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WASHINGTON, DISTRICT OF COLUMBIA

Institutional Arrangements for Areawide Water Resources
Management Planning in the Washington, D.C. Region under
the Federal Water Pollution Control Act Amendments of 1972

Harvey Lieber, Ph.D.

June 1980

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By

Harvey Lieber

FINAL REPORT
Project No. B-010

The work upon which this publication is based was supported in part by funds provided by the Office of Water Research and Technology (Project No. B010), U.S., Department of the Interior, Washington, D. C., as authorized by the Water Research and Development Act of 1978

Agreement No. 14-34-0001-8072

Water Resources Research Center
University of the District of Columbia
Van Ness Campus
Washington, D. C. 20008

June 1980

PREFACE

This study was undertaken during my 1978 sabbatical as a follow-up to my book, Federalism and Clean Waters: The 1972 Water Pollution Control Act, which had reviewed the legislative history, state programs and initial implementation of this landmark Act. Since its publication, I had the opportunity to work in EPA's Water Planning Division as a program analyst viewing the "progress" of 208 programs nationwide.

Therefore, a detailed case study of the Act's most innovative section seemed to be a logical follow-up to my earlier, broader research and work. While I focused on the 208 program in the Metropolitan Washington area, brief trips to talk to officials and citizens involved in three other programs, in the Chicago, Cincinnati and Raleigh-Research Triangle areas, were helpful for comparative purposes.

My greatest debt is owed to Mary Storck, my invaluable and ever helpful research assistant, whose imprint and insights are to be found through the study. Many officials and citizens too numerous to list were interviewed in the course of the study and shared their views and knowledge with us. I am also grateful to the following people who read portions of the manuscript, improved it greatly and saved me from countless errors: Ruth Allen, Don Beckham, Henry Cook, Paul Eastman, Ed Lyle, Jim Meek, Sarah Taylor, Harry Ways and Paul White. I know that they do not entirely agree with my interpretations and conclusions, but nevertheless I am grateful for their helpful comments and corrections. Finally, this study could not have been completed without the

skills of Lyn Walker, a most valuable asset to the College of Public and International Affairs Office of Sponsored Research. Of course, the funds from the Office of Water Research and Technology through the D.C. Water Resources Research Center at the University of the District of Columbia, were crucial to initiating and seeing this project through. However, the contents of this publication do not necessarily reflect the views and policies of the Office of Water Research and Technology, U.S. Department of the Interior, nor does mention of trade names or commercial products constitute their endorsement or recommendation for use by the U.S. government.

Harvey Lieber
June 26, 1980
The American University

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Chapter 1: Water Quality and Water Supply Background

Water resource issues in the Washington area center around the Potomac River. The three million residents of the metropolitan area surrounding the Nation's Capital depend on the Potomac and its tributaries for most of their water supply. After this water is used, it is returned to the Potomac in the form of treated wastewater and then passes to Chesapeake Bay and the Atlantic Ocean.

Above Washington, D.C. the Potomac runs through scenic areas of West Virginia, Virginia and Maryland. The population of the upstream areas are engaged in mining, agriculture and forestry. Pollution problems in this region result from coal mine drainage, agricultural runoff and some industry. However, the major contributor to pollution is the Washington metropolitan area.

Between Washington, D.C. and the Chesapeake Bay, the Potomac River is an estuary; the fresh water gradually mixes into salt water as it travels downstream and is pushed back and forth by tides. The relatively shallow and slow to flush estuary is particularly sensitive to water pollution and the aquatic life is affected by levels of salinity. Very low levels or very high levels of fresh water coming into the estuary can disrupt the populations of crabs, fish and shellfish that provide a livelihood for hundreds of fishermen.

Water Pollution

Water Pollution in the D.C. area comes from both "point" and "nonpoint" sources. Point sources are pipes or readily identifiable

sources, for example, sewage treatment plants. The major point sources in the Washington area are sewage treatment plants (STP's), and the largest of these is the Blue Plains treatment plant. Blue Plains is located in the District of Columbia and treats wastewater for D.C., a small portion of Northern Virginia and most of suburban Maryland. Many medium sized and small plants are located in suburban Maryland and Virginia; the small plants are gradually being eliminated. Because of federal requirements for higher levels of treatment technology, the biological oxygen-demanding components of these point sources will be substantially reduced in the 1980's. There are few other point sources in addition to the STP's, mainly because there is comparatively little manufacturing or industry around Washington.

Nonpoint source (NPS) pollution occurs primarily when surfaces are washed by rainwater and to a lesser extent by atmospheric washout, such as acid rain. Sediment from construction sites, particles from automobile exhaust, pesticides and oils are included in runoff from urban areas. As the amount of land developed for residential or commercial use increases, the expanded impervious surfaces such as asphalt and concrete intensify runoff. Thus land use policy can contribute to water pollution.

Nonpoint source pollution is severe in the Washington area. With the prospect of more development and population growth, the pollutant loadings from urban runoff are likely to increase.

Combined sewer overflows occur in older sections of Washington and Alexandria, Virginia. In these areas, the same sewers transport household wastes and stormwater. During heavy rains, the volume

of combined sewage is so great that all the water cannot be transported to sewage treatment plants. The excess spills through flow regulated outlets directly to the Potomac or its tributaries. Water quality in the D.C. area has improved during the late 1970's with the elimination of dry weather overflows and the expansion and up grading of the giant Blue Plains regional treatment plant. Control of NPS pollution, however, remains a major problem.

Water Supply

The water supply for the Washington area can be precarious because the Potomac's flow is extremely variable. The lowest flows occur during the summer and early fall; the record one-day low is 388 million gallons a day which occurred in September 1966. In contrast, the average flow is 7,200 million gallons per day (mgd). Peak one-day demand was 448 mgd in July 1974. Should a low flow occur the same day as a peak demand, a severe shortage could result.

Water shortages have already occurred in the areas served by the Fairfax County Water Authority (FCWA) from the Occoquan reservoir in Northern Virginia. In the summer of 1977, the reservoir's level had become so low that mandatory conservation was necessary. Population growth in Northern Virginia has led to the building of a FCWA water intake on the Potomac north of the District of Columbia to supplement the Occoquan reservoir supply.

Since the District and most of suburban Maryland already rely on the Potomac for supply, they have resisted encroachment on the available Potomac flows. How to allocate the Potomac's water

during drought has been a major issue among the various jurisdictions and led to a low flow allocation agreement in 1978.

The safety of existing water supplies in the Washington area has also been questioned. Traces of chloroform were found in the drinking water of suburban Virginia and Maryland in 1977. Chloroform, produced when chlorine is added to water and reacts with certain organic compounds, is potentially carcinogenic. Washington's rapid growth (the area's population escalated by 39 per cent between 1960 and 1970) intensified these problems by generating much more pollution as well as increasing demand for safe drinking water.

Metropolitan Washington's water resources have faced many environmental threats including:

- o frequent violations of the dissolved oxygen standard needed to maintain aquatic life in the Upper Potomac estuary during summer months;
- o few streams in the urbanized portions of the area meet bacterial standards for safe water contact recreation;
- o swimming is banned in the upper reaches of the Potomac estuary;
- o storm runoff in developed areas is damaging stream channels and reducing the number of aquatic species;
- o fish kills occur with population declines of sport fish;

- pollution from the metropolitan area appears to have reduced seafood harvesting areas and stimulated excessive algal growth;
- sedimentation is damaging the Occoquan reservoir, the major water supply source in Northern Virginia; and
- the estuary cannot be used economically as a safe water supply, except perhaps in an emergency, with present water treatment technology.

Major Governmental Institutions

A large variety of governmental institutions and agencies attempt to deal with these problems. The Washington metropolitan area includes two states - Maryland and Virginia and the District of Columbia. The District is unique because it performs the functions of a state, county and a city. The District's population is mostly black and middle to lower class, whereas Maryland and Virginia suburbs are heavily white and middle and upper middle class.

The District of Columbia is surrounded by Montgomery and Prince George's Counties in Maryland and by Arlington and Fairfax Counties in Virginia. Fairfax City, Falls Church and Alexandria are cities in suburban Virginia; because of Virginia law, they are completely independent of their surrounding counties. Beyond Fairfax County are two more rural Virginia counties - Loudoun and Prince William. Finally, Charles County in Maryland is also within

the standard metropolitan statistical area (See Map).

Sewage treatment plants are managed and operated by the Washington Suburban Sanitary Commission (WSSC), the District of Columbia, Arlington and Fairfax Counties, two special authorities in Virginia, four special districts and nine cities and towns. There are three major water supply agencies in the area. The Fairfax County Water Authority (FCWA) provides water to most of the Virginia suburbs; it draws its water mainly from the Occoquan reservoir which is a tributary of the Potomac. In suburban Maryland, the WSSC provides water mostly from the Potomac.

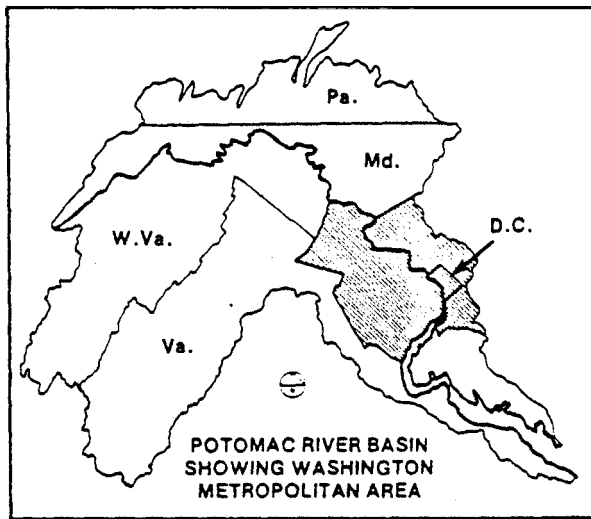
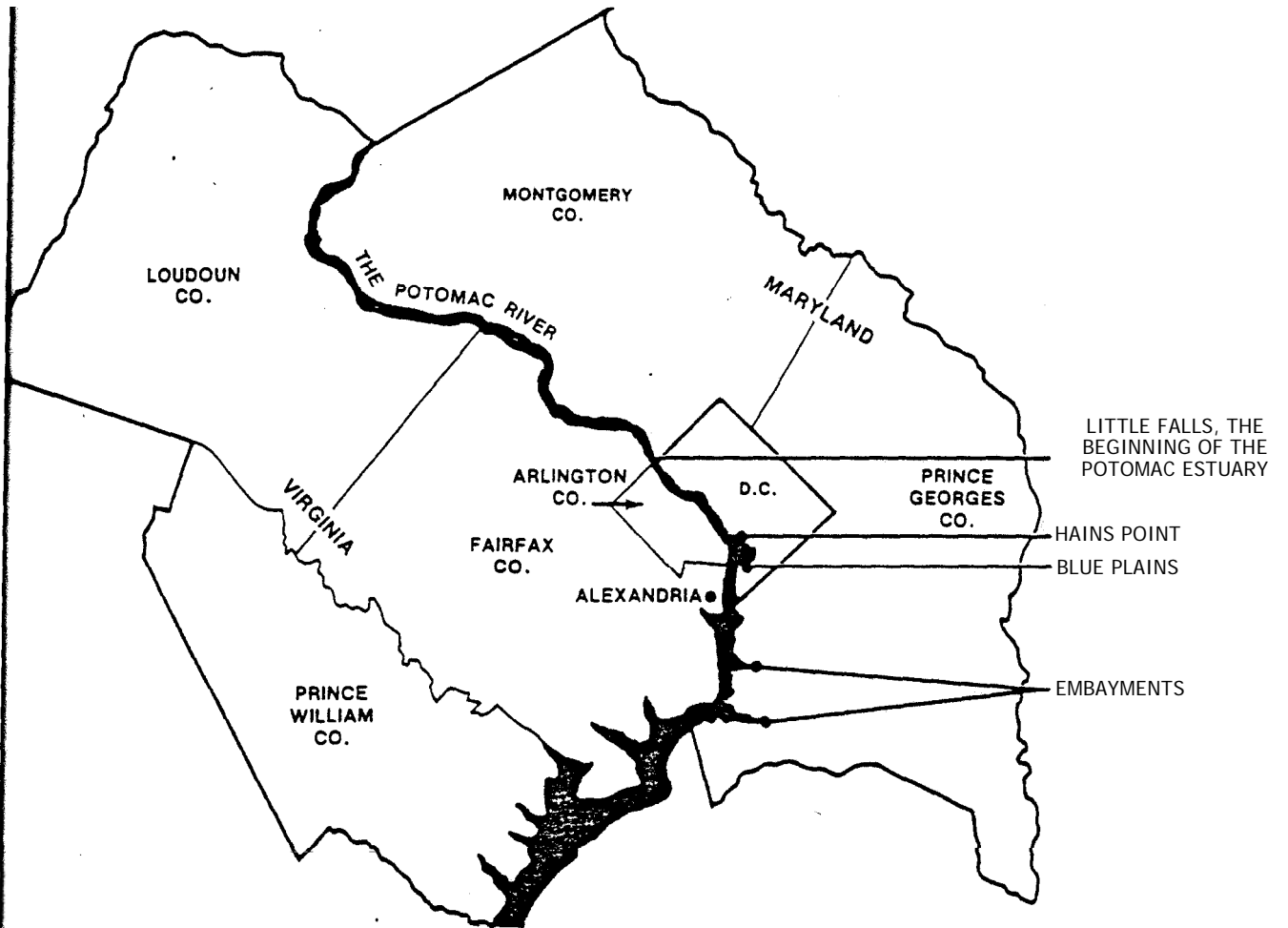
WSSC draws additional water from the Tridelphia and Duckett reservoirs on the Potomac River which runs through the northeastern edge of the metropolitan area. Finally, the Army Corps of Engineers Washington Aqueduct Division supplies the District of Columbia, Arlington County, and Falls Church, Virginia and several federal installations in Maryland. A small independent water supply system is maintained by the city of Rockville in suburban Maryland.

Parts of the outlying counties - Gaithersburg, Maryland and Leesburg, Virginia, for example - also depend on well water.

Metropolitan Washington Council of Governments (COG)

The Council of Governments is a voluntary organization of 15 local governments. Founded in 1957, the COG is structured around a Board of Directors and until recently had nine policy committees: Energy, Emergency Medical Services, Public Safety, Human Resources, Health and Environmental Protection, Land Use,

Washington Metropolitan Area



Source: Dollars & Sense, Interstate Commission on the Potomac River Basin (Sept. 1975)

Transportation, Water Resources and Air Quality.

COG's activities generally fall within two categories: (1) federally mandated planning, and (2) pooling local resources in non-controversial or voluntary activities.

In the first category, COG serves as the A-95 clearinghouse for the area by reviewing applications by local governments for federal grants and also federal projects for consistency with state and local planning. COG is also the official planning agency for the area under the Federal-Aid Highway Act and the Urban Mass Transportation Act. These activities parallel areawide planning for wastewater treatment under Section 208 of the Federal Water Pollution Control Act.

COG has also organized cooperative efforts among local governments. The following COG activities are typical of its interests outside of water resources:

- o air quality index and alert systems
- o emergency medical services project (in planning stage) o car pooling program
- o cooperative purchasing program
- o Metropolitan Growth Statement and Cooperative Forecasting
- o statistical and information services.

As can be seen from this list, the Council of Governments provides services to localities but does not venture into controversial areas except in an advisory role. For example, the Metropolitan Growth Statement listed above is in no way binding upon

zoning decisions by local governments. And a major regional function, transportation, including the Metro subway and bus system, is operated by the Washington Metropolitan Area Transportation Authority, which is independent of COG.

Efforts at Areawide Water Pollution Control

Water resources policy making in the Washington area has been deeply affected by two factors: rapid population growth and fragmentation of government jurisdictions. Rapid development has increased demand on water supplies and is outstripping sewage treatment capacity. Growth has also increased the quantities of residual treated sewage or sludge, sedimentation and polluted urban runoff. At the same time, the fragmentation of jurisdictions has prevented rapid decision making as states, counties, districts and municipalities negotiate with each other. When intergovernmental bargaining has not kept up with the pace of change, emergency measures such as sewer moratoria have been required.

The history of water resources activity in the Washington area reveals a series of attempts at a comprehensive areawide approach. Most of these efforts were stimulated by the federal government and all have encountered some resistance by local governments to implementation of areawide policies.

Interstate Commission on the Potomac River Basin (ICPRB)

The first regional effort at water resources coordination occurred in 1940, when Maryland, Virginia, Pennsylvania, West Virginia, the District of Columbia and the federal government joined to form an interstate compact. This agreement, the Potomac

Valley Conservancy District Compact, created the Interstate Commission on the Potomac River Basin (ICPRB). The Commission is composed of three commissioners from each state, the District, and the federal government and has a full time staff which functions as a research and consulting group to coordinate the activities of state, local and federal governments. In 1978, the ICPRB had a budget of \$406,000, and a staff of 13 headquartered in suburban Maryland just outside Washington.

Although the ICPRB provides information and advice to government agencies, it has no enforcement, regulatory or revenue-raising powers. In the 1940 compact, the Commission's interests were confined to water quality, but in 1970 the compact was amended to cover all water supply and related resources. These 1970 amendments specified five responsibilities for the ICPRB:

- o studies and research
- o promotion of uniform laws and policies
- o public information and education
- o assisting public and private planning efforts
- o review and comment on plans.

One other potentially significant amendment allowed the creation of "sections" which could be given broader powers if authorized by state legislation. One important task of ICPRB has been to analyze and report on Potomac water pollution through the Baseline Water Quality Monitoring Network, consisting of 62 stations sampled by city, county and state agencies. ICPRB compiles, interprets and published the data for government agencies and the public.

ICPRB's public education efforts include a monthly newsletter, The Reporter, and additional publications. The Commission also organized conferences which brings together federal, state and local officials to discuss water resource issues.

The ICPRB staff appear satisfied with a fact-finding, advisory role. They provide expertise and information to agencies such as the Army Corps of Engineers. ICPRB's two strengths for influencing policy are the staff's technical capabilities and access to publicity. But because ICPRB can do no more than advise local governments, its role in water resource decision and policy making is difficult to identify.

Potomac River Enforcement Conference

The Federal Water Pollution Control Act of 1956 provided three stages of enforcement: conference, hearing and court action. At enforcement conferences, representatives from federal, state and interstate agencies gathered to develop recommendations and conclusions on pollution problems and forwarded them to the federal administrator for review. If dissatisfied with cleanup progress the water pollution control agency administrator could, after six months, convene a hearing of federal and state governments and public interest groups. Finally, after another six months, the administrator could require the Attorney General to institute court action against the violator.

Pursuant to the 1956 Act, a Potomac Enforcement Conference met

in 1958 and proposed interim clean-up recommendations. It was reconvened in 1969, and produced a 1970 agreement, or "Memorandum of Understanding", including these provisions:

- o load limitations and removal levels for sewage treatment plants
- o chlorination at all sewage treatment plants o control of sewer overflows
- o coordinated monitoring of water quality o soil erosion ordinances
- o further studies and meetings.

Although the Memorandum was technically legally binding, enforcement was weak because the follow-up mechanisms of hearings and court action were never utilized. The following elements of the Memorandum were implemented voluntarily, aided in part by a U.S. District Court consent decree resulting from Virginia suing the WSSC:

- o higher treatment levels for sewage o chlorination of effluent
- o elimination of some raw sewage overflows
- o improvement of water quality monitoring in 1974
- o adoption of erosion control ordinances in Maryland, Virginia and the District.

Some other parts of the Memorandum did not fare so well. The timetable for construction and improvement of sewage treatment plants was disrupted by delays and cut-offs of federal funds.

Failure to construct facilities on time put the Conference's pollution abatement goals out of reach. The collective accomplishments of the Enforcement Conference were insufficient to bring Potomac water up to "swimmable" standards by 1975.

Shortly after the reconvened Enforcement Conference, the shortage of sewage treatment capacity reached a crisis stage in the Washington area. The WSSC, Fairfax and Loudoun Counties, and the District of Columbia revised the allocation formula for the Blue Plains treatment plant in 1971. Because their share did not allow for growth, Maryland suburbs were forced to institute a sewer moratorium which remained in effect until 1978. This greatly restricted construction and hurt the tax bases of localities.

Potomac River Basin Advisory Committee

President Lyndon Johnson was interested in the Potomac River and initiated a Department of the Interior study which was released in 1968. This report, The Nation's River, noted that the Washington area was in danger of suffering future water shortages. The report called for more parks and recreation areas along the Potomac, to be acquired by federal legislation. It advocated that the Potomac Valley Conservancy District Compact be rewritten to give the Interstate Commission greatly increased powers. The study was endorsed by the President who had earlier pledged that the Potomac would be swimmable by 1975.

Major recommendations of The Nation's River study were written into a bill introduced in Congress. The legislation died for

lack of interest, and after reintroduction in 1972, the plan was again ignored. However, the states had taken notice of this federal activity. Pennsylvania, West Virginia, Maryland, Virginia and the District of Columbia established a committee in 1965 to write a new interstate compact. This group was named the Potomac River Basin Advisory Committee. Operating on an annual budget of \$60,000, the Committee finished drafting the new compact in 1969. The Compact was then forwarded to the state legislatures for approval.

This new Compact included the following provisions:

- o establishment of the Potomac River Basin Commission, with one representative from each state, from the District and from the federal government;
- o preparation of a Comprehensive Water Resources Plan by the Commission,
- o provision that the Commission could acquire, finance and operate facilities if local governments were unable to or unwilling;
- o implementation of the Comprehensive Plan to be coordinated by the Commission;

Virginia enacted the Compact in April 1970, and Maryland in 1971. Members of the Advisory Committee worked for passage through hearings, meetings and educational campaigns. However, organized lobbying against the Compact arose in West Virginia and Pennsylvania, especially from extremist conservative groups. Some

of these groups went so far as to label the Compact a Communist conspiracy.

In the District of Columbia, the appointed council and Mayor/ Commissioner endorsed the Compact, but this did not constitute enactment because Congress had not granted such authority to the District.

In West Virginia, the Compact was studied by a subcommittee of the Commission on Interstate Cooperation, which recommended in early 1972 that the Compact not be adopted. Accordingly, the West Virginia legislature did not enact the proposal.

A committee of the Pennsylvania legislature held one hearing on the Compact and then failed to take any further action.

The indifference of West Virginia and Pennsylvania may be attributed to several factors: the presence of organized opposition, the powers given to the proposed Commission which might interfere with states' rights, and the lack of a large constituency lobbying in favor of the Compact.

In late 1974, the Advisory Committee recognized that the Compact would not be passed in its original form; therefore, the Committee drafted a revised Compact to include only Maryland, Virginia, and the District. The new Compact proposal was sent to the District and state legislatures in late 1973. However, by this time the attitudes of state officials in Maryland and Virginia had changed. Many of the original supporters of the 1965 Advisory Committee were no longer in office. In the late 1960's, interstate compacts had

been widely viewed as the best solution to water resource problems in large river basins. By 1975, this general enthusiasm had waned and as a result, Maryland, Virginia and the District did not enact the revised Compact.

The eight member Committee has received no funds since 1976 and completed its final study in 1979. Prospects for enactment of the Compact have been dim because there is no longer enough interest in Maryland and Virginia. The experience of the Committee illustrates the difficulty of establishing regional management agencies in the Washington area.

National Capital Region Water and Waste Management Report

Congress mandated a study of water supply, pollution and institutional arrangements in the Washington area in 1970. The Environmental Protection Agency performed the study in conjunction with some staff from the Council of Governments and their member jurisdiction. Congress specifically instructed EPA to investigate the option of establishing a regional authority to control pollution and water supply and to administer facilities. EPA published its report in 1971 and concluded that a regional authority should be established. They named the proposed agency the Regional Council; it would replace the Council of Governments and have greatly expanded powers. It would not only undertake areawide planning, it would set policy as well. An Environmental Service Corporation, controlled by the Regional Council, would be responsible for the operation of facilities. The Corporation would be empowered to

acquire, finance and manage water supply and sewage treatment facilities. EPA's proposal was presented to the public and to elected officials and was immediately opposed. The only supporters at public hearings were the Virginia Society of Professional Engineers and the appointed D.C. City Council. In the face of overwhelming protest from local officials, EPA did not continue to push for implementation of the proposed Regional Council. This case illustrates the resistance of the localities to areawide government and the inability of the federal government to impose solutions on the metropolitan area.

Washington Area Interstate Water Resources Program (WAIWRP)

Shortly after the EPA report had been issued, a similar state study was initiated by Maryland, Virginia and the District of Columbia, only this time there was no mandate to recommend a regional authority. The states set up a task force to develop an action program for water supply and water pollution control. The group, known as the Washington Area Interstate Water Resources Program (WAIWRP), presented its report in 1973. With respect to water pollution, the task force recommended completion of advanced water treatment (AWT) technology at all sewage treatment plants. Construction on an AWT plant in northern Montgomery County at Dickerson was also recommended. The plant would discharge highly treated sewage 20 miles upstream from the water intakes of WSSC and the District.

The WAIWRP study had minimal tangible effects. When Congress passed P.L. 92-500 which had provisions in Section 208 for areawide planning, the functions of the WAIWRP task force were left to the agency that would be designated for 208 planning by EPA.

Water Supply Activities

Army Corps of Engineers 1963 Study

The first major study which called attention to impending water shortages in the Washington area was released by the Army Corps of Engineers in 1963. This study recommended that 16 dams be constructed in the Potomac basin to create reservoirs. The water could be released to augment Potomac flow during droughts. The Corps of Engineers claimed that recreation, water supply and aquatic life would benefit from the more stable river flow.

The proposed dams were located in rural areas of the upper Potomac basin. Most of the residents upstream from Washington had little sympathy for the water supply needs of the metropolitan area. Opposition to construction of the dams stopped two projects that Congress authorized: Sixes Bridge, Maryland and Verona Lake, Virginia. Only one of the 16 originally proposed dams - Bloomington Lake - is being built. Bloomington Dam was supported by environmentalists and the local residents.

National Capital Region Study

The EPA study (National Capital Region Water and Waste Management Report), released in 1971, proposed a regional authority to solve the problems of water supply. The EPA report noted that the Washington area was threatened by water shortages, but concluded that the root of the problem was institutional, i.e., governmental fragmentation. EPA claimed that an areawide agency in control of water supply would take the necessary steps to prevent

water shortages. As noted above, this EPA proposal met heavy antagonism and was never implemented.

Revised Potomac River Basin Compact

During the same year that the EPA study was released (1971), Maryland enacted the new Potomac River Basin Compact. Virginia had enacted the measure in 1970. This Compact would have established a regional agency for water supply as well as water pollution much as the EPA proposal, but on a larger scale. Apparently the local Washington area governments perceived the EPA proposal as a greater threat than the Compact. But because Pennsylvania and West Virginia did not enact the Compact and because the attitudes of the Maryland and Virginia state legislatures changed, water supply in the Washington area was not put under the control of an interstate agency.

While discussions of the Compact were taking place, the U.S. Congress authorized two Army Corps of Engineers projects to increase the potential water supply for the Washington area. In 1971, Congress authorized the Army Corps of Engineers to build an emergency pumping station at the beginning of the Potomac estuary, just north of the District of Columbia. Since the upper estuary water is of marginal quality, the water would be mixed with regular D.C. supplies and used only in emergencies. Construction of the project was completed in 1978 at a cost of \$4.5 million.

In 1974, Congress authorized the Army Corps of Engineers to build a pilot water supply treatment plant on the Potomac estuary.

The purpose of the plant would be to assess the technical and economic feasibility of treating estuary water to drinkable quality. If found feasible-to treat, fresh water in the estuary could potentially alleviate part of the water supply problems for the metropolitan area. Construction of the pilot plant was completed in 1980 and several years of testing will follow before the Corps reports its conclusions.

Washington Area Interstate Water Resources Program

One major areawide study performed by the States (as opposed to the federal government) made specific water supply proposals during the early 1970`s. The 1973 report by the WAIWRP task force made several significant recommendations on the issue of water quality. They noted that the WSSC, Washington Aqueduct and Fairfax County water supplies could be interconnected to allow the area as a whole to cover water shortages. The task force advocated Sixes Bridge and Verona Dam (which were later dropped due to upstream opposition). Finally, the WAIWRP report recommended water conservation.

The WAIWRP group did not appear to carry heavy influence in the area of water supply since the interconnections have not yet been implemented, the dams will not be built and water conservation efforts have not been comprehensive.

During and after the WAIWRP study, local governments joined in two cooperative agreements dealing with water supply.

Water Conservation and Coordination Agreement

The Metropolitan Washington Council of Governments drew up a Water Conservation and Coordination Agreement in 1974. This plan

included measures on water pricing, plumbing devised, public education and a Water Shortage Emergency Plan. For two and one half years, no local jurisdiction took action on the agreement. Then in 1976, Congressman Herbert Harris (D.-Va.) put pressure on the local governments during hearings held on the Potomac River. Shortly afterwards, 17 local governments accepted the agreement. It was finally signed at the end of 1978 after four Virginia suburbs finally consented to join.

Low Flow Allocation-Agreement

Virginia, Maryland and the began discussing in 1971 how to a shortage. The WSSC had asked structure) onto its Potomac intake in 1967, but the Army Corps Engineers claimed that this might threaten D.C.'s share of the water. This led to discussions distribute Potomac water during District water supply agencies allocate Potomac water in case of to build a weir (low water diversion of from 1971 about a formula to low flows. The agreement was signed in 1978, after a severe drought, and only after the FCWA had been delayed in its request for additional intake

Conclusions

Intergovernmental efforts to coordinate policy in the Potomac River Basin have intensified since the early 1960's. The years 1965 to 1971 were marked by federal and state activity and interest in regional or areawide agencies as a solution to water problems. These were the initial years when a stronger basin Compact was discussed, when the EPA proposed a Regional Council.

and when President Johnson's task force produced The Nation's River study.

During these years, there was general support from the states and the federal government for major institutional reforms.

Since 1971, enthusiasm for a new interstate compact and talk of areawide water authorities have decreased. The 1970's have been marked by negotiations between governments as water supply problems become more urgent. Disagreements surrounding the Low Flow Allocation Formula and the controversies over the Army Corps of Engineers proposed dams are examples of inter-governmental water supply disputes in the Potomac basin. These experiences provide the background for areawide water quality planning under Section 208 of the Federal Water Pollution Control Act Amendments of 1972.

Chapter 2:

208: Nationally and in Washington

Section 208, "Areawide Waste Treatment Management", was viewed by some as the centerpiece of an extremely ambitious and complex water pollution control act;

"In the long run, however, the most influential portions of the new law may well be those relating; to planning and water management. The Act requires detailed, sophisticated water management planning to be done, on an areawide basis, within a few years."¹

The Federal Water Pollution Control Act Amendments, P.L. 92-500, was passed by Congress in 1972 at the high water mark of the environmental tide of the last decade. Its goals, requirements and deadlines were innovative and demanding, but also, in retrospect, somewhat unrealistic and unmanageable. Its goal was zero discharge - abatement of all significant pollution - by 1985 with two interim deadlines: utilization of best practicable technology by 1977 and best available technology by 1983. It was thus anticipated that by 1983 we would attain water quality suitable for the protection and propagation of fish, shellfish, and wildlife and for water-based recreation. This is often called "the fishable, swimmable" goal.

The Act established a national permit system for industrial and municipal discharges under federal guidelines and standards. It authorized \$18 billion in federal construction grants for municipal waste treatment facilities and provided increased opportunities for citizen suits and for greater public participation.

The entire Act, more than 89 pages of fine print, is "one of the most complicated pieces of legislation ever to emerge from Congress".²

The provisions of Section 208 reflected the general thrust of the Act - federal leadership, tight deadlines for state and local compliance and very ambitious objectives. It attempted to establish comprehensive water quality management planning on a regional basis, within states and also in interstate metropolitan areas. It provided for a two-step process: first, planning with identification of major problems and proposed programs, and, secondly, management, the implementation of effective remedial actions by new institutional arrangements in the form of a regional water pollution control agency or agencies.

These areawide planning and then management agencies were to be established in geographic areas with substantial water quality problems resulting from urban-industrial concentrations. The two year planning process would be funded entirely by the federal government. The subsequent 208 management agency would establish regulatory programs to "regulate the location, modification, and construction of any facilities within such area which may result in any discharge or runoff of pollutants in such area".³ Thus its powers could extend to land use and waste disposal within the entire region.

The first step of the process involved designation by a Governors of regional planning area boundaries, after consultation with local officials. Then a specific agency would be selected

to assume the planning function. Once the plan obtained state certification and federal approval, a management agency would be established with authority to approve and even review federal construction funds for sewage treatment plants.

In the case of interstate areas, the Governors of the bordering states were to consult and agree on a single representative organization capable of developing effective areawide waste treatment management plans for the area. If the Governors could not agree, the chief elected local officials would then have the power to designate the 208 agency which was to develop the management plan.

This 20-year plan was to be developed within two years and no later than the end of 1978. It would cover all wastes, including nonpoint sources and include alternative treatment strategies for present and future municipal and industrial wastes. It would also indicate which agency or agencies were to carry out the plan, which was to be updated annually.

Subsequent EPA regulations elaborated on the 11 statutory requirements and identified 16 program elements to be specified: planning boundaries; water quality assessment and segment classifications; inventories and projections: nonpoint source assessment; water quality quality standards; total maximum daily loads; point source load allocations; municipal waste treatment systems needs; industrial waste treatment systems needs; nonpoint source control needs; residual waste control needs and land disposal needs; urban industrial stormwater systems needs; target abatement dates; regulatory programs, management agencies;

environmental, social and economic effects. Public participation was also required, under other provisions of the Act.

After enactment of the legislation, EPA and the Nixon Administration delayed implementation of Section 208 and then, about two years later, was forced by two court decisions and by mounting Congressional pressure to considerably expand the program's coverage and funding. EPA initially chose to interpret the areawide management provisions as a long-term objective of delayed priority, although the bill's sponsors had stated that

"The degree to which the Administrator takes immediate action to implement this section (208) will be convincing evidence of the commitment of the Environmental Protection Agency to early and effective implementation of the water quality management policies established by this legislation." ⁴

EPA officials limited application of Section 208 with stringent criteria, delayed regulations and minimal funding. This was part of their water quality strategy according areawide planning, low priority, in contrast to 'a heavy emphasis on dispensing construction grant funds and issuing effluent permits. Thus, Section 201 construction funds were dispensed without consideration of the more comprehensive water quality management planning process mandated under Section 208. As a result, the 208 program lost whatever "carrot" leverage it might have had over the massive construction grants program.

However, court suits brought by public interest groups forced EPA to increase funding for the 208 program and to expand it from

an optional one for complex urban regions to a mandatory state wide planning effort throughout the nation. Nevertheless, the 208 agencies, after designation, were given only two years to address the statutory and regulatory requirements and to complete their plans no later than November 1978.

The Clean Water Act of 1977, P.L. 94-517, amended the 1972 Act. It extended the 208 planning authorization to make up for the initial funding delay and initiated a program with funding for implementing agricultural nonpoint source control programs through the U.S. Department of Agriculture.

In the meantime, EPA had funded 176 regional agencies and also given areawide planning grants to 49 states for a total of \$220 million over seven years. The program was gradually reoriented away from its original regional and comprehensive thrust which was to encourage the establishment of unified, powerful regional agencies, toward much greater attention to nonpoint sources, both agricultural and urban storm water runoff. But the guidelines still stressed that the planning process should be linked to implementation and not viewed as a theoretical, data gathering exercise.

However, even EPA was forced to concede in retrospect that the program had been plagued by many problems:

"Policy was often developed later, had changing objectives, and confused the ongoing planning efforts. There was a belated recognition that the program was a political process, and public participation was under-emphasized. Ill-defined and shifting relationships existed between States and areawides as to responsibilities. Most importantly, an overly ambitious attempt was made to cover all water quality and waste treatment problems in the initial two-year process.'

While the 208 program failed to meet the ambitious expectations of the original legislation or to resolve many tough regional-issues, its defenders point out that it

- o surfaced institutional problems to the point where they could no longer be ignored;
- o began a process that will focus on the trade-offs between point and nonpoint sources;
- o raised the consciousness level of the local citizens, especially in terms of pollution costs.⁶

The future of 208 is in doubt. More than 150 of 226 plans have been approved by EPA and 20 more certified by the States. However, most of the approvals are "conditional" with reservations on key parts of the plan. And since 208 emphasized implementation results rather than planning, observers are forced to judge 208 by its actual accomplishments and not only by its "process".

The 208 Process in Washington

The areawide water quality planning and management process in the Washington area has been affected by national developments and clearly reflects some of the more general problems and trends. After initial start-up problems, the program lurched to an unclear climax.

The initial controversy involved a jurisdictional clash between the Interstate Commission on the Potomac River Basin (ICPRB)

and the Metropolitan Washington Council of Governments (COG) over which organization would be designated as the 208 agency. The ICPRB moved first by appointing an advisory committee in October 1973 to explore the role of the Commission in 208 activities. In December, the committee recommended that the ICPRB be "designated", but by then the COG had also indicated its definite interest in becoming the 208 agency.

The ICPRB pushed for a primary role in an elaborate February 1974 proposal detailing its interest and professional capabilities. It received the general support of Virginia Governor Linwood Holton for its bid, although the Northern Virginia Planning District Commission had also sought the designation.

However, the Council of Governments intensified its efforts, urging local governments to pressure the Governors for designation of COG as the planning agency. It enlisted both local government and environmentalist support by raising the specter that the ICPRB was state-dominated and might force water management decisions that could undermine local authority as well as the controlled growth efforts being undertaken in the Virginia and Maryland suburbs. Thus, local governments from Prince George's County to the Northern Virginia Planning District Commission also petitioned EPA on behalf of COG.

Only Montgomery County, under Executive James L. Gleason, was not enthusiastic over the whole 208 process. It feared that any regional planning would weaken state and local powers and possibly threaten the county's proposed Dickerson waste treatment plant.

Because of the controversy, the Maryland and Virginia governors and the District of Columbia government failed to reach agreement within the statute's time limit. Therefore, the decision went by default to the local officials, who designated COG as the 208 agency.

By the end of July 1974, COG established a Water Resources Planning Board (WRPB) composed of local jurisdictions, the Northern Virginia Planning District Commission, Maryland, Virginia and the District of Columbia through the ICPRB, with responsibility for conducting areawide waste treatment planning. However, approval of the Board's charter was held up early in 1975 when Montgomery County Executive Gleason refused to endorse it unless the plan would assume the construction of Dickerson, a condition which was eventually agreed to.

Upon approval of the charter, EPA awarded the Washington COG's WRPB \$3.5 million in June 1975. Of this amount, \$1.2 million was allocated to local governments and agencies for "general liaison contracts" to collect data for the 208 plan or for specific studies related to the plan.

The WRPB, utilizing the staff of COG's Department of Water Resources, undertook various studies, contracted out for others and enlarged its own staff of planners, scientists and engineers.

A Technical Advisory Committee of governmental personnel and a Citizens Advisory Committee, composed mainly of environmentalists, were created and met regularly to review studies and drafts.

Parallel to the 208 effort, EPA finally decided in September 1976 to reject Montgomery County's application for a sewage treatment grant to construct the Dickerson plant. As a result, Montgomery County imposed a "freeze" on 208 contracts. This suspension of cooperation with COG was ended after two months when the WRPB agreed to continue the Dickerson part of the area's plan, despite its rejection by EPA, until the matter was resolved in the courts.

Shortly before the COG staff was due to present a draft plan to the Board for public comment, its director resigned under fire after reports of considerable staff dissension and management problems had surfaced. Nevertheless, a draft plan was submitted in March 1978, accompanied by a strong Citizens Advisory Committee dissenting critique.

The draft plan identified problem areas, generally accepted the water use goals of the District of Columbia, Maryland and Virginia, and approved of most state water quality standards.

It presented various options for constructing additional advanced waste treatment facilities and asked local jurisdictions to consider land treatment options and to share treatment capacity, without, however, specifically allocating amounts. It also urged local governments to control nonpoint sources through urban "best management practices" and to reduce their sewage flows through water conservation. While the plan did specifically come out in

favor of a regional ban on phosphate laundry detergents, many other key issues, such as sludge disposal and sewage treatment construction plans-and allocations, were left unresolved.

A federal district court decision upholding the federal government's turndown of Dickerson was helpful in obtaining Montgomery County's endorsement of the plan, the last of the local jurisdictions to do so. The Board appointed a special subcommittee to resolve controversial and crucial issues such as sewage treatment capacity and residuals by July 1979. It officially approved the plan in September 1978 and then submitted it to the states for their certification.

A permanent 208 program director was appointed in October 1978 to continue the effort and to head COG's Department of Water Resources. At about the same time, EPA indicated its dissatisfaction with the plan, which had not yet been officially received from the states, by sending a blunt letter to the Board requesting more specific results and better data and threatening a cut-off of funds.

By September 1979, the Governors had conditionally certified the plan and passed it on to the federal government. By that time, EPA, in line with national policy, announced that it would not award construction grants for facility growth, specifically rejecting Montgomery County's scaled down, proposed Rock Run treatment plant.

EPA also shifted the emphasis of the 208 program to nonpoint

sources and urban runoff studies and control. By the spring of 1980, it unveiled its new “Potomac Strategy” to coordinate local government studies while a 208 plan update was being drafted by the WRPB. The “Draft 208 Plan Supplement” was circulated in June 1980 by COG for a public hearing the next month.

Basic issues as well as latest developments and trends will be discussed at greater length in succeeding chapters. However, this chapter’s brief historical outline should be sufficient and its uncertain future, both nationally and in the Washington area.

FOOTNOTES

1. Washington Post, November 7, 1972, editorial, p. A18
2. Lester Edelman, “Congressional Intent of the 1972 Federal Water Pollution Control act”, Water Pollution Control Federation Journal, 45 No. 1. (January 1973), p.1.
3. Sect. 208.62 c.ii of the act. EPA later narrowly interpreted this language to refer only to waste treatment facilities and not to other pollution causing activities, such as industrial plant siting. It is also the only section of the 1972 Act dealing with nonpoint sources. For a fuller discussion of legislative intent and early administrative implementation of 208 see Harvey Lieber, Federalism and Clean Waters: the 1972 Water Pollution Control Act (Lexington: Lexington Books, 1975), pp. 100-108
4. U.S. Senate, Committee on Public Works, A Legislative History of the Water Pollution Control Act Amendments of 1972, 93rd Congress, First Session, January 1973, Vol. 1 p. 169.
5. From EPA’s March 1, 1978 report “Program Strategy for Water Quality Management FY 1979-83”, quoted in U.S. General Accounting Office, Water Quality Management Planning is Not Comprehensive and May not be effective for Many Years (CED 78-167), December 11.

6. I am especially indebted to James Meek of EPA for raising these points, often overlooked by critics who have pronounced the program a failure and ripe for sunset.

Chapter 3:

Major Issues in the 208 Plan

Outside observers have criticized 208 planning for its lack of results. However, 208 agencies have confronted issues which have been fought out for, years between localities, and between the federal, state and local governments. In Washington too, water quality decisions have been extremely controversial because of treatment plant construction costs and growth implications. The areawide planning process under the Water Resources Planning Board, while considering these issues, was similarly unable to resolve them.

1. General Institutional Arrangements

When 208 planning began in 1975, the Washington area had already witnessed ten years of debate over the optimum institutional arrangement for water resources management. The years 1965 to 1970 saw an unsuccessful attempt to establish a strong Interstate Compact to control the river.

The Nation's River study in 1968 proposed increased federal control. Then, in 1971, the EPA suggested a metropolitan authority to control sewerage, water supply and waste disposal. All of these ideas failed to gain acceptance by the states, the U.S. Congress and the local governments. Understandably, the COG staff doing 208 planning was not inclined to propose significant institutional changes after these major failures.

Most of the institutional analysis in Washington's 208 plan was done by a consulting firm, Development Sciences, Inc. In their report of November 30, 1977, the consultants discussed six candidate management systems. Three were rejected and not listed

as options: a metropolitan structure, reliance on the states, and an interstate commission. Development Sciences concluded that these mechanisms were not politically feasible, probably because they had been considered and decisively rejected in the past.

Development Sciences did present three institutional options which were incremental variations of the existing fragmented system:

Option I: In-Jurisdiction Treatment

As at present, each locality would be responsible for its own increased sewage flows, to be treated within that jurisdiction's boundaries. Existing regional facilities (Blue Plains, Potomac Interceptor Sewer) would continue to be used regionally. The WRPB would perform continuing planning with 208 funds. As under the current system, the self-sufficiency of each jurisdiction would be emphasized.

Option II: Multijurisdictional Treatment

New and expanded sewage treatment plants would be built to meet regional needs. Sharing of capacity would be arranged through inter-jurisdictional contracts. Although existing institutions would be designated as management agencies, the WRPB could take on an expanded role as the mediator of disputes and also expand its continuing planning efforts.

Option III: The Potomac

Interjurisdictional contracts would include water supply and sludge disposal as well as sewage treatment capacity. Thus, the northern portions of the Potomac River would be protected for water supply uses. The southern reaches of the river would

assimilate effluent discharges. Development Sciences proposed that Montgomery County provide expanded water supply storage, the District of Columbia treat more sewage, Prince George's County offer a sewage outfall site, and Fairfax County perform sludge composting. Although this option would increase the interdependence of localities, no new institutional arrangement was suggested beyond contracting. Continuing planning and mediation by the Water Board might expand, and the jurisdictions would have the option of pooling bond issues for lower borrowing costs.

Water Board Action

When these three alternatives were presented to the WRPB, there was little controversy, because the selection of Option II was a foregone conclusion. Option II was basically the status quo with the small additions of possible contracts and WRPB mediation. Since Option II did not commit any jurisdiction to a particular action, it was attractive to Water Board members.

In adopting Option II, the Board did state that the "Potomac Perspective" would be a desirable end state. However, it seems that Option III was too ambitious in its call for interdependence and cooperation for immediate acceptance.

During the 208 process, relatively little attention was paid to the institutional question. The Technical Advisory Committee and the Citizens Advisory Committee spent little time on the issue; during public hearings institutional arrangements were hardly mentioned.

Although the Council of Governments might have been expected to push for a more regional approach, the COG staff did not actively pursue the management agency questions. EPA was largely silent on institutional issues as well. In general, these discussions were characterized by lack of interest and a common assumption that existing arrangements could not be changed.

The CAC's lack of interest in institutional issues is interesting because the citizens were such vocal proponents of change in other areas. CAC was unfriendly towards most candidate management systems. They distrusted the states and were critical of state water quality standards. They dislike the Interstate Commission on the Potomac River Basin, and saw no environmental advantage to the interstate compact approach. The CAC also disagreed with COG and with the local governments on most issues. But they were fearful of any new super agency. Since the existing 208 planning mechanism gave the CAC members direct access to the planning process, they may have felt that their strategic position on the CAC was the best mechanism they could realistically expect.

In their critique of the 208 plan, the CAC members proposed a revision of the WRPB so that it would be composed of elected officials only. The CAC suggested that planning and A-95 reviews be turned over to such a revised board. The CAC apparently felt more comfortable with elected officials than with local staff.

2. Sewage Treatment Capacity

The Washington area 208 plan called the allocation of sewage

capacity "the most pressing issue in waste water treatment in the region". Montgomery County and the District of Columbia in particular faced immediate needs for additional sewage capacity if they were to accommodate their desired levels of growth. Because sewage treatment capacity is viewed as a prerequisite for population and economic growth, capacity sharing has been the most difficult and time consuming issue in the 208 process.

When a jurisdiction runs out of available sewage capacity, a sewer moratorium must be instituted, often through the courts, which prevents further construction in the affected area. This depresses the economy of the jurisdiction, causes desirable development to locate elsewhere, and may harm the tax base. Sewer moratoria have affected various portions of the Washington area during the 1970's, including Montgomery, Prince George's and Fairfax Counties.

Two factors combine to intensify the capacity issue: financial problems and siting of plants. Because of the high capital outlay required for a sewage treatment plant, the counties, cities and the District of Columbia cannot build major facilities without federal grants of up to 85 per cent of the construction cost. EPA funding approval, therefore, has become a necessity for large projects; this gives EPA veto power over the localities' proposals.

The second problem, siting of plants, is critical because the Potomac is used for water supply and waste disposal. The ideal location for sewage plants is downstream from water intakes so that health problems can be minimized.

On the Maryland side of the river, Blue Plains (owned by the District of Columbia) and Piscataway (owned by Prince George's County) are well below water supply facilities. However, the size of the Blue Plains site and limited expansion sites nearby would probably not permit any expansion of the plant. Piscataway could be expanded, but the Prince George's County government has strenuously resisted the prospect of providing capacity for the District and Montgomery County. (Prince George's County already has three major plants of 30, 15, and 7.5 mgd capacity; Montgomery County has only a few small interim plants.) The terminology most frequently used by Prince George's County officials in resisting expansion of Piscataway is that they do not want to be "the sewer capital of the region", However, since they have excess capacity, they see no need to subsidize growth in other areas, especially their more affluent sister county, Montgomery.

A. Northern Virginia

On the Virginia side of the river, problems center around the areas served by Blue Plains, which are mostly in northern Fairfax County. The rest of the Virginia suburbs send waste water to three major plants: Arlington, Alexandria and Lower Potomac. A few small facilities also serve northern Virginia. Although there is surplus capacity in these plants, the Virginia area served by Blue Plains is not interconnected with the plants that have extra capacity.

In response to a 1974 sewage capacity lawsuit, the Fairfax County Board of Supervisors proposed a \$19.2 million pipeline

which would divert sewage from Blue Plains service areas to the Lower Potomac plant. The Virginia communities served by Blue Plains were close to utilizing their total share of capacity, and a renewal of sewer moratoria seemed imminent.

However, EPA refused in 1977 to fund the project, called the Difficult Run Pumpdown. EPA cited the State of Virginia's construction priority systems as justification for funding other projects instead of the Pumpdown. Nevertheless, the Water Resources Planning Board included the Pumpdown in all of the 208 plan options for capacity sharing.

A second problem involved a plant operated by the Upper Occoquan Sewage Authority (UOSA). In 1972, a 10 mgd plant was planned to replace 11 small overloaded sewage treatment plants on Occoquan Creek in Northern Virginia. The costs of building the plant, estimated at \$42 million, were to be shared by Fairfax County, the City of Manassas Park and some other Northern Virginia jurisdictions.

When the plant was built in 1977, the actual costs, \$82 million, were almost twice what had been expected. Manassas Park, a small town of 1,800 homes, was forced to raise its water and sewer rates drastically. A small group of residents protested in 1978 by refusing to pay their water bills and having the City cut off their service. Besides increased costs for more advanced water treatment, the problem in Manassas Park was excessive infiltration of ground water into leaky sewers and poor planning; anticipating

rapid growth, the small town had purchased an extra capacity of 900,000 gallons per day. Although this high level of growth did not occur, the city was forced to pay for the extra capacity which had been built and the extra operating costs due to its leaky sewers. The construction cost overruns at the UOSA and the extra operation costs for excessive flows therefore had a severe impact on Manassas Park, while the other jurisdictions using the plant were able to avoid such large rate increases.

B. Blue Plains Sewage Treatment Plant

The Blue Plains Treatment Plant serves all of the District of Columbia and parts of Montgomery and Prince George's Counties, Maryland served by WSSC and Northern Virginia. It is one of the largest publicly owned waste treatment facilities in the United States. Controversies over its capacity, operations and degree of treatment have been common and continuous.

Constructed in 1938, it was upgraded and enlarged in 1949 and again in 1959 to accommodate Washington's rapid growth. The third session of the Potomac Enforcement Conference, convened by EPA's predecessor agency in the Department of the Interior, resulted in a 1970 Memorandum of Understanding signed by the District of Columbia, the Washington Suburban Sanitary Commission (WSSC), Fairfax County, Maryland, Virginia and the U.S. Department of the Interior. It further upgraded the degree of treatment, established capacity limits at 309 mgd and made allocations among the principal government jurisdictions - about 50 per cent for the WSSC, 38 per cent for the District and 12 per cent for Virginia.

Despite the agreement, the WSSC was soon sued by the District of Columbia, Fairfax County and the State of Virginia in September 1973 for exceeding its allocated flow. When the District, which operated the treatment plant, threatened to close the facility because of inability to dispose of the sludge being generated by the plant, EPA obtained an injunction to prevent this and the District was also sued by the other principals. Many negotiating sessions finally produced a June 1974 consent decree detailing a sludge disposal plan and more firmly establishing the following allocation of Blue Plains capacity, which formed the basis for 208 planning:

TABLE ONE
BLUE PLAINS ALLOCATIONS*

	Total mgd	
WSSC (Montgomery and Prince George's Counties)	153.3	49.6%
District of Columbia	135.0	43.7%
Fairfax County	8.026	
Pimmit Run area (Fairfax County and Arlington)	8.0	
Loudoun County	3.208	6.7%
Vienna	.953	
Dulles Airport	.423	
National Park Service	.0111	
Naval Ship Research and Development Center	.085	

*Source: 208 Plan, p. V-28a

In any case, the Blue Plains capacity arrangement in 1974 fell far short of projected wastewater treatment needs. This is not surprising, since tentative plans at the end of the 1960's had called for expanding Blue Plains to 419 mgd to accommodate the increasing number of suburban residents. However, because this would involve filling in mud flats at Library Point in the Potomac, the necessary permits from the Corps of Engineers could not be obtained from EPA and other agencies. An early WRPB staff paper predicted the following deficits for 1985 and 1995:²

<u>Jurisdiction</u>	<u>1985 Deficit</u>	<u>1995 Deficit</u>
District of Columbia	7.6 mgd	14.2 mgd
Fairfax County	3.0 mgd	8.6 mgd
Loudoun County	- -	1.7 mRd
WSSC (Suburban Maryland)	<u>9.7 mgd</u>	<u>43.5 mgd</u>
	20.3 mgd	68.0 mgd

Permit

Besides capacity sharing and sludge disposal, the type and degree of treatment at Blue Plains is still another pending issue. Litigation and complex scientific issues surround its permit.

An EPA discharge permit, under Section 402 of the Federal Water Pollution Act, was first issued to Blue Plains in May 1974. It has been enveloped in judicial and scientific controversy even after its expiration five years later. A second permit is similarly being contested, with environmentalists disagreeing with local governments as well as with EPA and the WRPB.

The 1974 EPA permit greatly increased treatment and operating costs and required the removal of both phosphorous and nitrogen. A year later, upon request of the Blue Plains principals, EPA reviewed the permit conditions and suspended the nitrogen removal or denitrification requirement pending further studies. This lowered construction costs by more than \$100 million. However, environmental groups, especially the Montgomery Environmental Coalition (MEC) and the Natural Resources Defense Council, promptly appealed. They also contested the liberal method employed for calculating the 308 mgd flow (an annual average rather than on a monthly basis) as well as the dechlorination provisions.

Two years after a June 1976 administrative hearing, the EPA administrator decided in favor of the revised permit. This decision was upheld by the EPA Administrator in May 1979. The environmental groups took their case to the federal appellate court although the first permit was due to expire at the end of June. The new permit, issued on July 19, 1979, changed the flow calculations to a monthly basis and again deferred requiring denitrification.

The new permit also affects the capacity and operations of Blue Plains. While the 1969 Conference limited its full treatment and sharing capacity to 309 mgd, it is designed with hydraulic capacity for intermittent flows of up to 650 mgd, with an additional 289 mgd for limited, primary treatment, i.e, a maximum of 939 mgd. This second permit sets stricter standards for plant discharges and also required Blue Plains to treat more storm water runoff.

This may serve to reduce the sewage flow into the plant, further restricting local governments and perhaps even leading to sewer moratoria.

Although considerably stricter than the earlier requirements, this new permit and a related consent agreement have similarly been challenged by the MEC and the Environmental Defense Fund, and separately by the Virginia State Water Control Board, which is especially concerned over downstream water quality standards not being met by the permit requirements. The environmentalist petition for review supports denitrification and asks EPA to consider other alternatives such as requiring land treatment, imposing a sewer moratorium and abating storm water and combined sewer overflow or discharge of treated sewage to other reaches of the Potomac estuary. They base their support for a \$200 million denitrification facility on a contested chlorophyll a standard. The environmentalists have also claimed that Blue Plains is currently inadequate, that it does not have sufficient capacity, and that its treated wastes violate the less strict first permit conditions. So far, EPA has chosen under its "Potomac Strategy" to prefer additional studies before invoking the stringent requirements of the permit which the environmentalists seek.

In any case, the Blue Plains issue indicates the competitive nature of sewer policies, the lack of regional comity, and incomplete, sometimes contradictory technical and scientific evidence, and the frequent resort to court suits since local governments and interests are often unable to reach peaceful agreement.

C. The Proposed Dickerson Plant

Washington area jurisdictions have wanted a major new regional plant since 1970, when the Blue Plains plant was limited to 309 mgd capacity. Prince George's County refused to provide a site, claiming that the County must not become a "sewer capital". Therefore, Montgomery County, which anticipated significant population and economic growth, began to look for a site within its borders. A task force narrowed the choice to five possible sites. In March 1973, the Montgomery County Council designated Darnestown, in western Montgomery County, as the site for a new 60 mgd plant. The Darnestown location was two miles upstream from water supply intakes.

EPA, disapproved the grant application for Darnestown, but noted that "of the discharge points considered in the 'Facilities Plan', a point of discharge at the Dickerson site or above would appear to provide an adequate degree of separation between wastewater effluent and the water supply intakes".³ The County Council, after receiving notice of Darnestown's rejection, was unable to select a site and requested Governor Marvin Mandel to make the decision. Mandel chose the Dickerson site, and the County Council approved his action.

Montgomery County and the Washington Suburban Sanitary Commission (WSSC) spent approximately \$12 million to design the plant and prepare the environmental assessment. The County calculated the costs of the 60 mgd plant at \$355 million, and submitted the

grant application to EPA on March 19, 1976. Apparently, the County expected to receive EPA's approval. Therefore, County and State officials were shocked to receive EPA's March 31, 1976 report which, although labeled "tentative" and "preliminary", indicated that Dickerson would be rejected.

EPA's major basis for rejecting Dickerson was cost. EPA claimed that Dickerson was significantly more expensive than, alternatives; the major alternative which EPA cited was a Piscataway extension. One major cost difference was the 24 mile rock tunnel to transport sewage to Dickerson, which was at a higher elevation than the area the plant would be serving. This rock tunnel alone cost an estimated \$164 million. In addition to cost factors, EPA questioned the desirability of effluent discharges above water intakes. The Agency further noted that 60 mgd capacity was more than necessary, and that the technology proposed for Dickerson had never been tried at the 60 mgd scale.

Montgomery County, Prince George's County, WSSC and the State of Maryland sent EPA an 82 page rebuttal, "The Maryland Response", in May 1976. This document claimed that Dickerson was the best alternative to the capacity problem and that EPA had for many years given the appearance of tacit approval for Dickerson.

Several documents were cited as showing an EPA commitment to Dickerson. The first was a November 1972 telegram from EPA Regional Administrator Edward Furia, which said that "although we cannot give our full approval until these reviews are completed,

we would like to express our strong support based on preliminary data made available to us.... I believe a project such as this represents a dynamic and innovative step forward". Second, EPA had disapproved Darnestown in August 1973, but noted that the Dickerson site "appears to provide adequate separation between discharge and water intakes". Third, the Blue Plains agreement was issued, which referred to the Dickerson plant, had been signed by EPA. EPA Regional Administrator Daniel Snyder had approved a Maryland State Basin Plan on April 15, 1975, which contained the 60 mgd plant at Dickerson. And finally, in mid-1975, EPA approved the State construction grant priority list with Dickerson near the top.

Despite these indications, EPA representatives have insisted that the Agency did not "lead on" Montgomery County. No funding was given to the County for planning (known as a Step I grant) although EPA did reimburse about \$5 million of the planning and engineering costs after rejecting Dickerson. EPA officials have insisted that they never told Montgomery County to put the plant at Dickerson; they stated only that Dickerson was the sole site considered far enough from water intakes.

EPA's rejection of Dickerson was related to the efforts of environmentalists to stop the plant. Groups including the Montgomery Environmental Coalition, the Public Interest Campaign (a consumer group) and the Metropolitan Coalition for Clean Air petitioned the EPA Administrator to deny funding for the grant application. John Menke and Charlotte Gannet were two of the most

active citizens participating in the efforts to stop Dickerson. John Menke was later elected to the Montgomery County Council and served on the Water Resources Planning Board, where he continued to oppose Dickerson. Charlotte Gannet continued as an environmental activist on the Water Resources CAC during 208 planning.

The environmentalists challenged many aspects of the proposed plant. They feared that construction of the plant would cause development of areas in western Montgomery County that had been designated for open space. They noted possible health hazards from discharges above water intakes; they criticized the design of the plant which they claimed was too expensive and sophisticated; and they demanded that land treatment be given greater consideration.

Finally, cost considerations became crucial with the downward revision in the population projections by the Montgomery County Planning Board. Some have claimed that this "caused the planned Dickerson plant to be two or three times oversized. That, together with the sudden increase in energy costs, destroyed any realistic justification of Dickerson cost effectiveness, an EPA grant requirement" 4

Dickerson and 208 Planning

The final sentences of EPA's March 1976 Tentative Preliminary Document stated that Dickerson "required an excess commitment of resources prior to the completion of the Areawide Wastewater Treatment Plan". EPA's mention of 208 planning may have been the clue which

led County Executive James Gleason to insist that Dickerson be a given in the 208 plan. Since unanimity was essential for beginning the 208 process, his adamant insistence that Montgomery County would not participate unless Dickerson was in the plan was effective. When initial EPA rejection of the plan was given in 1976, Gleason froze all 208 subcontracts being performed by the County for two months. The WRPB agreed to include Dickerson as a part of the plan and the Board's charter included a provision that facilities already planned by the member jurisdictions would be included in the 208 plan. With these assurances, Gleason allowed the County Government to participate in the 208 planning effort.

At the same time, Gleason and others attempted to force EPA funding of Dickerson through court action. Maryland filed the suit against EPA in the U.S. District Court, and Maryland was joined by Montgomery County, WSSC and, in September 1977, the District of Columbia. The case, known as *Maryland, et. al. v. Costle*, charged that EPA's decision on Dickerson was "arbitrary and capricious". This court action caused uncertainty over the 208 sewage facility *planning*, since the case rejecting Dickerson was not decided until after the draft 208 plan had been circulated.

D. 208 Planning and Sewage Capacity Sharing

The major technical effort related to sewage capacity in Washington's 208 planning was the development of a computer model. This model, called the Sewer Extension Simulation (SES), predicts

the impacts of various combinations of sewage treatment facilities. Unfortunately, due to internal management problems, the model was not completed in time to be used by the WRPB. This meant that a crucial decision making tool was unavailable. Instead, cruder formulas were used to assess the costs and water quality impacts of different options.

Four sewage capacity sharing options were discussed in the draft 208 plan, labeled Options I, II, III and IV. Options I and II were called plan component options, that is, they included Dickerson. Options III and IV were called contingency component options; they did not include Dickerson, and therefore could not be adopted according to the WRPB charter. The charter stated that facilities already planned by the member jurisdictions would be included in the plan.

In listing Options III and IV as contingency component options, the plan included this disclaimer:

"The consideration of contingencies was not intended to jeopardize the legal position of parties contesting the EPA determination on the grant request for Dickerson. Contingencies would only be considered if Dickerson were unable to proceed and were at no time to be considered as alternatives to the construction of the plant at Dickerson."⁵

All four options assumed that Blue Plains and Piscataway would be interconnected, that Blue Plains would handle no more than 309 mgd total, and that the Difficult Run Pumpdown in Virginia would be constructed. All the options contained land treatment as a "sub-option", meaning that new construction of

plants could utilize either advanced wastewater treatment (AWT) or land treatment.

The options varied in the allocation of Blue Plains capacity and the sized of expansions at other plants. A brief summary of each option indicates the major differences between alternatives.

Option I

Virginia would take care of its own flows beyond its existing Blue Plains allocation. Montgomery County and Prince George's County would share responsibility for expansion of plants to meet their needs as well as additional flows from the District of Columbia. In 1995, 36 mgd of unused capacity would be available to accommodate growth.

Option II

Montgomery and Prince George's Counties would provide plant capacity for their own needs and those of the District and Virginia beyond existing Blue Plains allocations. In 1995, 52 mgd of unused capacity would be available for growth.

Option III

Prince George's County and Virginia would treat sewage in excess of Blue Plains capacity. Dickerson would not be built, and the Piscataway plant would be significantly expanded. All capacity would be used in 1995, leaving none for growth.

Option IV

Blue Plains excess flows would be divided equally by Montgomery County, Prince George's County and Virginia. Montgomery

County would construct several small plants instead of Dickerson. Ten mgd would be available in 1995 for growth.

TABLE TWO
SUMMARY OF OPTIONS

Option	Flow in Excess of Blue Plains 309 mgd Treated by:	Available Capacity in 1995
I	Virginia, Montgomery, Prince George's	36 mgd
II	Montgomery, Prince George's	52 mgd
III	Prince George's, Virginia	none
IV	Virginia, Montgomery, Prince George's	10 mgd

Both the WRPB and the TAC agreed to Option II, with the excess Virginia flows treated by Maryland and the construction of Dickerson providing a major portion of needed new capacity. Examination of Option II, however, shows that this alternative is a conglomeration of existing local plans.. Option II (and likewise Option I) does not contain any proposals which are new to the Washington area. 208 planning, therefore, did not produce a new, comprehensive, area-wide plan; Option II was merely the continuation of the same arguments, the same ideas, and the same facilities which the jurisdictions have been discussing since 1970.

In April 1978, Option II along with the rest of the 208 plan went^l to public hearings. At the three hearings, citizens almost unanimously criticized the Dickerson proposal and the

capacity sharing plans. The State of Virginia would not participate financially in Dickerson: should the plant be built, the State would not contribute to the non-federal portion of the costs. Since Dickerson's capacity was meant to free up more of Blue Plains for Virginia, it had been expected that Virginia would share in the costs of the plant.

The Water Board met after the public hearings to consider revisions to the plan. At this April 17 meeting, two issues emerged as critical. First, District of Columbia representatives sought to insert a clause in the plan claiming that D.C.'s ownership of the Blue Plains plant exceeded its 135 mgd allocation. This, of course, was totally unacceptable to the other jurisdictions sharing Blue Plains.

Secondly, John Menke of the Montgomery County Council asked for a contingency option for Dickerson. This amendment would establish a procedure for selecting an alternative should Dickerson be rejected in the courts. (By this time, the Montgomery County Council had formally opposed Dickerson in contradiction to the preferences of the County Executive.) WRPB members who were against Menke's contingency proposal included David Sobers, representing County Executive Gleason, and the Prince George's County representatives.

After much negotiation and reconsideration of motions, the Water Board voted the following amendments:

- o the contingency for Dickerson, which stated the process to be followed if any major facility could not be implemented;

- a statement by D.C, that its ownership rights in Blue Plains exceeded 135 mgd; and
- a statement with D.C.'s claim to ownership of more than 135 mgd.

One week after this WRPB meeting, Judge John Smith upheld EPA's rejection of Dickerson. He noted that EPA's decision was not "arbitrary" or "capricious". This, in effect, nullified Option II for sewage capacity sharing in the 208 plan; but the plan was already on its way to the local jurisdictions for approval, as was required by the WRPB charter. Decision on an alternative was left to the continuing planning period. James Gleason, Montgomery County Executive, decided to run again in the 1978 election, and also decided not to appeal the court's decision on Dickerson.

EPA Funding Uncertainties

Greene A. Jones, Director of EPA's Region III Water Division, met with the WRPB on October 26, 1978, to discuss future EPA funding of sewage treatment. The most important point of his presentation was to stress that EPA would not fund sewage treatment for pure growth, that cleanup of existing sewage would in all cases take priority. He based this on his interpretation of the 1977 Amendments to the Federal Water Pollution Control Act. The essence of this policy would be a cut-off of funds to the Washington area, since existing sewage flows will soon be receiving advanced treatment.

A Dickerson type plant would definitely be disallowed. Although the Washington jurisdiction want sewage capacity that will allow economic and populations growth, this is exactly what EPA indicated that it would not fund.

On October 31 (elections were held November 7), retiring County Executive Gleason proposed a \$62 million, 20 mgd plant for a site in Montgomery County. Five mad of the capacity were intended for the District of Columbia. This plant, which became known as Rock Run, was drastically scaled down from the Dickerson proposal, used a much less complicated technology, and would have its discharge piped below the water intakes on the Potomac. Within only a few days, the County Council accepted the new proposal. Gleason expected that the plant would not receive federal funding since EPA had indicated in the October 26 meeting that growth projects would not receive grants.

The District's Appropriation of 5 mgd

The fall of 1978 continued to be an eventful time for sewage capacity issues, when Walter Washington, mayor of the District of Columbia, notified other jurisdictions 140 mgd rather than 135 mgd provided in the 1974 consent decree. His letter of November 17, sent to the chief executives of Montgomery, Prince George's and Fairfax Counties, stated that the 135 mad figure had been temporary, and based on the assumption that new regional facilities, i.e, Dickerson, would be built. Washington claimed that D.C. actually owned at least 61 mad of Blue Plains and that the 5 mad being taken was essential to allow needed growth in the District.

The responses of other jurisdictions, especially Montgomery County, were highly negative. Commenting on Washington's letter, David Sobers, director of environmental planning for Montgomery County, stated: "Montgomery County does not find the unilateral reallocation of capacity acceptable".⁶ He further stated that the County already had a waiting list of 12 mgd for new construction and that the District's takeover of 5 mgd could not be accommodated.

Walter Washington's action came at a time when he was a lame duck mayor, having been defeated in the primary election. New executives had also been elected in Montgomery and Prince George's Counties. Because of the unsettled condition of the new administrations, the sewage capacity issue in the winter of 1978-79 remained unresolved after Washington's initial letter. Although Mayor Marion Barry's administration rescinded the threat to take more Blue Plains capacity, his sudden initiative is indicative of the twists and turns in the complex bargaining over sewer capacity.

Continuing Planning

EPA refused to fund continuing 208 planning by COG past products were forthcoming by which EPA insisted that the WRPB December 15, 1978, unless three that date. The three documents which EPA insisted that the WRPB produce were:

1. Alternatives for sewage treatment capacity
2. Alternatives for sludge management
3. Criteria for designating critical watersheds for nonpoint source control.

The first requirement, a list of alternatives for sewage capacity, seemed to be a step backward since the Water Board had already considered four detailed options. The document they agreed on for the December deadline was a catalog of ways to reduce sewage flows and treat sewage, such as land treatment, water conservation, reduction of infiltration/inflow into sewer lines, building of new plants, etc. The list never mentioned specific facilities or jurisdictions. Although this document appeared to be a beginning from "scratch", EPA representatives stated that the list would be enough to gain more continuing planning funds for the Water Board, EPA noted that from this initial list, studies should be done and a capacity sharing arrangement developed during continuing planning. From the experiences of the Water Board, EPA's hope for an eventual capacity sharing arrangement to come out of 208 planning may be unrealistic, As Walter Washington noted in his November 17 letter: "We have just spent four years engaged in the region's 208 water resources planning process and are apparently no nearer today than we were at the outset to achieving agreement on capacity sharing".

3. Residuals

Daniel J. Snyder, EPA Region III Administrator, said in 1976 that sludge disposal was "perhaps the key element in the wastewater management problem in the metro area". 7 Sludge is the by-product of wastewater treatment plants and amounted to 430 dry tons per day in the Washington area at the time of 208 planning. It was projected that sludge would increase 188 per cent to 1240 dry tons per day by 1995.

Several kinds of technology were being used by area jurisdictions to dispose of sludge in 1978. These included, in order of desirability:

1. Composting -Sludge is mixed with wood chips and decomposes to form a useful soil conditioner, Composting requires less land than landfilling or trenching and generates revenue if the compost is marketed. The disadvantages of this method include difficulty in obtaining a site, the costs of transportation to the site, and the effort required to develop a market for the composted sludge.
2. Landfilling -Sludge is buried in large quantities in pits. The disadvantages of landfilling include the costs of transporting land to the site, the costs of land, and difficulty in site selection.
3. Trenching - Sludge is buried in trenches in the ground. The disadvantages of trenching are similar to those of landfilling.
4. Incineration - Incineration reduces the volume of sludge by 75 per cent. The ash must then be disposed of, generally by landfilling. The disadvantages of incineration are that it is energy-intensive and causes air pollution.

In the Washington area, many sewage treatment plants lack long range, and in some case, short range, provision for sludge disposal. The blue Plains service area in particular does not have sufficient sludge disposal facilities. This is because sites

for landfills, trenching and composting have been extremely difficult to find. Citizen opposition has defeated most proposed sludge disposal programs.

Sludge, like sewer capacity, has been an inter-jurisdictional political and environmental problem for the entities which share the Blue Plains treatment plant. The 1970 Memorandum of Understanding required a higher degree of treatment. Thus, ferric chloride and lime, coagulating materials, were added to wastewater to increase solids removal. As a result, several hundred tons per day of sludge in excess of the digesting capacity of Blue Plains were generated. However, the Understanding did not specifically provide for the disposal of this additional raw, undigested sludge which has caused new technological and environmental problems, since its disposal is considerably more difficult.

The 1974 Blue Plains Agreement required each County to accept its proportionate share of sludge; the District, which has less available land, was not required to provide sludge disposal. For the other jurisdictions, sludge was divided according to sewage flows: Prince George's County, 48 per cent; Montgomery County, 40 percent; and Fairfax County, 12 percent, which was more than its proportion of flow, but was digested sludge only. This Agreement, which resolved a lawsuit, was to terminate at the end of 1977. Another component of the Agreement was a mandate for a regional solution to the sludge disposal problem to be presented by July 1, 1976.

This study for an areawide sludge program was the responsibility of the Blue Plains Technical Committee, the civil engineering committee which advises the Blue Plains principals. Their report, "Short and Long Range Sludge Disposal Solution for Blue Plains", proposed that a composting facility be constructed at a site within the District, Oxon Cove, which is very close to Blue Plains. This facility, on a 30 acre parcel, could handle 600 wet tons of sludge per day. The proximity of the site to Blue Plains would greatly minimize transportation costs. Sludge amounts above the capacity of Oxon Cove would be incinerated.

This sludge proposal was not implemented for several reasons. The District of Columbia initially had difficulty obtaining the Oxon Cove site, because the National Park Service wanted to build an 18 hole golf course at the location. Pressure from Congressman Herbert Harris (D.-Virginia) in 1976 hearings on the Potomac River speeded up approval of the site by the Park Service and the EPA. In the summer of 1977, EPA approved 75 per cent federal funding for the composting project. However, public health hazard was discovered and publicized; a fungus, aspergillus fumigatus, found in composting material, which can be dangerous to the aged and to persons with respiratory problems. Residents near the proposed facility therefore used the health threat to protest the project. Despite expert opinion that the fungus could be controlled, opposition from citizens and the D.C. City Council members defeated the project in 1978.

The District of Columbia is not the only jurisdiction believed to be unable to find a composting site. In 1977, as sludge disposal in Montgomery and Prince George's Counties neared capacity, the two jurisdictions disputed the location of a new site. Citizen protest had prevented the selection of several locations in Montgomery County.

The first site selected, Cheltenham Boys Village, was on state owned property. However, opposition by neighborhood groups and by local elected officials led to its being rejected.

Then the Maryland Environmental Service, a state agency which had taken responsibility for disposing of the raw sewage, chose a site, downstream from the Washington area. In the fall of 1977, it proposed constructing a \$20 million composting facility in Charles County. Sludge from Blue Plains would be transported to the site by barge.

A 23 member citizen advisory committee was appointed by the Charles County Commissioners to study the site. Although the County would not have to pay for the facility and might even profit from the sale of the compost product, the citizens committee rejected the proposal by a 12-11 vote, listing 19 reasons why the composting project was not desirable. These reasons included odor, possible water pollution and the need for dredging to obtain access to the facility. During public hearings, influential residents living near the site strongly opposed the composting operation.

After the public meetings and the citizens committee vote, the Maryland Environmental Service withdrew the Charles County composting proposal. Significantly, the president of the Board of County Commissioners, who had supported the project, was defeated in the 1978 general election after his opponent charged that he planned to revive the proposal after the election.

This case and the experience of the District of Columbia with Oxon Cove illustrate the central problem of sludge disposal: site selection. Virtually any location proposed for sludge disposal will provoke heavy opposition from citizens living nearby who don't want someone else's sludge in their backyard.

On July 10, 1978, the U.S. District Court temporarily decided the sludge disposal issue for Blue Plains. This court order specified the use of certain sludge disposal sites in Montgomery and Prince George's Counties. The court required Montgomery County to have a sludge composting facility by July 1, 1979; the District was to complete a similar facility by February 15, 1979; and Prince George's County would send its sludge to the Montgomery County facility until September 1979. After that date, there was no provision for disposal of Prince George's County's share of the Blue Plains sludge'.

In the meantime, the District of Columbia has continued its search for a composting site. This quest, still unsuccessful, has led it to seriously consider non-metropolitan disposal sites in Virginia and even in Haiti.

Dano Resource Recovery, Inc., a Swiss-based firm with considerable success in composting European sewage sludge, has come the closest to finding a location. The District in March 1978 gave Dano a letter on intent to enter into a contract if Dano could find a site within 90 days. This was further extended until August 1978.

Dano tried three sites in Virginia in an attempt to dispose of 900 tons of sludge and 800 tons of solid wastes per day. Prince William County was first approached, but after a favorable report by the Planning Commission staff, the Commissioners ruled unfavorably and Dano withdrew its proposal. Next, the Stafford County Board of Supervisors unanimously turned down Dano's proposal. This was after an "Environmental. Warning" had been sounded by the Stafford County Environmental Association which was "organized as a non-profit, non-political organizations to stop a plan by Dano that would significantly reduce the quality of the human environment, adversely effect the fish and wildlife in a portion of the country, and destroy the ecological system created by the Potomac River as part of their food chain". This environmental association supported steps "to ensure that Stafford County solve its own solid waste problems", and took credit for blocking the Dano proposal because it "was able to demonstrate the little, if any, benefit to the country, and the serious detrimental effects that would result ".8

After two such defeats, Dano decided on a more subtle approach.

It formed a company, Southern Marine and Salvage, Ltd., which purchased a 195 acre estate on the Potomac in Prince William County. The company was then given a building permit, ostensibly to subdivide the land area and it began site preparation. However, when King George officials found out the true purpose of Dano's dummy company, they obtained an injunction. The proposal was ultimately blocked when Dana was unable to obtain a court-required zoning change

The final unsuccessful idea was to ship 1,200 tons of sewage sludge each day to Haiti to be used as a fertilizer in reforestation. However, the undigested nature of the material may make it unsuitable for the designated site. Therefore, this plan too has been shelved and the search still continues as the sludge mounts. The sludge disposal situation for some other area jurisdictions is as follows:

Fairfax County utilizes a landfill site, which is expected to operate through 1985; it also incinerates sludge and composts at one location. The site for incineration ash disposal will reach capacity about 1985. Fairfax County has made no provision for most of its sludge after 1985.

Alexandria operates its own sewage treatment plant and landfills the sludge. The landfill sites are expected to operate through 1985, No provision has been made for sludge disposal after that date.

Arlington also operates a sewage treatment plant and incinerates the sludge on site. Ash from the sludge is then recycled in the

production of concrete. Present plans call for the use of a special process, called pyrolysis, to be used within several years. Pyrolysis reduces sludge to ash in the absence of oxygen and uses less energy than conventional incineration. The ash can then be used in concrete recycling.

208 Planning and Sludge Disposal

The initial 208 planning process produced very little progression the sludge issue. The 208 plan did not discuss sites for sludge disposal, which is the core of the problem. Rather, the 208 plan considered three issue areas: (1) reducing sludge disposal costs, (2) sludge disposal methods, and (3) institutional arrangements.

The main technique recommended by the 208 plan for reducing sludge disposal costs was a ban on phosphate detergents. Because phosphorous removal generates sludge, a reduction in phosphates would mean smaller quantities of sludge produced. The WRPB considered three options with respect to phosphate detergents: do-nothing, restrict phosphate content but not ban it entirely, and a complete ban on phosphate detergents. The sludge disposal cost savings from a complete ban, \$2 million per year, plus wastewater treatment savings of \$2.5 million, led the V1RPB to approve a complete ban. To go into effect, the ban must be enacted by individual jurisdictions.

The District of Columbia has been considering legislation banning phosphates for several years. Soap and detergent industry .

representatives, in hearings before the D.C. City Council, opposed the ban and claimed that prohibiting phosphates would cost consumers \$10 million per year. The CAC, on the other hand, testified and lobbied in favor of the ban. The District has not yet made a decision, and no other jurisdiction has acted on the proposal. In fact, some jurisdictions noted in the 208 plan that they lack authority to ban phosphate detergents.

Sludge Disposal Methods

The portion of the plan addressing the technical aspects of sludge disposal never dealt with specific facilities or sites. Instead, the WRPB considered three generalized alternatives:

1. The area would rely on a variety of methods, including ;composting, incineration, trenching, and landfilling. There would be trial marketing of lime sludge for agricultural use, and a generalized policy to use sludge for productive purposes when possible.
2. Composting of sludge would be encouraged, as well as development of markets for the compost.
3. Composting of organic/chemical sludge would be required.

The WRPB chose Option 2 encourage composting of sludge and development of markets for compost. Essentially, this option accomplished very little, since no specific facilities were chosen. The Washington area jurisdictions were already oriented towards

composting as the preferable sludge management technique. The lack of progress towards sludge management in the 208 plan led EPA to demand more specific decisions during the continuing planning period.

Institutional Arrangements

The Water Board discussed three alternative management systems for sludge:

- "1. Existing committees to negotiate needed sludge disposal
2. Encourage the formation of inter-jurisdictional policy committees (Northern Virginia, Blue Plains, and suburban Maryland) to discuss and make recommendations for all disposal problems. This option would move beyond the present somewhat ad hoc problem-solving toward greater coordination. Initial membership would be provided by the Water Resources Planning Board members of the concerned jurisdictions. Other elected officials and citizens would be added as appropriate.
3. Regional sludge management committee assigned to handle all disposal problems. This option would enable the Water Resources Planning Board to form a subcommittee composed of elected officials to make recommendations for the solution of the sludge problem. The membership of such a committee would be flexible and would depend on the issue under study. This option provides the greatest opportunity for integration of problem solving. "⁹

The Water Board endorsed Option 2, inter-jurisdictional policy committees. The Board stated that a general principle should

govern sludge disposal: the generating jurisdiction should be responsible for managing its residuals. The Board also noted that Blue Plains principals would manage Blue Plains sludge. This option selected by the WRPB is not, in reality, a significant departure from the status quo. The Blue Plains principals were already involved in discussions of sludge disposal. There had also been a continual give and take between Montgomery County and Prince George's County on the issue. Furthermore, the reliance of the Blue Plains service area on the July 10, 1978 court order indicated that the region will continue to use the U.S. District Court, not inter-jurisdictional committees to resolve sludge issues. There has been no noticeable change in institutional approaches to sludge management since 208 planning began.

Conclusions

A survey of sludge management in the Washington area shows that major decisions, such as Oxon Cove and the Charles County facility, were made outside of the 208 planning process. Court rather than through the Disputes were resolved in the U.S. District Water Resources Planning Board. The WRPB has been unable thus far to grapple with site specific decisions, especially the problems of scarce land, and high costs. Besides the phosphate ban proposal, the only WRPB outputs have been very general recommendations. EPA has been attempting the force the Water Board to develop a regional sludge management plan during continuing planning.

Considering past experience, it is unlikely that the Water Board on its own will be successful in solving the mounting sludge problem.

4. Water Supply

Relationship to Water Pollution

Problems of water pollution and water supply are closely related, especially in the Washington area, since the Potomac River is both the main source of drinking water and the major recipient of pollution discharges. Yet 208 planning did not directly address water supply issues. Partially by default, but also for historical and legal reasons, the major actor in the Washington water supply arena has been the Army Corps of Engineers; local governments play a relatively subordinate but noisy role collectively through the Council of Governments (COG).

Supply and pollution problems are both aspects of water quality and are difficult to separate scientifically and functionally. For example, it is generally true that the smaller the flow, the greater the pollution. Thus in the summer, the Potomac suffers from, a considerably decreased flow and pollution problems are magnified because of the inability of the shallower stream to assimilate wastes. Excessive drawdowns adversely affect fish and plant life, especially during peak spawning periods. Dams which, further lower flow may block the passage of fish; it has even been noted that under low flow conditions it is much easier for both humans and raccoons to trap fish and mollusks.

The argument environmentalists successfully made against the proposed Dickerson sewage treatment plant stressed the interplay of water supply and pollution problems. Dickerson's discharge pipes were to be located above water supply intakes, possibly contaminating drinking water with viruses and toxic materials not subject to conventional treatment removal methods. In particular, it was feared that the chlorine used in sewage treatment plants might react with nutrients discharged from these plants to form carcinogenic materials.

Fears have even been expressed that in time of drought, a sufficient pressure loss could contaminate water supply lines. Regardless of health problems, one clear adverse economic impact of pollution on water supply is that the more polluted the upper Potomac waters are, the more costly their treatment for drinking might be. Also, if the estuary water is too highly polluted, it may be unfit or too costly for use even as an emergency supply source. And salt water intrusion from the lower estuary into the upper estuary theoretically could drive out fresh water fish and related plants.

In Virginia, both problems are intermixed. Sediment and runoff have reduced the Occoquan reservoir storage capacity as well as polluted its water. Potentially hazardous chloroform levels have been detected in the water distribution system after chlorination of water from the Occoquan reservoir and some wells used by the Fairfax County Water Authority (FCWA) have been found to be contaminated...

In a broader sense, both water supply and pollution can be limiting factors for growth and development, especially in the Washington area. As the Washington Board of Trade testified, "inadequate water supply will inhibit normal growth, jeopardize jobs, community facilities and tax revenues throughout the area".¹⁰ Similarly, lack of sewer hookups will prevent community and industrial expansion.

Local Washington communities, realizing the importance of adequate water for drinking and waste disposal for their future development and revenue growth, tend to compete with each other for economic self-sufficiency. As in the case of sludge disposal, they are very reluctant to share facilities or to join together for the good of the overall metropolis when their community's "fair share" is not completely guaranteed.

In terms of federally encouraged water resources planning, EPA failed to integrate water pollution with water supply consideration in the 208 process even though federal officials and others complained in 1978 that there was "little relationship in the Potomac Basin between planning for wastewater disposal and water supply requirements".¹¹ Similarly, the Corps of Engineers water supply study recognized that "quantity and quality are... two facets of a single problem -- wise management of the total water resource"¹² But its study failed to consider the quality of water available for drinking; rather, it examined water quantities almost exclusively.

Current Supply and Future Projections

The Potomac River is the source of more than two-thirds of the current water supply in the Washington metropolitan area. Other water sources include the Patuxent River in Maryland (14 per cent) and Virginia's Occoquan Creek (about 16 per cent); only four per cent is derived from ground water.

Besides pollution threats, the major problem in relying so heavily on this river is its undependability, especially during low drought periods which often occur at the end of the summer. The Potomac is highly variable and unregulated; it is one of the few important American rivers without major dams throughout its length. This means that there is little storage capacity or reservoirs to store water for low flow periods.

The Washington area has experienced several such critical periods, most recently in 1977, an 11 year low, when drought severely affected Occoquan Creek leading to mandatory restrictions on water use in the FCWA service area. At the same time, an electrical breakdown in a water purification plant forced severe conservation measures and emergency closing of business and industry in Montgomery County for a week.

A reverse problem is that of high flows and floods. A year after the drought, a record flow was reported to have flushed five times the normal amount of sediment runoff into the river.

Washington's problems are also unusual in that there are few major industrial water users. This means that *nonpoint* sources are relatively more prominent and also that demand is

overwhelmingly affected by individual citizen needs and uses, such as lawn watering, toilet flushing and bathing. These have increased, per capita, in accord with a more affluent life style. Municipal water use has also increased quantitatively

since the area's population has grown by 50 per cent since 1950. Thus the major dilemma facing Washington water supply policy makers has been the increasing withdrawal of a relatively fixed, limited and uncertain supply. This increased population and per capita demand has been nervously regarded by government officials and utilities who foresee an upward trend causing their capacity to peak and prove insufficient in the near future.

Present Institutional Responsibilities

Responsibility for supplying drinking water is divided among many local, regional and federal jurisdictions with the States playing a limited role. Although there are 29 water supply systems, three major purveyors supply about 95 per cent of the total drinking water treated for an average of 400 mgd and a maximum capacity of almost 900 mgd.

The Corps of Engineers has a unique role in the Washington area. Nationally, it builds dams, helps in water supply planning and approves dredging and filling operations. However, in this area, its Washington Aqueduct Division, drawing its water entirely from the Potomac, has since 1863 operated water supply facilities which now serve the District of Columbia, Arlington, Falls Church, part of Fairfax County, and a few federal facilities in Maryland.

It serves almost one-half of the metropolitan population and 60 percent of its water supply is used by the District. The Washington Suburban Sanitary Commission (WSSC), a bi-county agency, serves the two major suburban Maryland counties of Montgomery and Prince George's, which have a total population of 1.2 million. Sixty per cent of the WSSC's water is drawn from the Potomac.

The remaining major water supply utility (13 per cent of total metropolitan demand) is the Fairfax County Water Authority covering Fairfax County, Alexandria and parts of Prince William and Loudoun Counties. It draws 90 per cent of its water from the Occoquan Creek, a tributary of the estuary portion of the Potomac River. These three major suppliers and the lesser utilities are generally independent systems, unconnected to each other.

Regional agencies also play some role in backstopping water, supply activities. The Interstate Commission on the Potomac River Basin (ICPRB) has undertaken some studies aimed at improving the management of raw water supply systems, especially through inter-connections of raw and finished water. The Council of Governments (COG) has also had a limited role, in planning for emergencies.

State background activities include designating and enforcing water quality standards and uses, as well as general legislation relating to conservation and use, such as statewide plumbing codes and requirements.

In addition, use and withdrawal of Potomac water by "outside" jurisdictions may also affect metropolitan Washington water supply.

The District of Columbia, for example, covers only one-half of a per cent of the Potomac River Basin, Maryland twenty-six per cent, Virginia thirty nine per cent, West Virginia 23.8 per cent and Pennsylvania 10.7 per cent. Thus, state laws on withdrawals and riparian rights can crucially affect Washington downstream users. And upstream rural residents have shown little inclination to allow deep well withdrawals of ground water to meet urban needs.

The Environmental Protection Agency (EPA) does have some responsibility for insuring; the purity of drinking water through the Safe Drinking Water Act. However, its 208 process hardly dealt with water supply. The Washington 208 plan, too, did not address drinking water issues per se, although some of the sewage policies were related. The draft plan's introduction did state that there was not enough clean water and not enough for drinking, swimming and fishing, but failed to devote a chapter or section to water supply. The Citizens Advisory Committee (CAC) therefore criticized the 208 plan for not considering water supply constraints. Similarly, environmentalists later critiqued the Corps study for not examining water quality.

The Corps of Engineers

Chapter One briefly reviewed major water supply historical developments. This section focuses on the Corp's activities, mainly the Metropolitan Washington Area Water Supply Study as well as the Low Flow Allocation Agreement and some subsidiary COG and regional activities, especially the Water Supply Emergency Agreement.

The Corps' current study reflects the ongoing; leading metropolitan water supply role played by this federal agency, including local operating responsibilities. However, the Corps' orientation has changed dramatically in the last decade. Formerly, the Corps' answer to projected metropolitan water problems was to emphasize the need to increase supply; now it focuses on reducing demand or on maximizing current supplies.

Until recently the Corps of Engineers emphasized the need for constructing additional storage capacity through an extensive series of reservoirs and dams. Their hotly contested 1963 proposal involved building 16 multi-purpose dams and major river projects. This was scaled down by the end of the 1960's to six projects. A 1971 COG policy statement also supported their six reservoirs. However, because of the intense opposition of conservationists and of the affected upstream residents, as well as due to rising costs, only Bloomington Dam is actually being constructed; all of the other projects were eventually shelved.

The Metropolitan Washington Area Water Supply Study

Following upon the rejection of the Corps' structural solutions in the face of a widely perceived water supply shortage in the near future, the Metropolitan Washington Area Water Supply Study was authorized by the 1974 Water Resources Act, P.L.93-25, Section 85. It called for the Corps to develop a water supply management plan following a complete investigation of the Washington area water needs and present it to Congress. The Corps

intended to first develop short range plans for the next 15 years by 1980. By 1982, it would offer long range alternatives for the 15 to 50 year period which would focus more intensively on wastewater reuse for drinking water, on using Maryland deep well water and on the possibility of constructing upstream reservoirs.

The short range study, now completed, focuses on combinations of five major strategies: water conservation and demand reduction; finished or treated water interconnections between the three major distributors; raw, untreated water interconnections; re-regulation or inter-system transfer of water between rivers and reservoirs; and finally, local storage or impoundments. The latter option involved only small water projects; no major upstream reservoirs were considered for the near future.

The first phase of the study offered five plans which were a combination of varying conservation, interconnection and local storage strategies. All of the plans were based on 100 mgd flowby and all except the no action plan assumed re-regulation by the WSSC and FCWA and a 10 per cent reduction through conservation by the year 2030.

The five plans, which assume different degrees of cooperation by the local governments and were ranked according to economic and political criteria, are:

1. Status quo - This no action plan assumed no future water

supply projects other than those already planned, such as Bloomington. It projected a water deficit perhaps as early as 1990 and was the lowest ranked.

2. Regional II - This was the most ambitious plan involving total regional cooperation, even including cost sharing by the local utilities and governments. It was ranked next to lowest, mainly because of its lack of feasibility.

3. Local - This assumed a minimal amount of regional cooperation with everybody basically going their own way, i.e., each utility would rely upon itself to solve its own supply problems.

4., Subregional - This assumed a greater degree or moderate amount of cooperation. Both FCWA and WSSC would solve their own problems as well as a portion of the Washington Aqueduct's shortage. This plan was ranked number two.

5. Regional I - This was the most desirable plan which assumed total areawide cooperation.

In regard to institutional arrangements for managing water supply,' the Corps' study offered four options: first, a Council of the principal water supply agencies such as the four signatories of the Low Flow Agreement (the Corps, D.C., Maryland and Virginia) and also possibly COG and the ICPRB. The second option contained an enhanced or stronger state role, basically involving Maryland,,Virginia and the District. On a broader basis, it offers the option of a Potomac regional agency, much like the ICPRB, to also include Pennsylvania and West Virginia. The final option is a new lower basin agency.

A federal-interstate-state-regional advisory committee worked with the Corps on an early-action plan to insure its acceptability. Also, a committee of elected officials has been organized to obtain political agreement on a final plan. The Corps says that it will leave the selection of the water supply plans and the institutional arrangements for their implementation to the States, local governments and water supply agencies, which now have these plans under consideration. However based on past experience it is questionable whether they will be able to agree among themselves and reach a consensus; equally uncertain is the role of the Corps in persuading them to accept a plan.

One of the most striking aspects of the early action plans is the revised projection of needs. The Corps now claims that there is sufficient water supply for the near future and that the maximum regional water deficit, in terms of 30 day needs or once in a 100 year shortages, has been pushed back to 2030. Thus the Corps' calculations tend to downplay the possibility of drastic water supply emergencies. Critical shortages are possible but not nearly as likely as viewed in the past.

There are apparently several reasons for this lowered water supply risk estimate. First, population growth projections have slowed down, and, second, per capita use is lower; citizens are conserving more water. Also, Bloomington Dam, soon to come on

line, and other minor storage projects, such as Little Seneca Creek Dam in Montgomery County, will be of significant supply benefit. Re-regulation will also help as well as a possible reformulation of water supply allocations from Bloomington. Finally, the most recent calculations were more complete; they included all existing sources, not just Potomac water.

Thus, the Corps projects no immediate need for the massive dams which had aroused such strong opposition. While interconnections do not add to the total water supply - they simply increase the amount available to the areas within the region which need it most during droughts - they can smooth out the rougher spots of near shortages over longer dry periods or other emergencies.

The first phase study, heralded as "Water Without Dams", has received a very favorable response. These low profile plans are in accord with surveys which had indicated that the public prefers locally based solutions such as conservation and interconnections to larger impoundments. And conservationists were quite happy with the Corps switch away from an emphasis on the structural supply side of the equation to more limited demand management strategies although some complained that more attention to water quality considerations would have been useful.

Other Corps Activities

Besides being a planning agency, as exemplified by the water supply study, the Corps also plays several other roles. It is a licensing agency for any construction, dredging, or filling

on the river. In this capacity, after long bargaining and with Congressional approval, it allowed the WSSC to construct one diversion weir for more efficient operation and enlarged (400 mgd) intake of Potomac water in times of low flow and it has also eventually approved a new intake facility of 200 mgd by the FCWA.

As an engineering-contractor firm, the Corps completed in 1980 a 100 mgd emergency estuary water pumping station on the northwest boundary of the District below Little Falls. These waters, if determined not to endanger public health, could be used after mixing with freshwater and after purification. It is also constructing a one mgd pilot estuary water treatment plant, which will test the feasibility of using the more salty and polluted waters of the estuary as a water supply source in lieu of upstream dams. In this experimental role, the Corps has come closest to integrating water supply and water quality considerations.

Finally, the Corps, as the operator of two treatment plants in D.C. and the supplier of water to the District, is sometimes perceived as a-proxy for the District by other local governments.

It was the Corps, using its several hats, which finally persuaded the other major governmental entities to agree upon a formula for sharing the available water supply during low flow periods. Signed on January 11, 1978, by the Secretary of the Army and Maryland, Virginia, the District of Columbia, WSSC and FCWA officials, the Potomac Low Flow Allocation Agreement (PLFAA).

offers these jurisdictions a means to share limited supplies during emergencies.

The agreement is activated only when withdrawals reach 80 per cent of the river flow although the alert stage is reached with 50 per cent withdrawals. The agreement and individual allocations can be renegotiated in 1988, but only if all the parties agree; thus any principal signatory can freeze the formula after 1988 until a new one is negotiated. However, the crucial issue of flowby, the amount of water allowed to flow by the intakes into the estuary for water quality, fish and wildlife protection, was not settled; further studies are to resolve this question.

This major regional pact was concluded only after more than four years of intense, sometimes bitter, negotiations in which the Corps was viewed by the other parties as a stand-in for D.C. The Corps, supported by EPA and the Department of the interior held up approving the WSSC and FCWA diversion structures to guarantee its Washington Aqueduct Division a substantial part of its current allocations for future, despite the District's declining percentage of use and relatively smaller growth rates. It agreed that the District which lacks new desirable water sources should not assume the burden of water conservation or capital improvements because of new growth in the suburbs. Thus, the formula is based on the amount of water pumped to each of

the utilities during the winter months of the past five years. While the FCWA finally has access to Potomac water through the agreement, one of their spokesmen accused the Corps of being "politicians in uniforms", suffering from a conflict of interest and "giving us the crumbs".¹³ And both WSSC and Virginia officials accused the Corps of blackmailing them into the agreement at the risk of losing their water intakes.¹⁴

The negotiating sessions were long and sometimes acrimonious; intervention by Congressman Herbert Harris^s and other Congressional pressures to condition approval of the intakes on an agreement were apparently needed too. At one point, a spokesman for Virginia, which continued to assert a claim to the water or riparian rights of the Potomac, said, "As a Southerner,. I've never seen a document that had so much Yankee trading in it".¹⁵

Water Supply Emergency Agreement

The other major regional accomplishment was the COG-sponsored Metropolitan Washington Water Supply Emergency Agreement. Also not without its negotiating trials and tribulations, this agreement by local governments builds upon the PLFAA and details a series of actions to limit and conserve certain water uses during low flow periods and to deal with the effects of a shortage or outage.

Signed on December 5, 1979, by 20 local governments and water supply agencies, it is the culmination of a series of sometimes halting attempts, starting with a 1969 COG voluntary water supply

conservation plan and a Water Conservation and Coordination Agreement approved by COG's Board of Governors in 1974. Undoubtedly the 1977 drought experience helped greatly in developing the plan and obtaining local government approval.

The agreement is designed to deal with two types of emergencies first, equipment failure causing water supply outage, but mainly 7-7th shortages due to droughts and low flows. The plan establishes three stages: first, Alert, when withdrawals reach one-half of the Potomac flow; second, Restrictions, when 80 per cent of the flow is withdrawn; and, third, Emergency, when demand exceeds supply. At the second stage, the local governments are urged to undertake voluntary cutbacks aimed at 15 per cent use reduction. At the critical third stage, phased mandatory restrictions intended to reduce demand by up to 60 per cent go into effect. The Washington Aqueduct District of the Corps coordinates the plan by declaring the stages as shown by flows in conjunction with COG, which releases general information to the public.

However, use restrictions are to be enforced by local governments. Typically, Arlington County had the following language inserted: "Nothing in this agreement requires a local jurisdiction or agency to undertake any action not allowed by law".¹⁶

Although the emergency plan has yet to be invoked, it appears to be a coordinated consistent response by local governments. It complements the Low Flow Agreement which was also greatly encouraged by the lessons of the 1977 drought.

208 Report

While the 208 process did not deal directly with water supply, its draft report did discuss three issues related to drinking water. When confronted with choices, the Water Resources Planning Board (WRPB) generally selected the option closest to the status quo.

In regard to providing a margin of safety for fresh water inflows to the Potomac estuary, the Board recognized that some Potomac flow past water supply intakes, or flowby, was necessary. However, while the CAC advocated a minimum of 950 cubic feet per second (cfs) (about 600 mgd) to protect aquatic life in the estuary against the possibility of the salt water wedge moving into the upper estuary, the Board rejected this and also minimums of 560 cfs (preferred by the staff) and 300 cfs. Instead, it decided to rely on the mechanism of the PLFAA to establish the amount of flow, because its Technical Committee believed the data was inadequate to recommend a minimum flow.

Another crucial issue concerned wastewater treatment discharges above the water supply intakes. The report recognized that there were over 50 discharge points into waters upstream of one or more of the region's sources of water supply which might pose a health risk as well as make it more difficult to protect the Potomac for fish and swimming. The CAC emphasized the resulting virus and chlorine threat (chlorine may combine with decaying

matter to create trihalomethanes, e.g. chloroform, which can be carcinogenic). It therefore wanted to prohibit expansion of existing or any new discharges above water supply intakes as well as have existing flows diverted to land treatment sites where feasible.

The Board rejected this option and even one which would require virus inactivation, prohibit direct discharges into intermittent streams (streams which flow only during wet weather conditions) and establish a policy of minimizing sewage treatment plant discharges above the water supply intakes. Instead, the Board and its Technical Advisory Committee decided that its current policy, which allowed dischargers above supply intakes to certify that there was no health hazard, provided adequate protection. Even in regard to new discharges, the Board felt that case by case technological precautions would be adequate.

In regard to water conservation, the Board considered three options which built upon local and state plumbing codes to promote water conservation and sewage flow reduction. The Board chose not to support adoption of pricing policies which encouraged water conservation because it believed that such policies only had a temporary effect. However, it did recommend that water saving fixtures be required in new and renovated public buildings, including compliance by federal agencies, and it did support more stringent plumbing codes.

In general, the CAC was much more concerned about contamination of drinking water. It said that Washington water was of

poor quality and in short supply and suggested that land treatment of sewage could increase ground water supply, as well as call for regionwide water conservation. The Board, on the other hand, opted for proposals which in almost every case were merely approval and continuation of present practices and standards.

Concluding Political Lessons

There are numerous water supply studies and management plans, all designed to lessen the game of "Potomac Roulette" currently being played in the Washington metropolitan area. But there are few positive actions. As the authors of one of the most obvious beneficial strategies, interconnections, have acknowledged in "More Water for Less Cost", "the real obstacle in implementing interconnection systems is not engineering for their construction and operation," especially since the "benefits of regional cooperation are great" 17 Similarly, a Congressional Research Service study concluded that "lack of institutional coordination is the major impediment" 18

Interjurisdictional bickering and competition continue to characterize the Washington environment of water supply as well as that of water pollution. Even emergency regional cooperative arrangements; such as the PLFAA and the WSEA, as well as a Fall 1979 Northern Virginia emergency interconnection agreement, have usually been obtained with great difficulty, after protracted and heated negotiations and only after drought catalyzed the government jurisdictions to these rarely-to-be-invoked plans of action.

Otherwise, short range considerations and non-cooperative strategies predominate although broader more integrated steps in the long run benefit each local government economically and environmentally. However, the enlarged supply projections may lead to more progress, some officials now say.

This lack of environmental and political consensus is complicated by the multiplicity of actors - federal, state, and local - who generally are effective in vetoing proposed actions but much less successful initiating and carrying through desired plans. The numerous local governments and independent water supply systems and utilities chose not to subordinate their interests to their -umbrella agency, the Council of Governments. As a result, COG has a very weak water supply coordinating role. For example, it has only had mixed success in urging its members to revise plumbing codes and water pricing policies in the interest of conservation.

The two metropolitan states, Maryland and Virginia, lurk in the background with important unresolved differences overwater rights. Maryland seems to be more aggressive and seeks to expand its role in metropolitan water supply decisions. Virginia, on the other hand, has a more decentralized system and has been slow to reorient itself to drought and supply management strategies; it has toyed with more exotic structural solutions such as piping water from the Shenandoah Valley to Northern Virginia.

There are also numerous federal agencies on the scene. While

the Department of the Interior's involvement has declined since the Secretaryship of Stewart Udall in the 1960's, the Corps of Engineers is still strong, with a comparatively large budget and staff. Its national planning, construction and licensing activities linked with its unique water supply operating role in Washington make it the preeminent water supply agency. And it has not pushed for an enhanced COG role in any of its institutional arrangement options.

The CRS report did suggest that ICPRB's Article III powers to establish sections of the Commission could be utilized and many witnesses at a 1979 Congressional hearing were amenable to the idea. In November 1979 ICPRB established a 'section of Cooperative Water Supply Operations on the Potomac to coordinate reservoir operations, but again its very limited powers and weak constituency render its expansion into a meaningful action role unlikely.

EPA does very little directly in the Washington water supply area, in contrast to its water pollution role, but it has generally been suspicious of water supply withdrawals because of their environmental effects. National legislation separating water supply from water pollution may also contribute to this dichotomy. Thus, EPA refused to fund any 208 activities in COG's work plan which directly involved water supply planning. COG's 208 plan only 'tangentially studies water supply issues.

Finally, in 1979, it amended the original 1977 water resources policy statement to include water supply considerations and it

created a Water Supply Advisory Committee which first met on March 14, 1978, after the draft 208 plan had already been circulated but at about the time that Corps planning was becoming more prominent.

In conclusion, the persistent threat of shortages and even curtailment of supplies by upstream users has been insufficient to move the Washington governmental entities towards regional solutions. They are united only in their opposition to any kind of powerful King of the River Agency. The result is that needed programs are delayed or deferred and decisions lacking. These problems are exacerbated by the artificial separation between water supply and water pollution which further prevents any kind of integrated approach.

FOOTNOTES

- Metropolitan Washington Council of Governments (COG), "Summary of Draft Areawide Water Quality Management Plan", March 1978, p.
2. COG staff paper, "Sewage Treatment Capacities/Flows of Specific Facilities: 1980-1995".
 3. Environmental Protection Agency, "Tentative and Preliminary Report", March 31, 1976:'
 4. Paul Eastman to Harvey Lieber, April 26, 1979. (Letter)
 5. COG, "Metropolitan Washington Water Quality Management Plan"., March 1979₁, p. v-2.
 6. Washington Post, November 18, 1978, p. 1
 7. Potomac River Hearings and Mark-up before the Subcommittee on Bicentennial Affairs, the Environment and the International Community, 94th Congress, Second Session, 1976, p. 448.

8. Stafford County Environmental Association, "Environmental Warning", October 4, 1978, p. 1.
9. COG Metropolitan Washington Water Quality Management Plan", March 8, 1978, p. VI-24.
10. U.S. Army Corps of Engineers Baltimore District, "Metropolitan Washington Area Water Supply Study: Public Meeting", January 25, 1979, p. 21.
11. Interstate Commission of the Potomac River Basin, The Thames/ Potomac Seminars, July 1979, p. 90.
COG Staff
12. U.S. Army Corps of Engineers, Baltimore District, "Metropolitan Washington Area Water Supply Study: Plan of Study", March 1978, p. 64.
13. Washington Post, September 30, 1977, p. B-1, statement of John Herrity, Fairfax County Board of Supervisors.
14. U.S. Army Corps of Engineers, Baltimore District, Metropolitan Washington Area Water Supply, "Workshops and Public Meeting", October 25, 1979, Statement of James Dillard, Chairman, Northern Virginia Water Study Commission, p. 45.
15. Washington Post, January 12, 1978, p. C-1, statement of Virginia Water Control Board Vice-Chairman, J. Lee Bourassa.
16. COG, Austin S. Librach memorandum to Water Resources Planning Board, "Adoption of Metropolitan Washington Water Supply Emergency Agreement", p. 5. It became Sect. 4.10 of the Procedures.
17. Daniel P. Sheer and Paul W. Eastman, "More Water for Less Cost in the Washington Metropolitan Area", ICPRB, April 16, 1978, pp. 7,8.
18. Christine DeMoncada, "Water Management in the Washington Metropolitan Area", Congressional Research Service, October 10, 1979, p. 5.

Chapter 4:

The Actors in the 208 Process

This chapter will briefly review the main actors in Washington's 208 process, with special emphasis on the Council of Governments (COG) staff and members. The next chapter will discuss in more detail the unique role played by the Citizens Advisory Committee (CAC).

COG Staff

Although COG's staff was recruited rapidly with no promise of permanency, its caliber was thought to be quite high. However, there were leadership deficiencies at the top. Thus the final product, the draft report, was somewhat unfocused and disorganized as well as lacking in consensus, except at the lowest common denominator.

The nucleus of the staff was drawn from COG's career personnel although the Director, Frank Laum, was an outsider. He was selected on the basis of his planning experience in Minneapolis. The added staff, hired for a limited and uncertain time period, was generally promising but young and inexperienced. They were in need of considerable direction and guidance. However, the top staff was unable to furnish them the guidance and direction they needed. Personal rivalries and internal turf fighting distracted the 208 staff to the point that the ambitious work program was not well managed.

The diffuse 208 draft plan failed to resolve the basic issues and did not directly address many of the 16 program elements

required by EPA regulations. This was not entirely the staff's fault. The Water Resources Planning Board (WRPB) members were representatives of independent and often rival local jurisdictions who were at odds on many key issues. Thus, for example, it may have been impossible to reach agreement of the essential question of sewage treatment construction under any circumstances.

However, the failure of the 208 staff and leadership to develop the crucial sewer capacity model led them to frame sewage treatment questions on the basis of limited knowledge and without being able to discuss all viable solutions; some relevant ones may have been ignored or not brought to light.

The staff's lack of enthusiasm was shown by the numerous times the Board disagreed with it on issue options (See 208 Decision Option Table, Page 95). However, the local governments had to keep working with the COG staff on the plan because otherwise they could lose federal funding, both for their portion of the studies undertaken under the plan as well as EPA monies in the future if no 208 plan was forthcoming. So, while the '208 staff was in charge of preparing the plan, they were unable to persuade local governments to favor their views or to bind them to specific options which jeopardized vital interests of the localities.

WRPB and the Technical Advisory Committee (TAC)

The WRPB and its TAC agreed on all issues. This is not surprising since the TAC was composed mainly of engineers and

208 Decision Options*

Issue	Most Most Conservative ~ Environmental			
Water uses - state standards or stricter regulation	WRPB1 TAC		staff ³	CAC ⁴
Endorse state water quality standards	WRPB TAC			CAC
Chlorophyll <u>a</u> as a goal	WRPB TAC		staff	CAC
Post-development runoff volumes		WRPB TAC staff		CAC
Maintenance of fresh water inflows to Potomac estuary	WRPB TAC		staff	CAC
Sewage discharges above water supply intakes	WRPB TAC		CAC	
Water conservation	,		WRPB	CAC
Seasonally varying treatment levels		WRPB TAC staff		CAC
Land treatment		WRPB TAC staff		CAC
Ban phosphates				WRPB TAC CAC
Sludge disposal		WRPB TAC		CAC
Nonpoint source controls		WRPB TAC staff		CAC
Agricultural sediment control		WRPB TAC staff		CAC
Construction Nonpoint sources		WRCB	staff	CAC

Derived from Draft 208 Plan ¹Water Resources Planning Board ²Technical Advisory Committee ³Council of Governments staff ⁴Citizens Advisory Committee

planners working for local governments. Public works employees generally are conservative in their approach to water resources planning, do not like to try out new approaches and are usually not that sympathetic to environmentalists and their views.' Local officials on the Board tended to follow the orientation of their own staffs, especially since they were even more conscious of taxpayer resistance to raising water and sewer rates. Thus, in any difference of opinion, the WRPB members relied on their "own" experts.

All the localities represented on the WRPB were careful to protect their own interests. For example, the District of Columbia claimed ownership rights to the Blue Plains Sewage Treatment Plant in reacting to the 208 plan; Rockville, Montgomery County -and other Blue Plains users refused to accept this situation.

A major strategy used by local officials in promoting their interests over any staff or regionally oriented recommendation was to initially threaten to pull out of the planning process or withhold payments to COG and later to intimate that they would veto the plan unless their own claims or major interests were recognized. Montgomery County, under Executive James Gleason, continually insisted on the inclusion of the proposed Dickerson plant in the 208 plan. Similarly, the city of Rockville, in its comments on the 208'plan, denied the District's ownership-claim to Blue Plains and, short of land, refused to accept any additional water supply storage requirements. Finally, Virginia's representatives at the plan review felt free to assert that they would not

approve the 208 plan if it included Dickerson, which they viewed as threatening their downstream water supplies.

The two states were lukewarm to the Washington 208 process. This was related to their initial reluctance to have COG, which represents local governments, designated as the 208 planning agency. They were later unenthusiastic supporters of COG's request for additional money for continuing planning. Maryland was at times openly antagonistic while Virginia officials were typically more indifferent to problems relating only to the northern portion of their state. Finally, the Interstate Commission on the Potomac River Basin participated on the WRPB, but its major influence was through the technical assistance its staff supplied in the engineering and modeling studies.

Environmental Protection Agency (EPA)

EPA's influence was asserted mainly at the beginning and at the end of the 208 study. Its initial involvement was in the form of the national 208 regulations and guidelines which shaped Washington's process. More directly, its approval of the proposed work plan through its 100 per cent funding made it difficult for the WRPB to pursue independent lines of inquiry. For example, the staff was unable to study the vital and inter-related question of water supply because EPA officials rejected its inclusion in the work plan.

Once the study began, EPA's regional office in Philadelphia

did not spend much time overseeing the COG planning effort. This lack of close surveillance was partially deliberate because of the feeling *that* 208 was *a* local effort and in any case EPA would have a chance to review and theoretically even reject the plan at the end.

However, as the management problems began to surface in the Washington 208 process, William Colony, an EPA official who had written the 1971 EPA report on water supply and pollution, was detailed to help repair some of the problems. He managed to influence some changes and continually voiced EPA's concerns about lack of progress. *But* he was unable to salvage the whole plan to meet EPA requirements on time.

When the draft plan *was* completed early in 1978, its inadequacies were painfully obvious. EPA began to push for specific results and outputs even before the draft plan was officially submitted to them. EPA became more demanding, cut the continuing planning budget and re-oriented the Washington 208 program into a nonpoint source study effort. Its presence is now being continually felt as it keeps the 208 program on a very tight leash.

Chapter 5:

Citizen Participation

This chapter will summarize our observations and analysis of an unusually active and influential citizen participation effort, that of the Citizens Advisory Committee (CAC), established as part of the 208 water pollution planning process. The CAC was chartered by the COG's Water Resources Planning Board (WRPB), which is mainly composed of local government officials. Yet the CAC operated very independently of the Board and its Technical Advisory Committee.

Compared to other citizen advisory committees both at Washington COG and throughout the country, this active, environmentally-oriented committee showed exceptionally high interest in the subject matter, dealt with more technical issues, and put in more hours to complete an extensive critique of the plan which proved to be quite influential in shaping the plan's outcome.

The character and the outputs of Washington COG's citizen participation efforts were influenced by several factors: federal law, regulations and guidance; COG's previous experience with citizen participation; and the environmental groups in the Washington area.

Federal Law and Regulations

The development of a comprehensive areawide waste treatment management plan was to be accomplished through a regional planning and implementation process involving local and state officials. In addition, Section 101(e) of the Act strongly encouraged public participation in the implementation of the Act's provisions.

EPA's guidance in the form of regulations and handbooks spelled out in more detail what is expected of a 208 citizen participation program to involve. These elements included:

1. Information materials: Provide information to interested persons or organizations; may be in the form of newsletters and news releases.
2. Assistance to Public: Respond to requests for information; provide citizen education and workshops, including technical assistance.
3. Consultation: Consultations with interested or affected persons may be through workshops and advisory committees.
4. Notification: Maintain a current list of persons and organizations for mailing informational materials; give notification of public hearings, etc.
5. Access to Information: Provide information depositories in public places.

Washington COG followed these guidelines in its 208 citizen participation program: COG developed a newsletter, the Water Monitor; a slide show; a comprehensive mailing list; and library depositories for planning documents. However, these activities were overshadowed by the work of the Citizen's Advisory Committee; the major impacts of the public participation program occurred as a result of the CAC.

A Citizen's Advisory Committee, while not required, was strongly recommended by EPA. Formation of Washington's CAC therefore responded to EPA's provisions for citizen "consultation". The unique character of Washington's 208 citizen's advisory committee was influenced by the particular structure for membership which COG devised and the ability of the environmental groups to exploit this opportunity to their advantage.

COG's Experience with Public Participation

At the time of the 208 grant, Washington COG already had a well developed citizen participation process, and the 208 public participation effort followed this general precedent: Health and Environmental Protection Board CAC, Public Safety CAC, Human Resources CAC, Transportation Planning Board CAC, and Land Use CAC. COG was also producing informational materials and disseminating these to the public before 208. Thus, the structure of 208 public participation was drawn largely from COG's previous experience.

The critical factor which led to environmentalist domination of the CAC was the membership structure adopted by the WRPB in October 1975. WRPB specified the following:

- one citizen from each participating local government, and one from the Northern Virginia Planning District Commission;
- one member from each of the five existing COG CACs;
- one member from each of five regional citizen organizations chosen by the local government appointees and the representatives of other CACs.

Because various citizen activists were alert to the planning process in 1975, and because of the CAC membership structure, the CAC was soon captured by environmentalists.

Domination of CAC by Environmental Groups

Many well organized environmental groups have been active in the Washington area during the 1970's. When formation of the Water Resources CAC was announced, several environmental activists approached their local elected officials and requested appointment to the CAC. These environmentalists were able to control selection of the five "regional citizens organizations" that would be allowed representatives on the CAC. The organizations selected were: The Center for Environmental Strategy; The C & O Canal Association; The League of Women Voters; The Northern Virginia Conservation Council; and the Sierra Club. CAC members and alternates from these five groups were among the most active (and in some cases the most extreme) of the citizens on the committee.

The general position of the environmentalists on the CAC was anti-growth, anti-Dickerson (the proposed advanced wastewater treatment plant), pro-land treatment, and in favor of the very stringent water quality standards. Because the meetings were dominated by environmentalists, many of the other appointees stopped attending. This made the CAC more completely controlled by citizen activists.

CAC views were generally opposed by the local government officials composing the Water Resources Planning Board (WRPB). Many Water Board members, being strongly pro-growth and in favor

of conventional technology, regarded the CAC as a group of extremists. In fact, the Water Board amended the CAC operating procedures in October 1976 to increase organizational membership to ten persons, presumably to bring in non-environmentalist interests and broaden the CAC. The amendment stated: "These members shall reflect a wide range of diverse interests representing the affected publics in the Washington metropolitan area.... To the extent feasible, these members shall be from organizations not represented by members appointed by the local governments, NVPDC, or COG citizen advisory committees".

This expansion, however, did not balance the CAC. The organizations selected were the Metropolitan Washington Builders Council, the Montgomery Environmental Coalition, the Farm Bureau, the Cold Water Coalition, and the American Society of Civil Engineers. The Builders Council and the Farm Bureau representatives attended few meetings and did not become active in the group. The Civil Engineers member and alternate both became very active, but joined in with the environmentalists on many issues. The other two organizations -- Montgomery Environmental Coalition and Cold Water Coalition -- were environmental. Thus the Water Board failed in its desire for a "balanced" advisory committee. Had the Water Board taken a different approach to CAC membership from the beginning, eliminating local government appointees and-specifying the organizations to be represented, the CAC might have been completely different.

CAC Strategy and Tactics

It was not surprising that CAC members were strongly committed to ecological principles and willing to devote considerable time to meetings, discussing options and writing alternative recommendations. As experienced activists, they were not willing to rubber stamp official recommendations; they were, in fact, predisposed to view them suspiciously.'

However, the CAC was even willing to tackle complex scientific questions. Many CAC members already had a firm grasp of technical details before 208 planning began from their earlier battles over water pollution issues. Other members did their homework and were soon able to deal with very complicated issues such as water quality modeling, standards setting and sewage treatment technology. The CAC even hired a consultant for a technical study of water quality standards which supported their position.

Thus these self-educated experts ended up giving detailed scientific critiques of proposals advanced by the Technical Advisory Committee, composed of engineers and scientists working for local governments. As a result, the CAC was able to challenge the COG staff on a great variety of issues and influence the staff's work. The CAC did not hesitate to harshly criticize the WRPB and the COG. Several CAC members tended to be quite opinionated and prickly to the point of abusiveness toward COG staff during their committee meetings. One CAC member who dropped out early in the planning process commented, "I was so annoyed by the one-sidedness

of the committee. There was no brooking another viewpoint. There was no way to listen to another side.... I don't see how the staff could stand it. How they kept their cool, I don't know".² Nevertheless, CAC members felt frustrated by the lack of sufficient COG staffing and funding to aid them in their studies and to publicize their alternative recommendations and views. However, the CAC was quite sophisticated in promoting its viewpoint. After drafting a counterplan to the official one of the Water Resources Planning Board, the CAC successfully mobilized its supporters to testify at public hearings on the 208 plan.

To support their position, the CAC also drafted a questionnaire. This survey contained several questions relating to 208 planning issues: water quality standards, wastewater discharges above water intakes, etc. There was no background information accompanying the survey, and questions were worded in a way that encouraged a response favorable to CAC. When the CAC presented this questionnaire to the WRPB, the Board refused to fund printing and distribution costs. In response, a CAC members paid \$700 to have the survey printed independently. (Two organizations later reimbursed the member.) The CAC then began distribution of 20,000 questionnaires at public hearings, libraries and meetings. Almost 2,000 survey forms were returned and a CAC members stated: "The responses to the questionnaire made it obvious why the WRPB wanted no-part of it -- the citizens of the area want strong programs to improve water quality, and, in fact, oppose many of the elements put into the 208 plan by the WRPB".³

CAC Positions and Policy Outcomes

CAC views, working style and the abrasiveness of some of its more outspoken members resulted in many WRPB members tuning them out. It was unable to sway the votes of Board members on most issues. Instead, the WRPB voted with the Technical Advisory Committee on options, taking a much more conservative approach than the CAC. For example, the CAC wanted chlorophyll a to be used as a water quality standard; the Water Board, however, rejected this proposal. The CAC consistently opposed Dickerson, but this was included as a given in the plan until the courts took action. On all issues except the phosphate ban, the Water Board voted to adopt a more conservative option than was supported by the CAC. CAC members, in turn, frequently complained that the WRPB did not listen and did not give the CAC adequate support.

In the Spring of 1978, when the draft 208 plan was being prepared, the CAC wrote a detailed commentary on the plan. The CAC critique followed an outline of the 16 requirements EPA specified for 208 plans, and was in fact better organized than the plan document itself. The CAC Appendix B, as it is called, was distributed with the 208 plan. Appendix B attacks specific water quality standards, the Water Board's lack of attention to waste loan allocations, the Dickerson plant and many other items. One CAC member commented:

As an antidote to the weak 208 plan approved by the WRPB, members of our CAC spent hours (in some

cases days) preparing a point-by-point critique, which was printed and published. For this work, and for the high standards of the critique, we have been applauded by several EPA officials as one of the most expert and hardest-working CAC's in the country. But the work is for naught so far as the WRPB is concerned--like many local government officials, they will hear only what they want to hear

There was relatively poor response by the general public to the formal public hearings in April 1978, but the CAC members and other environmentalists presented extensive testimony in addition to what was already in Appendix B. In particular, the hearings were dominated by negative comments on Dickerson. Immediately after the hearings the WRPB voted to include a contingency in the plan in case Dickerson was not built; this action on the contingency may be attributed in part to CAC's efforts.

Some other efforts of the CAC's work include the attention given to land treatment in the 208 plan and changes in water quality modeling. Although the 208 plan does not specifically designate land treatment for any service area of facility, it does recommend that land treatment be fully considered. The CAC, with the help of an outside expert, stimulated changes in staff work on modeling and influenced staff efforts by continual requests for information and studies.

The CAC critique stated that the plan failed in almost every important consideration and proposed stricter state and local regulations and standards. It urged that the plan be extensively revised.

Evaluation of CAC Efforts

CAC's resources included time, persistence, strong ideological commitment to environmental principles, technical expertise and extensive press and governmental contacts. In view of the status quo nature of the 208 plan which proposes that existing agencies and program assume responsibility for plan implementation, it is not surprising that the CAC devoted little time to institutional analysis and utopian reorganization schemes.

The CAC was unable to change the plan or the votes of Board members. But many of its views and strategies were influential in the long run. It did succeed in discrediting the plan sufficiently for EPA to intervene and negotiate further changes with the WRPB. And at the very least the provision of a citizen's committee in the organizational structure gave environmentalists access to the planning process.

Conclusions on the Public Participation Process

Lack of general Public Involvement

In the 1975 to 1978 period, water pollution was not a high priority issue for the American public compared to the economy, the energy crisis and taxes. Accordingly, 208 planning did not capture the attention of citizens except for environmentalists. Another handicap of 208 public participation was the difficulty of interesting citizens in a planning process instead of specific proposals and actions. Most citizen awareness was focused on the final plans which received much more media coverage than did the ongoing process.

But by the time that a 208 plan was completed, it was frequently too late for citizens to exercise influence. 208 in Washington as well as in other areas did not reach the general non-activist public with citizen participation programs.

Public Participation and EPA Goals

The actual purpose of citizen participation was never spelled out in P.L. 92-500. Indications of EPA's desires for public participation, however, may be found in many EPA documents. Essentially, EPA saw citizen participation as a means to promote implementation of 208 plans. Several quotes illustrate this idea:

If the public actively participates in trade-off decisions, they will be more likely to support those decisions and accept the impacts.... Groups such as the League of Women Voters are particularly effective at convincing state legislatures to support water quality programs. This may mean increased allocation of budget or passage of legislative measures.

Planners must constantly be aware of the necessity for building a constituency of supporters for the plan as it is being developed. If the public participation process is well carried out and all viewpoints have been considered, this constituency confirms the validity of the plan and smooths the way for implementation.⁶

Thus, public participation as interpreted by EPA was essentially a one way flow of information in order to sell the 208 plan by constituency-building for its implementation. As an EPA public participation consultant stated:

Public participation is being stressed in the 208 program because of the legal requirements by Congress that public participation shall be

part of any plan or program developed under the Act, and because of the political reality that without public acceptance both by local and state publics, and local and state agencies, the plans are unlikely to ever be implemented.⁷

It is unlikely that EPA and surely COG viewed the program as participation in decision-making. Rather, it was stressed in terms of citizen acceptance and support. 208 planning in Chicago, Cincinnati and the Research Triangle (North Carolina) which we observed and apparently all of the other 208 areas with the interesting exception of Washington, D.C., followed this ritualistic support-building approach.

It is doubtful whether COG's public participation program -either the public information activities or the CAC --built very much support for plan implementation. None of the three public hearings drew more than 100 people out of a population of 3 million in the planning area. The majority of the attendees criticized the plan. The only indication that public participation might help plan implementation was some CAC testimony in favor of the phosphate ban at D.C. subcommittee hearings later in 1978.

In general, public participation failed to support implementation for three reasons:

1. The general public had a low level of interest in 208 planning.
2. The 208 plan itself contained very few specific actions that could be implemented. For example, there was no sludge management program, no capacity

sharing agreement and no nonpoint source control program.

3. The few specific recommendations that the plan did contain were generally opposed by environmentalists on the CAC. For example, the CAC voted against seasonal reduction in sewage treatment levels, the Dickerson plant and maintenance of existing state water quality standards without changes.

The effort of 208 public participation has been to enhance EPA's constituency, however, by strengthening the environmentalists Citizen activists have been given more access to the planning process and have developed into a cohesive, well-organized group through the CAC. Although EPA may not agree with all CAC positions or tactics, the existence of the committee is to EPA's advantage. CAC has acted as a watchdog over the 208 process and has notified EPA of problems or failures by COG to meet requirements. Because the CAC was composed of environmentalists, members were highly motivated and worked harder than might have been expected. Thus while EPA's goal of building support for plan implementation has not been realized, the overall operations and products of the CAC has been advantageous to EPA.

Ironically, Washington's CAC publicly criticized the 208 plan, seemingly doing the opposite of what EPA had intended. But while CAC worked to oppose elements of the 208 plan, they implicitly supported EPA policies. For example, CAC's stands on Dickerson,

land treatment and growth were in line with EPA's positions and in conflict with the WRPB. CAC also provided a watchdog system for EPA because of CAC's ongoing energetic critique of COG staff and the WRPB. Although some EPA staff regarded the CAC as extreme, the work of the CAC was totally to the advantage of EPA. CAC provided a barometer of environmentalists' reactions to 208 planning while not actually hindering the planning process.

Other Perspectives

The General Accounting Office has recently expressed concern over the progress of the 208 program nationally, criticizing among other matters the public participation component.⁸ it recommends more sensitivity to local needs through a much greater use of scientific public opinion surveys. However, it is doubtful whether this proposal would meet with the approval of either EPA, local officials or even the environmental activists who have so influential in the Washington area.

Although the CAC was incorporated within the official 208 planning and implementation process, its members refused to be co-opted or socialized to official views. Thus the situation does not differ much from Caldwell's observations on citizens and the environment: that public officials often view citizen groups as self-appointed troublemakers and that environmentalists in turn are critical of the bureaucratic inertial, narrow vision and hostility to genuine public participation.⁹

An Uncertain Ending

Our story of an unusually effective public participation effort

ends on an ambiguous note because the Water Resource Citizens Advisory Committee has recently been abolished as a separate entity. Washington COG has restructured all its citizen advisory committees and consolidated the CAC into a new Environmental Resources Advisory Committee covering environmental issues relating to air and water pollution, energy, solid waste and noise.

The CAC predictably reacted by unanimously passing a resolution at its January 10, 1979 meeting expressing its surprise, concern and opposition. It further describes this reorganization as a repudiation of its past effort and recommendations and expresses the suspicion that the committee is being abolished because it "has been too outspoken in defense of improvement and maintenance of water quality".

More recently, Committee members have accepted this consolidation perhaps in the hope that their influence might be extended over an even wider area of environmental concerns.

The CAC's successor, the Environmental Resources Public Advisory Committee (ERPAC), had also proven to be independent and aggressive. In particular, ERPAC voted in April 1980, much to the displeasure of Montgomery County, to oppose the proposed Rock Run sewage treatment plant, citing environmental impacts, costs and a lack of adequate planning.

Illustrative of the continuing friction between the environmentalists on the Advisory Committee and the local officials on the Board is this agenda item from the May 29, 1980, meeting, quoted in its entirety:

WRPB Policy Regarding Future Distribution of ERPAC Positions

In February 1977, the WRPB agreed to permit transmittal to other units of governments, Citizen Advisory Committee comments on recommendations developed by the WRPB as part of its 208 planning responsibilities. At the same time, the WRPB agreed to transmit CAC comments on matters referred to the Board under the A-95 review process. In practice, the CAC and its successor body, the Environmental Resources Public Advisory Committee (ERPAC), have also distributed committee positions on issues which have not come before the WRPB. Currently, there is some question as to whether the Board's position is to limit ERPAC activity strictly to commenting on WRPB recommendations and A-95 projects, or whether the Board accepts the additional ERPAC practice of transmitting its positions on issues that are not on the WRPB agenda. The WRPB is asked to clarify its policy with respect to future activities of the ERPAC. ¹

FOOTNOTES

1. See Federal Register, V. 38, No. 163, Part III, p. 22757, August , 17S.
2. Judy French, Representative from Rockville, in Washington Post, April 20, 1978, p. DC 2.
3. Letter, Ed Weseley to Lee Daneker, Fall 1978.
4. Ibid.
5. Environmental Protection Agency, Public Participation Handbook for Water Quality Management, June 1976, p. .
6. Environmental Protection Agency, The Bellevue Experience, p. 8 (undated).
7. Synergy, Public Participation Training Manual, p. 1. c. 1976.
8. General Accounting Office, Water Quality Management Planning is Not Comprehensive and May Not Be Effective FOR Many Years, CED 67, December 11, 1978.
9. Lynton K. Caldwell, et al, Citizens and the Environment: Case Studies in Popular Action (Bloomington: Indiana University Press, , pp. xiv, 5.
10. Metropolitan Washington Council of Governments, Water Resources Planning Board, "Meeting Notice and Agenda", May 29, 1980, p. 2.

Chapter 6:

Conclusions

The federal, state and local agencies in the Washington area have utilized a great variety of water resources planning mechanisms in the last 20 years. These mechanisms range from 208 planning by the Council of Governments to the Army Corps of Engineers study recommending 16 major dams in the Potomac basin. At times, proposals for drastic changes in management arrangements have been debated, such as EPA's 1971 proposal for a regional multi-purpose agency. These Washington area experiences lead to several conclusions about areawide planning and the future prospects for institutional arrangements to control the Potomac River.

Effectiveness of Planning and Management Mechanisms

The matrix on the next page compares the Interstate Commission on the Potomac River Basin, the Potomac Enforcement Conferences, the Interdepartmental Task Force under Lyndon Johnson, the Washington Area Interstate Water Resources Program, the Army Corps of Engineers, and COG's Water Resources Planning Board. These have been the major water resources planning programs and proposals in the past 25 years or more.

Interstate Commission on the Potomac River Basin (ICPRB)

The Interstate Commission on the Potomac River basin (ICPRB) differs from the other planning efforts listed because it has never produced a comprehensive plan. ICPRB's function is to be an on-going advisory organization to assist the agencies and group which perform water resources planning. Because ICPRB has no financial

MAJOR WASHINGTON WATER RESOURCES PLANNING PROGRAMS

<p>Interstate Commission on the Potomac River Basin 1940-Present.</p>	<p>Federal Enforcement Conferences 1957-58, 1969-70</p>	<p>Dept. of Interior Interdepartmental Task Force 1965-68</p>	<p>Washington Area Interstate Water Resources Program 1972-73</p>	<p>Army Corps of Engineers 1957-Present</p>
<p>Water quality only 1940-1970 1970 amendments expanded interests to include water supply and land use. Acts as an</p>	<p>Water quality only Acted as a forum for implementation of federal water quality legislation requirements for sewage treatment</p>	<p>Water supply, water quality, land use Developed a comprehensive plan for the Potomac River Basin under the impetus of President Johnson.</p>	<p>Water quality and water supply Acted as a forum for the states to draw up water resource proposals.</p>	<p>Water supply only Develops plans and proposals for dam and other capital improvements to increase water supply.</p>
<p>Policy board: representatives from Md., Va., Pa., W.Va., and D. C. and from federal government Active professional</p>	<p>Federal, state (MD., Va.), and D.C. agency personnel</p>	<p>Staff from several federal agencies: UMA, Mr1, Interior, Army; headed by Secretary of Interior</p>	<p>Staff from Mi. , Va. , and D.C. agencies</p>	<p>Army Corps of Engineers staff members</p>
<p>Newsletter and public information Assistance to other agencies including, Corps of Engineers and COG Interconnection of water suppliers Development sewer simulation model</p>	<p>Specific recommendations concerning, sewage treatment facilities and water quality standards</p>	<p>The Nation's River Study: proposal to preserve Potomac shores as a green area by govt. acquisition of land and; scenic easements;</p>	<p>A series of recommendations including building of Dickerson treatment plant, interconnection of water supplies, completion of advanced waste treatment</p>	<p>1963 proposal for 16 major dams N.E. U.S. water supply (NEWS) study proposed alternative strategies in 1976 Special study of D.C. ar water supply underway 1976-80</p>
<p>No operating responsibilities</p>	<p>Higher treatment levels for sewage especially expansion and up Wading of Blue Plains Sewage Treatment Plant Elimination of some raw sewage overflows</p>	<p>Bill to implement line <u>The Nation's Piper Plan</u> was introduced in Congress several times but never passed.</p>	<p>Recommendations not implemented because WAIWRP's responsibility was given to 208 program. GIATVPP disbanded in 1973.</p>	<p>Heavy public opposition prevented all but one of original 16 proposed dam Obtained Potomac Low Flow Allocation Agreement. Estuary Pumping station and pilot drinking plant being built.</p>

or regulatory powers, it must rely on persuasion to influence policy making.

ICPRB's strength is its ability to undertake studies which may then influence decisions by other governmental bodies. ICPRB has been a force, sometimes behind the scenes, in encouraging incremental changes. For example, the Commission suggested reconvening the Potomac Enforcement Conference in 1969. One major ICPRB proposal -- interconnection of water supplies -- is still being considered and has good chances for future implementation. However, ICPRB does not have a sufficient power base to stimulate comprehensive planning and action in the Washington area.

Despite its major limitation as an advisory, non-operational agency, ICPRB has been helpful in supplying technical assistance and innovative approaches to the state and local agencies in the Washington area. In particular, it has pioneered in the development of the Sewer Expansion Simulation to plan for sewer and sewage treatment capacity needs and in studying raw and finished water interconnections to meet peak summer water supply demands. It currently is trying to develop technical management tools for coordinating the planning and operation of major reservoirs affecting the Potomac basin to determine desirable water releases and withdrawals on a continuing basis.

However successful its innovative engineering proposals are, its role as a regional mediator of inter-jurisdictional disputes will be extremely limited because of its lack of independent funding

or enforcement powers. Unlike the other local governments, it does not have any operating programs with a clearly identifiable and supportive constituency.

The weakness of this planning and research agency was painfully evident in 1978 when it attempted to organize a Labor Day "Swim-In" on a portion of the Potomac River. Observing that cleanup efforts had been so successful that water quality, especially measurements of fecal coliform, had steadily improved the ICPRB's Executive Director attempted to demonstrate that water contact sports could now be allowed. However, local officials and environmentalists questioned whether the Potomac was sufficiently clean to allow swimming. The next day, the ICPRB was forced to retract its plan and cancel the swim-in when District of Columbia harbor police objected. Thus, despite ICPRB's statistics, its attempt at independent if symbolic action was quickly aborted.

Federal Government Initiatives

Two planning processes were undertaken solely by the federal government: the Interdepartmental Task Force's The Nation's River report, and the Army Corps of Engineers' studies in the 1960's. These studies made some drastic proposals for change. The Nation's River plan advocated massive federal land acquisition along the banks of the Potomac to provide more recreational opportunities. The Army Corps of Engineers proposed numerous dams throughout the river basin.

Both of these studies produced few tangible results.

The federal staff who produced the reports apparently did not anticipate that local opposition would prevent implementation of their plans; seemingly, federal officials did not understand local sentiments and desires. This lack of perceptivity by federal staff was also evident when the EPA's 1971 proposal for an areawide agency provoked numerous protests from localities.

Federal water resources planning in the Washington area has not been effective in achieving measurable change. Although the federal agencies have been able to take a comprehensive perspective in *planning* for the basin and proposed some innovative strategies, an exclusive reliance on the federal government for future *planning* does not seem feasible.

The Potomac Enforcement Conferences brought federal agency officials together with representatives from the state governments. The 1969' Enforcement Conference produced the most results, particularly in the area of sewage treatment. Incentives for improvement of sewage treatment included federal construction grants and some program funds. The conference mechanism was weakened, however, because the only *sanction* available was court action, a last resort that was often threatened but rarely used. When various jurisdictions failed to meet the timetables established by the Conference, no effective or realistic enforcement alternative was available.

The experience of the Potomac Enforcement Conferences suggests that a federal-state conference approach is most effective when federal funds are supplied for implementation and when there are clear federal guidelines *mandating* certain actions. These factors

were present in the case of sewage treatment for the 1960 Conference. However, a federal-state conference would not be very effective in dealing with nonpoint sources due to lack of federal funds, lack of clear guidelines, and especially because of local control over zoning and land use.

The Washington Area Interstate Water Resources Program (WAIWRP) was a cooperative and somewhat defensive effort of the states of Maryland and Virginia and the District of Columbia. This program articulated some existing state desires such as Maryland's plan for a sewage treatment plant at Dickerson.

However, WAIWRP planning was handicapped by a lack of legislative back-up. There was no federal act mandating certain guidelines, no guarantee of funding for WAIWRP proposals and no sanctions against a state or locality failing to implement a WAIWRP recommendation. WAIWRP was rather short-lived because of the establishment of the 208 program which replaced WAIWRP as the areawide planning mechanism.

208 Program Accomplishments and Failings

The framework for 208 planning was different from WAIWRP in several ways. The threat that federal sewerage and construction grants would be contingent on an acceptable 208 plan gave 208 high stakes for the localities. This possibility caused local and state governments to become more defensive, more cautious and more wary of committing themselves to new responsibilities or major changes. As a result, the 208 plan

is probably the most conservative document among the multitude of Potomac studies which have been produced.

Federal funds for 208 planning enabled Washington area jurisdictions to greatly expand their research into water pollution control. Much data on nonpoint source pollution was collected. Probably the most important study was performed by the Northern Virginia Planning District Commission (NVPDC) under a \$322,000 subcontract. Twenty-one sites on the Occoquan and Four Mile Run watersheds (problem areas for nonpoint source pollution) were monitored for the level of pollutants in storm water runoff. The purpose of this research was to determine the amounts of nonpoint pollution generated by various land uses.

Another subcontract, with Bendix Aerospace Corporation, provided land cover data through the use of satellite technology. COG developed a region-wide inventory of soil types. Computer simulation models were examined under subcontracts. Montgomery County assessed the effectiveness of sediment control basins and retention ponds for the control of nonpoint sources. These and other studies produced a massive accumulation of data by the end of the initial planning period; however, integration and use of the data remained to be done in the work program for continuing planning.

In the area of point sources, the computer model, Sewer Expansion Simulation (SES), was developed but was not ready to use during the initial planning period, because of data and calibration problems. Further work using the SES was scheduled for the

continuing planning work program; initially, the SES was implemented for only Montgomery County. The 208 planning process produced two innovative proposals which the WRPB recommended for implementation. Banning phosphate detergents was assumed to save \$4 million per year in sewage and sludge handling was one of these policies. The WRPB was attracted to the phosphate ban because of potential dollar payoffs and the lack of strong opposition. Each local government must enact the phosphate ban, however, before the cost savings can be realized; none has yet done so.

A proposal for seasonal variation of sewage treatment levels was also adopted by the WRPB, again in the interest of hard cash savings. The WRPB decided that expensive denitrification processes should not be used during the winter when water quality standards can be met without nitrogen removal. Final implementation of this proposal is uncertain.

The continuing rejection of Dickerson by EPA and in court may have been influenced by 208 planning as well as by downward population projections. Citizens who spoke at public hearings in the spring of 1978 were almost without exception opposed to Dickerson. The CAC was partly responsible for the strong turnout against the proposed plant. Within weeks of the public hearings, Judge John Lewis Smith Jr. upheld EPA's rejection of Dickerson, finding that the decision was not "arbitrary and capricious".

EPA in the 1976 Dickerson decision had noted that 208 planning should determine major facilities construction. Therefore, EPA

delayed consideration of any major Montgomery County treatment plant until the completion of the 208 plan. But by 1978, EPA had revised its policies so that funding for sewage treatment capacity which would provide for growth (as opposed to providing for existing needs) became much more difficult to obtain. 208 had served in effect as a delay which killed the idea of a 70 mgd plant in Montgomery County. In the fall of 1978, County Executive James P. Gleason proposed a 20 mgd plant, a drastic reduction from the original Dickerson scheme.

A review of 208 accomplishments in Washington shows that the most progress came in non-controversial areas: data gathering, technical work and cost saving ideas. 208 also became a delaying factor which promoted the final rejection of Dickerson. Ironically, the WRPB had been forced to accept Dickerson as a given at the start of the planning process.

208 planning shortfalls were evident in the failure to resolve problems of nonpoint sources, sewage treatment plant construction or residuals management. Also, the plan did not adequately examine water quality standards, land use and water supply implications or devise any new institutional arrangements.

Although much data was gathered during 208 planning in Washington, a control program for nonpoint sources was not fully developed. The 208 plan contained no specific measures to be adopted or timetables for nonpoint source reduction. The urban best management practices (BMP) manual was left until continuing planning for completion; even then, local governments will have few incentives

to implement the BMP's. The failure of the 208 plan to deal with the nonpoint source problem can be partly attributed to the poor state-of-the-art nationwide in nonpoint source control and the lack of clear guidance by EPA.

The 208 plan did not contain any new sewage treatment plant proposals, but favored the existing expansion plans of localities. On the contrary, the plans of the cities and counties were taken as givens. However, EPA's rejection of Dickerson has forced the WRPB to develop alternatives during continuing planning. Although unlikely, continuing pressure from EPA could force the WRPB to take on an expanded role in sewage treatment facility planning..

In regard to residuals, the 208 plan generally favored composting of sludge, but no specific sites or timetables were designated. Development of a more complete sludge disposal program was left to the continuing planning period. EPA funding in this period was made contingent on significant progress by the jurisdictions in residual management.

The 208 plan did not change the existing state water quality standards. Over the opposition of the CAC, the WRPB endorsed the state water use designations, quality standards and goals. The Board did, however, recommend some improvements in sampling and monitoring.

The efforts of the WRPB focused on water pollution; almost no time or money was spent on the related issues of water supply, and land use. The only notable attention to water supply was discussion

by WRPB of proposed minimum flows of fresh water to the estuary that would be allowed during water supply shortages. However, the Water Board decided to leave the decision to the signatories of the Low Flow Allocation Agreement.

208 planning failed to deal with land use except for nonpoint source data collection. Existing population projections were accepted into the 208 plan; no specific land use controls were adopted as part of a nonpoint source control program.

Finally, in regard to implementation, the 208 plan contained no new scheme for reorganizing water resources management in the Washington area. Interviews with COG staff and other participants indicate that staff, WRPB and CAC viewed institutional arrangements as a comparatively minor issue. The CAC viewed a new regional agency with suspicion and COG feared a rival areawide agency. It was apparently common knowledge that a new areawide management agency would have insurmountable opposition. Clearly, 208 planning did not promote more effective regional institutional mechanisms in the Washington area.

In contrast to other major water resource programs in Washington, COG's 208 planning was unique because decisions were made by a committee of local officials and planning staff representing

each county and major city in the area, as well as representatives from the states of Maryland and Virginia and the District of Columbia. The planning process was characterized by conflict and negotiations, as opposed to other efforts dominated by professional planners, for example, Army Corps of Engineers studies.

A planning process controlled by local officials results in plans which represent local feelings but no major innovations. Because local governments were reluctant to make firm commitments, the WRPB made few specific recommendations. No sites were chosen for sludge disposal, no particular Best Management Practices were selected for nonpoint source control. The entire plan is dominated by generalizations such as "encourage composting of sludge".

Local governments in the Washington area attempted to use 208 planning as a tool to force EPA to fund projects. Dickerson and the Northern Virginia Pumpdown, two projects which EPA had rejected, were included in the 208 plan. Montgomery County Executive Gleason apparently thought that if the 208 plan was based on construction of Dickerson, EPA would give in and fund the plant.

The plan's weaknesses are due not only to local sensitivities but also because the Council of Governments staff failed to sell the plan or the options it preferred. Distracted by internal management problems, the staff adopted a relatively defensive, passive stance and remained isolated from key metropolitan decision makers.

The Washington 208 effort therefore reflected many of the criticisms of 208 nationwide, especially its status quo planning and ineffectiveness in dealing with sewage treatment construction and nonpoint source problems. Most of the 208 plans produced across the country, mainly throughout regional COGs, failed to recommend significant actions departing from the status quo. The outlook of many local government officials has been pro-growth, wary of

new technologies and sensitive to citizen complaints stimulated by rising water and sewer rates. It is not surprising that the cautious approach of local governments produced 208 plans which were basically compilations of existing local plans.

At the beginning of 208 planning, local governments rarely knew how much nonpoint source pollution existed, where it came from and how much it could be reduced by best management practices. Most 208 nonpoint source work centered on very basic research rather than development of control programs. As a result, the recommended EPA guidelines for nonpoint source planning proved to be unrealistic.

Thus the Washington 208 output is not an implementable plan; rather, it is an incomplete summary of existing problems and some possible options. The 208 process has failed to serve as a forum for resolving issues; the Blue Plains principals and the courts continue to carry greater weight. The plan failed to come to grips with or resolve such crucial issues as Dickerson, Blue Plains sludge, water supply and low flow allocations. It also neglected key links to water supply and in general is of very limited scope; related land use, air quality and transportation issues are not addressed either.

Public Participation

Washington's 208 efforts was unique in its public participation program or, more accurately, the activities of the Citizens Advisory Committee (CAC). Despite its public participation mandate, 208 in Washington as well as nationwide did not catch the attention of, citizens except for special interests and environmentalists. Most 208 citizen participation programs tended to be symbolic or token, with little public influence on the 208 planners;

However, in Washington the public participation component was in effect the CAC, which was captured by environmentalists early in the planning process. The Washington CAC possessed several strengths: technical expertise, esprit de corps, heavy commitments of time by certain members and previous experience of several members in environmental action. The technical expertise enabled CAC members to challenge COG staff positions on complicated items such as water quality standards and modeling. The cohesiveness and commitment of CAC members enabled them to develop a sophisticated critique of the final plan.

Despite these advantages, CAC did not sway the votes of the Water Resources Planning Boards (WRPB) away from the conservative opinions of the Technical Advisory Committee (TAC). The WRPB felt that they and not the CAC were the best representatives of public opinion. Although CAC did not succeed in heavily influencing the WRPB, the provision of a citizen's committee in the organizational structure gave environmentalists access to the planning process and an independent voice in every detail

EPA had originally anticipated that facilitate implementation of 208 plans. The intention was to build political support for water pollution control. But, while the CAC opposed elements of the 208 plan, they in effect promoted EPA policies. The CAC's stands on Dickerson, land treatment and growth, for example, were in accord with EPA's positions and in conflict with the WRPB.

Indicative and symbolic of the close ties between environmentalists and the Carter Administration is the appointment of Dr. Robert H. Harris to the U.S. Council on Environmental Quality. Harris, formerly of the Environmental Defense Fund, had become active in the Blue Plains litigation, having conducted a study which asserted that the entire phosphate removal strategy is a costly mistake. He also supports the environmentalist view that it would be wrong to enlarge regional treatment plants such as Blue Plains because they concentrate treatment wastes into small areas but fail to significantly increase water quality. He would like to give more attention to combined sewer overflows and to non-structural alternatives to concentrated waste water treatment systems.² Thus, the CAC's approach currently has friends in high places.

Current Status of Washington 208 Program

The one thousand page plan was approved by the local governments and COG in Fall 1978 and by Spring 1980 was conditionally certified by the governors of Maryland and Virginia and by the District of Columbia. Virginia stated, for example, that parts of the plan were not in total conformance with its state and local programs while the District pointed out that the plan was lacking in a solution to sludge disposal, additional sewage treatment capacity, and nonpoint source problems. The initial plan along with a

"Draft 208 Plan Supplement" which attempts to address some of the

original plan deficiencies was submitted to EPA's Region III in Spring 1980.

At the same time, EPA has taken tighter control through reduced funding and specific priorities for the continuing planning process. Even more significantly, it has proposed a "Potomac Strategy" whose purpose is "to coordinate the various EPA funded studies and programs (italics added) into a comprehensive program" aimed at achieving waste load allocations and Blue Plains Outfall Location Evaluation. Under the Potomac Strategy, EPA proposed that "details for each major task will be developed individually for the agency responsible for completing the task".³

It would, therefore, appear that, dissatisfied with the 208 process and feeling a special concern for the Capitol area, the federal agency is attempting a more active role in Washington water resources decisions.

Thus Washington's 208 program has not ended with a bang but has drifted inconclusively into a more federally guided nonpoint source monitoring program. By the middle of 1980, more funding for the work of the Water Resources Planning Board was derived from EPA's Nationwide Urban Runoff Program than from 208 planning funds.

Growth: The Real Issue

The problems of adequate sewage treatment capacity, sewers and water supply are linked to the crucial question of metropolitan growth and development. Local officials rarely question the need

for additional water supply and treatment through construction of more sewage treatment plants as a desirable goal. Environmentalists, however, have begun to ask if growth generates costs in excess of the benefits derived, whether demand for government services such as schools, libraries, police protection, roads and sewers may actually outstrip the financial and taxing ability of local governments to pay for them, even with additional real estate and business taxes. A second fundamental question deals with the negative impact of development, whether its adverse effect on environmental amenities may not be worth any additional economic benefits.

In the Washington area, these environmental concerns coupled with extremely rapid population increases have led to some programs to control or channel growth. While their effectiveness is questionable, these government attempts indicate mixed feelings about the fast pace of development.

Between 1960 and 1970, Washington was the fastest growing region among the 12 largest standard metropolitan statistical areas. In that decade, its population grew by 39 per cent, with an added population of 800,000, equivalent to the entire population of the central city, the District of Columbia. While its population increase has subsequently slowed down, this has also been a nationwide trend. Even in the 1970 to 1974 period, Washington was the second fastest growing region. Fast growth demands rapid sewer service expansion and, usually, increased land use densities. This exacerbates water pollution problems.

Several governmental programs were initiated to control or slow growth. Fairfax County, spurred by environmental concerns, devised a PLUS (Planned Land Use System) Program emphasizing impact assessment. The Council of Governments also developed a Metropolitan Growth Policy Program which included not only cooperative population forecasting but also impact assessment and an attempt at offering policy guidance to all localities so that they could agree to a fair share of growth. Finally, sewer moratoria in Montgomery County and Fairfax Counties also serve as tools to limit development.

The 208 program could also have been an important growth control tool as intended by Congress. And by the mid-1970's, the Washington area was receptive to this approach. However, the 208 plan failed to move in this direction because of the veto power of growth-minded local officials such as James Gleason as well as the timidity of the COG staff.

By the end of the planning process, key local officials still believed that additional sewage capacity, often in the form of new treatment plants or reallocation of existing capacity, was crucial to the future economic health of their jurisdictions.

The District of Columbia, for example, was concerned that it would not be able to accommodate \$1.3 billion in projected commercial development. Outgoing Mayor Walter Washington unilaterally declared his intention to transfer 5 mgd, the equivalent of 16,500 homes, from the Blue Plains capacity to the District and candidly stated,: "The District can no longer...underwrite the development of other

jurisdictions by gambling with its own share of growth.⁴ Similarly, Montgomery County, lacking its own sewage treatment plant, feared that it might be unable to attract one to one-and-a-half million feet of planned office space to the county. Mr. Gleason's successor, Charles Gilchrist, although of the opposing Democratic Party, similarly viewed sewage treatment capacity as perhaps the county's most pressing problem and promoted the Rock Run plant even without federal funding.⁵

His fears may have had some justification since lengthy Montgomery County moratoria and limited sewage capacity may have served to attract more development to its effluent rival county, Fairfax, on the other side of the Potomac. However, the 208 process did nothing to smooth out such possible intraregional impacts. 208 lacked a decisive role in these decisions; the courts have emerged, as in land use and zoning issues, as perhaps the ultimate arbiters. However, their case by case approach is slow and unpredictable. For example, citizen suits on Blue Plains permits have bogged down in the administrative/judicial process.

Nationally as well, the 208 process seems to have done little to create areawide agencies with a larger role in such growth deciding, land use issues have emerged. Even the National League of Cities concluded, after conducting a nationwide survey, that the 208 process had not led to any change in growth patterns; at best, future facility decisions might be affected.⁶ But here, too, the 208 process was limited to sewage treatment plant construction rather than broader land use and siting considerations.

Other preliminary studies have also concluded that 208 failed

to achieve its objective of limiting growth as well as more careful planning of sewage treatment plants and other facilities impacting the environment.⁷ Thus, the Washington case is apparently typical of efforts elsewhere. However, given a more favorable climate of opinion as well as active and knowledgeable environmentalists, the Washington 208 program had a much better chance initially of achieving the act's original objectives.

In order to view Washington's 208 process in a broader context, visits were made to three other 208 programs: Chicago, Illinois; Cincinnati, Ohio; and Raleigh-Research triangle park, North Carolina.

Similarities

The designated 208 planning agency in most cases was a council of government- the Ohio-Kentucky-Indiana Regional Council of Governments, a tri-state agency for Cincinnati and the Triangle J Council of Governments in North Carolina. The Northeastern Illinois Planning Commission is officially an advisory body whose commissioners are selected by the Governor, Chicago officials and organizations of local elected officials. However, it is similar to other COG's in that it performs A-95 reviews on an areawide basis and reviews federal grants. It is not surprising that COG's were selected for 208 programs; their areawide planning functions seem to be well-suited to water quality planning. However, they are weak in actual program authority and responsibilities, an almost fatal flaw for the 208 implementation process, or even for the selection of options which some local governments oppose.

Thus the plans did not significantly depart from the status quo in proposing institutional arrangements. None of the areas wanted anything resembling a comprehensive regional water authority with operating responsibilities.

The 208 staffs complained that the two year time frame was too short to produce an adequate and accurate plan. Nonpoint sources were especially difficult to deal with technically. While considerable advances were made in comprehending the very significant role played by NPS, the modeling and data were not available to completely fulfill EPA requirements.

The Technical Advisory Committees that were established followed a generally conservative role in that they were leery of new technologies and innovative programs. Thus none of the plans paid more than lip service to land treatment.

While affected citizens did come out to protest potential land treatment sites in the metropolitan areas, the general public did not participate in 208 planning, despite publicity efforts. Only a relatively small percentage of the population was involved in 208 citizen participation programs. And it is hard to see any evidence that citizen participation actually built support for plan implementation, as EPA suggests.

Except for Chicago, where not all important local officials were represented on the 208 Steering Committee, the policy boards, e.g., the WRPB, were composed of elected officials. They acted as representatives of the major jurisdictions and played a crucial policy making role in formulating the plan.

Differences

The 208 staffs, although considerably reduced at the end of the planning process, has continuity of leadership. In contrast, the 208 program in Washington was deeply affected by personality problems and lost its director, and then a few months later, the deputy director.

Therefore, the staff members in the other programs had greater influence over the content of the plan than the 208 staff at WashCOG. The OKI Director, in particular, was able to utilize federal construction grants "carrots" to induce local governments to certify the plan.. However, staff could not always sway the policy boards. For example, Triangle J staff strongly opposed the Corps of Engineers Everett B. Jordan dam, but this was included in the 208 plan.

Another major difference is that the advisory committees in the other 208 programs represented a variety of interest groups and spoke with many voices. The CAC in Washington represented environmentalists exclusively and acted as a unified bloc in passing resolutions and then offering a detailed critique of the plan. Its role was influenced by the technical expertise of several members as well as the political contacts of others.

Therefore while it may have had less direct influence on the 208 plan in Washington compared to the other areas, it had significant impact on the 208 process and on EPA.

Relations with state governments varied. NIPC 208 planning had

much closer and friendlier relations with state agencies. The difference is probably due to NIPC's contacts with the state for work and lack of an interstate problem, such as exists in Washington. On the other extreme, Indiana and Kentucky, with a relatively small share of the population, were minimally involved in the OKI plan.

While all the plans ended up at about the point they began institutionally, such arrangements were barely discussed in Washington and Cincinnati, both interstate areas with difficult jurisdictional and legal relationships. On the other hand, such structural questions received the attention of a senior staff member and much public debate in Chicago.

Finally, sewage treatment issues dominated 208 planning in Washington. (Dickerson, Blue Plains, Piscataway). They were less prominent in Chicago and Cincinnati due to the fact that they do not rely on large inter-jurisdictional STP's. And agricultural and nonpoint source pollution received major emphasis in North Carolina where the 208 area was largely rural.

Future Water Resources-Planning and Institutional Arrangements

The 208 experience corroborates Melvin Mogulof's conclusions concerning Councils of Governments. Mogulof characterized COG's as organizations which cannot take action harming any particular member government. He noted that COG's are not equipped to handle highly controversial issues. Also, Mogulof concluded that

"regional" plans done by COG's are normally little more than summations of local plans.. These observations were characteristic of 208 planning done by Washington COG: inability to make decisions on sludge and sewage treatment and acceptance of local plans as givens.⁸

In regard to areawide planning, many intergovernmental negotiations on water resource problems by-passed the WRPB, the indication that the local governments did not yet favor regional decision making. Issues such as sludge disposal, Blue Plains capacity and allocation of Potomac water supply were decided apart from the 208 process, although these problems were discussed at WRPB meetings. The implication is that local governments are not ready to commit themselves to areawide planning by COG in particular, local governments do not want a WRPB-type body making crucial decisions.

The federal government's effectiveness in mandating actions at the local level is directly in proportion to the federal funding provided to local agencies. A comparison of point sources and nonpoint source water pollution controls highlights this fact. By funding the construction of sewage treatment plants, the federal government has achieved significant progress in the control of point sources at the local level. 208 funds were provided for research into nonpoint sources, but the best management practices needed for abatement are generally not federally funded. This lack of funds as well as the absence of sanctions may handicap the entire nonpoint source control program.

Metropolitan government, or an areawide authority, has almost no hope of becoming the preferred institutional mechanism for water resources management in the Washington area. For example, a revised interstate compact giving ICPRB financial and enforcement powers is no longer considered a possibility even by most of its advocates.

Other recent attempts by Congressmen to encourage regional instrumentalities have died aborning. In 1978, Representative Stewart McKinney, Chairman of the House District of Columbia Committee, introduced a bill to fund a study of an areawide authority for control of the Washington area's mass transit, air quality, solid waste and water services. McKinney failed to find a cosponsor for the bill and the Committee on the District of Columbia held no hearings in 1978. This poor response indicated the severe attitudinal obstacles blocking establishment of metropolitan government in Washington.

Undaunted by this aborted attempt, Congressman Joseph Fisher of Virginia subsequently proposed a Potomac Shoreline Protection Bill which would have the ICPRB prepare a plan for the preservation of the Potomac River shoreline in Maryland and Virginia. It would also have established an advisory committee composed of a variety of interests to review the plan. Although West Virginia was deliberately excluded from the bill, opposition by environmentalists and local governments in Virginia and Western Maryland has prevented Congressman Fisher from even formally introducing the bill in Congress. This again indicates the extent of opposition to even tentative and limited regional planning approached.

The Council of Governments and the Water Resources Planning Board also do not show prospects of becoming a strong coordinating force in water resources policy. Major negotiations between two or three jurisdictions will continue to by-pass COG. Washington COG's experience conforms to Melvin Mogulof's 1971 conclusions that COGs are not able to resolve controversial disputes between member governments.

Because of COG's failure to resolve issues in the Washington area, the courts will tend to be used increasingly as a last resort to decide issues. Problems of sludge disposal and sewage capacity allocation especially that of Blue Plains are the most likely to continue to be ensnarled in lawsuits.

The refusal of the federal government to fund new sewage treatment plant construction for growth and the inability of local governments to locate acceptable sites for sewage plants and sludge disposal will combine to delay growth in the Washington area. Future sewer moratoria are likely, especially if Montgomery County fails to construct a major sewage treatment plant before Blue Plains has reached full capacity.

Barring a major water resources disaster in the form of a prolonged drought or drastic sewage treatment and disposal shortage, the prognosis is for very slow incremental adjustments among the competing jurisdictions. Limited agreements similar to the prolonged and acrimonious negotiations resulting in the Potomac Low Flow Allocation Agreement are possible. However, imposed solutions by the federal government or regional agencies are highly unlikely.

Sweeping changes will not occur not only because of opposition by existing jurisdictions but also because metropolitan government has failed to capture popular

The federal government, frustrated by seeming lack of progress by locals or any show of implementable results from the 208 process, may indeed insert itself into waste and water resources management more forcefully. The Potomac Strategy may be an indication that we are undergoing another phase of the cycle similar to the effort ten years ago of increased federal intervention to push local and regional agencies to more effective water resources management planning and implementation.

FOOTNOTES

1. There is a fast-growing literature in this area. See Sheldon Kamieniecki, Public Representation in Environmental Policy Making: The Case of Water Quality Management (Boulder: Westview Press: Janet . Johnson, "Representation in Metropolitan Water Quality Making", paper presented at the 1979 Annual Meeting of the American Political Science Association, Chicago, April 19-21, 1979, and Steven A. Cohen, "Citizen Participation in Bureaucratic Decision Making", (Ph.D. Dissertation, State University of New York at Buffalo, 1979). Cohen on p. 235 characterizes the citizen participation effort of the 208 in Erie and Niagara Counties as a "sick program within a sick program".
2. See U.S. Congress, Senate, Committee on Environment and Public Works, Nomination of Robert H. Harris, Hearing, 96th Congress, Second Session, Serial 96-H31, 1979.
3. U.S. Environmental Protection Agency, Region III, "Potomac Strategy, "Philadelphia, May 1979, p. 1.
4. Washington Post, November 15, 1978, P. A-18. See also Washington Post, February 8, 1979, p.B-1.
5. Washington Post, March 2, 1979, p. C-1.

6. See National League of Cities, "Cities and 208.. Local Government Experiences with Section 208 Areawide Waste Treatment Management Requirements", January 1978.

7. See Lustig, Thomas D. "Implementation of Section 208 of the Federal Water Pollution Control Act", Laboratory of Architecture and Planning, Massachusetts Institute of Technology, March 1978. See also Jonathan Bulkley, et al. "Institutional Arrangements for Area-wide Water Quality Planning and Management", OWRT Project No. A-096-Mich, School of Natural Resources, University of Michigan.

8. Melvin B. Moguluf, Governing Metropolitan Areas (See Urban Institute: Washington, .C.,

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