United States
Environmental Protection
Agency

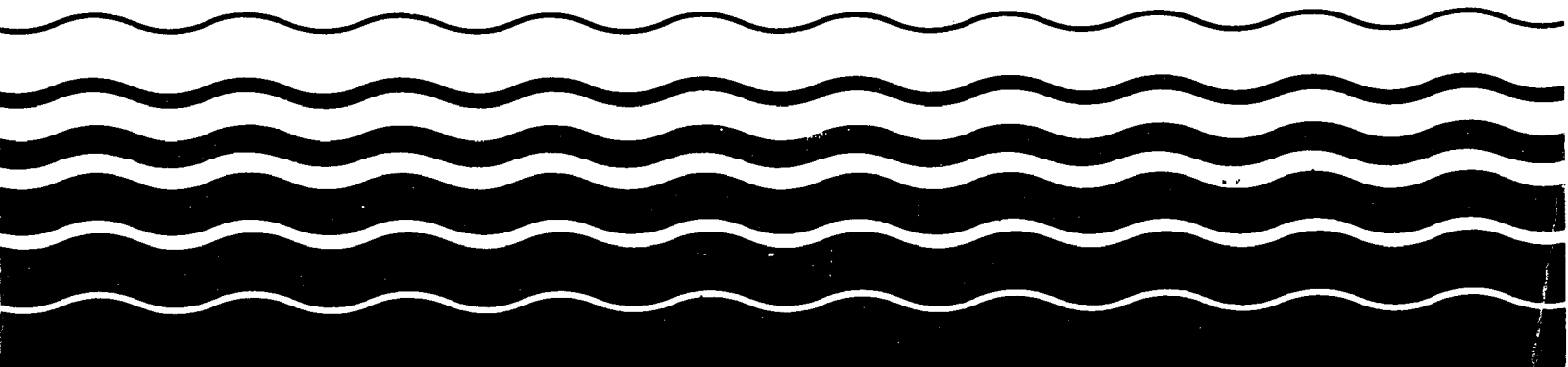
Office Of Water
(4204)

EPA 832-R-96-001
June 1996

EPA

Alternative Funding Study: Water Quality Fees And Debt Financing Issues

Final Report To Congress
June 1996



ALTERNATIVE FUNDING STUDY

Part I

FEE-BASED MODELS
FOR
FUNDING WATER QUALITY INFRASTRUCTURE

September, 1996

Prepared by

Victoria S. Kennedy
The Environmental Finance Center
The Maxwell School of Citizenship and Public Affairs
Syracuse University

for the

Office of Water
United States Environmental Protection Agency

FOREWORD

The Alternative Funding Study was undertaken at the request of Congress by the U.S. Environmental Protection Agency (EPA) in 1995, and was funded through an earmarked sum in EPA's FY95 appropriation. The project resulted from an interest in Congress to explore new financial mechanisms to enhance the capability of governments to fund mandated environmental goals, particularly the use of special Federal, State and local fees for water-related infrastructure. This interest had been reflected earlier in H.R. 2188, entitled the "Polluter Pays Clean Water Financing Bill" of 1993.

The year-long study was undertaken by the Environmental Finance Center (EFC) of the Maxwell School of Citizenship and Public Affairs at Syracuse University, under a grant from the Office of Water, EPA. The project leaders were Victoria S. Kennedy of the Syracuse University EFC, and James G. Horne, Office of Wastewater Management, EPA. The views in this report are not necessarily the views of the EPA.

This report consists of two parts. **Part One**, for which the majority of research and public consultation was undertaken, focuses solely on the potential use of governmental water-related fees to supplement existing investment in wastewater and drinking water facilities, as well as watershed protection and non-point source improvements. By "fees", we mean special monetary charges for particular activities, products or services, such as utility user fees, permit fees, effluent fees, chemical feedstock fees, and "green" product fees.

Part Two centers on water-related debt financing issues, such as the use of tax-exempt bonds by State Revolving Funds and the private sector, for which work occurred towards the end of the study process as a result of interest expressed by project participants.

The study methodology is somewhat unique. Not only was extensive research undertaken on numerous fees and debt financing topics, but the resulting ideas were reviewed and discussed in an open arena by the many "stakeholders" who might be affected by any future fees or financing revisions. Since EPA sought to stimulate thinking and debate within as broad a public forum as possible, four day-long public meetings were held in the summer and fall of 1995. The three panel discussions on fees, and a fourth meeting on debt financing issues, included almost 150 experts who sought to reach some common ground on the topics presented to them. Summaries of these meetings are included in the report, and many of the ideas contained in the report are a direct result of discussions at these meetings.

The Alternative Funding Study project leaders wish to thank John E. Petersen and Jason J. Gross of the Government Finance Group, in Washington DC, for their many substantive insights on the fee report and for taking the lead on Part Two of this document. George F. Ames, of EPA's Office of Administration and Resources Management, organized the first public meeting sponsored by EPA's Environmental Finance Advisory Board (EFAB) and is the administrator of the University EFC network. James N. Smith, Executive Director of the Council of Infrastructure Financing Authorities (CIFA), organized the last three public meetings, and prepared meeting agendas, selected expert panelists, and reviewed written documents. John Whitlock of the Maxwell Center of Advanced Public Management, Syracuse University, provided professional facilitation for the last three public meetings.

In addition, we gratefully acknowledge the major analytical contributions of Professor Stuart I. Bretschneider and Myung Jae-Moon of the Maxwell School at Syracuse University for their analytical work in designing all quantitative fee estimates. Mr. Moon and Ronda Garlow of the Maxwell School also provided important assistance in all phases of document preparation.

TABLE OF CONTENTS

FEE-BASED MODELS FOR FUNDING WATER QUALITY INFRASTRUCTURE

EXECUTIVE SUMMARY

The Alternative Funding Study has been prepared by the Environmental Finance Center at the Maxwell School of Citizenship and Public Affairs, Syracuse University, under a grant from the Office of Water, U.S. EPA.

The Study evaluates two distinct sources of revenue to augment capital investment in local wastewater and drinking water projects. First, and primarily, is the use of special, dedicated, Federal, State and/or local "fees" to supplement existing direct subsidies from general funds. A secondary focus is on the expanded use of debt financing, including indirect borrower subsidies through tax-exempt bonds, and greater private investment.

This document is Part I, "Fee-Based Models For Funding Water Quality Infrastructure", and focuses solely on fees, where most of the work of overall study was undertaken. A companion document, Part II, "Debt Financing Strategies for Funding Water Quality Infrastructure", centers on other financing topics. A third alternative, to reduce the demand for project financing in the first place through regulatory changes and pollution prevention, was not addressed specifically, notwithstanding the substantial interest in such reforms.

By "fees", we mean those financial charges for a particular activity, product or service, such as water utility customer user fees, environmental permit fees, effluent fees, chemical feedstock fees, and "green" product fees. Other fees or taxes such as "sin" taxes, with no direct relationship to environmental services or damage, are mentioned briefly.

Assumptions

Four assumptions guided this project. First, all fees are designed primarily to raise revenue, at a national target level of $2-3 billion annually, as opposed to changing polluting behavior. Second, all fee revenues must be dedicated solely to financing water-related infrastructure, both drinking water and wastewater, as well as non-structural improvements such as non-point source controls. We term such fees "capital-generating" fees. Third, new fees would supplement ongoing Federal appropriations such as State Revolving Fund (SRF) capitalization grants.

The fourth assumption is that fee-based funding programs, while possibly national in scope, need not be primarily "Federal" in program initiation, collection, and "delivery redistribution" decisions. By "delivery", we mean the disbursement of fee revenues to local projects. "Redistribution" refers to revenue allocation policies, or "who" receives funding, as distinct from "what" is eligible for funding.

Public Consultative Process

Since EPA's Office of Water sought to stimulate thinking and debate within as broad and open an arena as possible, four day-long open meetings were noticed in the Federal Register and held between April and October, 1995. These sessions served as "reality checks" on interim Syracuse University research products, and as forums to provide input from the constituencies or "stakeholders" affected by any future fees.

The three panel discussions on alternative fees were held in Crystal City, Virginia on April 25, at the Airlie Center in Warrington, Virginia on July 19, and in Denver, Colorado on September 21, 1995. A fourth was held in New York City on October 10, 1995, on debt financing issues. All four meetings were facilitated and panel votes were taken at the last three.

In all, over 100 persons attended the three fee meetings either as selected "expert" panelists or as interested parties, and a total of 20 States and many more localities were represented. The opinions voiced are referred to frequently throughout the text of the report. Thirty-two persons were present at the debt financing meeting, representing eight States.

In addition, extensive data were collected on existing State and local fee programs, to help verify which types of fees might be most workable and acceptable.

Fee Topics and Concerns

Three major questions, or design components, form the basis of this report. These are:

1. What criteria should be used to evaluate the potential effectiveness of water quality fee-based funding systems?

2. What specific types of fees are workable and acceptable?

3. What water quality policy fee-based funding goals, especially redistributive goals, should be pursued?

Several important caveats are noted. Many fee meeting participants preferred other investment approaches, such as the traditional appropriation process, new Federal-State cost sharing mechanisms, and expanded use of tax-exempt debt. Others did not support increased reliance on fees at present, or within any context that was "Federal". Support for increased State and local flexibility, affordability-based programs, regulatory reform, and pollution prevention was very high. Many participants also sought to include solid waste eligibilities.

A. Fee Evaluative Criteria

Among the most important criteria to use in selecting fees and delivery mechanisms are:

a. Public Support or opposition influencing potential legislative adoption of fees;

b. Revenue Size and Predictability in estimating and auditing fees to meet the desired revenue target, and ensuring fee dedication to originally intended uses;

c. Equity and Impacts, or fairness and minimal economic impacts on those who pay fees; equity may also refer to fee revenue allocation systems;

d. Close Cost/Benefit Linkage or relationship between "who pays" and "who benefits" from fees;

e. Collectability, or the administrative ease, time, and cost of fee collection systems;

f. Meeting Environmental Goals using financial delivery institutions and techniques which address criteria for prompt, leveraged, affordable and flexible funding, and result in consensus on redistributive funding objectives.

The study concludes that long-term fee dedication remains a serious, practical issue. Although Federal experience with fee-based funds such as the Highway and Superfund Trust Funds has been mostly positive, subjecting such accounts to periodic outlay restrictions for deficit reduction is a grave concern. State experience has been more uncertain, with dedicated funds actually used for non-dedicated purposes on occasion. While Federal authorization of State programs, such as SRFs, may help safeguard funds, this must be weighed against the apparent greater acceptance of State-initiated fees.

Fees clearly may result in positive behavioral modification, such as greater water conservation, effluent reduction, or product substitution. While many environmental groups support the fees mainly as market-based incentives to reduce pollution, most stakeholders argued that substantial behavioral changes will undercut revenue goals. Thus, capital-generating fees should be structured and promoted primarily for their revenue potential.

The majority of fee panelists agreed that "everyone should pay a little." Fees that are broad-based and low level (not too costly) are preferred over more "particularized" economic sector fees, such as certain industrial fees. Reliance on a strict "polluter pays" principle for capital-generating fees, although sometimes more equitable, was not widely supported.

Strong agreement was evidenced for use of water-related fees, as opposed to non-environmental fees such as "sin" taxes, lotteries, or general sales set-aides. Dedication of pollution fines and penalties was not supported lest it encourage "bounty hunting" to meet revenue targets. Permit fees should remain dedicated to State operating budgets, not to capital formation.

Fees should be designed so that those who pay them clearly understand the environmental uses to which they are put. Fees could be dedicated specifically to regional water bodies or watersheds, such as current fees in the Chesapeake Bay area.

Locating fee collection and institutional delivery mechanisms at the same level of government is desirable. Caution should be exercised in selecting fees which are to be collected by lower level of government but then must be rebated to a higher level for subsequent redistribution.

B. Sources of Fees

Water-related fees fall into five categories: (1) effluent or discharge fees; (2) water use and other resource "severance" fees; (3) permit and other administrative service fees; (4) chemical feedstock fees; and (5) "green" product sales fees on products adversely affecting water.

The most widely used State water-related fees are permit and other administrative service fees now used by most States. Next are public water supply withdrawal fees (at least 11 States) and direct water use fees (at least 7 States). State use of water-related green product fees compared to solid waste green fees is not widespread. At least five States use pesticide and fertilizer fees, and three levy steep industrial and municipal effluent fees. Presently, no States use chemical feedstock fees. Both effluent fees and green fees are used extensively in Europe.

The amount of State "capital-generating" revenue raised is still very modest, currently under $200 million annually. Most fees are used to offset State environmental agency operating budgets. Most mineral severance fees support general State budgets. Almost one-half of the $200 million comes from alcohol and tobacco taxes in three States, general sales tax set-asides in two States, and real estate transaction fees in one State.

Within the limited context of all water-related fees examined, two fees received the most support, as demonstrated by the "multi-vote" or "revealed preference" technique used at Airlie and Denver. Strong opposition also was voiced. These are: **(1) public water supply withdrawal fees, and (2) "green" product fees**. Both are broad-based, water-related, and comparatively low cost (depending on the revenue target), since they are applied to a wide population base and relate to the use or degradation of water. Both represent add-ons or "surcharges" to existing fees or taxes, and could use flat, simple rates.

1. Green Product Fees

Slightly more support was evidenced for green fees (i.e., 98 multi votes) than for public water supply withdrawal fees (73 multi-votes), in part because some votes included solid waste green fees. It should be noted that industry was less well-represented at the fee meetings compared to local utility representatives, all of who strongly opposed the latter fees.

Green product fees are most efficiently designed and collected at the Federal level. Federal precedents are the gasoline tax, telephone and cosmetic excise fees. Using U. S. Commerce Department sales data based on Standard Industrial Codes (SICs) published every five years, a flat percentage fee rate of 4.0% of gross national sales receipts on the following hypothetical fee base by SIC yields $2.8 billion annually:

Foods (cooking oils)	Synthetic dyes, pigments
Paper (toilet paper)	Fertilizers, pesticides
Soaps, detergents	Printing inks
Polishes, sanitation goods	water treatment compounds
Toilet preparations	Plumbing fixtures, copper pipe
Painting products	Photo chemicals

Fee collection would be similar to that of the gasoline tax supporting the Federal Highway Trust Fund. Here, the Internal Revenue Service collects fees directly from gasoline producers, who are reimbursed by the fees which everyone pays at the pump. Federal green fees could be collected from end-product manufacturers, and are highly regressive.

Individual State green fees could be collected at the cash register or time of sale, such as State alcohol, tobacco, automotive and luxury taxes. Unilateral State fee programs may result in "pollution havens."

Many practical concerns about the simplicity of green fees remain. Currently, little empirical data exist by which to document the suspected toxicity of products targeted for fees. This results in a significant **selection bias**, and makes it difficult to apply graduated, more equitable rate structures, for example, higher fees on toxic solvents.

Concerns also emerge for revenue stability. Fee rates must be adjusted periodically as new products come on line, or are discontinued. Few data exist on the elasticity of consumer demand, or alternative "safe" product substitutes. How to treat foreign imports and exports must be determined.

Importantly, the hypothetical annual revenue target of $2.8 billion cannot be achieved without a very wide array of products in the fee base and, secondly, only is reached at a relatively steep flat fee rate of 4.0% of national sales, especially for agricultural chemicals which would contribute $.7 billion a year.

2. Public Water Supply Withdrawal Fees

The public water supply withdrawal fee could be levied on all public and private water utilities, and/or customers, through regular water bills, and measured in cents per 1,000 gallons produced, "sold" or consumed. This fee is less universal than green fees, since it **excludes direct, self-supplied water**, both surface and groundwater. Direct water use accounts for over 87% of all water use in this country, and is largely unpermitted.

Local collection through volume-based surcharges on residential, commercial and industrial water bills would be fairly straight-forward. The preferred method of State collection, which avoids unpopular local fee rebates, could be based on State assessment of drinking water production or sales.

Since better data exist for regulated water consumption than green fees, the regressiveness of flat fees might be avoided by offering lower rates to certain customers, for example the poor and elderly, or higher rates for industrial/commercial users requiring very clean water like manufacturers of computer chips and bottled drinks. Ascending block rates could be used for water conservation, and declining block rates for economic development objectives.

By setting a national revenue target of $2.8 billion annually, and calculating based on 1990 U.S. Geological Service public water supply withdrawal estimates, we can define a flat rate as:

1995 Rate: $2.8 billion/15.01 Trillion = **$.185/1000 gallons**

This translates into an average individual cost of $7.04 to $9.50 per year, based on average use of 104-140 gallons per day. Thus, annual household water bills would increase by slightly over 10% for an average family of 2.64 persons.

Supporters of the public water supply withdrawal fee noted that drinking water is the cheapest of all utilities, is still underpriced in many communities, and should reflect the "true cost of service."

Opposing positions were very strong. Rate increases could undermine public support for new treatment, particularly if local fees must be redistributed. Affordability concerns were high. Water rates already were indirectly regulated through Federal mandates and, for investor-owned utilities, directly regulated by State Public Service Commissions. There was little support for Federally-imposed water withdrawal fees.

3. Other Fees

Other fee candidates are presented briefly in this report, but attracted few votes at the fee meetings.

One exception is fees which might be administered within individual, sub-State watersheds. "Surrogates" for watershed protection fees are many, including agricultural-related fees, water and sewer construction and hook-up fees, and development impact fees. In addition to raising revenue, such fees might help control non-point sources, encourage small system regionalization, and discourage development which negatively impacts watershed ecology.

Another candidate is the direct, self-supplied water use fee, currently in place or being considered in many States. Although the direct water use fee was not widely understood or discussed, coupling State direct use fees with State public water supply fees appears to be a fair and equitable approach to enlarging the fee base and reducing individual fee burdens.

C. The Future Federal Role in Fee-Based Funding

The study cites the advantages of using fees to supplement water quality financing. The typical long-term legislative authorization of fee programs lends certainty to infrastructure

funding. Fees provide for internal administrative costs, offer investment opportunities, and result in little contingent liability. Fees can be administered within most single governmental units, or fee functions can be shared intergovernmentally. Potential delivery mechanisms are many, such as the periodically proposed Federal Clean Water Trust Fund, or expanded SRFs.

This apparent self-sufficiency and flexibility is recognized by States and localities. Thus, the question of a future Federal role rests on the perception of whether the Federal government can initiate, collect and safeguard fee funds better than States and localities can, and whether it can gain consensus on fee revenue allocation, i.e., redistribution policy goals.

Presently, little consensus exists. While green product fees are best structured as Federal fees, and some smaller States may seek a Federal "umbrella", much ambivalence remains. Many fees are viewed as more within the purview of States and localities on political, cultural and legal grounds.

Moreover, fee revenue allocation attracts strong and pervasive disagreement. Allocation of fee revenues is particularly contentious because of the significant, and very noticeable, "donor" or "cross subsidization" concerns -- i.e., under most fee programs, some States and localities will be contributing substantially more in revenues than they will receive back. Historically, this has been true for the Federal Highway Trust Fund fee program.

To characterize this debate as "large versus small" is an oversimplification. As the fee meetings demonstrated, "equitable" redistribution of fee revenues also means that States and localities having invested heavily in the past should not be penalized by redistribution policies favoring others.

Moreover, environmental financing today not only must address who pays, but also how much and why. Affordability, is a strong theme and demands a flexibility in financial delivery modes which many panelists considered beyond any Federal capacity to administer. There is also a demand for revenue allocation which is linked to real environmental "risks", often within watersheds, bearing little relationship to the traditional State "needs" and population approach to current Federal formulas.

D. Fee-Based Intergovernmental Funding Models

The last chapter offers four generic models to illustrate how different fees, delivery mechanisms, and environmental financing policy goals might be combined. These models are designed to stimulate further policy discussion on fees, and include:

1. The Federal Green Fee Model which relies on new Federal green product fees collected by the IRS, and deposited in a new Federal Clean Water Trust Fund. The Fund would make capitalization grants to SRFs or other State funds for financing local water-related projects.

2. The Federal-State Water Use/Match Fee Model which combines State "water use" fees (both public supply and direct withdrawals) with a new 33% Federal match derived

from Federal green fees. States choose whether to participate, with the Federal match incentive offered through year-end State capitalization grants, and all fees being dedicated to water-related project financing.

3. The Voluntary State Fee Incentive Model is similar to Model 2 with three exceptions -- States may select any capital-generating fee they see fit (water-related or not), the Federal government may use fees or appropriations for its match, and the match is increased to 50%.

4. The Watershed Fee Model directs financing to specific watersheds and/or water bodies, sub-State or multi-State, and relies on watershed protection-type fees, State or local, such as special assessment district fees, development impact fees, facility construction, certification, and hook-up fees, well and septage fees, and others designed with protection needs in minds. Federal and/or State flexible cost-sharing subsidies may be offered.

Even without new fee funding systems involving the Federal government, there is every reason to believe that States will continue to innovate in establishing capital-generating fees, perhaps seeking greater revenue dedication than in the past.

FEE-BASED MODELS FOR FUNDING WATER QUALITY INFRASTRUCTURE

I. INTRODUCTION

A. Origin and Purpose of the Study

The goal of the Alternative Funding Study is to evaluate two distinct sources of revenue to augment capital investment in local drinking water and wastewater infrastructure and related water quality projects. First is the use of special, dedicated Federal, State and/or local "fees" to supplement existing direct subsidies from general, appropriated funds. Second is the expanded use of debt financing, including indirect borrower subsidies through tax-exempt bonds, and other public and private investment incentives.

The study grew out of the deep concern to maintain environmental progress in this country by enhancing the capability of State and local governments to finance mandated national clean water objectives. As the EPA's Environmental Finance Advisory Board (EFAB) reported several years ago, under current trends State and local governmental will be responsible for the clear majority of all environmental financing by the year 2000 (EFAB, "Narrowing the Gap", 1992).

Over the past decade, States increasingly have turned to fee-based systems to finance water-related programs in an effort to closely link the cost of public environmental services with the financing mechanisms. Likewise, interest in leveraging limited revenues in order to maximize spending impacts led to the creation of the State Revolving Fund (SRF) loan program for wastewater-related facilities. Recently, extending the SRF concept to drinking water and attracting more private sector investment have been steady themes in environmental financing.

As a result, the U.S. EPA's Office of Water received an earmarked sum in its FY1994 appropriation to examine innovative financing approaches, which itself grew out of H.R. 2188 in 1993 called the "Polluter Pays Clean Water Financing Bill." Grant funds were awarded subsequently to the Environmental Finance Center at the Maxwell School of Citizenship and Public Affairs, Syracuse University, which over the past year has conducted the major portion of this study.

B. Assumptions and Definitions

This document, "Fee-Based Models for Funding Water Quality Infrastructure", is Part I of the Alternative Funding Study. It focuses solely on the use of fees, where most of the research and public consultation was undertaken. The Syracuse University Environmental Finance Center (EFC) was assisted in this effort by the Government Finance Group and Council of Infrastructure Financing Authorities, and EFAB staff.

A companion document, Part II: "Debt Financing Strategies for Funding Water Quality Infrastructure", centers primarily on expanded use of tax-exempt bonds and other avenues to increase both public and private capital investment, and was prepared primarily by the Government Finance Group with the assistance of the above-mentioned groups.

A third funding innovation, to reduce the demand for water-related project financing in the first place through regulatory modifications and pollution prevention, is not addressed specifically in this report, although the need for these was raised repeatedly during the open meetings described subsequently.

A working assumption of this study has been to examine fees designed primarily to raise revenue, at a national target level of $2-3 billion annually. For fee rate estimating purposes, we have used a revenue yield of $2.8 billion annually. Only secondarily, if at all, would such fees serve as market incentives to reduce polluting behavior.

Another assumption is that all fee revenues must be dedicated to financing water-related capital construction facilities, both drinking water and wastewater, although non-structural solutions such as non-point source and watershed protection also are included. Such fees are termed "capital-generating" or capital formation fees in this study. A final assumption is that fee-based revenue would supplement existing or new annual appropriations such as Clean Water Act (CWA) Title VI SRF capitalization grants.

In considering fee-based funding programs, we looked more broadly than primarily Federal systems. We were interested in fee programs that might be nationwide in scope, but not necessarily or mainly "Federal" in terms of fee program design, administration and collection, and the allocation or "redistribution" of fee revenues to local projects. Governmental institutions disbursing fee-based funds are termed "delivery mechanisms" in this report. In this, States and localities are included as major decisionmakers.

By "fees", we mean those financial charges for a particular activity, product or the rendering of specific services, linking the demand for services with the cost for providing them as much as possible. For water, an example is the public and private utility company charges, or rates, billed to all customers. Likewise, various State administrative permit fees now finance the costs of preparing permits, and States use an increasing number of other fees, such as laboratory testing and licensing fees, and drinking water sales fees, to subsidize State operating budgets. A number of States use direct, self-supplied water fees, and levy coal, oil and gas "severance" fees.

Recent State use of fees has been well documented and continues. However, only a modest amount of revenue has been raised for capital formation, as opposed to operating budgetary support, currently under $200 million annually (See Appendix D).

At the Federal level, Superfund fees on chemical feedstocks and imported chemical derivatives, and the recent Federal fee on chlorofluorocarbons, are good examples. In 1990, the Clean Air Act Amendments became the first Federal environmental statute to require States to charge fees to recover the full cost of preparing air permits (CAA, Title V, Section 502).

"Taxes" generally may be distinguished from fees in that they are typically charged against sales, income, property or a specific activity, with less of a direct relationship to the environment and eligible uses. Several States currently earmark taxes to water quality project financing, such as "sin" taxes on tobacco and alcohol and real estate transaction taxes. Two States earmark a portion of general sales taxes to water financing. The relationship, or lack thereof, between specific sources and uses of fees (i.e., who pays and who benefits), is termed the "cost/benefit" relationship in this report.

C. Public Consultative Process

The process utilized for study is somewhat unique. Since the EPA's Office of Water sought to stimulate thinking and debate within as open a process as possible, and also to evaluate the University's research products at various stages, four day-long open public meetings were noticed in the Federal Register and held between April and October, 1995.

The first three meetings -- April 25 in Crystal City, Virginia, July 19 at the Airlie Conference Center in Warrington, Virginia, and September 21 in Denver, Colorado -- focused on fee programs and are covered in this report. The last meeting, on October 10, 1995 in New York City, centered on debt financing issues and is discussed in the Part II companion document.

The April 25 meeting in Crystal City was sponsored by EPA's Environmental Finance Advisory Board (EFAB). The Syracuse University Environmental Finance Center (EFC) and the Council of Infrastructure Financing Authorities (CIFA) sponsored the remainder.

The format for each of the meetings was similar and, in a reiterative process, each panel discussion benefitted from the debate and opinions offered in the previous ones. Expert panelists, numbering about 20 for each meeting, were selected to be representative of various public and private "stakeholder" groups. They included drinking water and wastewater utility participants, State and local government officials, environmental, industry, engineering and agriculture representatives, and persons from the financial and privatization communities.

To the extent possible, participants were actual practitioners of some aspect of water-related facility financing, construction or management, as opposed to non-profit association staff. In addition, comments and statements from other attendees (e.g., observers and interested parties) were made in the afternoon of each day. A complete list of panelists and attendees for the three fee meetings is contained in Appendix A, totalling over 100 persons. In all, 20 States and many more localities were represented at the three fee meetings.

The second and third fee meetings facilitated by the Maxwell School of Citizenship and Public Affairs utilized a "multi-vote" technique to record and weight the preferences of each panelist on varying topics. This technique allowed each participant a total of typically 10 votes, which could be divided among different alternatives. For example, a panelist might dedicate all votes to just one (strongly preferred) option, or spread out votes among different options.

This technique, often termed "revealed preference" or "weighted preference", also has been used in local elections when the number of candidates is high. The multi-votes at the July 19 Airlie Center and September 21 Denver meetings, along with meeting summaries of all fee discussions, are contained in Appendix B. Additional written submissions by attendees comprise Appendix C.

In general, we do not describe who voted for what, in terms of constituency representation, unless such distinctions are very clear and relevant to further debate.

D. Report Outline

In the following text, we will refer frequently to the opinions and preferences of fee panelists on three basic topics, within the context of the research findings. The first fee panelists were asked to react to an earlier Syracuse University EFC Draft Report, "Fee-Based Models for Funding Water Quality Infrastructure" (April 1995, revised May 1995), the executive summary of which is contained in Appendix E. The next two panels responded to a more general background paper, because of an interest in seeing how the participants might construct fee systems on their own.

The three major fee questions remained the same. These issues, or design components, form the basis of the next three chapters. These are:

1. What are the evaluative criteria for successful, fee-based funding systems for water quality, whether such systems be national, State or local in scope? (Chapter II)

2. What specific types of fees are viewed as the most workable and effective, and should these be Federal, State or local? (Chapter III)

3. What should be the funding policy goals, e.g., "redistributive" goals, of different financial delivery mechanisms such a Federal Trust Fund or State Revolving Funds (SRFs)? (Chapter IV)

While the report addresses the three basic fee questions in some depth, the reader should be cautioned against seeking a consensus out of the panel responses, as both the sample size and time frame of the public consultative process are limited.

Some general propositions and agreement did emerge, however. Based on these and extensive policy research, we offer some basic programmatic models in **Chapter V.** These four, generic fee-based intergovernmental funding models combine alternative sources of fees, delivery mechanisms, and environmental financing policy objectives. They are presented for illustrative purposes and to stimulate further policy thinking and debate.

E. Outstanding Issues

All the fee panelists addressed, broadly, the rationale for new fee programs in the first place. Clearly, there were many panelists who preferred other methods of funding drinking water and wastewater projects, such as annual appropriations by Congress from general funds. Others did not support new fee programs within any context other than purely local, with possibly some State but no Federal involvement.

A number of panelists argued that other issues might be more critical to address first, in and of themselves and also to lay the groundwork for increased acceptance of fee programs in the future. For example, "making more efficient and effective use of existing financial resources" received the highest number of multi-votes at the July 19 Airlie panel. By this, the panelists meant that more pollution prevention, water conservation, non-point source controls, and facility system regionalization might be undertaken, along with preventative maintenance and other cost-savings measures at treatment facilities.

Within this context, panelists also argued for removal of barriers to existing tax-exempt financing and increasing private sector participation. In fact, it was concern that the latter topics be addressed, initially expressed the April 25 Crystal City meeting, that lead to inclusion of debt financing issues as part of the Alternative Funding Study.

Two other issues are noteworthy. First was the desire for regulatory reform and local risk prioritizing, as part of the "unfunded mandates" debate. Second was the expressed concern for improved scientific risk communication at the local level, to promote greater understanding of the need for many regulations in the first place. Although pollution prevention, regulatory alternatives and risk communication are outside the scope of this study, such issues were very much on the mind of panelists as they turned their attention to fees.

II. EVALUATING FEE SYSTEMS

This chapter addresses the evaluation criteria that might be used to determine the benefits and concerns associated with various fee programs, which was the first question posed to the fee panelists. These criteria may be applicable to any revenue-generating fee program, including capital formation fees, at any governmental level, but are different from those aimed at evaluating economic (market) incentive fee programs.

A. Revenue-Generating Fee Criteria

Listed below are the original six evaluative criteria developed by the earlier Syracuse University EFC Draft Report (April 1995, revised May 1995). The opinion, additions and modifications made by the fee panelists in several critical areas are described subsequently.

These six initial evaluative criteria include:

1. Public Support - the amount of support and/or opposition to new fee proposals, which will influence the possibility of legislative passage of fee proposals at different levels of government.

2. Size and Predictability of Revenue Stream - the likelihood that a predetermined annual fee revenue target, e.g., $2.8 billion, can be reasonably estimated, administered and audited over time, and whether this revenue will remain dedicated to its intended use over the long term.

3. Equity and Impacts - equity and impacts generally relate to those "who pay" fees and address issues of fairness and economic impacts, although an in-depth analysis of economic impacts was beyond the scope of this study; equity may also refer to fee revenue allocation or redistribution decisions.

4. Relationship between Costs and Benefits - the cost/benefit relationship refers to the linkage between "who pays" and "who benefits" by receiving fee-based financial assistance; a close relationship may result in greater acceptability of fees.

5. Collectability - the ease and simplicity of fee collection systems; administrative systems which build onto those already in place save time and expense, and close proximity of the collection mechanism to the financial delivery institution is most efficient.

6. Meeting Environmental Goals - the ability to meet stated environmental objectives using financial delivery mechanisms which effectively stretch limited fee revenues and are flexible enough to address a range of environmental risk and affordability issues would, of course, be the goal of new fees in the first place; new fees generally imply that some new "redistributive" objectives will be sought.

B. Additional Evaluation Concerns

The panelists offered some significant comments on these six criteria, with public support and other concerns in mind.

1. Fee Dedication

There was substantial discussion on ensuring that fee revenues remained dedicated to intended uses over time. Historically, the Federal experience with trust funds has been mostly positive, with several caveats. Even though Federal trust funds typically are included in the budget (as opposed to being "off-budget"), they have not yet been spent for non-dedicated purposes. However, funds such as the Highway and Superfund Trust Funds periodically have been subject to outlay restrictions, and used to offset the deficit as well as provide ready purchase of U.S. Treasury bonds. Current Highway Trust Fund unspent balances are $31 billion, and Superfund accounts are at $5 billion. These concerns have led to repeated initiatives to move one or another trust fund off-budget.

Recent State experience has demonstrated that governors or legislatures feel relatively free to use fee-based funds similarly. Since State and local political representation changes frequently, it sometimes has proven difficult to mandate long-term dedication. Indeed, many State and local fees have never been specifically dedicated, but rather are viewed more as a general revenue source. Other dedicated State fees are subject to annual gubernatorial review, or legislative allocation, such as in New York.

Some Crystal City and Airlie panelists noted that the best way to protect State fee funds was to establish them under Federal legislative authorization, subject to ongoing Federal oversight, such as with the current wastewater SRF program, or to move them off-budget. The Denver panelists argued the reverse. Since Federal credibility was greatly diminished, States, with encouragement, could do as good a job of oversight.

2. Behavioral Modification

Another issue for fee revenue size and predictability pertains to possible behavioral responses to fee imposition. Avoidance of fees depends both on the elasticity of demand and supply, and in some cases on tax policy. Some behavioral modification will result from most fee programs, and indeed is appropriate in areas such as water conservation or purchase of highly "polluting" products for which substitutes exist. But sizeable changes will affect revenue stream substantially.

Environmental representatives argued strongly for the use of fees that do provoke significant reductions in "polluting" behavior, and in some cases the use of fees for market-based incentives. Most fee panelists, however, believed that behavioral goals should be secondary and supplemental to revenue-generating objectives. Some cautioned, moreover, that fees should be promoted mainly on the basis of their revenue potential, thus avoiding the political pitfalls of a heated debate on market-incentive fees.

3. Broad-Based, Low Impact Fees

Interestingly, the majority of fee panelists appeared to adopt the approach that "everyone should pay a little." Debate on the implications of the equity and impact criterion resulted in a seemingly clear preference for fees that are broad-based and low-level (not too costly), compared to higher cost, "particularized" fees aimed at one economic sector, such as the industrial effluent fees or pesticides/fertilizer production fees earlier proposed in the 1993 H.R. 2199 "Polluter Pays" bill.

4. Water-Related Fees

Strong agreement was evidenced for the preservation of a close cost/benefit relationship in terms of who pays and who benefits from fees. Fee panelists had little interest in the use of taxes, such as "sin" taxes, real estate transactions fees, or lotteries, that bore no relationship to environmental damage. If fees were unrelated to the sources of water pollution, many panelists seemed to prefer use of general appropriation funds in the first place. This conclusion is interesting, since a handful of States successfully have imposed the above-mentioned fees for a number of years. Panelists also opposed the use of pollution fines and penalties, lest they encourage "bounty hunting".

For some fees, such as the public water supply withdrawal fee discussed subsequently, raising public awareness as to the "true cost of service" or causes of water degradation resulting from the use of certain highly toxic products, was viewed as a decided advantage.

In terms of public acceptance, the majority of panelists ultimately preferred those who paid fees be aware of how fees were to be spent, termed "transparent" as opposed to "invisible" fees by the panelists. Some argued that fees should be dedicated, initially, to specific regional/local bodies of water or watersheds, such as are some current fees in the Chesapeake Bay and Puget Sound.

5. Fee Collection

The panelists appeared less concerned with efficient administration and collection of fees than with other criteria. Basically, many agreed that, if fees were ever agreed upon at all, States and localities could collect fees as effectively as the Federal government (NCSL, "State Earmarking", 1994).

What was not always made explicit, however, was that some kinds of fees implied collection by a specific level of government, whether local, State or Federal, raising the possibilities of fee "rebate" to a higher level and "redistribution" back down. Thus, the relationship between the collection and the financial delivery system, e.g., those institutions awarding financial assistance to local projects, remains an important design consideration which will be addressed in Chapter IV.

6. Meeting Environmental Goals

Deliberations on this criterion are characterized as much by what the panelists did not examine, as by what concerned them. The initial Syracuse University Draft Report (May 1995) included an evaluation of two important design components: (1) financial delivery institutions and (2) specific water-related eligibilities, including types of financial assistance (e.g., grants versus loans), and possible private sector eligibilities.

The majority of fee panelists agreed that drinking water projects should be eligible in addition to wastewater, and that non-structural solutions should be emphasized along with new capital needs. Constructing something new, as opposed to pollution prevention, improved operations and maintenance, and other low cost approaches, was not always the best answer. Moreover, many panelists argued that continued separation of water and solid waste program lines was artificial.

Likewise, functions of alternative delivery institutions examined in the earlier draft report, for example, a new Federal Clean Water Trust Fund, Federal Infrastructure Bank, and "Environmental SRFs", generated little dialogue.

For these reasons, an evaluation of specific water-related project eligibilities and delivery mechanisms does not reappear as separate subjects in this document.

Instead, the fee panelists assumed a more philosophical approach to the questions of the future Federal role in providing additional environmental financing. Here, disagreement emerged as to whether, and how, the Federal government might make future allocations, or "redistribution" decisions, with new fee-based capital funds.

III. SOURCES OF FEES

The list of potential fees evaluated in detail during the research phase of this study was limited primarily to those related to the use of water, either directly or indirectly. Water-related fees generally fall into five categories: (1) effluent or discharge fees (based on volume and/or toxicity); (2) water use (both public water supply withdrawal and direct, self-supplied water withdrawal) and other "severance" fees; (3) permit or related administrative service fees; (4) feedstock and excise fees on chemical use or production; and (5) "green" product fees (based on manufacutured product sales). Some fees, such as pesticides fees, may be designed either as feedstock or green product fees.

Another strong research consideration is the extent to which specific fees already were utilized by States and localities. This information has been extensively documented and is presented throughout the text and in Appendix D. Presumably, wide State use of certain fees implies that such fees are workable and, to some extent, acceptable as financing mechanisms.

Third, the preferences and opinions of the over 100 expert fee panelists and attendees are taken into account in the subsequent sections on "Potential Acceptability".

The summary below centers on two types of broad-based, relatively low level, water-related fees which, out of a wide array of fees, received the most potential support as indicated by the panel multi-voting: **(1) public water supply withdrawal fees, and (2) "green" product fees**. The public water withdrawal fee, moreover, is the third most extensively used by States, following NPDES permit and drinking water operator, laboratory and certification fees.

For each of these hypothetical fees, we provide a general description of the rationale, fee base and rate, a prototype revenue estimate, and implementation and acceptability issues. Some data on economic impacts are presented.

Other potential fees are summarized briefly at the end of this chapter as well as the Syracuse Environmental Finance Center Draft Report Executive Summary (Appendix E). This draft report contained current estimates on industrial and municipal effluent fees, pesticides and fertilizer production fees, and NPDES wastewater permit fees, none of which received much support as capital-generating fees during the public consultative phase.

The potential acceptance of any fee, however, should be put within the context of the preference of many fee panelists to solve financial shortfalls through different approaches, both policy and financial, at the present time. Support may also be termed "comparative", since it occurred within the context of alternative fees.

A. Public Water Supply Withdrawal Fees

The public water supply withdrawal fee is discussed first, because it was included in the original research, although slightly more support was evidenced for green fees at fee panel discussions. Public withdrawal water fees have been proposed in the recent past (Apogee 1990,

H.R. 2188 Hearings, 1994), and within the context of alternative fees presented by this study drew some clear support and very strong opposition.

1. Rationale

The public water supply withdrawal fee can be categorized as broad-based, since in most cases it would represent an add-on or surcharge to local residential, commercial and industrial water utility rates regularly paid by water customers. It is water-related, since it is in the domestic and commercial use of water the bulk of treated drinking water and municipal wastewater treatment occurs. The concept could be extended to include surcharges on wastewater user fees as well, which was mentioned at the third fee panel discussion in Denver. It can be considered relatively low cost, for example, since it is typically structured in cents/per 1,000 gallons of water. Whether this is low impact as well depends on the national annual revenue target.

2. Fee Base and Implementation

The public water supply withdrawal fee benefits from its essential simplicity. Levied as a flat rate in cents/1,000 gallons, it would fall equally on all utility (both public and privately-owned utilities) customers within a State or whatever governmental context selected. It relies on a long history of successful rate-setting practices, typically ascertained through metered water use or similar estimates. If collected locally, administration would be relatively straight-forward, with local water utilities collecting the volume-based fee "surcharge" through periodic regular billings, whether bimonthly, quarterly or annually.

Unless imposed by a higher level of government, local rate increases would be approved by local voters or, in the case of privately-owned companies, State Public Service Commissions. The political obstacles accompanying either process, however, should not be minimized.

The regressiveness of flat fees might be avoided by offering different rates to different classes of customers (e.g., the poor and elderly). Other volume-based rate structures could be based on ascending block rates (to encourage water conservation), or declining block rates (to encourage economic development). However, flat fees, as opposed to graduated rate structures, always are easier to administer.

The Denver fee panelists also suggested charging some industrial users a much higher fee than residential and commercial users, particularly those requiring very clean water for manufacturing processes (e.g., bottled drinks, computer chips).

If administered and collected by States, public water supply withdrawal fees could be levied on a different basis entirely. For example, fees could be based on a percent of utility water sales, or percentage of treated water production volume, and would be paid directly by utilities. Although such fees probably would be passed on to customers, utilities might be required to exempt certain classes of consumers from rate increases.

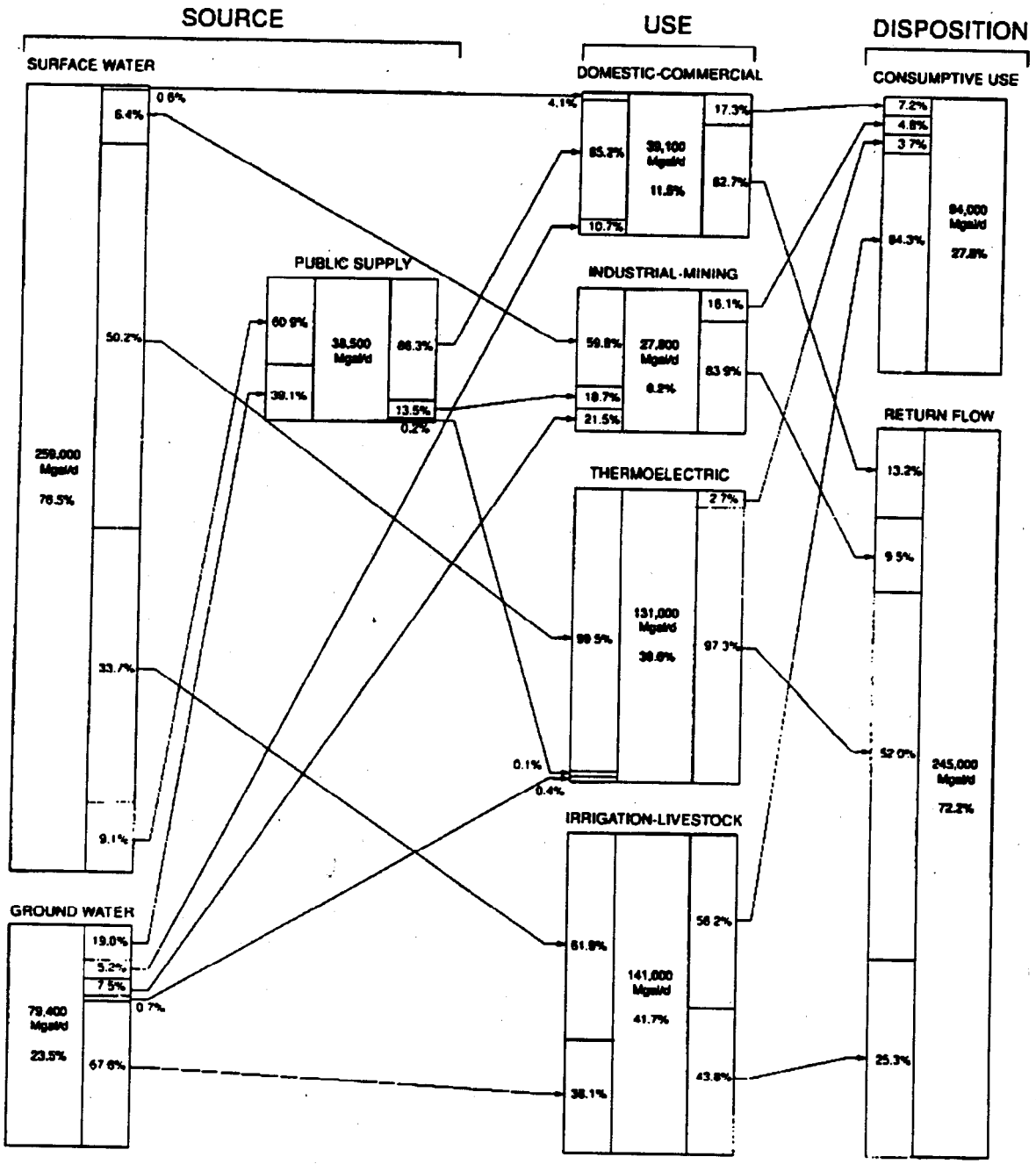
If used within a State context, the thorny issue of local fee rebate to State government, for redistribution among different localities, is avoided. However, many State constitutions restrict the taxing power of States, such as was mentioned in Colorado.

Eleven States already have imposed public water supply withdrawal fees in the form of drinking water production, sales or service fees, ranging from $.03 - $.07 per 1,000 gallons. These include Arizona, California, Delaware, New Jersey, New Mexico, Montana, Oklahoma, Rhode Island, Texas, Vermont and Virginia. A similar fee was defeated recently in New York, and currently is being considered in Pennsylvania and Florida. Typically, these fees support State operating budgets, for example, to offset laboratory testing costs, as opposed to generating new capital.

There are severe limitations to the broad base of the public water supply withdrawal fee, however. This is because the **publicly supplied, treated water withdrawal, as opposed to direct or self-supplied withdrawals by the vast majority of industry, mining, hydroelectric facilities, and agriculture, represents only a very slim portion (about 12%) of all water use in this country**. Also excluded are private wells. The reader should note, as confusion still exists as to the terms, that "public water supply withdrawal" as termed in this report, differs dramatically from "direct water use" or "self-supplied water" which is not supplied by utilities.

Figure 1 below, the U.S. Geological Survey "Estimated Use of Water in the United States in 1990" (Solley, Pierce, and Perlman) demonstrates this key difference. Although the hypothetical public water supply withdrawal fee would cover 85.2% of all domestic (residential) and commercial use in this country, it includes only 18.7 % of all industrial use, and almost no thermoelectric and agricultural use. Moreover, while some direct withdrawal is measured and subject to registration by States, most is not.

Figure 1
1990 Aggregate Sources, Uses and Disposition of Water in the U.S



3. Prototype Fee Rates

We have used a flat rate fee on public water supply withdrawals for estimating purposes. In 1990, total public withdrawal of treated water was 38,650 million gallons per day or a total of 14.1 trillion gallons per year. By setting a national revenue target of $2.8 billion annually, we can define the flat rate as:

1990 Rate = $2.8 Billion/14.1 Trillion = **$.198/1000 gallons**

This rate is about 5 cents greater that the approximately 14 cent rate employed in earlier studies designed to generate only $2 billion annually (Apogee 1990, Syracuse 1995).

A 1 cent lower rate could be predicted for 1995, based on increased consumption at an annual compounding growth rate of about 1.3%, assuming that public water use grew at the same rate as between 1985 and 1990. Thus, the lower, current rate could be estimated as:

1995 Rate = $2.8 Billion/15.01 Trillion = **$.185/1000 gallons**

4. Impacts

The impacts of the public water supply withdrawal fee on water bills, under a $2.8 billion annual revenue target, are not minimal when one accounts for ongoing facility expansion, upgrades and operations and maintenance demands.

One study estimates the average individual uses between 104 and 140 per day, or 38,000 and 51,000 gallons of water per year or between 3000 and 4000 gallons per month (EFAB, "Public Sector", 1992). Thus, the cost to the typical consumer is between .$587 and $.792 per month, or $7.04 to $9.50 per year. Table 1 below provides a similar analysis of impact for the typical family in 1995. Table 2 examines the impacts by State, based on the 1990 estimates of water use by State.

Table 1. Effects of Public Supply Water Withdrawal Fee on a Typical Household

Assumptions:

Average Family consists of 2.64 people
Average Person Consumes 104 to 140 Gallons of Water/Day
Rate: **0.1856** per 1000 gallons

	Monthly Low	Monthly High	Annually Low	Annually High
Consumption *	8351.00	11242.00	100214.00	134904.00
Fee	$ 1.55	$ 2.09	$ 18.60	$ 25.04
Average Bill	$ 14.47	$ 19.01	$ 173.64	$ 228.12
Fee/Bill	10.71%	10.98%	10.71%	10.98%

* the unit of water withdrawal is 1000 gallons

Table 2. Public Supply Water Withdrawal Fee by States Based on 1990 Withdrawal Rates

State	1990 Ground Water PUBLIC SUPPLY	1990 Surface Water PUBLIC SUPPL	1990 Total PUBLIC SUPPLY	1990 Total Annual Withdrawals Gallons	1995 Total Annual Withdrawals Gallons	1990 Fee Allocation	1995 Fee Allocation
Alabama	224	483	707	$ 258,055,000,000	$ 275,860,795,000	$51,218,756	$51,220,729
Alaska	34	58	92	$ 33,580,000,000	$ 35,897,020,000	$6,664,958	$6,665,215
Arizona	401	305	706	$ 257,690,000,000	$ 275,470,610,000	$51,146,311	$51,148,281
Arkansas	119	190	309	$ 112,785,000,000	$ 120,567,165,000	$22,385,567	$22,386,429
California	3260	2560	5820	$ 2,124,300,000,000	$ 2,270,876,700,000	$421,631,064	$421,647,302
Colorado	83	567	650	$ 237,250,000,000	$ 253,620,250,000	$47,089,380	$47,091,194
Connecticut	73	301	374	$ 136,510,000,000	$ 145,929,190,000	$27,094,505	$27,095,548
Delaware	33	52	85	$ 31,025,000,000	$ 33,165,725,000	$6,157,842	$6,158,079
D.C.	0	0	0	$ -	$ -	$0	$0
Florida	1700	226	1926	$ 702,990,000,000	$ 751,496,310,000	$139,529,455	$139,534,829
Georgia	234	730	964	$ 351,860,000,000	$ 376,138,340,000	$69,837,173	$69,839,862
Hawaii	221	17	238	$ 86,870,000,000	$ 92,864,030,000	$17,241,958	$17,242,622
Idaho	173	28	201	$ 73,365,000,000	$ 78,427,185,000	$14,561,485	$14,562,046
Illinois	444	1420	1864	$ 680,360,000,000	$ 727,304,840,000	$135,037,853	$135,043,053
Indiana	274	330	604	$ 220,460,000,000	$ 235,671,740,000	$43,756,901	$43,758,586
Iowa	234	88	322	$ 117,530,000,000	$ 125,639,570,000	$23,327,354	$23,328,253
Kansas	176	197	373	$ 136,145,000,000	$ 145,539,005,000	$27,022,060	$27,023,100
Kentucky	55	372	427	$ 155,855,000,000	$ 166,608,995,000	$30,934,100	$30,935,292
Louisiana	275	344	619	$ 225,935,000,000	$ 241,524,515,000	$44,843,579	$44,845,306
Maine	21	86	107	$ 39,055,000,000	$ 41,749,795,000	$7,751,636	$7,751,935
Maryland	76	722	798	$ 291,270,000,000	$ 311,367,630,000	$57,811,270	$57,813,496
Massachusetts	179	535	714	$ 260,610,000,000	$ 278,592,090,000	$51,725,873	$51,727,865
Michigan	261	1140	1401	$ 511,365,000,000	$ 546,649,185,000	$101,495,725	$101,499,634
Minnesota	290	225	515	$ 187,975,000,000	$ 200,945,275,000	$37,309,278	$37,310,715
Mississippi	282	38	320	$ 116,800,000,000	$ 124,859,200,000	$23,182,464	$23,183,357
Missouri	185	493	678	$ 247,470,000,000	$ 264,545,430,000	$49,117,846	$49,119,737
Montana	51	83	134	$ 48,910,000,000	$ 52,284,790,000	$9,707,657	$9,708,031
Nebraska	235	66	301	$ 109,865,000,000	$ 117,445,685,000	$21,806,005	$21,806,845
Nevada	104	281	385	$ 140,525,000,000	$ 150,221,225,000	$27,891,402	$27,892,476
New Hampshire	34	61	95	$ 34,675,000,000	$ 37,067,575,000	$6,882,294	$6,882,559
New Jersey	396	643	1039	$ 379,235,000,000	$ 405,402,215,000	$75,270,563	$75,273,462
New Mexico	241	32	273	$ 99,645,000,000	$ 106,520,505,000	$19,777,540	$19,778,301
New York	550	2360	2910	$ 1,062,150,000,000	$ 1,135,438,350,000	$210,815,532	$210,823,651
North Carolina	137	668	805	$ 293,825,000,000	$ 314,098,925,000	$58,318,386	$58,320,632
North Dakota	32	45	77	$ 28,105,000,000	$ 30,044,245,000	$5,578,280	$5,578,495
Ohio	396	904	1300	$ 474,500,000,000	$ 507,240,500,000	$94,178,760	$94,182,387
Oklahoma	80	435	515	$ 187,975,000,000	$ 200,945,275,000	$37,309,278	$37,310,715
Oregon	105	365	470	$ 171,550,000,000	$ 183,386,950,000	$34,049,244	$34,050,555
Pennsylvania	427	1300	1727	$ 630,355,000,000	$ 673,849,495,000	$125,112,860	$125,117,679
Rhode Island	13	88	101	$ 36,865,000,000	$ 39,408,685,000	$7,316,965	$7,317,247
South Carolina	79	273	352	$ 128,480,000,000	$ 137,345,120,000	$25,500,710	$25,501,693
South Dakota	52	24	76	$ 27,740,000,000	$ 29,654,060,000	$5,505,835	$5,506,047
Tennessee	269	426	695	$ 253,675,000,000	$ 271,178,575,000	$50,349,414	$50,351,353
Texas	1270	1830	3100	$ 1,131,500,000,000	$ 1,209,573,500,000	$224,580,120	$224,588,769
Utah	305	203	508	$ 185,420,000,000	$ 198,213,980,000	$36,802,162	$36,803,579
Vermont	19	19	38	$ 13,870,000,000	$ 14,827,030,000	$2,752,918	$2,753,024
Virginia	69	640	709	$ 258,785,000,000	$ 276,641,165,000	$51,363,647	$51,365,625
Washington	434	441	875	$ 319,375,000,000	$ 341,411,875,000	$63,389,550	$63,391,991
West Virginia	43	118	161	$ 58,765,000,000	$ 62,819,785,000	$11,663,677	$11,664,126
Wisconsin	294	301	595	$ 217,175,000,000	$ 232,160,075,000	$43,104,894	$43,106,554
Wyoming	41	47	88	$ 32,120,000,000	$ 34,336,280,000	$6,375,178	$6,375,423
Puerto Rico	80	325	405	$ 147,825,000,000	$ 158,024,925,000	$29,340,306	$29,341,436
Virgin Islands	10	5.4	15.4	$ 5,621,000,000	$ 6,008,849,000	$1,115,656	$1,115,699
Total	15100	23550	38650	$ 14,107,250,000,000	$ 15,080,650,250,000	$2,800,006,980	$2,800,114,816

Unfortunately, the impacts on smaller communities requiring extensive drinking water treatment sometimes are upwards to two and one-half times higher. (EPA, 1990). Moreover, since water utility companies represent a high volume/low margin industry, most rate increases probably would be passed on to the consumer unless, in the case of investor-owned (private) utilities, rate increases were denied by State Public Service Commissions.

Several factors could work to reduce aggregate public water use. One is increased conservation associated with changing perceptions of resource scarcity and importance independent of economic prices, and another is short-term emergency situations such as droughts. Since both are difficult to predict, responses to price changes are best understood in terms of price elasticity. Existing research suggests that individual household responses to prices changes for water are small, as are estimates of commercial or industrial price elasticity for water which run between 5% and 8% (Apogee 1990). In 1990, industrial use consisted of about 13.5% of public system use. Thus, for an 8% increase in water rates due to the protoptypical fee, industrial use would shift away from public sources by approximately 6% generating an overall reduction in total public use of less than 1%.

5. Potential Acceptability

Those fee panelists supporting wider use of a public water supply withdrawal fee, compared to other fees, advanced some cogent arguments. Water reportedly represents the cheapest of all utilities at present (e.g., gas, electric and telephone) and is substantially underpriced in many parts of the country. In the past, water sometimes even subsidized general municipal budgets. Increased rates, when accompanied by improved communication about real treatment needs, might be supported over time. Moreover, strengthening the service user fee approach to water financing was a sound principle on which to base new revenue generation.

At the Airlie Center open meeting, several panelists termed water rate increases as "infrastructure renewal" fees, to emphasize the importance of full-cost pricing. One panelist summed up the problem of reaching full-cost pricing goals -- if everyone would "cheerfully" pay all water costs, new financing would not be an issue in the first place.

Opposing positions also were very strong. Localities, and water and wastewater utility participants argued vigorously that government indirectly regulated the price of drinking water through regulatory mandates and, in the case of privately-owned water utilities, water rates were directly regulated. To subject customers to additional rate increases at this time could be damaging to public support for enhanced treatment, particularly if local fees collected were redistributed to other communities. Current water rates already were insufficiently flexible to address real affordability concerns, and in the case of wastewater were doubled every six years.

Panelists at all three fee meetings had trouble with the notion of a Federally-imposed public water supply rate increase, both from a cultural and legal standpoint. Others who supported the fee concept in principle somewhat reluctantly supported State-levied rate increases, but preferred implementation on a purely local level.

The biggest stumbling block to State public water withdrawal fees was the cross-subsidization and redistribution of fee-based revenues between localities, which State intervention implies -- i.e., some communities with successful water programs would become "donors" in that they would pay more to the fee fund than they received back for "infrastructure renewal".

B. Green Product Fees

The second type of broad-based, water-related fee which drew support from fee panelists is the "green" product fee. Green fees would be broadly based, since they would most likely represent, ultimately, an increase to the existing price of selected retail products. They could be water-related by the selection of products primarily disposed of in water. Hence the term "green", which in this study implies not that the products are free of pollutants, but the reverse. The extent to which such fees are low level or low cost, however, depends on the price of the product and the national revenue target.

1. Rationale

Green product fees have been suggested frequently in the past, although the literature is not nearly as extensive as that for other fees, and primarily exists for green fees utilized as market-based incentives as an alternative to direct regulation. Green fees are used more extensively in Europe than in this country, with the exception of solid waste fees. Here, State and local charges for the disposal of particularly toxic or large wastes are fairly well-established, for example, for used oil, lead acid batteries, tires, household hazardous wastes, and the like (NGA, 1989). Sometimes fees are used at the front end, for example, fees on new tires and bottles.

The Federal green fee concept was proposed by the Association of Metropolitan Sewerage Agencies (AMSA) at the April 25 Crystal City meeting and was offered as an option at the subsequent two fee panels. The AMSA paper is included in Appendix C.

Green product fees are, in fact, more "universal" and broadly based than public water supply withdrawal fees, because of the latter's exclusion of direct water use. Green fees would fall on virtually every manufacturer of the "taxed" product and/or consumers.

2. Fee Base and Implementation

The target base for water-related green fees could be quite extensive, with one significant caveat. Currently, little empirical data exist by which to document the volume and toxicity of most potential fee targets. This limitation, which research might address over time, results in a **significant selection bias when products are selected for their link to water pollution**. It also makes it difficult to justify the use of graduated, more "equitable" rate structures, for example, levying higher fees on toxic solvents compared to biodegradable toilet paper.

Another empirical limitation pertains to where used products initially are disposed. Presumably, some go to solid waste landfills, are incinerated, or illegally dumped, rather than entering the wastewater stream directly. Obvious solid waste "green" products, such as many paper and plastic products, and disposable diapers, are not included in the list below.

Despite these limitations, it is generally agreed that there are many widely used products, some quite costly, which can contribute to water degradation. Use of such products may enter the wastewater stream adding to the treatment costs, or be disposed of directly in water affecting receiving water quality and drinking water. Noting the strong selection bias involved, and working off the original candidate list proposed by AMSA, possible products might include:

soaps, shaving creams	pesticides, herbicides
shampoos, tooth paste	synthetic fertilizers
mouthwash	copper plumbing pipe
special bath products	plumbing fixtures
toilet paper	plumbing chemicals
cleaning products	dry cleaning solvents
household solvents	paint products
dishwasher detergents	photo process chemicals
laundry detergents	synthetic dyes, inks
cooking oils	domestic water treatments

The most efficient way to levy and collect green fees is at the Federal level, which has authority because of the interstate commerce application. Unlike hypothetical Federal water withdrawal/use fees, the legality of Federal green fees may not be seriously challenged. Federal fees could be collected at the production or manufacturing site and, to ensure only selected commodities are covered and avoid any double-counting, would be imposed only on manufactured "end-products".

This method of collection would be similar to how the gasoline tax supporting the Highway Trust Fund works. Here, the Federal Internal Revenue Service (IRS) annually collects fees directly from gasoline producers, who then are reimbursed by the fees which everyone pays at the pump. Although certain manufacturing States obviously pay the major share of gasoline fees, the impact on ultimate consumers is equal. Other Federal precedents are the Federal telephone and cosmetic excise fees.

If States sought to impose green fees, the best method might be to collect fees at the retail cash register or time of sale, much like existing State alcohol, tobacco, automotive or luxury taxes are handled. Individual State production or manufacturing data, however, are not readily available. It is likely that some States produce few if any potentially taxable "green" products. Moreover, unless States imposed similar green fees, differences among them would result in pollution havens and competitive disadvantages.

Presently, State use of water-related green product fees is not widespread. At least four midwestern States place fees on pesticides and fertilizers, including Wisconsin, Kansas, Minnesota, and Iowa, as well as Oregon. Two States, Florida and Connecticut, have fees on professional dry cleaning solvents, and Florida has been considering a $.01 fee on each toilet paper roll. Maryland places a fee on boat sales and New York on motor boat fuels, and a number of States impose fees on highway de-icing salts.

3. Prototype Fee Rates

Estimating national green fees rates is relatively straightforward, but the reader will see that fee administration poses several significant problems. U.S. Commerce Department sales data based on standard industrial codes (SICs) are published and updated every five years. Under flat rates, the method of assessment is to prescribe a fixed percentage of total national sales of selected commodities to meet the desired revenue target.

Table 3 below offers some hypothetical candidates at a fee percentage of 1%, 3%, and 4.0% of national gross sales receipts, with the latter percentage yielding the targeted revenue stream of $2.8 billion annually. In most cases, industrial, commercial and domestic use is counted.

Table 3. Examples of Estimation of Green Fee (Special Sales Tax)

(Unit: $ Million)

			Revenue Estimations		
Products	**SIC**	**Product Shipment***	**1% Sales Tax**	**3% Sales Tax**	**4% Sales Tax**
Foods					
Vegetable oil mills	2076	745.5	7.46	22.37	29.82
Paper Products					
Toilet tissues(rolls and ovals)	267645/47	2600.6	26.01	78.02	104.02
Soap and Other Detergents					
Soaps and detergents (commercial, industrial)	28411	2149.1	21.49	64.47	85.96
Alkaline detergents (household) (A)	28412	1062	10.62	31.86	42.48
Household laundry detergents(dry)	28412	2796.7	27.97	83.90	111.87
Household laundry detergents(liquid)	28412	2038.9	20.39	61.17	81.56
Presoaks and others	2841200/61	132.3	1.32	3.97	5.29
Soaps (household) (B)	28413	1965	19.65	58.95	78.60
Glycerin	28414	138.3	1.38	4.15	5.53
Soap and other detergents	28410	771.9	7.72	23.16	30.88
Polishes and Sanitation Goods					
Household bleaches	28422	941.7	9.42	28.25	37.67
Specialty cleaning and sanitation products (C)	28423	3599.7	36.00	107.99	143.99
Polishing preparations and related products	28424	1057.4	10.57	31.72	42.30
Toilet Preparations					
Shaving Soaps and cream	2844149	270.4	2.70	8.11	10.82
Hair Preparations (shampoo, tonics, perms, etc)	28443	4606.9	46.07	138.21	184.28
Dentifrices, mouthwashes, gargles	28444	1706.9	17.07	51.21	68.28
Bath salts, tablets, oils, and bubble baths	2844771	275.8	2.76	8.27	11.03
Paint Products					
Architectural coating (D)	2851100	5325.2	53.25	159.76	213.01

Product finishes for OEM	2851200	4220.6	42.21	126.62	168.82
Special purpose coating (E)	2851300	2868.8	28.69	86.06	114.75
Miscellaneous allied paint products (F)	2851500	1226.9	12.27	36.81	49.08
Synthetic dyes and pigments					
Synthetic organic dyes	28652	1341.7	13.42	40.25	53.67
Synthetic organic pigments, lakes and toners	28653	1233.5	12.34	37.01	49.34
Fertilizers and Pesticides					
Nitrogenous fertilizers (G)	2873	3588.1	35.88	107.64	143.52
Phosphoric fertilizers (H)	2874	4049.4	40.49	121.48	161.98
Fertilizers, mixing only	2875	1781.5	17.82	53.45	71.26
Insecticidal preparations	28795	1567.1	15.67	47.01	62.68
Herbicidal preparations	28796	4202.2	42.02	126.07	168.09
Fungicidal preparations	28797	699.6	7.00	20.99	27.98
Other pesticidal preparations	28798	594.2	5.94	17.83	23.77
Household pesticidal preparations	28799	874.3	8.74	26.23	34.97
Printing Inks and Water Treating Compounds					
Printing ink	2893	3064	30.64	91.92	122.56
Water treating compounds (I)	28995	2117.1	21.17	63.51	84.68
Plumbing Fixtures and Copper Pipe					
Vitreous plumbing fixtures	3261	807.2	8.07	24.22	32.29
Copper and copper-base pipe and tube	33515	1534.7	15.35	46.04	61.39
Photo Chemicals					
Prepared photographic chemicals (J)	38618	1851.8	18.52	55.55	74.07
Total			**698.07**	**2094.21**	**2792.28**

The figures are based on 1992 Census of Manufacturers (Washington D.C., May 1995) which is published by US Department of Commerce

* Value of Product Shipments covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped.

A includes dishwashing detergents, hard surface cleaners and scouring cleaners.

B includes toilet soaps, glycerin and soap (other detergents).

C includes glass window cleaners, oven cleaners, toilet bowl cleaners, drain pipe solvents, disinfectants, dry cleaning . spotting preparations, household laundry aids and etc.

D includes exterior solvent-type, exterior water type, interior solvent-type, interior water-type, and architectural lacquers.

E includes industrial new construction and maintenance paints, traffic marking points, marine paints, aerosol-paint concentrates . and special purpose coatings.

F includes paint and varnish removers, thinners, pigment dispersions, and glazing compounds.

G includes synthetic ammonia, urea, fertilizer materials of organic origin and nitrogenous fertilizers.

H includes phosphoric acid, superphosphate and other phosphoric fertilizer, and mixed fertilizers.

I includes boiler compounds, swimming pool chemical preparations, cooling tower compounds, and other non-utility water treating compounds.

J includes office copy toners, photographic chemicals, plate chemicals, and others.

Several significant issues arise immediately from Table 3. First, a national fee revenue target of $2.8 billion annually cannot be achieved without a very wide array of products in the fee base and, secondly, only is reached at a relatively steep rate of 4.0% of total sales.

Theoretically, it is possible to vary the fee percentage rate with the suspected toxicity of the waste stream, assuming it ends up in water. For example, certain chemicals such as photo

processing chemicals, printing inks, some components of agricultural chemicals, and other candidates may be highly toxic. A graduated fee rate, for example, was applied in the first Syracuse Draft Report (May 1995) to toxic versus conventional effluent, and the active ingredients in pesticides versus fertilizers. Toxicity amounts might be approximated by placing weights on Toxic Release Inventory (TRI) data, such as was done in earlier effluent studies (CRS, 1992).

It also would be possible to differentiate between "major" and "minor" products, in terms of gross sales amounts, such as has been done for NPDES permit fees. However, highly complex fee structures not only are more difficult to administer, but also must rely on empirical water pollution data, which in this case are deficient. Steeply graduated fee rates may begin to promote behavioral modifications as well as cheating.

Concerns also emerge for the stability and predictability of the revenue stream. Since new products will be continually coming on line, and some discontinued, it will be necessary for the Federal government to adjust fee rates periodically. Also, there are no data on elasticity of consumer demand. Both issues are complicated by the wide number of green products potentially subject to new fees, and by the fact that it would be costly to audit and adjust fee rates annually. Thus, in some years, the revenue stream most likely would be higher or perhaps lower than anticipated. Literature on revenue fees suggests that such unpredictability can undercut fee acceptability.

Third, issues are presented by the export and/or import of certain products subject to green fees. In our case, it may be more likely that export issues will arise. Foreign trading needs to be carefully measured and thought through from a policy perspective.

4. Impacts

The gross economic impact on domestic manufacturing is represented by the percentage of sales fee rate selected. Measuring green fee impacts on individual manufacturers or producers is very difficult, however, since profit data on a company-by-company basis have not been collected. Conceivably, the impacts could vary widely across manufacturers depending on their own economic efficiencies, transportation costs, and wholesaling and retailing opportunities. Thus, smaller companies might be put at a comparative disadvantage.

It should be noted that the pesticides/fertilizer green fee at 4.0% of gross receipts accounts approaches the $700,000 mark as depicted in Table 3. This amount thus is close to the $1 billion annual revenue stream estimated by two earlier studies basing the fee on volume/toxicity (CRS 1992, Syracuse May 1995).

5. Potential Acceptability

Green product fees did not generate as much resistance on cultural and legal grounds as did public water supply fees, although opposition on economic grounds has yet to surface. Total multi-voting was slightly higher for green fees than for public water withdrawal fees (98 compared to 73 multi-votes). In part this is because some green fees votes in Denver included solid waste and air fees, and plumbing fixtures were added later at the Airlie meeting.

Support for the green fee alternative appeared to be based primarily on the very wide industrial, commercial and consumer revenue base, which was viewed as preferable to the smaller public water supply customer base. Federal green fees were seen as working parallel with continuing Federal capitalization grants to SRFs.

"Green" products, moreover, contribute significantly to water pollution. While acknowledging the pitfalls of documenting the damage and cost of clean-up on a product-by-product basis, proponents argued that some relationship was obvious and that drawing attention to the causes of water pollution was important. In Denver, the argument was also made that, if green fees ever were accepted, it would be best to implement them on a "full-spectrum" (i.e., multi-media) basis including solid waste and possibly air. Common sense underscores the rationale that the cross-media implications of green products are large and an across-the-board program might be more justifiable on the basis of economic fairness and public support.

At Airlie Center when green fees were first discussed, they were strongly opposed by industry representatives for reasons of economic competitiveness, although at Crystal City one panelist subject to Superfund fees could see the justification for new green fees. No industry participants were present in Denver.

Additional dissent was based on the potentially large administrative costs and complexities of Federal or State programs. Of particular concern was how to compare a specifically taxed "harmful" product with what might be considered "safe". The panelists reluctantly agreed that certification and labeling of environmentally friendly products, such as practiced in Germany, would be too administratively and politically difficult in this country.

C. Other Fee Candidates

The fee panelists struggled with generating a list of other possible fees, as described below. One fee mentioned was the State direct water withdrawal fee, as contrasted (and sometimes confused) with public water supply withdrawal fees. Almost as many States currently charge for direct water withdrawals on a recurrent basis as States using public water withdrawal fees, although there is an equal history of States decidedly rejecting proposed direct use fees (University of Florida, 1992). Direct water use fees might be supported by some drinking water utilities on the grounds of being a fair and consistent approach to water use.

Interestingly, at both Airlie and Denver, fee panelists attempted briefly to develop a concept for what may be termed "watershed" protection fees, whereby development impact or

development "windfall" profit fees, agriculture chemical fees, and water and sewer hook-up fees might be administered within watersheds.

Other candidates were nominated, but not debated, included an income tax surcharge, although the governmental implementation context (Federal or State) was not raised. Chemical feedstocks also attracted some multi-votes, but what the panelists appeared to have in mind was transfer of Superfund unobligated balances to new water/wastewater accounts.

General characteristics of fees presented briefly below include State experience, governmental implementation, and fee panel responses where appropriate. Fee rate estimates to yield a total of $1 billion annually are offered.

1. Industrial Effluent Fees, extensively examined in the past (e.g., CRS, 1992), remain some of the most challenging to design because of data limitations. Typically, self-reported Toxic Release Inventory (TRI) data are used to estimate volume and toxicity. However, the TRI includes only major industrial toxic discharges, and no standardized toxicity measures (or weights) exist. Effluent fees currently are used in three States (Louisiana, New Jersey and Washington) to subsidize operating budgets, at rates upwards to $100,000 for major industries. They are also used extensively in Europe for infrastructure capital generation, as was posed in New York in 1993 but defeated.

Effluent fees can be highly complex if a graduated fee rate structure is employed to link discharges to environmental damage, particularly receiving water quality. Flat-rate fees are more simple and less easily circumvented through dilution or media transfer. Flat rates of **$1.3514/lb. of toxics and $0.200/lb. of conventional pollutants yield $1 billion annually** (Syracuse, May 1995). However, even this approach appears to impact heavily, and disproportionately, on the chemical and allied product industry, and secondarily on the pulp and paper industry, as well as on a minority of States (Research Triangle, 1993).

Although the fee panelists had little interest in industrial effluent fees, some environmental panelists still supported them in theory as market-based behavioral incentives.

2. Municipal Effluent Fees must rely on EPA's Permit Compliance System (PCS) which measures conventional pollutants only, which for fee estimating purposes may not be sufficiently accurate. A flat-rate fee of **$.0756/1000 gallons of conventional discharge raises $1 billion annually** (Syracuse, May 1995). Local fee panel representatives strongly resisted use of these fees on the basis of being too costly and placing a negative stigma on "permitted" discharges.

3. Pesticides and Fertilizer Production Fees currently used by five States could be based on a measurement of the production and sale of active ingredients in each, or as a registration or licensing fee, and could be implemented by the Federal IRS or by States depending on the assessment technique employed. Flat-rate fees of **$0.2623/lb. of active ingredients in pesticides and $0.0132/lb. of active ingredients in fertilizers yields $1 billion annually** with the fee burden falling most heavily on the corn and wheat producing states, and on

individual fruit and vegetable growers (Syracuse, May 1995). Although agricultural panelists strongly resisted imposition of such fees, they were included in the more popular green estimates.

4. NPDES Permit Fees, for both industry and municipalities, currently are used in at least 30 States to support State program budgets. EPA has supported imposition of administrative permit fees in all States, as was required for air emissions under the CAA of 1990 ($25 per ton of regulated pollutants). State NPDES permit fees typically distinguish between major and minor, and industrial and municipal, categories with the median annual charge per major industrial permit being $9000 (counting the three with much higher effluent fees) (Syracuse, May 1995).

NPDES fees could be collected through the permit mechanism, but under most hypothetical capital-generating fee scenarios would have to be very expensive for large facilities in order to offset much lower rates for smaller facilities. EPA's PCS classifies 6,880 out of 73,666 permitted facilities to be "majors". Following this, one annual permit fee estimate is **$96,813 for majors and $5,000 for minors yields $1 billion** (Syracuse, May 1995). Permit fees are considered most useful as State budgetary support.

5. Direct Water Use drawn from surface and groundwater by industry and mining, hydroelectric companies, agriculture and some households represents the majority of water use. However, self-supplied water is extremely difficult to estimate on a State-by-State basis because of the nature of the water allocation and regulation systems (or lack thereof) adopted by States. Moreover, the amount of water returned to the water table, and the degree to which it is "polluted", varies considerably.

While many States regulating the consumptive use of water impose a one-time permit application or water rights registration fee, as of 1992 seven States -- Arizona (with the most comprehensive system), Arkansas, Connecticut, Kansas, New Jersey, North Dakota, and South Dakota and at least one sub-State district (in Texas) -- impose a **recurrent direct water use fee** (University of Florida, 1992).

In the western "prior appropriation" States of Arizona, Kansas, South Dakota and Texas, the fee varies with the volume or rate of diversion, appropriation or withdrawal, from **$0.25/1000 gal. to $ 0.015/1000 gal. or $5.00 per acre foot.** The eastern riparian or reasonable use States of Arkansas and Connecticut charge a **single flat fee of $10.00 and $500 per year regardless of volume**, as did a recently repealed law in Wisconsin, while New Jersey's rate is graduated.

In one study, a total annual revenue yield of **$1 billion from an industrial use fee of $.0195/1,000** was estimated (CRS, 1992). Withdrawals below certain amounts are generally exempted. Also, two States exempt agricultural uses, and in others direct use fees have been challenged by the power industry on the basis of temporary "non-depletive" or "unpolluted" usage (Florida, 1992). In the five States with graduated rate structures, as well as in Florida (proposed), fee-based revenues are sufficient to be dedicated to capital accounts for water supply development, conservation and treatment.

6. Surrogate Fees for Direct Water Use are used in a number of States to support operating budgets, including seven States which use well-drilling license, permit and/or pump fees, five western States with rather steep water rights application fees, and five States with septage fees (on septic tanks, disposal or haulers).

7. Surrogate Fees for Watershed Protection are used by a number States, but also could be implemented on a watershed basis. Typical fee "surrogates" include drinking water construction fees in five States, drinking water connection fees in three States, mining severance fees in five States (with Wyoming and Montana generating almost $50 million annually), wetlands permit fees and groundwater certification fees in five States, development impact fees in Florida and many others, hunting, fishing and camping fees, and dam registration and stream encroachment fees. Most of these fees remain dedicated to State operating budgets, and annual revenue yield remains modest.

8. Feedstock Chemicals and Wastewater Treatment Sludge are hypothetical fee candidates on which no research has been conducted. Potential candidates are chlorine for drinking water treatment, and chlorinated solvents for industry. Fees on any wastewater sludge with no beneficial use might be considered. One State, Indiana, already places a fee on industrial wastewater sludge. Although data on sludge are available, there are limited data on water treatment chemicals and feedstocks. Moreover, both fees should be approached cautiously because the regulatory policy implications (i.e., necessary chlorine usage for bacterial reduction and pre-treatment regulated toxics in sludge), and the possibility of double-counting under other fee proposals. These fees were not discussed at the three fee meetings.

D. Fee Comparison

Table 4 below portrays how the alternative fees discussed in this chapter compare to one another, using the six evaluative criteria proposed earlier. Although the fee panelists suggested that not all criteria were equal, the unweighted "scores" below demonstrate some of the benefits and concerns attached to different sources of fees. The "public support" score depicted is drawn from the opinions voiced at the three fee meetings. Other scores are based on study research and current State experience with one or another fee, as well as comments by the fee panelists.

A rating of "+" means that some advantages or benefits accrue to a fee, while a rating of "-" indicates strong disadvantages, concerns or negatives. A score of "0" means that either the practical outcome is unpredictable, or that the potential advantages and disadvantages cancel out one another. The multi-votes cast for the public water supply withdrawal and green fees are recorded, but the other fees received only a few (if any) votes.

Table 4. Fee Comparison (for Capital Generation)						
Criteria/ / Fee	Public Support	Revenue Size Predictability	Equity Impacts	Costs/ Benefit	Collectability	Financing Environmental Goals
1. Public Water Withdrawal (73 Multi-votes)	0	+	-	0	+	+
2. Green Product (98 Multi-votes)	0	0	-	0	+	+
3. Industrial/ Municipal Effluent	-	-	-	0	0	+
4. Pesticides/ Fertilizer Production	-	+	-	-	+	+
5. NPDES Permit	-	0	-	0	+	0
6. Direct Water Use	0	0	+	0	0	+
7. Watershed Protection	+	-	0	+	0	+
"+" is Advantageous "-" is Disadvantageous "0" is unpredictable and neutral						

IV. THE FUTURE FEDERAL ROLE IN FEE-BASED FUNDING

The Federal role in any new fee-based funding system is presented separately here because of the substantial debate which surfaced at the three fee panel discussions. Although Federal involvement stimulated a great deal of thinking and deep skepticism, no clear consensus emerged. Below we attempt to frame the most significant issues affecting fee implementation, future fee revenue allocations, and the Federal role.

A. Implementation Functions

Fee implementation involves a number of separate tasks, some of which are highly complementary. Responsibilities include: (1) fee design; (2) soliciting public support; (3) authorizing legislation; (4) collection; (5) revenue fee allocation and "delivery"; and (6) administrative oversight.

One of the advantages of fee-based funding systems is that all these functions can be implemented by, and administered within, any single level of government, or within certain geographical/political boundaries. Fee programs could be Federal, but they could also be established solely as State, regional, or local programs. On the other hand, some functions can be shared between different governmental agencies or even different levels of government. For example, fees could be Federally-designed but State-collected.

Another hallmark of fee programs is their self-sufficiency. Fee systems typically depend on a long-term legislative authorization, often five or more years, sometimes under a fixed revenue target. The longer term nature of fee programs can provide predictability in funding infrastructure projects, which themselves depend on multi-year contracts and construction.

Fees can provide for their own internal administrative costs, and offer investment opportunities for unobligated funds or to cover unanticipated shortfalls or windfalls in fee collection. While fees at all levels of government at times have been subject to annual authorizations to outlay or obligate monies, fee collection need not be approved every year. Moreover, while fee revenues may be subject to spending limitations, it is unlikely that fees established within one governmental jurisdiction would be tapped by another, higher jurisdiction.

Fee systems are flexible by operating on a pay-as-you-go basis, with monies collected being matched to monies obligated. Although periodic fee rate adjustments may be made, contingent liability is not an issue.

The apparent self-sufficiency and flexibility of fee programs have been recognized by States. Thus, the question of future Federal involvement depends on whether States, localities and the private sector believe that the Federal government can collect fees more efficiently than, for example, States can do, and whether Federal "delivery" mechanisms will pursue redistributive, or allocation, policy goals which States and localities can support.

B. Fee Collection and Rebate

Although addressed earlier, fee collection is presented here because, to some extent, it clouded the more significant debate over Federal fee revenue allocation or redistribution policy goals. Also, fee collection issues sometimes raised the possibility of fee rebate to a higher level of government.

Some smaller State panelists seemed to prefer Federal collection of many fees, to avoid administrative costs and use the Federal "umbrella" over the onerous nature of fees. Some fees, such as green fees, are collected most efficiently at the Federal level.

In this context, the concept of a new Federal Clean Water Infrastructure Trust Fund advanced with the green fee program, and repeatedly proposed over the last decade, was not antithetical to the fee panelists if the Federal redistributive objectives addressed below could be resolved.

Other fees, such as water withdrawal fees, can be collected efficiently by either States or localities. Such fees are most acceptable if unpopular fee rebates to a higher level of government, for redistribution, is avoided. Thus, locating the collection and delivery mechanisms within the same governmental level is desirable.

C. Fee Revenue Redistribution

The subject of fee redistribution drew strong opinion. Of the many factors which emerged over the course of this study, "who" should receive the benefits of fee-based financial assistance remained a pervasive question.

All governmental funding programs imply that policy decisions will be made on revenue allocation. What makes this issue particularly obvious and contentious for environmental fee systems is that such systems are comparatively new, and because significant State and local "cross-subsidization" and "donor" issues emerge mainly when fees are considered in a Federal implementation context. Some States, in other words, conceivably will contribute substantially more in fee payments than they will receive back. Historically, this has been demonstrated in the case of annual Federal revenue-sharing, and for fee-based programs such as the Highway Trust Fund which recently has attempted to match State receipts with Federal outlays to States as closely as possible (ISTEA, 1990).

While the time frame for this study did not permit an analysis of the magnitude of the donor State factor under alternative fee proposals and, vice-versa, the extent of inter-State subsidy, such analysis is needed for further evaluation of different fee scenarios. Because cross-subsidization among States under Federal fee systems probably will be substantial, debate over redistribution formulas is likely to be more intense than that for existing and future SRF capitalization grant formulas.

Other revenue redistribution objectives resulting from Federal fees caused deep concern. Not surprisingly, a major issue was whether new Federal fee revenue allocation formulas should be based on traditional "needs" and population categories or something entirely different.

To summarize this conflict as mainly a difference between "large versus small" probably is an oversimplification. While this split was evident, other principles also were at work. "Equitable" fee revenue allocation implied to many that the more successful States and localities, or those having made substantial past investment in water-related infrastructure or pollution prevention, not be penalized. However, others favored new subsidies, including grants, for smaller, disadvantaged communities as well as larger communities facing huge capital investment programs.

Affordability, in the face of the growing regulatory environment, was a theme echoed at all three fee panels. Many State and local panelists believed that local economic variability demanded a new flexibility in financing modes which was beyond any Federal capacity to administer.

There also was substantial interest in new funding principles based on redistribution of funds to specific watersheds on an environmental risk basis. In Denver, one proposal called for new, flexible Federal cost-sharing or subsidy principles, although this was not discussed in detail.

As described earlier, most panelists did not object to adding drinking water, including private sector facilities, to fee-based funding eligibilities. Yet the panelists spent no time examining the balance of funds to be distributed to drinking water versus wastewater. The only Federal issues mentioned in this context was a concern and some ambivalence on the part of the drinking water community in dealing with Federal bureaucratic red tape, and on the part of the investor-owned (private) water utilities not to have to compete with deep Federal subsidies to public water utilities, such as grants.

Likewise, in seeking "delivery" flexibility, panelists agreed that States should utilize whatever institutional delivery mechanism worked best for them, whether expanded ("environmental"), independent State Revolving Funds, other trust funds, special Treasury accounts, the environmental agency or, in the case of drinking water, sometimes State health departments.

There appeared to be support for States to provide fee-based funding to the water program with the greatest need on a year-to-year basis, and permitting inter-account transfers of funds. Many also would have added solid waste projects, such as landfills, to the list of eligible projects.

In general, the Federal role in fees remains unresolved. New fee systems will need to be defined more specifically in relationship to new financing policy objectives, both environmental and subsidy-related, for the advantages of Federal fee programs to be perceived.

V. FEE-BASED INTERGOVERNMENTAL FUNDING MODELS

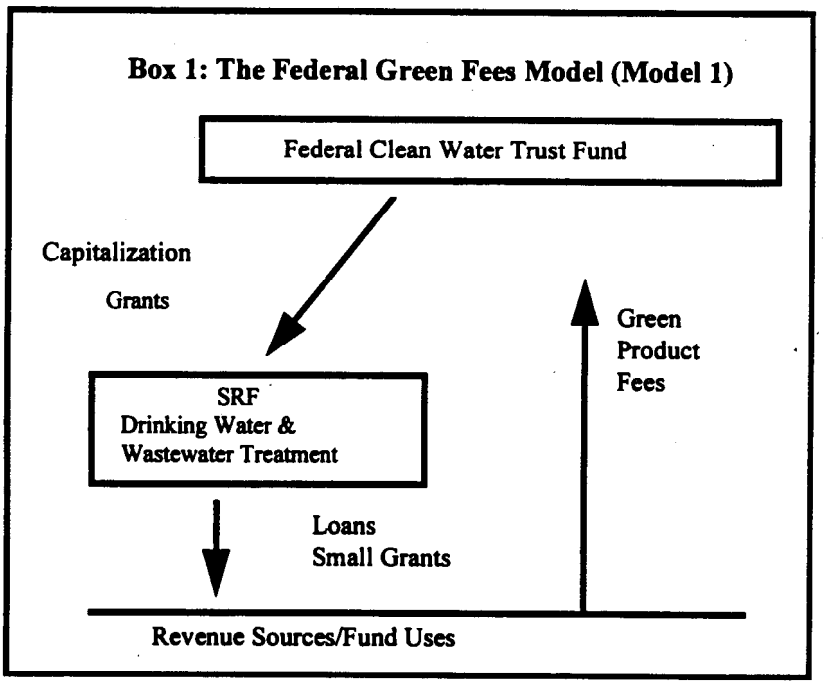
Presented below are four alternative intergovernmental funding models based on fees. These models are designed as generic examples of how different fees, financial delivery mechanisms, and environmental goals might be mixed. Of course, any number of models are possible. These four are illustrative only, and should stimulate further policy discussion.

The models are based on the fees and institutions addressed within the context of this study and its public consultative process. They move on a continuum from the most Federally-controlled to the most flexible, and ultimately voluntary, State and local fee-based systems. Federal matching funds are used as incentives in the second and third models, and may be used to accommodate affordability concerns in the fourth. We have labeled these prototypes as: **(1) The Federal Green Fee Model; (2) The Federal-State Water Use/ Match Model; (3) The Voluntary State Fee Incentive Model; and (4) The Watershed Fee Model.** A fifth option, preserving the **Status-Quo**, is discussed.

Appendix E, the Executive Summary of the earlier Syracuse Environmental Finance Center Draft Report (May 1995) elaborates on details of revenue allocation, eligibilities, forms of assistance, and oversight. However, the fees differ here.

A. Model 1: The Federal Green Fee Model

This model is based on new Federal, water-related green product fees, but in other respects is a very traditional funding system. Federally-legislated green fees would be collected by the IRS and deposited in a new Federal Clean Water Trust Fund, or "Account", managed by EPA and Treasury Department officials. The Fund would allocate revenues, in the form of capitalization "block" grants, to SRFs or similar State institutions, which in turn would offer financial assistance to water-related projects. Box 1 diagrams this model.



The Federal Clean Water Trust Fund also would invest temporarily in taxable U.S. Treasury securities, the earnings from which could be used to cover Federal administrative costs (not to exceed 4% of green fee revenues annually.) The Trust Fund would be, preferably, off-budget.

The Federal Green Fee Model may be a solid mechanism by which to address existing and new national environmental goals. It supports State environmental financing objectives, particularly use of the SRF concept as a major State-to-local delivery mechanism, and jumpstarts drinking water funding.

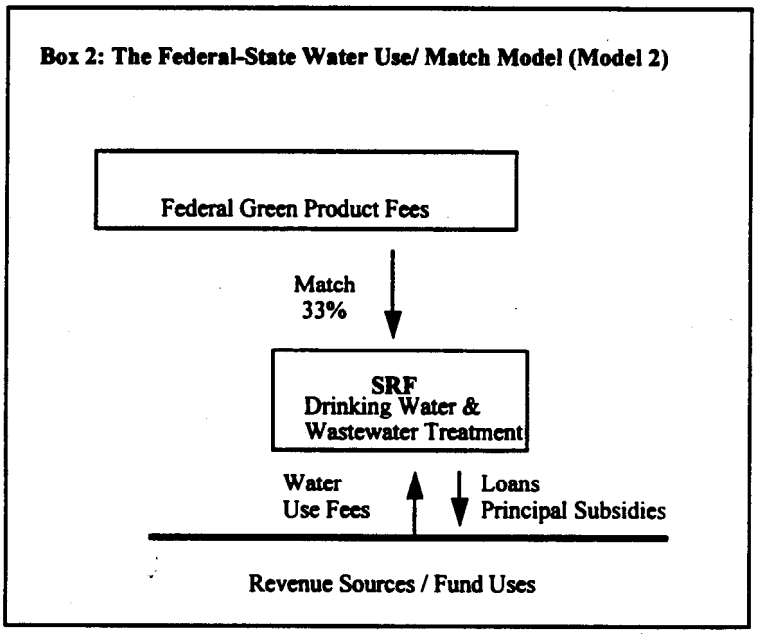
However, major stumbling blocks include industry opposition to green fees, resistance on the part of "donor" States, and the administrative complexities of green fee programs. The Federal government must seek a difficult consensus on an equitable allocation, or redistribution, formula to States. This formula should strike a balance between wastewater and drinking water investment, both past and ongoing, and address local affordability and environmental risks, as well as traditional "needs" and population criteria.

New Federal redistributive goals which might prescribe the use of Federal and/or State set-asides for project grants (as opposed to loans) may complicate this debate, since the use of grants diminishes the monies available for SRF revolving loans, both direct and bond-leveraged loans, and interest rate subsidies. For example, grants and/or "principal subsidies" for small, disadvantaged communities, as well as for larger cities, are supported by many but also are seen to undercut equity and leveraging principles.

B. Model 2: The Federal-State Water Use/Match Model

The second model is a mixed, or partial Federal-State option, which relies on State-imposed water use fees, **both** for public water supply and direct, self-supplied water withdrawal. These State fees, here termed collectively as "water use" fees for simplification, would account for the majority of new revenue nationwide, but the Federal government would be required to supply a 33% match.

The Federal match would be raised by Federal green product fees. However, this fee rate would be smaller than the 4% sales percentage described earlier. For example, a 1.0% sales surcharge on the commodities outlined in Chapter III would yield almost $.7 billion annually. A Federal "EPA Trust Account" could be established to receive deposits, and disburse a year-end Federal match annually through capitalization grants to SRFs or other State trust funds. This model is diagrammed in Box 2.



The Federal-State Water Use/Match Model is less heavy-handed than the Federal-State **De Minimis** Model presented in the earlier Syracuse Draft Report (May 1995), since State participation via use of existing or new, capital-generating water use fees is voluntary. Here, States are encouraged to use such fees, and dedicate them to water-related project financing, in order to receive Federal matching funds.

The Federal match serves as a "carrot" as opposed to a "stick". In contrast, the earlier **de minimis** model relied, in theory, on Federal imposition of public water supply withdrawal fees on a per-State basis to generate $2.8 billion annually, which in practice it would impose and collect only if States did not choose to implement such fees or supersede them with other types of fees.

Reliance on water use fees is prescribed in this model because it supports and extends the user fee concept, and because many States already impose them, although such fees are rarely used as capital-generating fees. Including a direct water use fee enhances the fairness and equity of this approach, and reduces the individual fee burden. Consideration could be given to including new wastewater user fee surcharges, or effluent fees, in the match-eligible fee base.

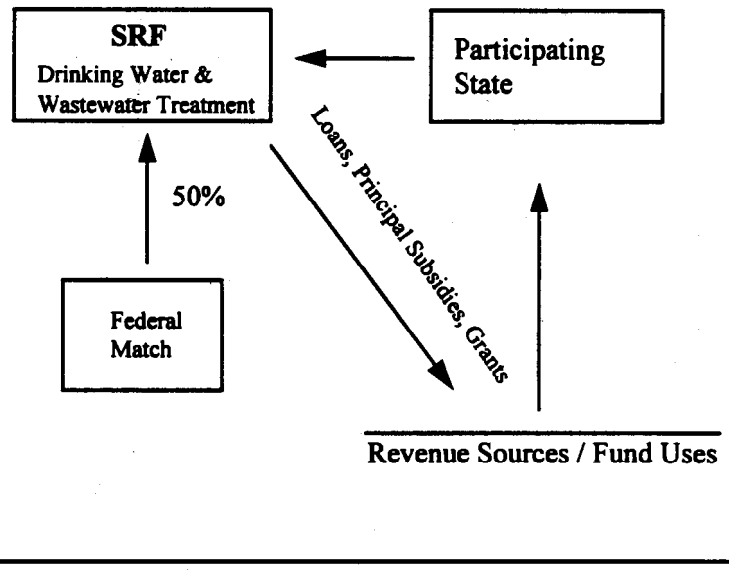
Here, States have more flexibility in funding whatever local projects they see fit, and the Federal match is unrestricted in terms of specific categories (e.g., drinking versus wastewater) or types of assistance (e.g., loans versus grants).

Use of the Federal match is novel, since previous intergovernmental funding models require States to match Federal funds (EFAB, "Public Sector", 1992). This switch in roles conforms to the principle of devolution to States, and may be attractive to them. The downside is that there is no assurance that a national revenue target for new infrastructure funding will be met, with the exception of that provided by Federal green fees. Moreover, localities may continue to oppose State imposition of water use fees on affordability grounds.

C. Model 3: The Voluntary State Fee Incentive Model

This model is similar to the above-described alternative with three exceptions. State fees are unrestricted in terms of the types of fees selected. Likewise, the source of the Federal match is not prescribed, and the match itself is increased to 50%. This model is outlined in Box 3.

Box 3: Voluntary State Fee Incentive Model (Model 3)

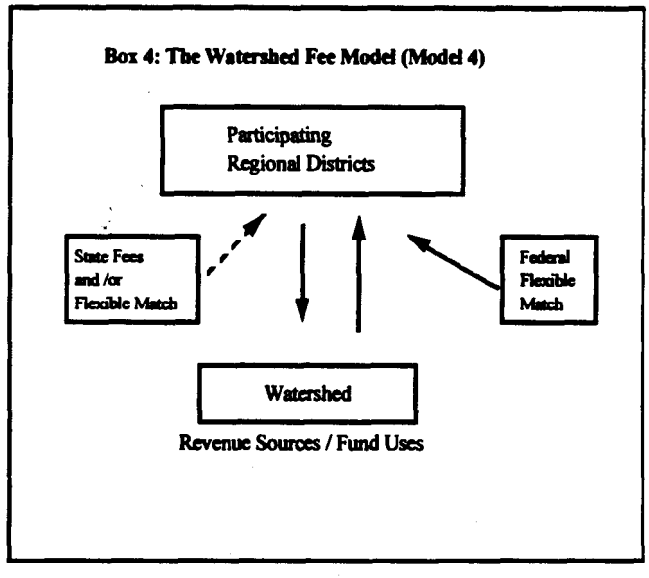


Under the Voluntary State Fee Incentive Model, States may choose to establish any fees or taxes, whether environmentally-related or not, at any rate and yield. For example, States could use general sales tax set-asides, "sin" taxes, severance fees, or the like. To be eligible for the Federal 50% match, however, such fees must be dedicated to State water-related project financing accounts. The Federal match is generated by general appropriations or fees, and Federal capitalization grants to States are not earmarked to specific eligibilities.

The advantages of this model are maximum flexibility for States which, depending on how fees are viewed in individual States, may be crucial in getting fees off the ground in the first place. However, there is no assurance that any new fee legislation and subsequent fee dedication will occur. Moreover, if the Federal government relies on annual appropriations to match States fees, this represents either an open-ended contingent liability for it or, in the worst case, undercuts certainty to States that the year-end match will be forthcoming.

D. Model 4: The Watershed Fee Model

The Watershed Model is the most innovative since fee funds are directed to specific regional watersheds, either sub-State or multi-State. Moreover, although some State or Federal funds may be used, the role of both governments is minimal. For example, fee revenues to be disbursed to specific watersheds could be imposed by States, and be State-wide, or could be generated and spent solely within individual watersheds. Or, general or fee-based Federal or State funds could be used to "buy down" the cost of watershed protection projects according to local affordability criteria. This model is described in Box 4.



The Watershed Fee Model appears to be responsive to several new kinds of funding demands. First is the perceived need to pursue watershed protection through pollution prevention. However, the kind of projects this implies, such as agricultural best management practices, are not easily fundable on a more traditional loan or user fee basis.

Secondly, local affordability concerns, especially in rural areas, might be best addressed by flexible cost-sharing or subsidies by either the State or Federal government. Such monies could be disbursed directly to watershed regions. If watershed ecology necessitated multi-State programs, some Federal financial commitment might provide an incentive for States or localities to cooperate.

A third demand is enhanced local involvement and control. Since most new fees are viewed as "mandates" by localities, and wealthier localities vigorously resist rebating and/or redistributing new fees elsewhere, regionalization may help address these concerns.

Other benefits pertain to public support. By attaching fees to specific, identifiable watersheds or water bodies, public support may increase along with the recognition that pollution prevention may be less costly than capital construction. Regionalization of small systems may also be encouraged. A final benefit is that suburban units which do not use public water and sewer systems, may support conservation goals by paying new fees, such as recreational fees or special assessment district fees.

Of course, any type of fee could be used to fund watershed protection, Federal, State or local. For the purposes of argument, we identify below fees which are considered "surrogates" for watershed protection fees and/or direct water use, such as examined in Chapter III. (See also "Financing Alternatives for Maryland's Tributary Strategies", 1995). These include:

-direct water use fees in sub-State districts;
-well drilling licenses, pumping fees, water rights application, and aquifer depletion fees;
-fees on new septic fields and tanks, and commercial pumping, hauling and disposal;
-water/sewer facility construction and connection fees;
-ascending block water utility fees;
-mineral severance and timber cutting fees;
-wetlands and dam permit and mitigation fees;
-groundwater certification fees ;
-recreational fees, "conservation" stamps and license plates;
-non-beneficial sludge and ash disposal fees;
-special district development impact and "profit" fees;
-real estate transaction fees;
-local capital bond transaction fees;
-tax increment financing, property tax or tax "check-offs";
-special stormwater district management fees.

The administrative and institutional aspects of the Watershed Fee Model need to be considered carefully, since watershed "districts" and some special assessment districts are novel, and many such fees may be difficult to design and collect. It is conceivable that regional trust funds might be created both to safeguard and invest fee funds, and also to imitate highly leveraged financing concepts such as SRFs.

While States and localities already use many of these fees, the fee base and rates may need to be adjusted to increase the revenue potential, avoid the proliferation of many small fees, and account for the effects of desirable behavioral changes. Likewise, affordability criteria based on the cumulative cost of regulatory mandates and fees need to be devised, so that any flexible cost-sharing or subsidy can be determined.

E. Preserving the Status-Quo

In the absence of new Federal legislation on fees, there is every reason to believe that States and localities will continue to innovate. Over the past decade, the number of State fee programs has increased, both administrative service and capital-generating fees. There is every reason to believe that fee revenues will continue to grow, however modestly.

Several observations may be offered. In recent years, fees, particularly administrative service fees, may have proliferated to the extent that some backlash in public and legislative support may exist, and the use of dedicated fee funds for other purposes at all levels of government is disturbing.

States may need to structure capital-generating fee programs more carefully, using some of the evaluative criteria outlined in this study. The growing interest in local or regional water-related fees should be accommodated as well.

BIBLIOGRAPHY

American Petroleum Institute, Effluent Fees: Present Practice and Future Potential, Discussion Paper #075, December, 1993.

Carlin, Alan, et. al., December, 1990, Environmental Investments: The Cost of a Clean Environment. U.S. Environmental Protection Agency Office of Policy, Planning and Evaluation.

Carr, A. Barry, March 11, 1994, An Assessment of the Agricultural Impacts of H.R. 2199. CRS Report to Congress.

Clean Water Council (Apogee Research, Inc.), December 1990, America's Environmental Infrastructure: A water and Wastewater Investment Study.

Congressional Research Service (Copeland, Claudia), July 10, 1992, Funding Water Quality Programs: Revenues for a National Water Investment Corporation.

Council of Infrastructure Financing Authorities (CIFA), (Irvin, Daniel), March 1993, State Municipal Bond Banks.

Council of Infrastructure Financing Authorities (CIFA), (Ladd, Paul), August 1994, Leveraged SRF Programs: A Comparative Review.

Environmental Financial Advisory Board (EFAB), May 1992, Narrowing The Gap: Environmental Finance For The 1990s.

Environmental Financial Advisory Board (EFAB), March 13, 1992, Public Sector Options to Finance Environmental Facilities.

Ernst & Young, 1992, Water & Wastewater: 1992 Rate Survey.

Foster, Richard, July 13,1994, Statement of Richard L. Foster before the Subcommittee on Investigations and Oversight Committee on Public Works and Transportation.

Friends of the Earth, April 1995, "Dirty Little Secrets".

GAO, February, 1993, Environmental Protection: Implication of Using Pollution Taxes to Supplement Regulation.

Grossman, Steven, November 14, 1994, 1994 Annual SRF Survey.

Hearings on H.R. 2188, House Committee on Public Works and Transportation, Subcommittee on Investigations and Oversight, statements by Carole Browner, U.S. EPA, and Richard Foster, National Utility Contractors Association, July 1994.

Lee, Martin R., January 14, 1993, Summaries of Environmental Laws Administered by the Environmental Protection Agency, CRS Report.

National Conference of State Legislatures (Aurturo Perez), April 1995 (3rd Edition), Earmarking State Taxes.

National Conference of State Legislatures, May 1991, States as Water Quality Financers.

National Conference of State Legislatures, December 1993, Summary of State Wastewater Discharge Permit Fees (NPDES)

National Conference of State Legislatures, July 1993, Alternative Funding Mechanisms for State Drinking Water Programs.

National Governor's Association, (Shields, Evelyn), 1989, Funding Environmental Programs: An Examination of Alternatives, NGA Report.

New Jersey Department of Environmental Protection, New Jersey Pollutant Discharge Environmental System: 1989-1990 Annual Fee Report.

New York State Environmental Facilities Corporation Memo, February 19,1993, SRF Loans V. Grants.

New York State Memo, April 16, 1993, Small Community SRF Program Benefits.

Report from the Governor's Blue Ribbon Panel, August 1995, Financing Alternatives for Maryland's Tributary Strategies, "Innovative Financing Ideas for Restoring the Chesapeake Bay".

Research Triangle Institute, February, 1993, Effluent Discharge Fees and Water Quality: A Preliminary Assessment, U.S. Environmental Protection Agency Office of Water.

Solley, Wayne B., Pierce, Robert R., and Perlman, Howard A., U.S. Department of the Interior, 1993, Estimated Use of Water in the United States in 1990.

Subcommittee on Environment and National Resources, March 15, 1992, Hearing on "Polluter Pays Clean Water Funding Act".

Syracuse University Environmental Finance Center, July 1995, (Kennedy, Victoria S. and Moon, Myung-Jae), Fees for Funding Water Quality Infrastructure: Background Paper.

Syracuse University Environmental Finance Center Draft Report, May 1995 (Kennedy et.al.) "Fee-Based Models for Funding Water Quality Infrastructure".

Taylor, Harold, U.S. Department of Agriculture, September 1994, Fertilizer Use and Price Statistics, 1960-93.

The Sierra Club (Glick, Patricia and Halik, Heide), January 1995, In The Green: A Guide to Paying for Environmental Programs.

University of Florida Law School, February 1992, Nationwide Survey of State Water Use Legislation.

U.S. Department of Agriculture, October 1993, Agricultural Resources Inputs: Situation and Outlook Report.

U.S. Department of Transportation, Federal Highway Administration, May 1992, Financing Federal-Aid Highways.

U.S. Department of Transportation, Federal Highway Administration, December 1994, Rebuilding America: Partnership for Investment.

U.S. Environmental Protection Agency, Office of Water, September 1993, 1992 Needs Survey Report to Congress.

U.S. Environmental Protection Agency, 1992, Permit Compliance System.

U.S. Environmental Protection Agency, June 1994, Prevention, Pesticides and Toxic Substances, Pesticides Industry Sales and Usage: 1992 and 1993 Market Estimates.

U.S. Environmental Protection Agency, Office of Administration and Resources Management, May 1990, A Preliminary Analysis of the Public Costs of Environmental Protection: 1981-2000.

U.S. Environmental Protection Agency, Office of Policy, Planning, and Evaluation, March 1991, Economic Incentives: Options for Environmental Protection.

U.S. Environmental Protection Agency, Office of Wastewater Enforcement and Compliance, October 1991, State Revolving Fund (SRF) Final Report to Congress.

U.S. Environmental Protection Agency, Office of Water, May 1992, An Overview of Existing State Alternative Financing Programs: Financing Drinking Water System Capital Needs in the 1990's.

U.S. Environmental Protection Agency, Office of Toxic Substances, 1994. Toxic Release Inventory.

U.S. Environmental Protection Agency, August 7, 1992, Alternative Financing Mechanisms for Environmental Programs.

U.S. Environmental Protection Agency, July 1985, The Effluent Charge System in the Federal Republic of Germany.

Vroomen, Harry and Taylor, Harold, U.S. Department of Agriculture, January 1993, Fertilizer Trade Statistics, 1970-91.

Water Environment Federation, 1992, A National Water Agenda for the 21st Centry: Water Quality 2000 (Phase III Report).

Appendix A

Alternative Funding Study

Three Water Fee Meetings

List of Panelists and Attendees

A-1	*April 25, 1995*	*Crystal City Sheraton* *Arlington, Virginia*
A-2	*July 19, 1995*	*Airlie Conference Center* *Warrington, Virginia*
A-3	*September 21, 1995*	*EPA Region 8 Conference Center* *Denver, Colorado*

Appendix A-1

Alternative Funding Study
Water Fee Meeting
April 25, 1995

Crystal City Sheraton, Virginia

Sponsored by the EPA's Environmental Finance Advisory Board (EFAB)

Meeting Panelists and Attendees

DISCUSSION PANEL

Deborah Photiades (EFAB Moderator)
Executive Director
Governor's Advisory Council on
Privatization, Maryland

State Government

Pete Butkus
Department of Community Development
State of Washington

Saeid Kasrei
Chief, Project Manager Division
Maryland Environmental Department
(Association of State and Interstate
Water Pollution Control Administrators)

Robert C. Lenna
Executive Director
Maine Municipal Bond Bank

Greg Smith
Ohio Water Pollution Control Agency
(Municipal Assistance Task Force
Association of State and Interstate
Water Pollution Control Agencies)

Elizabeth Ytell
Director
Environmental Services Division
Rural Environmental Community
Assistance Corporation

Environment

David Zwick
President
Clean Water Action

Congressional Staff

Claudia Copeland
Environmental Policy Specialist
Congressional Research Service
Library of Congress

Local Government

Jon W. Schellpfeffer
Assistant Director
Madison Metropolitan Sewerage District
(Association of Metropolitan Sewerage Agencies)

Ken Kirk
Executive Director
Association of Metropolitan Sewerage
Agencies

Thomas Schaeffer
Association of Metropolitan Water
Agencies

Industry

Nela Brown
Shell Oil Company

Agriculture

Tom Van Arsdall
National Council of Farmer Cooperatives

DESIGNATED FEDERAL OFFICIAL

George Ames
Office of the Comptroller
U.S. EPA

EPA PRINCIPALS

Mike Cook
Office of Wastewater Management
U.S. EPA

Jim Horne
Office of Wastewater Management
U.S. EPA

ATTENDEE SPEAKERS

John Sullivan
American Waterworks Association

James Groff
Executive Director
National Association of Water Companies

Patricia Glick
Economist
Sierra Club

OTHER ATTENDEES

Pam Barr
Office of Management and Budget

Zach Church
Office of Management and Budget

Jason Gross
Analyst
Government Finance Group, Inc.

Tom Guay
ECA

Jane Messmer
Association of Metropolitan Water Agencies

Eileen O'Brien
Chief Legal Assistant
Congressman Gerry Studds

John E. Petersen
President
Government Finance Group, Inc.

Dan Schechter
Water Environment Federation

Paul Schartz
Clean Water Action

John Staunton
Inside EPA

Ralph Sullivan
Senior Environmental Advisor/ International Trade Advisor

Robert Weaver
Attorney
Association of Metropolitan Sewerage Agencies

Jamie Bourne
Office of Ground Water and Drinking Water
U.S. EPA

Michael Deane
Office of Wastewater Management
U.S. EPA

Richard Kuhlman
Office of Wastewater Management
U.S. EPA

Vera Hannigan
Office of the Comptroller
U.S. EPA

Appendix A-2

Alternative Funding Study
Water Fee Meeting
July 19, 1995

Airlie Conference Center
Warrington, VA

Sponsored by CIFA, Syracuse EFC and the Office of Water, U.S. EPA

Meeting Panelists and Attendees

State Government

Paul Marchetti
Executive Director
PENNVEST
22 South 3rd Street
Keystone Building, 4th Floor
Harrisburg, PA 17101

Greg Smith
Chief, DEFA
Ohio EPA
1600 Watermark Drive
PO Box 163669
Columbus, OH 43216-3669

Tom Gray
VA Division of Water Supply Engineering
1500 East Main Street, Room 109
Richmond, VA 23219

Brian Jeans
MA Department of Environmental Protection
One Winter Street
Boston, MA 02108

Local Government

Bob Weaver
General Counsel
AMSA
1000 Connecticut Avenue, NW,
Suite 410
Washington, DC 20036

Paul Bringewatt
Executive Director
Monroe County Water Authority
475 Norris Drive
Rochester, NY 14610

Mike Ralph
Director of Public Affairs
MA Water Resources Authority
100 First Avenue
Boston, MA 02129

Agriculture

Mark Jenner
American Farm Bureau Federation
925 Touhy Avenue
Park Ridge, IL 60068

Tom Van Arsdall (absent)
National Council of Farm Cooperatives
50 F Street, NW
Washington, DC 20001

Jason Gray
Manager
Environmental Programs
VA Water Project
PO Box 2868
Roanoke, VA 24001

Environment

Joanne Freund Lesher
3601 Connecticut Avenue NW
Apt 610
Washington DC 20008

Velma Smith
Executive Director
Friends of the Earth
1025 Vermont Ave, NW
Suite 300
Washington DC 20005

Business and Industry

Ford West
Vice President for Government Affairs
Fertilizer Institute
501 2nd Street, NE
Washington, DC 20002

Mike Ruszczyk
Manager, Surface Water Issues
Health, Safety & Environment
Eastman Kodak Company
Rochester NY 14652-6263

Roy Torkelson
First Vice President
Reinoso & Company, Inc.
30 Broad Street
39th Floor
New York, NY 10004

Patricia Hill
Manager
Federal Regulatory Affairs
Georgia Pacific Corporation
1875 I Street, NW Suite 775
Washington DC 20006

Construction & Engineering

Andy Mayts
SCI
38521 U.S. Highway 19 North
Palm Harbor, FL 34684

Charles Jars
Vice President
Rust International, Inc.
11240 Waples Mill Road
suite 100
Fairfax, VA 22030

Bill Stannard
Black & Veatch
8400 Ward parkway
Kansas City, MO 64114

Other

Claudia Copeland
Environmental Policy Specialist
Congressional Research Service
Library of Congress LM-423
Washington, DC 20540

Ken Murphy
Executive Director
Environment & Energy Study Institute
122 C Street, NW Suite 700
Washington DC 2004

ADDITIONAL ATTENDEES

George Ames
US EPA

James Bourne
US EPA

Richard Kuhlman
EPA

Tim McProuty
US EPA

Jason Gross
Government Finance Group

Paul Arneson
National Association of Water Companies

Eric Madden
Clean Water Action

Richard Kakuske
WERF

Lee Garrigan
American Consulting Engineers Council

Dawn Kristof
Water and Wastewater Equipment Manufacturing Association

Bill Harley
National Utility Contractors Association

Bill Hillman
National Utility Contractors Association

Steve Bugwell
Water Environment Federation

Appendix A-3

Alternative Funding Study
Water Fee Meeting
September 21, 1995

EPA Region 8 Conference Center
Denver, Colorado

Sponsored by CIFA, Syracuse EFC and the Office of Water, U.S. EPA

Meeting Panelists and Attendees

University

Norm Falk, Director
Technical Service Division
University of New Mexico
Engineering Research Institute
1001 University Boulevard, Suite 101
Albuquerque, NM 87106

Local Government

Barbara Biggs
Governmental Legislation Liaison
Metro Wastewater Reclamation District
6450 York Street
Denver, CO 80229-7499

George Brinsko, Director (absent)
Pima Co. Wastewater Management
210 N. Stone, 8th Floor
Tuscon, AZ 85701

Jon DeBoer
American Water Works Association
1025 Laurel Oak Road
Voorhees, NJ 08043

Mike DiTullio, Chairman (absent)
Water Utility Council
Fort Collins-Loveland Water District
4700 S. College Avenue
Fort Collins, CO 80525

Steve Smithers
Colorado Municipal League
1660 Lincoln Street, Suite 2100
Denver, CO 80264

Art Sweacy
Director
Arkins Water Association
PO Box 26
Masonville, CO 80541

Richard Zais
City Manager
129 N. 2nd Street
Yakima, WA 98902

Agriculture

Ray Christensen
Colorado Farm Bureau
2211 W. 27th Avenue
PO Box 5647
Denver CO 80217

Engineering

David Stewart
President
Stewart Environmental Consultants, Inc.
P.O. Box 2285
Fort Collins, CO 80522

Jim Stutler
Tierdael Construction Co.
1751 East 58th Avenue, Suite A
Denver, CO 80216

Environment

Dan Luecke
Environmental Defense Fund
1405 Arapahoe Avenue
Boulder CO 80308

State Government

Gary Bechtol
TX Water Development Board
PO Box 13231 Capitol Station
Austin, TX 78711-3231

Julia Doermann
Western Governors' Association
600 17th Street, #1705 South
Denver, CO 80202

Daniel L. Law
Executive Director
CO Water Resource & Power
Development Authority
1580 Logan Street, Suite 620
Denver, CO 80203

Langdon Marsh
Director
Oregon Dept of Environmental Quality
811 S.W., 6th Ave
Portland, OR 97204

Arturo Perez
National Conference of State Legislators
1560 Broadway, Suite 700
Denver, CO 80202

Other

Hester (Tess) McNaulty (absent)
1070 Miami Way
Boulder, CO 80303

ATTENDEES

Clarance Barnett
Mayor Pro-Tem
City of Yakima

Wendy Clevenger
Montgomery Watson

Jack Rycheclay
EPA Region 8

Marian Law
HDR Engineering

Martin Loring
Oregon Dept. of Environmental Quality

Ted Boogs
Vorys, Safer, Seymour & Pease

Edward Blundon
City of Phoenix

James C. DeLaura
Montgomery Watson

Appendix B

Summaries of Three Water Fee Meetings

B-1	*April 25, 1995*	*Crystal City Sheraton* *Arlington, Virginia*
B-2	*July 19, 1995*	*Airlie Conference Center* *Warrington, Virginia*
B-3	*September 21, 1995*	*EPA Region 8 Conference Center* *Denver, Colorado*

Appendix B-1

Alternative Funding Study

Panel Discussion on Water Fees

Crystal City, Sheraton, April 25, 1995
(Sponsored by the U.S. EPA's Environmental Finance Advisory Board, EFAB)

General Observations: Discussion on the fee base was considerable, with differences of opinion concerning the degree to which "polluter pay" principles and behavioral changes should be sought, compared to those persons seeking broad-based fees ("everyone pollutes") and maintaining some cost/benefit relationship. One major recommendation was to explore and add more types of fees, i.e., broaden the fee base, particularly by using the product sales taxes recommended by AMSA.

The drinking water community was adamantly against Federally-mandated local user fee increases, and the agricultural representative spoke strongly against pesticide/fertilizer fees. The majority of the attendees seemed to be more in favor of State as opposed to Federal fees. However, there was more support for a Federal redistributive role vis-a-vis States than anticipated, and less support for a totally voluntary model. Enhanced flexibility for SRFs was widely supported.

Attendees appeared to support ongoing public consultation regarding the use of fees, particularly if it included more industry and discussion of other types of fees. Given the interest in a new Model 2 modified to include elements of Models 1 and 3 (e.g., some Federal role including a Federal match, new State fees especially "green" fees), one or two more model design and refinement sessions would be worthwhile.

However, a handful of the attendees spoke strongly against the concept of using fees altogether (several from the drinking water community), while other participants were very concerned that a national fee proposal would undercut Congressional willingness to appropriate annual SRF monies (AMSA and AMWA).

Specific Comments:

1. The Fee Base

-Broaden Fee Base

-Include more specific industry fees (Nela Brown from Shell Oil, Beth Ytell from the Rural Community Assistance Corporation, RCAP, in California, and EFAB, who mentioned timber and mining; David Zwick from Clean Water Action)

-Include product sales "green" taxes such as toilet paper (Ken Kirk, John Schellpfeffer, and Bob Weaver from AMSA, Bob Lenna from the Maine SRF and EFAB, and Nela Brown)

-Study relies too much on earlier H.R. 2188 proposals (Nela Brown, Jack Sullivan from AWWA, Tom Van Arsdale from the National Association of Farmers Cooperatives)

-Include Federal facilities (Sahid Kasraei from Maryland and ASDWA, Beth Ytell)

-Explore solid waste fees and include solid waste in eligibilities (Bob Lenna and Beth Ytell); distinction between water and solid waste is artificial

-Include non-public water supply withdrawals such as direct industrial withdrawals (Jim Groff, National Association of Water Companies, NAWC)

-Change Fee Base

-Effluent and NPDES fees are unacceptable (AMSA, Nela Brown); POTW's are not polluters (AMSA)

-Federal public water supply withdrawal fees are unacceptable but similar State fees O.K. (Jack Sullivan, AWWA)

-Pesticide/fertilizer production fees unacceptable (Tom Arsdale, National Association of Farmers Cooperatives)

-Support "polluter pays" principle and set rates to produce behavioral change (the two environmental groups, Clean Water Action and Sierra Club, and Ken Kirk, AMSA to some extent)

-Against tight linkage between costs/benefits and strict adherence to "polluter pays" (Bob Lenna and Beth Ytell, EFAB), but preserve principles to some extent (Greg Smith from Ohio and ASWIPCA); Nela Brown argues that those who pay fees should see some benefits unlike Superfund experience; everyone is a polluter (Ken Kirk, Patty Glick from Sierra Club)

2. Evaluation Criteria

-Most fees are unacceptable but that should not be the main issue (environmental groups, CWA and Sierra, Greg Smith from ASWIPCA)

-Eliminate or modify cost/benefit criterion (David Zwick from CWA, Bob Lenna from EFAB, Tom Schaffer from AMWA)

-There are subtle difference here between those who believe "polluters" should pay even if they don't benefit (CWA and Sierra), those who favor State cross-subsidization and redistribution, and those arguing that everyone pollutes and fee base should be broad

-Eliminate or modify equity criterion (David Zwick and Tom Schaffer from AMWA)

-Some cross-subsidization between States is necessary particularly for small States such as Maine (Bob Lenna, Beth Ytell from EFAB, Claudia Copeland from CRS, David Zwick, and Jack Sullivan from AWWA)

-Assured State control over revenue source more important than revenue size and predictability (Bob Lenna)

-Ease of collectability is given too much emphasis in the study (Bob Lenna, and Sahid Kasaeri from ASIWPCA; both argued that States may want Feds to collect fees, even if this adds time and administrative costs to collection process)

-Annual $2.8 billion revenue stream too small (Ken Kirk, Jack Sullivan)

-Add behavioral changes to environmental goals, with more graduated as opposed to flat fee rates (David Zwick and Patty Glick)

3. Delivery Mechanisms

-All three models are biased in favor of existing institutions and ways of doing business

-Support for the Federal Trust Fund (Ken Kirk, and Bob Lenna who at least wants some Federal redistributive role)

-Federal Trust Fund activities need clarification (Claudia Copeland, CRS, in terms of administration, operations and grants) and Federal match concept needs more work

-Strongly support SRF flexibility (Greg Smith from ASIWPCA, Pete Butkus from Washington State and EFAB, Ken Kirk, and Bob Lenna)

-Need more SRF assurances under all models (e.g., Bob Lenna and Pete Butkus who argued that fees must be dedicated to SRFs in perpetuity with no State legislative review, Federal administrative cost should be capped, and SRF reporting requirements reduced)

-**Don't overlayer SRF with too many eligibilities** such as some aspects of drinking water and solid waste (Ken Kirk)

4. Eligibilities

-**Include non-structural improvements** (Greg Smith from ASWIPCA, Tom Van Arsdale from NCFC, Beth Ytell from EFAB, David Zwick from CWA, Tom Schaffer from AMWA, and Jack Sullivan from AWWA)

-Non-structural solutions include NPS (BMPs) and source-water protection

-**Include Federal/State technical assistance** (drinking water systems viability, use of low-cost technologies by small communities, Tom Schaffer from AMWA and Beth Ytell)

-**Include solid waste** (Bob Lenna, Beth Ytell, and Pete Butkus)

-**Encourage drinking water regionalization and consolidation** (Jim Groff from NAWC)

5. General Comments

-**Federal match sounds like a new Federal entitlement** under Model 3 (Claudia Copeland, CRS)

-**Beware of unanticipated outcomes**, e.g., fee-based models might be seen by Congress as a substitute for direct SRF appropriations (Ken Kirk from AMSA, Tom Schaffer from AMWA)

-**Congress will never support our fee proposals** and the report would do damage to the cause of funding water infrastructure (Jack Sullivan from AWWA, Jim Groff from NAWC, Tom Van Arsdale from Farmers Coop,)

-**Gaining State legislative support a huge problem** (Beth Ytell from EFAB, Nela Brown from Shell, Jack Sullivan from AWWA, Bob Lenna from EFAB)

-**Getting local commitment to fees is essential** (Nela Brown)

-**Value-added fees very unpopular** (David Zwick from CWA) and always regressive (Nela Brown)

-**Legislating local user fee increases very difficult** (John Schellpfeffer from AMSA, Tom Schaffer, Jim Groff, Jack Sullivan) and user fees increases under Models 1 and 2 are too steep

-**What's wrong with using general revenues** instead of new fees (Nela Brown and Beth Ytell)?

-**Remember, the study is not a financing study, e..g. which would focus on issues such as arbitrage rebate restrictions on SRFs** (Bob Lenna)

-**Pay more attention to pollution prevention** (Jack Sullivan and Patty Glick from Sierra Club)

-**Tax-exempt bonds are still the best way to go** (Jim Groff); we may wish to explore such issues as expanded volume caps for private-activity tax-exempt bonds

-**Grants are inefficient** (Jim Groff) and loans too costly and time-consuming (Jack Sullivan)

-**Federal and State environmental mandates are the real problem** (Tom Van Arsdale)

-**Need a ceiling and sunset on fees** (Nela Brown); also need to look at effects on international markets (Nela was the only panelist who specifically mentioned the need for more analysis on the economic impacts of fees)

-**How did we derive our toxic vs. conventional fee rates** under Model 1 ? (Nela Brown)

-**Need to include more industry in discussion** (Nela Brown, Beth Ytell, Sahid Kasraei)

-**Support for funding private sector public-purpose projects** (Jim Groff, Beth Ytell); otherwise, there was no discussion on the privatization aspects of the study

-**Remember that behavioral changes resulting from fees may reduce the future need for fees** (Patty Glick); fees for revenue could be converted down the road to fees for behavioral change (David Zwick)

6. Support (and lack thereof) for 3 Models

MODEL I - Supported by Ken Kirk, John Schellpfeffer except use green fees (noting that Model I is similar to today)

MODEL I - Lack of support from Greg Smith (too Federally heavy-handed)

MODEL II and III combined (a new 2.8 model, such as a Voluntary De Minimis Model - Supported by Pete Butkus, Bob Lenna, Beth Ytell, Greg Smith; Bob Lenna supported a Federal redistributive role which might be accomplished with a Federal match.

MODEL III - Lack of support from Beth Ytell and Claudia Copeland) because will not yield enough revenue

MODEL II - Lack of support for Federal water withdrawal fee base (Jack Sullivan, Tom Schaffer, Jim Groff); but Model II improved if add effluent fees from Model I (David Zwick) or if completely a State program (Jack Sullivan)

Appendix B-2

Alternative Funding Study

Panel Discussion on Water Fees

Airlie Conference Center, Virginia, July 19, 1995
(Sponsored by Syracuse University, the Council of Infrastructure Financing Authorities, and U.S. EPA)

Twenty panelists representing the public and private wastewater and drinking water communities assembled at the Airlie Conference Center in Warrington, Virginia, on July 19, 1995, to respond to a background paper, "Fees for Funding Water Quality Infrastructure," prepared by the Syracuse University Environmental Finance Center (EFC). The Syracuse EFC, located in the Maxwell School of Citizenship and Public Affairs, has worked under a grant from EPA to conduct an Alternative Funding Study, as requested in the Agency's FY95 appropriation.

The purpose of the forum was to stimulate thinking and debate on the many practical issues associated with the potential use of fees to finance water quality infrastructure and related water projects in the future. Three fundamental questions posed in the background paper and to the July 19th panelists were:

1. What are the criteria for a successful fee-based funding system, whether such a system be national, State or local in scope?

2. What specific types of fees are viewed as the most workable and effective, and should these be national, State or local?

3. What "delivery" mechanisms might be used to offer fee-based financial assistance to localities, such as a Federal Trust Fund or State Revolving Funds (SRF), and with what funding goals in mind?

Expert panelists were selected by the Council of Infrastructure Financing Authorities (CIFA) and the Office of Wastewater Management, EPA, to be representative of different constituencies of wastewater and drinking water facility financing, construction and management, both public and private (list attached). Most participants were actual practitioners or "stakeholders", such as local utility managers or SRF officials, as opposed to being interest group or association staff. The participants also included persons from the industrial, agricultural and environmental communities, and two Congressional personnel.

The day-long discussion was guided by a facilitator from the Maxwell School's Center for Advanced Public Management in Washington, D.C. The "multi-vote" technique was used to reflect the preference of the panelists for varying assumptions, evaluative criteria for fee systems and delivery mechanisms, and different types of fees, for example, water rates, "green" product fees, and effluent fees. Under this technique, each of the panelists was given 10 votes to divide among alternatives. The multi-vote method is designed to record the "revealed preference" of individuals, and will be referred to below. In general, "who" voted for what, in terms of constituency representation, is not recorded here.

A. Assumptions and Rationale for Examining Fee-Based Funding

Although the panelists were asked to express their views on the feasibility of using fees to fund future water-related projects, the initial discussion was far-ranging. The use of fees as an alternative financing mechanism within a Federal context did not receive 100% support, even within the hypothetical context of being supplemental to appropriations from general funds,e.g., annual Congressional wastewater SRF appropriations.

One principle raised repeatedly was the need to make **more efficient and effective use of existing financial resources**, such as by funding pollution prevention (e.g., source water protection), removing barriers to tax-exempt capital financing (e.g., arbitrage rebate), and increasing incentives for private investment. The "efficiency" rationale received the most votes during the opening discussion on financing assumptions. However, that new fees might provide more long-term certainty in funding levels, compared to the use of annual general appropriations from tax revenues, was underscored.

Another issue raised was the need to **improve scientific risk communication at the local level**, to enhance local support for paying for wastewater and drinking water treatment. That both water supply and wastewater treatment are undervalued, and often underpriced, was seen to highlight the imperative to communicate better to local citizens the public health and environmental benefits of clean water in understandable, scientific terms. As one panelist summed it up: If "everyone would cheerfully pay the full cost" of water and wastewater treatment in the first place, including saving for further needs, we would not be debating new financing mechanisms today.

A number of panelists emphasized that **regulatory reform** might also reduce the need for new financing. "Pruning the regulatory bush" to take account of local differences both in environmental risk and ability to pay was briefly addressed, although the panelists understood that this topic was not part of the day's agenda. The excessive costs resulting from "one size fits all" regulations placed enormous burdens on smaller communities. Enhanced State flexibility was underscored as one means to accommodate local differences.

In summary, the top five rationale (also termed principles or assumptions) voted in the July 19, Airlie Center opening discussion on fee systems were:

1. Make more effective and efficient use of existing financial resources (26 votes)

2. Generate more revenue through use of dedicated fees (21 votes)

3. Fees to generate revenue might also result in some positive behavioral change (17 votes)

4. Fees preferably should be applied to a broad base and have low rates (15 votes)

5. Funding systems need to be flexible to accommodate local variability in financing water-related "needs" (10 votes)

B. Evaluative Criteria for Fee Systems

Six criteria by which to evaluate fee systems were outlined in the Syracuse University study. The panelists were asked to make additions, modify, and rank these in order of importance. The initial six criteria were: **public support, revenue size and predictability, equity and impacts, collectability, relationship between costs and benefits, and environmental goals.**

While endorsing these, the panelists offered some significant observations and additions. Again, there appeared to be a strong preference for more **State flexibility**, particularly in determining eligible projects and distribution of funds among localities, than currently exists, for example, in wastewater SRF funding. However, some panelists cautioned that continued Federal oversight vis-a-vis States might be needed.

Second, there was a strong consensus on **preserving a relationship between costs and benefits** (i.e., who pays fees and who receives fee-based financing). While this relationship will never be exact because the redistribution of revenues implied by new funding systems, the majority of panelists supported maintaining this equation. In particular, the cost/benefit relationship was viewed as an important means by which to emphasize the real costs of pollution control. The panelists then endorsed the use of **fees which were simple and easy to administer, broad-based and low level**, and bore some relationship to water use and/or damage (discussed below under "Types of Fees").

Another criterion was the **long-term dedication of fees**, particularly by State governments. The imperative of safeguarding fee revenues over time for originally intended uses, in dedicated "trust" accounts, has been an issue for all levels of government. Federal trust funds such as the Highway and Superfund Trust Funds have repeatedly been subject to outlay restrictions measured in billions of dollars. Local drinking water budgets have also been used to support general funds.

However, the State experience in protecting dedicated environmental fee-based funds has been the most worrisome. Several panelists representing State governments referred to special water-related fee accounts which had recently been "raided" by either State legislatures or governors, such as in New York and Virginia. Using the Federal "umbrella" or Federal oversight, i.e., having a Federally-authorized State program such as the current SRF program, was considered by several as the only certain means by which to keep State fees permanently dedicated.

It is interesting that while fees resulting in behavioral changes (thus reducing pollution) were not rejected, and continue to be supported by many environmental groups, the majority at the July 19 forum considered **behavioral goals to be supplementary to revenue-generating goals**. Several panelists also agreed that fees should be "sold" on the basis of their revenue potential, as opposed to their behavioral modification potential, on the grounds that the latter was too controversial and some fee avoidance (through pollution reduction) would result in any event.

In summary, the top five criteria with which to evaluate alternative fee systems voted by the July 19 Airlie Center panelists were:

1. Ability to attract public support (23 votes)

2. Ability to support State flexibility (21 votes)

3. Preservation of a relationship between costs and benefits (19 votes)

4. Ability to safeguard fees for dedicated uses over time (18 votes)

5. Fees that result in a stable and predictable revenue stream, and fees that are simple, and easy to administer and collect (both with 17 votes)

C. Types of Fees

The afternoon discussion on July 19 was devoted to coming to a tentative closure on preferred fees and, to a lesser extent, governmental delivery mechanisms. Two different kinds of broad-based (i.e., relatively universal and non-particularized), low-level (i.e., typically measured per unit in cents, not dollars), and water-related fees appeared to generate the most support, although the reader should be cautioned that describing this support as "consensus' may be premature.

These two fees are: **(1) local public water supply withdrawal fees**, with an apparent preference for such water fees being implemented within a non-Federal context; and **(2) "green" product fees**, such as fees on toilet paper and detergents, generally favored by the local government and utility panelists over the public water supply withdrawal fee. Again, the caveat should be made that some participants did not support the use of capital-generating fees, as opposed to fees to support operating budgets, within any context other than purely local.

1. The **public water supply withdrawal fee**, receiving the most votes, could be based on the volume of water consumed by individual households, businesses and industry (drawing water from a public utility), as reflected in regular water bills. It might also be a flat fee per type of customer. In either case the fee would be a surcharge or add-on to existing water charges.

One panelist labeled the water fee "an infrastructure renewal tax" reflecting the resulting use to finance both drinking water and wastewater facility rehabilitation, upgrades, and new standards. Another referred to the current practices of 11 States imposing special water withdrawal, production, sale or use fees ranging from $.01 to .07 per 1,000 gallons, to support State program budgets (see "background" appendices).

A strong body of opinion supported a new public water supply withdrawal fee because of its solid cost/benefit relationship, and relationship to wastewater pollution. Several discussants argued strongly that a new fee might underscore the importance of charging for "the true cost of water", still very cheap in this country compared to residential billings for electricity, cable television, and the like.

The political hurdles in gaining local approval of water rate increases, and the requirement (under most proposals) to rebate fees routinely collected by local water utilities to the State level for redistributive delivery purposes, were not, however, small. Moreover, whether a new water surcharge could be considered less "particularized" and more "invisible" than a sector-oriented new fee such as effluent fees, was questioned seriously by local utility panelists who argued that current rates already were escalating rapidly.

In contrast to municipal "treated" water delivered to households and businesses, **direct water use**, i.e., water drawn directly from surface or ground water by individual industries, mining facilities, electric utilities and agricultural operations, received little support as a source of fees. Although direct water withdrawal accounts for over 85% of all water use in this country, such uses typically are not "permitted" by riparian rights States (predominantly non-Western States). The panelists agreed that estimating and

collecting direct water use fees from such disparate sources, especially agriculture, would be administratively difficult and politically unpalatable. Although at least eight States currently have in place recurring fees for some direct water uses, as many proposals have been rejected in other States (see "background" appendices).

2. **"Green" product fees** placed second in the multi-vote process, but if "plumbing fixtures" are included would be first. Green product fees, proposed at the earlier April 25, 1995 open meeting by the Association of Metropolitan Sewerage Agencies (AMSA), could be levied as a surcharge to existing sales taxes. Candidates for green fees are many, including toilet paper and paper towels, diapers and tampax, household detergents, paints, solvents and pesticides, or products used or sold by commercial enterprises such as dry cleaning solvents (perchloroethylene), agricultural pesticides and fertilizers, and even copper pipe and plumbing fixtures (the latter of which was not really discussed but subsequently drew many votes).

Again, green product fees represent a type of broad-based, low-level, and relatively simple and easy to administer through the existing sales tax structure. The above-mentioned products are considered "green" because they bear some relationship to water degradation. They could be collected by either States or the Federal government, although the original AMSA proposal supported Federal collection as the most efficient and equitable.

The use of green fees, however, drew some sharp criticism. Opponents noted the difficulties in handling foreign imported products, and the extreme regressiveness of such fees. That a proliferation of many small fees could easily backfire was emphasized -- i.e., the increasing use of fees in recent years, especially by States, has resulted in some bad experiences. Green fees, others noted, were really "taxes".

Controlling the size of the green fee revenue stream might also pose major problems. Green fees might result in too much monies being collected, which also might backfire politically, and subject fee funds to outside budgetary "raids." Another problem was that the amount of environmental damage resulting from the use of specific products is not readily documentable. Currently, only a few States use green product fees, such as Florida, although five States levy special pesticides and fertilizer sales taxes.

3. **Brainstorming generated some new ideas**, for example, the possible use of an income tax surcharge, and the chemical production "feedstock" fees currently underpinning Superfund. While use of the $5 billion of "idle" monies in Superfund was not discussed at length, a number of panelists voted for transferring such funds to water accounts. Lastly, the use of speculative "development" fees on real estate profits was a close sixth in the multi-vote.

Noteworthy are the types of fees which the Airlie Center experts gave five or less votes. These included NPDES permit fees (viewed as too costly for capital formation and better utilized for State operating budget support), tax burden shifts (e.g., through elimination of the lead depletion allowance), a voluntary IRS check-off, industrial effluent fees, direct water use fees (discussed above), block grant redistribution, and a national lottery (one vote). A pesticides/fertilizer production fee was not presented.

Two fees received no votes, i.e., earmarking fines and penalties, and "sin" taxes such as on alcohol and tobacco. The former was rejected on the grounds that it might lead to a "bounty hunter" system. The latter was rejected seemingly on the basis of violation to the cost/benefit relationship. The unpopularity of "sin" taxes is interesting, since three States have successfully used them for water project capital generation for a number of years. If such fees were State, not Federal, more support might have been forthcoming.

In summary, the top five fees voted by the July 19 expert panelists were:

1. Public water supply withdrawal fee ("infrastructure renewal tax") based on volume (46 votes)

2. "Green" product fees (supplemental to existing sales taxes) (32 votes)

3. Plumbing fixtures (19 votes)

4. Income tax surcharge (14 votes)

5. Chemical production fees (i.e., transfer of Superfund fees to water projects) (14 votes)

D. Delivery Mechanisms

Delivery mechanisms are those institutions which might distribute (and redistribute) fee-based financial assistance among local projects, in either a Federal-to-State, Federal-to-local, State-to-local, or even a local-to-local delivery configuration. Although "delivery" institutions are not necessarily the same ones that might design and collect fees, it is important to note that the Airlie panelists appeared to support linking fee collection and delivery at the same governmental level.

Although time constraints resulted in no voting on delivery mechanisms, the panelists readily supported a variety of alternative institutions depending on the type of fee used, and where it was collected. In particular, the current State institutional variation existing for wastewater SRF administration was favored. Alternative delivery mechanisms proposed included:

1. State level

-State environmental protection agencies (for collection and/or delivery of new fees for wastewater and NPS projects, possibly through the SRF mechanism)
-State health agencies (for collection and/or delivery of fees for drinking water projects, and home of a future drinking water SRF)
-Combined/Environmental SRFs (independent financing authorities or bond banks) for State environmental funds (primarily for delivery)
-State Treasury departments (for collection, and for complex SRF-related transactions)
-New trust funds (primarily for delivery of new fees)

2. Federal level

-New Federal Clean Water Trust Fund (primarily for fee delivery, and preferably "off-budget")
-New Federal Treasury Department dedicated "account" (primarily for delivery)
-Internal Revenue Service (primarily for collection)
-U.S. EPA (could collect and deliver fees)
-Fanny Mae model (quasi-private, which borrows funds to be distributed; not widely supported on July 19)

3. Local level

-Investor and publicly-owned water and sewer agencies or authorities (for collection and delivery)

4. Mix-and-Match of above

An important implication for selecting delivery **and** collection institutions, and fees, emerged. Many panelists explicitly or implicitly rejected the notion of a lower level of government collecting fees (e.g., local utility companies) and then rebating them to a higher level of government (i.e., State or Federal) for redistribution back to local projects.

Rebating fees for redistribution raises the "donor" government or "cross-subsidization" issue which plagues the Federal Highway Trust Fund, which distributes gasoline tax revenues back to States. Under many fee proposals, cross-subsidization among States and localities is inevitable, since any one unit of government probably will contribute substantially more in fees than it receives back, or vice-versa.

If a national redistribution of fee revenues is ultimately favored because of the Federal government's ability to address the largest number of State/local differences (e.g., small versus large, urban versus rural), then fees should be designed to be collected **and** delivered (i.e., redistributed) at the Federal level. Those fees which might be collected by the IRS then appear preferable. In contrast, maximum State flexibility in addressing local needs argues for purely State-imposed and collected fees, even though inequities among States may arise.

Appendix B-3

Alternative Funding Study

Panel Discussion Water Fees

Denver, Colorado, September 21, 1995
U.S. EPA Region 8 Conference Center
(Sponsored by the Syracuse University Environmental Finance Center, the Council of Infrastructure Financing Authorities, and the Office of Water, U.S. EPA)

Eighteen persons representing the public and private wastewater and drinking water communities were selected to participate in the third expert panel discussion on the future use of "fees" to finance water-related environmental projects, on September 21 in Denver, Colorado. As the earlier July 19 Airlie Center meeting, the purpose was to stimulate thinking and debate on the potential use of fees, as outlined in a background paper, "Fees for Funding Water Quality Infrastructure", prepared by the Environmental Finance Center (EFC) at Syracuse University, located in the Maxwell School of Citizenship and Public Affairs. Denver was selected because of its western location.

The three fundamental questions posed in the background paper for consideration by the panelists were:

1. What are the criteria for a successful fee-based funding system, whether such a system be national, State or local in scope?

2. What specific types of fees are viewed as the most workable and effective, and should these be Federal, State or local?

3. What "delivery" mechanisms might be used to offer fee-based financial assistance to localities, such a Federal Trust Fund or State Revolving Funds(SRF), and with what redistributive funding goals in mind?

The format for the Denver panel was similar to that of the July 19 Airlie Center meeting. Panelists selected by the Council of Infrastructure Financing Authorities (CIFA) and the Office of Wastewater Management, U.S. EPA, were actual practitioners of different aspects of water facility financing, construction and management, such as members of the Association of Metropolitan Sewage Agencies (AMSA), American Water Works Association (AWWA), and the National Utilities Contractors Association (NUCA), and Rural Water Association (list attached).

The panelists and additional attendees also included two local government officials, representatives from the Colorado Municipal League, Western Governors Association, National Council of State Legislatures, and agricultural, engineering and environmental groups, and the director of the University of New Mexico EFC. There were no industry representatives. In all, six States were represented.

The panel was guided again by a facilitator from the Maxwell School's Center for Advanced Public Management, and the "multi-vote" technique was used to reflect the preferences of the panelists. "Voting" patterns will be reflected in the summary below.

A. Assumptions and Rationale for Examining Fee-Based Funding

When the Denver panelists were asked early on to give their opinion on whether and why new sources of financing (such as fees) were needed for water and wastewater, responses were very similar to those on July 19.

There was a strong body of opinion that did not support the use of fees at this time as a new financing mechanism. Many panelists agreed that the more critical issue was to reduce the demand for new financing in the first place through regulatory reform. Arguments focused on the need to reexamine the basis on which Federal risk management decisions were made in the first place (e.g., "10 to the minus six" may be too arbitrarily strict), in order to reduce regulatory burdens where local environmental risk and financial circumstances dictated.

Local affordability to meet national standards received firm emphasis in Denver. In particular, the burden on local utilities which had to upgrade to meet new water-related standards, such as drinking water filtration, combined sewer and stormwater overflow, at the same time as meeting ongoing operations and maintenance requirements, was addressed..

The Denver participants likewise reiterated a deep motivation for greater flexibility at both the State and local levels in meeting clean water goals. Local flexibility in reordering regulatory priorities and time schedules for compliance were repeatedly stressed, along with the importance for States to have "primacy" in setting water-related funding goals.

The top-voted financing principle at Airlie Center, i.e., the need to make more efficient and effective use of existing financial resources, also drew strong support in Denver. The rationale of making the best use of existing resources before the imposition of new fee programs was presented in Denver as a practical first step. As one panelist stated, the need for new financing programs first must be demonstrated before any new fees would be supported. Another panelist argued that localities were against any and all new fees, which should be "market-tested" before further consideration by policymakers.

In summary, the five major financing principles, assumptions and rationale in Denver were:

1. The fundamental issues of affordability (19 votes), and the basis for environmental risk standards-setting (also 19 votes), need to be revisited

2. States should have primacy (13 votes), and localities greater flexibility in timing to meet environmental mandates (also 13 votes); also, the need for new fees must be demonstrated (13 votes)

Note that "changes in regulations can reduce costs" received an additional 7 votes, and the importance of "evidence and interest in fee-based alternatives that may look like new taxes" received 11 votes

3. The Federal government should continue to contribute financial resources for localities to meet environmental mandates (12 votes)

4. Voluntary, site-specific financing options, on a Federal/State/local cost share basis, should be considered as a major option (11 votes)

B. Evaluative Criteria for Fee Systems

The highest ranked criteria in Denver addressed the importance of local control over fee collection and fee use, with a limited State and sharply curtailed Federal role. However, depending on the type (if any) of fees selected, the Denver panelists did envision a Federal and/or State fee collection role if greater administrative efficiencies were to prevail. Those panelists favoring a purely local system argued for local definition of who should pay, and how much.

On equity grounds, a large body of opinion supported a fee-based financial delivery or redistribution system which was weighted in favor of States and/or localities which had already invested heavily in water and wastewater treatment facilities, if the Federal government were to collect fees. The current SRF capitalization grant allocation formula was criticized for being biased in favor of outstanding wastewater "needs".

Similar to the Airlie meeting, the Denver panelists clearly supported a close relationship between the source and use of fees, or a close cost/benefit relationship. They firmly rejected the use of non-environmentally related fees (e.g., "sin' taxes), arguing that it is the relationship of fees to the water-related services provided (e.g., laboratory testing) which distinguished "fees" from "taxes" in the first place. Colorado panelists mentioned that a cigarette tax recently had been disapproved by the voters.

Ambivalence about the Federal fee role persisted. Local officials in particular argued for a continued Federal financing role, discussed subsequently, whether from direct appropriations or from new fees. However, they emphasized that the local share had to be determined flexibly on an affordability basis.

The fifth ranked criterion for fee-based funding systems pertained to public support. The Denver panelists asserted more strongly than the Airlie panelists the need for new fees to be understood by those who paid, both in terms of costs and benefits. They termed this fee transparency, as opposed to a "hidden" or less visible type of fee, e.g., an add-on to existing fees.

In summary, the five criteria drawing the largest number of votes on September 21 were:

1. Fees should be subject to local control (19 votes), and States should be treated equitably in fee allocation (if the Federal government collected fees) (also 19 votes)

2. The source of fees should be "rationally" related to their use (close cost/benefit relationship) (18 votes)

3. Federal financing should supplement State/local fees (14 votes)

5. Affordability should be determined at the local level (13 votes)

6. Fees should be understandable in terms of costs and benefits (11 votes)

C. Types of Fees

If fees were supported at all, the Denver panelists confirmed the preference for a broad-based, low level, water-related fee voiced at the Airlie Center meeting. More "particularized" and costly fees such as effluent fees and pesticides production fees were not mentioned at all.

1. Green Product Fees

In Denver, adding the multi-votes for water "green" product fees and other environmental green fees, the green fee concept received more support than use of local utility water and wastewater user fees. "Multi-media" environmental green fees drew the most votes, i.e. fees for solid waste and air pollution products in addition to more water-related product fees. The idea behind what several panelists termed multi-media, or "full spectrum" green fees is that, if new fees for project financing were to be implemented at all, an administratively effective and equitable option might be to use such fees across the board.

Implicit in this policy preference was the notion that multi-media fees not only might be better understood and accepted, but also that new financing options should conform with the trend towards environmental program integration, particularly at the State level. While few States and localities currently use water-related "green" product fees, more States have successfully implemented solid waste disposal fees such as for used oil, tires, and household hazardous wastes.

Green fees on household and commercial products affecting water quality, such as paper goods, detergents, and paints and solvents, drew an almost equal number of votes as full-spectrum green fees, and are reflected in the AMSA proposal presented at the April 25 and July 19 open meetings.

The apparent preference for green fees implied to many panelists, some of whom acknowledged reluctantly, that the Federal government would be the collecting agent. AMSA's green fee proposal notes that such fees should be collected by the Internal Revenue Service (IRS) because of the interstate commerce application.

Green fees representing a direct sales tax surcharge, or value-added tax, might be collected directly from the private sector producer (and then reimbursed through the sales tax mechanism, such as the gasoline tax supporting the Federal Highway Trust Fund works). In debating the merits and efficiencies of Federal versus State collection, several panelists affirmed that States could be (and had been) highly efficient as fee and tax collectors, with lower administrative costs than the Federal government.

The green fee concept drew less detractors in Denver than at the Airlie Center meeting, perhaps in part because no industry groups were represented on September 21. However, at both panels an interesting discussion on "green labelling" pursued. The approach used in Germany of certification by a public/private board of "environmentally friendly" products, for which producers pay a fee, was mentioned. Panelists argued that green labeling probably would not work here, in part because the environmental effects of particular products, such as household detergents, could not be documented adequately.

2. Water and Wastewater User Fees

The second highest ranked fee was the broad-based, low level public water supply withdrawal fee, which theoretically could be implemented in conjunction with increases to wastewater user fees. Similar to the Airlie panel, support for this was based on the concept of paying the true costs of services through the rate or user fee structure. As one panelist noted, such fees currently existed in a number of States to support State operating budgets (e.g., permit writing).

That the Federal government already was "regulating" the price of water through drinking water standards-setting, was noted. However, localities still decided how and who should pay, and could offer subsidies for low-income rate payers. Privately-owned local utilities also are regulated by State Public Service Commissions, and this presents a special problem.

Using the local rate structures to raise State revenue for project financing might also highlight the need for greater water conservation, watershed protection, and wastewater quality. Fees less related to the use of water as an important national resource would be more invisible, and less likely to bring about behavioral modification and policy change.

Again, the local government and utility panelists strongly resisted any externally-mandated user fee increases, with water and waterwaster already being a high volume/low margain industry. There was especially strong opposition to a Federally-levied public water supply withdrawal fee on the grounds that water was ainherent "right" not a taxable product, and opposition to the basic concept of localities collecting fees and rebating them to a higher level of government for "delivery" in other localities. The legality of a Federal water fee was questioned.

Clouding the debate to some extent is remaining confusion about public water supply versus direct water withdrawal. The latter, which accounts for most water use in this country, is drawn directly from surface and groundwater by industry, mining, hydroelectric, and agricultural activity, in contrast to treated water processed by local public or private utilities. Possible fees on direct water withdrawal received no support in Denver.

3. Other Fees

The Denver panelists searched for other possible fees, none of which drew significant support. Candidates included a public investment "windfall" profits surcharge, a value-added tax on water used in manufacturing (e.g., computer chips which relied on high quality water), a surcharge on water/sewer hook-ups in new developments (already used in a number of States), and a watershed protection fee on entitites within individual watersheds. Using no fees at all, but instead redirecting Federal spending priorities to the environment, was an attractive alternative (11 votes, with an additional 3 votes for "none of the above").

In summary, the fees receiving the highest number of multi-votes in Denver were:

1. "Full-spectrum" green product fees ((24 votes) and strictly water-related green product fees (23 votes)

2. Local utility water and wastewater user fees (27 votes)

3. Redirection of Federal general funds (11 votes)

4. Public investment windfall profits surcharge (termed an "unearned increment" tax) (8 votes)

5. Water/wastewater development hook-up fee (7 votes) and watershed protection fee (also with 7 votes)

D. Institutional Delivery Mechanisms

Discussion on institutional delivery mechanisms, or those Federal, State or local entities offering fee-based financial assistance, centered on the future Federal role in general. Here, ambivalence about Federal involvement runs deep. Many panelists favored a return of the traditional Federal capital financing role on a cost-share basis, possibly using nationally collected green fees as the revenue source. However, as a whole, the panel disfavored a strong Federal redistribution, described as mainly "political", in making State-by-State allocation and allotment decisions. As the panelists appeared to sum up: "The Feds should be cheerleaders -- but don't let them on the field."

What was novel in Denver was a concern for a flexible Federal cost-share percentage depending on the economic condition of localities to meet Federal mandates. Many supported a stronger role for States in determining the percentage of Federal financial participation on a project-by-project basis, and States were concerned that Federal fee-based allocation decisions woud penalize those States which had already invested heavily in water and wastewater projects. Balance between the twin goals of rewarding States having made good progress, and subsidizing States or localities with greater "needs", remained unresolved.

Distrust of the Federal role was high. The panelists argued that Federal credibility has been damaged by restrictions on Highway Trust Fund and Superfund annual outlays, in order to write-down the Federal deficit as well as provide a ready market for purchase of Treasury Department bonds. Many stated that States could do just as well if not better in protecting new, dedicated fee-based trust funds. However, since the green fee proposal is based on Federal collection, some role for the Federal government in ongoing oversight was envisioned.

State Revolving Funds (SRFs) and bond banks were the preferred alternative at the State level for the delivery of fee-based assistance to localities. SRFs could also make project-by-project decisions on the subsidy level offered to localities.

In summary, the top-ranked financial delivery institutions on September 21 were:

1. State flexibility to determine Federal financial cost-share for local projects, with a two-thirds percentage as the threshold (23 votes) on a project-by-project basis (14 votes)

2. SRFs for drinking water and wastewater, and State bond banks (18 votes)

3. A mix-and-match of Federal/State/local institutions (9 votes)

4. State health agencies for water (4 votes) and/or State environmental agencies for wastewater and non-point source (also 4 votes)

5. State Treasury Departments (7 votes)

Appendix C

Written Comments by
Water Fee Meeting Attendees

C-1	*April 25, 1995*	*Crystal City Sheraton* *Arlington, Virginia*
C-2	*July 19, 1995*	*Airlie Conference Center* *Warrington, Virginia*
C-3	*September 21, 1995*	*EPA Region 8 Conference Center* *Denver, Colorado*

Note that comments on Syracuse University EFC reports, comments on fee meeting summaries, and oral statements made at fee meetings are available upon request from the Syracuse University EFC

Appendix C-1

amsa
Association of Metropolitan
Sewerage Agencies

A Green Fee for Clean Water Self-Financing Federally Mandated Water Quality Infrastructure

Local government costs to meet the federally mandated requirements of the Clean Water Act ("CWA") continue to grow, while demands on the federal General Fund, the historic source of clean water construction funding, also expand. This paper summarizes a broad-based user fee and authority for states to adopt a companion state fee to supplement or ultimately replace General Fund participation for moving the national clean water infrastructure program forward and funding the availability of sound science to support appropriate regulatory decisions particularly by states.

A. *National Interest In User Fees*

Congressional interest in user fees for infrastructure ranges from the 100th Congress to 104th Congress. Support for user fees particularly to fund infrastructure improvements was articulated by Speaker of the House Newt Gingrich on May 3, 1995, on NBC's Meet the Press: ". . . I think that there are a lot of things Americans are willing to do that are practical and commonsensical that are not irrational; that aren't . . . some gimmick for budget purposes. But they say, ' Look, you know, we have got to get this government under control and we've got to find a way to have self-financing systems.'" National Broadcasting Company, Inc., 1995. During the interview, Speaker Gingrich went on to favorably cite "a brand-new toll road in Atlanta which is going very well. ... it has just dramatically increased people going downtown by making it easier to get in. ... It's an automatic - people are happy that they . . . saved 40 minutes, it cost them 50 cents and I've not heard any complaints about it."

The Environmental Protection Agency study of fee-based revenue systems to finance wastewater and drinking water infrastructure facilities was directed by the FY'95 Appropriation Act for the Departments of Veterans Affairs and Housing and Urban Development - Independent Agencies. The assumptions of the study are: (1) fees are for the "purpose of raising revenue, not changing behavior"; (2) "all fee revenues must be dedicated to financing water related capital construction projects"; and (3) "options considered contemplate the funding of drinking water treatment facilities as well as wastewater and nonpoint sources". [1]

A fourth assumption should be that the user fee would be low rate on broad-based sources that relate to water quality, but must not include revenue sources on which local governments depend in financing federal mandates. A fifth assumption would be that the national fee-based system would provide flexibility to states in adding to, and using revenues from, the broad-based self-financing system.

Additionally, while not focused directly on infrastructure, the Omnibus Budget Reconciliation Act of 1990 ("OBRA") in the 100th Congress, directed EPA to ~by regulation, assess and collect fees and charges for services and activities carried out pursuant to laws administered by the Environmental Protection Agency." 56501 OBRA of 1990. The EPA Assistant Administrator for Administration and Resources Management has established an agency-wide workgroup to study fee revenue generation.

Review of alternative funding sources has been made more relevant by the FY'96 Congressional budget resolution providing for reduction of the wastewater SRF program. The House VA, HUD-Independent Agencies FY'96 appropriation bill reduces EPA spending overall by 33% from FY'95. This bill also reduces the wastewater state revolving fund ("SRF") program from $1.235 billion in FY'95 to $1.225 billion for FY'96 (or $1.025 billion less than would be authorized in the House Clean Water Amendments, H.R.961). Not included in the FY'96 bill is $700 million for an unauthorized drinking water SRF requested by the Administration for FY'94, FY'95 and FY'96, and included in the FY'94 and FY'95 appropriation bills.

[1] The Environmental Finance Center, the Maxwell School of Citizenship and Public Affairs at Syracuse University, "Fee-based Models for Funding Water Quality Infrastucture," Draft Final Report, April 1995.

B. Mandated Water Quality Needs Continue to Grow

The enforceable requirements of the CWA and the Safe Drinking Water Act, are the most frequently cited federal mandates affecting local governments. Wastewater construction needs resulting from CWA requirements continue to expand for secondary treatment; compliance with water quality standards; control of combined sewer overflows ("CSOs") and sanitary sewer overflows ("SSO") during wet weather events; wastewater reclamation and reuse; and control of stormwater and nonpoint sources. Needs to bring local drinking water systems into compliance are uncounted to date, but significant. Additionally, as proposals to require use of sound science and risk assessment in water quality decisions increase, new sources of funding for developing necessary scientific information on which to base appropriate regulatory decisions becomes critical.

The wastewater construction grants program was a key element of the Federal Water Pollution Control Act of 1972. That Act established secondary treatment as a federal effluent limit for sewage treatment plants; a system of water quality standards promulgated by states or the Environmental Protection Agency ("EPA") in absence of state action; and the National Pollutant Discharge Elimination System ("NPDES") permit program. The federal funding commitment was established to soften the impact of compliance costs on sewer rates and to discourage industrial forum shopping.

Since the 1987 CWA Amendments, funding for the clean water mandate has been provided through the state revolving fund ("SRF") loan program and, except for FY'91, targeted grants primarily for secondary treatment construction and some combined sewer overflow control. Appropriations through the EPA Water Infrastructure Account have provided only modest increases for wastewater construction while needs have continued to grow.

1. EPA Needs Surveys

The 1992 EPA Needs Survey2 of wastewater construction costs reported a significant increase in municipal construction needs over those reported in 1990 to meet CWA requirements. Construction needs for Categories I-V were reported for 1992 at $145.7 billion3, compared with $110 billion in the 1990 Needs Survey4, or an increase of $35 billion in two years. EPA documented secondary treatment construction needs alone increased from $26 billion in 1990 to $31.3 billion in the 1992 Survey

Documented and modelled CSO control needs were put at $42 billion in the 1992 report compared with documented CSO control needs of $20 billion in 1990. Uncertainty, however, remains as to the actual level of CSO control needs which have been estimated to range from $100 billion to $200 billion and beyond depending on actual implementation of the EPA CSO Control Policy, state water quality standards, NPDES permit requirements, and future statutory changes.

Costs to comply with federal storm water NPDES permit requirements are in addition to wastewater construction needs. Additionally, these needs do not: (a) include separate needs for water reclamation and reuse, nonpoint source, ground water, estuaries or wetlands; (b) contemplate the cost of meeting any new EPA policy on sanitary sewer overflows ("SSOs") now under development; (c) fully reflect water quality permitting requirements; or (d) reflect future amendments to the Act. Also not included are repair, rehabilitation and replacement costs for previously constructed facilities.

EPA construction needs data for compliance with the federal Safe Drinking Water Act are not currently available. In 1994, EPA elected to prepare a survey of drinking water needs in lieu of wastewater needs.

2. National Financing Shortfall

Apogee Research Inc. has reported a capital shortfall of $65.7 billion for wastewater facilities construction, plus $18.2 billion for drinking water, during the 1993-2000 period not counting CSO, SSO and stormwater control needs.5 EPA's Environmental Financial Advisory Board has reported that:

The cost of maintaining a clean environment is growing rapidly.... Annual public expenditures in drinking water, water quality, and solid waste management must increase by 17% between now and the end of the century .... From a public finance perspective, it is questionable whether state and local ability to borrow can keep pace with the rising expenditures anticipated under current policy. In particular, environmental investments may be increasingly delayed, as small and economically disadvantaged communities often cannot get access to or afford the cost of capital.

2 EPA 1992 Needs Survey Report to Congress: "Assessment of Needs for Publicly Owned Wastewater Treatment Facilities Correction of Combined Sewer Overflows and Management of Storm Water and Nonpoint Source Pollution in the United States".

3 *Funding For Sound Science*

Additionally, in the current budget environment, funding for scientific studies necessary to assure well grounded regulations and water quality permitting for publicly owned treatment works ("POTWs") is increasingly at risk. The reduced federal grant commitment has placed severe constraints on the development of alternative and innovative municipal wastewater treatment and pollution prevention technologies. A renewed commitment to these objectives should be pursued as water quality based NPDES permitting proceeds.

4. *AMSA Survey of Wastewater Construction Funding And Rates*

Most wastewater construction needs will be met by local sewage rate payers resulting in progressively increasing rates. A 1993 AMSA survey of its membership, consisting of major POTWs, revealed that these municipalities are collectively relying on the following sources to finance wastewater construction costs to comply with the CWA: direct municipal financing at 84%; SRF loans at 6.7%; state grants at .9%; remaining federal grants at 7.9%; and miscellaneous other sources .5%. This means that over 90% of wastewater construction costs are being paid by these local governments in either direct local financing or loan repayments to SRFs. 6

AMSA also reports that annual household user fees are doubling every six years and are projected to increase at a greater rate in the future due to increased construction, operation and maintenance costs for higher treatment levels and new mandated requirements.7 Federal drinking water requirements under the Safe Drinking Water Act which presently provides no capital funding, are expected to result in further rate increases.

5. *Infrastructure Job Generation And Long-Term Productivity Benefits*

Construction of wastewater and water facilities is among the highest generators of jobs for all infrastructure categories. Each $1 billion in sewer and water improvements generates over 57,000 direct and indirect jobs. By comparison, total job creation by highway and road construction is estimated to be approximately 34,000, for each $1 billion. 8

In addition to public health and environmental benefits, water and wastewater facilities provide major contributions to public and private productivity. Research indicates that public investments in these facilities improve: (1) competitiveness for American industry, (2) private profitability, and (3) wages, which in turn yield higher tax revenues to governments.9

C. The Clean Water Green Fee Option

Expansion of federal wastewater and drinking water infrastructure funding will likely require a self-financing mechanism tO augment, or substitute for, General Fund revenues. Continuation of federal funding for these mandated costs is vital to moving the federal clean water and drinking water programs forward for protection of public health and the environment. The primary example of existing dedicated revenue is the federal gasoline tax accumulated in the Highway Trust Fund: a low based excise fee collected from producers and ultimately paid by consumers to finance construction of surface transportation systems.

A 1993 Congressional Research Service report on clean water dedicated revenue sources focused on industrial discharge fees and fees on pesticides and fertilizers tO support grant funding of municipal wastewater and combined sewer overflow construction. The Maxwell School draft report focused on these sources, plus public water supply withdrawal fees, municipal wastewater effluent fee, and NPDES permit fees, and a mix and match approach. Except for the pesticide/fertilizer fee, such sources are either a tax on local government wastewater and drinking water enterprises or compete with these local enterprises for the same revenue base.

1. Green Fee Option Objectives

The objectives of the Green Fee option are to develop a new (a) broad-based, (b) low-rate, (c) easily collectable, and (d) water quality related source of revenue to augment the traditional local customer-based water and wastewater fee revenue. As with the Maxwell School options, it not the purpose of this Green Fee Option to change behavior, but rather to generate a relatively low amount - $3 tO $5 billion annually - from national sources for allocation to states. States would also be authorized to add an additional incremental amount for collection and use only within their borders.

3 The 1992 Needs Survey amounts includes (a) documented, (b) modelled and (c) separate state estimates for Categories: I secondary treatment II advanced treatment; and inflow correction IIIB sewer replacement and rehabilitation IVA new collector sewers; IVB new interceptor sewers: and V combined sewer overflow control.

4 This 1990 Needs Survey amount includes (a) documented and (b) supplemental state estimates for Categories I-V.

2. Source A User Fee On Products Affecting Water Quality

The Green Fee self-financing option would provide for a low-rate user fee on consumer, commercial, and industrial products (a) that contribute to water pollution, including those that present a treatment/ processing problem for publicly owned treatment works ("POTWs"); (b) that otherwise are contributed to POTWs by residential, commercial, and industrial users; or (c) that affect drinking water supplies.

Revenue would be raised from a low-rate fee imposed at the point of manufacture (or sale) and ultimately paid by consumers purchasing, using and disposing of a broad range of products. The Maxwell School draft report identifies these characteristics in discussing equity and impacts: "[A] fee which is broad-based and small . . . may be more acceptable than fees targeting limited sectors, particularly when the benefits are widespread." [10] States would be authorized to add an incremental amount to the fee implemented within their borders.

The following products can be considered for a federal " Green Fee" under the contribution-to-waterpollution or treatment approach, the total revenue from which could be targeted at $3 to $5 billion depending on revenue estimates:

pesticides, herbicides	household, commercial, industrial solvents
synthetic fertilizers	plumbing chemicals
copper plumbing pipe	dry cleaning chemicals
soaps, shampoos, conditioners	photo processing chemicals
tooth paste, mouth wash	disposable diapers
household, commercial and industrial	condoms, tampons, related products
cleaning fluids	toilet paper, paper towels
detergents, dish washing soap	cooking oils and related products
paint turpentine, and related products	

Additional products can be identified.

Single product fee analogies for this Green Fee option would be the federal telephone and cosmetic excise fees, as well as the gasoline user tax. Since the listed products provide some contribution to water pollution often by disposal in sewer systems or affect drinking water supplies, a low level user fee would also provide some sense of consumer contribution to water quality protection and such products could be authorized to use a "Green Fee" labeling notice of this contribution at the producers option.

3. Clean Water Trust Fund Operations

Revenue generated by this self-financing system would be collected at the point of products manufacture or sale and deposited to a dedicated clean water trust fund or account in the U.S. Treasury. The amount to be collected would be established by law to coincide with an amount likely to be appropriated annually by the Congress from the trust fund or account in order to avoid unused balances from one fiscal year to the next. The objective would be to maintain a low fee on a wide range of products for purposes of funding wastewater and drinking water facilities rather than to change behavior through a fee that noticeably impacts consumers. Revenue generated for a state's incremental amount would be paid directly tO the state as collected by the Treasury.

5 America s Environmental Infrastructure: A Water And Wastewater Investment Studv Apogee Research Inc. for tbe Clean Waur Cotncil December 1990.

6 Association of Metropolitan Sewerage Agencies 1993 Municipal Wasteater Treatment Agency Financial Survev to be published Spring 1994.

7 "The Cost of Clean, "The Association of Metropolitan Sewerage Agencies, June 1992.

8 "A Report On Clean Water Investment And Job Creation". prepared by the National Utility Contractors Association by Apogee Research, Inc., March 30,1992.

9 Apogee Research Inc. for the Clean Water Council, December 1990.

4. Flexible State Use and Management

Revenue in the Treasury's clean water trust fund would be allocated to the states in the form of capital grants for: (a) construction of wastewater facilities (secondary treatment, treatment to meet water quality requirements, CSO control, wastewater reuse, sanitary overflow control) (60%); (b) construction of drinking water facilities (25%); (3) implementation of nonpoint source management practices and watershed management which benefits water quality or drinking water sources (13%); and (c) development of sound science on which to base regulatory and, by implication, facility construction decisions (2%). These percentage allocations could be adjusted following completion of EPA's drinking water needs survey.

States would fund wastewater control, drinking water, and nonpoint source projects, and watershed management based on a priority system or systems managed by the states to meet enforceable requirements of the CWA and SDWA. The amount allocated for sound science would be used by states or local governments to develop general or site-specific water quality standards and waste load allocations.

States would deposit their formula-based allocations from the trust fund including state generated incremental amounts to existing SRFs. State generated incremental amounts could be used to satisfy the SRF state match requirement. States would be provided maximum flexibility in managing their SRFs. Funding would be provided to local governments through loans; municipal financing or insurance payments; or grants to high priority projects at the state's option limited to no more than 50% of a state's federal capital grant and state contribution.

[9] Maxwell School, April 1994, page 5 (examples omitted).

SRF grant-equivalent features currently under discussion such as negative interest rates or principal forgiveness, reduce the corpus and purchasing power of each SRF. Separate state SRF loan and grant authority would allow nonloan assistance without the administrative and financial costs associated with negotiating a loan with grant-equivalent features and preserves the long-term, revolving integrity of SRFs as municipalities begin rehabilitation and replacement of wastewater facilities.

A state-managed, combined loan and grant program worked well during the period immediately following the 1987 CWA amendments when states and EPA administered both under state project priority and project certification procedures. Additionally, the Department of Agriculture has administered a combined grant and loan program for many years.

Conclusion

The Green Fee self-financing system would generate a predictable level of funding from a low-level fee on a broad range of products that contribute to water pollution or require treatment by wastewater or drinking water facilities. This new revenue would be dedicated to sustaining flexible SRFs for funding compliance with mandated clean water and drinking requirements. Stakeholder consideration of this option at the next EPA alternative revenue meeting is urged.

Appendix C-2

National Association
of
Water Companies

STATEMENT BY
MR. JAMES B. GROFF
EXECUTIVE DIRECTOR
BEFORE
THE ALTERNATIVE FINANCING WORKGROUP
OF THE
ENVIRONMENTAL FINANCIAL ADVISORY BOARD,
U.S. ENVIRONMENTAL PROTECTION AGENCY
APRIL 25. 1995

INTRODUCTION

1. National Association of Water Companies

The NAWC is the national trade association that exclusively represents the private and investor-owned water utility industry. Its membership -- over 380 companies in 41 states -- provides safe, reliable drinking water to over 22 million Americans. Indianapolis, IN and San Jose, CA are but two examples of large metropolitan areas with water provided by NAWC's members. NAWC serves as the ambassador for this $3 billion industry that employs 15,000 people.

2 Position

Presented herein are the NAWC's comments on *Fee-Based Models for Funding Water Quality Infrastructure*, the April 1995 draft final report to EPA's Office of Drinking Water prepared by the Environmental Finance Center of Syracuse University's Maxwell School of Citizenship and Public Affairs.

We find this report disappointing as a basis for policies to help come to grips with the tremendous financial implications of rehabilitating and growing our nation's infrastructure. Our principal concerns follow:

NAWC's POSITION

1. Fee Models Are Disincentives to Consolidation and Regionalization, Positive Trends Already Benefiting Consumers

NAWC believes that the guiding thrust of the report is just wrong.

The private, investor-owned member companies of NAWC are active in the financial marketplace virtually every day raising the capital needed to ensure abundant supplies of safe water at reasonable prices, and these efforts will continue. Our data indicate NAWC members plan to raise and spend approximately $600 million per year, to about $3 billion by the year 2000, in order to be able to continue providing good, affordable water to their customers.

Numerous other municipal water supplier members of the American Water Works Association and the American Metropolitan Water Association are doing likewise.

In short, responsible water suppliers serving the vast majority of American consumers arrange capital financing without seeking or promoting government financial assistance, save for tax-exempt bond financing which is and should be available to investor-owned and municipal systems alike.

Fee-Based Models overlooks other alternatives, including proven taxexempt bond programs in such states as West Virginia, Missouri, and elsewhere. Examination of these highly successful programs would have shown there is little need for fee-based systems, and that their establishment might indeed discourage further expansion of these bond programs for water and wastewater projects.

In that light, any proposal -- new and creative or not -- for grants or subsidies at the federal level is simply inconsistent with today's reality.

True enough, there may be small systems lacking technical expertise and financial stability, and for them raising capital for costly infrastructure can be a serious problem. But if these systems cannot "get the job done," the answer in terms of federal policy should not be simply to spawn new programs to give them money; this would most likely beget only waste, inefficiency, and (especially if the money were derived from a tax on water!) disincentives to trends in the water supply industry that can solve financial and other problems for the longer term.

These trends are consolidation and regionalization. If the federal government is to make a contribution to solving infrastructure problems, it should first of all recognize that these problems affect, most importantly, consumers. Then government should recognize that consumers can best be served by encouraging the trends already being pursued by water suppliers who do have the resources and who are eager to deploy them to serve more people better. It is good in the long run that consumers in small communities or even rural areas obtain drinking water from growing, professionally run, and well-financed water suppliers.

Accordingly, we would recommend the report before us consider a new approach that would promote and encourage consolidation and regionalization. NAWC would be glad to help in any such effort.

Stated differently, NAWC urges that all who play a role in evaluating the proposals contained in this report bear in mind the need to compare them to all available alternatives.

2. The "Federal/State *De Minimis* Fee Model" Fails on Grounds of Equity

In its "Federal/State *De Minimis* Fee Model" the report proposes to raise $2 billion with a "public water supply withdrawal fee." (At, e.g., p. 17.) This water fee (as I shall refer to it), is of particular interest to NAWC. The report claims it is not only equitable but also "may be among the most politically acceptable ..." fund raising mechanism. (At p. 41.) We disagree.

The report notes that public water supplies account for "only 11.3% of all water use ... " (at p. 42), and yet it calls the water fee "broad-based" (at p. 41). Thus the report claims "[t]he term 'equitable' applies because the rationale ... has a broader population base which arise *[sic]* from universal water consumption." (At p. 42.) Yes, everybody drinks and otherwise uses water. But political decision-makers know that many of the largest users of water do not get it from public supplies and they will escape their share of the water fee's burden.

Beyond that, even if it applied easily to all public water suppliers, the water fee would unfairly penalize those systems whose communities have already paid for the facilities necessary to ensure safe, reliable supplies of drinking water. It would be unthinkable for the federal government to tell them, "good job, folks, now ante up for the same results in other communities." In short, the cost-benefit match the report claims to be seeking is seriously lacking here. Worse yet, the water fee would undermine and discourage consolidation and regionalization -- wherein lie real prospects for infrastructure improvement. (This objection would have similar application to the wastewater discharge permit fees.)

3. Excessive Reliance on Delivery Systems That Will Encourage or even Force Delays in Improving Drinking Water Systems

All three models presented by this report use SRFs (state revolving funds) as the primary state-to-local financial assistance delivery mechanism. In two of the models, fees would be collected and then disbursed to provide revenues to SRFs and to fund grants to municipal water and wastewater treatment projects.

Grants and even the SRF process, because of time and paperwork involved, have been impediments to the timely completion of such projects. "Waiting time" for communities to receive financial assistance has resulted in increased project costs and delays in completion of necessary drinking water treatment facilities or in otherwise resolving water quality issues.

Over 250 public water suppliers, representing over 80 million customers, recently indicated their willingness to enter into a partnership with EPA to undertake voluntary efforts to improve treatment processes to finished water pumped into distribution systems. Grants are a disincentive to implementation of such efforts, for most communities would prefer to "wait and see" whether they would become eligible for grant dollars.

4. Report Recommendations Are Not Politically Acceptable

The report virtually concedes that political objections are a likely bar to model one. However, we believe, as to model two, that political acceptability of the public water supply withdrawal fee would never be realized, either, and not just because of the inequities noted above, but also because of other concerns perhaps best examined in the context of the question whether this is a fee or a tax.

The report's brief struggle with the definitions of "fee" vs. "tax" left the authors exhausted, it seems. "For purposes of this study," they sighed, "we discuss fees and taxes together, using the terms somewhat interchangeably." (At p. 2.)

But if the water fee is a "fee," what kind of "fee" is it? A "user fee"? To say so might be taken to imply the federal government is asserting some ownership or control of the ground and surface waters that water suppliers "withdraw," or perhaps some other new but serious federal interest in those waters. Else how charge a fee for its "use"? Objectors to this notion would be strong in numbers and intensity, both from private property owners and from states with long histories of protecting their water resources.

How about a "cost for services" fee? Quoting EPA, the report (at p. 2) intones that "Fees for public services are often intended to establish a direct link between the service provided and the cost of providing that service."

However, this does not easily apply to water suppliers paying water fees because many of them will have no expectation of benefiting from the financial assistance program they are to support. And if the "service" to be covered by the fees is simply allowing the water to be withdrawn, objection again arises that it is usually not the federal government's water. What service is the report hinting at? And what is its cost?

If the water "fee" is really a "tax" (a conclusion fortified by the report's references, e.g., at p. xi, to IRS), implications just in terms of congressional committee jurisdiction are serious. Tax issues go to committees with concerns for infrastructure having no greater claim for attention than scores of other worthy causes. Probably the chief concern of these committees is the generic "revenue neutrality," how to pay for myriad pending amendments to the Internal Revenue Code. Do the proponents of a water tax want to take a risk against alien lobbyist raiders on water-tax revenues? We don't!

Moreover, NAWC is dubious that Congress would be willing to assess any water fee/tax on municipal water systems. And it may well be beyond congressional authority to exact them from units of state or local government, such as the municipal suppliers who would probably stand in line at the courthouse door to bar collection. Lawsuits raising this constitutional issue could take years to resolve, and the report's proponents should not bet heavily on the outcome. Collectability is seriously in question.

If municipal water supplier litigators got themselves beyond reach of the water fee/tax, the entire $2 billion it was supposed to raise could scarcely be expected from private or investor-owned suppliers, for that sum is roughly their aggregate annual gross! (Total investor-owner industry revenues in 1993 were about $2.4 billion.) To seek even a significant part of $2 billion from them would quickly necessitate rate increases forcing private companies into take-overs by municipal systems who along with their customers would be both free of the fee/tax and potentially recipients of program benefits.

Besides, it is hardly certain that private or investor-owned water suppliers will be eligible for program benefits. At some points *(e g., p. xiv)* the report suggests yes. But elsewhere *(e.g.,* pp. 5, 29) it says that the issue is one that has been and again should be addressed. And presumably it would be addressed, not just by the authors of the report but also by EPA, its Environmental Financial Advisory Board, and ultimately the Congress and the President -- and then by state officials who will exercise discretion as to who among supplicants will get program benefits. While NAWC does not support the recommendations of the report, we would insist on inclusion of private and investor-owned water suppliers in the benefits of any of them, especially since it is clear we are to pay for those benefits.

Evaluation of political acceptability should take account that current congressional leaders might well categorize the water tax as a "sales tax" because of the method of collection suggested by the report (at pp. 42-49). And since at least some of these leaders hope soon to explore sales-type taxes for general revenue purposes, they may well not want to see a part of their new "general tax base" dedicated for a "particular" purpose, even one as important as infrastructure financing.

Finally, two other points of possible congressional interest. One reason the report says it supports the proposed water fee/tax is that "it is generally recognized that water is a scarce resource which is typically under priced resulting in over use." (At p. 15.) Committees other than those dealing with taxes and the environment might well have something to say about that proposition and its implications for federal policy. Again, this would be at least a complicating factor that bears on political acceptability of the water tax/fee. Finally, the report emphasizes that its "models are structured to be self-sufficient ... [with] moneys to support their own administrative costs." Congressional appropriators may raise eyebrows at what could sound to them like an effort to build a fiefdom unaccountable to them.

We believe that, mindful of these and other considerations, Congress would find the withdrawal fee overly complex and wholly unpalatable.

The report's authors reached their conclusion thinking water rates would be driven up only modestly by the water tax, and ratepayers are too numerous and diffuse to mount effective political objections. Also, given relatively inelastic demand, water suppliers would not suffer a reduction in demand sufficient to generate strong opposition. (See pp. 17-19.) That analysis is simply incomplete.

CONCLUSION

Most importantly, we fault this report because it proposes new federal money programs that hinder rather than facilitate long-term solutions to infrastructure problems facing some water suppliers. As outlined above, we believe that any federal efforts should seek to promote consolidation and regionalization. Again, NAWC would be glad to help in any such efforts.

The report's recommendations are objectionable even on their internal merits because they rely on delivery systems that would likely be counterproductive, and because they are inequitable particularly for those that have already made the necessary investments.

As to political acceptability, the NAWC agrees with the report's authors when they concluded that political objections are a likely bar to model one, but we believe the same is true for model two, and we outline the political objections to two that we foresee. Model three suggests hybrids of one and two, and it sounds like a new entitlement (nearly anathema to Congress), so we are highly skeptical of its viability, too. Thus, we doubt the author's recommendations could succeed in Congress.

Appendix C-3

STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT
906 Columbia St. SW • PO Box 48300 • Olympia, Washington 98504-8300 • (360j 753-2200
May 3, 1995

TO: Deborah Photiad, EFAB
FROM: Pete Butkus

You requested that I provide a synopsis of my comments from the meeting, which focused on the financing options paper prepared by the Environmental Finance Center at Syracuse University. Further, you asked me to note salient points made by others, and finally, to consider implications of this meeting on future EFAB activities.

Part One: Meeting Comments

I. Opening remarks. I speak today from my background as manager of several infrastructure and environmental infrastructure finance programs. In Washington State, I am responsible for the Public Works Trust Fund, a multi-purpose state infrastructure bank; the state's non-entitlement area Community Development Block Grant (CDBG); another infrastructure loan program designated for economic development infrastructure; and, the Bond Cap Allocation process.

II. Fee models. I will not comment on the suggested fee models, but limit my remarks to the three alternatives for delivery of whatever revenue is obtained to the states for financing environmental infrastructure.

III. Model designation. I propose that the best of models two and three be combined into what I call model two-point-eight (2.8), a model which would provide financing to states for local environmental infrastructure with the following goals:
• minimal oversight
+ minimal regulation
+ maximum state/local flexibility

IV. A new mindset. In order to implement this model a new and different mindset would need to be established in the enabling language by Congress. The federal government, consistent with the goals in III, above, would provide areas or topics to be addressed by each of the states. Instead of mandating a certain practice, the language would simply require the state, in conjunction with its local governments, to address each of these points in the design and operation of the state's program financed by this act.

Suggested areas include:

• States may manage this program through one or more state agencies.(This would permit utilization of existing state management structures or permit a state to modify existing practices -- it would be the state's choice. For example, in Washington state, the Water Quality SRF is managed by the Department of Ecology, the proposed future Drinking Water SRF will be jointly managed by the Department of Health (TA and regulation) and the Public Works Board (capital facility finance). If solid waste were to be added, another agency could conceivably be utilized. States should be able to target financing to the locally-determined greatest need.

+ There could be a cap on the percentage of funds expended for program management. This amount should be the lowest reasonable amount necessary to manage a non-bureaucratic revolving loan program. If states wish to exceed this amount, it may be done with state funds.

• States should examine needs and determine mechanisms, if any, to fairly allocate financial assistance to specific population groups. Native Americans/colonias, small communities, economically disadvantaged (urban and rural) are some that come to mind. Again, there would not be a mandate for specific allocations or programmatic activities, the states would be charged with addressing each as best fits its needs, in consultation with local and other governments.

+ States should develop and document efforts to ensure sustainability of this environmental finance mechanism.

- States should provide for capacity building of local governments to finance environmental infrastructure and to provide cost-effective solutions in financing and capital facility design as necessary.

+ Interlocal, bi-state, and interstate/regional cooperation is encouraged.

+ Public private partnerships are encouraged, consistent with each state's constitutional or statutory enactments.

+ States are encouraged to promote linkages with other financial assistance programs, CDBG (HUD) and FmHA (USDA) linkages are specifically encouraged.

V. Standard federal protections Given the propensity of state legislatures to shift funds, some standard federal projections are also suggested:

+ Perpetuity of fund purpose

+ Protection on investment earnings -- must be used for environmental finance

+ States may not utilize legislative review and approval as the final step before fund disbursement.

Vl. What this gives (us). The above goals (III) and mindset (IV) provide for the opportunity to have up to 50 different state models created that stand the best chance of meeting the unique needs of each state and its people. To the extent that territories and trust lands are included, the number of unique models would be expanded.

Vll. Report back. Congress should include in the authorization the requirement for each state to report back to Congress via EPA on the implementation, successes, and needs for modification or ciarification of the program. It is suggested that a four-year period of state activity be reported. With the many models for program management in place, Congress will have a wealth of information to review and make modifications, if any in the program based on picking out the "best" parts from all of the models.

Xl. Closing comments. I ended by pointing out the we have never had or will have enough resources to do the job we are expected to do, so we should "quit chipping our teeth" and get on with the job of providing the financial assistance to the good environmental managers.

Part Two: Points bv Others

+ Other speakers identified the desire to consider solid waste as an "equal" with water and water quality. Specifically, go towards an environmental SRF concept. I agree.

+ Several speakers gave the message of "don't tax or charge me a fee, tax or fee charge the other person." A much more positive side of this was the view expressed by Beth Ytell when she noted the need to think in terms of: "the true cost of delivering service" as the real finance base line. I agree. To implement Beth's thoughts, it may be useful to separate the basic cost of service as that by naturally occurring events being charged to the customer. Events that raise the cost of delivering service (the additional cost caused by outside influences) shouid be charged to the person, firm, or part of society that causes the additional cost. An example of the latter would be charging the cost of water treatment due to military fuel spills to the federal government directly.

+ Several panel members wanted to consider poliution prevention activities (to include education activities) in addition to capital structure finance. - I agree, a modest amount of the total program should be so designated. As a start for discussion, maybe an amount not to exceed 10% could be considered .

+ Given the rapid turnover of people aligned with legislative and environmental fiance issues, it may be helpful to include in legislative language a full statement of intent and statements of values that are expected to be carried out.

- I have enclosed a copy of the paper recently presented by Richard E. Warren, P.E. at an International Symposium on Public Works and the Human Environment. Mr Warren's paper tied-in nicely with the work reviewed at our April 25 meeting.

cc: George Ames Victoria Kennedy Beth Ytell Richard Warren, P.E.

Appendix C-4

SYRACUSE NOTES

Introduction 1

Good afternoon. My name is Clarence Barnett, Mayor Pro Tem, City of Yakima, Washington.

I want to thank you for the chance to offer a few comments regarding alternative funding sources for water and wastewater. My remarks are primarily based on the fee models as presented to the EPA by the Environmental Finance Center, Syracuse University in the April 1995 draft report.

You have been given a Statement and Position of the City of Yakima.

The Yakima region is a desert plateau with minimal rainfall, -- and is dependent on large withdrawals of water from rivers to support its agricultural economic base. Yakima is designated as Economically Distressed.

Introduction 2

Federal Fee Model

The wastewater effluent fee in the Federal Fee Model would increase City of Yakima sewer rates 3.5 percent. This is very close to the 3 percent increase in the Syracuse report.

However, the fee used in the background paper by Victoria Kennedy would require a city 4.1 percent sewer rate increase.

The fees on the production of fertilizers and pesticides are viewed by local industry as an attempt to keep the " "Studs" type proposed legislation alive . (H . R. 2 1 9 9, 1 0 3 rd Congre s s) .

(Fee: Syracuse $0.0605/1,000 gallons
Kennedy $0.0756/1,000 gallons)

Federal/State de Minimis Model

We have serious concerns on the impact of Federally-assessed water withdrawal and discharge permit fees.

Introduction 3

Our rate increases differ dramatically from those presented in the Syracuse report. We compute the average Yakima household would have an overall 62 percent rate increase as compared to the 8 percent range in the Report.

It is also noted that the discharge fee (NPDES) incre ased from $ 8 7 ,000 to $96, 8 13 for major wastewater facilities.

Syracuse A-1

The City of Yakima has two separate public water supply systems, --- one for potable water, --- and another for only irrigation water. Both systems withdraw water from the Naches river.

Irrigation water is an integral part of our public water supply for residential uses.

The City has water rights for potable water; and, separate water rights for irrigation purposes.

Should fees be imposed for public water withdrawals of irrigation water for residential uses, — then, the City position is that the use of fee revenues should be expanded to include the repair and rehabilitation of residential irrigation water supply systems. The disbursement of these funds should not be limited to potable water, wastewater and nonpoint pollution purposes.

Syracuse A-2

The same expanded use of the funds should apply if fees are attached to water withdrawal for agricultural purposes.

The repair and rehabilitation of irrigation water delivery systems will dramatically reduce leakage, and will have a direct reduction of excessive water withdrawals from rivers.

This will allow more water to remain in rivers for fish flows and agricultural purposes during years of drought. Yakima experienced three consecutive years of reduced river flows. Water for fish and adequate water for agriculture are important and sensitive local issues.

This proposal goes beyond the scope of funding for wastewater and safe drinking water

However, an expanded use of revenue raised from either Public Water Supply Withdrawals or Direct Water use from rivers would provide an opportunity toward resolution of several water-related issues at the same time.

Syracuse B-1

The City of Yakima's position is that before new fees or taxes are imposed, careful consideration must be given to the fact that local expenditures have increased dramatically merely to comply with existing environmental regulations and to maintain current standards.

Existing regulations have been responsible for nearly 90 percent of the increases in our utility rates. Twenty-three percent of our water and wastewater operating budget is obligated to service the debt of federally mandated water quality facilities.

Yakima is an Economically Distressed area. Yakima has the highest percentage of residents living below the poverty level in the State of Washington.

The gap between the cost of basic utility services, -- and the ability to pay, -- has caused many low-income families, disabled and elderly to choose between heat or food in winter.

Syracuse B-2

This has led to many families living together in over-crowded conditions, -- posing an immediate threat to health.

As an elected official, I see and talk to these people and must consider their plight. They will not understand fees on water withdrawal — a basic necessity of life.

Some of the materials I have read preceding this meeting uses terminology such as "water is typically under-priced", "comparatively low cost fee" and "very small fee". Many of our citizens are simply too poor and unable to pay for new fees or taxes despite the risks involved.

Syracuse C-1

A major concern expressed by my constituents is: — once the fees are imposed, what assurance is there that any of the revenues collected will ever return to Yakima to help finance our water-related capital improvement projects?

From a Federal point of view, — de Minimis may provide an equitable distribution of impacts and a close relationship between costs and benefits, — because the fees collected do not leave the State.

However, at the local level, there is no assurance that provisions will be made to guarantee an equitable distribution of funds between cities within the State.

Based on my discussions, this is an important issue for political acceptability.

Syracuse D-1

A question raised on several occasions is: "How do these proceedings tie into the intent of the Unfunded Mandates Reform Act of 1995?"

It would seem that before Congress considers the outcome of these public meetings; -- the study charged by Congress under the Unfunded Mandates Act to review existing federal mandates should be completed. Some existing mandates may be modified, suspended or terminated.

On the assumption that the Unfunded Mandates study will reduce costs, --- then the proposals now under consideration might be more palatable to the general public.

Syracuse E-1

Water quality is a stated national priority. Therefore, congress should set different priorities for federal spending to provide adequate funding for environmental water quality infrastructure improvements.

The people do not support new fees without having local public input.

Most important, the people do not support federally driven fees.

However, they want clean water.

Therefore, we offer a voluntary program with a combination of federal, state and local funding. It is located on the last two pages of our Statement and Position.

The cost-share formula is similar to phases 3 and 4 of the Yakima River Basin Water Enhancement Project legislation. (H.R. 1690)

Syracuse E-2

The cost-share formula received grass roots support when the Yakima Basin legislation was developed.

The proposal has the following features:

- Congress must be willing to set different priorities for federal spending.
- Only localities requiring clean water project funding would be affected.
- The proposal is not federally driven.

Appendix D

Current State Water Fee Programs

Appendix D-1

STATES WITH CAPITAL-GENERATING FEES DEDICATED TO WATER QUALITY INFRASTRUCTURE IN 1994

Washington	$34,000,000	Cigarette & Tobacco tax for Wastewater Treatment and NPS
	$23,298,000	Real Estate tax & State tax on Water, Sewer, and Garbage Utilities for Wastewater Infrastructure
Idaho	$4,800,000	Sales tax for Wastewater Treatment
	$2,800,000	Cigarette & Tobacco tax for Wastewater Treatment
Iowa	$16,273,000	Pesticides Dealer License and Registration Fees, Fertilizer Sales Taxes for Water and NPS
Kansas	$2,523,000	Fertilizer Use, Pesticides Sales, and Stock Water Uses for Water Infrastructure and NPS
Maryland	$14,000,000	Boat Sales and Boat Excise Taxes
Minnesota	$16,000,000	Cigarette Tax for Wastewater Treatment
	$4,100,000	Pesticides and Fertilizer Registration and Sales Fees for Groundwater
Missouri	$18,843,000	One tenth of 1% of Sales Tax dedicated to NPS Projects
Montana	$1,000,000	Interest on Coal Severance Tax
New Jersey	$5,000,000	Safe Drinking Water Use Tax for Drinking Water Infrastructure
New York	$29,000,000	Bottle Returns, Motor Boat Fuels, and miscellaneous fees for NPS (landfill closure)
Wisconsin	$20,000,000	Pesticide Tax, Vehicle Title Transfers, Highway Salt, Lottery (proposed) for Water and NPS Projects for Groundwater
Wyoming	$5,000,000	Coal, Oil, and Gas Severance Tax (not all dedicated)
Total	$196,436,000	

Sources: National Conference of State Legislatures, National Governor's Association, Telephone Interviews, U.S. Environmental Protection Agency, Office of Water, An Overview of Existing State Alternative Financing Programs: Financing Drinking Water System Capital Needs in the 1990's. May, 1992.

Appendix D-2

*STATE ADMINISTRATIVE WASTEWATER DISCHARGE PERMIT FEES (PROJECTED FY1994) (Dedicated to Non-Capital Purposes)**

Alabama	$1,200,000
Arkansas	$1,592,000
California	$8,426,000
Colorado	$845,251
Connecticut	$3,500,000
Delaware	$292,700
Kansas	$380,000
Kentucky	$510,500
Louisiana	$10,500,000
Maine	$194,296
Maryland	$1,138,000
Minnesota	$2,400,000
Missouri	$1,682,825
Nevada	$574,000
New Jersey	$15,306,664
New York	$9,500,000
North Carolina	$3,145,000
Ohio	$5,839,800
Oklahoma	$600,000
Oregon	$2,175,900
Pennsylvania	$692,000
Rhode Island	$26,796
South Carolina	$1,140,000
South Dakota	$689,437
Tennessee	$2,100,000
Texas	$7,191,605
Vermont	$247,500
Virginia	$1,600,000
Washington	$20,992,000
Wisconsin	$7,452,000
Total	$111,934,274

Source: Summary of State Wastewater Discharge Permit Fees (NPDES)
National Conference of State Legislatures, December 1993

* Dedicated to State environmental agency operating and programmatic budgets

Appendix D-3

STATE ADMINISTRATIVE DRINKING WATER FEES IN FY 1993 (Dedicated to Non-Capital Purposes)*

Alabama	238,000
Alaska	10,000
Arizona	0
Arkansas	2,400,000
California	5,970,000
Colorado	0
Connecticut	150,000
Delaware	0
Florida	725,000
Georgia	2,430,000
Hawaii	0
Idaho	950,000
Illinois	2,067,300
Indiana	40,000
Iowa	16,000
Kansas	0
Kentucky	65,856
Louisiana	0
Maine	6,000
Maryland	0
Massachusetts	0
Michigan	0
Minnesota	0
Mississippi	900,000
Missouri	300,000
Montana	557,000
Nebraska	100,000
Nevada	396,267
New Hampshire	177,900
New Jersey	3,400,000
New Mexico	10,000
New York	0
North Carolina	462,000
North Dakota	0
Ohio	0
Oklahoma	1,100,000
Oregon	443,407
Pennsylvania	1,000,000
Rhode Island	0
South Carolina	950,000
South Dakota	235,000
Tennessee	1,360,000
Texas	1,630,000
Utah	58,000
Vermont	180,248
Virginia	1,722,000
Washington	1,170,000
West Virginia	0
Wisconsin	0
Wyoming	0
TOTAL:	**$ 31,219,978**

Source: Alternative Funding Mechanisms for State Drinking Water Programs, July 1993. National Conference of State Legislatures * Dedicated to State drinking water operational and programmatic budgets

Appendix D-4

MISCELLANEOUS STATE FEES AND TAXES

(generally dedicated to non-capital water programs, or dedication unknown)

Direct water use (recurrent withdrawal, diversion, appropriation) fees

Arizona, Arkansas, Connecticut, Kansas, Montana, New Jersey, Pennsylvania, South Dakota, Texas (a sub-state district), and Utah

Public water supply withdrawal fees (production, sale or service fees based on gallons or sales percentage)

Arizona, California, Delaware, New Jersey, New Mexico, Montana, Oklahoma, Rhode Island, Texas, Virginia, Vermont

Effluent fees (municipal and industrial)

Louisiana, New Jersey, Washington

Drinking water connection fees

Massachusetts, New Jersey, Nevada

Drinking water and/or wastewater laboratory, operator and other certification fees

Alabama, California, Florida, Illinois, Kentucky, Massachusetts, Michigan, New Hampshire, New Jersey, Pennsylvania, North Carolina, South Carolina, Tennessee and Wisconsin

Drinking water facility construction fees

Arkansas, Florida, Illinois, Missouri, New Jersey, Ohio, Pennsylvania

Well-drilling license, permit and/or pump fees

Alabama, Arizona (including industrial well users), Montana, New Jersey, South Dakota, Virginia, and Wisconsin (also a compensation fee for wells)

Water rights application fees

A number of Western States including California, Montana and Nevada; New Jersey has a water allocation fee

Septage fees

Virginia, North Dakota, Oregon (all subsurface disposal), and Wisconsin (haulers and private systems)

Sludge fees

Indiana (land application), Wisconsin (sludge disposal)

Mineral severance fees (coal, oil and gas)

Maryland, Nebraska (uranium) Pennsylvania, Virginia, Wisconsin (also Wyoming and Montana discussed under State "Water Capital" Fees)

Wetlands permit fees

New Hampshire, Florida, Minnesota, Oregon, West Virginia

Miscellaneous tax dedication (see also State "water capital" fees

California and Massachusetts (utility taxes); Illinois and New York (sales tax on specific products); Montana (interest on coal severance taxes); New Jersey (special safe drinking water tax); Missouri (soil and water sales tax and percentage of state sales tax)

Special activity or product sale fees

Real estate transfer - Tennessee and Florida (for wetlands), and Montana (loan closure); also Florida (document stamp fee) (see Washington under "Water Capital Fees")

Bond issuance fee (for private-activity bonds) -New York

Permit registration - Alabama

State Lottery - Kansas, Minnesota, and Wisconsin (for water programs)

Income Tax check-off's, credits - Arkansas, Ohio and North Carolina (for wetland acquisition or mitigation), and Wisconsin (NPS)

Hunting and fishing licenses - Nebraska and New Jersey (for wetlands), Maine and Maryland

Camping fees - Montana

Vehicle Title Transfer - Wisconsin and Maryland

Vanity license plates - Maryland (for Chesapeake Bay)

Postage stamps - Nebraska and New Jersey (for wetlands)

Oil spill permit - New York (for water programs)

Tidelands occupancy - Massachusetts

Governmental publications and computer data - Michigan and South Dakota (for water programs)

Consulting service fees - Wisconsin

Industrial waste tax credit application fee - Oregon (for water programs)

Dam registration - Maine

Stream encroachment - New Jersey

Environmental impact reviews - Wisconsin

Highway de-icing salt - Wisconsin and others (for NPS)

Development impact fees - Florida and Others

Specific Chemicals

Pesticide and fertilizer fees (see State "Water Capital" Fees, for Wisconsin , Kansas, Minnesota, Oregon and Iowa)

Perchloroethylene (dry cleaning solvent) - Florida

Soil and plant additives - Wisconsin

Petroleum product barrel import tax - Hawaii (for groundwater programs)

Note - This list does not include solid and hazardous waste fees, and air-related fees, specifically dedicated to those environmental media.

Sources: National Conference of State Legislatures, States as Water Quality Financiers, 1993; National Governors Association, Evelyn Shields, Funding Environmental Programs: An Examination of Alternatives, 1989; many personal telephone interviews conducted by the Syracuse University Environmental Finance Center

Appendix E

Executive Summary of the Draft Report

"Fee-Based Models for Funding Water Quality Infrastructure", Syracuse University Environmental Finance Center (April 1995, Revised May, 1995)

Appendix E

Executive Summary of the Draft Report

Origins of the Study

This study is the result of a growing interest, nationwide, in the use of fee-based systems to raise revenues to finance drinking and wastewater infrastructure facilities. In 1994, the U.S. Environmental Protection Agency (EPA) was awarded moneys to conduct a study of alternative revenue sources for clean water project funding. This earmarked amount in EPA's FY95 appropriation had its origins in a bill originally sponsored by Gerry Studds (D, Mass), called the "Polluter Pays Bill" (H.R. 2199 in 1993). This report, prepared by the Environmental Finance Center at Syracuse University, was conducted under a grant from the Office of Water, U.S. EPA.

Assumptions

In evaluating alternative sources of fees, a target level of $2-3 billion annually was established by EPA, recognizing that this sum was not based on total needs. The fees examined here are designed for the **purpose of raising revenue, not changing behavior.** Another assumption is that **all fee revenues must be dedicated primarily to financing water-related capital construction projects** and revenues from fees are meant to be supplementary to existing annual appropriations such as Clean Water Act Title VI State Revolving Fund (SRF) capitalization grants. **The options considered in this study contemplate the funding of drinking water facilities as well as wastewater and non-point sources.** Some non-structural solutions such as best management practices and watershed protection also could be included.

In considering funding systems, we looked more broadly than primarily Federal systems. We were interested in fee programs that were nationwide in scope, but not necessarily or mainly "Federal" in terms of fee program design, collection, administration, and disbursement. We placed special emphasis on fee systems that involved State governments and State Revolving Funds (SRFs), sometimes as the major decision-makers. Here, local governments are discussed primarily as the recipients, or beneficiaries of fee-based financial assistance.

The Building Blocks: Fee Sources, Institutional Mechanisms, and Evaluative Criteria

The goal of this study is to generate several self-sufficient, intergovernmental fee-based funding models for financing water quality infrastructure, which can serve as the basis for further discussion and evaluation. While past fee studies often have focused mainly on revenue sources, we have concentrated on designing complete funding packages. The models are structured to be self-sufficient, in that they do not rely on other sources of funding, and indeed provide moneys to support their own administrative costs. The models are generic and designed to generate additional discussion. Policy-makers may mix-and-match the elements of each model depending on future policy decisions.

The basic elements of each model, i.e., the role of various governmental levels, the fee base (revenue sources), institutional delivery mechanisms, collection and administration, and specific water-related eligibilities and oversight, result from a mix-and-match of the fees and intergovernmental delivery mechanisms examined. Delivery mechanisms are those that disburse financial support to States and/or localities.

Figure 1 (on the following page) depicts the building blocks which were used to generate three combined intergovernmental models, described below. From a wide number of **revenue sources** examined, we selected five as the most feasible for in-depth analysis and estimation, including: Industrial Effluent Fees, Pesticides and Fertilizer Production Fees, Public Supply Water Withdrawal Fees, Municipal Wastewater Effluent Fees, and NPDES Permit Fees.

Likewise, four **institutional delivery systems** were examined and two, a new Federal Clean Water Trust Fund and expanded State Revolving Funds (SRFs), were selected for the generic models. State programs are described throughout the report and in Appendices.

Six evaluative criteria systematically were used. The criteria are:

(1) political acceptability by different governmental levels and fee sources
(2) total revenue size and predictability
(3) equity between, and impacts on the sources of fees
(4) feasibility of collection (collectability)
(5) relationship between costs and benefits, or "who pays versus who benefits", and
(6) environmental goals, including efficiency in funding drinking and wastewater infrastructure and State capacity-building

Three Fee-Based Intergovernmental Models

From these building blocks we developed three "strawman" models which move on a continuum from the most Federally controlled fee-based system to the most flexible, and ultimately voluntary State systems with Federal matching funds. All three models use SRFs as the primary State-to-local financial assistance delivery mechanism, and all fees are dedicated to water-related capital projects. Likewise, project eligibilities and types of financial assistance are gradually expanded, and Federal oversight gradually decreased. This movement is depicted in Figure 2 and 3.

1. The first model, **The Federal Fee Model**, creates a Federal Clean Water Trust Fund supported by Federally-imposed effluent and pesticide/fertilizer production fees. The new Fund primarily makes capitalization grants to SRFs, with the possibility of direct project grants.

2. The second model is a mixed Federal/State fee-based system, which we have termed **The Federal/State *De Minimis* Fee Model**. Here, the Federal government levies fees on two main sources, public water supply withdrawal and wastewater discharge permits fees, at a minimum level per State, which States are encouraged to adopt and implement themselves. States also may partially substitute other water-related fees for the two main fees.

Figure 1: Alternative Fee-Based Funding Models

Revenue Sources

1. Industrial Effluent Fees
2. Pesticide/Fertilizer Use Fees
3. Public Water Supply Withdrawal Fees
4. Municipal Wastewater Effluent Fees
5. NPDES Permit Fees
6. Mix and Match

Evaluative Criteria

a. Political Acceptability

b. Revenue Size and Predictability

c. Equity and Impacts

d. Collectability

e. Relationship of Costs and Benefits

f. Environmental Goals
(Efficiency and State Capacity Building)

Delivery Mechanisms

1. Federal Clean Water Trust Fund
2. Federal Water Investment Bank
3. Existing and Expanded State Revolving Funds
4. Regional Funds

Combined Intergovernmental Models

1. The Federal Fee Model (Federal Fees and Trust Fund)
2. The Federal/State *De Minimis* Fee Program (Federal or State Fee Systems)
3. The Voluntary State Fee Incentive Program (State Fee Systems and 33% Federal Match)

Figure 2: Depiction of Expanding Water-Related Eligibilities under Three Models

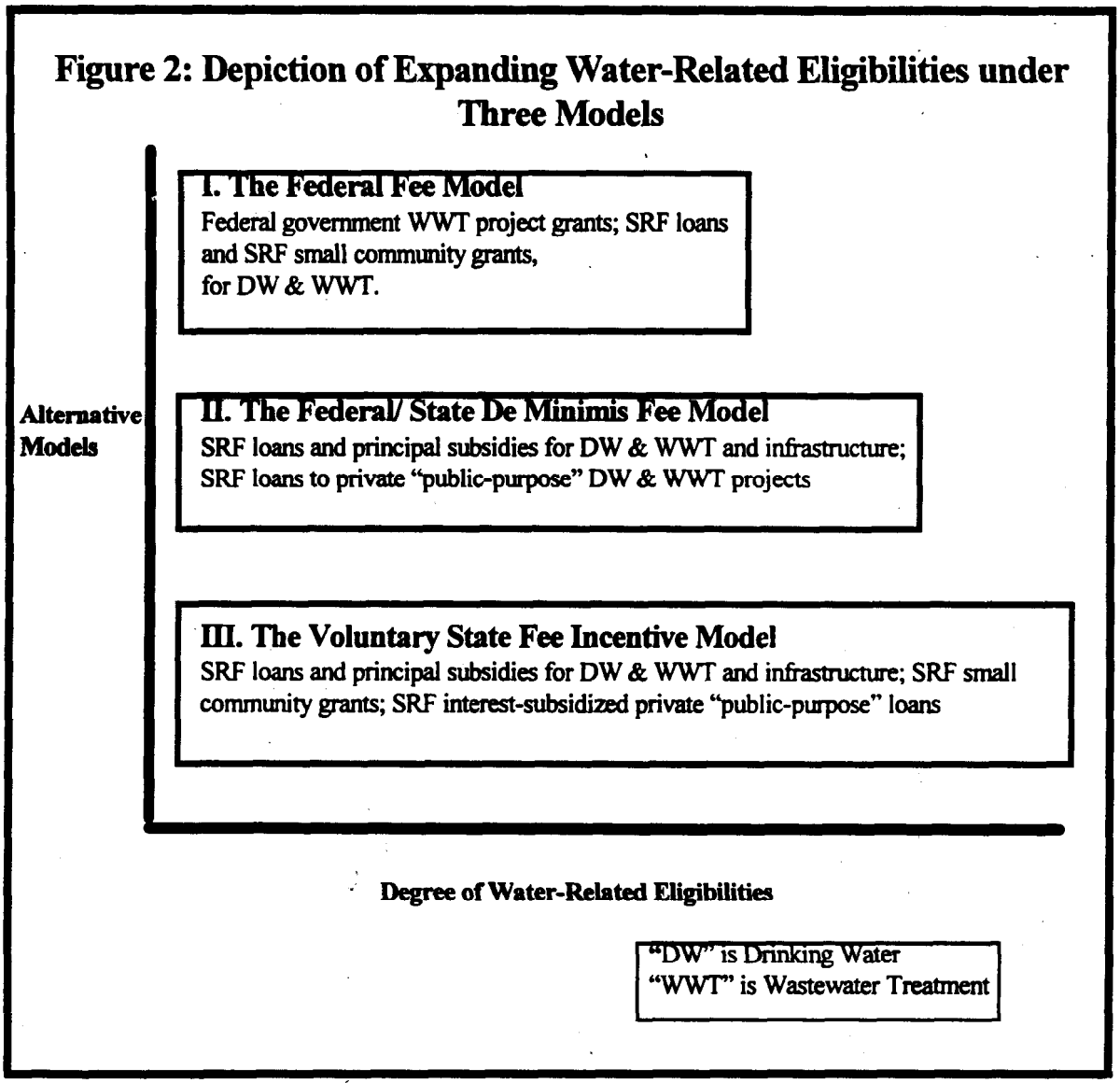


Figure 3 : Depiction of Increasing State Flexibility(Decreasing Federal Oversight) for SRF Eligibilities under Three Models

Includes:
a) Type of Water Project
b) Type of Financial Aid

State Reporting Requirement

1. SRF Annual IUP (start of year)

2. If State administers, it submits year-end reports (audit) to EPA.

3. State submits annual bill for Federal match to EPA, for next year funding, plus periodic "baseline"certification.

I. The Federal Fee Model
Federal government allocates amounts for DW and WWT SRF "capitalization" grants; also , large direct WWT grants and small DW & WWTgrant set-aside.

II. The Federal/ State De Minimis Fee Model
+ If Federal government administers, Federal government allocates DW and WWT amount.
+ If State administers, "Environmental" SRF makes all DW and WWT decisions plus type of financing.

III. The Voluntary State Fee Incentive Model
"Environmental" SRFs make all DW and WWT decisions plus type of financing, including for Federal match.

Degree of State Flexibility

"IUP" is Intended Use Plan
"DW" is Drinking Water
"WWT" is Wastewater Treatment

3. The third major model is **The Voluntary State Fee Incentive Model** with 33% Federal match, and the roles of the Federal and State governments are reversed. Here, States are completely free to participate or not, and may design whatever fee structures they wish as long as fees are dedicated to capital water-related facilities. The Federal match may be raised by general appropriations or Federal fees, is capped at $700 million annually and sunsets in 10 years.

The three funding models are described in some detail below, and evaluated in relationship to the six criteria.

Model I: The Federal Fee Model

The basic elements of this model are the creation of a new Federal Clean Water Trust Fund, reliance on Federally-assessed fees, Federal fee revenue allocation to individual SRFs for both drinking water and wastewater construction projects, and Federal grants to large municipal wastewater projects. This model is fashioned to be somewhat similar to H.R.2199 (the Studds bill), except that drinking water treatment facilities are also eligible for SRF loans. In addition, while there is a SRF small community grant set-aside (10%), there are no non-point source set-asides and the Trust Fund may offer direct wastewater treatment project grants to municipalities. Box 1 and Figure 4 following describe model implementation and intergovernmental flow of funds.

We have constructed this model with the Federal government assessing two main types of fees nationwide: (1) industrial and municipal effluent fees, and (2) fees on the production of pesticides and fertilizers. States conceivably could collect all of the former on behalf of, and rebating fees to, the Federal government. States could be reimbursed for collecting Federal effluent fees, but in some cases the Federal government might have to collect effluent fees itself. Pesticides/fertilizer fees could be paid by private sector producers directly to the Federal Internal Revenue Service (IRS).

All fees would be deposited immediately in the newly created Federal Clean Water Trust Fund, which then would allocate fee revenues back to the SRFs to specific drinking water and wastewater capital accounts, with no State match required. While the Trust Fund could reserve a specific portion of fee revenues annually for grants to large municipal wastewater treatment projects, no specific set-aside is mandated. Trust Fund investment earnings would be used first to cover Federal administrative costs (not to exceed 4% of fee revenues annually). Note that existing CWA Title VI SRF capitalization grants would be preserved, with existing requirements (e.g., the State match), in separate SRF accounts.

Using the Federal Fee Model has some advantages in terms of the six evaluative criteria. Historically, the Highway Trust Fund and to some extent Superfund have had considerable success in generating large and stable fee-based revenues over time. Because of the long-term Federal fee authorization, these Trust Funds do not rely on annual appropriations. If fees are properly estimated and collected, the Federal Clean Water Trust Fund may produce similar good results.

Box 1: The Federal Fee Model

Revenue Source: Federal fees are assessed, as flat rates, on toxic and conventional pollutant effluent, which include industrial direct and indirect discharges and municipal wastewater treatment effluent, and also on a per pound/active ingredient basis on the production of pesticides and fertilizers. No State match for new fee-based SRF capitalization grants is required. The new Federal Clean Water Trust Fund would also earn money on the investment of undisbursed fee accounts.

Collection and Administration: State environmental agencies could collect all effluent fees on an installment basis through NPDES permits functions, including 13 non-delegated NPDES States if they so wish. Otherwise, the Federal government would collect. Pesticide/fertilizer production fees could be paid annually to the Federal IRS by private sector production and manufacturing companies.

Delivery Mechanism: The Federal Clean Water Trust Fund allocates fee revenues annually to SRFs upon EPA acceptance of new SRF Intended Use Plans (IUPs), submitted annually at the same time as Title VI SRF IUPs. The Fund also may make direct grants to large municipal wastewater projects. New Federal bureaucracy needed to administer the Fund may use up to 4% of fees collected for administrative costs.

Eligibilities and Oversight: The Federal government makes most "redistributive" decisions by allocating drinking water and wastewater moneys to separate SRF accounts, with inter-account borrowing permitted, and also by making annual direct project grant decisions for wastewater. To do this, EPA will incorporate new Drinking Water Needs Survey data into the existing Wastewater Treatment Needs Survey database to form a Unified Clean Water Needs Survey, and a new SRF allotment system (which also must take account of ongoing CWA Title VI SRF capitalization grants).

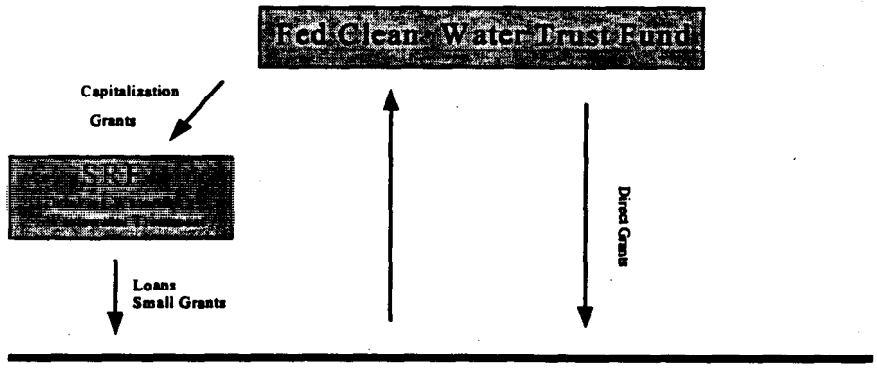
Fee-based SRF eligibilities would be expanded to include EPA 1994 CWA reauthorization initiatives, e.g., non-point source, watershed protection, and wetlands mitigation banking,[1] and 1994 proposed SDWA SRF eligibilities, e.g., loans for drinking water treatment facilities including land acquisition, water conservation, source water protection and privately-owned, public-purpose projects.

SRFs must make a minimum of 10% in drinking/wastewater grants to small communities. Otherwise, no Federal restrictions or set-asides apply to new fee-based SRF capitalization grants, or Federal direct project grants, except for National Environmental Policy Act reviews (NEPA) and civil rights rules. (Note that Federal wastewater project grants are not restricted to CWA Title II eligibilities, and may be combined with an SRF wastewater loan project.)

The Federal Fee Model is also a excellent mechanism by which to address existing and new Federal environmental goals, and accommodate change of these over time. A major goal fulfilled under our approach is jump-starting the SRF drinking water treatment program nationwide. By ultimately relying on SRFs to deliver State-to-local financial assistance, the financial efficiencies of SRFs through the revolving loan concept, bond leveraging, credit enhancement, and pre-financing functions are maintained, except for those cases in which the Trust Fund makes direct project grants.

[1] These so-called "greenbook" initiatives are contained in "President Clinton's Clean Water Strategy", 1994.

Figure 4: The Federal Fee Model (Model I)



However, a major stumbling block will be to overcome political resistance to such a model, based both on the sources of fees and resistance by some States to rebating fees to the Federal government for redistributive purposes. As we have constructed it, the model does not provide equity in terms of revenue sources, and impacts on the industrial and agricultural communities may prove to be a negative. Cross-subsidization as between States, i.e., some States will be contributing more than they receive back, could be considerable. The complexity and political difficulties for the Federal government in devising a new needs-based State SRF allotment formula are very real.

Industrial effluent fees designed to raise $1 billion tend to be concentrated in several industrial groups, particularly the chemical industry. Impacts of this fee will depend on the price elasticity of the products produced by the firms paying the fee. Thus it is anticipated that some portion of the fee will ultimately be passed on to consumers. The fertilizer and pesticide fee designed to generate $ 0.7 billion runs between 3.5% and 4.9% of total fertilizer and pesticide industry revenues respectively. Studies by the Congressional Research Service (CRS 1994) suggest that the impact of this fee on the industry will in part be passed on to farmers and final product consumers, but that the impact on agricultural cost will be less than 5% of total revenues. Finally the impact of the municipal wastewater effluent fee designed to raise $ .8 billion would be an approximately 3% increase to water user bills on average.

Table 1
Fee Rates for Federal Model

Source		Rate	Units	Base	Revenue
Effluents					
Industrial	*Toxics*	$ 1.3514	lbs.	651,506,001	$ 880,445,210
	Conventionals	$ 0.0200	lbs.	5,975,652,780	$ 119,513,056
Municipal		$ 0.0605	1000 gallons	13,219,971,500	$ 800,000,000
Fertilizer		$ 0.0132	lbs.	31,631,800,000	$ 417,539,760
Pesticides		$ 0.2623	lbs.	2,231,000,000	$ 585,191,300
Total					$ 2,802,689,325

The relationship between costs (who pays) and benefits is weak, since the major sources of fees (the private sector) and eligible Federal and SRF recipients are distant. The only direct relationship is provided by the fact that large municipal facilities may

pay effluent fees, and are eligible for grants and loans. A return of a wastewater treatment construction grant program will be heralded by many cities, but this support may be offset by the decrease in the availability of SRF loans to potential borrowers, including for drinking water.

Model II: The Federal/State *De Minimis* Fee Model

The second model developed is a partial Federal system, or a mix of Federal/State fee-based systems, whereby Federal law sets a baseline option and broad parameters, but States may administer the fee program and keep the money. We have labeled this option the Federal/State *De Minimis* Fee Model, since it depends on a fixed, minimum amount of water-related fees being raised in each State, under Federal requirements, so as to come up with the revenue target of $2.8 billion annually used for this scenario.

The major role of the Federal government is to design a *De Minimis* set of fees, on a per-State basis, which it administers only if a State decides not to implement them or supersede them with its own fee package. Funding eligibilities continue to expand to include drinking water collection and distribution in addition to treatment facilities, principal subsidies in addition to loans and credit enhancements, and loans to private sector, public-purpose projects. When States administer the *De Minimis* Model, SRFs make all project funding choices.

The *De Minimis* approach to fee-based water infrastructure funding is imitative of the approach outlined in the 1990 Clean Air Act Amendments (CAA), and several other Federal programs such as the FAA's airport Passenger Facility Charge program. The CAA Title V, Section 502, requires States to enact air permit fees to recover all State permit program operating costs, at a minimum amount of $25 per ton of regulated pollutant emissions. Because the Federal government cannot direct States to raise taxes, air permit fees are basically a Federal program which the States might choose to adopt, or receive "primacy" or "delegation" similar to water programs, or "default" to the Federal government.

Box 2: Federal/State *De Minimis* Fee Model

Revenue Source: The Federal government would assess flat-rate public water supply withdrawal fees for residential, commercial and industrial users, and flat-rate fees on major and minor municipal/industrial wastewater discharge permits. Estimated revenues from these two fees form the baseline of the State *De Minimis* sum and also the Federal legal rationale to "require" States to set fees (similar to the 1990 CAA). States may partially substitute any other State fees, but must include some of the above-mentioned two fees in the base. State fees must be dedicated to water-related capital projects to count towards their share.

Collection and Administration: The Federal government (as a default mechanism) and/or the States (which elect to accept fee program "delegation") administer the fee system, although localities initially collect all public water supply withdrawal fees through regular water rate charge systems. If the Federal government retains the program, it may retain a small percentage of fees (e.g., not to exceed 4%) for administrative costs. Otherwise, States may fund their administrative costs out of *De Minimis* amounts.

Delivery Mechanism: Expanded SRFs fund all local projects. Even the major Federally-administered fees would be immediately credited to State accounts. To the extent that States administer the program, no new Federal bureaucracy will be needed.

Eligibilities and Oversight: Expanded eligibilities would include both drinking water treatment and infrastructure (collection and distribution systems). If the Federal government runs the program, all water withdrawal fees go to SRF Drinking Water Accounts, and all discharge permit fees to Wastewater Accounts, with inter-account borrowing permitted. If States administer the program, no such restrictions apply. SRFs may offer loans to any public-purpose project (including privately-owned wastewater facilities), credit enhancements, and principal subsidies for communities of any size.

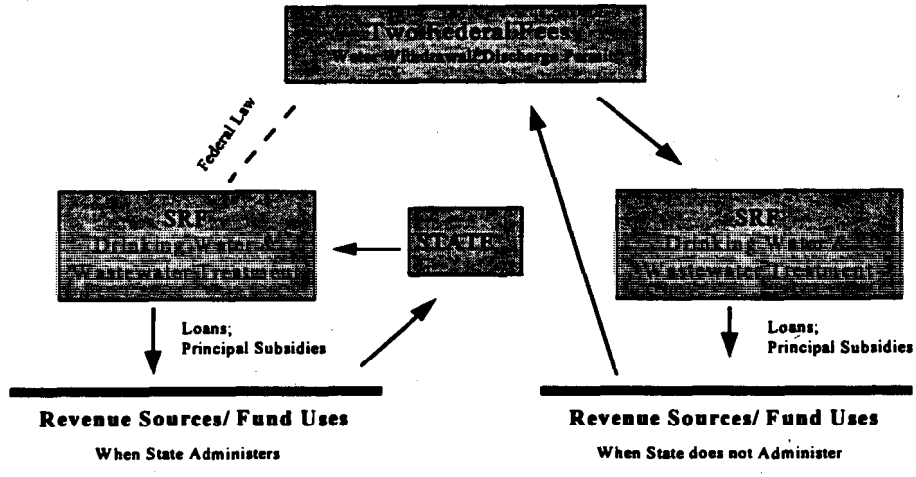
State fee programs and collections are reviewed (i.e., audited) annually to assure that *De Minimis* requirements are being met.

Our design presents a more complete program than earlier precedents. We have designed two flat rate, Federally-implementable, fees for this model, which are readily estimated and allocated on a per-State basis: (1) uniform (nationwide) public water supply withdrawal fees, and (2) two-tiered wastewater discharge permit fees. This Federal "umbrella" thus provides a baseline of available funds nationwide, and to each State. By the same token both partners are assured that all States are doing their share without any competitive advantages, even though State fee programs may differ somewhat.

Importantly, States not only may decide to adopt the Federal program by implementing these two fees themselves; they also may choose to substitute partially any existing State capital-generating fee, or new water-related fees, **to generate annually a revenue stream equal to that which would result from their share of Federally-assessed water withdrawal and discharge permit fees.** Thus, States are given great latitude and other State fee programs are minimally distorted, or undercut.

The basic description of the Federal/State Model is characterized in Box 2, with Figure 5 portraying the intergovernmental flow of funds. Table 2 portrays an example of how the two Federal/State fees might be assessed. The reader will see that public water supply withdrawals fees will bear the bulk of the $2.8 billion annual revenue yield selected, because under any rate scenario NPDES discharge permit fees are comparatively steep (i.e., costly).

Figure 5: Federal/ State *De Minimis* Model (Model II)



The *De Minimis* Models has a number of very practical advantages which pertain primarily to the simplicity and collectability of the two main fees, the relative stability of revenue yield, and flexibility for States in substitution fees and making most specific SRF funding chooses.

The fact that each State is allocated a minimal contribution, which State-by-State adds up to a desired total, provides a measure of predictability in revenue generation. The public supply withdrawal fee focuses less on one particular sector compared to other fees and is relatively low cost to individual households and businesses, even though no user fee increase is easy to pass.

To the extent the two main fees are used, the *De Minimis* model provides some measures of equality and reduces impacts, and a solid relationship between costs and benefits, i.e., who pays and who benefits. Because fees collected never leave the States even if the Federal government ends up administering the program in some States, SRF financial efficiencies from revolving, leveraging, pre-financing and, under this model, principal subsidies, are sustained. Thus, the likelihood of States meeting environmental funding goals is very high.

There are some potential downsides of the *De Minimis* model. Political acceptability is diminished by the imposition of Federal fees. The two main fees might be more acceptable if implemented by States in the first place, but then the *De Minimis* characteristics are sacrificed. A second problem arises if the Federal government has to implement the program itself in a large number of States, since this will cost administrative time and money.

In contrast, if States readily adopt the program but widely substitute new or existing State fees dedicated to water quality capital projects, such fees may prove to be less equitable, less collectable, and distort the relationship between costs and benefits established by reliance of the two main fees.

Table 2
Public Supply Water Withdrawal and Wastewater Permitting Fees Designed to Generate $2.8 Billion Annually

Source		Base	Units	Rate	Yield
Water withdrawal		14,107,250,000	1000 gal.	$ .1418	$2,000,408,050
NPDES	Majors	6880	Facilities	$ 87,000	$ 598,560,000
	Minors	66786	Facilities	$ 3,000	$ 200,358,000
Total					$2,799,326,050

Model III: The Voluntary State Fee Incentive Model

The third model offered combines completely voluntary State participation through capital-dedicated fees, with a Federal monetary incentive in the form of a 33% Federal match. Under the Voluntary State Fee Incentive Model, States decide whether to generate and dedicate fees to water-related capital formation, while the only role of the Federal government is to raise and disburse its matching share, by Federal fees and/or general appropriations, to the SRFs.

In effect, the Federal and State governments switch roles in terms of previous intergovernmental matching programs in which the States have matched, by the smaller percentage, Federal funds. Under the model, water quality project eligibilities expand further, with States completely free to earmark drinking and wastewater allocations, and types of assistance, as they see fit, including for the Federal match.

When States participate, they may establish any fees or taxes, whether environmentally-related or not, at any rate and yield. The 33% year-end Federal match is phased in and capped in the third year at $700 million annually (one-third of the total of the State $2.1 billion annual revenue target). The Federal match sunsets in 10 years. The only requirement on States is to dedicate fees to SRF drinking water and wastewater capital facilities. Box 3 describes the proposed model. Figure 6 depicts the intergovernmental flow of fees, and Table 3 summarizes an example of the Federal match using the hypothetical pesticides/fertilizer excise tax as the revenue base.

Table 3
Estimation of Fertilizer and Pesticide Fee

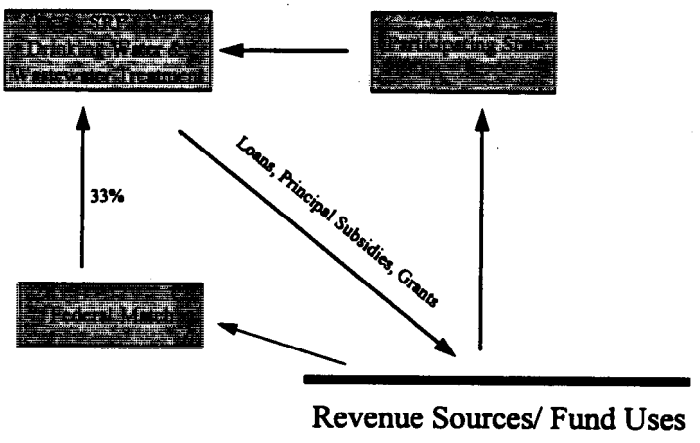
Source	Amount	Units	Rate	Yield
Fertilizer*	31,631,800,000	lbs	$ 0.0092	$ 291,012,560
Pesticides**	2,231,000,000	lbs	$ 0.1840	$ 410,504,000
				$ 701,516,560

* Nitrogen and Phosphates
** Includes Wood Preservative and Disinfectants

In order to minimize disruption and not penalize States for past capital contributions to water-related infrastructure, a State's initial annual fee share may include not only existing dedicated fees but also some (albeit limited) portion of general, capital-dedicated appropriations, such as non-point sources grants. A 'snapshot" picture of State match-eligible contributions is taken in the first year of the Voluntary State Fee Incentive Model. In addition to loans and credit enhancements, SRFs may offer principal subsidies to most projects, interest rate subsidized loans to privately owned public-purpose projects, and grants to small disadvantaged communities.

How to raise the Federal match is a Federal decision. Federal fees may be the best and most feasible choice, particularly if they are excise fees paid directly by the private sector producer or user to the IRS.

Figure 6: Voluntary State Fee Incentive Model (Model III)



To receive the match, States "bill" the Federal government annually, and must certify periodically "baseline maintenance of progress" in the dedication of initial fees and non-fee capital contributions to water quality projects. It should be noted that in some years, States may receive less than a 33% Federal match because it is annually capped to limit Federal contingent liability.

The benefits of this model, in terms of its "voluntary" and "incentive" characteristics, may be considerable. From the State and local perspective, this is probably the most politically appealing of all three models. The creation of a Federal match to States may be viewed as a novelty, and an argument made for a higher percentage Federal match.

Box 3 :Voluntary State Fee Incentive Model

Description: States may choose to establish fees and fee rates for whatever they wish, but all match-eligible fees must be dedicated to water-related capital projects. The Federal match is 33%, capped at $700 million annually for most years (not counting investment funds), and ends after 10 years. Existing State fees, and some (limited) portion of general appropriations, dedicated to non-SRF projects under current CWA and SDWA enforceable requirements, count towards the Federal match. CWA Title VI SRF bonded debt and 20% State match, and State monies to meet stricter State standards, do not count.

Revenue Source: Any type of capital-generating State fee or tax, environmental or otherwise, dedicated to water-related projects (with some existing non-fee capital investment counting). The year-end Federal match may be generated by new Federal fees, direct appropriations, and/or investment earnings. The Federal match is phased in and capped, respectively, at $300 and $500 million annually in the first two years.

Collection and Administration: States, and possibly localities on behalf of States, for some fees. States may use a portion of fees to cover administrative costs. The Federal government must collect its fees, and may use a portion (not to exceed 4

%) of fees to cover its administrative costs. Federal bureaucratic demands are minimal after the first several years, depending on the success of its match program.

Delivery Mechanism: Expanded SRFs fund all local projects.

Eligibilities and Oversight: SRF loans, credit enhancements or principal subsidies for any water-related capital project, but interest-subsidized loans only to the private sector. Also, SRF may offer grants to small communities. SRFs earmark categories annually as they see fit.

The only Federal oversight is a year-end review of State "bills" for the Federal match and review of State periodic certification of "baseline maintenance of progress" in initial match-eligible capital contributions.

However, the voluntary aspects of this model may backfire, because there are no guarantees of a steady revenue stream, equitable programs, and a close cost/benefit relationship. Thus, environmental progress is not assured as readily as under the first two models.

Presumably, collectability is a strong point because all governmental levels will have an incentive to collect fees. Still, from the Federal government's perspective, a long-term match may be regarded as another entitlement program, which would increases the long-term Federal exposure.

Findings and Conclusions

Table 4 below portrays how the three models compare to one another, using the six evaluative criteria. Considering all criteria as equal and "0" as neutral or unpredictable, the "scores" below demonstrate that Model II, the Federal/State *De Minimis* Fee Model carries the least (none) disadvantages or negatives.

Table 4

Comparison of Three Models

Criteria/ Model	Political Acceptability	Revenue	Equity/ Impacts	Collectability	Costs/ Benefits	Environmental Goals
1. Federal Fee	0	+	-	0	-	+
2. Federal/State *De Minimis* *	0	+	0	0	0	+
3. Voluntary State Fee Incentive	+	-	-	+	0	0

"+" is Advantageous
"-" is Disadvantageous
"0" is Unpredictable or neutral

* Evaluating the *De Minimis* model depends on whether States adopt the program or not, and the extent to which they substitute fees. Thus, the equity, collectability and costs/ benefits are unpredictable.

The primarily attributes of the *De Minimis* Model are the simplicity of the main fee base, the public water supply withdrawal fee, and the State flexibility permitted under the Federal "umbrella". This model also accommodates a number of overarching values. From a national viewpoint, it might go a long way towards meeting the existing standards and goals of the Clean Water and Safe Drinking Water Acts. It not only provides a financial means by which every State can raise its fair share, but also accommodates existing State programs and special circumstances.

A second overarching goal is met through the suggested two main fees, water withdrawals and discharge permit fees, which directly relate water clean-up costs to use of the medium, both as an input (water) and as an output or byproduct (wastewater). No matter what specific rates or other fees States choose to raise their minimum share, there is a general correlation between the user/polluter costs and the burden to be placed on the economy. Thus, the "polluter pays" principle is partially preserved and States may choose to pursue this objective, more or less aggressively.

Model III, the Voluntary State Fee Incentive Model, is also attractive because its potentially higher political acceptability and the Federal match incentive to States. Model I, the Federal Fee Model, may be the least attractive because it is the most heavy-handed in terms of Federal control and a specific "polluter pays" fee base, even though some non-industrialized, non-agricultural, smaller States will support Federal redistribution to States based on needs. Both Models I and III, however, might be substantially improved by further mixing and matching.

For example, Model I's Federal fee base (effluent and pesticides/fertilizer fees) might be altered to include the more equitable and collectable *De Minimis* fee base. The Voluntary State Incentive Fee Model III might be improved by the addition of some of the *De Minimis* total revenue requirements of Model II, but without any Federally-levied fees. Conversely, Model II might be improved by reducing any Federal fee role entirely, and giving States and localities complete flexibility in selecting fees and eligible projects, although the legality of doing this under national revenue-generating *De Minimis* State requirements needs further exploration. Many variants are possible, and may involve substantial substitution or simply fine tuning over time, for example, in the areas of eligibility and oversight requirements.

The goal of generating three generic, and complete, intergovernmental fee-based models is to emphasize the very different approaches to fee-based financing that might be employed. Choices range from using a Federal "carrot" as opposed to a "stick", an environmental or non-environmental related fee base, and the extent to which the innovations, creativity and knowledge of State and local governments are relied upon. Future decision-making will depend not only on the specific environmental policies sought, but also on institutional, financial, and other parameters considered important.

In general, we conclude that fees are a feasible means by which to raise revenue to fund water-related projects over many years. Even though no fee system will be supported by everyone, the long-term authorization which underlies fee-based programs may be more suitable to infrastructure development than annual, sometimes unpredictable appropriations. Fee systems are not only self-sufficient but also may be independently administered by the States and localities according to individual project and funding goals.

ALTERNATIVE FUNDING STUDY

Part II

DEBT FINANCING STRATEGIES
FOR
FUNDING WATER QUALITY INFRASTRUCTURE

September, 1996

Prepared by

Jason J. Gross
John E. Petersen
The Government Finance Group, Inc.

for the

Syracuse University Environmental Finance Center
and the
Office of Water
United States Environmental Protection Agency

TABLE OF CONTENTS

ALTERNATIVE FUNDING STUDY

PART II, DEBT FINANCING STRATEGIES TO FUND WATER QUALITY INFRASTRUCTURE

Summary of Panel Discussion on Debt Financing Issues

Note: The views in this report reflect the views of the meeting participants and not necessarily those of the EPA.

America's immense clean water infrastructure needs are estimated by the Environmental Protection Agency to be $137 billion for wastewater treatment alone over the next 20 years. The Alternative Funding Study has explored two ways to increase investment in water quality infrastructure, for both wastewater treatment and drinking water. One is the greater use of fees and user charges to increase the investment base, and the second is to allow greater flexibility and liberalize rules to access more private and public capital. Part One of this study focused on the first option, while Part Two addresses the second.

The rationale for examination of debt financing issues resulted from the previous three public fee options meetings, where a widely supported option was to "make more efficient and effective use of existing financial resources". The attached background paper and subsequent October 10, 1995 panel discussion in New York City were used to define and sharpen what "more efficient and effective use of resources" should be.

Twenty-six people representing the public and private water infrastructure financing communities gathered at EPA Region II Office in New York City on October 10, 1995 to respond to the background paper, "Debt Financing Strategies for Funding Water Quality Infrastructure," prepared by the Government Finance Group (GFG). GFG has been collaborating with the Syracuse University Environmental Finance Center, under a grant from EPA to conduct an Alternative Funding Study, as requested in the Agency's FY95 appropriation. New York City was chosen because of its concentration of financial expertise. Unlike the past three meetings, this discussion focused on increased investment in water infrastructure through lowering the cost of public borrowing and encouraging larger private sector participation.

The forum's purpose was to stimulate thinking about what debt financial strategies could be followed to increase investment in environmental infrastructure. Three fundamental themes emerged from the background paper and formed the center of the panel's discussion:

1. Identify the financial and legal barriers to greater investment in water infrastructure, particularly from private sources of capital.
2. Rank the relative importance of these barriers.
3. Discuss strategies to move discussion of reducing or eliminating barriers to the forefront of political discourse.

Expert panelists were selected by the Council of Infrastructure Financing Authorities (CIFA) and the Office of Wastewater Management, EPA, to be representative of different financing constituencies of water infrastructure, both public and private (list attached). Most participants were direct practitioners of environmental finance: fund managers, capital investors, underwriters and finance and credit analysts. Finance directors, engineering consultants, and attorneys specializing in privatization also attended. The majority of participants were from the private sector, which influenced discussion during the meeting and the conclusions which followed.

The day-long discussion was guided by a facilitator from the Maxwell School's Center for Advanced Public Management in Washington DC, and the multi-vote technique was employed to determine the preferences of the panelists.

What emerged from the October 10 debt financing meeting included the following:

- **the eagerness of the private sector to become involved in clean water infrastructure investment; and**
- **the importance of permitting privately-owned or operated facilities similar access to tax exempt debt as the public sector, the absence of which was argued to be one of the prime factors preventing the increase of private capital into water quality projects.**

While some panelists asserted that this inequality might be rectified through the elimination of tax exemptions and SRF loan subsidies altogether, this step appeared unrealistic to the majority of panelists. Instead, panelists' concerns with the financing inequality produced the recommendation with the most votes of the panel meeting: "private ownership of a clean water facility for public use should not disqualify it from tax-exempt status." By adopting this recommendation, most panelists believed the Federal government could move closer to the goal of increasing investment in clean water infrastructure.

Understandably, Federal budget scorers have long been concerned about the budget implications of permitting greater use of tax-exempt debt. But policymakers should consider exploring all ramifications of defining tax-exempt status by public-purpose use and not ownership. Increased tax-exemption could be counterbalanced by increased tax revenues from privately owned facilities, by the sale price of the facility to the public sector and by reduced operating deficits (if any) by State and local governments. Those counterbalancing effects do not include the value of better infrastructure and improved water quality. These issues are explored in further detail in the remainder of this meeting summary.

A. Assumptions and Rationale for Discussion

The rationale for this meeting grew from the results of the previous three. In the Crystal City (4/25/95), Airlie Center (7/19), and Denver (9/21) meetings designed to collect public input on fee options, a widely supported option was to "make more efficient and effective use of existing financial resources".

Two themes emerged early on the discussion. One was the strong interest of private firms to invest in domestic water infrastructure. But despite having the capital and the desire, too many legal and tax hurdles stand in the way of an adequate return on investment. The virtually unanimous view of the participants, both public and private, held that increasing private investment in public water infrastructure was essential. The success of public-private partnerships in drinking water infrastructure boded well for increasing private activity in the wastewater community.

The second theme discussed briefly was how important clean water treatment and delivery was to society as a whole. Is it important enough to warrant subsidization of local costs by higher levels of government? Or should costs be fully paid by individual local jurisdictions? The group came to a consensus that clean water treatment is important enough to share costs across jurisdictional lines. As mentioned earlier, a number of panelists from the private sector suggested that a way to attract more private capital for clean water for all jurisdictions would be to eliminate entirely the tax exemption for clean water infrastructure to level the playing field for private participants. However, the consensus was that this proposal was neither feasible nor desirable and instead the group coalesced behind the idea of increasing private access to tax-exempt debt as a way to increase private participation in clean water infrastructure.

B. Financial and Legal Barriers to Greater Investment in Water Infrastructure

The discussion moved to identifying the barriers to greater investment in water infrastructure. Representatives from the private sector pointed strongly to the imbalance in access to tax-exempt debt which unfairly penalized private investment.

Thirty votes were cast for the proposal that "private ownership of a clean water facility for public use should not disqualify it from tax-exempt status." This proposal was in the spirit of the study's aim to increase overall investment in infrastructure as well as in line with Federal initiatives such as Executive Order 12803, to remove barriers to private investment. The essence of this proposal is if the general public benefits from clean water infrastructure improvement, then who actually owns the facility is unimportant. The meeting's discussion focused on the philosophical importance of this proposal as opposed to specific legal avenues to arrive there.

The debt financing panelists argued similarly that "conversion of water infrastructure ownership from public to private shall allow private owners to maintain existing, outstanding tax-exempt debt structure." Just as a private start-up facility serving the public should be allowed to access tax-exempt debt proceeds, a private buy-out that continues to serve the public should not be forced to undergo the costly procedure of defeasing the tax-exempt debt and issuing taxable debt.

The third ranked proposal, with 16 votes, targeted public investment in water quality infrastructure. The best framework to accomplish that goal was viewed to be within the existing State Revolving Fund structure, with some expansion and modification. Necessary modifications to maximize SRF potential would broaden eligibility to cover all environmental mandates, make privately-owned facilities eligible, exempt Federal capitalization from arbitrage rebate regulations, and permit up to 30-year SRF loans.

The last change would require amendment to the Clean Water Act itself. The 20-year loan cap in the Federal tax code has been criticized for not taking into account the debt schedule of a treatment facility and the long term nature of, for example, underground pipe. Arbitrage rebate restrictions are seen as complicated, duplicative, and counter-productive. The results of the restrictions are increased administrative compliance costs and the inability to bolster reserve funds, preventing additional loans from funding additional infrastructure.

Some on the panel asked whether there was excess SRF loan capacity in some States. Representatives from New York maintained that widening the recipient pool and liberalizing some rules was precisely the incentive for more States to lend out to capacity. New York recently made an SRF loan for acquisition of a food processing operation's wastewater treatment facility by a local governmental authority. The acquisition allowed low-cost SRF financing to be used for a facility upgrade, and although now publicly owned, the facility will continue to be operated by the privately owned food processing company. Underscoring the continuing potential for the SRF framework was a report on Kentucky. There, after an intense marketing campaign with localities, the State had increased loan participation to a point where leveraging the SRF was being considered. The Kentucky effort did not involve coercion or stronger environmental standards, the panelist noted.

Another important change which was widely supported by the private sector panelists was to accelerate the number of years over which plant and equipment can be depreciated. Before the 1986 Tax Act, private companies were allowed to depreciate the facility over a faster, five year period instead of over a period that was closer to the expected useful life of the facility. Subsequently, the law has extended the depreciated life of properties up to fifty years, using straight-line methods.

The panelists also supported "forgiveness" of Federal construction grants provided earlier to build wastewater infrastructure (10 votes), thus easing the transfer of assets between localities and private buyers. The local public owner would be reimbursed for the fair market value of the asset, but no intragovernmental reimbursement to Washington would need to occur. Requiring such reimbursement can drive up the fair selling price for a locality beyond what a private concern would find attractive. However, caution should be exercised in those cases where municipalities are seeking windfall profits by selling to the private sector. Because this proposal does not have future implications for the Federal deficit, it might find support within the Office of Management and Budget and the Treasury Department.

Ending up sixth on the list with eight votes involved the budget scoring process mentioned above in the context of Federal grant forgiveness. Panelists complained that the chances for all of the reforms on the list to be enacted were lessened because of a Federal budget scoring system that they believe stifles reform by only scoring proposals by the impact of tax revenue loss and ignoring concurrent increases in tax revenue. The proposal became known as change to a system of dynamic scoring of policy effects on the Federal budget. But just as the Federal forgiveness proposal was praised for its feasibility to become enacted, this dynamic scoring proposal was rated as having much bleaker prospects. Some panelists remarked that it

had been raised often over the years with little response from Treasury or Office of Management and Budget officials.

Finishing seventh on the list was a proposition to lengthen allowable term of private management contracts. A proposed method to accomplish this would be to transfer 20-year safe harbor language from solid waste regulations to water infrastructure rules.

Support for the Government Finance Officer Association's Mandated Infrastructure Bond proposal ranked eighth on the list with only four votes. This idea is closely related to the first proposal and SRF reform designed to enlarge eligibility for tax-exempt debt. More flexibility to governmental entities for the construction, renovation, and rehabilitation of infrastructure facilities would be accomplished for governmentally-owned infrastructure facilities though the easing of restrictions in laws governing tax-exempt financing, and through targeting the use of mandated infrastructure facility bonds to finance facilities mandated by Federal law or Federal regulations.

Expanding bank deductibility for tax-exempt debt got three votes. One panelist strongly insisted that the 1986 Tax Act elimination of bank deductibility costs for carrying tax-exempt for issues greater than $10 million has undercut financing of infrastructure. This particularly affects pooled issues of small localities, whose individual issuances are less than $10 million, but whose total exceeds $10 million. This proposal would extend bank deductibility for pooled issues when no individual issue exceeds $10 million. The panelist estimated that the new law costs his institution 10 basis points when issuing tax-exempt debt.

A move to reform the private bond activity volume cap got only one vote, not because the idea was unpopular but because other more sweeping proposals would accomplish the same thing. In fact, a number of panelists explicitly supported volume cap reform as important if the proposal to define tax-exempt status by use (and not ownership) were unsuccessful.

Some panelists questioned the significance of State volume caps. One panelist said he had not heard of any water infrastructure financing proposals that specifically were rejected because of a lack of room under volume cap. However, others responded that such deals would never get to the point of official rejection. Issuers knew ahead of time whether a project would get funding, and would not get involved if rejection were likely. They insisted that a number of projects did not go ahead because private activity bond funding seemed unlikely.

Below is a summary table of the results of the multi-vote:

Panel Votes on Barriers to Greater Investment in Clean Water Infrastructure	
Proposal	**Votes**
use of water infrastructure (not public or private ownership) should determine tax-exempt status	30
conversion of water infrastructure ownership from public to private shall allow private owners to maintain existing, outstanding tax-exempt debt structure	17
expand SRF eligibility to cover all environmental mandates, make private interests eligible, exempt federal capitalization from arbitrage rebate regulations, allow 30 year SRF loans	16
allow accelerated depreciation of assets	13
federal forgiveness of grants issued to build water infrastructure -- transfer of assets only between localities and private groups	10
change to a system of dynamic scoring of policy effects on the federal budgets -- look at benefits of changes, not simply costs	8
lengthen allowable term of private management contracts (transfer 20 year safe harbor language from solid waste regulations to water infrastructure)	6
support GFOA proposal for Mandated Infrastructure Finance Bonds	4
reauthorize bank deductibility of costs for carrying tax-exempt debt	3
change volume cap, exempt environmental projects from cap, inflate cap, or allow transfer of cap volume between states	1

C. Strategies to Focus Attention on the Need for Change

While participants praised the consensus on ranking the barriers to increased water infrastructure investment, others warned that this consensus within the finance community has existed for some time, but little progress has been made. Some panelists said that similar lists they had compiled after the 1986 Tax Reform Act resembled closely the list of barriers that emerged from this session. All of the discussion begged the question: If there was virtual unanimity on what needed to be done, why has nothing been done? How could the discussion be moved to the forefront of political debate?

One of the first responses to that question looked to the nature of clean water itself. Unlike more obvious infrastructure problems, transportation traffic jams or solid waste for example, clean water does not represent the same immediate, clear threat to public safety. There are no mountains of burning tires associated with clean water infrastructure, one participant noted.

Another suggested that EPA's infrastructure needs surveys were too massive for policymakers to handle. For example, over $130 billion in wastewater "needs" might seem unrealistically high for some, a "pie-in-the sky" figure which gives some an excuse to continue ignoring the problem.

Others defended compiling the list of financing barriers as a necessary and positive step. Particularly, some members of the investor-owned water facility community stressed that they could demonstrate that accelerated depreciation and private management contract reform would increase private investment. These panelists believed that the climate in Washington continues to change and efforts such as this list can continue to exert pressure for change.

Addressing specifically of the question raised of why unanimity within the finance and infrastructure community has not produced change came the proposal which headed the action item ballot with 24 votes. This proposal called for "leadership to spearhead tax law change for environmental regulations." Groups such as Renew America, GFOA, the National Council on Public Private Partnerships, the Council of Mayors, and others, needed to coordinate their message and lobbying efforts to produce change. No specifics on how this coordination would take shape emerged, but members who sat on the boards of these organizations were urged to raise this and help develop a dialogue which would lead to a greater spearheaded effort.

The second rated strategy involved working within the Environmental Protection Agency for change and received 12 votes. Under the banner "EPA should work more closely with States", proponents urged the Agency to take full advantage of existing rules to encourage maximum investment. While some regional offices have worked well with States to encourage them to innovate, others have made innovation difficult. Washington and the regional offices must help foster State innovation, particularly in promoting greater private investment.

Much of the talk in the strategy session involved the switch in focus from Washington to the States. Virtually tied for third place were proposals to move the focus of expanding infrastructure to governors (11 votes) and mayors (10 votes). Others said that mayors simply lacked the resources to invest in water infrastructure and needed more funds, whether they come from Federal or State sources (10 votes).

A few panelists raised the importance of enlisting the environmental community to bring about change. But only four votes were cast for this initiative in part due to many panelists' experience that the environmental community has expressed little interest in financial issues, and will continue to stay focused on only environmental policy.

One proposal stemmed from a desire to support only those initiatives that had a good chance of becoming reality. The budget-scoring attractiveness of forgiveness of Federal grants attracted four votes for the water infrastructure community to support this proposal. Support for the proposal was qualified in order to prevent localities from engaging in short term "fire sales" of infrastructure at the expense of long-term interests.

Proposals to Bring Attention to Clean Water Infrastructure Investment Barriers	
Proposal:	**Votes:**
need leadership to spearhead tax law change for environmental regulations	24
EPA should work closer with State SRFs	12
governors make more noise	11
mayors make more noise	10
mayors need cash	10
duplicate dynamic of '86 Solid Waste Influence	5
more clarification from EPA and OMB	5
tapping environmental community	4
get behind complete forgiveness of federal grants	4
SRF participating in 12803 process	3
demand more grants to demonstrate needs	0

D. Conclusions

Many of the proposals that emerged from the debt financing report and public meeting involve giving State and local governments greater leeway and flexibility when it comes to making decisions about closing clean water infrastructure financing shortfalls. They are consistent with the trend of devolving policy and funding responsibility to the States. As many panelists argued, the goal is for localities to explore who is best suited to own and operate clean water infrastructure: public providers, private providers or a combination.

What may have been lacking from the panelists' perspective was a dose of political reality. Discussion about the political feasibility of the proposed reforms entered into the discourse, but rarely dominated the debate. The day's session provided a list of ideal reforms, ones which many panelists strongly believed would make a difference in increasing investment in clean water infrastructure. Future policy makers will need to focus more attention on the feasibility of reforms discussed in the report.

Attachment 1

BACKGROUND PAPER
Debt Financing Strategies to Fund Water Quality Infrastructure

INTRODUCTION

In the Crystal City (4/25/95), Airlie Center (7/19), and Denver (9/21) meetings designed to collect public input on fee options, a widely supported option was to "make more efficient and effective use of existing financial resources". While these earlier meetings focused on increasing fees to augment public spending on clean water infrastructure, this paper seeks to advance discussion of efficiently using existing financial resources to enlarge investment.

As EPA's Environmental Finance Advisory Board (EFAB) outlined several years ago, the cost of maintaining a clean environment is daunting. Annual public expenditures for drinking water, water quality, and solid waste management must increase over 17 percent between now and the end of the century simply to maintain current standards. State and local government investment alone is expected to rise by almost a third over the same period. Moreover, State and local governments will be responsible for an increasing share of total public expenditures -- their share will rise to over 95% of total expenditures required simply to maintain current standards by the year 2000.

As the nation confronts those environmental needs, it faces twin challenges of infrastructure and Federal budget deficits. Tension between the two requires a difficult balancing act. Therefore, any greater State flexibility to issue tax exempt debt which could reduce short term tax revenue must be justified with strong, positive impacts on environmental infrastructure. This report looks at the effectiveness of current financing practices and how removing some barriers could expand the financing pool for environmental infrastructure. Exploring financial issues to increase investment in environmental infrastructure breaks down into two basic categories:

1. increasing public investment through greater use of tax exempt bonds
2. increasing private investment and private ownership of facilities.

In the public investment section, the paper first looks at ways to increase investment within the existing (or expanded) State Revolving Fund system. Increasing leveraging within the existing SRF regulations as well as lifting restrictions on SRFs, particularly arbitrage rules, are explored. Next, the potential of proposals to expand and adjust tax-exempt eligibility are examined. The section concludes with an analysis of the effect of the private bond activity volume cap on environmental infrastructure investment.

The private investment section picks up where the public section left off by investigating how changing the definition of private activity bonds could increase public private partnerships. Current rules and proposed IRS rule changes are examined. The effect of changes in

depreciation schedules and investment tax credits is analyzed. Finally, the section concludes with an outline of how Executive Order 12803 has affected public-private partnerships.

INCREASING PUBLIC INVESTMENT

Increasing public investment refers to expanding funds for facilities operated and owned by local governments. Shifts in program responsibility from the Federal level to State and local governments have produced greater spending requirements for localities.

> Federal funding cuts and increasing water quality mandates have put local governments in a bind. For many, the treatment plants they built with federal grants during the 1970s need to be expanded, upgraded, or replaced. Full local funding of that work often is political suicide due to the inevitable rate shock. Yet the lack of treatment capacity ... is constraining economic growth in many communities.[2]

At the State and local level, environmental infrastructure must compete with a myriad of budget items including public safety, education, and health care. Further complicating matters has been a continuing taxpayer revolt at all levels, which has made raising funds by traditional general revenues extremely difficult.

Out of this environment has emerged a reinvigoration of the principle of self-supporting public policies through user charge and fee-based methods of public finance. Equitable, efficient, and enforceable user charges provide a foundation for securing the revenue base and attracting private capital to upgrade water treatment and delivery. As the National Council on Public Works asserted in 1988, "Linking financing to use can produce a steady and predictable revenue stream, encouraging better maintenance, rehabilitation, and replacement."[3]

How can the benefits of the State Revolving Fund Program be maximized?

There are three ways to continue and maximize benefits of State Revolving Fund Program. One is to increase the amount of SRF leveraging in the credit markets. Another is to exempt SRFs from existing arbitrage restrictions. A third is to liberalize other various rules which may be impeding SRF loans.

The State Revolving Fund program has bolstered public investment in environmental infrastructure by shifting more public funding into a self-supporting basis through loans and associated issuance of tax-exempt debt. The Title VI amendments to the Clean Water Act of 1987 dramatically altered the financing of wastewater treatment facilities by phasing out the Federal construction grants program and replacing it with the State Revolving Loan Fund Program. Eight and a half billion dollars in Federal capitalization grants and converted Title II grants since 1988 have translated into a potential loan pool of $15 billion for environmental infrastructure projects. Unlike $8.5 billion in direct grants, this capitalization amount has the

---

[2] *Public Works Financing*. June 1994.

[3] US Advisory Council on Intergovernmental Relations. *High Performance Public Works*. September 1994. p. 579.

potential to be recycled into successive generations of projects and leveraged in the credit markets to increase the amount of capital. Together this investment has produced 2,519 loans totaling $11.8 billion through July 1994.[4] The loan programs help instill financial discipline in all parties involved. When localities were simply the recipients of grants, there were few incentives to contain project costs. Accepting loans that must be paid back provides strong inducement to prioritize projects and control the scale of projects and building costs.

Capitalization funds from the Federal government, State matches, and a stream of loan repayment from local communities create an asset base that permits States to leverage SRF funds in the credit markets to create further loans. Through the sale of bonds, SRF programs can immediately make additional funds available for wastewater projects. Eighteen States have to date leveraged their SRFs, providing $5.2 billion in net bond proceeds to their State loan funds.

Ways to Maximize SRF Investment

Increase leveraging -- Leveraged revolving fund structures offer the greatest potential for generating a higher volume of loans. In the SRF context, leveraging is defined as using Federal and State capital grants, in conjunction with loan repayments, as security to borrow additional funds in the public bond market to increase the pool of available funds for project lending. As of July 1994, 32 of the 50 States had chosen not to leverage their State Revolving Funds. As the table below indicates, the 18 States which leverage have originated almost twice the loan dollar volume as the 32 States which have not leveraged (see table below).

SRF LEVERAGING ACTIVITY

	Dollar Amount of SRF Loans	**Total Federal Capitalization Funds for SRF**	**Ratio of SRF Loans to Federal Capitalization**	**Dollar Amount added to SRF loan pool by leveraging**
18 States which have leveraged	$7,333,181	$4,136,624	177.3%	$5.2 billion
32 States which have not leveraged	$4,446,173	$4,429,948	100.4%	$0

Source: CIFA. *State Revolving Loan Fund Survey, 1994.* March 1995.

States which have not leveraged have billions of dollars in wastewater infrastructure needs identified in a 1992 EPA needs survey, but these long-term needs have not necessarily translated into project-ready initiatives at the local level.

A reason why many States have not leveraged may be institutional. Some SRFs may be managed by staff who are neither comfortable with nor interested in bonds and debt. Anecdotal evidence suggests that the process of borrowing, especially disclosure and arbitrage rebate requirements, is

[4] CIFA. *State Revolving Loan Fund Survey, 1994.* March 1995. Totals are through July 1, 1994. Additional capitalization, leveraging and lending have continued since that date.

often seen as prohibitively complex and time-consuming. A trend noted by GAO in 1992 still to an extent holds true today: "...we found that the mix of skills was heavily weighted toward engineering; about half of the staff responsible for the SRF Program are engineers. Other SRF staff generally include accountants, grant administrators, and program analysts. However, according to regional officials, only 2 of the EPA's 10 regions have a staff member with experience in lending and bond markets."[5] Another problem may be legal. One state, Florida, prohibits by law the SRF from participating in the bond market. Finally, one must take the recent recession into account when assessing SRF demand and leveraging.

The most active SRFs have profited from the synergy between aggressive State officials who "market" the importance and inevitability of the revolving fund concept and forward-looking local officials who see wastewater needs as too important to postpone in hopes that someday a grant system will be revived. Another reason which helps explain varying degrees of leveraging is differing aggressiveness of enforcement among States. Stricter enforcement of clean water standards would give localities deadlines to meet and discourage procrastination.

CIFA estimates that additional Federal capital grants of $2 billion per year for 12 more years combined with a continued 20 percent State match and a conservative leveraging factor of 2:1 on 60 percent of the funds would create a loan pool capable of financing $133 billion in projects over the next 25 years.[6]

Exempt SRFs from Arbitrage Restrictions -- Interest on a municipal bond is normally exempt from Federal income tax, unless the bonds are arbitrage bonds. Although the Internal Revenue Code definition of "arbitrage bonds" is complex, its simple purpose is to prevent municipalities from turning a profit with their tax exempt status. "At its most basic level, arbitrage is profit from buying something in one market and selling it in another. In the world of municipal bonds, arbitrage is a municipality's profit from borrowing funds in the tax exempt market and investing them in the taxable market."[7] Before the reforms in the 1986 Tax Act, abuse with arbitrage profits was possible. To give a simplified example, a city or State could issue tax exempt bonds at five percent and then take the proceeds and invest them in U.S. Treasuries bearing an eight percent return. The excess three percent was then used to fund general government operations or plug gaps in budgets. This use of state and local obligations was not what Congress had in mind when it granted tax exempt status for municipal bonds to fund infrastructure.[8]

The 1986 Tax Act requires that money raised through issuance of tax-exempt bonds not be invested to earn more than 0.125 percent above interest rate at which the bonds were issued. These provisions apply to State Revolving Funds and restrict additional interest which could be invested in infrastructure. The complexity in tracking arbitrage compliance adds to

---

[5] General Accounting Office. *Water Pollution. State Revolving Funds Insufficient to Meet Wastewater Treatment Needs.* January 1992.

[6] CIFA, Leveraged SRF Programs, A Comparative Review. August 1994. p.2.

[7] Ballard, Frederic. *ABCs of Arbitrage.* Chicago: American Bar Association, 1994.

[8] The U.S. Supreme Court Case, South Carolina v. Baker (1988) established that tax-exemption was a matter of Congressional policy and not Constitutionally protected.

administrative costs which are capped by Clean Water Act regulations. Some have argued that these tax rules, designed only to apply to the permitted investment yields on bond proceeds, should not extend to SRF borrowing programs meeting Federal environmental mandates and funded with Federal and State grants.[9] SRF programs are already subject to a great amount of scrutiny under the Clean Water Act. A joint agreement between the States and the EPA requires approval of the States' intended use plan for project spending. In addition, a certain amount of funds in an SRF come from State sources and previous SRF bond issue proceeds -- not direct Federal funding. Therefore, the argument goes, arbitrage rules for SRFs unnecessarily and unfairly restrict additional investment required to be turned back into environmental infrastructure in any event.

Exempting SRFs from arbitrage restrictions could have a strong impact on environmental investment, particularly in States with leveraging SRFs. For example, States using an SRF "bond reserve" model maintain an oversized bond reserve of between 33 percent and 50 percent of bond proceeds. Allowing them to strengthen their reserve fund by investing fund monies at rates higher than currently allowed would strengthen subsequent SRF bond issues in the eyes of investors. Stronger bond issues lower interest rates and bond insurance costs, reducing SRF borrowing costs This could, in turn, lower future interest rates the SRF charges on its loans to localities. With lower interest charges, economically disadvantaged localities may be able to afford loans to finance clean water infrastructure.

Grant SRFs greater flexibility -- Three modifications to SRF rules which might create more investment or accelerate investment in the short term would be to enlarge eligibility to private facilities, allow loan maturities of greater than 20 years, and expedite Federal funds delivery to SRFs.

Private wastewater facilities are currently ineligible to participate in the SRF program. This limitation appears to contradict the direction of recent Executive branch and Congressional initiatives to encourage public-private partnerships. It is important to note, for drinking water as opposed to wastewater, that thinking is evolving in this direction because recently proposed Congressional legislation authorizing drinking water revolving funds would make private facilities eligible for funding. With forty-six percent of water facilities privately owned, the chance of increasing infrastructure financing by enlarging eligibility seems high. However, private sector wastewater treatment demand is undocumented.

Current rules under Title VI of the Clean Water Act allow SRF loan maturities to last no longer than 20 years. Many have argued for a change to permit loan maturities of the lesser of 30 years or the useful life of the project. The effect of this would be assist smaller jurisdictions in affording large and expensive compliance projects by spreading out the term of repayment. Pipe replacement projects, which particularly lend themselves to 30 year periods, might see a strong increase.

---

[9] See for example: Alan Anders, Treasurer, New York City Municipal Water Finance Authority in April 1995 *Government Finance Review*. p 38

Would proposals to enlarge or modify tax-exempt eligibility add to investment?

Two proposals would change the tax exempt status of certain infrastructure bonds in order to enlarge investment in infrastructure. One would involve targeting the pension fund market. The second would exempt infrastructure bonds from some Internal Revenue Service requirements. Whether these proposals would add to investment is difficult to determine. Those who believe that market demand for tax exempt bonds is already strong may be skeptical about the effect of these proposals.

One approach to enlarging tax-exempt eligibility would be to tailor the tax status of environmental infrastructure bonds for the resources of the pension fund market. An alteration of Section 72 of the Revenue Code could permit an eligible pension fund investor that purchased a qualified Environmental Bond to receive any interest earned on that investment as a tax free distribution upon retirement. The Commission to Promote Investment in America's Infrastructure asserted in 1993 that "Such a tax-free pass-through from a fund to its participants would produce a competitive after-tax market rate of return for the retirement fund participants, yet allow a project to obtain funding at levels commensurate with municipal bonds."[10] This would bring environmental bonds into line with the fiduciary responsibility of pension funds to provide participants with maximum return commensurate with safety and liquidity.

With approximately 18 percent (or approximately $800 billion) of the $4.5 trillion in pension fund assets in defined contribution plans, even moderate participation in environmental bonds could stimulate increased demand, providing additional liquidity to issuers of tax-exempt debt which in turn could stimulate issuance and investment activity. By lowering the cost of capital to localities to fund environmental infrastructure, these specially designated bonds could provide flexibility to spend on financing new investments.

A just released GAO report *Private Pension Plans: Efforts to Encourage Infrastructure Investment* [11] encapsulated some of the doubt about this proposal. "We found strong reservations among economists and market participants about the need for new Federal entities and subsidies to encourage a reallocation of pension capital." The report "questioned whether specific incentives to attract pension plans are the best way to spur infrastructure investment" because bonds and State Revolving Funds provided ample methods to entice investment.

Another approach has been advanced by the Government Finance Officers Association. This group supports designating certain tax exempt bonds as mandated infrastructure facility bonds (MIF bonds) to provide more flexibility to governmental entities for the construction, renovation, rehabilitation of infrastructure facilities. This would be accomplished for governmentally owned infrastructure facilities though the easing of restrictions in laws governing tax-exempt financing and through targeting the use of mandated infrastructure facility bonds that are mandated by Federal law or Federal regulations.

---

[10] *Financing the Future.* Report of the Commission to Promote Investment in America's Infrastructure. February 1993.

[11] September 25, 1995.

The MIF proposal includes:

1. exempting interest earned on certain MIF Bonds from the individual and corporate alternative minimum tax
2. permitting financial institutions to deduct 80 percent of the cost of purchasing and carrying MIF Bonds
3. substantially changing the arbitrage requirements
4. exempting certain MIF Bonds from the Statewide volume caps
5. increasing the private business use and security or payments test to 25 percent

The volume cap and private use tests are discussed below.

Is the Volume Cap on private activity bonds hindering environmental infrastructure investment?

The answer to the question of whether the volume cap hinders environmental investment is yes and no. While overall room within the volume cap exists nationally, a number of States have completely exhausted their cap limit or have little room for maneuver left. Although the overall national volume cap is not being exhausted, more than half of the States are close to the limit and four completely exhausted the cap in 1994.

The background on the Volume Cap issue is complicated. Congress allowed States to issue tax-exempt bonds virtually without limits until the late 1960s. But after becoming concerned about potential revenue loss, Congress restricted tax-exempt bond use for private activity to certain purposes, including wastewater treatment. Tax-exempt bonds issued for privately owned environmental facilities were primarily industrial development bonds. Generally, these bonds were used when more than 25 percent of bond proceeds were used by a single private company. State and local issuance of long-term, tax-exempt bonds for private activities (industrial development, student loans, mortgage revenue, and pollution control) increased sevenfold from 1975 to 1985 -- from $21 billion to over $144 billion.[12] Because bond holders were not subject to tax on the interest income, revenue losses to the Federal Treasury also increased. Congressional revisions to tax-exempt laws continued to 1984, when Congress first imposed a cap on the volume of tax-exempt bonds a State could issue for industrial development and student loans.

The volume cap on Private Activity Bonds (PABs) for each State was set in 1988 at $50 per capita or $150 million, which ever was larger. Previous tax policy had the effect of favoring public-private cooperation. By the mid-eighties, tax exempt financing for non-traditional uses involving non-governmental entities had reached over 50 percent of long term issues. After the 1986 Act, the supply of private activity bonds plummeted to 20 percent of all bond sales by the end of the decade.[13] A study conducted for the National Bureau of Economic Research (NEBR) found evidence that as a result of the volume cap, the total volume of PABs issued in the States

---

[12] General Accounting Office *Environmental Infrastructure: Effects of Limits on Certain Tax-Exempt Bonds*. October 1993. p. 11.

[13] Petersen, John E. *Local Government Finance: Concepts and Practices*. Chicago: Government Finance Officers Association, 1991. p. 295.

that used 80 percent of more of their annual allocation (24 in 1990) was less than it would have been without the cap.[14]

For a short period in the early nineties, Congressional action mandated that mortgage revenue bonds and small issue industrial development bonds (IDB) were no longer eligible for tax-exempt status under the volume cap. This gave tax-exempt facilities (such as wastewater treatment facilities) less competition under the cap and increased PABs for environmental purposes. When the mortgage/IDB policy was reversed in 1994, their popularity returned to historical levels. Growing strains in the volume cap in 1994 were evident in a number of States where officials reported having to adjust their allocation plans or develop a plan for the first time to meet unprecedented demand. Bonds for exempt facilities (including wastewater treatment plants) totaled $2.2 billion in 32 States, a 40 percent drop from $3.6 billion in 1993.[15]

> Exempt facilities, in particular, have usually had trouble in many states obtaining volume cap allocations. For one thing, they often must compete with mortgage bond and IDB programs. In addition, exempt facilities projects tend to be extremely large, and just a few could soak up most of a state's volume cap authority.[16]

Developing a formula for allocating PABs is a political process at the State level and has often resulted in a relatively small volume being allocated to environmental projects. Officials in several States told the General Accounting Office that it is more politically attractive to allocate funds to highly visible projects that directly benefit their constituents, such as student loans and housing, as opposed to environmental facilities that no one wants "in their backyards." In 1989, housing bonds accounted for 45.4 percent of all PABs issued while environmental facilities accounted for around 15 percent.[17] As the General Accounting Office noted in 1992, "States decide how to apportion their allocation among various authorized uses; most give low priority to environmental projects, typically choosing to support housing and industrial development projects instead."[18] California officials revealed that the State directs 85 percent of its allocation to housing.

The Volume Cap also introduces elements of uncertainty into long term infrastructure financing, which can be devastating to environmental facility projects. Private companies are reluctant to consider undertaking an environmental project that depends on tax-exempt financing. Often, the annual total is allocated on a first come first served basis among projects that apply, making multiyear financing very difficult and risky to obtain. Other States determine annual allocations under the Cap by a lottery process. Company officials and bond counsels have asserted that the

---

[14] Kenyon, Daphne. "Effects of Federal Volume Caps on State and Local Borrowing," National Tax Journal, December 1991. p 81-92.
[15] *Bond Buyer*. May 11, 1995.
[16] *Bond Buyer*. July 6, 1993.
[17] GAO *Environmental Infrastructure: Effects of Limits on Certain Tax-Exempt Bonds*. October 1993. p. 25.
[18] GAO *Environmental Infrastructure: Effects of Limits on Certain Tax-Exempt Bonds*.
October 1993. p. 29

inability to secure financing at the outset increases the risk involved and therefore discourages companies from investing in these projects.

When debt for environmental infrastructure is squeezed out of the PAB structure, the next logical step is for this type of debt is within traditional governmental debt. GAO's analysis suggested that some States may have issued government bonds in place of PABs to finance environmental projects. Substituting government bonds for PABs may become increasingly difficult, as the competition increases for public investment to meet a variety of other infrastructure needs -- for schools and roads and prisons. State constitutional and statutory debt limitations such as Propositions 13 and 2½ have engendered fierce competition for limited funds. It is plausible to argue that the same political pressures which place short term, higher profile public spending needs ahead of environmental infrastructure within the PAB structure will spill over into general governmental bond decision-making.

Three possible options to increase environmental spending through PABs are to raise annual volume cap, index the cap to inflation, or to exempt environmental uses from the cap. Total amount that could be allocated under the volume cap in 1994 was about $14.7 billion, barely rising from $14.6 billion in 1993. The Public Securities Association urged Congress to increase the $50 per capita amount to $75. Change is needed in PSA's eyes because, "in recent years a number of States have begun to exhaust their annual volume caps and have been forced to postpone or cancel investment projects involving private activity because tax-exempt financing could not be secured."[19]

INCREASING PRIVATE INVESTMENT

Policies seeking to increase private investment would target privately owned or operated environmental facilities. As public resources at all levels of government are being stretched, calls grow louder to inject private sector efficiency into water treatment and to tap private sector capital sources. Forty-six percent of the country's water systems are privately run. Of the nation's 58,000 community water systems, approximately 27,000 (or 46 percent), serving 38 million people, are private or investor-owned. Only 410 systems serve populations greater than 10,000. The vast majority of private and investor-owned community systems serve between 25 and 100 people.[20]

Outside the United States, both Great Britain and France have had long-term success in the private-sector provision of water service. Great Britain serves nearly all of its population through fully privatized water-supply systems. France uses the franchise concept to provide water to over 75 percent of its population. In France, municipalities own the treatment facilities, pipes, and reservoirs and secure management through a wide range of long-term franchise agreements with private companies. In contrast to American municipal water-supply systems, local governments in France are required to keep separate and balanced budgets for water and sewer departments and to meter all households. The States could establish similar privatization policies to encourage

---

[19] *Bond Buyer*. May 11, 1995

[20] O'Connor, Jeremiah F. Patel, Bharat C. "The Water Industry Needs Reform." *Public Utilities Fortnightly* April 1, 1994 p. 132

more municipal systems to consider this alternative. EPA reported in 1989 that combined capital and operating cost savings from private provision as compared with public provision could vary from 5 to 40 percent.[21]

Overall, advocates of greater private participation in clean water infrastructure may want to consider which approach would be most effective to bring about change. Would increasing eligibility under the SRF program, increasing the volume cap, liberalizing the private activity test, or a mix and match be most effectual? Or should another approach be considered?

How important is Tax-Exempt Debt for Public-Private Partnerships?

Tax-exempt financing, with its lower interest costs, is often a determining factor in the feasibility of projects financed with public-private partnerships. For this reason, most public policymakers seeking to encourage public-private partnerships advocate combining tax-exempt debt with public-private partnerships. Over the last fifteen years, however, the clear direction of Federal tax policy has been to limit severely the amount of tax-exempt debt issued for projects that benefit private parties or have significant private involvement. These limitations have made public-private partnerships for infrastructure projects difficult, if not impossible, to finance on a tax-exempt basis.[22] Public opinion and movements to stop "corporate welfare" have also influenced officials' positions.

The primary Federal tax code barrier to tax-exempt debt issuance for public-private partnerships is found in Section 141 of the Internal Revenue Code of 1986, which outlines the circumstances under which tax-exempt bond issues are considered to benefit private parties and, as a result, are considered to be "private activity bonds".[23] Once deemed a private activity bond, an issue is treated as a taxable issue unless it meets a variety of stringent requirements.[24] The effort was done to distinguish between facilities intended to benefit a large number of persons primarily engaged in the same type of trade or business (private use) as opposed to those engaged in different types. The 1986 Tax Act tightened restrictions by enlarging the definition of what could be considered a private activity bond, which was then subjected to a volume cap. Before

---

[21] General Accounting Office. Environmental Infrastructure: *Effects of Limits on Certain Tax-Exempt Bonds*. October 1993. p. 38

[22] John W. Bates III & William J. Strickland. ''Creating a Public/Private Partnership.'' *The Real Estate Finance Journal*. Winter 1991.

[23] Bonds that do not meet the private activity tests are considered ''governmental'' bonds and are considered tax-exempt.

[24] Limited exceptions allow tax-exempt financing for certain ''qualified private activity'' facilities, including airports, docks & wharves, mass commuting facilities, water supply facilities, sewage facilities, solid waste disposal facilities, qualified residential rental projects, qualified manufacturing facilities, and 501(c)(3) organizations. Interest on qualified private activity bonds is generally subject to the alternative minimum tax. In addition, except for bonds issued by 501(c)(3) organizations, and governmental airports and solid waste facilities, the issuance of qualified private activity bonds is subject to a statewide limitation (volume cap) on the amount of private activity bonds that can be issued, described earlier in this report.

the Act, the definition of private activity was if more than 25 percent of a bond issue's proceeds were used by a private entity. The 1986 Act lowered that threshold to 10 percent.

How will proposed 1994 Tax Law Changes Affect Private Investment?

Recent uncertainty over proposed revisions to the tax regulations governing tax-exempt bonds have further clouded the prospects of using tax-exempt debt to improve the feasibility of public-private partnerships. In an attempt to clarify the definition of general public use, the IRS may have unnecessarily restricted the use of tax-exempt debt for certain types of projects. Until recently, practical implementation of the private activity rules was governed by existing Treasury Regulations, various IRS Revenue Rulings, and finally, bond lawyers' interpretations of these documents. In December 1994, the IRS issued new Proposed Regulations that serve as the first comprehensive detailed guidance in applying the private activity tests to debt-financed projects. The Proposed Regulations establish the following two tests of which issuers must pass at least one in order to qualify as a private activity bond and consequently, use taxable financing.

I. *Private Use Test* -- An issue must pass both of the following tests in order to pass the private use test and qualify as a private activity bond.

   A. *Private Business Use Test* -- an issue will pass this test if more than ten percent of the proceeds or property financed with the proceeds, are used, directly or indirectly, in the trade or business carried on by a nongovernmental person, calculated on an annual basis.

   B. *Private Security or Payment Test* -- an issue will pass this test if the total of the present value of the payments made by private properties for use of the financed property and the present value of the property or payments taken into account as private security exceeds ten percent of the present value of the debt service on the issue.

II. *Private Loan Test* -- An issue will pass this test if the lesser of five percent of proceeds or $5 million are loaned to a nongovernmental person.

The recently released Proposed Regulations liberalized *management contract criteria* and changed the tax treatment of debt issues in which the bond-financed project is subsequently converted to private use. Management contracts have been one area of consistent confusion under the private activity issue. The proposed rules would validate a management contract if:

- it does not exceed five years, and at least 50 percent of the compensation is based on a fixed fee; or if the contract does not exceed three years and the compensation is based on a per unit fee;
- it does not exceed ten years and 80 percent of the compensation is based on a fixed periodic fee; or
- it does not exceed 15 years, and all the compensation is based on a fixed periodic fee.

Critics of the current restrictions believe these modifications are a step in the right direction, but more flexibility could promote more private competition in water provision and inject more private capital into water infrastructure. David Haarmeyer, an economist with the Reason Foundation, issued a 1992 report citing cost savings to municipalities of 20 percent to 50 percent at the 300 water treatment plants operated by private contractors in the United States.[25] Changing Federal and State tax laws to permit operating contracts to run 15 to 20 years could make private risk assumption more feasible and introduce the greater efficiency into a larger number of plants. Evidence from other countries that Haarmeyer cited indicates that long term competitive franchise contracts can encourage technical innovation and greater capital investment than in typical U.S. water monopolies. Typical of European private providers, the French company Lyonnaise des Eaux-Dumez spent $33 million on research and development in 1991, an amount equivalent to 5.5 percent of sales.

Impact of IRS's new Proposed Regulations

The public comment period on the IRS's new Proposed Regulations ended on May 1, 1995. Reaction to the Proposed Regulations by the issuer and bond counsel community has been largely negative. While tax-exempt bond advocates support the liberalization of management contracts, many bond lawyers and issuers have complained that the private use restrictions are unworkable and may deter even the most straightforward infrastructure financings. In addition, many have complained that the detailed nature of the Proposed Regulations reduces any flexibility in interpreting the applicability of regulations to individual projects. The private use test may curtail the use of tax-exempt financing for water infrastructure that serve specific developments, stadiums, airports, and other similar entities.

These rules extend allowable contract items for private management contracts for services, however, the rules do not permit private companies to earn a return on funds invested in the facility upfront or during the term of a service contract. This limitation could offset the incentive created for the private sector to invest private capital to expand or upgrade municipal assets. In addition, the proposed rules would apply only to the financing an operation of new facilities, not to existing plants. This also limits the opportunity to privatize existing municipal assets by State and local governments, particularly in the water and wastewater industry. The rules also prohibit any renewal options in a service agreement that automatically renews the contract if they are not explicitly canceled by either party, again, acting to offset the primary incentive created.

The proposed rules on mixed use facilities could severely limit the ability to use tax-exempt financing for public infrastructure facilities or to enter into public-private partnerships for use of the facility. In addition, the rules could add multiple layers of complexity in determining the scope of use of facilities. Several groups have proposed that the rule should revert to the prior practice of determining private use based on a percentage allocation or apportionment basis to total use. The substantial concern and comment on the Proposed Regulations have made it unclear whether the IRS will entirely rewrite new regulations for comment or whether it will

[25] *Public Works Financing*. November 1992. p. 24

finalize the Proposed Regulations after making some revisions. The IRS has not disclosed when it will take action on the Proposed Regulations.[26]

How would improved depreciation schedules for some components of water infrastructure investment improve private participation?

Before 1986, State and local governments not only could attract private resources by supplying matching funds through tax-exempt revenue bonds but also could provide accelerated depreciation schedules and a 10 percent investment tax credit. All were eliminated because they were seen as potential tax shelters for private investors.

The 1986 Tax Act made tax allowances for depreciation less attractive to investors by extending the number of years over which plant and equipment can be depreciated. Before the 1986 Act, private companies were allowed to depreciate the facility over a 5-year period instead of over a period that was closer to the expected useful life of the facility. Companies could take advantage of this "accelerated depreciation" even when they were financing the project with tax-exempt bonds. Subsequently, the law has extended the depreciated life of properties up to fifty years, using straight-line methods

What has the been the experience with recent changes affecting sale and disposition of Federally Funded Property (codify Executive Order 12803)?

Recent developments have been encouraging. Previously, municipalities have been required to repay the Federal government when they sell facilities that were originally financed by Federal grants to private companies. This requirement has been a barrier to private investment in wastewater treatment facilities, which were financed from Federal construction grants in the 1970s and 1980s. On April 30, 1992, the Bush Administration issued Executive Order 12803 which freed municipalities from some repayment obligation. Executive Order 12803 sought to promote infrastructure privatization by drawing on corporate and capital market funds for modernizing environmental and transportation facilities. On the heels of that order came the Clinton Administration's Executive Order 12893 which directed agencies to tell OMB how they would remove barriers to private investment. OMB's concerns with 12803 have been that it allows private companies the possibility of financial gain from buying and operating municipal assets.[27]

An important test case gauging progress in recent changes in this area involves Wheelabrator EOS, Inc. and the Miami Water Conservancy District (MCD) in Ohio. The private purchase of the 4.5 million-gallon-per-day sewage treatment plant by Wheelabrator from MCD is important not only for the size of the transaction but because it was the first test of Order 12803 on an actual deal.

---

[26] Joan Pryde. "Many Fear Private-Activity Rules Will Curb Assessment Debt." *The Bond Buyer*. 8 August 1995.

[27] *Public Works Financing*. June 1994. p. 3

As part of the transaction, Wheelabrator paid the three towns composing the MCD $6.8 million, which is the full market value of the plant built 22 years ago with a $1.75 million Federal grant. Some of that $6.8 million will be directed toward defeasing $5.9 million in outstanding tax-exempt debt issued by State authority for upgrading the plant. As a further incentive, the three municipalities got $1.5 million up-front of the deal. The public benefited from a 20 year service contract that guaranteed a constant user fee lower than previous rates. Municipal user fees dropped from $1.69 per 1,000 gallons to $1.45, a 14 percent reduction. Municipally approved expansions and upgrades will be internally financed by Wheelabrator, built under competitive bid rules and only factored into the rate base when fully operational. This approach follows the user pays principle and taps into private capital sources as opposed to stretching limited public capital funds. The 20 year rate lock ensures a transition period for the public to adapt from publicly set rates to privately set ones. "It's hard to say we're not getting a bang for our buck," said James Rozelle, general manager and chief engineer for the Miami Water Conservancy District.[28] The transaction was approved by all parties including the White House and the Office of Management and budget in July 1995. Importantly, the Wheelabrator / MCD collaboration proves that process spawned by Executive Order 12803 can work.

A strong precedent has been established for future deals to follow. However, the applicability of the Wheelabrator / MCD transaction to future policy replications has some limits. First, the purchase price was raised solely by private cash from Wheelabrator. Because of the relatively small purchase price, no tax-exempt financing was sought under private activity bonds. Larger transaction prices would be more likely to require help from tax-exempt financing via private activity bonds. As described elsewhere in this report, the volume cap on PABs and competition with other financing demands may hinder access to tax-exempt financing. In addition, Wheelabrator already operated the plant, avoiding complicated issues involving public unions and employees and private owners.

[28] *Public Works Financing*. June 1994. p. 3

Attachment 2

Alternative Funding Study
Debt Financing Strategies
October 10, 1995

EPA Region II Office
New York City

Sponsored by CIFA, Syracuse EFC and the Office of Water, U.S. EPA

State and Local Government

Terry Agriss
NY State EFC
50 Wolf Road, #547
Albany, NY 12205-2603

Alan Anders
NY Municipal Water Finance Authority
75 Park Plave, 6th Floor-NW12
New York, NY 10007

Richard Anderson
Wheelabrator Technologies Inc.
1155 Connecticut Ave., NW, Suite 800
Washington, DC 20036

Michael Gagliardo
Urban Water Institute, U.S. Conference of Mayors
1620 I Street, NW
Washington, DC 20006

Mark B. Jinks
Arlington County, Dept. of Mgmt. & Finance
2100 Clarendon Blvd., Suite 501
Arlington, VA 22201

Robert Lenna
Maine Municipal Bond Bank
45 University Drive, P. O. Box 2268
Augusta, ME 04338

Investment Community

Martin Baker
Stroock, Stroock & Lavan
7 Hanover Square
New York, NY 10004

James Barr
American Water Works
1025 Laurel Oak Road
Voorhees, NJ 08043

Bob Bass
Lehman
3 World Financial Ctr.
20th Floor
New York, NY 10285

Tom Boast
Bear, Stearns & Co., Inc.
245 Park Avenue, 13th Floor
New York, NY 10167

Deborah Buresh
Chemical Securities, Inc.
270 Park Avenue, 7th Floor
New York, NY 10017

Ford Cooper
Ogden Yorkshire
40 Lane Road
Fairfield, NJ 07007-2615

Don L. Correll
United Water
200 Old Hook Road
Harrington Park, NJ 07640

Robert Dailey
J. P. Morgan
60 Wall Street, 33rd Floor
New York, NY 10260

Swep Davis
Tyone Parters
33 Witherspoon Street
Suite 200
Princeton NJ

James C. DeLaura
Montgomery Watson
299 Market Street
Saddle Brook, NJ

Raymond A. DiPrinzio
Credit Suisse
12 East 49th Street
New York, NY 10017

Bob Gill
US EPA
290 Broadway
New York, NY

Ron Grosser
Hawkins, Delafield & Wood
67 Wall Street
New York, NY 10005

Douglas Herbst
PSG
14950 Heathrow Forest Pkwy
Houston, TX 77032

Keith Hinds
Interwest Management, Inc.
110 2nd St., S.W., Suite 304
Albuquerque, NM 87102

Eileen Kaufmann
NYC DEP
59-17 Junction Blvd
Corona, NY 11368

Martin Lobo
US GAO
Rom 575
T. O'Neil Federal Bldg
10 Causeway Street
Boston, MA

Ed Markus
Black & Veatch
1211 Avenue of the Americas, 42nd Floor
New York, NY 10036

Marlin Mosby
Public Finance Management, Inc.
530 Oak Court Drive, Suite 145
Memphis, TN 38117

Mark Paul
Wheelabrator Technologies Inc.
Liberty Lane
Hampton, NH 03842

Heather Ruth
Public Securities Association
40 Broad Street, 12th Floor
New York, NY 10004

Sonia Toledo
Merrill Lynch & Co.
World Financial Center, 250 Vesey St.,
North Tower, 9th Floor
New York, NY 10281-1309

Roy Torkelson
Reinoso & Co.
30 Broad St.
New York, NY 10004

Walter Winrow
G. E. Capital Investment
1600 Summer Street
Stamford, CT 06927

Marion Yuen
268 Berkeley Place
Brooklyn NY 11217