CONCLUSION

This Report documents the extent to which information is available on CSOs in the District and notes the necessary information required before an overall regional policy on this significant environmental problem can be implemented. In reviewing each waterbody not only do specific recommendations become clear, but the same general recommendations apply to waterbody after waterbody. Rather than simply summarizing the recommendations contained in the previous chapters, this conclusion emphasizes these generally applicable observations in an effort to provide a more beneficial overview of the problem in the District. For recommendations regarding specific waterbodies, individual chapters can be reviewed. This last chapter focuses on the steps that can be taken in every section, regardless of a waterbody's individual characteristics. In addition, as part of this conclusion chapter, criteria useful in prioritizing waterbodies for remediation have been outlined.

As has been suggested throughout this Report, the information assembled here is valuable as a point of departure for interstate cooperation in the abatement of CSO impacts in the District. The Commission intends to send this Report and an invitation to participate in a coordinating conference to every municipality and each governmental and regulatory entity in the District which has control over CSOs. This conference should provide a mechanism to open communications among these entities, as well as a forum for technical information-sharing within the District.

The general observations applicable to all waterbodies in the District can be divided into two broad categories: obtaining definite information and coordinating action among jurisdictions. Within these two categories, six specific recommendations apply to all of the waterbodies discussed in this Report and will be discussed at the Commission's CSO conference:

1. Require a comprehensive outfall inventory of each permit-holding municipality or agency;

2. Identify each outfall in addition to each regulator overflow;

3. Reconcile all contradictory outfall and regulator information;

4. Obtain statistically valid sampling data on volume and constituents being discharged from outfalls;

5. Coordinate among jurisdictions to develop a plan and priorities for action; and

6. Initiate action to abate and, where possible, to eliminate CSOs.

All of these recommendations must be pursued. They are necessary first, to determine precisely the parameters of the CSO problem in a given waterbody and, second, to implement an efficient and thorough response to the water quality degradation resulting from this form of pollution.

1. Require a comprehensive inventory of each permit-holding municipality or agency

Although a listing of all combined sewer outfalls is attached to every state pollution discharge elimination permit granted to a POTW in the District and each outfall listed is assigned an outfall number, it is clear from this study that the information contained in the permit is not always correct. As is evident in numerous sections of this Report, the existence of outfalls that appear in the permit is not always verified by reference to other available reports. Similarly, outfalls acknowledged in inspection reports have not always been included in the permit or assigned an outfall number. In an attempt to compile an accurate catalogue of all outfalls in the District, each permittee should be required to do a study to identify all outfalls in its jurisdiction and to submit a complete listing as part of its permit application.

To some degree this has already been required, but remaining discrepancies indicate that the task has not been done thoroughly enough. The emphasis must be on field investigation and shoreline surveys rather than a report that simply relists previously compiled and often erroneous

information. Although identifying an outfall by latitude and longitude is often required by state agencies, listing its location by its nearest cross streets is more accessible to a broader range of interested parties. In some municipalities where few outfalls exist such an inventory will be easy to complete and to verify. In others, of course, it will be quite difficult. In New York City where this type of compilation would be monumental, such a compilation is already underway and the areas where there is poor or scant knowledge are known and can, thus, be targeted. An inventory of outfalls, on a region-wide basis, is an essential ingredient in any policy for remediation.

2. Identify each outfall in addition to each overflow

In order to best assess the impact of CSOs on a waterbody, it is necessary to tally the inputs to that waterbody. The most relevant part of the sewer system for this assessment is the mouth of the outfall pipe that discharges to a waterbody. To the extent that location and dimensions are provided for overflows or regulators, any estimates of inputs will be inaccurate. This information on overflows is not always descriptive of the outfalls. Only very rarely will the location and dimensions of an overflow be the same as the outfall for that overflow. In addition, a count of overflows may not correspond with the total number of outfalls. Although an overflow is usually associated with a single outfall, sometimes one outfall will empty a series of overflows or multiple outfalls will service one overflow.

Different municipalities have evaluated their sewer systems differently, with some focusing on overflows and some focusing on outfalls. Obviously, if a District-wide effort to abate CSOs is undertaken, there is value to having all of the recorded information documented consistently. Although data should be gathered for both outfalls and overflows, the structure referenced for measuring inputs throughout the District should be the outfall. Available information on overflows and outfalls can be verified and refined in the comprehensive outfall assessment performed in 1 above.

3. Reconcile all contradictory information

Some of the municipalities in the District have already begun to gather information on location, dimensions, and total number of outfalls within their jurisdictions. Unfortunately, information compiled for separate reports or even separate sections of the same report show discrepancies. A portion of these discrepancies may be attributable to printers' errors and could be clarified immediately. To the extent that the corrections are not apparent from backup material or where genuine questions exist, field inspections should be conducted to provide the answer. The Commission could act as a repository for all corrections, publishing as an Addendum to this Report all corrections and clarifying information.

4. Obtain statiscally valid sampling data on volume and constituents being discharged from outfalls

More desirable even than simply knowing where outfalls are discharging into a waterbody is knowledge of how much of what substances they are emptying into the waterbody. At a time when there is not definite information on the numbers and locations of outfalls, volumetric and analytic data might reasonably be considered to be substantially "down the road." Yet this information has been gathered for some outfalls, which could be the beginning of a data base. As part of this task, existing data should be gathered, evaluated, and incorporated in a data base if it can be validated. Additional information necessary to fill in data gaps should be gathered in a manner that is statistically valid from a regional perspective and that will present a picture of the inputs for the region as a whole.

In addition to providing valuable information for the purpose of assessing the impact of CSOs on water quality, data on the composition of effluents would have corollary importance in discovering previously unidentified sources of toxic pollution. Indeed this data gathering could

provide some evidence of possible pretreatment violations occurring in the sewer systems. As long as these outfalls will be point sources, intermittently at least, for some time in the future, the constituents of their discharges should be known.

5. Coordinate among jurisdictions to develop a plan and priorities for action

When information has been gathered on CSOs within a municipality's jurisdiction, the next logical step is for that municipality to decide, on the basis of that information, the action that it will take to alleviate the discharges. In order to get the most out of the investment, construction would generally be targeted for those outfalls or sections of the system where the work could provide the greatest benefit. As mentioned earlier, the greatest benefit is likely to be obtained when work is coordinated among jurisdictions bordering a waterbody because few waterbodies are entirely contained within one municipality. Consequently, it is necessary to open a dialogue with these other municipalities and apprise them of plans being formulated. The Commission, as stated before, is willing to act as facilitator in setting up the conference in which this dialogue can take place.

This strategy is especially important on a region-wide basis. Because the expense of the necessary sewer system separation in the District makes it unlikely that all of the work would be done at the same time, if ever, priorities must be assigned regarding where work will be done first. Coordination in resource allocation will lead to receipt of the greatest benefit from the money expended and may lead to an appreciable improvement in water quality in certain waterbodies within a relatively short time frame.

In terms of the criteria for prioritizing the waterbodies in which CSO abatement work will be undertaken once the parties involved begin allocating funds, at least four different approaches to funding projects could be

followed -- allocation based on: 1) the present water quality classification of the waterbody, 2) the number of CSOs in the waterbody, 3) the concentration of CSOs in a particular area of the waterbody, and 4) the potential of the waterbody for an upgraded water quality classification. Clearly, other criteria exist and can be used, but these four approaches listed above are put forward here and will be discussed during the Commission's CSO conference.

6. Initiate action to abate and, where possible, to eliminate CSOs

Although a plan to separate all sewer systems within the District would cost prohibitive amounts, sewer separation is clearly the most desirable resolution to the problem of CSOs. Realistically, a remediation plan that eliminates CSOs, where possible, and reconfigures or expands sewer lines to accommodate flows is reasonable if it, in fact, decreases the volume or number of discharge events. Part of any action to fulfill this sixth step should include review of existing CSO control technologies and evaluation of their applicability at certain locations in a project area. It also includes assessment of existing municipal procedures that could minimize the impacts of the CSO discharges, such as regular street cleaning. The emphasis in this sixth step is to take the action mapped out in step five and to reduce CSOs and their impacts to the maximum extent possible.

Although the goal of this Report has been to assemble a summary of available information regarding CSOs in one document, perhaps the most important role the Commission and this Report can perform is to spotlight the problem and to provide a focus and forum for solving the problem--a problem which is now only beginning to get the attention required. Studies are being conducted and additional data are being gathered. However, it is important to insure that the momentum gained to date is not lost. Creation of a regional policy and a plan on CSOs would guarantee that progress continues as more parties in the three states acknowledge the problems resulting from CSOs and the benefits to be gained from abating them. The Commission will continue in

phase two of its Report to gather and to disseminate information on CSOs, to arrange interjurisdictional conferences, to identify the participants for each waterbody, to facilitate a discussion of priorities and methods necessary to accomplish this, and to make recommendations regarding coordinated action to alleviate CSOs.