



PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

Halifax Regional Council
September 23, 2003

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: _____
George McLellan, Chief Administrative Officer

Dan English, Deputy Chief Administrative Officer

DATE: September 9, 2003

SUBJECT: Water Resource Management Study Project

ORIGIN

Staff

RECOMMENDATION

It is recommended that Halifax Regional Council accept the HRM Water Resource Management Study Report (WRMS Report) prepared by Dillon Consulting Limited and dated December 2002, and direct staff to begin the implementation process described herein, using as a basis the WRMS Report and the comments provided by the Watershed Advisory Boards on the report.

BACKGROUND

The protection of water resources is of critical importance to Halifax Regional Municipality. Approximately 8% (458 sq. km.) of HRM's geographical area consists of freshwater resources, also HRM has approximately 2400 kilometres of coastal and island shoreline. Improperly managed land use development can have an adverse effect on the surface and ground water resources. The United Nations Environment Program estimates that 80% of all ocean pollution originates from point and non-point sources on land (Charles, 2002). The cumulative effects of land development is now evident at HRM shores and there is a need to undertake an overall policy approach to protect HRM's fresh and marine water resources from the unintended consequences of land use development.

Staff is in the process of developing comprehensive and modern policies with respect to water resource issues in Halifax Regional Municipality. The project is a joint effort of Environmental Management Services and Regional Planning/Planning & Development Services and will harmonize the differing policies and regulations relative to the various aspects of wastewater and storm water management, including those related to the development of land. This report summarizes our findings and outlines recommendations and is further to the information report submitted to Regional Council on July 8, 2003.

By a motion of Regional Council on September 19, 2000, a consultant was engaged to develop a report to assist HRM in developing water resource management policies. This report was completed in December 2002 and was presented to the three Watershed Advisory Boards (WABs) in January 2003, as requested by Regional Council. The three WABs have provided written comments on the WRMS report and it's implementation. These comments are generally favorable and these, along with the consultant's report, were distributed to Council in an Information Report on July 8, 2003. The WABs' priority recommendations have been considered in development of the implementation plan.

The Executive Summary of the WRMS Report is attached to this report as Appendix A.

A list of the WRMS recommendations and staff action plan, entitled "Water Resource Management Project, Recommendations and Action Plan" is attached as Appendix B.

DISCUSSION

It should be noted that by approving the recommendation as presented, Council will not be approving any of the specific recommendations in the WRMS Report.

By approving the recommendation, Council will simply be allowing staff to proceed with the process to consider implementation of the various WRMS report recommendations, with full consideration of the WABs' comments. With the exception of several operational-type issues, staff will be returning to Council for approval of the various recommendations utilizing one of the five implementation processes described

later in this staff report.

It should also be noted that the HRM is not obligated to adopt or implement most of the recommendations in the WRMS Report. The HRM, through Council, may generally choose to adopt each recommendation, or not, based on an understanding of the costs and the benefits associated with each recommendation. Also, if implemented, some of the recommendations will result in the HRM becoming involved in issues that have traditionally been seen as the purview of the Province. Two key examples are water quality and on-site sewage disposal systems.

This project represents an opportunity for HRM to become more involved in protecting our water resources than we ever have in the past. The majority of the recommendations in the report identify activities that are not mandated by Provincial or Federal laws. The work, however, is necessary to meet the HRM Vision 20/20 relative to protection of the natural environment, and Council's business strategies relative to sustainable growth. To do this, and to do it properly, will require a commitment on the part of both Council and staff. Additional resources will be required, but the benefits - cleaner water and a healthier environment - are great. Also, an investment now in new and enhanced programs will bear fruit in the future in terms of more sustainable development and a reduced impact on our water resources.

Water resource policy plays a unique role in municipal planning and can have a profound affect on how, where and when development occurs. Good environmental management can also ensure the long-term sustainability of the water resources upon which HRM residents depend. Further, the protection of HRM's natural heritage is fundamentally linked to water resource management since it affects hydrological flows, prevents property damage, purifies and cleanses water resources, sustains drinking water supplies, and supports the local economy and recreation.

The WRMS report will aid in the formulation of a consistent and comprehensive set of policies to address the water resource management issues throughout HRM. The key water resource issues addressed under this study include the following:

- watercourse, wetlands and coastline protection;
- municipal service boundaries;
- wastewater management systems, including those for rural development;
- urban wastewater management issues such as infiltration/inflow; stormwater management issues relating to the impacts of peak wet weather flows and impacts on water quality; and
- monitoring of the impacts of development and the positive or negative effects of any future environmental initiatives on selected watersheds.

It should also be noted that staff have already started, or are intending to start, several initiatives consistent with the recommendations of the WRMS Report. These are described later in this report.

Watershed Advisory Boards' Comments and Recommendations

Generally the three Watershed Advisory Boards i.e., Bedford (BWAB), Dartmouth (DLAB), and Halifax and Halifax County (HWAB), felt that the study represented a positive step for HRM, and were supportive of most recommendations. Council have previously received the full text of the WABs' comments on the CD provided with the Information Report of July 15, 2003.

Recommendations in the WRMS Report receiving particular support by the WABs included:

- Establishment of protected buffer zones around water bodies; 20-metre minimum width (Recommendation 5-1, DLAB; 5-2 BWAB)
- Incorporation of natural channel design to the extent practical for modified watercourses (5-4, BWAB)
- Definition of urban development boundaries and establishment of settlement/service centres (6-1, BWAB)
- Planning for urban and rural service centres defining the sequence and pattern of proposed development and servicing provisions (6-2, BWAB)
- Establishment of a hierarchy of preferred sewage treatment methodologies for designated rural settlement/service centres (7-1, HWAB)
- Use of public education on proper septic system management, use and maintenance (7-4, DLAB)
- Recommendations on establishing wastewater management systems and mechanisms (7-1 to 7-10, BWAB)
- Establishment of stormwater management guidelines (8-3, HWAB)
- Application of erosion and sediment controls to all development and construction approvals (8-5, HWAB)
- Establishment of 1:20 and 1:100 year floodway zoning for the Sackville and Little Sackville and other river systems (8-6, HWAB)

Recommendations which were identified as priorities for immediate implementation included the establishment of 20-metre minimum protected buffer zones along watercourses, wetlands, lakes and coastlines, moving towards a 100-metre setback from lakes for new development areas with on-site septic service, and the development of consistent stormwater management guidelines. Also considered priorities were the mapping of flood plains, and the establishment of performance measurements.

The WABs had particular concerns with allowance of development activity within designated flood plain zoning or protected buffer zones unless valid reasons are clearly defined and limited. There was support for the establishment and use of performance measures (environmental monitoring) for water resources, but there was concern that the data collected must be properly assessed and used to improve methods and identify problem areas.

The WABs had some concerns with issues such as drinking water and coastal waters which were not included in the study scope, the concentration on stormwater management rather than overall watershed management, and the need for effective enforcement and public education.

There are additional recommendations submitted by the Boards. All of these will be considered when developing and implementing policy.

Implementation Strategy

The various recommendations of the WRMS report will be implemented through one of a number of different mechanisms. These mechanisms, and the organization or business unit responsible to lead the implementation process for each, are as follows:

1. Municipal Planning Strategy and By-Law - Regional Planning Team
2. Environmental Policy - Environmental Management Services
3. Municipal Services Systems Design Guideline - Environmental Management Services
4. Business Plan and Budget
5. Capital Cost Contribution Policy

Although a specific organization has been identified as leading some of the various implementation processes, for many of the recommendations, others will be involved in a support role. An integrated approach involving internal and external stakeholders is proposed to be used for many of the recommendations. Exceptions might be those where the recommendations are operational in nature, e.g. a wastewater wet weather flow study, which would be implemented through the Business Plan and Budget process.

There is a significant public participation process inherent in the Municipal Planning Strategy and By-Law developed through the Regional Planning Project. The details of how the Environmental Policy will be developed have not yet been determined but it is assured that there will be a significant public participation process, culminating with approval by Regional Council.

The point is reiterated that, by approving the recommendations of this report, Regional Council is not approving that the various recommendations of the Water Resource Management Study will be implemented as presented. That decision will be made by Regional Council as a result of the implementation process as defined for each specific recommendation.

A more detailed discussion of each of the five implementation processes follows:

1. Municipal Planning Strategy and By-Law - Regional Planning Team

Numerous recommendations in the WRMS Report speak to the need to create new land use regulation in HRM to protect water resources from the impacts of various forms of land development. These recommendations must be considered in the context of the full range of regional planning issues which may ultimately bring about change to regulations respecting land use. This section of the report briefly describes the need to pursue these recommendations as part of the Regional Planning Project.

The recommendations in Chapter 5 of the WRMS Report generally speak to the need to establish larger buffers for water courses and to better integrate HRM land regulation with that of the Nova Scotia Department of Natural Resources land management practices concerning harvesting of natural resources. This idea will be explored with the public as part of the Regional Planning public participation program now underway. It is likely that policy in this area will be developed early in the Regional Planning project due to the high level of public interest noted to date.

The recommendations in Chapter 6 speak to the use of settlement policies to encourage a preferred development plan which concentrates growth within development areas to reduce impacts on natural resources. For the urban areas, the Master Plan process and Capital Cost Contribution policy achieve this objective now. For outer areas, these policies are under active consideration through the Regional Planning Project and must be integrated with discussion concerning community character, economic factors, improving efficiency in our use of infrastructure, existing property rights and other issues. It is anticipated that final consideration of this fundamental Regional Planning issue will be concluded with adoption of the Regional Plan in the fall of 2005.

The recommendations found in Chapter 7 are generally concerned with management of on-site sewage disposal mechanisms. A study is currently underway through the regional planning process to evaluate and recommend the specific management options which would best serve HRM to promote the use of a system which would achieve less land consumptive development practices while preserving appropriate protection of health.

Chapter 8 of the WRMS Report recommends a watershed-based approach to land use planning. This is currently done on a reduced scale through the master plan process. The concept of expanding this approach to all areas of HRM will be considered through the Regional Planning Project in conjunction with community, cultural, infrastructure and economic factors which must be considered in any land use planning program. This chapter also recommends mapping and protection of sensitive watersheds and flood plain mapping. It further recommends protection of flood plain areas through land use regulation. Flood plain mapping already exists in some areas of HRM and watershed management is an important focus of Master Plan studies for large development areas. Additional work will be carried on through the Regional Planning Project to anticipate where issues might arise in other flood plain areas in HRM.

2. Environmental Policy

Environmental Management Services is a new business unit formed pursuant to the most recent realignment in HRM. It has brought together the various staff and functions related to environmental issues in HRM, including the Harbour Solutions Project, wastewater and storm water management, wastewater treatment, solid waste resources, greenhouse gases, by-law enforcement and others. This consolidation of responsibilities provides an opportunity for a more comprehensive approach to environmental issues within HRM. EMS will be responsible for the development of environmental policy in HRM. Some such policy already exists, but it is currently scattered about the HRM administrative landscape. EMS has begun the process of identifying and gathering all existing policies, with the intent of determining gaps and conflicts, so we can move forward with the development of a comprehensive Environmental Policy for HRM.

It is intended that many of the recommendations of the Water Resource Management Study will form part of this Environmental Policy.

3. Municipal Service Systems Design Guidelines

The Municipal Service Systems Design Guidelines are a set of minimum standards for the design and construction of municipal service systems in the Municipality. They were adopted by resolution of Council under the authority of the Municipal Government Act, and so have the same status as an administrative policy.

The Design Guidelines are reviewed annually by a committee which is lead by Public Works and Transportation Services. The review committee typically includes representatives of both internal and external stakeholders. Internal stakeholders include representatives from Real Property and Asset Management, Environmental Management Services, Planning and Development Services, and Public Works and Transportation. External stakeholders include representatives from the Nova Scotia Home Builders Association, the Urban Development Institute, the Nova Scotia Road Builders Association, and the Nova Scotia Consulting Engineers Association.

4. Business Plan and Budget

A small number of the recommendations, which are related to operational issues, will be implemented through the annual Business Plan and Budget process. One example is any study pursuant to Recommendation 7-8, which would likely be implemented and funded through HRM's Infiltration/Inflow Reduction Program.

5. Capital Cost Contribution Policy

The capital cost contribution policy is referenced in relation to recommendations concerning expansion of urban services and related studies. The policy is HRM's main mechanism for recouping costs of major infrastructure in new growth areas.

Immediate Action Items

Staff have started, or will soon be starting, a number of initiatives recommended by the WRMS report, some of which were identified by the WABs as being a high priority.

1. Regional Planning have drafted a Request for Proposals for a study entitled "Options for On-Site and Small Scale Wastewater Management in Halifax Regional Municipality". Staff from EMS have been involved in developing the project and reviewing the draft Request for Proposals. It is expected that the Request for Proposals will be issued by October.

This study will provide background technical support to facilitate the later implementation of the WRMS Recommendations 7-1, 7-2 and 7-3.

2. A high priority identified by the WABs was the provision of buffers in HRM as protection for our water resources. After further public consultation this fall, Regional Planning will look for opportunities for early implementation.

This work will lead to the possible implementation of the WRMS Report Recommendations 5-1, 5-2 and 5-3.

3. EMS staff have begun drafting a Request for Proposals entitled "Best Management Practices - Infiltration/Inflow Prevention and Reduction in HRM". This study will address in part the WRMS Report Recommendations 7-8 and 7-10.

Staff are intending to issue the Request for Proposals in October of this year. The study will be funded through HRM's Infiltration/Inflow Reduction Program.

4. The Wet Weather Flow Study - Halifax STP Sewershed, has already been approved in the Capital Budget. The work has been delayed due to the recent uncertainties surrounding the Harbour Solutions Project. Staff will proceed with the project through the winter months.
5. Develop policy regarding HRM's role in storm water management and surface water quality. The degree of HRM involvement in this issue is seen as a new direction and will require considerable time and resources. Staff will meet with the Province to better define mandates, and will develop a Request for Proposals for a study to develop comprehensive stormwater management water quality guidelines for both HRM operations and private developments.
6. The Water Resource Management Project has been co-ordinated to date by a Steering Committee comprised of staff from Environmental Management Services and Planning & Development Services. These same staff continue to function as a Co-ordinating Committee for the Water Resource Management Project. It is contemplated that this Committee would oversee the implementation process and time lines and serve as a resource to others involved in implementation.

BUDGET IMPLICATIONS

There are no direct budget implications resulting from the recommendations contained in this report. Any future budget requirements with respect to the implementation of any of the recommendations will be identified in business plans and/or reports to Halifax Regional Council as appropriate.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

REGIONAL PLANNING IMPLICATIONS

As identified in the attached table, **Water Resource Management Project, Recommendations and Action Plan**, many of the recommendations have regional planning implications or require completion of the regional plan before final implementation. This has been identified in the Regional Planning work plans.

ALTERNATIVES

None recommended

ATTACHMENTS

1. Appendix A - Executive Summary, WRMS report by Dillon Consulting Limited
2. Appendix B - Water Resource Management Study, Recommendations and Action Plan

Additional copies of this report, and information on its status, can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Mark Bernard, P.Eng., Senior Policy Engineer, 490-6716

Report Approved by: _____
Betty MacDonald, Director, Governance & Strategic Initiatives, 490-4769

Brad Anguish, P.Eng., PMP, MBA, Director, Environmental Management Services, 490-4825

Paul Dunphy, Director, Planning & Development Services, 490-4933

Carol Macomber, Project Manager, Regional Planning, 490-5908

Austin French, Regional Planning Manager, 490-6717

John P. Sheppard, P.Eng., Manager, Environmental Services, 490-6958