

SEVENTY YEARS OF POTOMAC RIVER HISTORY

Interviews with Dr. Abel Wolman

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February 1982

This publication has been prepared by the staff of the Interstate Commission on the Potomac River Basin. Funds for this publication are provided by the United States government, the United States Environmental Protection Agency, and the signatory bodies to the Interstate Commission on the Potomac River Basin: District of Columbia, Maryland, Pennsylvania, Virginia and West Virginia. The opinions expressed are those of the authors and should not be construed as representing the opinions or policy of the United States government or any of its agencies, the several states, or the Commissioners of the Interstate Commission on the Potomac River Basin.

PREFACE

"Wolman, Abel, B.A., B.SC., D.ENG.; American emeritus professor and public health engineering consultant," so reads the introduction to Dr. Abel Wolman, Professor Emeritus of The Johns Hopkins University, Baltimore, Maryland, in the International Who's Who. Following this is a list of worldwide accomplishments and honors longer than most of us could aspire to in our wildest imagination. Fortunately he is one of us who loves the Potomac and more than anyone in history, perhaps excluding our first President, has been involved intimately with protection and wise use of the water and associated land resources of the basin. His involvement spans a period of seventy years and he continues today as one of our very constructive critics.

In spite of a busy schedule as an advisor, consultant and much sought after keynote speaker, Dr. Wolman found time for two recorded interviews with me on September 1 and 25, 1981, in his office at The Johns Hopkins University. Dr. Daniel Sheer, Planning Engineer and Director of the Cooperative Water Supply Section (CO-OP) of the Commission, who visited that office many times as a graduate student at The Johns Hopkins University in the early 1970's, also participated in the second interview. Dr. Wolman's comments during the interviews are not only interesting and valuable, but also inspiring. Thus, I am especially pleased to be able to share them with you in this publication.

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EASTMAN: I wanted to explore your memory particularly with regard to your involvement with the Potomac and issues as they may have changed in the time from when you first remember being involved. I have done a little background exploration which may be helpful in jogging your memory. To begin with I believe that somewhere around 1912 or 1913 you may have first become involved in the Potomac and I believe you may have been a student at The Johns Hopkins University (JHU) at the time.

WOLMAN: I was just finishing my undergraduate training and starting my graduate training, so that your date is pretty accurate. It is either 1912 or 1913. I was working then for the U.S. Public Health Service (USPHS) on a pollution survey of the Potomac.

EASTMAN: That is one of the things I noticed in my review. There was a report put out by Cummings and others of the USPHS in 1916 which must have involved several years of investigation.

WOLMAN: Yes, and I would stress it for you to this extent. My memory is that it was the first comprehensive assessment of the pollution of the Washington Metro area. It had two important aspects which should be registered with you permanently. Those are indelible in my mind. I was a lesser operator in that survey, collecting samples and then analyzing the samples at the old USPHS Hygiene Laboratory, which fortunately has been preserved. That building, up in Georgetown (in Washington, D.C.), is an ancient fortress-like building and when somebody was about, as usual, to destroy it, I was one who appeared in Congress to oppose destruction and succeeded in keeping it, not only because it was an extremely interesting architectural abomination, but of tremendous importance in relation to the Potomac and to public health. My reason for that is this. My laboratory bench was next door to the bench for research on pellagra, one of the most distressing diseases in the southern U.S.

This is where the famous Dr. Goldberger worked while doing his research. He showed me how he was doing his work on guinea pigs, rats, mice, and so on. He revolutionized the handling of pellagra and its cause, and therefore the building has tremendous importance on that side. On the stream pollution side all I have to do is mention two names to you as to why it has such tremendous historical significance to the art. The consultant on that Potomac survey who came down frequently on the boat in which I was moving upstream and downstream was Earle B. Phelps. He was the father of stream pollution activities in the U.S. and the principal investigator in the USPHS stream pollution lab in Cincinnati, Ohio, the beginning of all things. Of equal importance there arrived on the boat a short, gentle individual, whom I had never known or seen, by the name of Dr. W. C. Purdy, the first biological investigator in stream pollution in the U.S. or anywhere. He became the teacher, the trainer, of almost every stream pollution biologist in this country. He was brought down full time to the Cincinnati lab and he came periodically to review the Potomac

situation. Those two people, plus Goldberger, on the other side of that shield is why it really should be recorded somewhere.

The report is a marvelous one, under the then Surgeon General, Dr. Cummings. I want to add another thing which I have never forgotten, because most of the recent work on the Potomac, particularly in relation to the Washington area where a great deal of money has been spent, is to see to it that we can eliminate algal growth. This sticks in my mind as some things frequently do -- the observation made by Professor Phelps that algal growth in the Potomac below Washington was one of the greatest sewage purification devices that nature had provided and should not be disturbed. I record it as a matter of scientific curiosity that it is the opposite of everything that we now do, for warrantable scientific reasons. When the flats below Washington, because of development and so on, were stripped of their nature and their algae growths sewage purification became different from stream purification. This is a long background of that area, but it has as much to do with the water supply as it has to do with waste water. Of course as time went on their linkage had become greater and greater.

EASTMAN: Do you remember any of your first impressions, as a very young man and student, of water pollution in the Potomac?

WOLMAN: You have to remember that at that time the so-called Washington Metropolitan Area had maybe a total of less than several hundred thousand people, and in the Maryland section of Prince George's and Montgomery Counties, considered to be urban society, a population estimate of 50,000 was high. I contrast that with what it is now. In Maryland's Montgomery and Prince George's Counties alone the population is greater than the whole metropolitan area then was. My impressions were that you had a pretty good body of water in the area. It had never occurred to me at that time we would be confronted with what confronts us now--what kind of a standard you are aiming at now. Most of the goals then in a very general way was related to BOD and dissolved oxygen and it was not in too bad a shape. The only previous data we had, as you may remember, were provided at the turn of the century by a USGS survey. The data were somewhat meager and were not collected with a biological approach, which we owe to Phelps. I recall to you that I was an extraordinary young man because of one curious thing. I was getting my graduate engineering training, not undergraduate training, and the extraordinary feature was that I was the only person that I know of in the U.S. trained in sanitary engineering, or civil actually, who had a course in bacteriology.

EASTMAN: How did that come about?

WOLMAN: That came about through chance. There was a professor of bacteriology on this JHU campus. I don't even remember his name, but because he was here, I took the course. I keep saying to my students who want a design for the future, "There isn't any such thing, at least if there is, I don't know of it." I do know people who had a desire, at age eight years, to be a mathematician or a garbage collector, or something. I represent one of those people who didn't have the slightest idea of what he

wanted to be. When you say how did that come about--the man was here and bacteriology was only a name to me and I took it. Therefore, when I was working as a supposed civil engineer I had a different background, which incidentally, probably had a good deal with centering my permanent occupation. It was an additional benefit and led to my view about education when I returned here to JHU.

I consider teaching my second life because in my first life, my first 25 years, I was in other activities. In my second life, I determined that I would not produce sanitary engineers except at the graduate level. By then, the late 1930's, I was convinced that they couldn't do their job without chemistry, biology, physics, and that to squeeze all that into a three or four year undergraduate course in sanitary engineering was impossible. All that stems from your question, how did that happen? Now let's pursue it. It has made it possible for me to examine the material from then on with an eye which I claim today most of the engineers are not capable of doing--mainly to evaluate biological data. It requires something more than a literature understanding.

There I come back to the first job. Just by luck I was a sampler of surface and deep water for biological and chemical examination. The Director of the bacteriological laboratory for water at the hygienic lab was William F. Wells. Bill Wells was a marvelous laboratory man. When I brought the samples back at the end of the day to that post on the bench, he began to teach me to examine them. He and his wife, who worked there also, were bacteriologists. I examined something of the order of 6,000 samples personally. I can't imagine anything more valuable, because Wells would come to me and tell me what he did and how he collected samples and did work on the bench. I considered I had by then a kind of expertise which you can't acquire unless you have the lab bench experience.

I have been having some thoughts since you told me what you would like to talk about, and I want to go back to history now for the next step. I have put a lot of time on that first subject because of its high significance, its great depths, and its wide exploration. Intellectually there were great contributions in those early days of the USPHS, including Hoskins, Streeter, Butterfield and others. I want to add how interesting a person Bill Wells was in history, for two dissimilar reasons. He was the first artificial grower of shellfish in the U.S. and ran it as a commercial enterprise in Connecticut. But more important, we brought him to Hopkins School of Hygiene because we became interested in organisms suspended in the air. He was the first person to insist on sterility in operating rooms. Like so many geniuses literally, he was marvelously creative. I don't mind saying that, at the time of his original ideas about oysters and organisms in air, we thought his ideas were crazy--but that frequently is the case with genius.

EASTMAN: I guess after graduation, after you received your masters degree, you went to work with the Maryland State Department of Health and rose from the bottom.

WOLMAN: It would interest you because I go back to your setting, where you work everyday--I was a survey rodman for the Maryland State Department of Health. We laid out the Washington Suburban Sanitary Commission (WSSC) boundaries in Montgomery and Prince George's Counties, Maryland.

EASTMAN: I believe the WSSC was established in 1918.

WOLMAN: I went with the State Department of Health in 1915, about six days after I graduated. Like many graduates I went to New York to search for a job. I got a telephone call from Mr. Robert B. Morse, the first Chief Engineer for WSSC and its creator. He telephoned my house and when I called home from New York, I was told he wanted to see me. I said, "Well I am taking the next train home, because I haven't got a job." So I came back and called Mr. Morse, who said, "Can you report for work tomorrow morning?" I said "Yes." Those early experiences as a rodman and sample collector were invaluable to me. Trotting around Maryland in those jobs, I became very familiar with the State. Then I became an assistant engineer and then a resident engineer on the Eastern Shore. I lived on the Eastern Shore and got to know the Chesapeake Bay very well.

Before Mr. Morse became General Manager and Chief Engineer of the WSSC, I worked with him on the creation of the District. I will never forget it because I worked out all those tables you see in the original report on the amortization of the bond issues because I was the mathematician for it--all the interest rates, depreciation values, table after table. I worked with him on the boundary and the actual charter. I appeared with him at the legislature, carrying his material. He got the Act through with the aid of Mr. Duckett.

There is historical significance to that enterprise, because of the whole question which comes up in relation to federal, state, county, and district functions which I read about now in the Congressional records of recent years. When the WSSC was created, the bill provided for the Commission to be appointed by the Governor from a list presented by the State Board of Health. The original drafts provided for appointments by the counties, and then by the Governor. But the counties weren't trusted then as was the State Board of Health. That is how it worked for years. I worked with Mr. Morse after hours for many evenings on legislative strategy because I was the only graduate engineer. Many employees then were only high school graduates. Later when I was Chief Engineer for the Board of Health, I had appointment authority changed because I thought the counties had grown up in their responsibilities. The first change was for the Governor to appoint Commissioners from a list presented by the counties. The present system of appointment by the county councils has evolved from that.

My experience before the legislature fascinates me now because we are talking regionalism now. In recent years I have appeared before the state legislature three times about this subject and before the committees when they tried to kill WSSC. The last time was when they wanted WSSC destroyed and the relevant powers given back to Prince George's and Montgomery

Counties. On one occasion at 4:00 in the morning, I am at a hearing where I had been sitting since 11:00 at night. When called upon I got up to their consternation and said, "Look, you are not going to listen to me--you have all heard this before. This is my third or fourth appearance here to prevent you from destroying WSSC. Now I am recommending that you do it. Destroy it. Just that. Destroy it, because a year from now I will be back here to sew it together again. You are hell-bent to cut it in half, and I know why. The answer is very simple. There is money involved, and you want to get your hands on it." As you know they didn't break up the Commission.

EASTMAN: And it hasn't really come up again recently.

WOLMAN: It is interesting. Philosophically, I want to give you one added note which ought to be in the record. This is relative to interconnections, in which Dan Sheer, you and others are interested. When Mr. Morse was still Chief Engineer of WSSC, a long way back, I became his successor as Chief Engineer of the State Board of Health and a consultant to WSSC during his period and thereafter. I said to Mr. Morse as his "advisor" at the time, "You have only two or three very small interconnections with the D.C. system. That doesn't make sense. Your systems are adjacent and serving the same area." He said, "I don't want any major interconnections with the District of Columbia." I looked at him and said, "There are water distribution lines in the systems that are right next door; in many instances they are not only next door, they are right inside each other." And he said, "I don't want to have anything to do with a system that requires congressional intervention." I'm reminded of U.S. Senator Mathias (Md.) asking someone recently, "What is the function of the federal government in this." Of course, it has real functions. I reminded myself that Mr. Morse said, "Don't let the Congress in on this, because I will never get anything done."

EASTMAN: Do you remember where the initial idea came from for the WSSC, because the population within the District must have been very small at that time?

WOLMAN: Let me remind you of that, because they had a legislative hearing which I will never forget. In 1916 or 1917, before the authorizing legislation was passed, Mr. Morse, then Chief Engineer of the State Health Department, conceived the idea. He has never been recognized for the idea as he should have been. He was one of the best engineers I have worked with, and no sanitary engineer. He was a naval engineer, beautifully trained at the Massachusetts Institute of Technology. I have asked him, "What are you doing here?" "Well," he said, "because I worked in New York on the sewerage system with Professor Gregory," who was my predecessor at Johns Hopkins. Prof. Gregory designed the Columbus system, the New York system, and the Chicago system. He was a great guy. The members of the legislature questioned Mr. Morse, "How in the world are you proposing the WSSC (we already had the boundary on the map) when we have a total urban population of only 35,000, with little water systems, for example, in

Hyattsville and Takoma Park?" They said, "Are you crazy?" "No," he said, "This is the capital of the world and it will not stay that small." If you take his report off the shelf, and I do that periodically, and you will see that, until the end of World War II, his population predictions were within one percent of the actual for Montgomery and Prince George's Counties. He said, "That is what it is going to be and that is what you have to prepare for."

The whole business stems from that man's foresight. I grew up with him and when he left I succeeded him at the State Health Department. I then began to look at Baltimore County, Anne Arundel County and Howard County. That was when I created the Baltimore County Metropolitan District, wrote the legislation, and got it through the legislature. It was created along Mr. Morse's lines. He laid out in WSSC, and in Baltimore County, on the drawing board, after office hours, the major water transmission lines and the major collection systems for sewage, useful until yesterday in both places.

EASTMAN: Remarkable foresight!

WOLMAN: And an unrecognized person. He died young. You might look up sometime when he died. He got a strep throat and in those days we had no antibiotics. He died in about four days.

EASTMAN: Was this in the 1930's?

WOLMAN: Somewhere in there. You might check it for me for the record, because it was one of the major tragedies.* Harry Hall was the next WSSC Chief Engineer, which may begin to register with you. Mr. Morse took Harry Hall with him from the Maryland State Health Department. Harry Hall was his deputy on the State level. Then Harry Shaw succeeded Harry Hall, then Bob McLeod, and then, of course, Bob McGarry. I served them all until McGarry came on, and for good reason. McGarry surely wanted to broaden areas of the investigations. I said to many of them here, as elsewhere, "Take another look with new tools, new imaginations; just don't keep repeating the past."

EASTMAN: One little incident, which I don't know whether you had anything to do with, or remember, but in 1923 the big flood knocked out the C&O Canal. It was so badly damaged that it never was operated commercially again. Of course, you do remember subsequently the federal government took over the canal and there was the proposed parkway, much controversy, and finally the present C&O Canal National Historical Park.

*Mr. Morse died in 1936 while still General Manager and Chief Engineer of Washington Suburban Sanitary Commission.

WOLMAN: I remember them all for a very interesting reason. We in Maryland had begun to sample the Potomac by that time, or shortly thereafter. On the flood aspect, we began then to examine the recurring floods on the Potomac. At a later time, I can't date this, I became the Chairman of the Flood Commission on the Potomac, which should be in the records somewhere. Because floods not only did damage to the Canal in 1923, but also in the late 30's, and inundated Cumberland. The old Cumberland Hotel had about eight feet of water in the lobby when I came up there.

EASTMAN: I think that then led to flood control works in Cumberland.

WOLMAN: That is right. And I was Chairman of the Flood Control Commission appointed by the Governor. But as true as it is in everything, flood damages were exaggerated when the flood receded. You know the Westernport (Maryland) Bridge was destroyed in the 30's and I picked it up in Brunswick, Maryland. We had thirty to forty million dollar estimates by the U.S. Army Corps of Engineers (COE) of the damage. I will never forget this, for in reporting to the then Governor and legislature, the real damage was about 3- 1/2 million dollars, about ten percent of the COE's estimate. I couldn't really charge the loss of Westernport Bridge to the flood because a truck collision did the major damage before the flood. When the canal system got messed up, as the record discloses better than my memory does, we had a great deal of discussion as to whether or not it should be rebuilt. I often say, let's not look at 1923 or 1915 through 1981 spectacles. Try to put on 1915 spectacles. It is a cinch that 1981 eyeglasses will show all the mistakes of 1915, because you are not really examining what the guys did in 1915, but what they might have done in 1981. I am reminded of Gordon Fair's exercise for his students at Harvard. About a year or two before he died, he gave his students a one-year case history study. "You study what the Boston metropolitan water supply system ought to be. You have your computer, your systems analysis and so on." The students studied it for a year and the result was about the same as the design developed earlier by the original design engineers. The new tools help, but they're no substitute for brains.

EASTMAN: I want now to get on to the 1930's when you were still Chief Engineer in Maryland.

WOLMAN: In the 1930's I began to have seven or eight occupations. I want this in the record because of questions that have been raised. The Baltimore Morning Sun had a headline an inch thick, "Wolman has more jobs than any person in the State of Maryland." It was true. From memory I had six as well as Chief Engineer of the Health Department. The article went on with several columns of discussion, but what they didn't say was that I was collecting only one salary, which was from the Health Department. I was Chairman of the Water Resources Commission, Chairman of the State Planning Commission, Chairman of the State Bridge Commission (it built several bridges, including one on the Potomac), Chairman of the State Roads Advisory Commission and Chairman of the National Water Resources Committee.

EASTMAN: That is what I wanted to get on to, because I did find that there was a special advisory committee on water pollution of the Water Resources Committee of the National Resources Board.

WOLMAN: I was Chairman of the National Water Resources Committee or Board. We never did quite agree on which it should be. I have to give you a little bit of the structure, which is useful to have in discussing its work.

One of my friends recently found in an antique book shop the secret diary of Harold Ickes. He was Secretary of Interior, first during the entire Franklin Roosevelt period and then during the early period of President Truman. It's in three volumes, six hundred pages each, and not published until the 1960's. Recently, I began to read it and it's relevant to the subject of our conversation. Somebody else loaned me the other day a seven hundred page volume on the last year of Franklin Roosevelt which I am reading simultaneously, and third, Marion Clawson has just published, through Resources for the Future, the history of the National Resources Planning Board. Subsidiary to it were Water, Land, Agricultural, Energy, and Population Boards. I chaired the Water Board, beginning in the 1930's. I chaired it for something like nine years, while I was still on the six unpaid State occupations and Chief Engineer of the State Department of Health. In about 1935 or 1936 I sent in my resignation to the State Board of Health because by that time I was already on international jobs, also unpaid, for the U.S. State Department. When I came back to Baltimore and discussed it with the Director of Health he said, "The Board has turned down your resignation." He said, "We turned it down for a very interesting reason; if you resign the present Governor is going to appoint a nonprofessional Chief Engineer and we would not be able to stop it. He will not fire you. We will tell you after the next Governor is elected and we have had a chance to talk to him about who would be appointed. If a qualified engineer is not going to be appointed you don't resign." When the new Governor was elected, I forget who it was, but the Board raked up my resignation with a new date because it had the new Governor's guarantee he would appoint George Hall.

EASTMAN: I am particularly interested in it because of the Special Advisory Committee on Water Pollution which issued three reports, and I think you chaired that Special Committee as well.

WOLMAN: Yes, I appointed several committees under the aegis of the Water Resources Board. We were concerned with the reason as to why we had, throughout the U.S. in the forty-some states, varying degrees of progress in sewage pollution abatement. That now concerns the 1981 EPA, and in the 1960's and 1970's, it concerned the Congressional committees. So we had foresight to that extent, and I set up a special committee and chaired it. It was ratified by Congress. It was ordered by a Congressional committee and they had a good one. We then used our full-time staff to review the status of pollution in all states. Nobody in EPA or among those who wrote PL 92-500 (The Federal Water Pollution Control Act Amendments of 1972) ever

knew of its existence. The report saved the Congressional committee a good deal of time, because here is the question they were debating: Here is our opportunity to lift all of the States up to the sky of accomplishment and how are we going to do it? If you have read recently the Water Pollution Control Federation (WPCF) Journal's marvelous six page interview with Congressional staff on the history of PL 92-500, it is fascinating, because everything that they have disclosed is in general in the the Special Advisory Committee report in the late 1930's. You could have written it, because I suspect you know the country as of course I do. The conclusion was in two sentences. Number one, and this is very important, the progress had little or nothing to do with the amount of legal responsibility in the individual State. States with powerful laws did not have the greatest progress. States with limited laws, in many instances, had great progress. Sentence number two: Why? Progress was related to the ability of the individual who ran the State program. You could name the good ones as I can. When I still look around at all the states, as we did at a conference a week or two ago, who are the guys that are making progress? And you say to yourself, is it because he has a powerful law? Sometimes yes, most of the time no. This is what our report disclosed. It was that Special Advisory Committee that recommended certain kinds of legislation with stimuli.

EASTMAN: I noticed in the 1938 report of the Special Advisory Committee that there was some advocacy of the concept of interstate compacts on water pollution. At the time of the earlier 1935 committee report there may not have been any compacts in existence.

WOLMAN: The first of them were established in the late 1930's as I recall.

EASTMAN: I believe the Interstate Sanitation Commission (N.Y., N.J. and Conn.) was established prior to the 1938 report.

WOLMAN: It regained a kind of strength in 1939 and 40. This is my memory and it checks with your record. The report was intended then to be the prod on many fronts. We spelled out in the earlier one what we thought the function of the federal government should be. In the WMA a great many still raise that question. At a Congressional hearing not long ago, Senator Mathias (Md.) kept asking, "What should be the function of the federal government." From my memory there were several recommended in our reports in the 1930's. One was the establishment of fundamental principles that should guide the nation. The fundamental principle that came out in federal legislation of the late 1960's and 1970's was that all waters should be swimmable and fishable, which is nonsense.

EASTMAN: President Johnson in the late 1960's said that he wanted to swim in the Potomac in ten years.

WOLMAN: He wanted swimmable and fishable in all the rivers in the U.S. and, of course, the great river of the Capital of the U.S. Then he asked the agencies (then the program was in the Public Health Service and later

in the Dept. of Interior): "How do we do that?" They were afraid to tell him. "Well," I said, "What are you going to tell him?" As a matter of fact they didn't tell him much of anything, because the dollar estimate for an attempt at accomplishment was astronomical. Of course that concept came out in the subsequent legislation so that you have a dilemma today with reconstruction of the role of the federal government. In the 1930's we recommended three functions, as I recall. One was establish general principles; second was use the grand forces of the federal government on research and development. I use the word, "grand," advisedly because you couldn't find them except in a few big states, for example maybe Massachusetts and California, which have lots of resources. Three, obtain a specific obligation toward providing implementation of water pollution abatement. We said that advisedly also. We urged an obligation for implementation, not by the federal government, but by the states and by the interstate compact. Now we had a marvelous demonstration of its validity. As a old state man I had already lived through that and it was great. I was weak in stream pollution people so I called up my friend in the U.S. Public Health Service, whoever he was, and I said, "Look, I want to do this study on the Potomac, or wherever, and I haven't any good people to do the work." His response was, "I'll lend you two people." We worked out a machinery. The USPHS lent me two people for one year, two years, and sometimes I had them for three, until I persuaded my State legislature to give me the necessary people and then I could release the USPHS personnel. Now those three fundamental principles are still applicable in connection with federal legislation. I could have predicted all that they were doing on legislation behind closed doors in the early 1970's. Do you know how many were lawyers among the Congressional staff who were interviewed?

EASTMAN: I think I know all of them. Dick Sullivan is a lawyer, Les Edelman is a lawyer, Gordon Wood at the time was working on his law degree and subsequently has become a lawyer, Tom Jorling is a lawyer, and Phil Cummings is a lawyer. Leon Billings is the only one who isn't a lawyer.

WOLMAN: This is what I wanted to know and that was my guess. Now what we have in the article, as I say behind closed doors, was the revelation of what they were doing and what their principles were. Where they went wrong was on my point number two, because they didn't carry out enough research and development until very recently when a member of the key Congressional committee announced this year that he regrets that all the time he was pushing the staff he ignored the fact that they didn't know what they were doing. He said what is now needed is tremendous research. The other point is that they now recognize that you couldn't get the universality of idea by bribery. Now it is apparent you didn't have enough good people. You went into let's say "benighted" states which they had in mind, and you had a handful of state people who were maybe good but not good enough, or certainly a number of them had very few staff. They thought that if they poured billions of dollars on them they would get the result they wanted and they didn't.

EASTMAN: I want to get back to the National Resources Board and the Water

Resources Board and its reports. I ran across an article that had been clipped from the Washington Sunday Star in 1936 which referred to recommendations of the Water Resources Board to use the Potomac River basin as a laboratory for studies on water pollution, flood control, and flow regulation with an estimated cost of \$15,000,000. This article referred to a 1933 comprehensive report by the U.S. Public Health Service on the disposal of sewage to the Potomac River and you mentioned previously, I think, that there had been some work done in the Potomac during the 30's.

WOLMAN: There had been a good deal of extended work beyond the original report in 1916.

EASTMAN: But do you remember specifically some of the thoughts behind the idea of having the Potomac River Basin as sort of a national example or laboratory?

WOLMAN: The idea dated back to the turn of the century. You may remember that when the old U.S. Geological Survey (USGS) back in the 1880's and 90's by legislative directive was asked to examine the Potomac River, always because it was the capital and showplace for the U.S. That also was the reason for the study on which I worked, the results of which found its way into the 1916 report on the Potomac by the USPHS. Always back in the minds of Congress and Presidents, is that we have this perfectly beautiful stream, potentially more beautiful within the capital area. Also somewhere in there, after that beginning in the 1930's and even in the 40's when I began to get around the world a great deal, I came back with a message of my own because of a situation in the inner harbor and the surrounding areas of Stockholm. I had the feeling that you are playing a losing game in trying to achieve inner harbor swimmable possibilities, because if for no other reason, surface drainage. I don't remember why in the world I was there, but I was there for quite a few days, and my hotel was the Grand Hotel of Stockholm, which overlooks one of the most beautifully managed harbors in the world. The castle, which I could see from the window, was sitting up on the other side of the harbor. That experience showed me that it was potentially possible to have something like the Stockholm inner harbor at the capital of the U.S. with beauty and style.

All along, I would say by now over 100 years, the record is full of intentions for a demonstrable showcase of the Potomac River. The proposal in the 1930's was one in a series of at least three prior ones within the memory of man. There may have been something even earlier than 1890. I haven't had occasion to go all the way back and see, but sometime I will. In any event, when this came up before our Board in the 1930's, following our inquiry on stream pollution abatement in the country as a whole, as a natural piece of intellectualism, we said to ourselves, "Why can't we show how to do it, with primarily a federal investment of \$15 million," which in those days was a lot of money. Let us say it was worth \$150,000,000 or more today. That is why the proposal occurred. We in fact, in taking those steps, dealt with a gentleman named Tom Parran, then Surgeon General of the U.S. Public Health Service. He was a very old friend and more

important, was a student of mine. Therefore, I had an opportunity to move forward with Tom Parran, during the Roosevelt Administration and another gentlemen by the name of Bell, Director of Budget after Lou Douglas. Douglas was the first Director of Budget under Roosevelt and also the owner of Phelps Dodge, plus a few other things. I had a lot of sessions with him on this question. I remember a discussion with Douglas about the federal responsibility for water pollution control.

I will share in this record something I did not remember until last month. Roosevelt entered his first term on a platform of balancing the federal budget. The first thing he did, I rediscovered in the diary of Harold Ickes (he describes it as the saddest cabinet meeting he ever had) was to order an across-the-board cut in every federal agency budget. When all the cabinet officers said they couldn't do that because it would be a blunderbuss action, do you know what he said? It reminded me of President Reagan. He said, "You will never do it any other way. If I say to you we are now going to sit down and examine the entire Dept. of Interior, Dept. of Agriculture, and so on, I will never live long enough to see it through." Later, and we won't burden this account with it, there were repercussions from Secretary Ickes, Secretary Wallace and so on.

Coming back to water resources, President Roosevelt said, "Next year (this is in the middle 1930's) we have \$500,000,000 for all the federal water resources development projects in the U.S. It is your function, delegated to you on the Water Resources Board by executive order, to see that is all that will be brought back to me for the budget. I can give you a distribution of that among the agencies," which he did, and this wasn't off the top of his head.

I had a series of hearings on the subject which I shall never forget. Every federal agency was notified of the individual amounts allowed. I notified them that the U.S. Army Corps of Engineers' slice of that pie was about \$250,000,000--not bad. And the Chief Engineer of the COE arrived for our hearing with a young man, a First Lieutenant, with all the answers, who became General Lucius Clay in West Berlin. The Chief brought in \$400 or \$500 million worth of projects and I said to him, "I'll give you two choices: one, which I would prefer, is that you take these back and you give us \$250,000,000 worth of projects, or two, the Board and my staff will do the cutting." My staff director was Gilbert White, in his first job out of school and he was as great as we know him to be. He has just retired from the University but he is going to stay in Colorado. After my remark I thought the Chief was going to have a heart attack, and I didn't have a medical doctor on the staff. He said, "Mr. Chairman, I resent it!" It was about all he could blurt out because he was a very heavyset man and looked susceptible to a coronary. I said, "I don't understand what you mean." He said, "I resent your suggestion." I looked at him kind of innocently and said, "Well I understand that, but I do believe that there are variations in what you might propose and I am simply suggesting it would be wiser and more logical because you know those projects, for you to re-examine them and send a reduced list of priorities back to us." That was the wrong

thing to say to him. He almost hit the ceiling. I didn't lose my temper but I said to him, "General, I want to remind you of something. I am operating under a directive of the President of the U.S. and what I am saying to you is that I didn't make this up, nor did I make up that dollar ceiling number. I simply have to remind you that the COE is an agent of the people of the U.S., not the other way around." But this is where we sit now in 1981, and of course that has always happened.

We decided to see if we could make a real demonstration of the Potomac, which we could never get Congress to do--not a real one. By that I mean, "Hand me a check, and don't tell me yes before that and say you will pass a resolution. A resolution won't do me a bit of good." I am reminded much later, maybe ten years ago or less, I am before another Congressional committee and the question should be in the record. It is part and parcel as to what you could do with the Potomac. The lawyers can give me all kinds of answers, a whole volume on the lack of legal authority and so on, and I say that is not the problem. Of course, it is part of the problem, as for example when our friend, Jay Corbalis (Engineer-Director, Fairfax County Water Authority, Virginia), says he doesn't have the authority to do what I might say he should. But in general that is not really the debatable issue, but lawyers think it is.

At any rate the question the committee asks is very simple. The chairman of the committee, in the early 1970's said, "We haven't cleaned up the Potomac around the capital of the U.S. after all these years. Why?" I hadn't expected the question, but it triggered me and I said, "I think I have the answers." I said, "First let me give you a little preamble. I began work on this river in 1912 or 13 and you don't have to take the pencil and paper out because I know what you are thinking, the guy here is crazy or he is senile. It could be so but I think it isn't. I have been on the river off and on and the library shelf is full of volumes of reports, but I have the answer for you. Periodically, throughout almost sixty years, we said to Congress that to clean up the Potomac would require X millions of dollars and what did you do? You gave us X minus, always less than twenty percent of what we told you, and you are sitting here now and asking: 'why haven't we done the job?' It is just that simple! Now, if you say we will give you another \$20,000,000 and you know it is going to cost \$80,000,000, I'll come back, if I am still alive, and your successor will ask me the same question. I have one other answer. You have shifted federal policy throughout the past ten years at least five times. That adds to the morass which you are in. You have never made up your mind on policy, and you have never put the money there. As the present day advertisement puts it, 'You must put your money where your mouth is.' Plus the implementing policy. You haven't done either. You have had hearings and so on, but all you were doing was messing it up, because out of the hearings came a new set of principles, a new set of implementation techniques, and you never stuck by any one set."

I observe also that, by force of circumstances, and I mentioned this in your St. Mary's conference (St. Mary's City, Maryland, October, 1980; see

State of the Potomac-1980: Issues for the 1980's, ICPRB Gen. Pub. 81-1, May, 1981), although nobody liked it I know, the river has been divided into sections. I rather suspect you probably knew it wasn't the best procedure, because, as I mentioned in St. Mary's, one cannot manage the lower Potomac River, without the upper Potomac decision making, such as for Bloomington and Savage Dams. What you are driven by, and I use the words "driven by" more emphatically in the last ten years than in any previous decade of my experience, are the environmentalists' desires and hopes. You had conservationists of course in Teddy Roosevelt's period, in the Franklin Roosevelt period, and in almost every one of his successors' periods, and their impacts, but at no time did you have the mass of impacts as has been experienced since the late 1960's. That itself is something that needs diagnosis because of what it impels one to do.

Much of what you and I and the COE and the federal government and the states are doing, and have been doing in the last 10 to 12 years, is a result of a psychological push for a good purpose, but with one in which the implementation methodology got lost. As I said to John Quarles after he resigned as Acting Administrator of U.S. Environmental Protection Agency (EPA), "Your point of view after your resignation is different from what you did when you were there, and we haven't yet resolved why." He is a very competent lawyer, incidentally, and he asked, "How do you diagnose what happened?" I said, "I diagnose what happened really with great simplicity, but I think it is true. You had a group of idealistic people, with an assignment by a driven political Congress to idealistically reorder the world too fast, and it failed. We have to pick up the pieces and redo the methods." This is not off the cuff, I have thought about it a great deal. A push for ecological wisdom was due and the high priests, mostly lawyers, decided how to do it. They had two qualities and they were contradictory! One was high idealism and purpose and the other was a good deal of ignorance. The two have demonstrated that what you are aiming at in this marvelous conversation is more than methodology. It's also politics.

I also would like to share with you, Paul, some thoughts on the more specific endeavor that you are engaged in now, a part of which, the Potomac water supply operation and drought simulation exercise, I had the pleasure of attending and described as a revolutionary methodology in management of the river under conditions of drought.

You are now engaged in a demonstration of the specific methodology which I describe probably inaccurately, but not with regard to its revolutionary character, which I think is accurate. Sitting next to me during the day's demonstration was a television man. He didn't know me and I didn't know him. Both of us were listening while the cameramen were taking shots and he said to me, "What do you make of this?" I was a little bit startled because I thought he was one of the staff engineers. I responded that it is an amazing exercise in equating human behavior with the hydrologic behavior of the Potomac River. He looked at me and said, "That is marvelous," and then I said to him, "Who are you and why do you say that?"

And he said, "I am the television reporter and I have a masters degree in psychology." Now I come back to that and what I want to put in the record is this. I want to remind your crowd that what you are dealing with is a definition of water service, which incidently does not appear in your whole exercise. I realized last evening that I wanted to crystalize something in my own mind before I share it with you. Why isn't that definition there, and I put it down this way. Water service is a reasonable, nonwasteful provision of safe water for all municipal purposes, during all meteorological recurrent conditions, including short- and long-term droughts, at a reasonable price.

EASTMAN: That is a very comprehensive definition.

WOLMAN: Then I added, this is what I want you to think about, not today but as you go along. All of the current works ignore that definition. All are focused on rationing. This is a charge. It has nothing to do with the revolutionary methodology which we will continue forever, I hope, to be used with whatever future refinements you have. But the underlying philosophy is a violation of my definition. I have observed this throughout the U.S., for example, in Boston and New Jersey. Too often I feel there is general violation of the definition. These are not charges just against you, you have plenty of company. I say to you somewhere along the line your methodology should confront you with what do you mean by recurrent frequency of droughts. Do you mean 5 years, 10 years, 20 years? Nowhere in your record of drought operations material that Dan (Dr. Daniel P. Sheer, ICPRB CO-OP Director) has been giving me, nowhere do I find two things: 1) a definition of reasonable service, and 2) a definition of an adopted frequency of recurrence of drought disaster. They are your two necessities. In a sense, what in the back of your minds is what you call reasonable water service.

EASTMAN: It doesn't appear in any of the documents and I think your point is therefore a good one, but the objective of ICPRB CO-OP is to avoid entering the mandatory restrictions stage.

WOLMAN: But you don't make that clear. In the discussion on the New Jersey final report, we spent almost a whole day on my second question. What is, on paper, the frequency of recurrence at which you want restrictions? Now I come to the third item. What you have been doing through all these pressures? All you have been doing is postponing important decisions to future generations. All capital decisions of significance you defer because of these two lapses. What I am saying is that you had better make up your minds as you go along because in the record recently in congressional hearings is an interesting observation on the year 2000 and year 2020. My natural question in my old age is where are you going to get that water and how? You, again using "you" collectively, have given Congress figures, which is always a mistake, but justifiable figures. When I speak of those two criteria and the third result, the result I am talking about is for your next generation. I have

always had in my mind that your guesses on future population of the capital area of the U.S. are too low.

EASTMAN: You feel they are too low?

WOLMAN: You may not remember this, but somewhere in the record we made an inventory of the populations surrounding the capitals of the world. We did that because we don't want any more imaginary population growth lines in the Washington area. I really don't want to be bothered with the lines. I am much more concerned with the underlying question. For example, is New Jersey going to have an increase in population as the major industrial state in the U.S.? It is interesting that New Jersey is more like Holland than anything else. In one of the early documents we go back and say, we wonder what will happen in the future.

While in Moscow, I said to the city engineer, "What is the population?" "Six million," and he added, "that's all. Can't be any more. We don't want any more, for good reason. The sewerage system is in a mess, the sewage treatment plant is in a worse mess. I haven't got enough water and the distribution system is falling apart and that's it." Moscow is one place in the universe where we could expect "no" to mean "no." I am back there two years later with my old friend and we talk about what is happening. He said they had done some work, for example, built some additional water supply. He had a lot on his mind since I last saw him; he didn't remember my earlier question about population, and I said, "By the way, what is the population of Moscow now?" "Seven million," he said, and I said, "Did I hear you right? What in the world happened? You told me six million two years ago and that is all there ever will be." He said, "Our policy was not to let them in, and we notified everybody that there would be no emigration into the city, but they brought their pots and pans and moved in with us." This, of course, is the way life is, even in the U.S.S.R.!

In spite of all efforts toward zero growth, we will have 50,000,000 additional people in the U.S. between now and the year 2000, and they will want everything. They will have a right to have everything: They will want houses, they will want water, they will want sewers, and I don't think a proclamation of a target will affect that. Now I promised as a part of my commentary here to take a look at the definition of frequency of restrictions, or as I call it, rationing--because this is part of the national problem with which I will have to be struggling in a committee of the American Water Works Association--and that is the President Reagan or Budget Director Stockman statement on what is called the New Federalism. Major water supply capital investments, primarily as you know, aside from distribution systems, are source impoundments. Put them in your rate structure now instead of saying let the grandchildren do it at an inflationary price.

EASTMAN: Those are some very penetrating thoughts.

WOLMAN: Maybe I ought to close that part of it and let you come back to

your history. I learned over many, many years the hard way that all population estimates in my recollection, with one exception I gave you with Mr. Morse of the WSSC, have all been wrong. Both too much and too little. It is interesting because they have been made by the best people, the demographers, really the best. I have grown up with Dr. Dublin of the Metropolitan Life Insurance Co., Lowell Reed, and Raymond Pearl, who developed one of the methods everyone uses throughout the world. And they've all been wrong, tragically wrong. Anyone trying to forecast population 50 years in the future is a bit crazy. We don't have the slightest idea of what the year 2030 will look like. Who will say what Iran will be like even next year? It's absurd.

They asked Chief Observer Abel Wolman for some remarks at the recent Washington Metropolitan Area drought management exercise organized by your agency. I told them I went through a parallel revolution just sitting here, because I sat in an equivalent, though smaller building, in the drought of the 1930's, and looked out the window hoping some lesser god would tell me what to do to alleviate the drought. You now have tools we didn't have then, but when you ask me what is missing, and I guess it was on the record, Dan has it, but one thing that I said was, "What would happen if you lost the Potomac River intakes, due to vandalism, for example, as was the case in Newark, New Jersey, recently." What about the fish with so little residual flow below the intakes?"

EASTMAN: That is right, there was no spokesperson there for the fish.

(Note: At this point the first session of the interview ended. The second session took place about three weeks later.)

EASTMAN: I would like to resume with your recollections about the establishment of the Interstate Commission on the Potomac River Basin and, before I forget it, I want to ask about your knowledge of Edmund Cotton, who was the first Executive Director of the Commission, about whom we know very little. First I think you had something to do with the development of the Commission charter, getting it through state legislatures and so on.

WOLMAN: In fact I can be more specific about the Commission than I can be about Cotton so I will try to answer that first. I had a great deal to do with the creation of the charter of the Commission and from memory I am quite sure that I either wrote or contributed to the writing of the charter. That from memory, as I guess your records would disclose accurately, was in Franklin Roosevelt's period as President. At that time I was extremely busy with almost everything in water resources. I phrase it that way because as I look back at it, which I have been doing for other reasons within the last one or two months, I am astonished at what in the world I was doing, because I was operating on about six different assignments. I won't enumerate them for you because I don't think they would be of any particular help. But when I persuaded both the states concerned and, of course, the President of the U.S. at the time, the Budget Director was a Mr. Bell.

EASTMAN: Yes, you mentioned him in our most recent conversation.

WOLMAN: He was then enthusiastic about it. Perhaps the most important ones to impress in the creation of it were Mr. Delano, Charlie Eliot and Mr. Merriam. These were the key people on the National Resources Planning Board. They were all in agreement, in the climate of that day, with that kind of a regional institution. That, then and now, remains a major National Capital interest in the U.S., calling the Potomac really the National River of this country. They all pushed for it. That is how it came about that the President, when it was created, then appointed me a federal representative, a post which to this day had been a curiosity to me. Although I was a federal official, I never listed myself as a federal operating individual. I guess the Potomac was the first of the basin creations.

EASTMAN: I think there was one before, the Interstate Sanitation Commission for the New York, New Jersey and Connecticut area of the lower Hudson River and Long Island Sound.

WOLMAN: You may be correct. I also had a great deal to do in creating and writing the Charter of the Interstate Commission on the Delaware River (the predecessor of the existing Delaware River Basin Commission). I attended its initial organizational meetings and a long series of them thereafter. Then the Ohio River Sanitation Commission (ORSANCO) emerged, in which we as the State of Maryland have a relatively small geographical portion. As I said to you before we were trying to do this across the board in the whole U.S. It's worth recalling the period in which the pressures were in that direction, in contrast with what has taken place in the more recent climate of the past 10 to 15 years. If there wasn't a conscious, deliberate effort on the part of EPA to destroy them all, at least that is what many of the regional groups felt. Whether you share that impression I don't know. I don't believe I have talked to you about it. But I know ORSANCO, the Miami Conservancy District, and the Delaware River Basin Commission all had the feeling that EPA was trying very much, but unsuccessfully, to get rid of them, because they were a kind of institutional headache to EPA. This was a very fascinating difference between the 30's and the late 70's.

EASTMAN: You are correct. A few years ago there was quite an effort on the part of some people in EPA, influential people, to exclude the interstate compact commissions from eligibility for receiving federal water pollution control grants.

WOLMAN: They didn't want to operate with the basin commissions. This was a battle which I was then encountering in my third life to my astonishment, because all pressure from the federal government originally was for the creation of the basin commissions.

EASTMAN: We were very fortunate, because at the particular time in which the greatest effort was made to exclude the interstate compact commissions, there was a man in a key position at EPA who was familiar with the compact

commissions, especially with ORSANCO. He had worked with ORSANCO for many years from his position in Cincinnati in the Public Health Service and the Federal Water Quality Administration research and technical assistance operations. He sympathized with the important role of interstate compact commissions. Thanks to his sympathy, he worked things out quite satisfactorily within EPA for the compact commissions.

WOLMAN: I would mainly record this additional recent aspect of that, because as an old timer and old battler for their creation and still an advocate for them throughout the country, I was interested in the drive to supersede commissions, by primarily directing the activities, such as research and investigative operations to EPA type of state agencies. In other words, it was an obvious drive for controlling the power. In many instances in the U.S., I was discovering that EPA was saying to old state agencies that we don't recognize you as a responsible unit to carry out state planning functions under the Federal Water Pollution Control Act Amendments. Therefore we are going to turn it over either to an EPA agency, an equivalent state planning organization, or a newly constituted regional body under Section 208. They had a number of ways in which they would like to get rid of you, of ORSANCO, of Miami Conservancy, the Delaware River Basin Commission, and the Muskingum District. Fortunately, it didn't succeed. I belabor this a bit because I was very much interested in the subject and maybe in my earlier discussion I may have mentioned my interview with the Deputy Attorney General of the U.S. Did I?

EASTMAN: No.

WOLMAN: Let me put that in the record. The National Water Resources Committee, which I was chairing in the 1930's, instructed me to meet with either the Attorney General of the U.S. or the Deputy Attorney General. I got to the Deputy Attorney General because he happened to be my classmate, John Dickinson, a marvelous individual. I came over and said, "I want to pose a question to you. We are on a drive for creating regional entities and I have two questions. One is a very simple one, perhaps not the most important one, first as an institutional unit I want your reaction to it legally. But more important, I want your philosophical reaction, your political reaction to that desire." We used to call him Judge John Dickinson here because he was a descendant of a signator to the Constitution of the U.S. He put his feet up on the desk and said, "Abel, I will answer both questions at the same time. Don't we have enough trouble in the U.S. with federalism, a conglomerate of 48 states, a central government and the subdivisions below the states without your coming in here and saying: How about a regional river basin commission?" So I said, "Well John will you proceed on that. I understand what you are saying." He said, "I would be utterly against it. We have every conceivable difficulty between the federal government, the state government, the municipalities, the counties, of which, as you know, we have thousands." And his point, of course, is true. In the present reconstruction of governmental relationships we are back where I was with my early discussion with John Dickinson.

The New Federalism is the new name. Remember when you were sitting in the Association of State and Interstate Water Pollution Control Administrators' (ASIWPCA) session in Baltimore a month or so ago and Governor Matheson from Utah was rehearsing this new concept philosophically. As I was listening to him I said to myself, "Is that a new concept or is that old wine in a new bottle, because you are going after the money." It is not really true that we are creating a new point of view. But the issue is still up, not only between the federal government and state governments, but as you know, because of the hostility, also between the states and the municipalities. When Reagan suggested that they give all the money for block grants to the states and then they allocate as they see desirable, every municipality in the U.S. said, "What? We won't get a nickel." There is a certain amount of justification in that worry, because, strange as it may seem, in a tremendous urban development in the U.S. most legislative assemblies are still dominated by rural people. They have no truck with urban areas, whether it is the Montgomery County suburbs of Washington, D.C., or Baltimore City. The experience has been that when you go to them at this next lower level, you have a battle. According to what he has said recently, President Reagan is going to give those block grants directly to the municipalities; that is his last word. Whether it sticks I don't know.

EASTMAN: In revenue sharing also, part of the money goes directly to the municipalities.

WOLMAN: That is right, because the municipalities said: If you give it to the state legislature, by the time we get any of it, the rural counties (for example in Maryland, Carroll County, Allegany, and Garrett) will take their slices first.

Let me come to Mr. Cotton, the first ICPRB Director. My recollection of him is extremely fuzzy. The reason is, he was not a very dynamic individual. I know very little about his history. As you say, there isn't any documentation on him. I don't know where he came from; I don't know what became of him. This is about all I can say.

EASTMAN: I will have to inquire, I guess. From someone I heard that he came from Pennsylvania.

WOLMAN: Your best bet would probably be Marion Clawson. It was his day and Marion knew everybody. You might check his book, which I mentioned previously, because it is exactly what you need and want and Marion has done a superb job. He did an analysis of the National Resources Board, a diagnosis of its failure and, of equal importance, a very intelligent analysis of whether we now need another one.

EASTMAN: That is interesting because, as you may have been reading also, the President is terminating the U.S. Water Resources Council and has established a Cabinet Committee on Natural Resources made up of the Secretaries.

WOLMAN: I am allergic to federal resources groups on policy making consisting of cabinet officers, because they don't go anywhere. After all they are a busy collection of people. My recollection of a similar arrangement during the 1930's when they had a cabinet group, which I think Interior Secretary Ickes chaired, it was impossible to get them together in very stressful periods such as we have now. The result of which was that the Secretary designated you, if you were the Deputy Secretary or if you were Director of something or other in the Department of the Interior, but you couldn't get any policy out of that kind of individual. And if you did, you couldn't get a vote that stuck. When you got back to Secretary Ickes or Secretary Wallace or somebody else, they said, "Well first of all, let it sit here," and it might sit there forever. I am allergic to that kind of group. The U.S. Water Resources Council has been fairly successful in productivity in their period of existence which has always been difficult. They try to do an intelligent job under the umbrella of a national water policy. As you already know, I am accused of having shifted my personal philosophy about a national water policy, a complete reversal. I may have stated before and I would simply repeat it in one sentence here: You are never going to get a national water policy. You know that, because you deal with them all the time, but perhaps not in detail. There are tremendously strong personalities in the U.S. Senate and House of Representatives. They don't want a water policy! We get water policy on a national level through many legislative actions. I find all these move upward toward sanity, but never completely. That is what I have said, in my reversal, in the American Society of Civil Engineers, American Society of Mechanical Engineers, American Water Works Association, and in the Engineers' Council. The last was created when I was the Chairman of the National Water Policy Committee. I appeared often before Congress and did not get to first base. Logic and wisdom were in what the Associations wanted. Logic and wisdom is not frequently very convincing to Senators.

EASTMAN: I think what is expedient is more convincing.

WOLMAN: I could see behind their reaction. They said, "Yes that is very interesting. Yes, that is very sensible." They never said, "No, I don't want that," but they don't want a policy which deprives them of their power of decision making. It will continue that way forever. If I ask for a national water policy, I am asking them to behave in a nonpolitical fashion. It isn't going to happen.

EASTMAN: And certainly it is contrary to what they think is basically best for their constituents.

WOLMAN: Our water resources group, and I list myself and you and those at that level, they look at it and say, "Gee whiz, what about the Arizona water project?" Our National Water Committee in the 30's unanimously turned that down everytime it came before us. I have a picture in my house of President Johnson giving me one of the multiple pens when he signed the bill authorizing the Arizona project. The Senator from Arizona who spent a lifetime pushing the project, was over 90 years old then. Senator Carl

Hayden had finally won his point. It took him 30 years to get his project and it is still not a wise one. The same occurred with the Trinity River project in Texas. We turned it down a number of times in the ten years in which I operated. But you have that kind of situation. Texans never forgot it and it has probably been authorized.

EASTMAN: Of course there is also the Tennessee-Tombigbee Project.

WOLMAN: I was once in Winthrop Rockefeller's office in Little Rock before he was governor. He was then chairman of the Development Commission for Arkansas. He asked Luna Leopold of the U.S. Geological Survey, the late Ed Ackerman with the Carnegie Foundation, a marvelous young man, and me to come down and spend a couple of days with them to review the water situation and make our recommendations to Governor Faubus. He was the most amazing character; I sat next to him at dinner when we came down because he gave us a nice dinner. We lived at Mr. Rockefeller's estate in the northern part of the state, which was fabulous. My wife was with me because I was coming up from somewhere else and I was going from there to Chapel Hill, N.C. We had an apartment in his house, a living room, a bedroom and a private bathroom, completely for ourselves, shut off from the main house. He was a most cordial host. In any event, the three of us, in writing, recommended against the Tennessee-Tombigbee Project.

EASTMAN: And it is still rolling along.

WOLMAN: Of course the argument now is: "Good God, we have put millions of dollars into the project, so we can't stop now!"

EASTMAN: In connection with the Tennessee Valley Authority (TVA), I have a personal interest. I received my civil engineering degree at the University of Missouri and the Dean of Engineering was Dr. Curtis, who I think was on the TVA board for a number of years.

WOLMAN: He was on a series of boards actually. I always had to appear before the board when I was down there. The board would say, "Well, we would like to have a session with you; what do you say about this and what do you say about that?" So I began with the Board chaired by A.E. Morgan. You know the fight, and then David Lilienthal succeeded Morgan, as a matter of fact, pushed Morgan out, which was a tragedy described in one of Morgan's books. Morgan was appointed by Roosevelt and they were very old friends. Roosevelt literally dismissed him and never told him till he read about it in the newspaper. Morgan was in a battle with Lilienthal, who won. It had to do with a detailed question of where the emphasis was going to be and Morgan was against a great deal of that. I often said that Senator Norris who drafted the TVA bill would turn over in his grave as to what TVA has today become.

The Norris bill created the TVA for the general development of the river, with an incidental development of power. It is now the largest power utility in the U.S. The other purposes are purely incidental, a little

fertilizer, a little agriculture and so on. In other words, it is the exact reverse of Senator Norris's purpose and philosophy.

EASTMAN: In connection with the establishment of the Interstate Commission on the Potomac River Basin, in its early days while you were serving as one of the presidentially appointed Commissioners, I noticed that at least a considerable amount of the emphasis seemed to be to assist, encourage and promote adequate legislation in the states. About 1946, the then Governor of Maryland, who was O'Connor, appointed members of the Maryland State Water Pollution Control Committee to study and recommend how pollution control could be advanced in Maryland. At that time Paul McKee was named Executive Secretary and from that committee came recommendations which resulted in the passage of legislation, I think a year later, creating what was called the Maryland State Water Pollution Control Commission. Also at that time there was no such state commission in Virginia. I ran across a reference to the fact that you spoke at an ICPRB meeting in Virginia, I think it was in 1944, outlining the desirable elements of water pollution control legislation. Not too long after that they created the Virginia State Water Control Board.

WOLMAN: Now you're right about the Interstate Commission's policy. It was definitely to be a catalyzer. As a member of it I could justify that feeling. I had a very strong feeling then, as now, that an Interstate Commission could do its greatest job by being the prod, the stimulator, the catalyzer of the states, rather than succumb to the temptation to do a great deal of this yourself. We stuck by it and you have fairly well. We were confronted, as of course I know you have been through most of your operations with the Commission, with the eternal degree of impatience with that sound function, because it always moves too slowly for your purposes. You not only say that in your reports and in your actions, but you have stuck pretty close to the principle. But it is not really your obligation to do it. The temptation is great to do it. You say, "Well good God, what are you going to do at Cumberland, we've been at it twenty, thirty years. Why don't I go to either the state or the federal government and say I'll build it," rather than sitting around and waiting for that slumbering part of the State of Maryland or Virginia to do something. We discussed that, as I know your Commission has internally many, many times, and I think it is the better part of wisdom. I have said this quietly, not in public statements about EPA, before Reagan became the President. When I was asked what is your criticism of EPA, I said, "My criticism of it is simple. First EPA ran too fast, and second, EPA didn't consider the customers." I said, "Its that simple." I know the reason for haste, and EPA could justify the reason, but not convincingly. EPA had an idealistic purpose and was going to prove that EPA could do the job in twelve months. And what EPA proved was a series of wrecks. In other words, you have a collateral operation, a kind of lesson, which fits within the principle of the Potomac group, the Delaware one, that you can see the problem, you can see the solution, but you can't match the two in a hurry.

EASTMAN: Patience is an outstanding virtue.

WOLMAN: Yes, I say it's patience which they didn't have. It's interesting, as we mentioned the last time, that in their confession in the Water Pollution Control Federation eight-page interview the Congressional staff made that clear. It's a frank acknowledgement that they thought they had all the answers and could do it quickly. The interesting thing is, of course, that not really more than one out of the six had any experience in the waste water field.

EASTMAN: Oh, the non-lawyer didn't actually have any background in water pollution nor really any particular experience with the subject.

WOLMAN: So you had a collection of people who wrote the water pollution control amendments, and handed them to Congress where a good percentage (who) knew even less. You take another look and of course you had a couple of years of disaster. Incidentally, it's a very expensive disaster. We've spent billions of dollars.

EASTMAN: And now a new group is reorganizing the whole effort and trying to find a scapegoat. Changing the subject, part of your effectiveness is due to your extraordinary ability as a public speaker. What is your secret?

WOLMAN: On the subject of public speaking, I said long ago, I had better learn how best to do it by observing public speakers. I also had a year, of course, in public speaking at the JHU.

EASTMAN: You did? Were you an undergraduate?

WOLMAN: Yes, an undergraduate. It was given every year, optionally, and I took it. The teacher who taught it was the worst public speaker I ever knew, but he knew what you ought to do. He knew what the principles were. Then forever, for the rest of my life, I watched. The best speakers, the mediocre ones, the lousy ones, and then began a fairly detailed examination of the printed record. In Woodrow Wilson's autobiography he talks about public speaking. So does Franklin Roosevelt. So do the other great speakers. They have an art and it was an acting art. But they had also deceptions. I've listened to some that had the art, but didn't have any deception.

EASTMAN: That's true. Getting back to the Potomac. There is a project that I think you were as close to as anybody, and that's the Savage River dam and reservoir, which I think was started before World War II.

WOLMAN: Is that in the record? It should be. I was involved with the Savage River very early. In the late 30's, I had been tramping over most of the state of Maryland either on foot, by car or whatever. There was a period in which I pride myself in knowing every foot of it. I have gone in the Savage River forest personally. It was an experience incidentally which stemmed from a non-water resources problem. That had to deal with the effort in the earliest Franklin Roosevelt's period to salvage people

who couldn't make a living in the days of the depression. That would be 1933, or somewhere in there. I was wandering around the state. I got into the Savage River forest and encountered families living there who had never been seen probably by anybody, certainly not officially. In my trudging around that beautiful forest, I encountered them. They lived on literally nothing. The reason I say nothing is I had lunch, and I will never forget it, with a family in the Savage River watershed, a father, a mother and two relatively small children. I viewed the menu--it was potatoes and a piece of what they described as apple pie, which would not be something that you would get at the Watergate Hotel. I talked with the mother about it. They were renting a scrub plot of land in which they could grow potatoes and the like. I said to her, "What do you eat for breakfast? What do you eat for dinner?" The answer was, "The same." This would be interesting to you as a human endeavor. We moved all those people out of the Savage River watershed, as a Works Progress Administration (WPA) undertaking. We moved them into the Garrett County urbanized area and some into another area, either on a plot of rural ground where they could grow something or made a job available for them with WPA money, doing something more than useless, but not too great. I went back there to look it over again and all of them had returned to their old homes.

That was the experience almost every place. I talked with the same family and learned from them the reason; they'd been dislodged from home, and that was home, and we shouldn't forget that. That was where the generation had been. They picked themselves up lock-stock-and-barrel and when they got through with the WPA, they went back home. In doing so, I then had a dual reason for development in the area. At the same time an expanded Cumberland needed more water. What I normally do--I usually go to the safe, in a city, for example Cumberland, and say, "Please open the safe and let me see what old records you have." I found a report on the future water supply of Cumberland written when I suppose I was a freshman at the JHU by James H. Fuertes. Now as an elder, Paul, do you remember him?

EASTMAN: No, I don't.

WOLMAN: Fuertes was one of the great water engineers of the U.S., with his base as a consultant in New York City. They employed him at the turn of the century. In his report, Mr. Fuertes recommended the development of the Savage River as a future water supply. I was still a state official, if you remember, simultaneously. Conflict of interest wasn't a law, then, so I was holding a dozen jobs at various levels. As a state official, I was pushing Cumberland to get an additional water source. Cumberland agreed and since it was Public Works Administration (PWA) money, as head of the Maryland PWA program, I put the money I think at that time into the design. Its construction began in PWA. As history, I could give you the story, as usual, in one or two sentences. We had a war, we had the depression. We had to stop everything during the war and in the post-war, we had a Korean episode. The Army Corps of Engineers, which had the responsibility, was on and off the project, and a Savage River Commission was created, I think with the sanction of Mr. Roosevelt. I've forgotten the name of the

chairman, who was from Cumberland, a very old friend of mine. He was a very useful and successful apple grower, and had a lot of money. He became interested in this and was appointed the Chairman of the Savage River Commission to build the dam.

EASTMAN: This was before World War II?

WOLMAN: Yes, before the war.

EASTMAN: With PWA money?

WOLMAN: Yes.

EASTMAN: Assigned to Maryland?

WOLMAN: Yes. The Corps did the design, and I think began with bulldozers at the site, and began to dig, and then had to quit, for two reasons: first of all, you didn't get any money out of Washington at that time, and second, you weren't going to build the Savage Dam in the middle of the war. This went on and on. I would go up and take a look at it periodically. In between World War II and the Korean episode, they began to put the earth fill in and only got so far, with so many cubic yards, and then quit again. The history was so leisurely that I was very amused by it for this incident. My friend, the chairman, and I waited maybe twenty years before the dam was topped and began to receive water. In the middle of the night, I got a telephone call to inform me that water is going into the Savage River reservoir. I said to him on the telephone, "That is a fascinating thing. A letter would have been just as good, because I've been waiting roughly twenty years." But he was so enthusiastic, he lived to be able to do that, and that is its history. Then the question came up which is now in your hands as to how to use its waters to maximum advantage.

Now, it's 1981 and you have an impoundment that began in the thirties, that's not too long, 50 years. Now we're discussing again, first, how should we operate it, and second, who is to pay for it? To me, of course, these are fascinations of this game.

EASTMAN: Some of the early records of the Commission mentioned that the Commission was strongly endorsing and constantly promoting the authorization for the Corps of Engineers to pick up and complete that project.

WOLMAN: They had to do it, as they often do, and somewhere in my record there is a recording of the increase in cost.

EASTMAN: Probably it was a big increase.

WOLMAN: Yes and it's astronomical, and that was before inflation. I'm reminded of it by the newspaper item this morning when in the Boston area they've decided not to go forward with the second nuclear power plant. It

rose to two and a half billion dollars in cost, five times the original. They've decided not to build it, because of the administrative red tape.

EASTMAN: You are probably aware that last Sunday the Bloomington Dam and Lake on the Potomac North Branch was dedicated.

WOLMAN: No, I wasn't. The reason I wasn't is as I said to you, I just got back at midnight last night. Newspapers are piled up here. My secretary saves all of them for me.

EASTMAN: And it of course has been filling slowly since July.

WOLMAN: For Bloomington, you would have a better idea of its initiation. And I don't remember how far back that was.

EASTMAN: It was authorized in 1962.

WOLMAN: Part of my testimony to Congress regularly is, when asked, "Why is it that we haven't got it?" I say, "The answer you ought to know better than I do. You never gave them enough money and you always turned around and said, 'Well gee, its only half finished, or one-third finished or one-quarter finished.'" Of course they are astonished. It may be a new Congress or a new committee.

EASTMAN: Briefly I'd like you to comment on some of the work that Johns Hopkins did. I think one of the earliest research studies the Interstate Commission helped support was up here at Johns Hopkins.

I believe it was under your supervision. Ralph Fuhrman, who was then Superintendent of the District of Columbia Blue Plains Sewage Treatment Plant came up here and studied the North Branch of the Potomac below the Westvaco pulp and paper plant.

WOLMAN: That is right. I discussed with Ralph some choices. That was my choice. Ralph thought that it would be a very good research project. It was my choice because it was for a long period of time a messy environmental situation.

SHEER: Still is, but now the acid drainage from abandoned coal mines is the problem.

WOLMAN: A very messy one. And one incidentally totally familiar to me because I had worked in that region intensively with that complex. So I said to Ralph, "Why don't you find out the facts for us and put it in the record. What is the mess, its origins, and quantify the whole business." He did a good job on it. Its a function, which the Department here at JHU, and now the Joint Department of Geography and Environmental Engineering, has pursued since my day.

EASTMAN: For a long time there has been a periodic relationship of the

Commission with activities which are assisted or supported in some way by Johns Hopkins.

WOLMAN: Our pressure was that in West Virginia and Virginia and Pennsylvania, their universities should be doing the same. When I was still Chief Engineer of Maryland, the exploration of the Chesapeake was begun. I chaired the committee at JHU which brought the first oceanographer, Dr. Don Pritchard, to this place. I'll never forget my problem with the University. In the first place we had never had an oceanography unit and our Board of Trustees considered that we ought to have one. I became the chairman of the committee to establish it. I'll never forget that. When we finally decided on Pritchard, he was an old man of 28 years of age. When I went to the Academic Council, they said, "Abel, are you crazy, you're going to start this department with a Dr. Pritchard. He is only 28 years old. There must be other people older than that, and so and so." I said, "The committee is unanimous; we know he is 28 years old; we also have put it in the record for you, and I know you have read it, he's the number one person in the U.S. and I don't really care whether he is 28 or 13 years old." We got the appointment through the Academic Council and had the same problems with the Board of Trustees, "Twenty eight years old, he is a child," but of course he was appointed. The University not knowing where else to put him, he resided in my Department of Sanitary Engineering. I got to know him very well. After a year or year and one-half I wrote to the Academic Council and to the President. This doesn't make any sense, administratively. I had to put Pritchard some place and he has a desk and chair in my Department but JHU should have a Department of Oceanography. That was the beginning of the Chesapeake Bay Institute. They accepted my recommendation, created the CBI, and he did a great job, as you know. He is a marvelous individual and built CBI from nothing.

Now we have a mass of material, annual reports, from not only the Chesapeake Bay Institute, but the Virginia Institute of Marine Science, and the Smithsonian research group. It's worth examining all the data because there is a similar lesson in them as we talk about the Potomac. We have a most remarkable collection of research data which nobody has ever interpreted even though they appear in the annual reports. They are reports of research findings. If I may use an anatomical analogy, I have all the parts of the body but nowhere have they been put together so I can see it as a whole. This is a universal problem. At the same time then I had to speak to public meetings of several hundred people. I was consulting on the San Francisco Bay Study. The director of it, in the preface, points out his problem which coincides with my conclusion independently. He said, "I am giving you my report, 500 pages of beautiful material, but nowhere in it have I been able to assemble a conclusion that I can tell the legislature."

SHEER: Who is responsible for doing that?

WOLMAN: The investigators themselves ought to be thinking about it during

their studies. It is up to them to tell the answers. They are all great scientists and engineers. Their material is marvelous, fascinating to me as a technician, but their results are in separate pieces. Pritchard is an example. He made a breakthrough on the physical behavior of the Bay tidal variations. It is a great contribution, but a piece. When I come to my central question which I always direct to them, and to him. I think I understand you and I am impressed with it. Then I am at the next step; what do you want me to do?" And that was the next step in San Francisco Bay. A most recent example is when I went down to Athens, Georgia, where the EPA research labs are, to review their work at their request. The director and the deputy director are products of JHU. They are both doctors from here. They wanted me to meet with the individual department heads. They have these series of departmental groups and one is working on this stage and one on another. They said, "We have them all lined up, so you spend the morning with, say Department A, and so on." I said, "Well, what I would like to do first is have them give me maybe one hour of what they have done, some of which I have already seen. I would like them to tell me what they are doing and then I want to talk to them." They reflected on that in a way, a little bit annoyed. Then I said, "What you are doing scientifically is marvelous, but now I have to ask you the central question. At night when you go to sleep and you waken and don't quite fall asleep again, do you ever say to yourself, I wonder what all this means?"--and they didn't like it too much. Then I said to them when I was closing with each, I said, "Now I will give you my apology. You may be right. It may be that question ought not to be directed to Department A or B. It may be," but I said, "Where am I to direct the question? Your bosses in Washington are asking the same question and you are wondering what has happened because you haven't gotten the budget you need."

SHEER: But that is the whole point of research management. Obviously somebody has to be responsible for saying, one, I want this information and, two, when I get it, this is what I am going to do with it. You can't do that entirely with research. Obviously, sometimes you just go out and say, "That is interesting and I will see what I can do."

WOLMAN: And you don't want to interrupt that scientific curiosity. You don't want to do so as a managerial thing. I talked to Walt Sanders (EPA Athens, Georgia, Laboratory) about it because EPA is putting a lot of money into research and the federal government is putting in a tremendous amount. I said, "Look, I don't like the notion of a management of research in Washington, and I don't want you to tell a Dan Sheer that if he wants to go this way, he should go that way, because it is very dangerous." They said they need a manager because there is a lot of duplication, and I reply: "Don't do that; duplication is useful."

EASTMAN: An interesting thing, I don't know whether you have read it, but I just read yesterday in some newsletter, or maybe it was the Washington Post, that the new Administrator of EPA wants to have no conflicts of opinion in the reports from the Office of Research and Development. It puts out some 3,000 or more reports a year. They are trying to work out a

system in which there would be no conflicting statements in all the reports. Her first proposal is that the Assistant Administrator for Research and Development will read all the 3,000 or so reports to discover and eliminate conflicts.

WOLMAN: That is an index with which I think you are both familiar. That is an index, that I have argued about, of a lawyer's approach, which she is. Now the three new top people in EPA are lawyers.

EASTMAN: No, they have one engineer.

WOLMAN: Dr. Hernandez, but many people are saying he is too far down in the real hierarchy. They're using him as a symbol, but he won't count very much. I am sorry to hear that, but I picked this up recently. That's the problem within EPA and now even more so than the past, but you must remember that the head of EPA each time has been a lawyer.

SHEER: Which is dumb. I really think that is inane, to have a lawyer to head that agency.

WOLMAN: Well I am against it. I want a lawyer on the staff but not the head of it. And my reason is just the thing that the Post is pointing out now. A lawyer's concept and his intention is toward simplicity of evaluation. He looks at a budget, for, let us say the 3,000 research reports. He says, "My God, there has got to be some way in which they can all be compacted into one position." He doesn't want 10 positions. Having known lawyers all my life, I know they look for simplicity of administrative decision-making and that is impossible. I want to finish with that for a very interesting reason. Looking at the Chesapeake Bay as an example, Don Pritchard was employed last year to review the whole EPA Bay study. I had the opportunity to see his review, which has never been made public. He had arrived at the same criticism that I did thereafter, by his independent look. The lack of an overall evaluation and conclusion really worries me a lot. They had \$10,000,000 but they haven't spent it all. Don points out that, in the last three months, they had a residual of a considerable number of millions of dollars. They divided it all up amongst the investigators in order not to return it to the U.S. Treasury, but they could not use it all. I list that as a bad way of operating, when Senator Mathias, I know very well, is pressing for another gob of money. Essentially what I am saying is that if you are going to spend money increasingly, it's Reagan's money or none. A recent speaker indicated that Federal money is going to dry up.

EASTMAN: This was a speaker from EPA?

WOLMAN: He was a congressional chief staff advisor and a lawyer. What he was saying had some points of great usefulness. His last sentence was that it may be that the allotments for, let us say the Clean Water Act, may be zero.

EASTMAN: Back in the late 1950's and early 1960's there was a discussion in the Interstate Commission on the Potomac River Basin about its future role. I think the Commission asked you and Professor John Geyer to look into the future activities of the Commission and the necessity of any revision of the compact. I think it was 1958.

WOLMAN: We made a report to them. You may have that. I am glad for I am not so sure where I could find it.

EASTMAN: I thought maybe you might recollect some of the development of the feeling that there should be a wider range of activities taken up under the Compact.

WOLMAN: Well I would risk it, but not in any detail, because I don't remember. I do remember this. It was partly related to what I was saying about the guiding principle for the Commission from the beginning as a catalyzer. Re-examining it as we did, Dr. Geyer and I held that the definition of the catalysis needed expansion, that you could by your charter, or the extension of the charter, have increasing responsibilities. That is as much as I can say about how that happened to turn around because then I didn't have recent, long experience as to how the Commission was doing. But it was very clear that under the aegis of a stimulator you needed the opportunity for additional functions.

If you were to look at that again today and ask somebody to do it, I would make a guess, this is a very preliminary one, that who ever did that would say maybe you ought to have another function added. Because I haven't thought about it in any detail, I don't know what that would be. I hinted at it in the St. Mary's City meeting last year when I felt that as a realist the Commission did a number of things, one of which I thought needed to be undone in part. Remember when I said you split up the river, and you split it realistically in order to get some place. My feeling would be, if you took another look at it now since the 50's, you might end up with another piece of duty, and see whether you could get it through. First, through the states. The states are always suspicious of you assuming something that has been a state function, but it could be worth a crystalization of another look at functions. That is about as much as I could say. As you know, I haven't looked at the Geyer/Wolman report for a long time. There were other studies and Geyer was in on at least one or two of those along with others. It is very interesting to me, even without re-examining them, and I haven't looked at them in years. There may be a series of recommendations which ought to be looked at and revised. For example, we made a recommendation for something within the District of Columbia area of the Potomac River of a scenic nature, which from memory I think was really Johnny Geyer's feeling. It got lost by the wayside. It should be something which would be symbolic of a Potomac River development. There are other ideas like that which were examined with considerable care.

EASTMAN: I will have to go back and look at that, because there is some attention being given, particularly in the Washington Metropolitan Area and

within the beltway, to provide greater access to the river, including a walkway and bikeway all along each side of the Potomac and Anacostia Rivers.

WOLMAN: I certainly have some suggestions about it, and curiously enough what reminded me of it was not your sitting here, but since a situation in the Miami Conservancy District. A walkway along the Miami River in the Dayton, Ohio regional area has been built to interconnect with a number of the satellite and smaller communities. A low dam has been built just in the middle of Dayton. A bicycle path was also built so they could get around the shoreline of what they considered to be one of the great assets of the greater Miami district, and, thirdly, they considered an open air amphitheater within two minutes walk of downtown Dayton, along the river. All that occurred within the last 5 or 6 years. The Board of Trustees of the District has put up money, the City of Dayton put up a considerable number of millions of dollars, with some other contributors. They say a good deal of that is lost on the Potomac because of National Airport, but the Potomac is a thing of beauty in many ways.

EASTMAN: Much of the shoreline is in good shape and is accessible to people, particularly on the Virginia side because of the George Washington Parkway. The one interesting thing is that they formerly had open air concerts down on the river near the Lincoln Memorial. Allegedly, it was pollution odors that caused the discontinuance, but now the noise from airplanes would drown out the music.

WOLMAN: There are all kinds of problems. They had a great many of them in the Dayton area, which of course is a much smaller metro area. That is the base of the National Cash Register Co. which is one of the prime movers in local development. The Chairman of the Board of Trustees, under whom I work now, just 20 years, has always been, not just somebody within National Cash Register, but the President from the beginning. That of course has been a tremendous asset, because of the prestige from that relationship. They employee maybe 20,000 people.

In my reports about the Potomac from time to time, there are inklings of, let us say, novelty or imagination that ought to be revived and pushed. Among them is the very important first priority which is what you are engaged in. There also is priority number two and priority number three of the Commission, which may well be worth expanding, first, in interest, and, secondly, in duties.

EASTMAN: Now that the river is improving considerably in quality, there is the noise pollution from the airplanes landing at National Airport. Have you been down around the Lincoln Memorial lately?

WOLMAN: I live at the Watergate when I work there. The airplanes are a nuisance. What they are doing about it, they are doing with a great deal of frustration because Congress doesn't want to approve change. First of all they have cut off major flights after 11:00 p.m. Secondly, they

are trying to reduce the number of flights, but Congress is vetoing it. Why, because it is the easiest airport for Congressmen to use.

EASTMAN: Do you have any suggestions as to how to get something like that through Congress?

WOLMAN: You may remember, some of our JHU people were on the committee of the National Research Council to review the proposed expansion of New York's Kennedy Airport and succeeded in curtailing the size. One of the issues was noise, the other was the scheduling of planes. But they didn't have the Congress on their backs, as is the case with the attempts to remedy the problems at the Washington National Airport.

