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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548



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STATEMENT OF
HENRY ESCHWEGE, DIRECTOR
COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION

BEFORE THE

SELECT PANEL TO ADDRESS NONPOINT POLLUTION IN THE POTOMAC
HOUSE COMMITTEE ON THE DISTRICT OF COLUMBIA

ON

THE [IMPACT OF NONPOINT SOURCE POLLUTION ON
MEETING NATIONAL WATER QUALITY GOALS]

MR. CHAIRMAN AND MEMBERS OF THE SELECT PANEL:

WE ARE HERE AT YOUR INVITATION TO PRESENT OUR VIEWS ON
THE IMPACT THAT "NONPOINT" SOURCE POLLUTION HAS ON MEETING THE
NATIONAL WATER QUALITY GOAL OF FISHABLE/SWIMMABLE WATER BY
1983. OUR COMMENTS ARE BASED ON CONCERNS PRESENTED IN A
NUMBER OF OUR ISSUED REPORTS (ATTACHMENT 1) WHICH ADDRESS A
WIDE RANGE OF ACTIVITIES DIRECTLY RELATED TO THE NONPOINT
POLLUTION PROBLEM AND WHICH CONTAIN RECOMMENDATIONS AIMED AT
DEALING WITH THE PROBLEM.

NONPOINT POLLUTION CAN HAVE A MAJOR NEGATIVE IMPACT ON
THE BILLIONS OF DOLLARS THAT ARE BEING SPENT TO ABATE POINT
SOURCES OF POLLUTION. WE ARE CONCERNED ABOUT NONPOINT
POLLUTION BECAUSE THE EXTENT OF THE NATIONWIDE PROBLEM IS
UNKNOWN, DATA ON ITS EFFECT IS INADEQUATE, SOLUTIONS ARE

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NOT READILY AVAILABLE, AND FUNDING HAS BEEN SADLY LACKING. SIMILARLY, WE BELIEVE THERE IS LEGITIMATE CONCERN AS TO THE EFFECT NONPOINT POLLUTION MAY HAVE ON SPECIFIC COMMUNITIES AND RIVERS AND STREAMS--SUCH AS THE WASHINGTON, D.C., METROPOLITAN AREA AND THE POTOMAC RIVER, AND WHETHER THE 1983 FISHABLE/SWIMMABLE GOAL CAN BE MET HERE.

WHAT IS NONPOINT POLLUTION?

STORMWATER RUNOFF BRINGS ALL KINDS OF CONTAMINANTS INTO STREAMS, RIVERS, LAKES, AND SEWERS. THESE POLLUTANTS COME FROM FARMLANDS, FORESTS, URBAN STREETS, CONSTRUCTION SITES, AND MINES. NONPOINT POLLUTION REFERS TO SITUATIONS WHERE POLLUTANTS ENTER THE WATER IN A DIFFUSED AND DILUTED FORM RATHER THAN FROM A SPECIFIC DISCHARGE POINT. IN CONTRAST, FACTORIES OR MUNICIPAL WASTEWATER FACILITIES DISCHARGE FROM A PARTICULAR POINT AND THIS WATER POLLUTION IS CALLED POINT SOURCE POLLUTION.

AGRICULTURAL ACTIVITIES AND URBAN STORMWATER RUNOFF ARE THE MAJOR SOURCES OF NONPOINT POLLUTION. IN VOLUME, THE MAJOR NONPOINT POLLUTANT IS SEDIMENT FROM SOIL EROSION OF AGRICULTURAL LANDS. AS EROSION DEPLETES TOPSOIL FROM THE LAND, THE RESULTING SEDIMENT TRANSPORTS OTHER POLLUTANTS, SUCH AS PESTICIDES AND EXCESS NUTRIENTS, INTO THE WATERWAYS. RUNOFF FROM LANDS USED TO SUPPORT LIVESTOCK ALSO CONTRIBUTES LARGE QUANTITIES OF NITROGEN AND PHOSPHORUS. URBAN RUNOFF

CONTAINS ALMOST ALL TYPES OF POLLUTANTS, SUCH AS SUSPENDED SEDIMENT, TOXIC MATERIALS, OIL AND GREASE, AND ANIMAL LITTERINGS.

OTHER SOURCES OF NONPOINT POLLUTION ARE ACID MINE DRAINAGE, FORESTRY ACTIVITIES, AND CONSTRUCTION SITES.

HOW SEVERE IS THE PROBLEM?

WE DO NOT KNOW HOW SEVERE THE NONPOINT PROBLEM IS. ALTHOUGH ESTIMATES VARY WIDELY, THE GENERAL CONSENSUS IS THAT NONPOINT POLLUTION IS OFTEN A SIGNIFICANT PROBLEM AND, UNLESS IT IS SOLVED, MANY RIVERS AND LAKES WILL NOT BE ABLE TO MEET OUR NATION'S WATER QUALITY GOALS. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) ESTIMATES THAT NONPOINT SOURCES OF WATER POLLUTION ACCOUNT FOR MORE THAN HALF OF THE POLLUTANTS ENTERING NATIONAL WATERS. THE COUNCIL ON ENVIRONMENTAL QUALITY ESTIMATES THAT POLLUTION FROM NONPOINT SOURCES, SUCH AS FEEDLOTS, LANDFILLS AND AGRICULTURE, ARE 5 TO 6 TIMES THE POLLUTION LOAD FROM MUNICIPAL AND INDUSTRIAL POINT SOURCES. THE COUNCIL BELIEVES THAT EVEN IF MUNICIPALITIES AND INDUSTRIES WOULD MEET MINIMUM TREATMENT LEVELS FOR POINT SOURCES, THE 1983 WATER QUALITY GOAL WOULD NOT BE MET BECAUSE OF NONPOINT POLLUTION. TO DESCRIBE THE MAGNITUDE AND IMPACT OF THE PROBLEM ON A NATIONAL BASIS IS VERY DIFFICULT, HOWEVER, BECAUSE STATES VARY IN CLIMATE, SOIL, AND RAINFALL--ALL OF WHICH AFFECT THE AMOUNT OF POLLUTANTS ENTERING THE WATERWAYS.

IN 1977, WE DID A STUDY TO ASSESS THE IMPACT OF NONPOINT SOURCES IN ACHIEVING WATER QUALITY GOALS. IN THAT STUDY, NONE OF THE STATES WE VISITED, WHICH INCLUDED MARYLAND, HAD COMPREHENSIVE DATA ON THE IMPACT AND EXTENT OF NONPOINT SOURCES. ALTHOUGH EPA SAID THAT NATIONALLY SUCH DATA IS NONEXISTENT, EPA IS NOW OBTAINING MORE DATA ON THE IMPACT AND EXTENT OF NONPOINT SOURCE POLLUTION UNDER ITS 208 PLANNING PROGRAM, BUT THE DATA IS STILL NOT COMPREHENSIVE.

WHY DON'T WE KNOW MORE?

RESPONSIBILITY HAS BEEN DELEGATED TO STATE AND AREAWIDE PLANNING AGENCIES TO DEVELOP AND CARRY OUT NONPOINT SOURCE CONTROL PROGRAMS. LITTLE HAS BEEN ACCOMPLISHED, HOWEVER, BECAUSE MAJOR EMPHASIS HAS BEEN ON POINT SOURCES AND THE STATES AND LOCAL AGENCIES LACK THE TIME, FUNDS, AND FEDERAL TECHNICAL ASSISTANCE NECESSARY TO DEVELOP ADEQUATE NONPOINT SOURCE DATA. FOR EXAMPLE, AS OF SEPTEMBER 30, 1978, THE PRIMARY FEDERAL PROGRAM COVERING NONPOINT POLLUTION HAD CUMULATIVE OBLIGATIONS OF \$232 MILLION WHILE PROGRAMS COVERING MUNICIPAL POINT SOURCES HAD \$28 BILLION.

AUTHORITY TO ESTABLISH A NONPOINT SOURCE PROGRAM STEMS FROM SECTION 208 OF THE CLEAN WATER ACT, WHICH REQUIRES STATE AND LOCAL AGENCIES TO PREPARE AN AREAWIDE WASTE TREATMENT MANAGEMENT PLAN. SETTING PLANNING POLICIES AND PRIORITIES

AND DETERMINING HOW SECTION 208 FUNDS ARE TO BE USED IS EPA'S RESPONSIBILITY. THE PLANS MUST IDENTIFY AREAS NEEDING MUNICIPAL AND INDUSTRIAL WASTE TREATMENT FACILITIES; ESTABLISH PRIORITIES FOR CONSTRUCTING SUCH FACILITIES; AND IDENTIFY THE NATURE, SCOPE, AND EXTENT OF NONPOINT SOURCES OF WATER POLLUTION AS WELL AS WAYS TO CONTROL THEM. THE ACT DOES NOT PROVIDE FUNDS FOR IMPLEMENTING NONPOINT CONTROLS OR SET FORTH COMPREHENSIVE REQUIREMENTS REGARDING THEIR USE.

WE RECENTLY COMPLETED AN EXTENSIVE EVALUATION OF THE 208 PROGRAM, AT THE REQUEST OF THE CONGRESS, IN WHICH WE CONCLUDED THAT THE PROGRAM FELL FAR SHORT OF ITS OBJECTIVES AND WOULD NOT BE EFFECTIVE FOR MANY YEARS. SOME OF THE PROBLEMS HINDERING THE EFFECTIVENESS OF THE PROGRAM WERE THAT:

--PLANNING AGENCIES DID NOT ADEQUATELY ADDRESS MANY OF THE STATUTORY REQUIREMENTS FOR WATER QUALITY PLANNING. AS A RESULT, NONPOINT POLLUTION AND CONTROL MEASURES WERE NOT IDENTIFIED.

--WATER QUALITY DATA, SHOWING HOW POLLUTION OCCURS AND TO WHAT DEGREE WATER QUALITY WOULD BE IMPROVED AFTER ONE OR MORE CAUSES OF POLLUTION ARE ELIMINATED, PARTICULARLY FOR NONPOINT SOURCES, WAS NOT BEING OBTAINED.

--LOCAL AUTHORITIES LACK COMMITMENT TO CONTINUE
FUNDING WATER QUALITY PLANNING AFTER FEDERAL
FUNDING IS EXHAUSTED.

GAO'S 1976 REVIEW OF THE POTOMAC RIVER

ON DECEMBER 21, 1976, GAO ISSUED A REPORT ENTITLED,
"BETTER DATA COLLECTION AND PLANNING IS NEEDED TO JUSTIFY
ADVANCED WASTE TREATMENT CONSTRUCTION." IN THAT REPORT WE
BRIEFLY DISCUSSED THE BLUE PLAINS, ALEXANDRIA, AND ARLINGTON
ADVANCED WASTE TREATMENT FACILITIES LOCATED ON THE POTOMAC
WHICH, AT THAT TIME, WERE PLANNED AND UNDER CONSTRUCTION.
WE REVIEWED THESE FACILITIES ALONG WITH 23 OTHERS TO
DETERMINE WHETHER THE FACILITIES WERE THE MOST EFFECTIVE OR
EFFICIENT MEANS FOR ACHIEVING WATER QUALITY GOALS. WITH
FEW EXCEPTIONS WE FOUND THAT CONSTRUCTING ADVANCED WASTE
TREATMENT FACILITIES WAS EXTREMELY EXPENSIVE AND THAT
ADEQUATE INFORMATION FOR PLANNING THE FACILITIES WAS
NOT AVAILABLE. WE ALSO NOTED THAT FACILITIES WERE BEING
BUILT WITHOUT CAREFULLY CONSIDERING WHETHER OTHER LESS
COSTLY METHODS SUCH AS LOW-FLOW AUGMENTATION, INSTREAM
AERATION, AND CONTROL OF NONPOINT SOURCES OF POLLUTION
WERE AVAILABLE.

FOR THE POTOMAC RIVER IT WAS UNCERTAIN AS TO HOW MUCH
ALGAE REDUCTION COULD BE EXPECTED ONCE THE FACILITIES WENT
ON LINE BECAUSE OF NONPOINT POLLUTION FROM UPSTREAM SOURCES.

THE ELEMENT OF DOUBT WAS PRESENT BECAUSE OF THE COMPLEX INTERACTIONS INVOLVED IN ALGAE GROWTH IN THE POTOMAC ESTUARY AND OF THE INTERRELATIONSHIPS BETWEEN THE TYPES AND FORMS OF NUTRIENTS INVOLVED. SOME WATER QUALITY EXPERTS WE TALKED TO THOUGHT THAT EVEN IF ALL THE NITROGEN AND PHOSPHORUS FROM THE THREE WASHINGTON, D.C., FACILITIES EFFLUENT WERE ELIMINATED, NUISANCE ALGAE BLOOMS MIGHT STILL OCCUR BECAUSE OF THE POLLUTION LOADS COMING DOWN RIVER FROM UPSTREAM SOURCES. APPARENTLY, SUBSTANTIAL AMOUNTS OF SEDIMENTS (INCLUDING NUTRIENTS) ENTER THE POTOMAC RIVER UPSTREAM FROM WASHINGTON, D.C., DUE TO RUNOFF FROM AGRICULTURE AND FORESTRY PRACTICES.

IN ADDITION, URBAN RUNOFF CONTRIBUTES SUBSTANTIAL AMOUNTS OF ORGANIC WASTES, SEDIMENTS, NUTRIENTS, HEAVY METALS, AND BACTERIA TO THE RIVER. OF PARTICULAR CONCERN IS A STORM WHICH OCCURS FOLLOWING DROUGHT CONDITIONS BECAUSE LESS WATER IS AVAILABLE TO DILUTE THE CONCENTRATIONS OF THE VARIOUS POLLUTANTS ENTERING THE POTOMAC RIVER. DURING OUR REVIEW, IT APPEARED THAT LITTLE DATA EXISTED ON THE EFFECTS OF STORMWATER RUNOFF IN THE WASHINGTON, D.C., AREA. AS A RESULT IT WAS EXTREMELY DIFFICULT FOR US TO EVALUATE THE EFFECT THAT CONTROLLING POINT SOURCES WOULD HAVE ON THE POTOMAC RIVER WATER QUALITY BECAUSE OF THE LACK OF SPECIFIC INFORMATION REGARDING NONPOINT POLLUTION.

WHAT IS THE IMPACT IF LITTLE
IS DONE ABOUT NONPOINT SOURCES?

IF WE CONTINUE TO GIVE INADEQUATE ATTENTION TO NONPOINT POLLUTION SERIOUS CONSEQUENCES MAY OCCUR. OUR 1977 REPORT ON NONPOINT POLLUTION CONCLUDED THAT WATER QUALITY GOALS WILL NOT BE ACHIEVED IN MANY RIVERS AND LAKES AND, IN FACT, NONPOINT POLLUTION WILL IN SOME CASES ACTUALLY MITIGATE THE EFFECTIVENESS OF VERY EXPENSIVE POINT SOURCE CONTROL FACILITIES.

WHAT SHOULD BE DONE?

THE APPROACH TAKEN TO REACH THE GOAL OF FISHABLE AND SWIMMABLE WATERS SHOULD BE THAT WHICH IS MOST COST EFFECTIVE. IN PAST TESTIMONY BEFORE THE CONGRESS WE HAVE POINTED OUT THE NEED TO HAVE GOOD AND RELIABLE INFORMATION FOR MAKING DECISIONS INVOLVING LARGE EXPENDITURES OF FEDERAL FUNDS.

BETTER DATA ON NONPOINT SOURCES OF POLLUTION IS ESSENTIAL TO ESTABLISH PRIORITIES FOR SELECTING THOSE PROJECTS PROVIDING THE GREATEST BENEFIT FOR CONTROLLING WATER POLLUTION. WITH THE LIMITED FUNDS AVAILABLE, SOME CHOICES MUST BE MADE BETWEEN CONSTRUCTING MUNICIPAL WASTEWATER TREATMENT FACILITIES AND IMPLEMENTING PRACTICES TO CONTROL BOTH POINT AND NONPOINT SOURCES OF POLLUTION.

WITHOUT SUFFICIENT FRONT-END PLANNING TO DEVELOP MORE AND BETTER DATA ON THE SOURCES, EXTENT, AND IMPACT OF NONPOINT POLLUTION, SOUND, COST-EFFECTIVE, AND BENEFICIAL SOLUTIONS MAY NOT BE ADOPTED. SUCH DATA IS NOW FAIRLY LIMITED. IN OUR

NONPOINT SOURCE REPORT, WE NOTED THAT IT WAS IMPOSSIBLE TO MAKE RELIABLE COST-BENEFIT ANALYSES AND COST-EFFECTIVE TRADEOFFS AMONG VARIOUS POLLUTION CONTROL ALTERNATIVES BECAUSE THE EFFECTIVENESS AND COST OF ANY GIVEN CONTROL PRACTICE WILL VARY DEPENDING ON SUCH FACTORS AS RAINFALL INTENSITY, TOPOGRAPHY, SOIL, AND REGIONAL COST DIFFERENCES.

EPA'S 208 PLANNING PROGRAM IS A VEHICLE THAT CAN BE USED TO BRIDGE THE INFORMATION GAP. HOWEVER, THE 208 PROGRAM, UNLESS EXTENDED, WILL EXPIRE AT THE END OF FISCAL YEAR 1980, ABOUT A YEAR AWAY.

BEST MANAGEMENT PRACTICES ARE THE FIRST LINE OF ACTION TO CONTROL NONPOINT POLLUTION AND POSSIBLY REDUCE COSTLY CAPITAL INTENSIVE PROJECTS. THE RURAL CLEAN WATER PROGRAM, AUTHORIZED UNDER THE CLEAN WATER ACT OF 1977, HAS SIGNIFICANT POTENTIAL TO PROVIDE THE KIND OF DATA WE HAVE BEEN ADVOCATING. ALTHOUGH FUNDS HAVE BEEN AUTHORIZED, NONE HAVE BEEN APPROPRIATED.

IN SUMMARY, IT IS QUITE OBVIOUS THAT OUR NATIONAL NEEDS FAR EXCEED THE FEDERAL FUNDS WHICH ARE APPROPRIATED EACH YEAR FOR WASTE TREATMENT FACILITIES. THE TIME HAS COME FOR EPA AND THE STATES TO LOOK MORE CRITICALLY AT THE MIX OF TREATMENT ALTERNATIVES TO ADDRESS BOTH THE POINT AND NONPOINT PROBLEMS. WE WOULD EXPECT THAT MANY POLLUTION PROBLEMS, ONCE IDENTIFIED

IN RIVERS SUCH AS THE POTOMAC, COULD BE ALLEVIATED MOST COST
EFFECTIVELY BY A SUITABLE COMBINATION OF SEVERAL ALTERNATIVES.

THIS COMPLETES MY PREPARED STATEMENT. WE WILL BE GLAD TO
RESPOND TO ANY QUESTIONS YOU MIGHT HAVE.

LIST OF GAO REPORTS ON THE NONPOINT
SOURCE POLLUTION PROBLEM

- "Greater Conservation Benefits Could Be Attained Under the Rural Environmental Assistance Program", B-114833, February 16, 1972
- "Additional Actions Needed to Minimize Adverse Environmental Impacts of Timber Harvesting and Road Construction on Forest Land", B-125053, March 20, 1973
- "Progress in Meeting Important Objectives of the Great Plains Conservation Program Could Be Improved", B-114833, June 28, 1973
- "Action Needed to Discourage Removal of Trees That Shelter Cropland in the Great Plains", RED-75-375, June 20, 1975
- "Better Data Collection and Planning Is Needed to Justify Advanced Waste Treatment Construction", CED-77-12, December 21, 1976
- "To Protect Tomorrow's Food Supply, Soil Conservation Needs Priority Attention", CED-77-30, February 14, 1977
- "National Water Quality Goals Cannot Be Attained Without More Attention To Pollution From Diffused or 'Nonpoint' Sources", CED-78-6, December 20, 1977
- "Secondary Treatment of Municipal Wastewater in the St. Louis Area--Minimal Impact Expected", CED-78-76, May 12, 1978

"Water Quality Management Planning Is Not Comprehensive and
May Not Be Effective For Many Years", CED-78-167,
December 11, 1978

"Combined Sewer Flooding and Pollution--A National Problem.
The Search For Solutions In Chicago, Six Volumes",
CED-79-77, May 15, 1979