*”, it was felt this was a strategy, not a principle. There were two divergent views on this strategy: some felt that this was based on an assumption that this was a worthy effort, when it may have minimal advantages; others felt that by waiting for storm and waste water separation by attrition and in the long-term, we are limiting our options, as new treatment based on separate storm and wastewater could not be implemented.
11. Informed citizenry is essential for sustainable long-term waste management. Citizens are part of the reduction-control process so they must be educated about their responsibility. This should be on-going public involvement.
12. There is strong support for aesthetically pleasing architectural design for new facilities which are community assets, and in keeping with the existing ecology of the landscape.
13. Sludge management must be part of an overall waste management strategy. (While there discussion of the options for minimizing sludge, turning it into a ‘resource’ by producing a high quality compostable product, banning certain products, etc., it was recognized that this is a complex issue with no one answer.)
14. Integration of legislation and regulations, with consistent and effective enforcement must accompany the waste management strategy.

## 10.3 Group 3

### 10.3.1 Revised Principles

This group gave principal attention to strengthening and assigning priority to the 14 “synthesis” points from the morning plenary. The objective was to assist advancement of these principles as a basis for future action on the part of the Halifax Regional Municipality (HRM).

The symposium marks the beginning of a process and it is imperative that this initiative continue, encompassing the following principles:

1. Halifax Regional Municipality is the lead agency responsible for developing a realistic implementation plan including:
    - A statement of environmental objectives
    - An open, transparent public consultation and consensus - building policy
    - A local industrial benefits policy
    - An approach justifying federal and provincial funding contributions
  2. There should be a phased, incremental approach which builds on proven, cost- effective successes.
  3. Education is essential for an informed citizenry and thereby important for source control.
  4. Move forward on the basis of established water quality objectives (Fournier Report)
  5. The user pay principle is important, to be applied in an equitable way with incentives for conservation
  6. Source control is important and should define, specify, identify and justify respective sources with reference to industrial, commercial, institutional and residential uses, integrated with the solid waste management model.
  7. Support aesthetically acceptable new facilities planned to be closely incorporated into respective neighbourhoods.
  8. Alternative treatments and technologies should be goal-driven, proven, and cost- effective.
  9. There should be harmonization and integration of legislation and regulations, with consistent, effective enforcement.
- ! Areas requiring further discussion:
- separation of storm and wastewater
  - Mainland South and Herring Cove form a separate issue
  - siting criteria, selection and process
  - Public/private partnerships

- whether to integrate water utility and wastewater utility
- consolidation of outfalls idea requires a solid base of economic studies
- number of plants and size of plants

! This group solidly endorsed this symposium initiative as taken by HRM.

! Further this group asked for a change in the name: Halifax Harbour Cleanup, and offered the alternative: Halifax Harbour Wastewater Management.

### **10.3.2 Action Strategy for Financial/Funding Process**

1. Plan the project to achieve the water quality objectives even if present resources cannot accomplish full implementation.
2. Plan to achieve minimum life cycle cost. (Examples in HHCI)
3. If funding constraints require, prioritize and implement to maximize water quality benefits.
4. Rationalize and justify and apply for federal/provincial funding.
5. Equitable user pay over region served.
  - conservation incentives.
  - new connection charges.
  - funds raised dedicated to sewage treatment and interception
6. Develop local industrial benefits package. (eg local economic benefits)

## **10.4 Group 4**

### **10.4.1 Action Plan**

1. Regarding #9 “more forward on the established Fournier Report water quality objectives”
  - propose that word “quality” be changed to “use”
  - qualified agreement with containment principle as a responsible way to handle effluent; may still want to put non-toxic nutrient rich effluent for outer harbour disposal

2. Consultation process:

! Step 1 is this symposium, which covers design of the planning process and goals

! Between now and next symposium tasks to be carried out include:

- planning for next Symposium
- by agency HRM staff
- with a community advisory group

- ! Step 2: System planning:
  - technical options
  - costs
  - number of facilities and locations
  - there should be an advisory group coming out of this symposium

- ! Planning tasks before “symposium 2”:
  - define legislative parameters
  - liaison with other land use & development. processes
  - define facility options
    - technologies
    - locations (general)
    - costs
  - liaison - regulatory agencies

## 5. Time Frame

! Symposium 2 6 to 8 months from now (late spring 97)

### ! NEXT STEPS

- need communication strategy
  - interim source reduction program
  - newsletter regular communication vehicle
  - no HYPE - very clear info linked to action
  - maintain momentum
- develop a data base
  - monitor environmental changes in harbour
  - support academic research

## 10.5 Group 5

### 10.5.1 Revised principles

1. Adopt the established Fournier Report on water use objective.
2. There should be an immediate start in the context of a comprehensive strategy that acknowledges:
  - work in progress
  - areas of clear consensus
  - the need to present the public with a draft strategy
  - a description of concurrent activities that would move the plan forward
3. HRM is the lead agency with respect to financial and operational planning. This does not preclude the possibility of joint or delegated management responsibility in the future.

4. There should be a step-by-step incremental approach which builds on past successes considering innovation and small-scale approaches.
5. Delete.
6. While the user pay principle is important HRM will pursue other funding options as feasible.
7. An on-going informed public consultation and decision-making process is needed that is transparent and open.
8. Source control and water conservation are important parts of the system that can be implemented immediately.
9. Public education is an essential component of the implementation and acceptance of the strategy,
10. Architectural design for new facilities should be appropriate to neighbourhoods and environments and be aesthetically pleasing.
11. Sludge should be viewed as a resource..., not a waste.

## **10.6 Group 6**

On Saturday Group # 6 wanted to continue work on the concept they had developed on the previous day.

They developed the idea of a Municipal Waste Water Management Action Team. The rationale for the team was based on the premise that the planning process will be an on-going public process that is transparent and open (not a consultation - it is active as opposed to passive). Equal responsibility, information, and opportunity to influence the outcome are cornerstones of the model.

Suggestions for how this team would function are as follows:

The Co-chairs of this symposium in consultation with HRM will make recommendations to Council on the process for selecting the organization/individuals for the project team. The project team will consist of HRM staff plus planners, technical experts (from many sectors) integrated with members of the public. The project team will be co-chaired by one HRM staffer and one member of the public reporting directly to Council and the Public. The project team will set up working groups which will be integrated at all stages using regular two-way communication processes. Consensus models of decision-making will be used. Working groups will also communicate among themselves and possible sub-committees may be developed from working groups to examine specific details.

Working groups will be developed to address important key issues such as:

- Technical

- Financial
- Education
- Public Process
- Siting
- Source Control
- Sludge Management

HRM may have staff members on each working group if appropriate and/or needed. A facilitator may be required for the process.

A Mayor or his elected appointee shall sit as a member of the Project Team, however the co-chairs will be responsible for all reporting at the Council level. The elected official will not act as one of the co-chairs. The project team will need a professional secretariat and possibly facilitator.

The group suggested that the development of this team could start at the symposium. they suggested that organizers might want to call for people interested in sitting on working groups and at least set up an interim group set up to get this process going immediately.

What follows are the comments of Group 6 on the principles which were developed for the Friday afternoon plenary.

1. This principle was accepted as is.
2. Change to: "Mission statements should be developed with specific objectives through a community process".
3. The group felt that HRM is lead agency relative to other government levels but that the whole process should have community involvement.
4. The group felt that this point should be separated into 2 items.

The first item should be that "there be an incremental approach for storm water lines, source control, education, treatment facilities." The rationale for above is that progress can begin without all the elements in place.

The second part of this statement, according to Group 6 should be a separate principle and should be written that projects will "actively seeking innovative and small scale approaches as an equal consideration".

5. Group 6 wanted to scrap the whole objective because it conflicts with user-pay principles.
6. Change to: "Funding for the project should be based on user and polluter pay principles. This would include: incentive programs, water conservation program, controls at source that start immediately,

education /volunteer stewardship, monitoring/ enforcement, federal and provincial government fall under user-pay principle".

7. Group 6 felt that this principle should be replaced by their planning model.
8. Change to: "Source control is an important part of the system. It is cost-effective in reducing toxins. Other pollution sources to the harbour should be addressed.
9. Change with this amendment: "Northwest Arm should be changed to Middle Harbour status (reasons, swimming, Dalhousie research etc.)"
10. Change to: "Separation of storm and wastewater should take place by attrition over the long-term and should be considered an integral part of the whole process."
11. Change to" Education is a long-term strategy that should start now. Education : builds trust, creates ideas, cost-savings, preventative, needs to be comprehensive, needs to be animated and interactive "
12. Change to: "Architectural design should begin at the start of the process. Residents neighbouring the facility should select the ultimate design (e.g. through competition)."
13. Change to: "There must be a sludge management system with the priority of using sludge as a cost-recovery resource not a waste product."
14. Add the word "monitoring".

In term of unresolved issues at the bottom of the page the group wanted to add the following issue:

- ! There is a need for an action plan to address the long-term contaminants that are at the bottom of the harbour that have resulted from actions in the past.

## **10.7 Group 7**

### **10.7.1 Revision of Principles**

1. There should be an immediate start.
2. Flexible, adaptable, comprehensive vision and long term strategy with links to other development planning and deal with treatment/prevention now.
3. HRM is lead agency.
4. There should Be a step by step incremental approach which builds on past successes using innovation and considers small scale approaches.

5. Cost-sharing with federal and provincial governments.
7. An ongoing transparent, open public consultation process is needed.
8. Source control is critical.
9. Move forward based on the Fournier water quality objectives.
10. Separation of storm and wastewater should take place by attrition and over long term. (There was not complete agreement on this) (One participant indicated that this may be done for her great, great grandchildren).
11. Education is essential.
12. Support for aesthetically-pleasing architectural design for new community facilities.
13. Need sludge management system.
14. Harmonize and integrate legislation with consistent, effective enforcement.

#### **10.7.2 Addressing Larger Issues**

Note: The group dealt with two of the three larger issues; funding/costing and planning.

##### **Funding/Costing:**

##### 1. Funding

The group recommends that HRM maximize contributions by federal and provincial governments. For example, 75% federal/provincial and 25% municipal.

##### 2. Costing

The group addressed the questions “what is the taxpayer willing to pay?” In answer to this the group considered it important that the taxpayer receive the “best value for their money.” To determine this the taxpayer would require education and information on the following:

- recognize that the taxpayer has a perception of an upper threshold
- provide the taxpayer with realistic information
- provide the taxpayer with an analysis of how the money may be paid
- provide the taxpayer with options based on cost (cost per month)
- determine the impact of operating costs (not just capital) on the taxpayer
- provide the taxpayer with information on typical project costs and life cycle costs

Public education must be ongoing.

### **Planning**

The group agreed that the following items could have (and should have) an immediate start:

- source control
- sort out/harmonize and integrate regulatory requirements
- select sludge management options and consider sludge as a renewable resource
- negotiate the best deal with the federal and provincial governments before the next provincial election, and avoid imposed/unacceptable conditions, which may modify project
- develop user pay options/alternatives for public consensus
- begin public consultation process
- HRM commit to role as lead agency
- partition project to deal with Mainland South/Herring Cove, but maintain it as part of the larger project.

### **Next Steps**

The group also addressed some steps that they would like to see followed after the Symposium.

1. Use this process to empower HRM to take action on this issue as a priority
2. Based on symposium results, HRM to develop an action plan to be considered by the public. Some participants believe the action plan must be considered by the public and stakeholders.
3. Following consideration by public of action plan, time lines would be developed (by HRM) for project(s) implementation to be considered by the public.
4. Time is of the essence.

The following is a detailed list of participants individual comments (as found on coloured cards) on funding, planning, consultation.

### **Funding**

1. Lowest, equivalent, annual cost to HRM taxpayer and/or water customer.
2. Determine public perception on afford ability.
3. Capital: federal 1/3, provincial 1/3, municipal 1/3. Operations: taxes and user pay (heavy users), tax base for small users.

4. There should be a comparison study of conventional sewage treatment costs against solar aquatics (or other alternate systems). Initial start up cost may be more but life cycle cost is less (standardized greenhouse components).
5. Select option: 1 plant or several plants. Cost is not totally dependent on life cycle cost.
6. All options for funding should be open for consideration.
7. Public ownership.
8. Provide decision makers a series of options (solutions) and their relative costs. Have the private/public sector jointly cost solutions developed - utilize existing material related to this to help decision makers - allow public to comment and provide input to the decision makers on the options.
9. Avoid funding with technology strings.
10. Keep option open for private ownership.
11. Ownership must be based on the best bang for our buck. RFP's to the private sector will determine cost/benefit analysis opposed to what the municipality can provide.
12. Public ownership but not politically controlled (ie. HR water commission).
13. Local finance - use city not water commission. Use water consumption and real estate taxation combination.
14. \$200 million. Consensus has previously been reached. Moneys had been committed for this amount. Getting commitments back seems doable (\$ 74 million from federal/provincial each).
15. Maximize contribution from federal and provincial governments.
16. User pay principle (area rates).
17. User pay as opposed to general tax rate. GTR may not be acceptable to other areas of HRM.
18. User pay - cost of water should be strong incentive to control use.
19. Increase tax rate throughout the HRM. Eliminate pollution control charge. Many residents who live in rural areas work and use urban core for recreation. They use facilities and enjoy the benefits of a clean harbour - should share in the cost. This would expedite raising necessary funds.
20. User pay for the operations. Tax dollars (1/3, 1/3, 1/3) use for infrastructure.

21. Once various costing are narrowed and one preferred solution is selected, have through consulting various stakeholders (fed/prov/mun/) indicate a preferred financing or funding sources (or what if anything they will contribute). Provide this to decision-makers.

### Planning

1. At source control and pollution prevention programs should be implemented immediately. Education, promotion, demonstration of success stories should be considered.
2. Consider local recycling for new subdivisions.
3. Source control: much of Burnside effluent might be treated on site after program for inventory reporting, monitoring, educating, reusing.
4. Technology: source control will be effective if properly regulated.
5. Implement source control now.
6. Source controls: implement a program and make it a law. Public education: schools, residential, commercial, industrial.
7. Technology: source controls are implemented effectively as soon as possible. Decision makers empower HRM to move ahead to implement through bylaws, regulations, monitoring, etc.
8. Keep option open for several plants.
9. Several small plants.
10. One large plant necessitates construction of 6-10 foot tunnels. Cost of tunnelling (HHCI) is \$245 million.
11. Regional plant (plus a small one at Herring Cove) OR Local plants (Halifax, Dartmouth, Herring Cove).
12. Mainland South sewage treated in Mainland South, and to a higher level of treatment (water quality objectives) - cost: save tunneling costs of \$36 million.
13. Separation of stormwater and sewerage over time. When you dig a hole, put in two pipes overtime they will join up. No need to pay to treat rainwater, lends itself to natural high level treatment systems.
14. Cost effective handling of stormwater and CSO's.
15. Separate sewer and stormwater in new and upgraded collection systems.

16. Siting will require a large public involvement.
17. Do not delay implementation waiting on new technologies.
18. Maximize inputs from local expertise.
19. Consideration of alternative sewage treatment methods (constructed wetlands, solar aquatics treatment plants, flow form technology).
20. Infrastructure: size facilities to encourage community “ownership” where possible.
21. Define regulatory requirements now.
22. Sludge management pilot project needed now.
23. Fully covered and landscaped treatment plant desirable.

#### Consultation

1. Proper balance during the decision making process: all levels of government and public HRM council to maintain ultimate responsibility.
2. Responsibility: HRM management team and staff implement the source control program according to the bylaws as agreed to by all levels of government. For residential, commercial, industrial, they answer to provincial and federal laws (ie. Fisheries Act, Environment Act).
3. Presentation at each of the community councils at each step of where we are and where we are going. Community input at each level.
4. The overall decision making process should be one which is “community based”. All participants must be “partners” and committed to seeing the process to its completion. Must be an open and transparent process.
5. Council put in place firm time lines for implementation.
6. Council take strong position to move towards implementation (ie. Source separation collection plant(s)).
7. Decision making requires education and public participation. Implementation of small neighbourhood scaled solar aquatics treatment plants (e.g. Bear River).
8. Municipal regulations should encourage at-source controls and effective alternative technologies.
9. Inform public and poll public opinion or conduct referendum if necessary.

10. Confirm regulatory requirements first.

## **10.8 Group 8**

Group 8 designated 20 minutes discussion to the Public Consultation Process, 20 minutes to the Cost/Funding Issue, and the remaining time (about 60 minutes) to the Planning/Implementation question.

### **10.8.1 Public Consultation**

- ! essential to have citizens/community/user participation as integral component of planning/implementation/evaluation cycle
- ! Council should establish a planning/implementation mechanism (eg: committee, etc. - possible name: *Liquid Waste Resource Committee*) with public participation component to oversee the project as a whole; sub-committee's of that body should be set up to deal with particular sites and projects within that comprehensive framework
- ! public participation is essential but must operate within clear decision-making time-table and be subject to 'reality checks':
  - Council has the final decision-making responsibility/power
  - understanding that there are no blank sheets (ie: previous history and decisions must be taken into account - cannot assume fresh start on everything)
  - recognition of external constraints/opportunities - election time-tables; funding opportunities; fast track for some projects
  - point of participation/consultation is to a) give all interested parties a voice, b) improve decision-making process, and c) reach a decision that commands the broadest possible support - 'perfect consensus' unlikely

### **10.8.2 Cost/Funding**

- ! long-term costs will be OK if the incremental steps are SMART - that is, the price tag on addressing every item of an overall harbour/watershed clean-up may seem prohibitive - if the incremental steps are effective and well done (ie: demonstration models regarding public participation, design, integration into overall strategy, etc.) the process will build on success, will gather momentum and will garner widespread support for further action
- ! federal/provincial funding should be sought, but Council planning and implementation should not be predicated on such funding
- ! beware tied funding unless it fits Council's strategy and priorities
- ! approach to funding should be pragmatic - should utilize most effective combination of assessment, differentiated user pay (ie: based on both volume and pollution levels, with incentives/disincentives) and public/private partnership (retaining adequate level of public control) financing arrangements

### 10.8.3 Planning/Implementation Process

- ! much of the framework for overall harbour/watershed plan/strategy is already in place - needs vision and commitment
  - much data and many studies provide solid base for action
  - should not require further major study - fill gaps/synthesize past work, but get on with it
  - further research should be relevant to incremental steps
  
- ! strong support for current Council initiatives regarding at-source controls and sludge management proposals
  - should be strengthened and well-publicized as important parts of overall strategy
  
- ! incremental and phased strategy should be adopted by Council rather than the mega-project previously pursued
  - first task should be to identify and select several initial sites that will a) have significant positive impact on the pollution of the harbour and b) serve as demonstration projects of how to do it right (ie: incremental strategy, public participation, design and community acceptance, cost/benefit outcomes, etc.)
  - most likely possibilities:
    - Dartmouth Cove - ready to go; cost effective
    - Water Street - likely federal/provincial interest; economic development significance; waterfront improvement, etc.
    - Mainland South/Herring Cove - outstanding issue; needs early attention to build momentum
  - watershed as well as immediate harbour projects should also be considered
  
- ! every project must include;
  - full and effective public participation (see above)
  - full ecological assessment
  - appropriate design emphasis
  - capacity for future expansion/upgrade
  - assessment of wider development impacts

## 11. Guest Speaker on Hamilton Harbour

### Leo Gohier - Guest Speaker

Director of Water and Wastewater for Hamilton-Wentworth Regional Municipality

From Hamilton-Wentworth

Graduated from University of Ottawa 1972 in civil engineering.

#### Summary of Presentation

Mr. Gohier outlined the Hamilton Harbour experience - some things were done right, some done wrong. He noted a recent Chatelaine magazine survey rated Halifax low on basis of water quality, and that this presents a major challenge. He presented the Chinese character for crisis, which incorporates both “danger” and “opportunity”.

Map of Hamilton on Lake Ontario - steel mills, shipping, industrial wastes, combined sewer system:

- some similarities and differences with Halifax
- Hamilton Harbour is adjacent to downtown, 13km long, half is industrialized.

In 1986 a Great Lakes cleanup plan was adopted under the International Joint Commission.

A Remedial Action Plan (RAP) was developed:

- 9 member technical team - municipalities, provincial and federal governments
- BAIT (Bay Area Implementation Team) - above agencies plus industry
  - coordinates and promotes projects, handles funding
  - Hamilton-Wentworth role in regard to sewage treatment
- BARC (Bay Area Restoration Council) - citizens advisory group
  - audit, public awareness and education roles
- plan has been in operation for 10 years
- better cooperation between groups has been achieved over last 5 years.

The Ontario Environmental Assessment (EA) process was outlined:

- onerous, lengthy, controversial, confrontational, expensive, open to abuse
- does not benefit community, can be misused to tie up process
- EA concept and objectives valid, needs streamlining
- can be manipulated by all sides

Process identifies problem and alternatives (all possibilities) - **public consultation** step

- one option would be to extend an outfall pipe 20 km - London has done this.

Identify preferred alternative, conceptual design - **public consultation** step

Final report with final **public input** step.

Need to keep any EA processes simple.

1992 - Hamilton-Wentworth adopted environmental policy “Vision 2020”

- environmental, economic, social aspects
- works in decision making



**Could you emphasize the role technology plays in this?**

Major role is after building a facility - use techniques such as computerization for efficiency to reduce operating costs; can pay off debt from capital expenditure through operating savings.

## **12. Plenary Report** (from Saturday morning groups)

### **12.1 Revised principles and Objectives**

Based on the morning small group session, the following revised set of directions were presented:

#### **General Directions on Principles -Halifax Harbour Solutions** (based on a synthesis of ideas from Saturday morning groups)

1. There should be an immediate start on the planning and public participation process.
2. There should be development of a flexible, comprehensive vision and a long-term strategy with links to other development planning.
3. Proceeding on a step-by-step incremental approach which builds on past successes and considering innovation and small scale approaches.
4. HRM is the lead agency responsible for achieving a Harbour solution.
5. The “user pay” principle should be implemented on an equitable basis.
6. An on-going informed public participation process is needed and decision-making must be transparent and open.
7. Source control is an integral part of the system.
8. Move forward on the basis of the established water use objectives revised as necessary.
9. Citizens need to be educated about their roles and responsibilities within the overall waste water and management system.
10. Architectural design for new facilities should be appropriate to neighbourhoods and the environments and be aesthetically pleasing.
11. Develop a sludge management strategy which will consider sludge as a resource.
12. There should be integration of legislation and regulations, with effective enforcement and monitoring.

#### **Areas requiring further discussion:**

- ! Siting criteria, selection, and process
- ! public/private partnerships
- ! whether to integrate water utility and waste water utility
- ! extent of consolidation of outfalls
- ! # of plants, size of plants

- ! need for innovation and alternative treatments and technologies
- ! Mainland South/Herring Cove
- ! should the process be cost-driven or goal-driven?
- ! cost-sharing which includes the federal and provincial governments
- ! NorthWest Arm classification needs discussion

## **12.2 Report on Strategies**

Each facilitator briefly reported on the strategy/action plan developed in their group. These are detailed in the previous notes.

## **12.3 Report on Mainland South/Herring Cove**

Participants with particular concern and interest in the challenges facing the Mainland South/Herring Cove area met on their own for a 'working lunch' on Saturday. The following are the conclusions of that session.

- ! General Concerns
  - Siting and design of sewage treatment
  - Growth Management
  
- ! Specific Concerns
  - relocation of existing Herring Cove outfall
  - STP siting
  - collector routing
  - Land use planning vision for MLS/HC
  - status of Purcells Cove/Herring Cove Wildlands
  - growth restriction/ceiling
  - development moratorium
  - appropriate, small scale alternatives to conventional treatment
  - an alternate to primary treatment, advanced, on-site, etc.
  - Fournier water quality objectives need to be modified for Mainland South/NW Arm
  - MLS consensus on needs
  - maintaining network
  - that MLS not be a dumping ground for HRM sewage and Herring Cove for MLS
  
- ! Recommendations for Action
  1. that HRM establish citizen-based decision-making process for MLS/HC
  2. that it identify issues and address water use objectives
  3. that MLS/HC accept responsibility for dealing with its fair share of sewage
  4. that there be thorough and open study of the economics and engineering aspects of the options.

## **12.4 Final Comments from Co-Conveners, Leslie Griffiths and Ray Coté**

When we agreed to take on this task, we really were not certain where it would lead. Having now watched and listened to the discussions during the two days, we are both very pleased with the result. There appears to be general agreement on some directions and guidance to HRM Council. We want to thank the participants who gave generously of their time to work cooperatively toward the goal and objectives set out for the Symposium. In particular, we thank the facilitators for their excellent work in assisting with the planning and the small group sessions. We all owe a particular debt of gratitude to HRM staff who ensured the smooth functioning of the Symposium and responded quickly to information requests. Finally, thanks to Dalhousie Catering for keeping us supplied with food and refreshments.

### **13. Reaction from HRM**

The final panel presentation was made on behalf of HRM by Deputy Mayor Jack Greenough, Chief Administrative Officer Ken Meech, and Commissioner of Policy and Planning Valerie Spencer.

Mr. Greenough indicated that he felt the Symposium had achieved substantial progress, and he had received the message for HRM to take the initiative to get on with the job. Participants want HRM to make a firm commitment to the project and develop an action plan to move forward with public involvement and participation throughout the project. He said an additional message was not to reinvent the wheel, but to build on work and expertise both locally and in other jurisdictions. Participants want the federal and provincial governments involved as funding partners, but the project should begin now. There was also strong support for source controls, and a clear message to get on with the job. He indicated his feeling that members of Council intend to clean up the Harbour, and that participants would want them to be cost conscious and affordable.

Mr. Meech indicated that he was encouraged and impressed by the Symposium, and that he had received a clear message from participants to get on with the job. He felt that the Symposium results were compatible with HRM objectives, that HRM can live with the principles adopted by the Symposium, and that there was a consensus to proceed. He indicated that there will be an internal team at HRM to define further processes to be used, and that approval will be sought from Council.

Ms. Spencer said that staff is now working to consider how to expand processes to increase public input, and work has started to make these things happen. She felt that we have good consensus and recommendations for Council. She felt the results had been very useful, and the focus will now be on communicating both with Council as well as Symposium participants. She indicated that she had learned a great deal here on how to move forward on the issues of integrated Harbour management, planning and vision, and how to solve our sewage problems.

## **14. Closure**

Halifax Regional Municipality Deputy Mayor Jack Greenough closed the Symposium. He acknowledged the efforts and commitment of the participants and expressed his thanks. He also indicated that Mayor Walter Fitzgerald was pleased and impressed with the progress made. Mr. Greenough expressed his thanks to the co-conveners, Lesley Griffiths and Ray Coté, for accepting a daunting task and being responsive to the participants. Finally, he thanked the event facilitators and municipal staff involved in the event.

## 15. Appendix 1: List of Facilitators and Participants

### Facilitators:

Brian Arsenault (group 5)  
Anne Camozzi (group 6)  
Donna Crozier (group 2)  
Lisa Mitchell (group 7)  
Doug Myers (group 8)  
Teresa McNeil (group 3)  
Sunday Miller (group 1)  
Rick Williams (group 4 and facilitation team leader)

Participants were asked to identify any stakeholder group of which they were members. However, participants did not necessarily represent the official views or positions of those groups.

Jerry MacKinlay  
Greenpeace

John Major  
Canadian Coast Guard, BIO

Patricia Manuel  
Williams Lake Conservation Co.

Alan Jean-Joyce  
Friends of McNabs Island Society

David Chaisson  
NS Scuba Association

Chris Mayne

Robert Baird  
Patterson Palmer Hunt Murphy

Paul Calda

Dr. Pocklington  
Friends of McNabs Island Society

Don & Pauline Lawrence  
Dartmouth Cove Area Residents Assoc.

Hugh Pullen  
Peninsula South Community Association

Byrne Williams  
CREED (Coalition for Responsible  
Economic & Env Development)

Bob Daley  
Peninsula South Community Association

Rochelle Owen  
Clean NS Foundation

Earle Hickey  
NS Environmental Industries Association

Buster Brown  
Herring Cove Rate Payers Association

Christine Moore  
NS Environmental Industries Association

Brian Jollymore  
Fisheries & Oceans Habitat Management

Robert M. Kechayan  
Canadian National

Jack Greenough  
Councillor

Mayor Walter Fitzgerald

Aileen Waller-Hebb  
NS Department of Housing  
& Municipal Affairs

Colleen Mercer Clarke  
Oceans Institute of Canada

Dr D.H. Waller  
Centre for Water Resources Studies, TUNS

Fred J. Dickson, QC  
Patterson Palmer Hunt Murphy

Alan V. Bell  
ADI Environmental Management Inc.

Damian McManus  
Autoport Limited

Bob Pett  
Harbour Committee Ecology Action Centre

Rosalee Grette Lydon  
Harbour Committee Ecology Action Centre

Dan Pace  
Occam Marine Technologies Limited

Sandy Sanford  
Halifax-Dartmouth Bridge Commission

Councillor Ron Cooper  
District 4

Councillor Howard Epstein

Alan Ruffman  
Metro Coalition for Harbour Clean-up

Michael Scarratt  
Bedford Basin Yacht Club

Laura Altenhof  
TUNS (Planning Dept.)

Fred Were  
Waterfront Development Corporation Limited

Marlene Morrison  
HRM - Financial

George McLellan  
Commissioner Regional Planning - HRM

Kulvinder Dhillon  
HRM-Engineering Services

John Sheppard  
HRM-Manager, Environmental Services

Ted Tam  
HRM-Manager, Design Services

Alan Brady  
HRM-Manager, Wastewater Treatment

Rick Paynter  
HRM-Manager, Construction Services

Phil Frances  
HRM-Policy & Planning Engineer

George Taylor  
HRM-Recreation & Leisure Outdoor Recreation

Rick Reid  
HRM-Chief Operator Leachate Treatment Plant

Ken Meech  
HRM-CAO

Diana Whilmhurst  
HRM-Tourism

Kim Hominchuk  
HRM-CAO Executive Assistant

Peter Dixon  
HRM-Planning Services

Angus Shaffenburg  
HRM-A/Manager Western Region,  
Planning Services

John Charles  
HRM-Crichten Avenue

Peter Bigelow  
HRM-Policy & Planning

Dan Gautreau  
HRM-Policy & Planning

Maria Mediola  
HRM-Policy & Planning

Tony Blouin  
HRM-Policy & Planning

Geoff Stropole  
HRM-Policy & Planning

Valerie Spencer  
HRM-Policy & Planning

Carol Macomber  
HRM-Policy & Planning

Gordon Fader  
BIO - Natural Resources Canada GSC Atlantic

Dale Buckley  
BIO - Natural Resources Canada GSC Atlantic

Norval Collins

Peter Underwood  
NS Department of Environment

Helen Jones  
RATE

Prof. Dr. Spencer Lee PhD  
Soil & Water Conservation Society  
Director, Virology & Immunology

Susan Holtz  
Ferguson's Cove

Meinhard Doelle  
Clean Nova Scotia Foundation

Robert L. Race  
Coast Guard College Instructor

Don Grady  
Coalition of Citizens For A Charter Challenge

Wayne Barchard  
Environment Canada

John Clarke  
Environment Canada

Paul Klaamas  
Environment Canada

Clarence Spencer  
Environment Canada

Al Kindervater  
Environment Canada

Eric Hundert  
Environment Canada

Ian Travers  
Environment Canada

Roger Albright  
Environment Canada

Mr. Creighton Briscoe  
NS Department of Resource  
Management & Environmental Protection

Dr. Robert Fournier  
Research, Dalhousie University

W.H. Gates

Doug Linzey  
Halifax Field Naturalists

D.A. Parker  
Harbourfront Landowner

Colin Stewart

Don Graham  
Ferry Road Development Limited

Dr Joan Kean-Howie  
Canadian Coast Guard

Condo Sarto  
Councillor

Robert Federico  
Metro Chamber of Commerce

Gordon Michael  
Halifax. Regional School Board

Tom Austin  
APENS

Gordon Michael  
Halifax Regional School Board

Frank LeBlanc  
DCI

Bob Lee  
Village of Herring Cove

Heather Brown  
Herring Cove Resident Rate Payers Association

Patrick Wright  
NSCEA

Jim Axell  
NSCEA

Paula Bouris  
Environmental Law Society  
Dalhousie Law School

Renate Deppe  
Herring Cove Resident

Horst Deppe  
Herring Cove Resident

Aran Hamilton

Mrs. Marjorie Gibbons  
Dartmouth Cove Residents Association

Ewen Wallace  
Sea Sun Kayaking Adventures

Robin Girard  
Sea Sun Kayaking Adventures

Marvin Silver  
CREED

Hettie MacKeigan  
Enviroseal Engineering Products Ltd.

Andrew MacDonald  
TUNS - Planning

Don Mason, P. Eng.  
NSCEA

Lauren Munro-Cape  
Canada Trust  
Friends of the Environment Foundation

William Adams  
Mount St. Vincent Univ.  
Student Union

Linda Douglas  
Attending School of Architecture - TUNS

Derrill C. Hynick  
NS Dept. Of Environment

Kevin Murphy  
Halifax - Community Monitoring Committee

Rose Featherstone  
Allergy & Environmental Health Association

Carol Lee Giffin  
CFB Halifax

Mike Comeau  
CFB Halifax

Nicole Delmage  
TUNS - Architecture School

Anne VonMaltzahn  
Williams Lake Construction Company

Kathleen Hall  
Williams Lake Conservation Co

Lt. Brian Titus  
Diving Fleet CFB Halifax

Dave Galbraith  
CANS

John Appleby  
Public Works

Hari Samant  
Public Works

Tony Pilling  
Public Works

Carol Buchanon  
Public Works

David Wimberly  
It's Not Garbage Coalition

Mr. Wayne Groszko  
NS Public Interest

Phyllis Semenuik  
TUNS - 3rd Year Architecture

Walter N. Regan  
Sackville River Assoc.

The Honourable Jim Smith, MD., Minister  
Department of Housing and Municipal Affairs

Mr. Maurice Rees, Product Manager  
NCC Speciality Publications

John H. Reynolds, P.Eng., Managing Director  
Professional Directors Inc.

Mr. William Moody, Professional Engineer  
Principal  
Moody Engineering Consultants

Mr. Ronald (Ron) A. Hiltz, P.Eng.  
Senior Municipal Engineer

Wallace Macdonald & Lively

Donald Mason, P.Eng., MCIP, Associate  
Washburn & Gillis Associates Ltd.

Renée Roberge

Nicole Delmage & Phyllis Semenuik

Linda Douglas

John Major  
Canadian Coast Guard

Bill Gates  
Halifax Regional Water Commission

Dr. Roger Pocklington  
Friends of McNabs Island Society

Paul Morgan  
HRM-Senior Planner

Paul Willis

Peter Pelham  
Herring Cove Rate Payers Association

Tom Swanson  
Alderney Consultants Limited

Mike Redmond  
Student, Dalhousie University

Colleen Moore

Paul Halperin  
TAS Editorial

Barry Hargrave  
Ocean and Fisheries

Blaise MacNeil

Peter Connell

Laura Loucks

John Sheppard  
HRM-Manager, Environment Services

Steve Smith  
HRM-Planning Technician

Nancy Cook  
Mount Saint Vincent University

Mike Sempel

Colin Stewart

Bill Bridgeo  
Chemistry Department  
Saint Mary's University

Peter Wallace

Richard Hale

Brenda MacNeil  
NS Department of Environment

Councillor John Cunningham  
C/O City Clerk's Office

Councillor Reg Rankin  
C/O City Clerk's Office

Lia Daborn  
Dalhousie Student