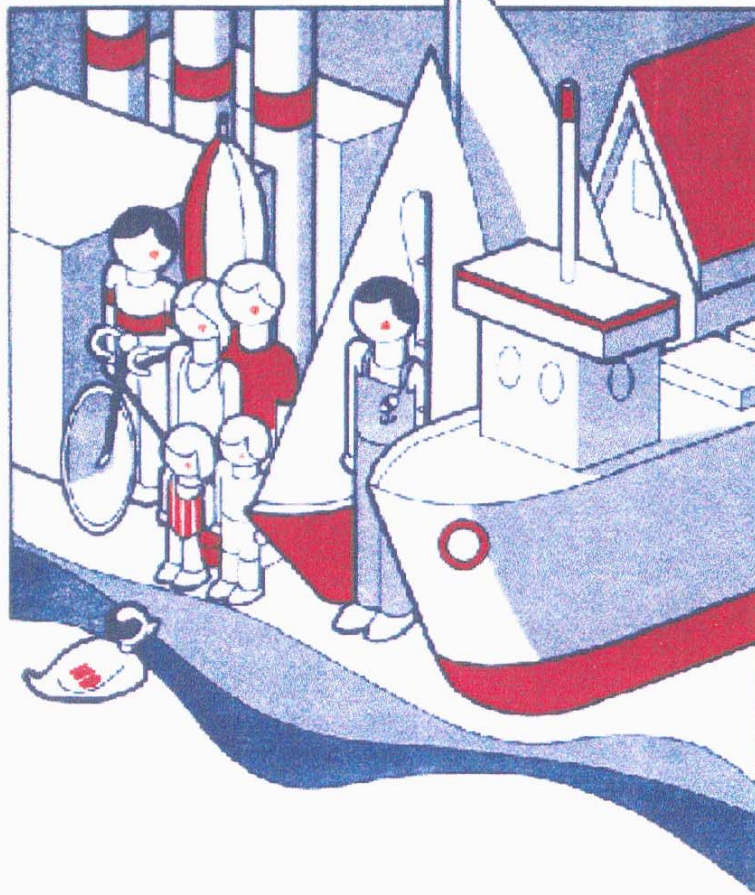


# **Remedial Action Plan for Hamilton Harbour**



**1998 Status Report - Summary**

**September 1998**

**EXECUTIVE SUMMARY  
HAMILTON HARBOUR REMEDIAL ACTION PLAN  
1998 STATUS REPORT**

**INTRODUCTION**

The 1998 status report presents an overview of actions, costs and accompanying changes in the aquatic ecosystem from 1990 to 1997 which support implementation of the Hamilton Harbour Remedial Action Plan (RAP). It pulls together information from all organizations represented on the Bay Area Implementation Team (BAIT). These are agencies from three levels of government; one academic institution; two steel companies and one public interest group.

The main body of the report draws on the Remedial Action Plan itself to remind readers of the nature of the problems and solutions outlined in the plan. It then arrays the new information on progress in the categories shown in the table below. Where possible it includes maps to identify locations of action, and figures which expose results of data collection over time in a way that makes trends understandable.

<b>TABLE 1: STATUS OF RAP IMPLEMENTATION</b>			
<b>Category</b>	<b>Excellent</b>	<b>Fair</b>	<b>Needs Improvement</b>
Water Quality Improvements		<b>X</b>	
Fish & Wildlife Habitat Restoration	<b>X</b>		
Sediment Remediation			<b>X</b>
Toxic Contamination*			
Urbanization & Land Use		<b>X</b>	
Public Access & Aesthetics		<b>X</b>	
Public Involvement & Education	<b>X</b>		
Research, Monitoring & Management		<b>X</b>	

\* Not enough information to evaluate.

For communication purposes, it is useful to look at progress in each of the categories on the table and review some highlights. However, as one might expect, everything is connected to everything else. Full restoration will require progress in all categories.

**WATER QUALITY**

Since the RAP has its origins in the Canada U.S. Great Lakes Water Quality Agreement, it is perhaps appropriate to report on progress in the water quality area first. The report shows that the main improvement in this area has been the reduction in bacterial contamination in the West end of the harbour, which has permitted the opening of beaches there. This progress is linked to the program to build combined sewer

overflow tanks so that combined stormwater and sanitary sewage spills into the harbour much less frequently than was the case when the RAP began. An overview of the status of this program is shown on the map in Figure 1.1a. The number of swimming days per season is reported (at least 36, at most 68) and improvements in water clarity are documented.

The report shows backward movement with respect to ammonia and suspended solids loadings which have an important influence on water clarity. Targets for reductions in loadings of these substances were recommended in the RAP but these have not been met as yet on the Hamilton-Wentworth side of the watershed.

## **FISH AND WILDLIFE HABITAT RESTORATION**

Fish and wildlife habitat restoration is highlighted as an area in which positive, visible progress is noted. Work at 5 sites is complete or nearing completion as shown in Figure 1.2a. Substantial progress has been made: shoreline rehabilitation and trail at Chedoke Creek; the carp barrier/fishway at the entrance from Cootes Paradise to Hamilton Harbour; design work on the Desjardins Trail; aquatic nursery and herptile ponds at Cootes Paradise marsh; pike spawning habitat and boardwalk at Grindstone Creek; underwater reefs and shoreline naturalization at Bayfront Park; shoreline naturalization, beach restoration, reefs and trail at LaSalle Park; colonial nesting bird islands, trail and lookout at the Northeastern Shoreline, and sand dune rehabilitation and trail at Burlington Beach.

New and physically modified habitat is now present in 86.4 hectares of the harbour and the mouth of Grindstone Creek. Another 20 hectares of emergent and 200 ha of submergent aquatic vegetation has regenerated in the Cootes Paradise marsh following carp exclusion at the Fishway. And 170 ha of submergent aquatic vegetation has been regenerated in Hamilton Harbour.

Volunteer plantings and growing of marsh plants in schools across Hamilton-Wentworth Region have involved thousands of individuals in "hands on" restoration work. The Watershed Stewardship Project of the Bay Area Restoration Council and the Conservation Authorities has co-operated with landowners and over 850 volunteers to establish 10 km of riparian habitat, enhance upland wetland habitat (25 ha), fence cattle, construct manure storage facilities and control erosion in the watersheds.

Consequences of all this work on fish populations and colonial nesting bird populations are being monitored, and the results of monitoring are briefly summarized in the status report. Results show movement in the right direction, but since most interventions only occurred in the post-1994 period, it is too soon to identify a trend of lasting significance.

## **SEDIMENT REMEDIATION**

A sediment remediation strategy was published as an update to the Remedial Action Plan in 1995. It placed a high priority on control of direct discharges of persistent toxic substances, and on remediation at a badly contaminated site near Randle Reef along

the South shore of the harbour. While much has been done to characterize this latter problem and to develop technologies for safe removal and effective treatment of contaminated sediments, no significant intervention has been made on this priority site.

Dofasco has worked with Environment Canada and the Ontario Ministry of the Environment to apply an "in situ" treatment process to accelerate biological degradation of contaminated sediments in its boat slip. Unfortunately, this has not yielded the desired result, largely due to competing factors such as a combined sewer overflow and frequent ship movement.

## **TOXIC SUBSTANCES**

Control of direct discharges of many contaminants from the steel sector has improved in the 1990-1997 period. However, some of this was achieved by re-routing effluents through the Woodward Avenue wastewater treatment plant, and loadings from that plant are not well enough monitored to permit a calculation of the net result for the harbour. Monitoring in some media, such as suspended sediments, shows declining concentrations for substances of concern. In other media, such as bottom-sediments, values remain at the "severe effect level". Analysis of fish flesh shows declines for some substances but troubling increases for others (such as mercury). This is an area in which more information is needed in order to evaluate progress.

## **PUBLIC ACCESS AND AESTHETICS**

The creation of Bayfront and Pier 4 Parks and a "Window on the Bay" on the North shore are highlights of progress in improving access and aesthetics. Approximately 16% of the harbour shoreline is now considered by the Harbour Commissioners to be publicly accessible—on the road to an objective in the RAP of 25%. Areas that are publicly accessible—not only around the harbour but also in Cootes Paradise—have been enhanced through the fish and wildlife habitat restoration project with boardwalks and lookouts, among other things. Industrial landowners have "greened" their shorelines by planting grass and trees.

More is needed, particularly in the East end of the harbour, but the report concludes that progress is "good" in this area.

## **LAND USE AND URBANIZATION**

In this category of activity the Remedial Action Plan did not have a prescriptive strategy. Its intention was to influence people's decisions about how they would use the land in ways that would protect progress in restoring the harbour. Progress to date has included preparing guidelines to reduce erosion from construction in the watersheds, and preparation of watershed management plans for the Spencer, Grindstone and Red Hill Creek watersheds. These documents may be used as the basis for devising a strategy to foster wise and sustainable land use in the future.

## **PUBLIC INVOLVEMENT AND EDUCATION**

The highlight in this category is the formation of the Bay Area Restoration Council (BARC) and the programs it runs to involve literally thousands of individuals in restoration projects. The status report describes these programs and lists the many partners involved in them. It notes that BARC publishes "Toward Safe Harbours", an annual report detailing actions of implementors in response to RAP recommendations and that BARC holds frequent public meetings to provide information and solicit public opinion on issues of concern.

## **RESEARCH, MONITORING AND MANAGEMENT**

The status report provides a round-up of the relevant research and monitoring results, along with a summary of the co-ordination and special issue management that is facilitated by this information. It shows that a thorough approach is being taken to understanding fish and wildlife populations, but there is room for improvement in understanding the health of individual animals and the ways in which they are exposed to and effected by contaminants. It reveals gaps in understanding related to sources, presence and effects of some toxic substances, particularly PAH's, PCB's and mercury, so that strategies can be devised for filling the gaps.

## **COSTS**

In an appendix to the status report, costs to date of implementation are presented. These are summarized in Figures A1 and A2. They show that expenditures are unlikely to reach the amounts that were predicted over a ten year period, and they allow for some comparison of the degree of financial commitment required and made to date in each category of activity.

## **CONCLUSIONS**

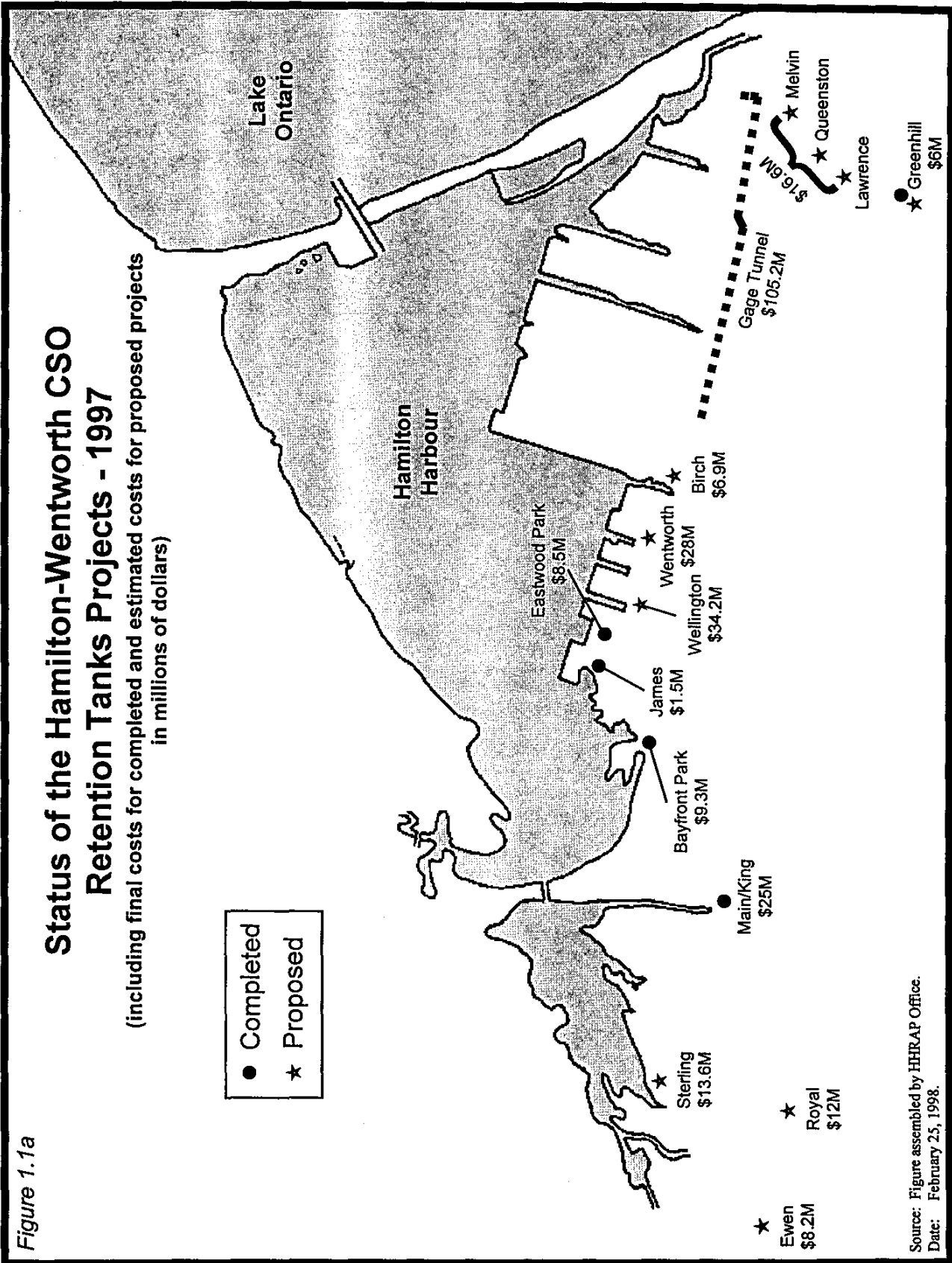
The report will be the focal point for discussion among residents and implementing organizations about how to celebrate successes, and how to address emerging issues. The "RAP Forum" , a re-creation of the stakeholder group which developed the Remedial Action Plan, will recommend areas in which the RAP could usefully be updated to address these issues. As in the planning stages, any updates will be based on a combination of good information, sound science, and community input.

Figure 1.1a

# Status of the Hamilton-Wentworth CSO Retention Tanks Projects - 1997

(including final costs for completed and estimated costs for proposed projects in millions of dollars)

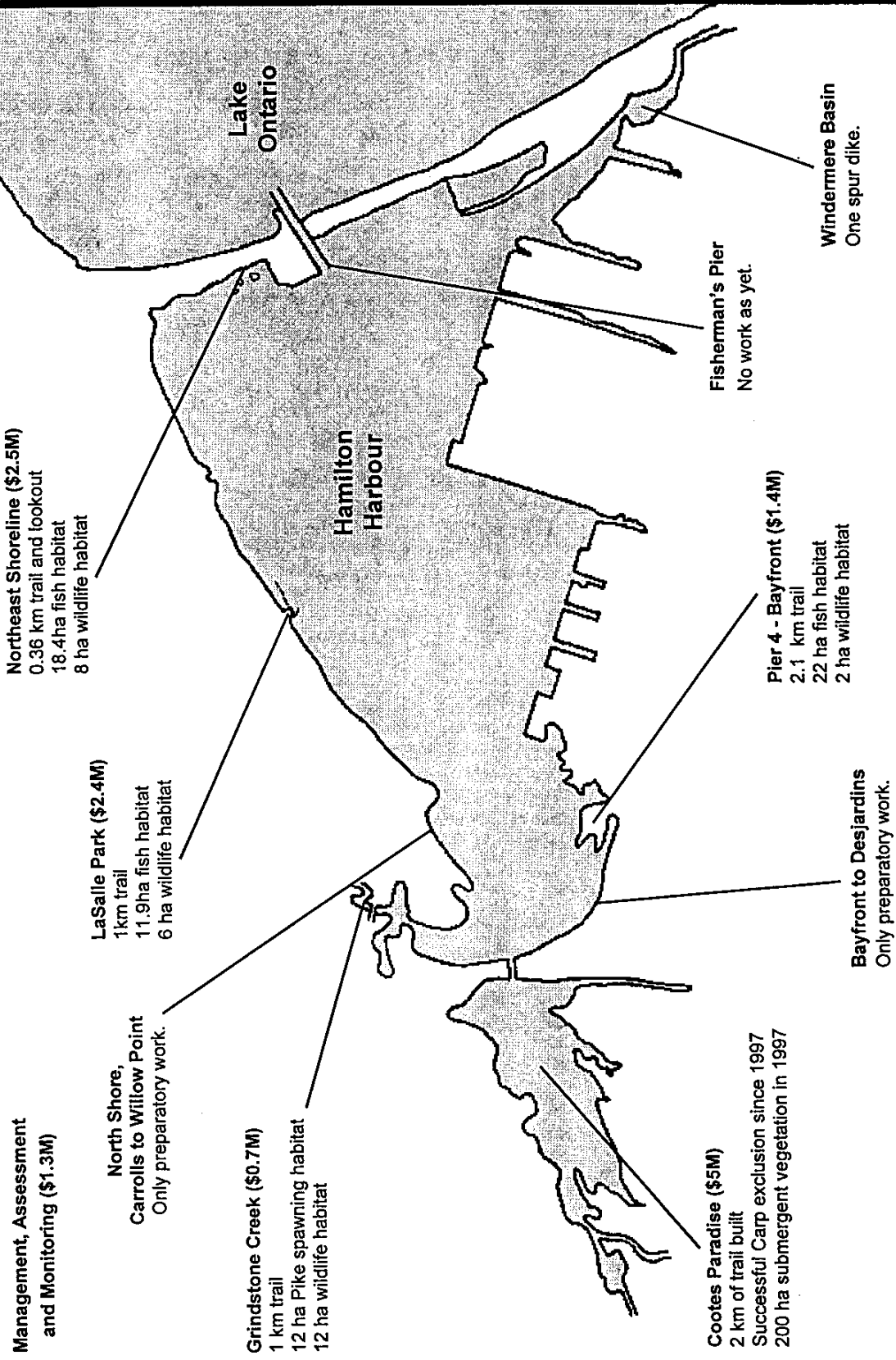
- Completed
- ★ Proposed



Source: Figure assembled by HHRAP Office.  
Date: February 25, 1998.

Figure 1.2a

### Status of the Fish & Wildlife Habitat Restoration Project - 1997

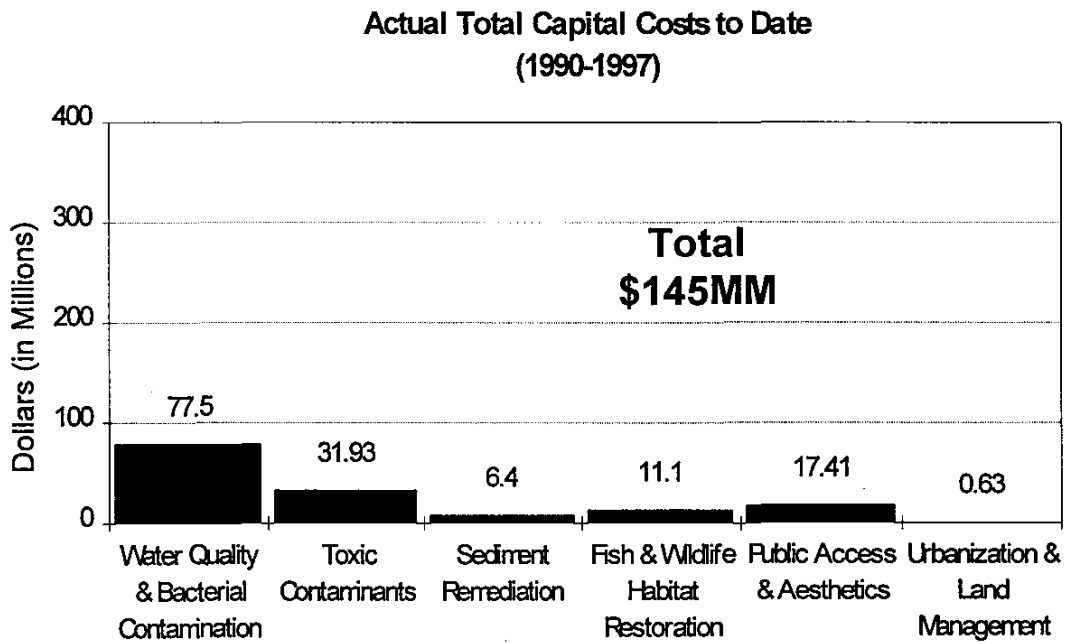
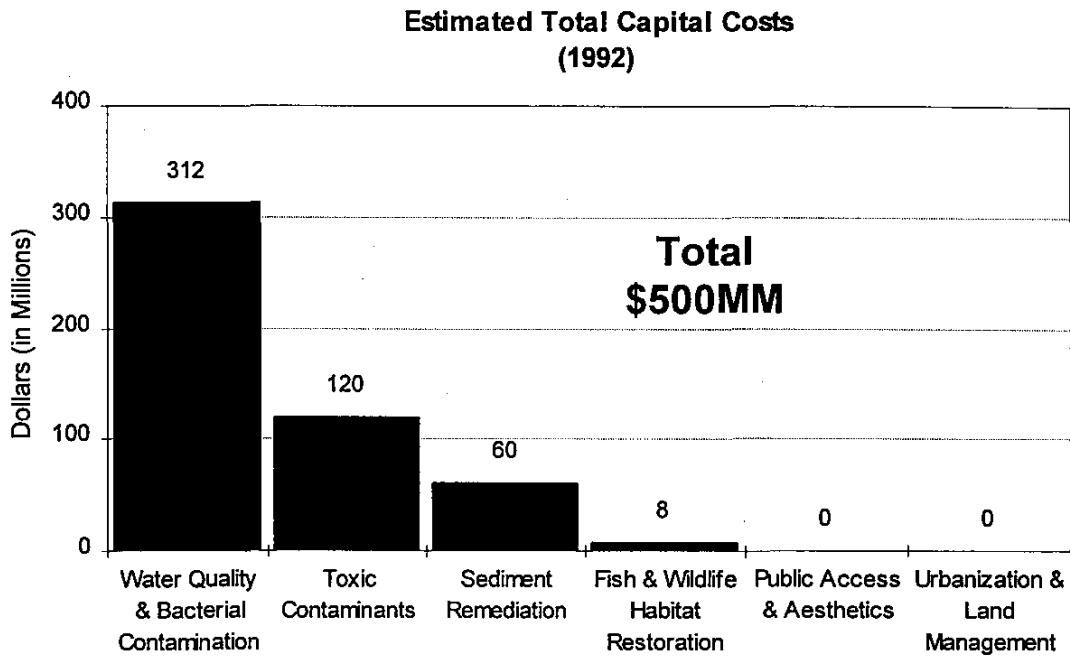


Source: Data provided by F&WHRP.  
Figure assembled by HHRAP Office.

Date: February 25, 1998.

Figure A1

Capital Costs for RAP Implementation Over 10 Years:  
1992 Estimate vs. Actual 1990-1997 Costs\*

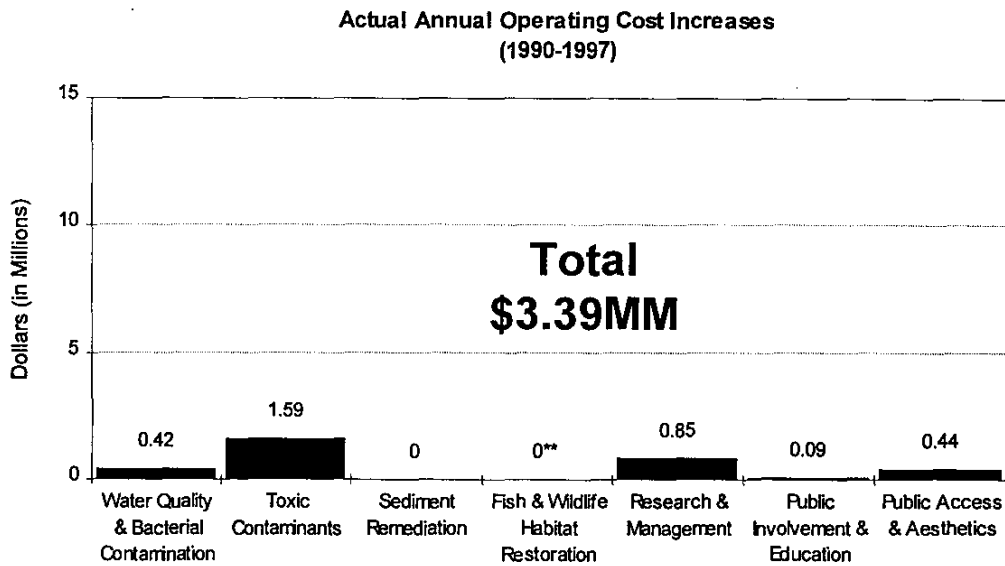
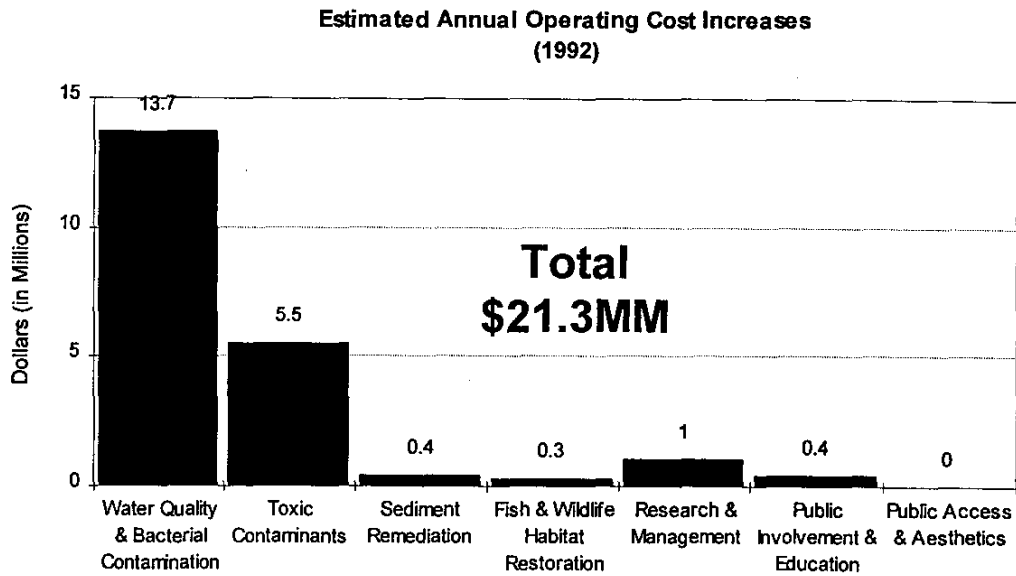


\* Actual costs as estimated by implementors in 1998. See Appendix A Introduction for explanation.



Figure A2

### Annual Operating Cost Increases Associated with RAP Implementation: 1992 Estimate vs. Actual 1990-1997 Costs\*



\* Actual costs as estimated by implementors in 1998. See Appendix A Introduction for explanation.

\*\* Operating costs for habitat projects are reflected in the category "public access and aesthetics".

Source: Hamilton Harbour RAP Office

Date: June 29, 1998