

MANAGEMENT OF FLOATABLE DEBRIS

PROBLEMS

*Beach closures
Adverse impacts on commercial and recreational boating
Adverse impacts on coastal species*

SOURCES

*Combined sewer overflows
Storm water discharges
Non-point sources including littering, landfill practices, and marine transfer operation
Decaying shoreline structures and sunken vessels
Vessel discharges*

VISION

To establish and maintain a healthy and productive Harbor/Bight ecosystem with full beneficial uses.

GOALS

*Eliminate floatable-related beach closures.
Prevent adverse impacts on coastal species resulting from floatables.
Prevent adverse impacts on commercial and recreational boating resulting from floatables.*

OBJECTIVES

*F-1 Continue and enhance implementation of the successful short-term floatables action plan.
F-2 Expand the USACE Harbor Drift Removal Program without compromising important habitat.
F-3 Implement beach and shoreline cleanups.
F-4 Assess and control landfill and solid waste practices.
F-5 Communicate impacts of marine debris and appropriate disposal practices.
F-6 Reduce loadings of floatables from CSOs, storm water discharges, and non-point sources.*

THE PROBLEMS

When the Bight Restoration Plan was enacted in 1987, there was a significant floatable debris problem in the Harbor/Bight system. By the summer of 1989, an interagency floatables workgroup, convened under the auspices of the Bight Restoration Plan, had developed and implemented a short-term floatables action plan, effectively controlling the problem. The extent of ocean beach closures declined from over 70 cumulative miles in 1988 to less than 4 miles in 1989.

Floatable debris is waterborne waste material that is buoyant. Examples include wood, beach litter, aquatic vegetation, and detritus; street litter (cans, bottles, polystyrene cups, sheet plastic, straws, and paper products); sewage-related wastes (condoms, sanitary napkins, tampon applicators, diaper liners, grease balls, tar balls, and fecal material); fishing gear (nets, floats, traps, and lines); and medical wastes (hypodermic needles, syringes, bandages, red bags, and enema bottles). The primary source of floatable materials in the Bight is the Hudson-Raritan Plume, which carries Harbor discharges into ocean waters. However, much litter is also generated by beachgoers.

Beach Closures

The wash-up of floatable materials on bathing beaches is offensive. Although the real threat to public health posed by inadvertent contact with these floatable materials is small, the perceived threat is large. In 1976, wash-ups of floatable debris were responsible for the closing of 60 miles of New York beaches. In 1987, wash-ups were responsible for the closing of 25 miles of New Jersey beaches in May and 50 miles in August. In 1988, floatable materials were again responsible for the closing of 60 miles of beaches in New York. These beach closures generally lasted for periods ranging from several hours at a time to days, and the economic and social impacts were enormous. The SUNY Waste Management Institute estimates a loss between \$990 million and \$4 billion in New Jersey and between \$950 million and \$2 billion in New York in the 1987-1988 time frame.

Adverse Impacts on Commercial and Recreational Boating

Floating debris, particularly driftwood, poses hazards to shipping and recreational boating in the Harbor/Bight, but quantifying the damage is difficult. A U.S. Army Corps of Engineers (USACE) briefing paper on damages to vessels in the New York/New Jersey Harbor estimated that the damage from floating debris in 1987 was \$48 million and involved 17,800 vessels. No comparable data are available for the Bight, although damages are thought to be much less. The USACE conducts two programs to address floating debris: 1) collection of debris already floating and 2) dismantling deteriorating structures before they fall apart and become drift.

Drift materials include timbers, pilings, plastics, rubber tires, fiberglass boats, polystyrene, rafts, floating drums, construction materials, and parts of barges, docks, sheds, and other shore structures.

Adverse Impacts on Coastal Species

Birds, mammals, and sea turtles are found seasonally throughout the Bight and portions of the Harbor. These living resources are vulnerable to entrapment and entanglement in plastic waste including six pack rings, fishing line, and nets.

Turtles and mammals are also vulnerable to ingestion of plastic items, such as bags, that are mistaken for squid, jellyfish, or other prey. This ingestion often leads to suffocation or intestinal blockage and death. While the frequency of debris-related deaths of marine wildlife is difficult to quantify, the fact that several species are threatened and endangered makes this issue significant for the region. In addition, accumulations of floatable debris in coastal marshes and shorelines can effectively smother productive vegetated areas.

SOURCES CONTRIBUTING TO THE PROBLEMS

The sources of floatable debris in the ecosystem and the problems caused by this debris are fairly well understood. The sources of floatable debris include:

- ◆ Combined sewer overflows;
- ◆ Storm water;
- ◆ Non-point sources including littering, landfill practices, and marine transfer operations;
- ◆ Decaying shoreline structures such as piers, pilings, sunken barges, and bulkheads; and
- ◆ Vessel discharges.

THE PLAN TO SOLVE THE PROBLEMS

The floatables component of the CCMP plays an important role in establishing and maintaining a healthy and productive Harbor/Bight ecosystem with full beneficial uses. This component of the plan has three goals:

- ◆ To eliminate floatable-related beach closures;
- ◆ To prevent adverse impacts on commercial and recreational boating resulting from floatable debris; and
- ◆ To prevent adverse impacts on coastal species resulting from floatable debris.

In order to achieve these goals, HEP decided to address the floatables problem on two tracks. A "fast" track, or expedited action plan, was developed and implemented in 1989, and included specific actions to clean up existing debris after it entered the system. A longer term strategy, to reduce the amount of debris entering the system, is incorporated in this CCMP.

Expedited Short-Term Action

Because of the ongoing beach closures in the summers of 1987 and 1988, the fast track Action Plan was developed in 1989 and has been implemented each year since then. The intent of this plan is to minimize beach wash-ups of floatables in the Bight. Its success can be measured by the reduced number of floatables-related beach closures since 1989, as well as by the improved communication which enables the agencies to intercept debris slicks before they reach the beaches. In spite of abnormally heavy rainfall in 1989, only two floatables-related ocean beach closures occurred. There were no closures of ocean beaches in New Jersey or New York during the summers of 1991 to 1994 as a result of floatables wash-ups. As shown in Table 21(f), thousands of tons per year of floatable debris have been collected as part of the Floatables Action Plan and New Jersey's Operation Clean Shores.

This fast track plan contains four key elements:

Surveillance - NJDEP, USEPA, and the U.S. Coast Guard (USCG) conduct helicopter and fixed-wing aircraft patrols of the Harbor complex to look for slicks of floating debris. In addition, there are daily vessel patrols of the Harbor complex by USEPA and USCG, weekly patrols of the Bight by USCG, and daily overflights of the Bight by NJDEP. Continued funding for the USEPA Region II helicopter is in jeopardy.

Regular Cleanups - USACE has an ongoing program to capture loose timbers and other navigation hazards in the Harbor complex. As part of this program, USACE cleans up floatable slicks, employing specially designed nets to collect small debris. These cleanups are regularly scheduled at the Verrazano Narrows and Arthur Kill (locations where garbage slicks tend to form, according to

Table 21(f). Debris Collected

	Floatables Action Plan (tons)	NJDEP Operation Clean Shores (tons) (miles)
1989	541*	3000 (45)
1990	795**	4800 (48)
1991	701**	4688 (74)
1992	958**	5789 (84)
1993	1088**	5750 (67)
1994	1298**	3700 (62)

* May 15 to September 15 only.

** Year round collection.

USEPA) during and following new and full moon high tides and following storms that cause combined sewer overflows. During the summer bathing season (mid-May to mid-September), these cleanups occur daily rather than according to tide or storm conditions. Starting in 1993, New York City supplemented USACE efforts with its own skimmer vessels to clean up tributaries to the Harbor. New Jersey supplements USACE's efforts with a program called "Operation Clean Shores", initiated in 1989, to remove shoreline debris from the New Jersey side of the Harbor complex in order to prevent resuspension of debris. This program, staffed by Department of Corrections inmates and NJDEP personnel, with assistance from local municipalities, operates year-round from the George Washington Bridge to Raritan Bay; over 10 million pounds of debris are collected each year. There is no similar program in New York State.

Nonroutine Cleanups - USACE attempts to capture additional slicks within the Harbor complex, when these conditions are brought to its attention. In 1989, NJDEP also contracted with fishing vessels to capture slicks. State coordinators notify local authorities and beach operators of potential wash-ups.

Communications Network - USEPA coordinates a reporting network as well as cleanup activities (See Figure 9). USEPA, NYSDEC, NJDEP, New York City Department of Sanitation (NYCDOS), USACE, and USCG are on-call 24 hours a day. Hotline numbers are available for citizen telephone calls.

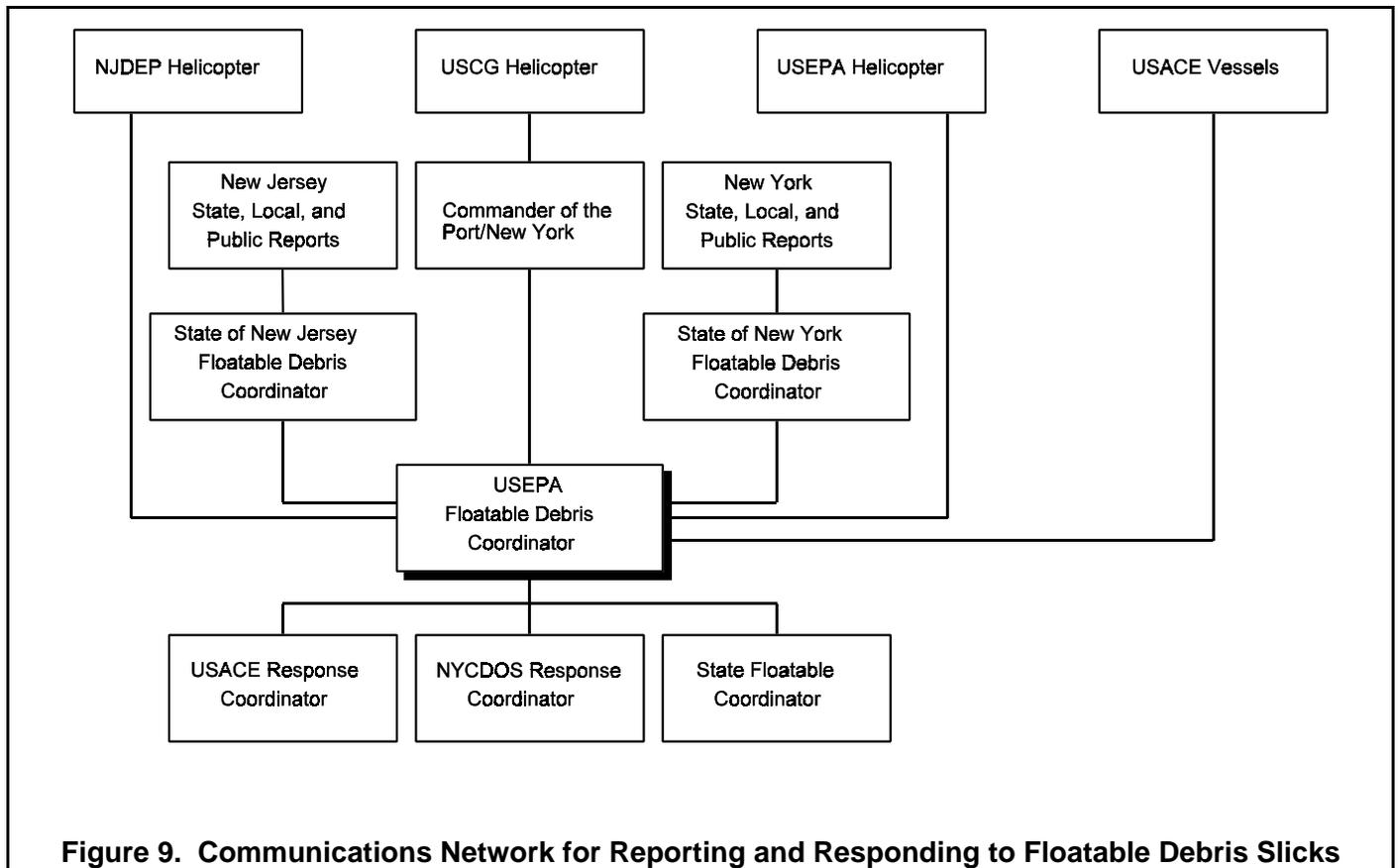
The Medical Waste Tracking Act of 1988 defined medical waste; established the requirements for packaging, labeling, and transporting the wastes; and specified a system to track the medical waste from generation to final disposal. Although this federal legislation expired in 1992, the need to educate the public on the proper disposal of home medical waste continues (see Action F-4.5 below).

There are many other ongoing efforts which remove debris from the shoreline. One such example is the National Beach Cleanup Program, in which an ever increasing number of public interest and youth groups (e.g., Boy Scouts, school children) conduct annual cleanups at local beaches.

Longer Term Plan

The HEP Management Conference recognizes the need to supplement the short-term action plan with a longer term strategy to control the sources of floatable debris, preventing the debris from entering the system. The management approach for this longer term strategy is as follows:

- ◆ Continue and improve the successful short-term floatables action plan;
- ◆ Develop and implement a long-term source-oriented strategy to reduce the amount of floatables entering the ecosystem; take action as soon as there are commitments and mechanisms in place for implementation; take additional actions, over time, as mechanisms and commitments are developed; and
- ◆ Expand public education and outreach efforts to foster lifestyle changes that will reduce the public's contribution to the floatable debris problem.



COMMITMENTS AND RECOMMENDATIONS

OBJECTIVE F-1 *Continue and enhance implementation of the successful short-term floatables action plan*

ACTION F-1.1

Short-term Floatables Action Plan

USEPA, USCG, USACE, NYSDEC, NJDEP, NYCDEP, and NYCDOS will continue to implement the short-term floatables action plan.

- In order to ensure that USEPA continues its active involvement in Harbor/Bight surveillance, HEP recommends that USEPA Region II continue to receive base program funding for its helicopter.

ACTION F-1.2

New Jersey "Operation Clean Shores" Program

New Jersey will continue annual implementation of the "Operation Clean Shores" program.

ACTION F-1.3

New York Companion Program to "Operation Clean Shores"

HEP recommends that NYSDEC work with other state agencies to develop and implement a companion program to New Jersey's "Operation Clean Shores" in the New York portion of the Harbor.

ACTION F-1.4

New York City Skimmer Vessels and Use of Booms

New York City acquired a large open water skimmer vessel, which became operational in October 1993, to complement the USACE Harbor drift collection vessels. New York City also purchased two small skimmer boats, for Flushing and Jamaica Bays, which have been operating since May 1993. New York City has recently acquired two additional small skimmer vessels for tributary areas of the Harbor. In addition, New York City is using booms to catch floatables in the four CSO abatement tributary planning areas.

ACTION F-1.5

Additional Measures in New Jersey

NJDEP is requiring that, as part of their permits to manage floatables, the New Jersey discharge permittees evaluate the need for additional floatables control measures, including skimmer vessels, for New Jersey tributaries to the Harbor.

OBJECTIVE F-2 *Expand the USACE Harbor Drift Removal Program without compromising important habitat*

USACE, to date, has awarded 18 construction contracts with a total value of \$40 million. This effort has removed over 320,000 tons of debris from the waters and shorelines of the Harbor core area.

ACTION F-2.1

Prioritization of Sites

The States of New York and New Jersey and USACE will establish priority sites for USACE's Harbor Drift Removal Program based on an area's potential to contribute significant quantities of floatable debris to the Harbor, without compromising habitat or navigational safety.

ACTION F-2.2

Implementation of Drift Removal Projects

USACE, with cost-sharing by the states, should implement Harbor drift removal projects in accordance with the prioritization in Action F-2.1. Implementation of these projects is dependent on annual appropriations by Congress.

OBJECTIVE F-3 *Implement beach and shoreline cleanups*

ACTION F-3.1

Routine Beach Cleanups

Beach operators should conduct routine beach cleanups at private and public beaches in New York and New Jersey in the off-season.

ACTION F-3.2

National Beach Cleanup Expansion

States should encourage public interest groups to continue and expand ongoing national beach cleanups to include the back bay and tributary areas. New York and New Jersey are committed to improving cleanup coordination.

OBJECTIVE F-4 Assess and control landfill and solid waste practices

ACTION F-4.1

New York City Solid Waste Enforcement

New York City marine transfer stations are now all enclosed, and procedures are established to prevent spillage while loading. The barges are all netted for the trip to the Fresh Kills landfill in Staten Island, as a measure to prevent floatables from entering the Harbor during trips from marine transfer stations to Staten Island.

Until a long-term solution is implemented, interim measures are presently in place to reduce the amount of floatables escaping from the Fresh Kills landfill.

NYSDEC and ISC will continue to monitor the provisions stipulated in permits and consent orders, issued to the New York City Department of Sanitation for solid waste handling at landfills and marine transfer stations, to ensure compliance.

ACTION F-4.2

Continuation of NJ Solid Waste Program

NJDEP will continue its existing solid waste disposal program, which requires solid waste to be disposed at specific facilities based on the source of waste generation.

ACTION F-4.3

Expansion of Marina Recycling

New York and New Jersey coastal communities should review the results of demonstration projects

on recycling at marinas and work to expand these recycling programs regionwide. In 1989, HEP sponsored such demonstration projects in New York and New Jersey.

ACTION F-4.4

Beach and Shoreline Waste Handling

- HEP recommends that entities responsible for managing public open spaces at beaches and shoreline areas continue and expand effective waste collection, recycling, and handling measures. Waste receptacles, including recycling and disposal containers, should be provided in sufficient numbers to accommodate public users and prevent debris dispersal by wind and wildlife.
- HEP recommends that entities responsible for managing public open spaces at beaches and shoreline areas implement, expand, and improve education efforts on litter control and the effects of plastic debris on marine life. (Objective F-5 below includes specific actions to communicate impacts of debris and appropriate disposal practices.)
- HEP recommends that legislation at the appropriate government level be enacted to ban or restrict the use of non-degradable plastic products at shore concession stands.

ACTION F-4.5

Education on Disposal of Home Medical Waste

Appropriate agencies should develop educational materials to inform the public of the proper disposal techniques for home medical wastes.

- The medical and pharmaceutical industries at both the regional and national levels should develop an educational strategy to encourage the proper disposal of home medical wastes. HEP will inform them of this need.
- NYSDEC and NYSDOH will develop educational materials for the disposal of home sharps.

OBJECTIVE F-5 *Communicate impacts of marine debris and appropriate disposal practices*

OBJECTIVE F-6 *Reduce loadings of floatables from CSOs, storm water discharges, and other non-point sources*

ACTION F-5.1

Signs on Debris Impacts and Waste Disposal

All New York and New Jersey beach and marina owners and operators should post permanent signs at boat launch ramps and other public access sites. Signs should depict the impacts of floatable debris on marine wildlife and provide information on appropriate methods for waste disposal.

ACTION F-5.2

Marine Debris Information in Fishing/Boating Applications

New York and New Jersey should enclose information on marine debris in all applications for fishing and boating licenses or registrations.

ACTION F-5.3

Public Service Announcements

HEP will seek sponsors to develop and broadcast public service announcements throughout New York and New Jersey regarding the proper disposal of beach and boating litter.

ACTION F-5.4

Continue Clean Streets/Clean Beaches Campaign

USEPA, NYSDEC, NJDEP, and NYCDEP will continue the clean streets/clean beaches campaign to educate the public on proper waste disposal.

ACTION F-5.5

Stormdrain Stenciling

HEP and its member regulatory agencies will encourage local user groups to engage in stormdrain stenciling activities. Stormdrain stencils inform the public that materials thrown into the sewers discharge into local waterways.

ACTION F-5.6

MARPOL V Enforcement

USCG will communicate and enforce provisions of MARPOL V for at-sea disposal of solid waste.

Three sources of pollution to the Harbor/Bight -- CSOs, storm water discharges, and non-point source runoff -- are associated with runoff induced by rainfall. These three sources are significant contributors of floatables to the Harbor/Bight system. Effective abatement of these sources is therefore important in reducing use impairments and adverse ecosystem impacts associated with floatables. HEP's plan to address these sources is found in the section on Rainfall-Induced Discharges below. The Plan includes the following actions addressing floatables:

Combined Sewer Overflows

- Fully implement the nine minimum control measures of the National CSO Control Policy (see Objective CSO-1 below).
- Implement additional CSO controls to meet water quality standards and restore beneficial uses (see Objective CSO-2 below).
 - New York City is implementing CSO control measures, including constructing retention facilities, and conducting long-term CSO abatement planning (see Action CSO-2.1 below).
 - HEP recommends that New Jersey CSO dischargers cooperate in a regional effort to develop long-term CSO abatement plans (see Action CSO-2.2 below).

Storm Water Discharges

- Implement measures to control municipal and industrial storm water discharges (see Objective SW-1 below).
 - Issue NYC storm water permit modifications (see Action SW-1.1 below).

- Incorporate requirements of the general permits that control construction discharges into local codes (see Action SW-1.3 below).
- Expand geographic coverage of the New Jersey Sewage Infrastructure Improvement Act (see Action SW-1.4 below).

Non-point Source Runoff

- Develop and implement coastal non-point source management programs under the Coastal Zone Act Reauthorization Amendments (see Objective NPS-2 below).
- Focus the Urban Resources Partnership Initiative on Harbor/Bight watersheds (see Objective NPS-3 below).

COSTS OF IMPLEMENTING THIS PLAN

Many of the commitments and recommendations in the floatables component of the CCMP are being accomplished through the effective use of base program resources. The CCMP itemizes 5 new HEP-driven commitments to control floatable debris using base program resources. These actions represent a continuing and expanding commitment to CCMP implementation.

The CCMP also includes 10 commitments and recommendations for floatable debris control programs that entail enhanced program funding. As shown in Table 22(fc) below:

- ◆ The Plan includes 4 commitments to continue and expand existing short-term initiatives, which total \$1.750 million per year.
- ◆ The Plan includes 4 recommended actions for which increased funding of \$200,000 plus \$1.35 million per year is required.
- ◆ The Plan also includes 2 additional recommended actions for which cost estimates will be developed as part of the continuing planning process.

This component of the CCMP includes 4 additional actions that require implementation costs for special projects. As shown in Table 23(fc) below:

- ◆ The Plan includes 2 actions for which a total of \$7.4 million has been committed by the responsible entities.
- ◆ The Plan includes 1 recommended action for an existing federally authorized program with an estimated cost of \$2.5 million per year.
- ◆ The Plan includes 1 recommended action for which cost estimates will be developed as part of the continuing planning process.

Table 22(fc). Enhanced Program Costs for Management of Floatable Debris

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION F-1.1: Implement the short-term floatables action plan.		\$1 million		
ACTION F-1.2: Implement "Operation Clean Shores".		\$600,000		
ACTION F-1.3: Complement "Operation Clean Shores" within NYS.				\$1.2 million
ACTION F-3.2: Continue existing national beach cleanups.		\$50,000		
ACTION F-3.2: Expand national beach cleanups to new areas.				\$9,000
ACTION F-4.3: Expand recycling demonstration projects at marinas.				\$140,000
ACTION F-4.5: Develop educational strategy to inform public of proper medical waste disposal.				*
ACTION F-5.1: Post signs advising of proper marine debris disposal.				*
ACTION F-5.3: Develop and broadcast public service announcements.			\$200,000	
ACTION F-5.4: Continue Clean Streets/Clean Beaches Campaign.		\$100,000		
TOTAL		\$1,750,000/yr+ ¹	\$200,000	\$1,349,000/yr+ ¹

* Enhanced program costs to be developed as part of the continuing planning process.
¹ Notation (+*) indicates cost plus additional costs to be determined.

Table 23(fc). Project Implementation Costs for Management of Floatable Debris

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION F-1.4: Operate open water skimmer vessel in New York City to clean up Harbor debris.	\$4 million (capital cost)			
ACTION F-1.4: Operate 4 skimmer boats in New York City to clean up Harbor tributaries.	\$3.4 million			
ACTION F-1.4: Use booms to catch floatables in the four CSO abatement tributary planning areas in New York City.	Included in the estimate for Action CSO-2.1			
ACTION F-2.2: Implement Harbor drift removal projects.				\$2.5 million
ACTION F-3.1: Perform routine beach cleanups during off-season.				*
TOTAL	\$7,400,000			\$2,500,000/yr

* Project implementation costs to be developed as part of the continuing planning process.

BENEFITS OF IMPLEMENTING THIS PLAN

Full implementation of the commitments and recommendations for management of floatable debris would result in:

- ◆ Elimination of floatable-related beach closures;
- ◆ Prevention of adverse floatable-related impacts on coastal species; and
- ◆ Prevention of adverse impacts on commercial and recreational navigation.

With the implementation of the short-term floatables action plan, the participants of HEP have made substantial headway in the attainment of these goals. Continued commitment to the implementation of a long-term strategy to control floatable debris will ensure continued progress toward the attainment of these goals. Aesthetics, recreational opportunities, navigational safety, and the regional ecosystem will all benefit from the implementation of this component of the Plan.

Table 24(fs). Summary—Management of Floatable Debris

ACTION	RESPONSIBLE ENTITY ¹	TARGET DATE	ESTIMATED COST	STATUS ²
OBJECTIVE F-1: Continue and enhance implementation of successful short-term floatables action plan.				
ACTION F-1.1: Implement the short-term floatables action plan.	USEPA, USCG, USACE, NYSDEC, NJDEP, NYCDOS, NYCDEP	Ongoing	Enhanced program cost - \$1 million/yr total, including \$126,800 for USEPA helicopter	C/N
ACTION F-1.2: Implement "Operation Clean Shores" program.	NJDEP	Ongoing	Enhanced program cost - \$600,000	C/O
ACTION F-1.3: Develop and implement a companion program to "Operation Clean Shores".	NYSDEC	Summer 1996	Enhanced program cost - approximately \$1.2 million/yr	R

Note: It is HEP's goal that all the recommendations in the CCMP become commitments.

-- In some cases CCMP actions are recommendations, not commitments, because responsible entities require resources to implement the action. HEP will advocate making these resources available. -- In other cases, CCMP actions are recommendations because HEP has not obtained the commitment of regulated entities and other responsible entities to implement the action. By issuance of this CCMP, HEP seeks the commitment of the responsible entities and requests that they step forward to voluntarily agree to implement the actions.

¹ Responsible entities may accomplish the actions directly or via contract or grant.

² C/O - An ongoing commitment, not driven by the HEP CCMP

C/N - A new commitment, driven by the HEP CCMP

R - Recommendation

(Continued)
Table 24(fs). Summary—Management of Floatable Debris

ACTION	RESPONSIBLE ENTITY ¹	TARGET DATE	ESTIMATED COST	STATUS ²
ACTION F-1.4: Continue use of skimmer boats and booms in New York City.				
-- Open water vessel.	NYCDEP	Ongoing	Project implementation cost - \$4 million capital cost (55% USEPA grant)	C/N
-- Four skimmer boats.	NYCDEP	Ongoing	Project implementation cost - \$3.4 million over 3 yrs	C/N
-- Use booms to catch floatables in the four CSO abatement tributary planning areas.	NYCDEP	Ongoing	Project implementation cost included in estimate for Action CSO-2.1	C/O
ACTION F-1.5: Require the evaluation of need for other floatables control measures including additional skimmer boats.	NJDEP	Completed	Base program	C/N
OBJECTIVE F-2: Expand the USACE Harbor Drift Removal Program without compromising important habitat.				
ACTION F-2.1: Establish priority sites for the drift removal program.	NY, NJ, USACE	Completed	Base program	C/N
ACTION F-2.2: Implement drift removal projects.	NY, NJ, USACE	By Dec 31, 1996	Project implementation cost - \$2.5 million/yr	R
OBJECTIVE F-3 Implement beach cleanups.				
ACTION F-3.1: Perform routine beach cleanups off-season.	Beach operators (Federal, state, local, and private)	Beginning by Dec 31, 1995	Project implementation cost to be estimated prior to implementation of program	R

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C/N - A new commitment, driven by the HEP CCMP

R - Recommendation

(Continued)
Table 24(fs). Summary—Management of Floatable Debris

ACTION	RESPONSIBLE ENTITY ¹	TARGET DATE	ESTIMATED COST	STATUS ²
ACTION F-3.2: Continue and expand national beach cleanups.				
-- Continue existing beach cleanups. (Adopt-a-Beach program in NJ)	NY & NJ	Ongoing	Enhanced program cost - \$25,000/yr (NJ) \$25,000/yr (NY)	C/O
-- Expand existing programs to include back bays and tributary areas.	NY, NJ, private sector	By Dec 31, 1996	Enhanced program cost - NYS: \$6,000/yr NJ: cost included above Private: \$3,000/yr	R
OBJECTIVE F-4: Assess and control landfills and solid waste practices.				
ACTION F-4.1: Monitor provisions of NYC DOS permits and consent orders for solid waste handling at landfills and marine transfer stations to ensure compliance.	NYSDEC & ISC	Ongoing	Base program	C/O
ACTION F-4.2: Continue NJ solid waste program.	NJDEP	Ongoing	Base program	C/O
ACTION F-4.3: Conduct recycling demonstration projects at marinas.	NYSDEC & NJDEP	Completed 1990	Enhanced program cost - \$140,000 (FY89 Demo project)	C/N
-- Expand such projects.	Coastal communities in NY and NJ	By Dec 31, 1996	\$140,000/yr	R

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C/N - A new commitment, driven by the HEP CCMP

R - Recommendation

(Continued)
Table 24(fs). Summary—Management of Floatable Debris

ACTION	RESPONSIBLE ENTITY ¹	TARGET DATE	ESTIMATED COST	STATUS ²
ACTION F-4.4: Provide for beach and shoreline waste handling.				
-- Ban use of non-degradable plastic products at shore concession stands.	Appropriate government legislators	By Dec 31, 1996	Base program	R
-- Continue, expand, and adopt effective waste handling practices at public shoreline areas, as required.	Open space managers	By Dec 31, 1996	Base program	R
-- Provide waste receptacles sufficient for public need and adequate to prevent debris dispersal.	Open space managers	By Dec 31, 1996	Base program	R
ACTION F-4.5: Develop educational materials to inform the public of proper disposal techniques for home medical waste.				
-- Inform medical and pharmaceutical industries of need to develop educational strategy.	HEP	By Dec 31, 1996	Base program	C/N
-- Develop educational strategy.	Medical and pharmaceutical industries	By Dec 31, 1997	Enhanced program cost to be provided by medical and pharmaceutical industries	R
-- Develop educational materials for the disposal of home sharps.	NYSDEC & NYSDOH	Ongoing	Base program	C/O

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C/N - A new commitment, driven by the HEP CCMP

R - Recommendation

(Continued)
Table 24(fs). Summary—Management of Floatable Debris

ACTION	RESPONSIBLE ENTITY ¹	TARGET DATE	ESTIMATED COST	STATUS ²
OBJECTIVE F-5: Communicate impacts of marine debris and appropriate disposal practices.				
ACTION F-5.1: Post signs depicting proper waste disposal methods.	HEP	By Dec 31, 1996	Base program	C/N
-- Inform beach and marina owners and operators.	HEP	By Dec 31, 1996	Base program	C/N
-- Post signs.	Beach and marina owners and operators	By Dec 31, 1996	Enhanced program cost to be provided by beach/marina owners/operators	R
ACTION F-5.2: Enclose information on marine debris in all fishing applications and/or boating licenses.	NY & NJ	By Dec 31, 1996	Base program	R
ACTION F-5.3: Develop and broadcast public service announcements on proper disposal of beach and boating litter.				
-- Seek sponsors.	HEP	By Dec 31, 1996	Base program	C/N
-- Develop and broadcast PSAs.	Sponsors	By Dec 31, 1996	Enhanced program cost - \$200,000	R
ACTION F-5.4: Continue Clean Streets/Clean Beaches campaign.	USEPA, NYSDEC, NJDEP, NYCDEP	Ongoing	Enhanced program cost - \$100,000/yr	C/N
ACTION F-5.5: Encourage local user groups to engage in storm drain stenciling activities.	HEP	Ongoing	Base program	C/O
ACTION F-5.6: Enforce provisions of MARPOL V for at-sea disposal of solid waste.	USCG	Ongoing	Base program	C/O
OBJECTIVE F-6: Reduce loadings of floatables from CSOs, storm water discharges, and non-point source discharges [see Rainfall- Induced Discharges section].				

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