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FISCAL ASSESSMENT:

**A Part of the 1990 Strategy for the
Construction Grants Program**

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SUMMARY

A problem in the Construction Grants program is the financial assessment of alternate methods of treating wastewater and of the accompanying economic effects upon citizens. EPA and states have made available engineering resources to help grantees make the best technical (engineering) choices to treat wastewater. However, communities frequently have made decisions having long-term consequences without adequate financial data. We now must begin to channel a greater share of our grant assistance into the area of financial planning for POTW's. Such an effort is essential to a program that is characterized increasingly by financial activities at the federal level and by fiscal and economic consequences in localities.

Grantees Frequently Make Poor Financial Choices

In many cases grantees choose methods of treating wastewater:

- o based upon inaccurate estimation of O&M costs and revenues.
- o based upon inaccurate cost data
- o based upon inadequate exploration of alternatives
- o based upon inadequate exploration of funding options
- o with no recognizable capital improvement plan
- o that do not recognize the need for future expansion

The consequences of poor decisions can be devastating.

Some of the most severe are:

- 1) Excessive costs (capital and O&M), especially in small municipalities or those lacking the ability to pay.
- 2) Failure to meet effluent limitations or to achieve water quality standards -- because of poor planning and funding of O&M.

Further, EPA will only buy more problems in the future if it does not create an incentive for grantees to design revenue sources for plant replacement and future expansion.

The roots of these problems are chiefly a lack of sophistication by grantees, a lack of clear EPA guidance, grantees' unlikely expectations of growth and of water use, and a lack of total financial planning assistance.

A Strategy for Financial Planning Will Help Grantees Make Appropriate Choices

The agency can combat the problem of poor financial choices with a strategy that encourages financially sound, self-sufficient POTW's. The strategy we recommend contains 3 elements.

- (1) Reach potential grantees at Step 1 before they choose wastewater treatment options. The intent is to influence grantees' choices so that they select optimal financial, as well as environmental methods. Providing cost comparison models, peer matches, or case studies will establish a context of constraints and trade offs within which grantees can choose rationally a method of treating wastewater.

(2) Help each grantee assemble the best possible financing plan. This element occurs after facility planning is complete and design engineering is under way. We, or the state (under delegation), would help put together financing mechanisms for replacing equipment or expanding the plant. We would help develop bond financing and user charge systems. The agency would make grant eligible all activities associated with the financial planning of POTW's.

(3) In cases of genuine hardship, EPA would increase "by exception" the funding provided by the federal government for a POTW's design and construction. Element 3 would become part of EPA's strategy when either Element 1 or Element 2 disclosed that a particular community would suffer hardship. Communities experiencing hardship as defined later in this paper could include as many as 25 percent of all grantees - yet these same communities require only 15 percent of the agency's POTW funding. This area clearly has many political and economic benefits with a minimal cost to EPA.

Table 1 below summarizes the strategy.

Table 1: Recommended Financial Strategy

Element 1: Early Influence during Step 1

Help Grantees to make good, early, financially influenced judgements in selecting a way to treat wastewater:

- o Through agency supplied cost comparison models
- o Through peer matches
- o Through Agency sponsored case studies
- o By making the assistance of financial consultants an eligible expense

Element 2: Exploration of Financing Alternatives
during Step 2

Help Grantees to explore financing alternatives for their
wastewater treatment choices:

- o Analysis of the financing capability of grantees
- o Bond financing schemes for construction costs
- o User Charges for O&M, debt service, and routine replacement
- o Financing mechanisms for eventually replacing major equipment or expanding the treatment system.

Sewer Service Charge
** User Charges*
** Debt Service*

Sewer Life
if 50
Useful life
of Facility

Element 3: Evaluate Hardship during Steps 1 or 2

Increase funding for capital construction of POTW's in
instances when environmental benefits are significant
and community hardship is great.

To expedite financial planning, we urge that all activities
associated with financially planning a community's wastewater
treatment be made grant eligible. We further urge that EPA
truly "market" the concept of financial planning as a means of
assuring the self-sufficiency of POTW's.

INTRODUCTION

The regulations of the Construction Grants Program, for all practical purposes, assume that grantees have the "necessary legal, financial, institutional, and managerial resources"¹ to build and operate waste treatment plants. Unfortunately, the "brief statement" that each grantee must submit to this effect in its facility plan too frequently covers a lack of understanding. Requirements that grantees examine alternative and innovative technologies, devise adequate user charge systems, and make public typical monthly charges have abated their ignorance only partly. Further, the communities most in need of help, the smallest, are not involved in the financial planning required of the 208 regional agencies. The result has been POTW's that are expensive per capita and often out of compliance. The economic effects upon some citizens have been severe.

At present, the Agency can point only to scattered examples of attending to local economic impact. It does not have a comprehensive policy and program to address the financial aspects of construction grant activities, which range from the first decision of sizing and funding to final decisions of expansion and replacement.)

¹40 CFR 35.917(h)

TAKE OUT?
make reconstruction
stark

← IMPORTANT

Right now the Construction Grants Program contains a number of financial regulations and policies: among them are Section 204 of the Clean Water Act, PRM 76-3, PRM 79-8, and a draft PRM which expands Step 1 eligibility for analyzing secondary effects of POTW's. PRM 76-3, for example, requires facility plans to include total capital costs, annual debt service, annual operation and maintenance expenses, and the "total monthly charge to a typical residential customer."

The flaw, however, is that the "total monthly charge" will not contain debt service, replacement, or improvements, if those items are covered by general taxes. Thus, the ordinary citizen may face through increased taxes incremental charges far in excess of the "monthly charge." Similar flaws exist in other EPA policies.

NOT A
TAX. is
a service
charge

This paper 1) presents the rationale for making grant eligible life cycle financial assessments of community wastewater treatment options, 2) indicates the scope of financial assessments, including economic hardship, 3) describes in Appendix A the funding mechanisms available locally, and 4) evaluates options for implementing a Financial Assessment Integrity Strategy for POTW's. This paper builds on elements now in the program and expands the concept of financial assessment.

THE PROBLEM

Having built sewage treatment plants, many communities find themselves unable to pay for them. Sometimes they are unable to service the debt; more often they are unable to pay

O&M costs. These financial problems particularly affect small communities: communities having 10,000 or fewer people. For example, a study of O&M costs in New York State communities (excluding New York City) found that for plants of less than 1 MGD, the O&M costs of AWT exceeded \$1,000 per MGD. In contrast, the O&M costs for AWT at plants larger than 5 MGD were less than \$200 per MGD -- a ratio of 5 to 1. The ratio of O&M costs of the two categories for activated sludge treatment is smaller -- 3 to 1 -- but still significant. Other studies report comparable differences between the costs of O&M for small and large plants.¹

For conventional sewage plants, the per capita construction costs in small towns exceed those of larger towns. When one adds to these larger costs the higher per capita cost of sewers in small communities, the financial burden on small communities becomes considerable.

Further compounding the problem are the financial naivete of small communities and their propensity to give over the management of construction grants to A/E firms, who are no better equipped to make financial recommendations.

Moreover, these financial problems will increase. A conservative projection is that 88 percent of all of the plants on the needs list for the next 10 years are small plants serving small communities.

¹ Legislative Commission on Expenditure Review, Audit Report on New York City State Operations and Maintenance Aid, April 1979.

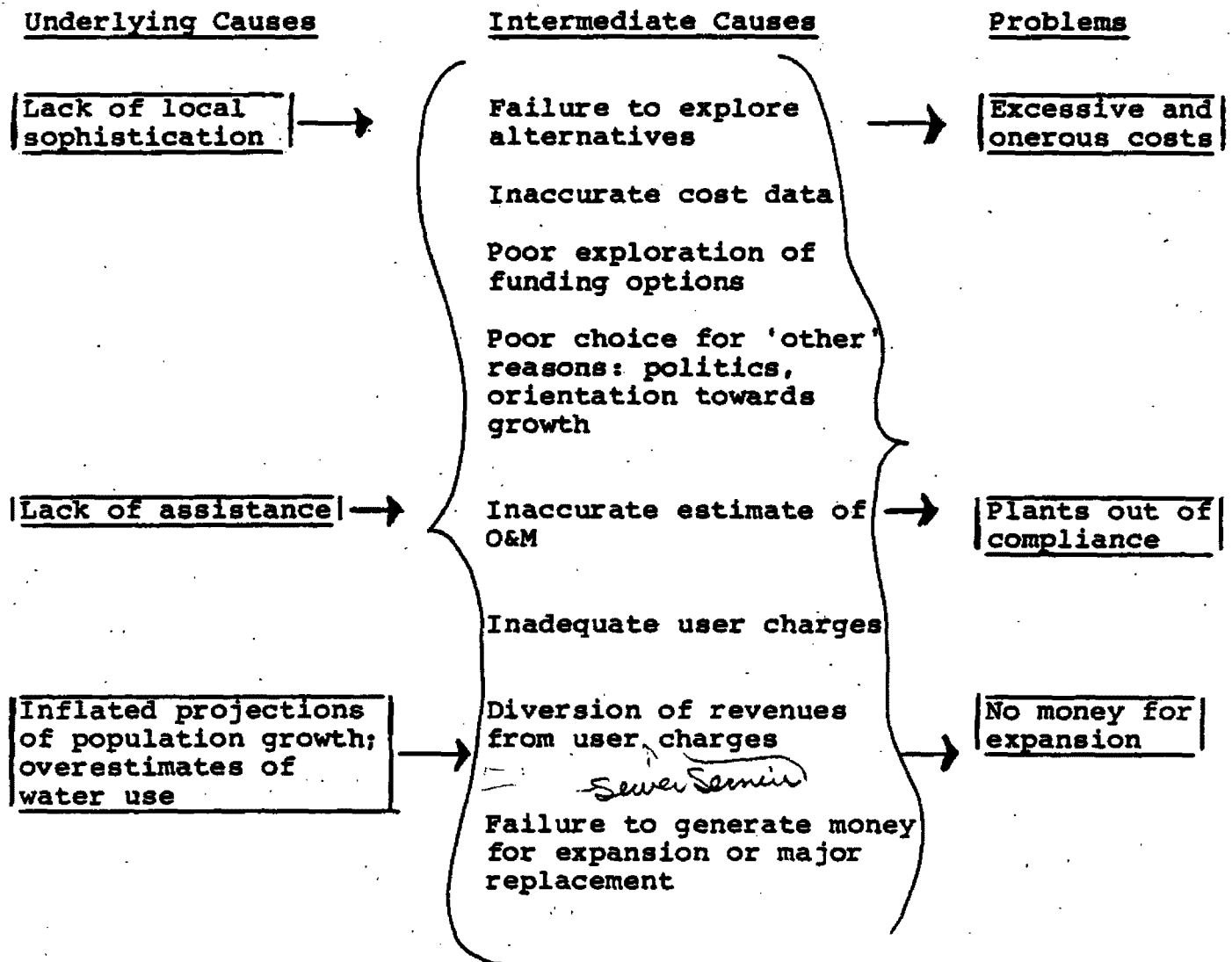
A strategy to deal with this problem would be (1) to influence a grantee's choice of wastewater treatment before a locked in preference is reached and (2) to fund and provide tools for grantees to develop comprehensive financial plans. Such a strategy would lighten financial burdens of communities and protect the federal financial and environmental investment.

Current Financial Planning in the Construction Grants Program

Many grantees involved in the construction grants program are unsophisticated technically and financially. To date, the Agency's concern has been primarily with their lack of technical engineering skill. However, we have come to realize that while technical skill is important, financial ability is as essential and perhaps more so.

The construction grants program is currently structured so that a grantees may hire all technical skills conceivably necessary to meet planning, design, and construction requirements posed by water pollution problems. In addition, both States and EPA provide back up technical skill to assist in and review the work done for grantees by consultants. Unfortunately, the Construction Grants Program provides almost no assistance in fiscal or financial matters related to sewage treatment needs. This imbalance should be rectified, especially since the C.G. program is increasingly characterized as an effort in which most of the federal activity is financial and where significant financial consequences occur in communities.

TABLE 2: Underlying and Intermediate Causes
of the Financial Problems Associated
with POTW's



Small Communities Wastewater Systems, a recent report for the Water Planning Division written by the Government Finance Research Center of the Municipal Finance Officers Association (MFOA), stated that financial analysis and planning are weak in public sector planning programs of all types. The report asserts that just as a large business corporation would "hesitate to invest in a new plant without projecting an acceptable financial rate of return on its investment and knowing how the funding will be provided, local officials often hesitate to invest in public facilities or programs without adequate assurance that certain financial criteria can be met." Decision makers need quantitative information. Despite the fact that the value of many public goods and services cannot be expressed adequately in dollars, estimates are necessary during the planning of a wastewater treatment system.

It is acknowledged that the development of water pollution abatement techniques are absolutely necessary by the local communities and that polluters ~~should~~ should pay for pollution abatement. To accomplish their task, they should become aware not only of the technical options available to reduce pollution but also of financial options to fund their choices. EPA funds and supports the entire technical chain from identification of need to final construction; the Construction Grants program should provide sound fiscal/financial assistance as well.

One possibility is to make total financial planning for sewage treatment programs grant eligible. The eligibility should extend to any Grantee -- a municipality, a special district or a group of municipalities. The eligibility also should cover either in house expertise or consultants to local communities.

A STRATEGY FOR SELF-SUFFICIENCY

In order for EPA's investment of billions of dollars in sewage treatment plants to pay off in terms of cleaner water, we must support our investment from not only the engineering but also the financial perspective. To date, that support has been oriented primarily toward the engineering integrity of the plant and not toward financial soundness.

We now require considerable cost information of grant recipients. As stated above, the cost information is aimed primarily at engineering cost effectiveness of the capital facility. This information is used to restrain the capital cost of a POTW and ostensibly is used to develop user charge systems later. While estimates of some of the costs are supposed to be part of the Step 1 facility plan, the costs provided do not assist the grantee in assessing the total costs associated with a particular POTW option. We should provide for or help the grantee to recognize total costs, long term expansion as well as short term O&M. For instance, O&M costs will vary with the type of treatment chosen, as will future equipment replacement and eventual expansion in

capacity. Thus, the Construction Grants program should develop a conscious, comprehensive policy to foster long-term financial self-sufficiency by all grantees. However, addressing financial matters in a generic and comprehensive manner, breaking through the tendency to think of the Construction Grants program in terms of Steps 1, 2, and 3, requires a different conceptual framework, that of financial self-sufficiency.

Long-term financial self-sufficiency is not a new concept. It is encountered frequently in the legislative history of the Clean Water Act and in discussions with Water Program staff, usually in terms of operating POTW's on a "utility" or "enterprise" basis. Unfortunately, such discussions usually center around the User Charge System, a necessary but insufficient requirement for a "utility" like operation. Listed below are some indicators of self-sufficiency:

- 1) Determination of Community's Financial Characteristics
- 2) Initial Estimation of Costs & Comparison of Alternatives
(+ disclosure)
- 3) Identification of Financing Mechanisms for Capital Costs and of Revenue Source for debt service and O&M
- 4) Development/Implementation/Revision of Revenue Systems
- 5) Planning of capital improvements --expansion and replacement-- with an appropriate planning horizon
(e.g., 5 years)

ELEMENT 1: EARLY INFLUENCE

The purpose of early contact with grantees and potential grantees is to establish a context in which a community can rationally choose (1) a method of treating wastewater, (2) a means of financing, and (3) a plan for operating, maintaining, and eventually expanding its sewage system.

To that end, a community must learn not only what it must do, but also what it must avoid. Early influence, whether in the form of panels of peers (representatives of similar communities which have built POTW's), case histories, or formal studies contrasting the costs of different methods of treating wastewater, would aim to do the following:

1. Alert grantees to the pitfalls of choosing and operating POTW's, such as:
 - o the inefficiency and high cost per household of excessive capacity.
 - o the necessity to have legally enforceable contracts, rather than "letters of intent," with industries that want to use a POTW.
 - o the fact that O&M costs usually surpass annual debt service.
 - o the likely local share of the new wastewater system (typically 35% to 59%).
 - o the likelihood that O&M costs will increase faster than personal income.

- o the necessity to present all costs as incremental costs per household.
 - o the increased costs per household when an increase in capacity means using a different method of treatment.
2. Alert grantees to generic cost tradeoffs between:
 - o alternate and conventional means of treating wastewater;
 - o capital costs and O&M expenses.
 3. Alert grantees to the different optima for small and large plants, for urban and rural communities.
 4. Alert grantees to the range of possible financing arrangements, including that of a county's issuing bonds on behalf of the grantee(s).
 5. Alert grantees to the range of state and federal assistance, including state management of construction grants for the smallest recipients.
 6. Alert grantees to the necessity of foreseeing a range of outcomes for each choice: best, worst, and most likely.
 7. Alert grantees to the value of early environmental assessments.
 8. Alert grantees to community needs which will compete for funds with waste treatment plants (e.g., schools).

Three vehicles for early influence are panels of peers ("peer matches"), case histories, and generic comparisons of costs. "Peers" may be knowledgeable representatives of

communities that have built and operated POTW's successfully, professors, or consultants. All serve free as a public service, with only their expenses reimbursed. Case histories may be presented as written narratives, slide shows, motion pictures, or video tapes. Formal cost comparisons contain the relevant ratios, tables, charts, projections, and cash flows.

In some sense, these three vehicles address three different audiences: the sophisticated, financially competent grantee; the naive, but able grantee; and the grantee who is overwhelmed by the prospect of a construction grant. Case histories, however presented, and peer panels are appropriate for the third category. Cost studies and peer matches will assist the naive, but able grantee. The sophisticated grantee should require only the formal cost comparisons.

Describing the Community and Costing the Alternatives

Assigning the costs associated with sewage treatment alternatives is a necessary exercise for a local community. A facility plan requires some of these costs; PRM 76-3 requires identification and notification of total and annual local costs. The purpose is to communicate these costs to the public. PRM 79-8 gives guidelines for telling how expensive a project is relative to a community's median income. However, the cost assessment should include not only the capital costs, operating costs, and replacement costs but also future expansion costs and per household costs.

Answers to the following questions (some which are required in the facility plan) should affect the costs a community foresees and influence the choice it makes.

Wastewater System Costs:

- (1) How much is the local share of the capital cost (12-25 percent of the total Step 1 - Step 3 grant costs)?
- (2) What are the potential operating costs, including such items as sludge handling, staff salaries, chemicals, small repairs, small equipment replacement, and support equipment?
- (3) What is the expected life of the major equipment and the replacement costs (including major collector lines.)?

Future Needs:

- (4) What growth (when, where, and how much) does the community expect? Would this growth require expanding the treatment plant?
- (5) What would be the expected cost of expanding the treatment facility and collector/interceptor lines?
- (6) What is the probability that the community (A) will decline in population, (B) will have a stable population but increase or decrease its tax base, (C) will have a declining economy and tax base?

With these questions answered honestly, a community can choose a method to meet its treatment requirements.

ELEMENT 2: EXPLORING FINANCIAL ALTERNATIVES

The next part of the financial strategy is to explore the available funding and revenue mechanisms.

Sources of capital for communities to pay for their 10-25 percent share of the cost of a sewage treatment plant are typically general obligation bonds or revenue bonds. In addition, small communities may apply for loans and grants from the Farmers Home Administration. The Municipal Finance Officers Association (MFOA) suggests, however, that local governments be aware that other forms of funding exist. They arise from changes in legislative actions, innovations in bond financing and other financing techniques, and alterations in State and Federal grants.

Revenue options range from having the facility generate revenue to having the community at large support the sewage treatment plant through dedicated ad valorem taxes. Appendix A describes these and other sources of funding and revenues in detail. A key point to build into any financing program, according to the Municipal Finance Officers Association, is that if a wastewater system is not going to be financed from general revenues, it must be self-supporting: Section 204 (6) (1) (E) of the Clean Water Act supports this point. Therefore a wastewater system must generate sufficient revenues to cover annual operating and maintenance costs, pay interest and retire outstanding debt, and make the capital outlays required for periodic plant modifications and expansions.

Estimate the cost of future expansions

An important part of EPA's financial strategy should be its statement of the long-term posture of the Construction Grants Program. There is considerable feeling, in Headquarters at least, that the CG program is a "one-time program" intended to abate existing water pollution -- with expansion and replacement to be the sole responsibility of the grantee. Specifically, the feeling is that while EPA funds reasonable reserve capacity, the local community should bear the costs of any additional growth in population or industrial/business activity; that is, the Agency should not be at risk to provide funds for incremental pollution resulting from growth.

A statement by EPA reflecting this feeling is especially important in light of the latest needs survey. The survey describes existing needs of \$105B, but it projects only \$30 billion in committed funds over the next 5 years. It does not appear that this policy of "one-grant funding" or these monetary constraints have been communicated clearly to grantees. The result has been considerable uncertainty.

A manifestation of this uncertainty is a lack of diligence by many grantees in providing their own financing for long-term treatment needs. If the Construction Grants program is to be a 'one-grant program,' EPA should make this policy explicit (with necessary guidance to accommodate the staged projects of large municipalities).

Thus, given a one-grant policy, communities should anticipate the need to expand their systems at the time they prepare their original financial plans. They should be aware of and build into their revenue schemes the means to finance replacement and expansion.

Two ways to pay for expansion are benefit assessment charges and connection charges. Appendix A describes both types of charges.

Table 3 summarizes this approach to funding.

TABLE 3

1. Determine capital costs.

Raise funds for construction through:

- o General Obligation Bonds
- o Revenue Bonds
- o Farmers Home Administration loans or grants
- o Other Sources

2. Determine needs for on-going revenue.

Fund O&M, debt service, and routine replacement through:

- o User Charges
- o Dedicated Ad Valorem Taxes

3. Determine costs of expansion.

Finance growth through:

- o Benefit Assessment Charges
- o Escalating Connection Fees
- o Other Sources

Communities should understand that some financial requirements may not be explicit. For example, paying for certain kinds of facilities may imply subdivision or zoning regulations or ongoing community planning programs. All of these have cost implications for the community and for local developers through subdivision fees and costs of construction permits.

Prepare the financial plan

According to the MFOA, a financial plan is long range in nature, but not static or unalterable. It should be a strategy for funding and supporting a POTW. Markets change; new opportunities emerge.

Moreover, a community's needs and concerns are not constant. Edwin Wells of Bartle Wells Associates suggests that a financial plan should specify timing and costs, but be flexible enough to take advantage of revenue changes. Thus the financial plan should contain triggers so that as interest rates and the construction index change, communities alter their financial schemes.

Yet a financial plan encompasses more than long term revenue/expenditure projections. It also assesses the credit capacity of a grantee,¹ the best way to market bonds and notes, the best way to set up accounting systems to service debt and to manage operation and maintenance, the best way to manage cash and investments so that capital will be available for future expansion. For example, marketing bonds is a specialty and, if properly done, can save a community much money through a lower interest rate.

1. Both Booz Allen and Hamilton and Peat, Marwick, Mitchell have designed procedures to assess the financial capacity of grantees.

Many grantees, however, do not have bond ratings because heretofore they have not gone to the capital markets. Booz Allen and Hamilton's 1978 study of 346 New York communities found that 58 (17 percent) were unrated.² These unrated grantees need instructions, a handbook telling them exactly how to get a bond rating. Anecdotal evidence suggests that the incomplete preparations of many such grantees result in their receiving lower bond ratings than they deserve.

Get the lowest possible interest rate

"A" rated bonds can vary over 1 percent even in a stable market, because a rating does not set a specific interest rate. Just a 0.1% (one tenth of one percent) saving on 1 million dollars equals \$10,000. Edwin Wells describes a campaign to sell municipal bonds as "a combination of information and promotion. The objective is to reduce bond interest costs by stimulating competition. An official statement is part of the campaign. The statement provides information and promotes and discloses information with a primary purpose of stimulating bidding and reducing interest rates."

2. Booz Allen and Hamilton, Assessment of the Capacity of Local Governments and the State of New York to Finance Public Wastewater Treatment Construction, April 28, 1978, p. III 2.

TABLE 4: Areas in Which Grantees
Need Assistance

FINANCIAL REQUIREMENTS OF A FACILITY PLAN	AREAS IN WHICH GRANTEES NEED ASSISTANCE
<ol style="list-style-type: none">1. Cost Effectiveness Analyses. Choose treatment method whose total costs (capital and O&M) have the smallest present value.2. "A brief statement demonstrating that the authorities who will be implementing the plan have the necessary financial, institutional, and managerial resources available to ensure the construction, operation, and maintenance of the proposed treatment works."3. Estimates of total capital cost, the local share, the expected method of financing, annual and monthly debt service and O&M charges, connection charges, and total monthly charge to typical resident. (PRM 76-3)4. Estimated costs of prospective sites.	<ol style="list-style-type: none">1. Analysis of credit capacity.2. Analysis of financing options.3. Obtaining a credit rating.4. Marketing bonds.5. Devising a revenue system to accommodate:<ul style="list-style-type: none">o debt serviceo O&Mo Replacemento Expansion6. Developing a program of "cash management," since the revenue stream will be even, but debt service, replacement, and expansion will be irregular or periodic expenditures.

Thus Staff professionals or firms having knowledge of the bond market and investment brokerage should be available to assure the best possible financing scheme for a community. Unfortunately, expenses incurred in marketing bonds are not allowable. To be allowable, they would have to be specifically authorized in the Clean Water Act. We believe EPA should seek the necessary change to P.L. 92-500 and fund or otherwise provide to local communities the ability to have the best professional financial advice available.

A sound financial/fiscal footing for POTW's should lead to better water quality because communities can service debt, because the plants will be run more efficiently, and because replacement and expansion will be built into a community's needs.

ELEMENT 3: EVALUATING ECONOMIC HARDSHIP

If small communities are financially strapped, will they be able to pay even the 25 percent of the cost of a well-designed, appropriate system for treating wastewater? As part of a total financial strategy we suggest that EPA consider paying more than 75 percent of the capital costs for communities meeting "criteria" of economic hardship.¹ Assessing economic hardship would occur as the third phase of the strategy for assuring financial integrity:

¹ Some states already supplement EPA's funding. EPA should consider the level of state funding when it decides how much more to pay in hardship cases.

STRATEGY

1. EARLY INFLUENCE

Up front agency contact with grantees on the priority list to show them the generic cost tradeoffs of various treatment alternatives.

2. FINANCIAL PLANNING

After a grantee chooses a particular treatment option, EPA requires and funds a complete financial plan.

3. ECONOMIC HARDSHIP

States ascertain community hardship. If a treatment system would impose undue hardship, EPA would increase its federal share of the capital costs.

Again, "economic hardship is most likely to occur in small, rural, relatively poor, unrated or low [bond] rated communities proposing new conventional treatment systems." ¹ Burns and Cahill of Booz Allen Hamilton correlated user charges as a percent of median family income with a set of typical POTW variables. ² They concluded that:

- o Small villages and towns are harder hit than larger towns and cities.
- o The more costly the system, the greater the impact on the community.

1. Burns and Cahill, Sewage Treatment Costs: Assessing the Impact on Communities, p. 3.
2. a) type of municipality, b) population and population density, c) family income, d) type of proposed system, e) bond rating, and f) capital cost

- o The greater the family income, the less the hardship.
- o Developing a new system has a greater impact than expanding an existing system.
- o Communities with low bond ratings experience more hardship than communities with higher bond ratings.

Burns and Cahill urge that such communities "be identified early on in the Construction Grants process so they can be encouraged to explore alternative, less costly approaches to wastewater management."

Keith Dearth of EPA found that (1) small communities located on tributaries with low flows are often required to construct expensive, resource intensive tertiary treatment plants, (2) the conventional collection system not funded by EPA generally represents 80 percent of the capital costs in rural areas, (3) small communities cannot spread capital costs among large populations whose homes have been sewered previously.¹

Importantly, increasing the federal share for such communities would not greatly tax the construction grant budget. Booz Allen and Hamilton's study of POTW's in New York State showed that only 15 percent of federal construction grant dollars go to communities with "inadequate"² financing capacity.

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1. Keith H. Dearth, "Current Costs of Conventional Approaches," National Conference on Less Costly Treatment Systems for Small Communities, U.S. EPA, April 12-14, 1977, Reston, Virginia.
 2. Inadequate = high probability of being excluded from the bond market

Table 4: Distribution of Federal Construction Grant Funds by Categories of Financial Capacity

N=346

	ADEQUATE CAPACITY	MARGINAL CAPACITY	INADEQUATE CAPACITY
# TOWNS	229	28	89
PERCENT FEDERAL CG BUDGET MEETING LOCAL FINANCING REQUIREMENTS	.68	.17	.15

Source: derived from Booz Allen and Hamilton

Adequate: Likelihood that financing a POTW with bonds will not lower a town's bond rating.

Marginal: Likelihood that financing a POTW with bonds will lower the town's bond rating.

Inadequate: Likelihood that town cannot enter the bond market

Yet these communities comprised 26 percent of the 346 communities studied. Thus, EPA's incremental commitment to such communities will be relatively small. For example, increasing the Construction Grant budget by 3 percent will fund 87.5 percent of the capital costs of POTW's in communities with inadequate financing capacity. The potential benefits are great. The number of POTW "horror stories" should decrease substantially.

There are several ways to assess economic hardship.

The Farmers Home Administration, whose grants and low interest loans may be used for POTW's, considers making grants when

annual debt service exceeds critical levels of median family income. EPA's own measures of hardship employ both debt service and annual O&M charges per household. The State of Virginia judges hardship to be economic impact greater than that of the State average (user charges/median family income). Using elements of several approaches, Burns and Cahill of Booz Allen and Hamilton have developed a comprehensive technique to evaluate economic impact. Appendix B presents these procedures in more detail.

In cases of genuine hardship, EPA has three choices:

- 1) Coordinate various grant mechanisms and fund more than 75 percent of the capital costs of a POTW.
- 2) Fund POTW's as it has in the past - and see poor communities saddled with costs they cannot afford and plants they cannot maintain.
- 3) Do not build POTW's in hardship cases.

Choice 2 (the way EPA now operates) is the worst of the three choices. Generally such plants will be out of compliance. If the environmental benefits of a particular POTW are small, choice 3 is the best. However, if the environmental benefits of a given POTW are substantial, EPA ought to consider choice 1.

OPTIONS FOR IMPLEMENTING A FINANCIAL STRATEGY

Before the options are reviewed and one is chosen, some assumptions should be made explicit.

Assumptions

- o The option chosen should increase the self sufficiency of the sewage treatment plants being funded.

- o The option chosen should be consistent with the role of EPA as a "franchiser" of the construction grants program.
- o The option chosen should require relatively few EPA personnel.
- o The option chosen should promote simple, useful systems, local autonomy, local responsibility, and minimal delay.
- o The option chosen should not lend itself to abuses.
- o Communities suffering genuine hardship may be reimbursed at greater than 75 percent.

OPTIONS

The following four options describe the range of possibilities, but they are not exhaustive.

1. Continue the present policy. Regulations require grantees to explore several means of treating wastewater. They do not, however, help or require communities to assess the total long range and short range fiscal impact of the options they consider, nor do the regulations require communities to examine the financing alternatives.¹
2. Make the cost of financial planning as defined in this paper an eligible expense (but not a

1. If the draft PRM 80 now being circulated for comments becomes policy, new Step 1 grantees will receive 75% reimbursement for assessing the "financial impact" of the different ways to treat wastewater. Draft PRM 80 represents a choice midway between Option 1 and Option 2. Unfortunately, it does not define "financial impact." Nor, because of ARB decision #2, can it assist in marketing bonds.

required expense). State personnel reviewing a facility plan would note that a grantee either had checked off from a "master list" the items it included in its fiscal assessment -- or had waived its rights to the assessment. Grantees would do the financial planning themselves or would hire competent consultants recommended by a state league of cities. EPA would make available guidelines, handbooks, seminars, hot-lines, and other materials so that grantees could check the work of financial, planning, and engineering consultants.

3. EPA would arrange with groups like the Municipal Finance Officers Association (MFOA) or the California League of Cities to furnish a financial planning service to grantees. The MFOA or State leagues of cities could also arrange "peer matches" and disseminate case studies. These services would be grant eligible, but not required. Grantees would pay 25 percent of the marginal cost of providing the service. EPA would provide the fiscal assessment package, pay the fixed costs, and pay 75 percent of the marginal costs.
4. State personnel (or possibly EPA personnel from "service centers") would make fiscal assessments of grant recipients. Grantees would pay a nominal

fee for this service. If States managed Construction Grants for small grantees, state personnel would be the logical persons to write the financing plans in these instances.

Options 2, 3, and 4 may vary in the following ways:

1. EPA may vary the percentage of financial planning expenses it reimburses. For example, using the principle of disallowing the ordinary operating expenses of local government (e.g., salaries and expenses of a mayor, city council members or city attorney), EPA may reimburse only the expenses of grantees whose ordinary operations do not include making fiscal assessments. These grantees are typically rural, poor, and small. Or, EPA might use hardship criteria to decide which grantees to reimburse fully.
2. EPA may require fiscal assessments of all grantees.
3. States may review the quality of the fiscal assessments.

Evaluating the Options:

Option 1 makes grantees fully responsible for any fiscal assessments they choose to make. It also forces grantees to pay the full costs of assessments. Right now, grantees which can afford a financial assessment already understand its benefits and purchase the service. Those that do not generally cannot afford the service. Thus, this

option is not consistent with the role of EPA as franchiser, as a provider of management training and services. Further, this option does not promote the self-sufficiency of POTW plants. "POTW" horror stories will occur repeatedly, with continuing complaints to Congressmen and probably no increase in plants' compliance.

Option 2 helps grantees to pay the cost of fiscal assessments and thereby provides an incentive for grantees to undertake full-fledged fiscal assessments. Grantees, however, remain responsible for deciding to do the assessment and for its ultimate quality. The self-sufficiency and rate of compliance of POTW's should improve.

This option is also fairly consistent with EPA's role as a franchiser, as provider of management services. Yet EPA's investment is minimal. There is no added review time. The cost of providing fiscal assessments will appear only in requests for payment, not in additional personnel and not in increased budgets.

Option 3 would ensure that fiscal assessments use the same methodology and exhibit an even quality. Because EPA would develop the "financial planning package," the Agency truly would be a franchiser. However, if the methodology were occasionally inappropriate, grantees might blame EPA. Option 3 would require EPA to invest more money and personnel than Option 2. Providing fiscal assessments would have to appear in EPA's budget. Further, Option 3 would require

more time to implement than Option 2. Nevertheless, the overall self-sufficiency of plants should increase.

Option 4 places full responsibility for fiscal assessments on EPA and on the states operating under delegation agreements. Further, Option 4 is the most expensive way to provide fiscal assessments, requiring both EPA personnel and probably significant resources. Self-sufficiency of POTW's should increase. Conceivably, States could make the assessments. However, the experience of California in providing an "Evaluation Assistance Service," which checked grantees' accounting systems was that 205 (g) monies were not sufficient to support an optional activity. In place of the Evaluation Assistance Service, California substituted something akin to Option 2: the opportunity for grantees to attend seminars in accounting and negotiations. California (and now EPA) have made the cost of attending the seminars an eligible expense.

Additional Considerations

If EPA enacts Option 2 and changes no other regulations, it will put into effect a crude mechanism to vary funding of fiscal assessments. That mechanism is the criterion of not reimbursing costs of "normal governmental operations." Applied to the cost of fiscal assessments, this criterion would reimburse the costs of a "targeted" group -- small grantees whose ordinary operations do not include making fiscal assessments. EPA should consider, however, whether this mechanism is equitable.

Another consideration is the effects of requiring each grantee to make a fiscal assessment. On one hand, requiring fiscal assessments would make more plants self-sufficient. On the other hand, this requirement would spawn many more consulting firms. Those firms would not have to compete fiercely for contracts, nor would they have to justify their products. Potential abuses exist.

Third, if EPA both required and reviewed fiscal assessments, the complexity of the Construction Grants program would increase. For each grantee, review time would lengthen and the additional consulting agreement would have to be audited.

User Charges. These charges distribute the costs of operating and maintaining and often servicing the debt among the users of a sewage treatment system. There is usually a unit of use (perhaps amount of flow) distributed in an equitable manner among households, businesses and industries. A simple system, for instance, might assess a single family detached house at 2.2 units, a garden apartment at 1.0 units and a small grocery store at 4 units. The monthly fee might be \$6.00 per unit, determined by dividing total annual costs by the total number of units.

Another locality might develop user charges by adding the total amount of money required to service the debt service (capital construction) to the total anticipated operating expenses for any particular year. The sum becomes a part of a ratio of metered plant inflow to cost. The locality next allocates the flow among users and charges each accordingly.

Other systems of user charges assess participants not only by the amount of flow but also by its strength.

It is important that user charges reflect the full costs of operation, maintenance, replacement, and debt service. To secure a budget for replacement, planners may have to use the word depreciation rather than replacement in some discussions.

Ad Valorem taxes supporting the construction, maintenance, and operation, and replacement of sewage treatment facilities distribute the costs of a POTW beyond the user to the community

at large. The premise is that all benefit from clean water. Ad Valorem taxes can be subject to legislative action by the community at large.

A Ready to Serve Tax or "stand by charge" is a tax on undeveloped land where sewer lines are in place. This tax encourages development within the existing service area. It reduces the probability of "leap frog" developments which require massive extensions of sewage lines, pump over of effluent from one basin to another, expansion of treatment capacity, or even new sewage treatment plant construction. A ready to serve tax can be part of a current O&M budget or become part of a plant expansion or construction fund.

Anticipating Expansion

Benefit Assessment Charge is a way of dividing the cost of capital construction among the eventual users. It works by the community establishing a lien on property being served to support construction of either a POTW or a sewer line. Typically it is a one time only charge at the time of construction financing.

Connection Charges are one-time fees imposed on new users of a system. The fees vary in the same manner as the user charges, and they are usually part of building permit fees. They can remain constant, or they can escalate annually. Escalating connection charges typically increase each year and are tied to an appropriate index.

Connection charges usually finance plant expansion. In order for them to be functional, a grantee should determine plant expansion costs when the original plant is built, and the connection charges should be based upon increments of growth to meet the expansion cost requirements. By tying the charges to a construction index, the connection charges will always be current with plant expansion costs. In this way growth pays for itself.

APPENDIX B: Ways to Evaluate Hardship

There are several ways to assess economic hardship.

1. FmH.A. The U.S.D.A. makes low interest loans and grants for community facilities available to rural areas and towns with populations up to 10,000. Wastewater treatment systems are eligible for FmH.A. funding. According to Booz Allen and Hamilton, the FmHA will consider issuing grants only when annual debt service per household exceeds:

- o .75% of a median family income less than \$6,000
- o 1.0% of a median family income between \$6,000 and \$10,000
- o 1.25% of a median family income greater than 10,000

2. EPA's hardship criterion compares user charges from new facilities to the median family income of a service area. Hardship occurs when (1) average debt service per household exceeds one percent of local median family income and (2) when the sum of debt service and operations and maintenance charges per household exceed two percent of local median family income.

3. EPA has also defined an "expensive" wastewater facility. A facility is "expensive" when average debt service and operation and maintenance together exceed the following percentages of median family income:

- 1.5 % if median household income is less than \$6,000
- 2.0% if median household income is \$6,000 to \$10,000
- 2.5% if median household income is greater than \$10,000

Note that the FmHA criteria evaluate capital cost; the EPA criteria evaluate the cost of O&M to the level of capital expense.

4. State of Virginia. Virginia assesses hardship as part of its review of the priority list. The Virginia approach essentially divides total user charges for all utilities by local median family income and compares the result to a statewide average of utility charges as a percent of state median family income. If a community pays more in proportion to its income than the state average, it is termed as a hardship and is eligible for funds. Virginia then ranks the hardship cases; the greater the hardship, the larger the percentage the state funds the community receives.

5. Burns and Cahill of Booz Allen and Hamilton have combined three of these approaches to develop a conceptual process for ranking each community in a state. Based upon median family income and user charges, their approach has three possible outcomes:

(1) Hardship, (2) Potential hardship, and (3) No hardship.

Step (1) Assess all user charges in a given State as a percent of local median family income.

Step (2) Calculate the average user charge as a percent of state median family income

Once Steps 1 and 2 are completed for each state, one can rank any new proposed sewage treatment project or proposal

anywhere in the U.S. When a municipality considers one or more specific alternatives, then Steps 3 and 4 show whether the municipality will suffer hardship.

Step (3) Determine user charges for the new facility as a percent of local median family income

Step (4) Compare user charges from Step 3 to EPA's is 2% criterion and to the state average from Step 2.

Place the applicant in one of three categories.

Hardship: Projected user charges exceed 2% of local median family income.

Potential Hardship: Projected user charges are less than 2% of median family income but more than the state average.

No Hardship: Projected user charges are less than 2% of median family income and less than state average.

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