

REGIONAL MUNICIPALITY OF HALTON

Report To Chairman and Members of the Planning and Public
Works Committee

From R. Mohammed, Director of Planning and Development

Date 87 01 29

Report No. DPD 18/87

Re: Hamilton Harbour Remedial Action Plan Interim Re-
port Entitled, "Hamilton Harbour's Water Quality:
The Stakeholders' Proposals" and the Proposed List
of Remedial Actions, Costs, and Research Needs

RECOMMENDATIONS

THAT Councillor Johnson and staff be authorized to present Halton's position on the Hamilton Harbour Remedial Action Plan Interim Report entitled, "Hamilton Harbour's Water Quality: The Stakeholders' Proposals" and the Proposed List of Remedial Actions, Costs, and Research Needs to the Stakeholders Group for consideration in the Remedial Action Plan.

REPORT

Background

Hamilton Harbour has been identified as one of the most polluted bodies of inland water in Canada. The International Joint Commission on the Great Lakes has identified Hamilton Harbour as one of 42 "AREAS OF CONCERN" in the Great Lakes Basin. The Ontario Ministry of the Environment and Environment Canada have joined together to investigate the problem and develop solutions after extensive community involvement. Landuse Research Associates of Toronto have been hired by the two government agencies to conduct an extensive public participation program known as "Dialogue on Hamilton Harbour". As part of this program, a "Stakeholders Group" has been formed which includes representatives from the Regional Municipality of Halton (Councillor Bill Johnson), other municipalities neighbouring the Harbour, ratepayers groups,

government agencies, special interest groups, industries on the Harbour, landowners around the Harbour, Harbour users such as the Hamilton Harbour Commission and several yacht clubs. Stakeholders have proposed a series of remedial action measures and policies in an interim report and have asked Halton Council to comment. A list of remedial actions, costs and research needs has also been put forward by the project writing team for Halton's comment. Further to CAO's Report 16/87, which indicated that Halton has been requested to respond, arrangements have been made for Councillor Johnson and staff to present Halton's position contained in Schedule A at the meeting of the Stakeholders on 87 02 26.

The Stakeholders' Proposals

The Hamilton Harbour Remedial Action Plan Interim Report entitled, "Hamilton Harbour's Water Quality: Stakeholders' Proposals" was prepared by Land Use Research Associates and was derived from discussions with the Stakeholders and a public meeting held in mid-1986. The report is interim in order to allow discussion among the participants including a submission by Halton Region. The intent of The Remedial Action Plan is to identify problems with Hamilton Harbour and recommend remedial actions. As the principal port for southwestern Ontario, Hamilton Harbour is surrounded on part of its shores by heavy industrial uses. The watershed of the Harbour is populated by about 500,000 people. The Halton shoreline on the Harbour contains residential, golf course, park, cemetery, institutional, and highway uses.

The Stakeholders approach to establishing water quality standards was to identify desirable uses and determine remedial measures necessary to support these uses. To achieve this end, several principles were involved including an eco-system approach, no further human health risk, public acceptance and support, increased public access, improvement of the shoreline and water aesthetics.

The use of the Harbour waters for drinking was not considered necessary as Hamilton and Burlington intake pipes are located in Lake Ontario. However, a primary goal for the Harbour is to remove the potential negative impact on Lake Ontario from Harbour waters flowing into the Lake.

The interim report addresses the issue of filling in the Harbour to create additional shoreline. There were several divergent views, the main ones being that filling has a detrimental effect by reducing spawning areas, destroying fish habitat, and further contaminating the Harbour. The opposing view was that filling increases public access through waterfront parks, permits industrial areas to expand and provides

a disposal site for dredging the material. No firm recommendations were forthcoming, but it should be noted for Halton that the fill situation in the Harbour is critical due to the limited surface water area and is a completely different situation from the filling for waterfront parks in Lake Ontario. In Lake Ontario the concern for reducing significantly the total surface area of the lake simply does not exist.

Current and Preferred Water Use Goals and Remedial Actions

The following are the water use goals identified by the Stakeholders including a summary of the remedial actions proposed.

1. Take immediate action to improve water quality for recreational boating.
 - ° increase public access
 - ° separate combined sanitary and storm sewers
 - ° remove nutrients from effluent
2. In specific areas, improve water quality to permit increased use for water sports.
 - ° separate combined sanitary and storm sewers
 - ° disinfection
 - ° industrial, municipal and non-point pollution controls
3. Shipping and navigation uses should continue but be contained to certain areas of the Harbour.
 - ° increased coordination between the Ministry of the Environment and the Hamilton Harbour Commission
 - ° enforce controls and regulations for waste pumping and boat deck washing
 - ° improve the existing emergency spills process by involving other agencies
4. Improve water quality to permit continuation of industrial uses in specified areas with effluent discharge to meet MOE guidelines.
 - ° establish total loading targets for industrial effluent
 - ° review compatible temperatures of waste and receiving waters
 - ° introduce programs for nutrient removal

5. Change status of Harbour to receive acceptable waste water effluent in specific areas only with a loading-target approach.
- ° restrict waste entry to allow improvements to Coote's Paradise in the west Harbour including the northshore (Halton)
 - ° separate combined sewers and upgrade Dundas Sewage Treatment Plant
 - ° implement stormwater management plans
 - ° nutrient removal program needed
 - ° limit paved cover and encourage vegetation cover
 - ° recommend leachate controls for Bayview, existing Regional and future landfill sites.

Goals and Remedial Actions for Future Uses of the Harbour

At one time, Hamilton Harbour and Coote's Paradise were outstanding wildlife areas with excellent fishing. Industrialisation and development have spoiled many habitats and spawning areas, but a limited warm water fishery has survived and is expanding with improvements in water quality. The Stakeholders Group proposed the following goals:

1. "Water quality and fish habitat should be improved to permit an edible, naturally reproducing fishery for warm species. Water and habitat conditions in Hamilton Harbour should not limit natural reproduction and the edibility of cold water species."

Remedial Actions

"That a staged fisheries rehabilitation plan begin immediately with an enhanced warm water fishery, on an area and project specific basis, progressing to a longer term goal of an edible, cold water self-sustaining fishery."

A further goal for wildlife was developed.

2. "Water quality improvement should be made to permit an enhanced wildlife habitat on a Harbour-wide basis."

Remedial Actions

- ° to protect Environmentally Sensitive Areas and rehabilitate through:
 - reduction of effluent loadings affecting wildlife
 - fisheries enhancement for feeding grounds
 - shoreline landscaping for habitat improvement

- support Royal Botanical Gardens programs

The following goals for swimming were proposed:

3. Enhance water quality to support swimming in the West end if health standards met.
4. Consider using disinfectants and membrane barriers for swimming if fecal coliform counts exceed standard.
5. Improve water quality to: a) provide for swimming in certain areas of the Harbour over the long term, and b) prevent impact on water quality for swimming in near shore Lake Ontario.

Remedial Actions

- reduce pollution from municipal, non-point and industrial sources
- implement urban storm water management
- separate combined sanitary and storm sewers
- remove nutrients from effluent
- clean-up bottom sediments in swimming areas

The Stakeholders also discussed the Harbour as an educational resource and agreed that schools at all levels should be identified as a "user group" or stakeholder.

Implementation Issues

The Stakeholders Group agreed to continue to meet until the Remedial Action Plan is completed in order to provide some consistency. The Group will address the official plan implications, review water quality enhancement plans, identify long-term goals, identify available funds and appropriate implementation agencies.

Costs of Remedial Actions

The goal of establishing a warm water fishery has been selected as the basis for the cost analysis attached as Schedule B to this staff report as it utilizes all Remedial Action Strategies. The main impact for Halton is the identified cost of \$4,000,000 to provide additional ammonia controls at the Burlington Skyway Water Pollution Control Plant and \$4,000,000 for sediment/suspended solids, turbidity, bacteria, and nutrient controls.

Research Needs and Costs

Research needs and costs to meet the goal of a warm water fishery have been summarized in Schedule C to this staff

report and total \$815,000. The Stakeholders are still discussing timing and the agencies that may undertake these projects.

Regional Landfill Site F Issue

The West Burlington Citizens Group tabled a letter at the Stakeholders meeting on 86 12 15, stating that they were concerned with the impact of leachate pollution from the Burlington landfill site, the old Bayview site and the proposed Regional Landfill site (see Schedule D for the letter and excerpt from the minutes). The Stakeholders discussed the letter and various opinions of the Stakeholders were expressed regarding the lack of information at the meeting, the mandate of the Stakeholders and their general concern for water quality. The following motion was passed:

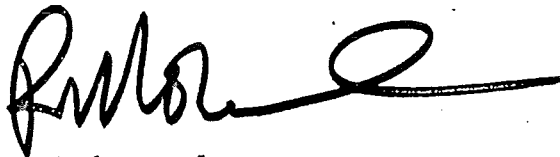
"Stakeholders discourage the location of any new sanitary landfill sites in the Hamilton Harbour Basin."

Conclusion

All the goals and issues mentioned in this staff report are addressed in the Halton Response document (Schedule A). Specifically, Halton's response addresses the Halton Official Plan Waterfront Policies which are highly applicable; the current situation at the Burlington Skyway Water Pollution Control Plant; the process and studies undertaken for the proposed Regional Landfill Site "F"; the Halton Health Departments' water quality monitoring; the tourism study and other planning issues.

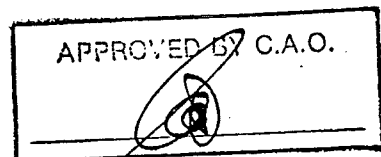
As Councils' representative, Recommendation No. 1 indicates that Councillor Johnson, along with appropriate staff support, make the presentation to the Stakeholder's Group.

Respectfully submitted,



R. Mohammed
Director of Planning and Development

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HALTON'S RESPONSE TO THE
HAMILTON HARBOUR STAKEHOLDERS PROPOSALS

INTRODUCTION

Halton is pleased with the opportunity to participate in the plans to formulate remedial actions and work towards improvement to water quality in Hamilton Harbour. As the Group is aware, Halton Council appointed Councillor Bill Johnson from the Town of Milton as its representative at all Stakeholders Group Meetings in June of 1986. Halton is impressed with the breadth of the issues addressed, the extent of the participation process and the innovative concept of having a "stakeholders" group propose remedial actions. Halton is generally very supportive of the goals and objectives as suggested in the Interim Report. We are taking this opportunity to explain our relevant Official Plan policies, our current activities related to water quality and to address some specific issues raised by the Interim Report.

1. HALTON WATERFRONT PLAN

Halton adopted extensive goals, objectives and policies to protect and improve the shoreline of Lake Ontario and Hamilton Harbour through the adoption of Amendment No. 1 to the Halton Regional Official Plan in 1981. The Halton Plan is very supportive of the goals and objectives as proposed by the Stakeholders. Halton's waterfront goal and objectives include the following:

"Goal

To improve and protect the Halton Waterfront Area as a major resource that is part of the provincially significant Lake Ontario shoreline.

Objectives

1. To maintain the basic existing land use pattern along the waterfront by developing the waterfront in a manner compatible with existing land uses.
2. To maximize public accessibility to the Halton Waterfront by increasing the amount of well distributed public open space.
3. To identify Regional Waterfront Parks to provide a variety of recreational opportunities along the Halton Waterfront.

4. To prevent building on hazard lands and establish priorities for erosion protection on public land based on established criteria.
5. To preserve stream valleys as an important open space feature of the waterfront.
6. To establish policies for the control of waterfront development that implement the objectives of the waterfront plan.
7. To encourage the appropriate government agencies to improve air and water quality, and protect and provide access for fish and wildlife resources in the waterfront area.
8. To recognize existing financial constraints in identifying priorities on the Halton Waterfront.
9. To identify and protect historic, architectural, landscape and geological features of regional significance, and incorporate them into Waterfront Public Use Areas, where feasible."

The Halton shoreline adjacent to Hamilton Harbour consists of open space areas such as the Royal Botanical Gardens, the Holy Sepulchre Cemetery, the Burlington Golf and Country Club and the Indian and Falcon Creek Mouths. The balance of the lands are suburban residential with a provincial highway and the Canada Centre for Inland Waters located on the Beach Strip.

The main purpose of the Halton Waterfront Plan is to establish regional waterfront parks to implement the objectives of creating additional access and open space. These parks are prioritized for implementation and include in the Hamilton Harbour Area, La Salle Park (Priority B) and Burlington Beach Waterfront Park (Priority A). The Burlington Beach Waterfront Park is currently the subject of a major master plan development process. The Master Plan is currently in the draft stage and envisions an extensive natural beach open space area with several tourism related attractions such as an aquarium facility, a waterfront centre, and a theatre auditorium complex. In addition, there is a proposal for a major marina at the end of the Burlington Beach adjacent to Spencer Smith Park. This park plan is relevant to the harbour as it is located at the mouth of the harbour and the harbour water quality can have an impact on the use of the beach for recreation. When fully developed the Burlington Beach Park will be a major Provincial attraction compatible with similar beach plans in Hamilton and augmenting the recreational and access objectives for the Hamilton Harbour Area.

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The Halton Official Plan Waterfront Policies also encourage the creation of local waterfront parks and provide development controls for lands adjacent to the lake and Hamilton Harbour. These policies require erosion protection measures, setbacks and consideration of views and breezes from the lake.

The open space areas along the Halton shoreline of Hamilton Harbour are designated waterfront open space in the Official Plan to maintain the existing natural and open character of the shoreline.

Although there are several regional park sites on Lake Ontario, where filling is proposed to extend the land base, no filling proposals were recommended or designated in the Hamilton Harbour area in recognition of the limited surface water area.

The Official Plan encourages the Ministry of Natural Resources and the Halton Region Conservation Authority to develop management programs for the revitalization of fisheries and wildlife resources.

The following Halton Official Plan Policy is relevant to the mandate of the stakeholders group:

"Encourage the Ministry of the Environment to enforce existing regulations relative to air and water quality along the Halton waterfront, and, in cooperation with Environment Canada, to investigate specific means by which the water quality problems in Burlington Bay (Hamilton Harbour) may be overcome."

The Plan also encourages the Conservation Authority to implement fill regulations along the Lake Ontario shoreline and to develop a demonstration project of Lakeshore Erosion Protection Methods which private landowners and municipalities can observe.

The waterfront policies in the Halton Official Plan are being implemented in a cooperative basis with coordination by the Regional Municipality of Halton, and participation from the City of Burlington, the Town of Oakville, the Ministry of Natural Resources, and the Halton Region Conservation Authority in a working group.

2. BURLINGTON SKYWAY WATER POLLUTION CONTROL PLANT EFFLUENT STANDARDS

Halton notes that the stakeholders proposals include an expenditure of 4 million dollars to upgrade the Skyway Water Pollution Control Plant to effect ammonia controls. In addition, another 4 million dollars has been suggested to control sediment/suspended solids, turbidity, bacteria and nutrients.

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Halton is proud of the record of the Burlington Skyway Water Pollution Control Plant in meeting all Ministry of the Environment guidelines. We have been advised by MOE that the Halton plants are among the top rated for achieving MOE water quality objectives in all of Ontario.

The Burlington Skyway Water Pollution Control Plant is a conventional activated sludge plant having a capacity of 20 MIGD discharging into Hamilton Harbour. The actual flow presently being treated is approximately 15 MIGD. The level of treatment consists of primary settling followed by biological aeration. The effluent is then settled for secondary settling followed by disinfection by chlorination. The settled sludge is treated by digestion. The sludge is then transported to Hamilton's Woodward Avenue sewage plant for incineration. Phosphorous is removed chemically by using ferric chloride.

MOE guidelines for effluent discharge are currently being met. These consist of measured concentrations of Total Phosphorous (Guideline = 1 MG/L), BOD (Guideline = 15 MG/L), and suspended solids (Guideline = 15 MG/L). There are no MOE guidelines for ammonia discharges.

Any recommendations on sewage effluent should take into account current MOE guidelines and MOE studies now underway, i.e. the Municipal Industrial Strategy for Abatement which is studying all water pollution control plants and major industries in Ontario with a view to improving pollution control.

We can advise that there are no immediate plans to expand the plant for either capacity or improved effluent quality as there is approximately 5 MIGD of spare capacity and all MOE effluent quality standards are being met. Since this is the case, the cost and benefit of improvements have to be weighed very carefully and compared with other Regional programs in need of funding support.

3. STAKEHOLDERS RESOLUTION REGARDING THE PROPOSED HALTON REGIONAL LANDFILL SITE "F"

Halton noted with some concern the motion passed by the stakeholders, which stated that:

"Stakeholders discourage the location of any new sanitary landfill sites in the Hamilton Harbour Basin."

A review of the minutes indicate that the members on the stakeholders group had no opportunity to review the extremely extensive set of documents (over seventy volumes) that were prepared by many consulting firms addressing the whole issue of the location of a new sanitary landfill site in the Regional Municipality of Halton. The Environmental Assessment process began in 1982 although previous studies have been searching for a site since 1973. Over 55 sites were investigated, an extensive public participation process

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was undertaken, a large number of environmental factors and government agency comments were taken into account before the location known as New Site "F" in Burlington was recommended by the consultant. All sites are located in drainage basins which flow into the Great Lakes. The quality and uses of the water in the basin is one factor in locating a site. At the top of the list of concerns all the way through the process was public health and safety, and the concern for leachate migration off-site. Further extensive detailed studies have been completed over the past year at the Burlington Site "F", and the second site in Milton known as Site "D". The consultants studied the stratigraphy between Site "F" and Hamilton Harbour; placed observation wells to determine ground water movement and used a computer simulation model of possible contaminant migration.

Since the Bayview and existing Burlington Landfill Site have been there for many years, the situation provides a unique opportunity to study existing conditions in order to forecast a future potential for groundwater movement. Consultants were able to project that it would take from 60 to 100 years for contaminants to reach the discharge zone till, which is located about 600 meters south of the site, near the CN Rail tracks. If observation wells indicate that movement is even occurring at this rate, purge wells can be located as a mitigation measure to prevent contaminated ground water from moving off-site. Since Hamilton Harbour Shores are located about 2 kilometers from the landfill site, the studies are indicating that there will be no impact on the harbour. These studies and others will be thoroughly examined before a Consolidated Hearing Board this spring and summer and it would be most appropriate to let any decision on the issue rest with the Board.

4. HALTON HEALTH DEPARTMENT REVIEW OF WATER QUALITY ISSUES

Since water quality is the main concern of the Stakeholders, it may be useful to review the program of Halton's Health Department, the Halton people responsible for water quality.

Although the details of implementation plans are not available, the Halton Health department indicates that there is no conflict between the principles and goals enunciated in the interim report and the mandate and activities of the Halton Health Department.

Several water quality surveillance and monitoring programs have been in place in the department for a number of years. These are as follows:

1. Routine bacteriological monitoring of the beaches along Lake Ontario during the summer (June - September).
2. Monitoring, on request, the water quality of creeks throughout the region, particularly those that discharge into Lake Ontario or other inland bathing areas.

3. Within the limitations of available resources, the investigation, identification and abatement of health hazards arising out of the impairment of our water quality. This activity, of course, implies water use for both recreational and drinking purposes.

5. OTHER ISSUES

Tourism

In April 1985 the Regional Municipality of Halton published a "Tourism Strategy for Halton". The main thrust of the strategy is an interception approach by which tourists would be diverted to Halton attractions while travelling to Toronto or Niagara Falls. The Skyway Bridge on the Queen Elizabeth Highway was identified as the Southern Gateway into Halton, and in this respect, the aesthetics and recreational opportunities afforded by the Hamilton Harbour area are of great importance to Halton Tourism potential. As mentioned, major tourist attractions are proposed for the harbour entrance adjacent to the bridge on the Burlington Beach side. In addition, the Royal Botanical Gardens is a significant tourist attraction and, of course, its overall desirability as a tourist destination can only be enhanced by improvements to the water quality in Cootes Paradise and Hamilton Harbour.

Environmentally Sensitive Areas

* The Halton Official Plan identifies four environmentally sensitive areas within the Hamilton Harbour drainage basin. Environmentally Sensitive Areas are defined as land or water areas (or combination of both) containing natural features or ecological functions of such significance as to warrant their protection in the best long term interests of the people and environment of Halton. The ESA Policies which require environmental impact assessments before development can occur, provide some protection for streams and valleys lands, particularly the Grindstone Creek Valley. These policies assist in protecting water quality as it enters Hamilton Harbour.

Hazard Land Policies

The Halton Official Plan Hazard Lands Policies control development in flood plains, restrict the alteration of water courses and the dumping of fill in valley lands on all major tributaries draining into Hamilton Harbour. The Hazard Land Policies also apply to a section of wooded slope on a portion of shoreline on the north side of Hamilton Harbour, adjacent to the Halton-Hamilton boundary.

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Parkway Belt Lands

The Halton Official Plan and the provincial Parkway Belt Plan designate as parkway belt all the lands on the Niagara Escarpment's slope between the escarpment and Highway 403, within the drainage basin of Hamilton Harbour, and below Highway 403 in the area of the Royal Botanical Gardens and the Grindstone Creek Valley. This designation provides for the retention of natural areas, and public open space lands by permitting limited low density and low intensity development only. The designation in this area provides some assistance in reducing erosion and subsequent water pollution prior to the streams entering Hamilton Harbour.

6. CONCLUSION

Halton supports the overall goal of working towards an edible warm water fishery for Hamilton Harbour by improving water quality. The goals, as detailed in the Interim Report, are supportable and the remedial actions listed seem generally appropriate.

Halton would like to emphasize two areas of concern:

- a) The Burlington Skyway Water Pollution Control Plant meets all MOE effluent standards currently and recommendations for improvements should consider these guidelines and ongoing MOE studies, such as the Municipal Industrial Strategy for Abatement (MISA).
- b) The Halton Regional Landfill issue has been extensively studied and will be thoroughly examined at the upcoming hearing. Since the stakeholders are not fully aware of the issues and the studies, it would be most appropriate to leave the resolution of this issue to the Consolidated Hearings Board.

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