

## RAINFALL-INDUCED DISCHARGES

### **PROBLEM**

*Much of the pollution entering the Harbor/Bight is associated with runoff induced by rainfall*

### **SOURCES**

*Combined sewer overflows  
Storm water discharges  
Non-point source runoff*

### **VISION**

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

### **GOALS**

*To minimize the loads of pollutants entering the Harbor/Bight from combined sewer overflows, storm water discharges, and non-point source runoff.  
To eliminate the adverse environmental effects of combined sewer overflows, storm water discharges, and non-point source runoff on the Harbor/Bight.*

### **OBJECTIVES**

*CSO-1 Implement the nine minimum measures of the National CSO Control Policy.  
CSO-2 Implement additional CSO controls to meet water quality standards and restore beneficial uses.  
SW-1 Implement measures to control municipal and industrial storm water discharges.  
NPS-1 Focus Clean Water Act non-point source programs on Harbor/Bight watersheds.  
NPS-2 Develop and implement coastal non-point source management programs under Coastal Zone Act Reauthorization Amendments.  
NPS-3 Focus the Urban Resources Partnership Initiative on Harbor/Bight watersheds.  
NPS-4 Continue and enhance education programs for control of non-point source pollution.*

Three major sources of pollution to the Harbor/Bight are associated with runoff induced by rainfall. Two of these sources -- combined sewer overflows (CSOs) and storm water discharges -- are regulated as point sources under the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) permit program. The third source -- non-point source runoff -- is not currently regulated by federal or state permit requirements. Problems and actions associated with these rainfall-induced discharges are described in this section to avoid redundancy throughout the CCMP.

## COMBINED SEWER OVERFLOWS

### ***The Problem***

Most of the Harbor is served by "combined sewers", which combine sanitary sewage and storm water. Combined sewer overflows occur when large volumes of water generated during rain events combine with the regular sanitary waste stream, overwhelming the capacity of sewage treatment plants. The resultant sewage overflow goes directly into the Harbor with little or no treatment.

There are approximately 730 CSO discharge points which discharge to the Harbor, including 460 in New York City; 22 from the Yonkers Sewer District, Westchester County; and 248 from New Jersey (from over 20 municipal entities). There are no CSOs discharging to the Bight or to the back bays adjacent to the Bight.

CSOs are the dominant source of pathogens and important contributors of floatables, toxic metals, and settleable solids to the Harbor. They also contribute toxic organic chemicals, nutrients and organic contamination, and cause degradation of habitat.

### ***The Plan to Solve the Problem***

USEPA recently issued a final National CSO Control Policy which prescribes nine measures that constitute a minimum recommended level of CSO control:

- ◆ Proper operation and regular maintenance programs for the sewer system and CSO pipes.
- ◆ Maximum use of collection systems for storage.
- ◆ Review and modification of pretreatment programs to assure CSO impacts are minimized (i.e., minimization of non-domestic user discharges during wet weather periods).
- ◆ Maximization of flow to sewage treatment plants for treatment.
- ◆ Prohibition of CSO discharges during dry weather.
- ◆ Control of floatable materials in CSO discharges.
- ◆ Pollution prevention programs that focus on contaminant reduction activities.
- ◆ Public notification to ensure that the public receives adequate information on CSO occurrences and impacts.
- ◆ Effective monitoring to characterize CSO impacts and the efficacy of CSO controls.

In addition, the Policy calls for permittees to develop long-term CSO abatement plans to eliminate water quality standards violations and

restore beneficial uses impaired by CSOs, including project schedules and financing.

The current CSO abatement program in the Harbor/Bight region is described in the following enforceable instruments or draft enforceable instruments: 1) for New York City -- the 1988 State Pollutant Discharge Elimination System (SPDES) permit and the 1992 NYSDEC/NYCDEP CSO Abatement Consent Order; 2) for the Yonkers Sewer District, Westchester County -- the 1994 SPDES permit and the 1989 NYSDEC/County Consent Order; and 3) for New Jersey communities in the Harbor area -- the final New Jersey Pollutant Discharge Elimination System (NJPDES) CSO General Permit, existing individual NJPDES permits issued to municipalities and sewerage authorities for CSOs, and existing state mandates not appropriately included in either of the above.

## **COMMITMENTS AND RECOMMENDATIONS**

### ***OBJECTIVE CSO-1 Implement the nine minimum measures of the National CSO Control Policy***

#### **ACTION CSO 1.1**

#### ***Assessment of Steps Necessary to Implement the Nine Minimum Measures***

HEP reviewed the CSO abatement programs in the Harbor/Bight region to assess the necessary steps to fully meet the nine minimum measures.

HEP has prepared reports which thoroughly assess New York City, Yonkers, and New Jersey communities' CSO abatement programs for the Harbor/Bight region, in relation to the nine minimum measures of the National CSO Control Policy. The reports recommend the steps necessary to ensure the requirements are fully met.

Our assessment of the steps necessary to fully implement the nine measures is as follows:

*New York City*

- Implement a floatables control plan, to the extent feasible, for that portion of the City's CSO drainage area that is not currently covered by the Consent Order's interim booming and skimming provisions.

*Yonkers Sewer District*

- Include requirements in the SPDES permit to review and modify the pretreatment program to minimize CSO impacts.

*New Jersey*

- Modify individual NJPDES permits issued to municipalities and POTWs for CSOs, as necessary, to require implementation of the nine minimum measures.
- Include requirements to explore the minimization of non-domestic user discharges during wet weather periods, maximize flow to POTWs for treatment, and incorporate pollution prevention (especially for the chemicals of concern), in individual NJPDES permits issued to POTWs for CSOs.

As part of the assessment of steps necessary to meet the nine minimum CSO control measures, HEP encourages the use of shoreline surveys to identify dry weather discharges.

ISC conducts a dry weather monitoring program to supplement the states' efforts to comply with the nine minimum control measures.

**ACTION CSO 1.2**

*Implementation of the Nine Minimum Measures*

Through appropriate enforceable instruments, NYSDEC and NJDEP will require dischargers to implement the recommendations in the HEP reports, to achieve full compliance with the nine minimum measures and to document the implementation of the measures.

- NJDEP and New Jersey dischargers will explore the implementation of the control measure to minimize non-domestic user discharges during

wet weather periods, within the context of existing authority and regulations.

*Pollution Prevention for Chemicals of Concern*

The National CSO Abatement Policy includes pollution prevention as a principal means of CSO abatement. Pollution prevention is expected to be effective in reducing loads of chemicals of concern, including petroleum, to the Harbor/Bight. The key recommendations of the HEP CCMP for pollution prevention can be found in the section on Management of Toxic Contamination. HEP's program involves:

- Identifying the largest emitters of chemicals of concern, using available data on discharges to all media, and giving these facilities priority for reduction or elimination of emissions through pollution prevention (see Objective T-8).
- Using sensitive monitoring techniques to identify significant discharges of chemicals of concern for track-down and clean-up, as appropriate (see Action T-1.2 and Objective T-6).
- HEP will, given sufficient funding, assess the load reductions of chemicals of concern expected with implementation of HEP's plan to abate CSO and other rainfall-induced discharges (see Action T-12.13).

**OBJECTIVE CSO-2** *Implement additional CSO controls to meet water quality standards and restore beneficial uses*

The nine minimum measures of the National CSO Policy establish a basic level of CSO controls. However, these controls will not necessarily achieve the reductions necessary to meet water quality standards, restore beneficial uses, and eliminate adverse ecosystem impacts. The National CSO Control Policy therefore recommends that additional steps be taken to eliminate adverse impacts due to CSOs.

HEP will coordinate the development of these long-term CSO abatement plans in New York-New Jersey Harbor to help ensure a bi-state regional approach to address CSO-related impacts on shared waters. One example of such cooperation is that, at NJDEP's request, NYCDEP has agreed to provide use of its Harbor CSO model to New Jersey. Also, because of its interstate jurisdiction that covers New York and New Jersey in the Harbor area, ISC will continue its regional efforts regarding CSO control strategies.

#### ACTION CSO-2.1

##### *New York City Long-term CSO Abatement Program*

The NYSDEC/NYCDEP CSO Abatement Consent Order commits New York City to a two-track program to abate impacts of CSOs. Track 1 will consist of retention tanks and other appropriate control measures which will be completed by 2005, at a cost of \$1-2 billion. Track 1 will eliminate violations of dissolved oxygen and coliform standards due to CSOs. Track 2 will address floatables, settleable solids, and toxics. Comprehensive planning for Track 2 will be completed by 1997; construction is not likely to begin prior to 2005. Costs for Track 2 are uncertain because planning is not complete. Costs could be negligible (e.g., for use of Best Management Practices) or could exceed \$3 billion (e.g., for tunnel construction).

#### ACTION CSO-2.2

##### *New Jersey Long-term CSO Abatement Program*

HEP recommends that the owners and operators of combined sewer systems in the New Jersey drainage to the Harbor, and the STPs to which they discharge, cooperate in a regional effort to develop long-term CSO abatement plans to prevent violations of water quality standards, restore and/or maintain beneficial uses, and eliminate adverse ecosystem impacts due to CSOs.

- In order to facilitate the cooperative development of CSO abatement plans, USEPA and NJDEP have initiated a series of meetings with the responsible parties to seek a broad regional agreement on the most efficient and effective interjurisdictional approach to long-term CSO abatement.

- By December 31, 1996, USEPA and NJDEP will obtain enforceable commitments from STP owners and operators to carry out their long-term CSO abatement responsibilities.
- NJDEP will follow up, as necessary, to obtain the commitments of the remaining responsible parties.

In implementing CSO abatement programs, HEP encourages New Jersey CSO dischargers to use the funding available through the New Jersey Wastewater Treatment Trust.

#### ACTION CSO-2.3

##### *CSO Controls for Pathogens Abatement*

Specific pathogen-related actions should be directed toward geographically targeted areas.

- HEP is conducting regional water quality modeling as a screening tool to examine bacterial contamination sources. Using the New York City water quality model where data are adequate, HEP will develop preliminary target areas for priority action to recover or enhance bathing and/or shellfishing uses.

(Note: Action P-7.3 would build upon this action.)

## STORM WATER DISCHARGES

### *The Problem*

Storm water discharges occur when it rains in areas with separate storm and sanitary sewer systems. Although much of the Harbor core area is served by combined sewer systems, significant areas are not. For example, in New York City, approximately 30 percent of the area is served by separate sewers. The entire Bight and back bays are either served by separate sewer systems or are unsewered.

Storm water discharges are important contributors of pathogens, many toxic chemicals, and floatables. They also contribute to nutrients and organic contamination and cause degradation of habitat.

***The Plan to Solve the Problem***

USEPA issued regulations in 1990 which establish permit application requirements for municipal storm water discharges and for storm water discharges associated with industrial activity. These requirements focus on reducing storm water contamination through implementation of best management practices, such as pollution prevention plans. In addition, municipal requirements seek to eliminate non-storm water discharges, such as illegal sewer hook-ups, to storm sewers.

The 1990 requirements for municipal storm water discharges apply to municipalities with a population of 100,000 or more served by separate sewer systems -- only New York City in the Harbor/Bight area. In April 1995, USEPA proposed additional regulations which address the permitting requirements for industrial and municipal storm water dischargers which were not covered by the 1990 rules. USEPA recently issued the final rule. The rule gives these additional dischargers until August 2001 to file permit applications. USEPA is committed to using an inclusionary process with stakeholders to re-evaluate the storm water permitting requirements for these additional dischargers and to propose revised rules by September 1997.

**COMMITMENTS AND RECOMMENDATIONS**

**ACTION SW-1.1**

***OBJECTIVE SW-1    Implement measures to control municipal and industrial storm water discharges***

***New York City Storm Water Permit***

NYSDEC has reviewed New York City's application for a municipal storm water permit. In April 1996, the state will issue proposed modifications to six of the City's SPDES permits which will establish requirements for the City's storm water management program. The requirements will address toxics, floatables, and pathogens.

**ACTION SW-1.2**

***NJDEP Municipal Storm Water Permit(s)***

NJDEP will implement a municipal storm water permitting effort for discharges to the Harbor and its tributaries. In a phased approach, NJDEP will negotiate permits with 46 municipalities draining to the areas of the Harbor where metals are water quality-limiting (see Toxics section for background information). Through this permitting effort, NJDEP and the municipalities will agree on an implementation plan for pollution abatement which could include actions such as floatables reduction, animal waste control, sewer rehabilitation, catch basin repair/maintenance, illicit discharge mitigation, and toxics monitoring.

**ACTION SW-1.3**

***Industry-Specific General Permits for Pollution Prevention***

- To comply with the regulations for storm water discharges associated with industrial activity, both NYSDEC and NJDEP have issued two storm water general permits: 1) to control industrial storm water discharges, and 2) to control construction discharges.
- HEP recommends that New York City and other local governments in the Harbor/Bight watersheds control construction discharges by adopting the requirements of the general permits into local codes.
- Both New York and New Jersey will issue statewide industry-specific general permits, establishing specific requirements for pollution prevention activities at certain classes of industrial sites.

**ACTION SW-1.4**

**DELETED**

**ACTION SW-1.5**

*Storm Water Projects under the Intermodal Surface Transportation Efficiency Act*

NJDEP and NYSDEC will work with local governments, as appropriate, to develop storm water control projects for potential funding under the Intermodal Surface Transportation Efficiency Act (ISTEA) program.

**NON-POINT SOURCE RUNOFF**

***The Problem***

Non-point source pollution is created by runoff directly from the land during rain events. As the rainwater moves over land, it picks up and carries away natural and manmade pollutants. Non-point source runoff contributes pathogens, toxic chemicals, nutrients and organic materials, and floatables to the Harbor/Bight, and also causes degradation of habitat.

***The Plan to Solve the Problem***

The actions below focus primarily on non-point source runoff in the areas of the Harbor/Bight that are unsewered. However, through actions in other sections of the CCMP, HEP is seeking to quantify the relative contribution of non-point sources on a pollutant-specific basis, throughout the Harbor/Bight. For example, several actions involving modeling and monitoring are intended to develop mass balances for various pollutants:

- ◆ System-wide Eutrophication Model (SWEM) for nutrients and organic materials (Action N-4.1); and
- ◆ Simple mass balances (Action T-13.3) and System-wide Toxics Model (Action T-13.2) for mercury and toxic organic chemicals.

To the extent non-point source pollutant loads are shown to be significant, HEP will adjust its priorities to address these sources. For example, for the purpose of developing the mass balances for the Harbor/Bight, tributary inputs of pollutants are treated as aggregate loads. However, the pollutants entering the Harbor/Bight through its tributaries are from point and non-point sources within the drainage areas of the tributaries. To the extent tributary pollutant inputs to the Harbor/Bight

are shown to be significant and require control, HEP will initiate action to develop mass balances for the tributaries. HEP encourages other sponsors to assess pollutant loads in Harbor/Bight tributaries.

**COMMITMENTS AND RECOMMENDATIONS**

Section 319 of the Clean Water Act requires states

***OBJECTIVE NPS-1 Focus Clean Water Act non-point source programs on Harbor/Bight watersheds***

to identify waters impacted by non-point source pollution and to prepare and implement state non-point source management programs. USEPA awards grants to states under section 319(h) to assist with implementation of the state management programs. Both New York and New Jersey have USEPA-approved state non-point source management programs.

**ACTION NPS-1.1**

*New Jersey Focus on Harbor/Bight Watershed*

As part of the joint strategic plan in New Jersey, USEPA and NJDEP have agreed to focus on two watersheds in the Harbor/Bight drainage basin, Barnegat Bay and the Whippany River, as part of the non-point source management program.

**ACTION NPS-1.2**

*New Jersey Navesink River Project*

NJDEP will complete a Navesink River non-point source demonstration project by March 1996. The purpose of the project is to identify simple best management practices (BMPs) which can be implemented on the municipal level. The project is examining the effectiveness of selected BMPs to control pollutants associated with urban and suburban runoff, boating and marinas, and animal waste.

The section on Management of Habitat and Living Resources identifies additional actions to control non-point source pollution in the Harbor/Bight (see Objective H-2).

**OBJECTIVE NPS-2 *Develop and implement coastal non-point source management programs under Coastal Zone Act Reauthorization Amendments***

Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA) of 1990 requires states with approved coastal zone management programs to prepare and implement coastal non-point pollution management programs. NOAA establishes the "Coastal Watershed Boundary", which defines the area to be included in the program, and states must follow USEPA's January 1993 guidance.

This guidance provides management measures which specify technology-based requirements for six categories of non-point source pollution, including urban runoff, agricultural runoff, shoreline erosion, and marinas. For many of the management measures, states are required to establish enforceable mechanisms to ensure implementation. States must have submitted approvable coastal non-point programs by July 1995; USEPA and NOAA must jointly review and approve the state coastal non-point programs within six months. Reviews will be based on the steps the states take to implement the measures. Implementation of the programs must occur by 1999. Any state which fails to submit an approvable program will be subject to reduced federal non-point source and coastal zone management funding.

**ACTION NPS-2.0**

*Coastal Non-point Source Programs*

- USEPA and NOAA are working with the States of New York and New Jersey to identify gaps in the states' coastal non-point programs and to develop approvable programs.

- New York and New Jersey submitted their coastal non-point programs in July 1995.
- NYDOS and NYSDEC will develop and implement a coastal non-point management program.
- NJDEP will develop and implement a coastal non-point management program.

(Note: NYSDEC, NYSDOS, and NJDEP will seek authority to implement their coastal non-point source programs as necessary).

**OBJECTIVE NPS-3 *Focus the Urban Resources Partnership on Harbor/Bight watersheds***

The U.S. Department of Agriculture (USDA) has recently begun the Urban Resources Partnership (URP). This partnership, including representatives from USDA's Natural Resources Conservation Service and Forest Service, the U.S. National Park Service and Fish and Wildlife Service of the U.S. Department of the Interior, USEPA, and Cornell Cooperative Extension, is working with local government and community groups to implement natural resource-related projects intended to improve the quality of life in urban areas. New York City is one of four cities chosen to pilot-test the initiative. USDA has allocated \$500,000 for the New York City project.

**ACTION NPS-3.0**

*URP Funds*

A portion of New York City URP pilot project funds should support non-point source management projects where non-point sources are contributing significantly to human use impairments and other adverse ecosystem impacts.

**OBJECTIVE NPS-4** *Continue and enhance education programs for control of non-point source pollution*

**ACTION NPS-4.0**

*Ongoing Education Programs*

NYSDEC and NJDEP will continue and enhance ongoing education programs for control of non-point source pollution.

**ADDITIONAL ACTIONS TO REDUCE AND ELIMINATE ADVERSE IMPACTS OF RAINFALL-INDUCED DISCHARGES**

Currently planned or ongoing investigations by HEP, such as toxics and nutrient modeling, may provide additional information indicating the need for further control of CSOs, storm water discharges, and non-point source runoff. USEPA, NYSDEC, and NJDEP are committed to using the results of these investigations to develop additional controls, and to require implementation of the controls through enforceable instruments, as necessary.

**COSTS OF IMPLEMENTING THE PLAN**

Many of the commitments and recommendations in the rainfall-induced discharges component of the CCMP can be accomplished through the effective use of base program resources. In fact, full implementation of the CCMP relies, in large part, on continued operation, and funding at current levels, of existing programs to address rainfall-

induced discharges. The rainfall-induced discharges component of the CCMP itemizes 8 new HEP-driven commitments operating through base programs; these actions represent a major commitment to CCMP implementation.

The rainfall-induced discharges component of the CCMP also includes 5 significant commitments and recommendations that entail enhanced program funding. As shown in Table 28(rc) below:

- ◆ The Plan includes 2 actions for which a total of \$168,000 has been committed by the responsible entities.
- ◆ The Plan includes 3 additional recommendations for action for which cost estimates will be developed during the continuing planning process.

This component of the CCMP includes 8 actions that require or may require the expenditure of project implementation funds by responsible entities. As shown in Table 29(rc) below:

- ◆ The Plan includes 3 actions for which funds of \$1-5 billion plus \$100,000 per year are or will be committed by New York City.
- ◆ The Plan includes 1 recommended action for New Jersey with an estimated cost of \$1.3 billion.
- ◆ The Plan includes 5 actions for which additional funds may be required to be expended by responsible entities based on the potential outcomes of several ongoing or planned HEP efforts.

The costs of implementation actions to address rainfall-induced discharges may be large. Cost estimates for these actions will be developed during the continuing planning process.



Table 28(rc). Enhanced Program Costs for Rainfall-Induced Discharges

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION CSO-2.2: abatement plan.			*1	
ACTION CSO-2.3: for recovering/enhancing bathing and shellfishing.	\$35,000			
ACTION SW-1.4: DELETED				
ACTION NPS-1.2: point source project.	\$133,000			
ACTION NPS-4.0: programs for non-point source.			*	
TOTAL	\$168,000		*	

\* Enhanced program costs to be developed as part of the continuing planning process.

<sup>1</sup> Note: NJDEP has provided a preliminary cost estimate for the overall NJ CSO abatement program. See Table 29(rc).

Table 29(rc). Project Implementation Costs for Rainfall-Induced Discharges

ACTION	COMMITMENTS		RECOMMENDATIONS	
	Cost	Cost/Year	Cost	Cost/Year
ACTION CSO-1.2: Comply with requirements for full implementation of the nine minimum CSO control measures.	*1		*1	
ACTION CSO-2.1: Implement long-term NYC CSO abatement program.	\$ 1-5 billion			
ACTION CSO-2.2: Implement long-term CSO abatement in NJ.			\$ 1.3 billion	
ACTION SW-1.1: Comply with municipal storm water permit (NYC).		\$ 100,000		
ACTION SW-1.2: Comply with NJ municipal storm water permits, as required.			*	
ACTION SW-1.4: DELETED				
ACTION NPS-2.0: Implement coastal NPS management programs.	*			
TOTAL	\$ 1-5 billion + <sup>2</sup>	\$ 100,000	\$ 1.3 billion + *	<sup>2</sup>

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

<sup>1</sup> Note: Responsible parties have committed to do much of what is required to meet the nine minimum control measures. NYCDEP has provided a cost estimate for its overall CSO abatement program (See Action CSO-2.1 below), and NJDEP has provided a preliminary cost estimate for the overall NJ CSO abatement program (See Action CSO-2.2 below). Costs will be further developed as part of the continuing bi-state/regional planning process.

<sup>2</sup> Notation ( + \* ) indicates cost plus additional costs to be determined.

## **BENEFITS OF IMPLEMENTING THE PLAN**

HEP's plan to address CSOs is intended to make stepwise progress in the control of these discharges. Implementation of the nine minimum control measures of the National CSO Control Policy will provide substantial benefits in reducing discharges of pollutants through good management practices. Implementation of long-term CSO abatement plans in New York and New Jersey will achieve HEP's goal to eliminate the adverse impacts of these discharges throughout the Harbor.

Implementation of HEP's plan to address storm water discharges will help minimize the adverse impacts of these discharges in most of the Harbor, through good management practices. HEP's plan

will start to address the adverse environmental impacts of storm water discharges; additional actions may be necessary in the future to fully address the impacts.

HEP's plan to address non-point source runoff is expected to significantly reduce these impacts in the areas targeted. Pilot projects are intended to lead to wider implementation.

Additional information on the benefits on minimizing rainfall-induced discharges is discussed in the CCMP sections on pathogen contamination, floatables, toxic contamination, habitat and living resources, and nutrients and organic enrichment.

Table 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
<b>OBJECTIVE CSO-1: Implement the nine minimum measures of the National CSO Control Policy.</b>				
ACTION CSO-1.1: Prepare reports assessing NYC, Yonkers, and NJ communities' CSO abatement programs in the Harbor/Bight region in relation to the nine minimum measures. Recommend steps necessary to ensure the requirements are fully met.	HEP	Completed	Base program	C/N
ACTION CSO-1.2: Require, through appropriate enforceable instruments, implementation of the recommendations in the reports, including documenting implementation of the minimum measures.				
-- Modify/develop enforcement instruments.	NYSDEC	Apr 1996	Base program	C/N
-- Finalize general permit.	NJDEP	Completed	Base program	C/O
-- Modify/develop individual NJPDES permits issued to municipalities and POTWs for CSOs.	NJDEP	Draft: Completed Final: Jun 30, 1996	Base program	C/N

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.

R - Recommendation

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant.

<sup>2</sup> C/O - An ongoing commitment, not driven by the HEP CCMP  
C/N - A new commitment, driven by the HEP CCMP

(Continued)  
Table 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
- Comply with above.	NYCDEP, WCDEF, NJ dischargers and municipalities	Jan 1, 1997	Project implementation costs incorporated in cost estimates under Actions CSO-2.1 and CSO-2.2*	R
<b>OBJECTIVE CSO-2: Implement additional CSO controls to meet water quality standards and restore beneficial uses.</b>				
ACTION CSO-2.1: Implement long-term NYC CSO abatement program.				
-- Track 1	NYCDEP	By Dec 31, 2005	Project implementation cost - \$1-2 billion	C/O
-- Track 2	NYCDEP	Begin construction by Dec 31, 2005	Project implementation cost - up to \$3 billion estimated	C/O
ACTION CSO-2.2: Cooperate in a regional effort to develop long-term CSO abatement plans to prevent violations of water quality standards, restore and/or maintain beneficial uses, and eliminate adverse ecosystem impacts due to CSOs.				
-- Conduct a series of meetings to seek a broad regional agreement on the most efficient and effective interjurisdictional approach to long-term CSO abatement.	USEPA & NJDEP, with NJ combined sewer system owners and operators in the Harbor area and the STPs to which they discharge	Ongoing, through Dec 1996	Base program	C/N

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant. R - Recommendation

<sup>2</sup> C/O - An ongoing commitment, not driven by the HEP CCMP  
C/N - A new commitment, driven by the HEP CCMP

(Continued)  
Table 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
-- Obtain enforceable commitments from STP owners and operators to carry out their long-term CSO abatement responsibilities.	USEPA & NJDEP	Dec 1996	Base program	C/N
-- Follow up, as necessary, to obtain the commitments of the remaining responsible entities.	NJDEP	As necessary beginning by Dec 31, 1997	Base program	C/N
-- Develop plan.	NJ combined sewer system owners and operators in the Harbor area and the STPs to which they discharge	Dates to be negotiated by USEPA & NJDEP with responsible entities	Enhanced program cost incorporated into project implementation cost below	R
-- Implement plan.			Project implementation cost - \$1.3 billion*	R
ACTION CSO-2.3: Use the NYC water quality model to develop preliminary target areas for priority action to recover or enhance bathing and/or shellfishing uses. (Note: Action P-7.3 would build upon this action.)	HEP	Draft report: Completed Final report: Mar 1996	Enhanced program cost - \$35,000	C/N

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant.  
\* Note: NJDEP has provided a preliminary cost estimate for overall CSO abatement program. See Action CSO-2.2.

<sup>2</sup> 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 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
<b>OBJECTIVE SW-1: Implement measures to control municipal and industrial storm water discharges.</b>				
ACTION SW-1.1: Issue modifications to six of NYC's SPDES permits which will establish requirements for the city's storm water management program.	NYSDEC	Apr 1996	Base program	C/O
-- Comply with above.	NYCDEP	Begin by Apr 1996	Project implementation cost - \$100,000/yr	C/O
ACTION SW-1.2: Implement a municipal storm water permitting effort for discharges to the Harbor and its tributaries.				
-- In a phased approach, negotiate permits with 46 municipalities draining to the areas of the Harbor where metals are water quality-limiting.	NJDEP, working with municipalities	Ongoing	Base program	C/N
-- Issue permits.	NJDEP	1996 to 2000	Base program	C/N
-- Comply with NJ municipal storm water permits, as required.	NJ municipalities	1996 to 2000, based on negotiated permit requirements	Project implementation cost to be developed by NJ municipalities based on negotiated permit requirements	R
ACTION SW-1.3: Issue industry-specific general permits.	NYSDEC & NJDEP	Ongoing	Base program	C/O
-- Adopt requirements of the general permit to control construction discharges into local codes.	NYC	Dec 1995	Base program	R

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant.

<sup>2</sup> 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 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
ACTION SW-1.4: DELETED				
ACTION SW-1.5: Develop storm water control projects for potential funding under the Intermodal Surface Transportation Efficiency Act (ISTEA).	NYSDEC & NJDEP, working with local governments as appropriate	Beginning by Dec 31, 1996	Base program	C/O
<b>OBJECTIVE NPS-1: Focus Clean Water Act non-point source programs on Harbor/Bight watersheds.</b>				
ACTION NPS-1.1: Implement NPS management program for Barnegat Bay and the Whippany River.	NJDEP	From Dec 31, 1995 to Dec 31, 1998	Base program	C/O
ACTION NPS-1.2: Complete Navesink River non-point source demonstration project.	NJDEP	Mar 1996	Enhanced program cost - \$133,000	C/N

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant.

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



(Continued)  
Table 30(rs). Summary — Rainfall-Induced Discharges: Combined Sewer Overflow Abatement

ACTION	RESPONSIBLE ENTITY <sup>1</sup>	TARGET DATE	ESTIMATED COST	STATUS <sup>2</sup>
<b>OBJECTIVE NPS-2: Develop and implement coastal non-point source management programs under Coastal Zone Act Reauthorization Amendments.</b>				
ACTION NPS-2.0: Develop and implement a coastal non-point management program.				
-- Develop program and seek authority to implement as necessary.	NYDOS & NYSDEC with USEPA & NOAA assistance, NJDEP with USEPA & NOAA assistance	Ongoing	Base program	C/O
-- Approve program.	USEPA & NOAA	Jan 1996	Base program	C/O
-- Implement program.	NYDOS, NYSDEC, NJDEP	Full implementation by Dec 31, 2005	Project implementation cost to be developed by responsible entities based on approved program	C/O
<b>OBJECTIVE NPS-3: Focus the Urban Resources Partnership on Harbor/Bight watersheds.</b>				
ACTION NPS-3.0: Use a portion of URP funds to support non-point source management projects in NYC watersheds impacted by NPS pollution.	Urban Resources Partnership (URP)	Ongoing	To be determined by URP	R
<b>OBJECTIVE NPS-4: Continue and enhance education programs for control of non-point source pollution.</b>				
ACTION NPS-4.0: Continue and enhance ongoing education programs.	NYSDEC & NJDEP	Ongoing	Base program plus enhanced program cost estimates as identified by NYSDEC & NJDEP	C/O

<sup>1</sup> Responsible entities may accomplish the actions directly or via contract or grant.

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

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

R - Recommendation

