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FINANCING AND OVERSIGHT OF WASTEWATER TREATMENT FACILITIES

December 15, 1986

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**FINANCING AND OVERSIGHT
OF WASTEWATER TREATMENT FACILITIES**

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**DIVISION OF WATER QUALITY
MINNESOTA POLLUTION CONTROL AGENCY**

DECEMBER 15, 1986

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EXECUTIVE SUMMARY

The following is an executive summary of: FINANCING AND OVERSIGHT OF WASTEWATER TREATMENT FACILITIES, a report issued by the Minnesota Pollution Control Agency (MPCA) December 15, 1986. This Report is a part of the Agency's continuing effort to: 1) Protect the waters of the state, 2) Ensure cost effective and affordable pollution abatement, and, 3) Secure adequate funding to assist communities throughout the state in achieving compliance with municipal wastewater discharge standards.

The Report has been prepared by MPCA staff as a resource document which provides information regarding municipal wastewater treatment needs; clarifies the financial impact of treatment on communities and households; and explores the financial, technical, and administrative issues in providing affordable treatment. The numbered headings of this summary correspond to sections in the main report.

I. INTRODUCTION

The Minnesota Pollution Control Agency is charged with administration of wastewater treatment facilities grants under the Federal Clean Water Act and the independent state grants program, and with permitting and regulating wastewater discharges. The Agency has also been directed to explore and devise more effective methods of targeting limited resources to assist communities in meeting their wastewater treatment needs.

Water Quality Standards - The Agency has promulgated water quality controls since the early 1960's. Waters are classified and discharge standards set with "Secondary Treatment" as the minimum standard. Certain municipal dischargers must meet higher "Advanced" standards because they discharge to particularly valuable or sensitive waters. The Agency periodically reviews its standards through a public hearing process.

Program Overview - Since 1957 Minnesota has received over \$920 million in federal funds for municipal treatment, and the State has contributed another \$202 million. With Fiscal Year 1985 the Federal grant percentage dropped from a high of approximately 90% of eligible project cost to a 55% basic grant and additional funds for special technologies. The Independent State Grants Program provides a 50% basic grant, plus an additional 15% for advanced treatment. The state also provides a supplemental, financial hardship grant of from 0-15% on both federal and independent state projects. Cities receive federal and state funds in priority order based on water quality criteria contained in a system approved by the United States Environmental Protection Agency (USEPA) and codified into State of Minnesota Rules.

Financial Capability and the July 1, 1988 Federal Deadline - Federal law requires that all municipal dischargers be in compliance with permit conditions by July 1, 1988. Federal grant appropriations are expected to sunset in Fiscal Year 1990 and be replaced by a revolving loan fund. At today's reduced grant percentages, and facing the prospect of a revolving loan fund, local financial resources are under extreme pressure, particularly in small rural communities where the cost of needed pollution control projects can be prohibitive.

The State is at a critical juncture, and it is imperative that the continuing

need for municipal wastewater treatment in Minnesota be evaluated, that programs are devised, and that adequate financial resources are secured to ensure effective and continuing wastewater treatment.

II. MUNICIPAL WASTEWATER TREATMENT FACILITY CONSTRUCTION NEEDS

The MPCA categorizes and assigns priority to municipal wastewater treatment needs. This information process documents the need for federal and state assistance and is a primary resource for program planning and development.

USEPA Needs Survey - Every two years the United States Environmental Protection Agency conducts a survey of all national wastewater treatment needs, this survey to be used in allocating federal grant funds to the individual states. Minnesota's current allotment is 1.8735% of the national appropriation.

State of Minnesota Needs List - The Municipal Needs List (MNL) lists communities with demonstrated needs for wastewater treatment facility planning, design and construction. Communities must request placement on the list, which is subject to MPCA review. Needs are categorized and priority points assigned according to several criteria, including: Use of receiving waters, type of project, public health, participation in watershed pollution abatement plan, population, etc.

The Minnesota Needs List reflects the USEPA Needs Survey; however, there are some differences. For example, the state may know of additional future needs which cannot be documented, or the state may not list needs which are ineligible for funding, such as projects which may need additional construction, but which have already received grants. The most recent draft Needs List contains 212 communities. The Needs List is dynamic, and as communities request and demonstrate fundable needs, they are added to the List.

The draft Needs List contains 212 communities or projects which can be generally described as having the following characteristics:

- 176 have completed facility planning, or are doing facility planning
- 198 are Greater Minnesota communities.
- 31 of the Greater Minnesota communities are unsewered.
- 106 of the Greater Minnesota communities are on the National Municipal Policy List which requires that communities be in compliance with water quality standards by July 1, 1988.
- 11 are MWCC (Metro Waste Control Commission) projects.
- 3 are combined sewer overflow (CSO) abatement projects for Minneapolis, St. Paul, and South St. Paul.

The 212 communities/projects on the draft state Needs List have an estimated cost of \$1,093,840,000.

Unsewered Communities - Thirty-one unsewered communities have an overall need of \$58,793,000; however, only \$29,841,000 of that total is eligible under the grants program (eligibility is limited to central treatment plants and major interceptors). The remaining \$28,952,000 for sewer construction is a considerable capital investment burden for these communities.

III. FINANCING WASTEWATER TREATMENT FACILITIES

A GENERAL INTRODUCTION

As a general introduction to the financing of municipal wastewater treatment the following questions were considered:

- a) How much are communities now paying for wastewater treatment?
- b) how much will communities pay in the future?

Survey Results - According to a Survey of 1985 Wastewater Treatment Costs conducted by the MPCA, the current cost of wastewater treatment is as follows:

The weighted average annual wastewater treatment charge paid by single family households in Greater Minnesota communities is: \$ 90.74 (\$7.56 mo.). The median is \$ 82.61 (\$6.88 mo.) The weighted average annual wastewater treatment charge paid by single family households serviced by the Metropolitan Waste Control Commission (MWCC) is: \$124.77 (\$10.40 mo.). The median is: \$130.19 (\$10.85 mo.)

(A "weighted average" provides an overall average of household cost across community lines by weighting the average within a particular community in proportion to the number of households served by that community. This indicator prevents small communities with extremely high (or low) Sewer Service Charges from misrepresenting the general situation regarding Sewer Service Charges encountered by Minnesota households.)

Variability of Charges - Perhaps as significant as the weighted averages and medians indicated by the survey, however, is the extreme variability of charges. This is evident in the wide range from the lowest to the highest (\$4.43 annually to \$ 403.09 annually for Greater Minnesota communities and \$36.73 to \$719.51 annually for MWCC communities). The cost of wastewater treatment varies from community to community according to at least the following factors:

- 1) Whether the immediate cost of wastewater treatment is being addressed and the permit is being met.
- 2) Whether the continuing cost of wastewater treatment (including provisions for constructing a new facility when the existing facility is no longer servicable) is being met.
- 3) The stage of the life cycle of the community's existing facility.
- 4) The level of grants and/or low interest loans, or other financial assistance provided.
- 5) The population of a community and the corresponding economies of scale available.

How Much Will Communities Pay in the Future? - Twenty-nine Minnesota communities are currently scheduled to receive construction grants during FY 1987. These twenty-nine communities are used to illustrate various aspects of financing wastewater treatment. The costs and charges provided are based on estimated costs after construction, summarized as follows:

At Current Levels of Grant Assistance: The weighted average annual wastewater treatment charge paid by single family households is: \$ 234.30 (\$19.53 mo.). The median is \$ 226.59 (\$18.88 mo.)

Without Grant Assistance and with provision for a 'Sinking Fund':
The weighted average annual wastewater treatment charge paid by single family

households is: \$ 590.99 (\$49.25 mo.). The median is: \$ 539.03 (\$44.91 mo.).

(A "Sinking Fund" is a mechanism for acquiring and investing revenues dedicated to constructing a new facility once the existing facility reaches the end of its useful life. As such it addresses the long term need for treatment and can be understood as constituting the complete cost of wastewater treatment.)

Who Should Pay ? - A discussion of what cities will pay in the future is not complete without considering who should bear the burden, particularly in light of reduced federal grant percentages. In general, this question is answered on the basis of one or a combination of the following:

- 1) **Local Responsibility** - Those responsible for bringing about a particular expense should pay. The local community should be fully responsible for the cost of pollution abatement.
- 2) **Benefit** - Those who derive direct and immediate benefits and those who will derive indirect and long term benefits from the pollution abatement should pay.
- 3) **Affordability** - The cost of addressing wastewater treatment should be distributed proportionately according to the ability of different parties to pay.
- 4) **Equity** - Those paying less because they received higher levels of federal and state assistance available in the past, should ease the burden for those facing higher costs due to reduced financial assistance and high inflation.

Methods of Determining How Much Communities Should Pay - While the primary goal of a municipal wastewater treatment assistance program will continue to be pollution abatement, the application of resources to this goal could be modified to respond to the problem of affordability. For example, a percentage of median household income could be set as that part of the construction cost of a facility that the local community would be responsible for. Low interest loans, negative interest loans or supplemental grants could then be used to "buy down" the cost to the established percentage.

IV. FINANCING WASTEWATER TREATMENT FACILITIES - ALTERNATIVES

The following discussion briefly highlights various methods of assisting and enhancing local financing of wastewater treatment through involvement by the state and the private sector.

Funding for State Assistance Programs - Bonding One method of generating revenue is through bonding, using state revenue bonds or state general obligation bonds. Revenue bonds, retired through revenue derived from specific charges or user fees would be repaid directly by those benefitting and would not effect the state's bond rating. General obligation bonds, retired through general fund revenues, usually command the lowest interest rate available to the state.

State Assistance Programs - State Bond Bank The State would issue bonds for several cities using the State credit rating. The cities would pay the debt service to the lender or the State would act as an agent for the cities. This approach would utilize the state's favorable bond rating and reduced bond issuance costs for the cities.

Funding for State Assistance Programs - Appropriation of General Fund Revenues A state assistance program could be funded by appropriation of General Fund

revenues, which would not increase the state's debt and could ensure predictable funding for community planning. This approach, however, would involve increased taxes.

Funding for State Assistance Programs - Cigarette Tax The current cigarette tax provides revenue for wastewater treatment. However, as currently structured, funding is too limited to fully address treatment needs.

Funding for State Assistance Programs - Generation of Revenue from 90% Grant Recipients Another source of revenue would be a surcharge on those communities which received 90% to 94% construction grant funding prior to Fiscal Year 1985 (FY 1985). Such an approach would help compensate for the reduced level of grant funding under the current federal and state programs.

Below are two alternatives for generating revenue from the 90% grant recipients:

1) **Connection Surcharge** - A monthly surcharge on each connection to a collection system served by a treatment facility built at the higher grant percentage. Under this alternative:

\$1 per month per connection would generate approximately \$12,000,000 annually.
\$5 per month per connection would generate approximately \$58,300,000 annually.

2) **Plant Design Capacity-based Surcharge** - A monthly surcharge based on design capacity would be charged to each community with a treatment facility built at the higher grant percentage. Under this alternative:

\$30,000 per month per million gallons design capacity would generate about \$12,800,000
\$150,000 per month per million gallons design capacity would generate about \$ 64,000,000

Funding for State Assistance Programs - State Lottery A State lottery could be the funding source for either a grants program or a loan program.

Funding for State Assistance Programs - Sales Tax Charged on Sewer and Water Charges A Sales tax charged on sewer and water charges would not require an additional appropriation but may excessively burden low and fixed income citizens.

Methods of Distributing Funds - Revolving Loan Program One option for funding wastewater treatment is the establishment of a state revolving loan fund using either state or federal funding or a combination of both. Loans from such a fund could be supplemented with grants based on need and financial hardship. State Revolving Funds (SRFs), whether capitalized with federal or state contributions, can provide a long-term source of funds that can be targeted to finance needed projects, while maintaining a local financial role through loan repayments. The State would set the priorities for loan distribution, interest rates, and maturities of the loans. An SRF can be capitalized by using an unleveraged or leveraged strategy, or a combination of both.

Ideally, interest paid by communities should cover State borrowing costs. However, there would be a need for low interest loans to hardship communities, possibly combined with supplemental grants. The determining of interest rates, eligibility requirements, disbursement and default policy, to name but a few, would need to be analyzed and incorporated into a SRF program. If such a program is properly tailored to the needs of Minnesota communities, it could be an attractive alternative.

Methods of Distributing Funds - Reimbursement Program The existing State Reimbursement Program allows communities that do not have a priority ranking high enough to be reached with the available funds to proceed with construction

and be reimbursed when state grant funds become available. This program allows communities to exercise greater flexibility in planning, scheduling and proceeding with construction and can result in considerable savings. It also allows communities beyond the fundable range of the current Municipal Needs List (MNL) to progress toward compliance with the EPA's 1988 deadline.

Methods of Distributing Funds - Septic Tank Funding Program Currently, state and federal wastewater treatment grants programs fund septic tank system development and construction, where facilities planning indicates this to be the most cost effective alternative. However, this approach requires the same processes of facilities planning and design required for large metropolitan area projects. For small communities and unincorporated areas the scale of such a project is often a significant disincentive, exceeding the managerial and administrative capabilities of the community, and imposing a financial hardship.

In such cases a smaller scale program of funding septic tank upgrades may be more effective. Such a program could be closely tailored to the specific, limited needs of a community. Procedures for setting priorities and allocating funds could also be streamlined and delegated to county sanitarians. A preliminary survey of county sanitarians indicates considerable support for such a program. Funding could be set at a certain percentage of municipal wastewater treatment funds made available during a specific year (e.g.2%).

Methods of Distributing Funds - Decentralizing Funding From The Minnesota Pollution Control Agency Decentralizing funding from the Minnesota Pollution Control Agency has been suggested as another method of distributing funds. Several options would be available if this course of action were chosen. First, another existing government agency could administer the financing. Second, a new government financing authority could be created. A third option would be to create a sub-unit within an existing government agency with the authority and ability to administer the financing. Under these options the primary goal of the assistance may not be pollution abatement, which is the primary purpose of providing funding.

Privatization - Privatization involves a private entity supplying services, facilities, or equipment ordinarily provided by a governmental unit. The purpose of privatization is to provide lower cost service to the public. Several financial plans are used to establish the roles for the public and private sectors in arranging a privatization agreement. Some of these include:

- A. Contract operations - A private firm provides the operating personnel to manage and operate the treatment facility. Ownership of the facility remains with the governmental unit.
- B. Tax-exempt municipal lease - The governmental unit leases the facility from a lessor and assumes all responsibility of ownership and operations for a stated period of time. At the conclusion of the lease, the municipality may purchase the facility for an agreed price.
- C. Sale and leaseback - The governmental unit which owns the facility sells it to an investor and then leases it back from the investor. Federal legislation changing depreciation schedules for this type of arrangement may make this plan less attractive to a private investor.
- D. Sale-service contract - The governmental unit sells the treatment facility to a private company which owns and operates the facility. The governmental unit pays for the service and is not responsible for the project or its operation.
- E. Full service contract - A private company designs, constructs, and operates the facility. The government entity pays an annual fee to the company.

At this time, the smallest privatization project nationwide is for a community with a population of 4,900. The feasibility of privatization for communities with populations under 3,000 is critically dependent on attracting investor participation.

V. AGENCY REVIEW AND COMMUNITY ASSISTANCE: ENGINEERING AND ADMINISTRATION

The Role of the Agency - In order to ensure adequate construction of municipal treatment facilities, protection of public funds, and compliance with state and federal regulations, the MPCA is actively involved in the technical and administrative review of municipal wastewater treatment facilities projects. The Agency combines its administrative and regulatory responsibilities with a commitment to community assistance.

Costs and Delays - Recent concern regarding the construction grants program has tended to focus in two areas: Increased costs and delays in the completion of projects. Financing of wastewater treatment, and the impending 1988 federal municipal compliance deadline, are discussed elsewhere in this summary; however, what should be noted at this point is that the confluence of these two factors has placed extreme pressure on a number of Minnesota communities, particularly small rural communities with limited financial resources.

The MPCA has recently acted to expedite the review of projects by streamlining the organization of construction grants program staff. In addition, the Agency has taken steps to improve quality control in the technical review of projects. While these actions are expected to significantly expedite projects, it is important to note that project delays have frequently resulted from insufficiency in the funds necessary to award advances and grants which will move communities through planning and design and construction. This factor must be kept in mind, particularly when comparing the Minnesota program to states such as Wisconsin, which has allocated significantly more funding to wastewater treatment.

Strategies for Agency Review and Community Assistance - Three alternative strategies - "Enforcement", "Review and Assistance", and "Performance of Municipal Engineering Services" - were evaluated as approaches to Agency review and community assistance:

- 1) **Enforcement (goal-oriented) Strategy.** MPCA efforts would focus on achieving compliance with discharge standards. The Agency's role would be limited to providing financial assistance with a minimum of review. Community assistance would be by special request only. This approach would simplify review and give communities greater control over budgeting and project development. However, less oversight could result in increased system failure, correction of which would be the sole responsibility of the community.
- 2) **Review and Community Assistance (current procedure - see above)**
- 3) **Performance of Municipal Engineering Services.** The Agency would work directly with communities, providing planning, design and engineering services in lieu of consulting engineers. This approach could result in improved quality control and reduced duplication of effort and expense through standardization of certain design elements. It would, however, require increased Agency technical staff, and could increase the State's liability while curtailing business for consulting firms.

VI. CREATIVE TECHNOLOGY

The Federal Innovative/Alternative Program - Creative technology has centered around the federal innovative/alternative (I/A) program, which has been in existence since 1977. Systems designated as I/A have received 10% (20% now) more federal funding than conventional systems. Approximately sixty innovative (unproven but potentially more cost effective, or having significant environmental benefit) systems and 110 alternative (land application) systems have been approved for construction in Minnesota since 1977. The Minnesota Pollution Control Agency Division of Water Quality has served as a facilitator of such innovative and alternative technologies by disseminating information and by assisting municipalities, consultants, and vendors as needed. The consultants and municipalities, however, have historically been reluctant to propose or utilize new, unproven technologies unless substantial funding incentives existed or unless the cost saving was substantial in relation to the total project.

The Future of Creative Technology and the Role of the Agency - The use of creative technology in the past has not resulted in substantial cost savings since costs have been similar to those of conventional systems. However, some creative systems now being proposed, such as sequencing batch reactors, appear to cost significantly less. Moreover, such creative technologies as spray irrigation have substantial benefits. While desirable, the use of creative technology may decline if the Federal I/A program is cut back or eliminated. With or without the federal I/A program, alternative strategies the Agency could utilize in managing creative technology include: "Risk Avoidance", "Facilitation" and "Promotion". Possible actions involved with these strategies range from active discouragement and refusal to fund creative technology, to solicitation and endorsement of creative treatment methods, and provision of funding of failure corrections. The Agency could also facilitate partial plant upgrades and "low tech" solutions.

PREFACE

The following Report has been prepared by Minnesota Pollution Control Agency (MPCA) staff as a resource document for: the Legislative Committees on Local & Urban Affairs, and Waste Management, the MPCA Board and Board Committees, and advisory groups interested in effective, efficient municipal wastewater treatment for Minnesota communities.

The Report provides background information regarding municipal wastewater treatment needs and financing, clarifies the financial impact of treatment on communities and households throughout the state, and explores financial, technical and administrative methods of providing financially viable treatment.

The intent of the Report is to encourage discussion and thereby engender programs which effectively utilize and direct limited resources to meet the overall goal of the Agency's efforts in municipal wastewater treatment: Enabling Minnesota communities to effectively abate pollution *on a continuous, long term basis*, in accordance with National Pollutant Discharge Elimination System (NPDES) Permit conditions.

After briefly introducing the Agency's legislative responsibilities, water quality standards, and the current construction grants program, the Report explores construction needs, financial issues, and administrative and technical considerations. The Report is divided into five sections:

- Municipal Wastewater Treatment Facilities Construction Needs
- Financing Wastewater Treatment Facilities - A General Introduction
- Financing Wastewater Treatment Facilities - Alternatives
- Agency Review and Community Assistance
- Engineering/Technical and Administrative Considerations
& Creative Technology

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INTRODUCTION

A. LEGISLATIVE RESPONSIBILITIES

The Minnesota Pollution Control Agency (the Agency) is charged with certain powers and duties in Minnesota Statutes Sections 115 and 116, including:

- o Administration of federal wastewater treatment facilities grant funds made available under the Federal Clean Water Act, 33 USC 1251, et. seq. (Minnesota Statutes Sections 116.16 and 116.18);
- o Administration of the independent state grants program (Minnesota Statutes Section 116.18, Subdivision 3a); and
- o Review of engineering reports and plans and specifications for wastewater treatment facilities (Minnesota Statutes Section 115.03, Subdivision 1 (f))
- o Permitting and regulating wastewater discharges (Minnesota Statutes Section 115.03, Subdivision 1 (c) and (e)).

In addition, Minnesota Statutes Section 471A.07 has directed the Agency as follows:

On or before January 1, 1987, the Pollution Control Agency shall submit to the legislature proposed legislation and draft implementing regulations providing for 1) The use by the administrator of unrestricted funds to provide grants and loans for related facilities that constitute wastewater treatment facilities as defined by section 115.71, subdivision 8, 2) The use of such funding as a means of speeding construction of wastewater treatment facilities and better targeting scarce unrestricted funds to help finance wastewater treatment facilities (including reimbursement of municipalities for a portion of the capital cost component in service contracts under capital cost component loans and capital cost component grants).

B. WATER QUALITY STANDARDS

The Agency has been establishing and promulgating water quality standards since the early 1960's. All waters of the State are classified for use, and assigned a specific water quality standard. The standards are enforced through effluent limits imposed on wastewater discharges. Secondary treatment, as defined by federal regulations, is established as the minimum level of treatment required of all sewage discharges to waters of the State. In some cases the State has additional secondary treatment requirements. Secondary treatment requirements are contained in Minnesota Rules Chapter 7050.0210, Subpart 6. A task force consisting of Agency staff and consulting engineers is currently reviewing the rules and standards to determine whether or not to recommend any change in secondary treatment standards in the next triannual review of the water quality standards.

When secondary treatment cannot ensure adequate protection and meet established water quality standards, additional "advanced" treatment becomes necessary. Examples of advanced treatment include the removal of phosphorus from sewage

effluents to protect lakes from further eutrophication; the removal of ammonia to reduce toxicity and preserve fish in the receiving stream; and removal of further oxygen demanding material (BOD - biochemical oxygen demand) below secondary levels (25 milligrams per liter), again to preserve fish. Table 1 lists municipal wastewater treatment facilities with "advanced" treatment requirements.

In recent years the Agency has evaluated treatment requirements and, where appropriate, reclassified waters or reduced requirements on municipal discharges that are not affecting the use of receiving waters. Waters designated as Class 7, for example, are limited resource value waters that do not require levels of treatment applicable to discharges to waters classified as fishable and swimmable.

C. PROGRAM OVERVIEW

The current federal wastewater treatment facilities grants program is administered by the MPCA under delegation from the U. S. Environmental Protection Agency (EPA). The federal program provides a 55% basic grant, plus an additional 20% for the portion of a project designated as innovative (new) or alternative (applying wastewater on land as treatment) technology.

Table 2 indicates Minnesota's allocation of federal construction funding by fiscal year. Note that the local share as a percentage of total project cost has varied considerably during the nearly three decades the federal government has provided assistance for water pollution abatement.

The MPCA also administers the independent state grants program, which is funded by the state cigarette tax. The independent state grants program provides a 50% basic grant, plus an additional 15% for advanced treatment. Cities are funded in priority order based on water quality criteria contained in a system approved by the EPA.

Table 3 indicates the State's contribution to construction grants funding. Table 4 describes the process whereby a community receives funding through the current federal and state programs as administered by the MPCA. Table 5 provides a comparison of the funding under the federal program and the independent state program.

D. FINANCIAL CAPABILITY AND THE JULY 1, 1988 FEDERAL DEADLINE

Effective October 1, 1984 (federal FY 1985) the basic federal grant provided to communities for the construction of treatment facilities was reduced from 75% to 55%. This reduction in the federal grant percentage has placed additional pressure on local financial resources, and in a number of situations has precipitated a crisis regarding local financing of critically needed pollution control projects.

The State has acted to redress the added local financial burden by supplementing the current federal and state programs with hardship grants of from 0% to 15%. But many cities are still unable to bear the burden of the local share.

Federal law requires that all municipal dischargers be in compliance with the conditions of their permits by July 1, 1988. The National Municipal Policy

promulgated by the EPA requires that cities proceed to construct wastewater treatment facilities, regardless of the availability of grant funds. Moreover, the EPA will not award a grant to any city if construction will be completed after July 1, 1988, unless a consent decree containing a specific schedule is signed by the city and the Agency and filed in court.

Federal grant appropriations are expected to sunset in Fiscal Year 1990 and be replaced by a revolving loan fund. Based on current experience, particularly with small rural communities, it is questionable whether a loan program, even at extremely favorable interest rates, would resolve the affordability problem facing an increasing number of Minnesota communities.

The State is at a critical juncture, and it is imperative that the continuing need for municipal wastewater treatment in Minnesota be evaluated, that programs are devised, and that adequate financial resources are secured to ensure effective and continuing wastewater treatment.

INTRODUCTION - TABLE 1

ADVANCED TREATMENT MUNICIPAL WASTEWATER TREATMENT FACILITIES AS OF OCTOBER 30, 1986

The following is a list of all Minnesota municipal wastewater treatment facilities with advanced treatment requirements. Facilities are included if they have limits on total phosphorous or un-ionized ammonia, or if they have Carbonaceous Biochemical Oxygen Demand (CBOD) or Total Biochemical Oxygen Demand (BOD) limits more restrictive than 25 milligrams per liter.

For each facility, the following items are listed:

ADDLIMS - an * indicates that there are limits for substances other than those on the main file. The 21 most commonly listed substances are on the main file.

TSS - limit for total suspended solids

CBOD5 - limit for carbonaceous BOD or total BOD, whichever is applicable

TOTP - limit for total phosphorous

NH3N - limit for un-ionized ammonia

EGRP - effluent limit group

NPID - NPDES permit number

NAME - name of discharger

WGRP - water quality standards group of river reach

W006 is equivalent to class 2B3B, W009 to class 7, etc.

RCHNAME - name of the river reach which is the point of discharge

This list is a general inventory and may not include updates regarding specific facilities.

OBS	ADDLIMS	TSS	CBOD5	TOTP	NH3N	EGRP	NPID	NAME	WGRP	RCHNAME
2		30	25		2,-,-,-	23	MN0021261	ADAMS	W006	TRIB TO LITTLE CEDAR R
6		30	25	1.0		4	MN0020575	ALBANY	W009	UPPER S BR TWO RIVERS
7		30	05		1,3,7,3	56	MN0041092	ALBERT LEA	W006	SHELL ROCK RIVER
8		30	25	1.0		4	MN0022586	ALBERTVILLE	W006	MUD LAKE
9		30	25	1.0		4	MN0040738	ALEXANDRIA LK SAN DIST	W006	SLOUGH TO LAKE WINONA
12		30	15			3	MN0022624	AMBOY	W009	JD 49 (PROVIDENCE CR)
14		30	05		1,4,8,4	11	MN0020834	ARLINGTON	W006	HIGH ISLAND CREEK
17		30	15			3	MN0022675	AUDUBON	W009	DT TO REEP LAKE
18		30	05	1.0		22	MN0020494	AURORA	W006	TRIB TO ST LOUIS RIVER
19		30	25		4,10,21,9	24	MN0022683	AUSTIN	W006	RED CEDAR RIVER
20		30	25	1.0		4	MN0020656	BABBITT	W006	HAY LAKE
21		30	25	1.0		4	MN0022705	BARNUM	W006	HANGING HORN LAKE
23		30	25	1.0		4	MN0022721	BATTLE LAKE	W006	SLAUGHTERHOUSE SLOUGH
24		30	25	1.0		4	MN0040754	BEAVER BAY	W002	BEAVER RIVER
25		30	15			3	MN0022781	BELVIEW	W009	JD 12 (RICE CREEK)
26		30	25	0.3		44	MN0022462	BEMIDJI	W006	LAKE BEMIDJI
27		30	05		3,10,-,4	37	MN0020036	BENSON	W006	CHIPPEWA RIVER
28		30	15			3	MN0022799	BERTHA	W009	CD 15 (BEAR CREEK)
30		30	25	1.0		4	MN0021610	BIWABIK	W006	EMBARRASS RIVER
31		30	05	1.0	1,4,8,4	18	MN0022837	BLACKDUCK	W006	COBURN CREEK
33		30	15			3	MN0021822	BLOOMING PRAIRIE	W009	CR TO CEDAR RIVER
34		30	25		1,4,-,4	46	MN0020532	BLUE EARTH	W006	BLUE EARTH RIVER
36		30	05		1,4,8,4	11	MN0022845	BOCK	W008	BOGUS BROOK
38		30	25	1.0		4	MN0020648	BOVEY-COLERAINE	W002	TROUT LAKE
39		30	15			3	MN0022870	BRAHAM	W009	DT TO LR STANCHFIELD BR
40		30	25	1.0		4	MN0022896	BRANDON	W009	SL TO UNNAMED DITCH
41		30	25	1.0		4	MN0046507	BREITUNG WATER & SEWER	W002	EAST TWO RIVER
42		30	25	1.0		4	MN0022942	BROWN'S VALLEY	W007	LITTLE MINNESOTA RIVER
43		30	15			3	MN0022934	BROWNSDALE	W009	TRIB TO ROBERT CREEK
44		30	05			8	MN0022951	BROWNTON	W006	BUFFALO CREEK
46		30	15	1.0	4.5	30	MN0022969	BUHL	W009	BUHL CREEK
47		30	15			3	MN0049239	BYRON	W009	CR TO SBR MFK ZUMBRO R
48		30	15			3	MN0022985	CALLAWAY	W009	DT TO BUFFALO RIVER
49		30	15	1.0		5	MN0020397	CALUMET	W009	CR TO U PANASA LAKE
50		30	05		1,4,8,4	11	MN0020354	CANBY	W007	CANBY CREEK
51		30	15			3	MN0023001	CANTON	W009	CR TO WEISEL CREEK
53		30	25	1.0		4	MN0020966	CHISAGO CITY-LINDSTROM	W006	WALLMARK LAKE
54		30	15	1.0		5	MN0020117	CHISHOLM	W009	BARBER CREEK (E SWAN R)

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OBS	ADDLIMS	TSS	CBOD5	TOTP	NH3N	EGRP	NPID	NAME	WGRP	RCHNAME
55		30	15			3	MN0021717	CHOKIO	W009	MUD CREEK
56		30	05		1,4,8,4	11	MN0021288	CLARISSA	W006	EAGLE CREEK
57		30	05		1,4,8,4	11	MN0020931	CLEARBROOK	W006	SILVER CREEK
58		30	15			3	MN0023051	CLEVELAND	W009	CHERRY CREEK
59		30	15			3	MN0021687	COMFREY	W009	ALTERMATTS CREEK
61		30	05		4,-,-,-	38	MN0021369	COOK	W006	LITTLE FORK RIVER
62		30	05	1.0	1,4,8,4	18	MN0021091	CROMWELL	W006	TAMARAC RIVER
63		30	25	1.0		4	MN0020311	CROSBY	W006	SERPENT CREEK
70		30	25	1.0		4	MN0023159	DARWIN	W006	LAKE DARWIN
71		30	25	1.0		4	MN0030511	DEERWOOD	W006	CRANBERRY LAKE
74		30	20	1.0		27	MN0020192	DETROIT LAKES	W006	ST CLAIR LAKE
76		30	05			8	MN0046868	DOVER-EYOTA-ST CHARLES	W006	S FK WHITEWATER RIVER
77		30	15			3	MN0023256	EAGLE LAKE	W009	DT TO UNNAMED STREAM
78		30	15			3	MN0023272	ECHO	W009	CD 1
79		30	15			3	MN0023299	ELGIN	W009	N FK WHITEWATER RIVER
80		30	05		1,4,8,4	11	MN0023302	ELLSWORTH	W006	NORWEGIAN CREEK
81		30	15			3	MN0023311	EMMONS	W009	CR TO LIME CREEK
82		30	15	1.0		5	MN0022527	ERSKINE	W009	DT TO BADGER LAKE
83		30	15	1.0		5	MN0023337	EVELETH	W009	ELBOW CREEK
84		30	10			17	MN0030112	FAIRMONT	W006	CENTER CREEK
86		30	25	1.0		4	MN0050628	FERGUS FALLS	W004	OTTERTAIL RIVER
89		30	25	1.0		4	MN0023442	FLOODWOOD	W006	SAVANNAH RIVER
90		30	15			3	MN0023451	FOLEY	W009	STONY BROOK
91		30	25	1.0		4	MN0022021	FRAZEE	W006	ALBERTSON LAKE
94		30	25	1.0		4	MN0023515	GARFIELD	W009	CD 23
95		30	25	1.0		4	MN0021334	GAYLORD	W006	MUD LAKE AND OUTLET
96		30	15	1.0		5	MN0020125	GILBERT	W009	DT TO HORSESHOE LAKE
97		30	05			13	MN0022233	GLENCOE	W006	BUFFALO CREEK
98		30	25	1.5		49	MN0021806	GLENWOOD	W006	PERKINS CREEK
99		30	05		1,4,8,4	11	MN0020541	GONVICK	W006	LOST RIVER
100		30	15			3	MN0020958	GOODHUE	W009	TROUT BROOK
101		30	25	1.0		4	MN0020010	GRAND MARAIS	W001	LAKE SUPERIOR
106		30	25	1.0		4	MN0023566	GREY EAGLE	W006	TRACE LAKE
107		30	05		1,4,8,4	11	MN0023574	GROVE CITY	W009	CREEK TO GROVE CREEK
108		30	25	1.0		4	MN0021903	HACKENSACK	W006	BOY RIVER

OBS	ADDLIMS	TSS	CBOD5	TOTP	NH3N	EGRP	NPID	NAME	WGRP	RCHNAME
109		30	15			3	MN0023582	HANCOCK	W009	DT TO JD 9
110		30	15			3	MN0022322	HARMONY	W009	PINE CREEK
111		30	15			3	MN0023604	HATFIELD	W009	UNNAMED CR TO CREEK
112		30	05		1,4,8,4	11	MN0023612	HAYFIELD	W006	CR TO E FK CEDAR R
113		30	15			3	MN0025445	HECTOR	W009	JD 15
116		30	05	1.0	1.1,11,17.4,16.9	39	MN0030517	HIBBING (NORTH)	W006	PENOBSCOT CREEK
117		30	15,11,15,15	1.0	21.4,4.9,13.8,15	69	MN0030643	HIBBING (SOUTH)	W006	EAST SWAN CREEK
118		30	05	1.0		22	MN0030988	HIBBING (W)-KELLY LAKE	W008	WEST SWAN RIVER
119		30	05		1,4,8,4	11	MN0023710	HOLDINGFORD	W006	S BR TWO RIVERS
120		30	25	1.0		4	MN0023744	HOWARD LAKE	W006	MUD LAKE
121		30	25	1.0		4	MN0020206	HOYT LAKES	W006	WHITEWATER LAKE
122	*	30	10		1,4,12,2	73	MN0020265	HUTCHINSON	W006	S FK CROW RIVER
123		30	05	1.0	1,4,8,4	18	MN0020079	IRON JUNCTION	W009	DT TO ELBOW CREEK
124		30	25	1.0		4	MN0032913	IRONTON	W006	IRONTON CREEK
125		30	15			3	MN0023833	JASPER	W009	CR TO SPLIT ROCK CREEK
126		30	15			3	MN0023841	KANDIYOH	W009	DT TO CD 23A
127		30	25	1.0	2,7,-7	25	MN0022012	KEEWATIN	W008	WELCOME CREEK
128		30	15			3	MN0020583	KERKHOVEN	W009	CD 61
129		30	25	1.0		4	MN0052230	KNIFE RIVER SAN DIST	W002	KNIFE RIVER
133		30	25	1.0		4	MN0021164	LAKE CRYSTAL	W009	MINNEOPA CREEK
134		30	15	1.0		5	MN0023892	LAKE PARK	W009	DT TO HAY CREEK
135		30	15			3	MN0023931	LE CENTER	W009	CD 51
136		30	05		1,4,8,4	11	MN0023973	LITCHFIELD	W008	JEWETT CREEK
137		30	25	1.0		4	MN0046655	LONGVILLE	W006	BOY RIVER
138		30	25	1.0		4	MN0024007	LOWRY	W009	DT TO CD 7
139		30	25		10,-,-,-	41	MN0020141	LUVERNE	W007	ROCK RIVER
140		30	15			3	MN0020877	MABEL	W009	RICEFORD CREEK
141		30	10			17	MN0024040	MADIELIA	W006	WATONWAN RIVER
142		30	15			3	MN0024058	MADISON	W009	DT TO CD 27
143		30	05			8	MN0040789	MADISON LAKE	W006	LE SUEUR RIVER
144		30	25	1.0		4	MN0024082	MAPLE LAKE	W006	MUD LAKE
145		30	25	1.0		4	MN0020214	MARBLE	W006	MUD LAKE
146		30	05			8	MN0022179	MARSHALL	W006	REDWOOD RIVER
147		30	25	1.0		4	MN0024031	MCKINLEY	W006	MCKINLEY LAKE
149		30	25	1.0		4	MN0020711	MEADOWLANDS	W009	TRIB TO WHITEFACE RIVER
151		30	05	1.0	2.5	43	MN0020290	MELROSE	W006	SAUK RIVER
152		30	25	1.0		4	MN0024139	MENAHGA	W008	BLUEBERRY RIVER
155		30	05		1,4,8,4	11	MN0024198	MINNEOTA	W007	S BR YELLOW MEDICINE R
156		30	25	1.0		4	MN0024201	MINNESOTA LAKE	W009	STALKMAN MARSH
158		30	15			3	MN0024210	MONTGOMERY	W009	DT TO CD 54
159		15	15			14	MN0049069	MOORHEAD	W004	RED RIVER OF THE NORTH
160		30	15			3	MN0020443	MORGAN	W009	CD 109
161		30	25	1.0		4	MN0040835	MOUNTAIN IRON	W006	EAST TWO RIVER
162		30	25	1.0		4	MN0029912	MWCC-BAYPORT	W004	LAKE ST CROIX

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OBS	ADDLIMS	TSS	CBOD5	TOTP	NH3N	EGRP	NPID	NAME	WGRP	RCHNAME
163		30	10		1.0	35	MN0045845	MWCC-EMPIRE	W006	VERMILLION RIVER
164		30	25	1.0		4	MN0024091	MWCC-MAPLE PLAIN	W006	KATRINA LAKE
165	*	30	10,24,24,24		5 TO 21	36	MN0029815	MWCC-METRO	W007	MISSISSIPPI RIVER
166		30	25	1.0		4	MN0025488	MWCC-ROSEMOUNT	W006	SPRING LAKE-MISSISSIPPI
167		30	25	1.0		4	MN0029998	MWCC-STILLWATER	W004	ST CROIX RIVER
168		30	25	1.0		31	MN0046621	NASHWAUK	W009	DT TO O'BRIEN BROOK
169		30	05	1.0		22	MN0021741	NEW LONDON	W006	M FK CROW RIVER
170		30	05		1,4,8,4	11	MN0020150	NEW PRAGUE	W006	CR TO RAVEN STREAM
171		30	15			3	MN0021032	NEW RICHLAND	W009	DT TO BOOT CREEK
172		30	15	1.0		5	MN0024317	NEW YORK MILLS	W009	CD 65
175		30	15			3	MN0024392	NORWOOD	W009	CD 4
177		30	15			3	MN0020907	OLIVIA	W009	CD 63 (E FK BEAVER CR)
178		30	25	1.0		4	MN0020028	OSAKIS	W006	SWIMS LAKE
179		30	05		1,4,8,4	11	MN0024449	OSTRANDER	W002	S BR ROOT RIVER
180		30	05		1.5,7,-,4	40	MN0024457	OWATONNA	W006	STRAIGHT RIVER
186		30	25	1.0		4	MN0020087	PARK RAPIDS	W006	FISH HOOK R
187		30	25	1.0		4	MN0024465	PARKER'S PRAIRIE	W006	ADLEY LAKE
188		30	25	1.0		4	MN0020168	PAYNESVILLE	W006	N FK CROW RIVER
190		30	25	1.0		4	MN0024511	PINE ISLAND	W006	M FK ZUMBRO RIVER
191		30	05			8	MN0021636	PIPESTONE	W007	PIPESTONE CREEK
192		30	15		3,10,23,5	34	MN0022063	PLAINVIEW	W009	CR TO NF WHITEWATER
193		30	25		1.5,5,11,7	50	MN0020401	REDWOOD FALLS	W006	REDWOOD RIVER
194		30	15			3	MN0020737	RENVILLE	W009	CD 45
196		30	25	1.0		4	MN0024597	RICHMOND	W006	SAUK RIVER
197		30	14	1.0	1.6	33	MN0024619	ROCHESTER	W006	S FK ZUMBRO RIVER
200		30	15			3	MN0021873	ROTHSAY	W009	UNNAMED STREAM
201		30	05		1,4,8,4	11	MN0029611	ROUND LAKE	W006	DT TO ROUND LAKE
203		30	05		1,4,8,4	11	MN0024686	RUSSELL	W006	REDWOOD RIVER
204		30	15			3	MN0049646	SABIN	W009	CD 32
205		30	15			3	MN0024708	SACRED HEART	W009	CD 104
206		30	10			28	MN0024821	SAUK CENTRE	W006	SAUK RIVER
209		30	15			3	MN0024872	SHERBURN	W009	JD 11
210		30	25	1.0		4	MN0024899	SILVER BAY	W001	LAKE SUPERIOR
211		30	25	1.0		4	MN0024902	SILVER LAKE	W006	SILVER LAKE
212		30	25	1.0		4	MN0020478	SPICER	W006	WOODCOCK LAKE
213		30	15			3	MN0021440	SPRING GROVE	W009	CR TO N FK BEAR CREEK
214		30	15		1,4,8,4	48	MN0024961	SPRING VALLEY	W002	SPRING VALLEY CREEK
215		30	15			3	MN0024759	ST JAMES	W009	SLOUGH TO ST JAMES CR
216		30	25	1.0		4	MN0024767	ST JOSEPH	W006	WATAB RIVER

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OBS	ADDLIMS	TSS	CBOD5	TOTP	NH3N	EGRP	NPID	NAME	WGRP	RCHNAME
219		30	05		1,4,8,4	11	MN0025003	STEWART	W006	BUFFALO CREEK
222		30	15	1.0		5	MN0025011	TACONITE	W009	DITCH TO SWAMP
224		30	15			3	MN0021431	THIEF RIVER FALLS	W009	DT TO RED LAKE RIVER
225		30	25	1.0		4	MN0025038	TOWER-BREITUNG	W006	EAST TWO RIVER
226		30	15			3	MN0022071	TRIMONT	W008	CEDAR RUN CREEK
227		30	15			3	MN0021652	TRUMAN	W009	DT TO UNNAMED STREAM
228		30	25	1.0		4	MN0022250	TWO HARBORS	W001	LAKE SUPERIOR
230		30	25	1.0		4	MN0025071	UNDERWOOD	W006	SWAMP TO GERMAN LAKE
234		30	15	1.0		5	MN0030163	VIRGINIA	W009	MANGANIKIA CREEK
236		30	15			3	MN0025151	WABASSO	W009	UNNAMED DT TO DITCH
237		30	05			8	MN0020672	WADENA	W002	UNION CREEK
238		30	15			3	MN0021849	WALDORF	W009	DT TO LITTLE COBB RIVER
239		30	15			3	MN0021776	WALNUT GROVE	W009	DT TO PELL CREEK
240		30	25	1.0		4	MN0020524	WANDA	W006	WILLOW LAKE
241		30	25	1.0		4	MN0025194	WARROAD	W009	DT TO ROSEAU RIVER
242		30	10		1,4,8,3	42	MN0020796	WASECA	W009	DT TO CD 12
243		30	25	1.0		4	MN0025208	WATERVILLE	W006	LAKE SAKATAH-CANNON R
244		30	05			8	MN0021296	WELCOME	W006	LILY CREEK
245		30	15			3	MN0050067	WEST CONCORD	W009	TRIB TO M FK ZUMBRO R
246		30	05		1,4,8,4	11	MN0047287	WHEATON	W008	MUSTINKA RIVER
248		30	05		1,4,8,4	11	MN0021679	WILLIAMS	W006	WILLIAMS CREEK (CD-1)
249		30	05			8	MN0022217	WINDOM	W006	W FK DES MOINES RIVER
250		30	40			45	MN0030147	WINONA	W006	MISSISSIPPI RIVER
251		30	15			3	MN0051098	WINTHROP	W009	CD 42
252		30	25	1.0		4	MN0025283	WINTON	W009	SWAMP TO FALL LAKE
253		30	25	1.0		4	MN0049786	WLSSP DULUTH MAIN PLT	W001	LAKE SUPERIOR
255		30	25		7,14,16,14	32	MN0031186	WORTHINGTON MAIN PLANT	W009	OKABENA CREEK
256		30	15			3	MN0020826	WYKOFF	W009	CARTER'S CREEK

INTRODUCTION - TABLE 2

CONSTRUCTION GRANTS PROGRAM
MINNESOTA'S ALLOCATION OF FEDERAL FUNDS
BY FISCAL YEAR

FISCAL YEAR	ALLOCATION	% OF NATIONAL APPR.	% LOCAL RESPONSIBILITY
1957	\$ 929,450	1.859	70%
1958	923,250	1.847	70%
1959	929,175	1.858	70%
1960	928,000	1.856	70%
1961	930,000	1.861	70%
1962	1,547,907	1.935	70%
1963	1,772,313	1.969	70%
1964	1,799,400	1.799	70%
1965	1,793,100	1.793	70%
1966	2,359,330	1.815	70%
1967	2,891,680	1.928	70%
1968	3,898,060	1.920	70%
1969	4,101,500	1.917	70%
1970	14,992,480	1.874	25%
1971	15,192,470	1.519	25%
1972	36,850,650	1.843	10%
1973	40,638,000	2.032	10%
1974	60,957,000	2.032	10%
1975	64,247,300	1.606	10%
1976	172,024,500	1.911	10%
1977	15,070,000	1.507	10%
1978	84,109,500	1.8691	10%
1979	77,414,600	1.8691	10%
1980	54,933,474	1.8691	10%
1981	46,980,353	1.8691	10%
1982	44,146,400	1.8432	10%
1983	44,964,000	1.8735	10%
1984	44,964,000	1.8735	10%
1985	44,964,000	1.8735	30-45%
1986	<u>33,240,000</u>	1.8735	25-45%
	\$920,491,892		

CONSTRUCTION GRANTS PROGRAM

STATE OF MINNESOTA CONTRIBUTION

BONDING AUTHORITY

LAWS OF 1971	\$ 25,000,000
LAWS OF 1973	30,000,000
LAWS OF 1975	29,000,000
LAWS OF 1977	40,000,000
LAWS OF 1979	20,000,000
LAWS OF 1984	12,000,000
CRYSTAL WATERS ACT APPROPRIATION	1,498,225
NET OF INTEREST AND BOND SALE EXPENSE	<u>211,543</u>
TOTAL BONDS	\$157,709,768

GENERAL FUND

\$ 11,000,000

LAWS OF 1975

PUBLIC HEALTH FUND

\$ 33,357,000

LAWS OF 1985	<u>APPROP.</u>	<u>REVENUES</u>
WASTEWATER GRANTS	\$19,850,000	\$ 9,607,000
COMBINED SEWER OVERFLOW	<u>6,750,000</u>	<u>6,750,000</u>
TOTAL FOR FY 1986	\$26,600,000	\$16,357,000
WASTEWATER GRANTS	\$21,750,000	\$10,250,000
COMBINED SEWER OVERFLOW	<u>6,750,000</u>	<u>6,750,000</u>
TOTAL FOR FY 1987	\$28,500,000	\$17,000,000
TOTAL BIENNIUM	\$55,100,000	\$33,357,000
TOTAL STATE CONTRIBUTION		<u><u>\$202,066,768</u></u>

INTRODUCTION - TABLE 4

WASTEWATER TREATMENT FACILITIES FUNDING PROCESS

STEP 1 FACILITIES PLANNING	STEP 2 DESIGN	STEP 3 CONSTRUCTION
1-CITY HIRES A CONSULTANT	1-CITY APPLIES FOR ALLOWANCE	1-CITY ACHIEVES RANKING HIGH ENOUGH TO BE FUNDED
2-CITY APPLIES FOR ALLOWANCE	2-CITY PREPARES PLANS AND SPECIFICATIONS	2-CITY SUBMITS APPLICATION FOR REVIEW
3-CITY DRAFTS FACILITIES PLAN TO ANSWER THESE QUESTIONS: What standards do we have to meet? What is our population now and in 20 years? What are the flows to the plant and can the excessive be eliminated? What does the wastewater consist of? Do industries need to pre-treat their wastewater? What methods of treatment are feasible? Can we upgrade our present facilities? Must we build new facilities? What are the costs of the feasible alternatives? Which is most cost effective? Can we afford it? What are the impacts on the environment?	3-CITY DRAFTS USER CHARGE SYSTEM: That generates sufficient revenue to pay for operation, maintenance, and replacement of equipment as it wears out, and is proportional for all users *	3-AGENCY OR USEPA AWARDS GRANT
4-CITY SELECTS COST-EFFECTIVE ALTERNATIVE AND SUBMITS FACILITIES PLAN TO AGENCY	4-CITY SUBMITS PLANS AND SPECIFICATIONS AND USER CHARGE SYSTEM TO AGENCY	4-AGENCY AUTHORIZES BIDDING
5-AGENCY REVIEWS PLAN Agency assures compliance with state and federal rules and regulations Agency prepares: a-Environmental Assessment (Federal requirement) b-Environmental Assessment Worksheet (State requirement)	5-AGENCY REVIEWS FOR COMPLIANCE WITH FEDERAL AND STATE RULES AND REGULATIONS AND ACCEPTED ENGINEERING STANDARDS	5-CITY ADVERTISES FOR BIDS
6-PUBLIC IS INFORMED City holds public hearing EPA issues FONSI Agency publishes notice in EQB Monitor	6-AGENCY APPROVES PLANS AND SPECIFICATIONS AND USER CHARGE SYSTEM	6-CITY SELECTS LOW, RESPONSIVE, RESPONSIBLE BIDDER
7-AGENCY APPROVES PLAN	7-CITY WAITS TO ACHIEVE HIGH ENOUGH PRIORITY RANKING TO BE REACHED WITH AVAILABLE FUNDS OR 8-PROCEEDS WITH CONSTRUCTION UNDER STATE REIMBURSEMENT PROGRAM	7-AGENCY AUTHORIZES CONSTRUCTION
		8-CONSTRUCTION BEGINS
		9-AGENCY MAKES PERIODIC PAYMENTS AND INSPECTIONS (Corps of Engineers performs this function for USEPA)
		10-CITY INITIATES OPERATION
		11-ONE YEAR START-UP
		12-CITY CERTIFIES THAT FACILITIES WILL MEET PERMIT CONDITIONS OR
		13-CITY PREPARES CORRECTIVE ACTION PLAN AND MAKES CORRECTIONS
		14-CITY COMPLIES WITH ALL CONDITIONS OF GRANT
		15-AGENCY MAKES FINAL PAYMENT
		16-CLEAN WATER

* "Replacement," as stipulated in the User Charge System, is not for the construction of a new facility, rather it is to ensure adequate funds for the replacement of such major equipment items as pumps, compressors, etc., on the existing facility.

INTRODUCTION - TABLE 5

COMPARISON OF FEDERAL AND STATE PROGRAMS FUNDING WASTEWATER TREATMENT FACILITIES

FEDERAL	STATE
GRANT AMOUNTS	
55% basic grants	50% basic grants
Another 20% for innovative or alternative technology	No additional funding for innovative or alternative technology
No additional funding for advanced treatment	An additional 15% for advanced treatment
0-15% supplemental hardship grants	0-15% supplemental hardship grants
MAXIMUM ONE GRANTEE MAY RECEIVE PER YEAR	
State has discretion on maximum	20% of available state funds
ECONOMIC DEVELOPMENT SET-ASIDE	
None	10% of state funds
REIMBURSEMENT	
Grant may not be awarded for work already completed	City may construct and be reimbursed when priority ranking is high enough
REFUSAL OF FUNDING	
May be required to proceed without funding	City is ineligible that year and the following year and may be required to proceed without funding
ELIGIBILITY OF PREVIOUSLY FUNDED CITIES	
If funded after 1956, not eligible again unless effluent standards change or plant exceeds design life	If funded after 1972, not eligible again unless effluent standards change or, if funded after 10/1/84, growth occurs
RESERVE CAPACITY	
Not eligible	Capacity for 20 years is eligible
STABILIZATION POND LAND	
Not eligible unless wastewater is used for spray irrigation	Eligible
COLLECTION SYSTEMS	
Not eligible unless Governor designates up to 20% of allotment for collection to homes existing in 1972	Eligible in completely unsewered cities and townships, but not fundable due to low priority ranking
SEASONAL HOMES	
Capacity for treating those existing in 1972 is eligible	Not eligible

MUNICIPAL WASTEWATER TREATMENT FACILITY CONSTRUCTION NEEDS

I. ISSUE STATEMENT

The compiling, categorizing, and assigning of priorities to municipal wastewater treatment needs throughout Minnesota provides a quantitative and qualitative measure of the scope of the municipal wastewater pollution problem. A summation of the estimated costs of corrective action associated with these needs indicates the extent of the problem as measured by the total estimated dollar resources necessary for correction. The priority and type of need, as defined for individual communities and groups of communities, indicates the severity of the problem and the immediacy of the need for pollution abatement.

The following section presents measures of municipal treatment facilities construction needs employed by the MPCA, and defines overall needs and priorities. This data provides a basis for recommendations regarding legislative funding requests, Agency policy, and Construction Grants Program rule making. A precise determination of the total municipal treatment needs in the state is a difficult undertaking. Numerous variables such as cost estimates, the definition of individual community problems, and water quality standards, impose limits on the precision of such a determination. Given these limitations, as accurate and reasonable a determination as is possible serves as a critical and necessary tool for planning and program development. This section describes current methods of needs determination and recommends an approach to better determine overall need.

II. DISCUSSION

The State of Minnesota and United States Environmental Protection Agency use two primary tools to describe the needs for the state and the nation:

A. STATE OF MINNESOTA NEEDS LIST

The State of Minnesota Needs List is a listing of all communities in the state which have demonstrated to the Pollution Control Agency a need for wastewater treatment facility planning, design and construction which meets the Agency's criteria as determined by Minnesota Rules Chapter 7075. Communities request placement on this list. The MPCA reviews requests and, using rule criteria, determines whether a community should be listed. The MPCA assigns point values to the community's request to determine the priority of each community relative to all other communities on the Needs List. Listings and priorities may change depending upon changes in a community's situation relative to other communities.

Chapter 7075 determines and categorizes municipal need under the following criteria:

Criteria	Points
1. Water Use - Points depend upon whether the receiving water from sewage effluent is from:	70 - 35
a. domestic consumption (Class 1, 70-55 points),	
b. fisheries and recreation (Class 2, 60-40 points),	
c. limited resource value waters (Class 7, 35	

points).

2. Type of Project - Points depend upon technology used: 10 - 160

- a. tertiary treatment (80-160 points),
- b. secondary treatment (75-150 points),
- c. collection (10 points), and
- d. combined sewer overflow (150 points).

3. Public Health - as determined by the Department of Health. 40

4. Current Treatment Technology. 20 - 40

5. Project part of a formal watershed pollution abatement plan. 15

6. Discharge is currently to an outstanding resource value water. 10

7. Proposed project will eliminate discharge to a game fish lake. 10

8. Proposed project involves multi-municipal systems. 10

9. Community was on Needs List prior to January 1, 1985. (NOTE: On January 1, 1985, the MPCA added two hundred new communities to the Needs List. The 40 points insures that communities that had developed facility plans would not be topped by new communities which had not done any planning. 40

10. Population - dependent upon size of community. 1 - 31

The state Needs List is updated continually. As communities request to be added to the Needs List, the Agency conducts an evaluation of the request and it places the community on the list per the criteria discussed above.

Also included on the Needs List are estimated costs of grant eligible portions of the proposed projects. These estimates are developed by the community, usually with the assistance of a consulting engineering firm.

B. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY NEEDS SURVEY

Every two years the United States Environmental Protection Agency (USEPA) conducts a survey of all national wastewater treatment needs. Survey data is compiled by the states and submitted to the USEPA for review and approval. The importance of the Needs Survey is that it is a critical factor in the allocation of federal grant funds to the individual states. Minnesota's current allotment is 1.8735% of the national appropriation. The current formula is:

Need Categories I, II, IVb	= 50%
Need Categories I, II, IIIa, IIIb, IVa, IVb, V	= 25%
Population	= 25%

Where Category I = Secondary Treatment
Category II = Advanced Treatment

Category IIIa = Infiltration/Inflow Correction
 Category IIIb = Major Sewer Rehabilitation
 Category IVa = Collector Sewers
 Category IVb = Interceptor Sewers
 Category V = Combined Sewer Overflow Correction

Congress is in the process of reauthorizing the Clean Water Act. It is very likely that the allocation formula and Minnesota's allocation of 1.8735% will change.

The 1986 USEPA Needs Survey is based on a reappraisal of the 1984 Survey. The USEPA required the MPCA to review the 1984 Survey and provide documented evidence of each community's need. Where such evidence was not available the community was dropped from the 1986 USEPA Needs Survey. Needs were also given reliability factors which were used to determine the total summation of needs.

C. CATEGORIES OF MUNICIPAL NEEDS

The 1986 USEPA Needs Survey is in draft, and a final report is not expected until the end of 1986. Based on preliminary information, the following breakdown has been determined:

USEPA NEEDS SURVEY

Category I	- Secondary Treatment	\$ 516,892,000
Category II	- Advanced Treatment	\$ 80,173,000
Category IIIa	- I/I Correction to Sewers	\$ 19,958,000
Category IIIb	- Major Sewer Rehabilitation	\$ 160,506,000
Category IVa	- Collector Sewers	\$ 34,653,000
Category IVb	- Interceptor Sewers	\$ 121,565,000
Category V	- Combined Sewer Overflow	\$ 239,451,000

TOTAL USEPA NEEDS SURVEY	\$1,173,288,000
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All needs described by the USEPA Needs Survey are eligible under the federal and state Construction Grants Programs; however, Category IIIb (Major Sewer Rehabilitation), Category IVa (Collector Sewers) and Category V (Combined Sewer Overflow) are eligible only if the Governor requests that up to 20% of the state's federal funding allocated be used for these need categories. Currently, the Combined Sewer Overflow Program for St. Paul, Minneapolis and South St. Paul uses the entire 20% of the Governor's discretionary funds.

Given the explanation above, the USEPA Needs Survey can be further described in terms of grant eligibility to communities as follows:

Grant Eligible Categories I, II, IIIa, IVb	\$738,678,000
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For most cities in the grants program these four categories will provide the necessary assistance for communities to build adequate wastewater treatment facilities. However, for those communities which do not have collector sewers there is a severe economic hardship since collector sewers are not eligible. Typically, collector sewers for a totally unsewered community double the total cost of the system (plant and collector sewers).

Grant Eligible Through Governor's 20% Discretionary Fund Category V (Three Metro Cities)	\$ 211,770,000
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The Governor has requested 20% of the state's federal allocation be reserved for Combined Sewer Overflow Abatement and correction for the cities of St. Paul,

Minneapolis and South St. Paul. The CSO program for the three cities is a 10 year effort to solve this major water quality problem. State, local and federal funding are involved in this program.

Grant Ineligible Categories IIb, IVa, V (Non-Metro CSO) \$ 202,669,000

The federal government has classified Category IIb (Major Sewer Rehabilitation), Category IVa (Collector Sewers) and Category V (Combined Sewer Overflow) as the lowest priority and, with the exception of the 20% Governor's discretionary funds, they do not fund these. Congress took this position in order to ensure that the nation's highest priority projects would be funded first. Most of the serious water polluting communities have sewers, but rather need new or upgraded treatment plants (Categories I and II), major interceptors (Category IVb) and, where necessary, correction of inflow and infiltration to the sewer system (Category IIa) in order to be in compliance with water quality standards. The result of this eligibility standard is that unsewered communities do not receive grant assistance for the sewer construction part of their system. Unsewered communities do not have direct discharges to surface waters. Therefore, they do not violate water quality standards; however, they may adversely impact ground water, health or quality of life.

TOTAL USEPA NEEDS SURVEY - ELIGIBLE AND INELIGIBLE \$1,173,288,000

The 1986 USEPA Needs Survey is preliminary. It is also based on 1985 costs. The final Needs Survey will be adjusted to reflect 1986 costs so the final figures are anticipated to increase. Other adjustments may be made in the final report; however, they are not expected to be major.

STATE OF MINNESOTA NEEDS LIST

To a large extent the Minnesota Needs List reflects the USEPA Needs Survey; however, there are some differences. For example, the USEPA Needs Survey may include projects which have been recently funded, but, because of survey time cut-offs, these projects have not been removed. Such projects do not appear on the state's Needs List. In addition, the USEPA Needs Survey contains all needs of the state for which there is documentation under the survey's criteria. The state may know of some additional future needs which cannot be documented, or the state may not list some needs which are not eligible for funding, such as projects which may need additional construction, but which have already been funded by the grants programs.

The state Needs List does not categorize needs as the EPA Needs Survey does, but for future program planning purposes, it is valuable to indicate major priority groups. The Needs List lists all projects according to the ranking system described above in order to establish an orderly and objective method of funding communities and projects.

The last published Needs List contains 596 communities; however, the MPCA did not have any documentation on over 50% of these needs. In 1985, all communities with needs as determined by the 1984 USEPA Needs Survey were added to the state's Needs List. The 1984 survey was based on very loose criteria, which was more strictly defined in the 1986 Needs Survey. In order to bring the state's Needs List into alignment with the needs survey, a large number of communities were dropped. The new draft Needs List contains 212 communities. The Needs List is dynamic, and as communities request and demonstrate fundable needs, they will be added to the Needs List.

The draft Needs List contains 212 communities or projects which can be generally described with the following breakdown:

- 179 have been formally ranked by the MPCA.

- 36 have not been formally ranked by the MPCA since the communities involved have not requested addition to the list and, therefore, the MPCA has not yet conducted a formal evaluation. However, the MPCA considers these real needs.
- 176 have completed facility planning, or are doing facility planning
- 198 are greater Minnesota communities.
- 31 of the greater Minnesota communities are unsewered.
- 106 of the greater Minnesota communities are on the National Municipal Policy List which requires that communities be in compliance with water quality standards by July 1, 1988.
- 11 are MWCC (Metro Waste Control Commission) projects.
- 3 are CSO projects for Minneapolis, St. Paul and South St. Paul.

The 212 communities/projects on the draft state Needs List have an estimated cost of \$1,093,840,000. A breakdown of general categories follows:

106 Greater Minnesota Sewered Communities on the National Municipal Policy List for July 1, 1988 Water Standards Compliance	\$ 185,707,000
61 Greater Minnesota Sewered Communities with Documented Needs, but not on National Municipal Policy List	\$ 83,720,000
31 Greater Minnesota Unsewered Communities	\$ 58,793,000
198 TOTAL GREATER MINNESOTA NEEDS	\$ 328,220,000
3 Metro Cities (Minneapolis, St. Paul & South St. Paul) with Combined Sewer Overflow Abatement Needs	\$ 211,770,000
11 MWCC Projects Including Upgrades to the Pig's Eye Plant	\$ 553,850,000
212 TOTAL - ALL COMMUNITIES/PROJECTS	\$1,093,840,000

Special note should be given to the unsewered communities. The 31 such communities have overall needs of \$58,793,000; however, only \$29,841,000 of that total is eligible under the grants programs. This eligibility is limited to the central treatment plant and major interceptors. This leaves \$28,952,000 for sewer construction which is not eligible in the current program. (Note previous discussion.) This eligibility question places considerable burden upon the unsewered communities in terms of the communities' responsibility for capital investment. To date, the Agency has attempted to tender grants to 8 unsewered communities which have decided they could not afford to build a system in which only the treatment plant was eligible for grant assistance. These 8 communities remain on the list, and they are included in the total of 31 unsewered communities.

In addition, there is a large potential for unsewered community needs which have not yet been brought to the attention of the MPCA.

D. PRIORITIZATION OF STATE NEEDS

A billion dollars in state needs for wastewater treatment facility construction is difficult to place in perspective; therefore, the following is an attempt to prioritize these needs:

1. 106 Greater Minnesota Sewered which are on the National Municipal Policy List for July 1, 1988 Water Standards Compliance.	\$ 185,707,000
2. MWCC Minneapolis East Interceptor Project which is being funded by annual installments under the Independent State Grants program.	\$ 29,000,000
3. 61 Greater Minnesota Sewered with documented needs, but not on the National Municipal Policy List.	\$ 83,720,000
4. 3 Metro Area Combined Sewer Overflow Projects which are under a 10 year program to abate CSO.	\$ 211,700,000
5. 2 MWCC Projects (Blue Lake and Seneca which will have to be upgraded due to changes in standards.	\$ 64,851,000
TOTAL OF 1ST PRIORITY PROJECTS (173)	\$ 575,048,000
6. 31 Greater Minnesota Unsewered Projects.	\$ 58,793,000
TOTAL OF 2ND PRIORITY PROJECTS (31)	\$ 58,793,000
7. 8 MWCC Projects for Upgrade of Various Plants Including Pig's Eye	\$ 459,999,000
TOTAL OF 3RD PRIORITY PROJECTS (8)	\$ 459,999,000
TOTAL OF ALL PRIORITY PROJECTS (212)	\$1,093,840,000

The basis for this priority plan is an attempt to address overall program equity, as well as water quality goals. The 106 communities under enforcement action are, for the most part, small communities which need assistance to achieve compliance with the federal July 1, 1988 compliance date. The 61 other greater Minnesota sewered projects represent first time grantees which have not had the benefit of past public grant funding. The MWCC Minneapolis East Interceptor project is only partially funded through annual installments. The state has shown an intent to support this project through to completion, given continued funding. Water quality standards are being tightened for two MWCC projects, and the Agency feels it should support those projects. The state has committed itself to the 10 year Combined Sewer Overflow Program. The three communities involved have participated in the program in good faith that public support would continue.

The second level priority is the unsewered communities, which cannot afford to build both sewers and treatment plants without public assistance on the sewer portion. These communities do not discharge to surface water and, therefore, they do not violate water quality standards; however, many communities in this category are experiencing health, ground water contamination and quality of life issues.

The third category is the Metro Area Plant upgrades. Since these plants are, for the most part, in compliance with water quality standards, they have received the lowest priority.

FINANCING WASTEWATER TREATMENT FACILITIES

A GENERAL INTRODUCTION

I. ISSUE STATEMENT

As a general introduction to the financing of municipal wastewater treatment, this section explores the following two issues:

- A. HOW MUCH ARE COMMUNITIES PAYING FOR WASTEWATER TREATMENT?
- B. HOW MUCH WILL COMMUNITIES PAY IN THE FUTURE?

By presenting an overview of these issues, along with specific illustrations of wastewater treatment cost impacts, this section provides a framework that will assist in understanding the implications of various methods of financing.

II. DISCUSSION

Throughout this introduction, the annual or monthly charge single family households pay for wastewater treatment will be defined as the annual or monthly "Sewer Service Charge", which is the aggregate of all charges for operation, maintenance, equipment replacement, debt service, and other sewer related costs periodically billed to users of the treatment facilities.

Statistical measures of Sewer Service Charges used throughout this discussion will include "averages" and "weighted averages."

The "average" sewer service charge is an average of community averages, indicating the central tendency among communities without regard to community size. This indicator is useful when comparing the average charge of one community to another.

The "weighted average" provides an overall average of household cost across community lines by weighting the average within a particular community in proportion to the number of households served by that community. This indicator prevents small communities with extremely high (or low) Sewer Service Charges from misrepresenting the general situation regarding Sewer Service Charges encountered by Minnesota households.

A. HOW MUCH ARE COMMUNITIES PAYING FOR WASTEWATER TREATMENT?

Appendix B outlines the results of a 1985 survey of wastewater treatment costs in greater Minnesota (i.e. excluding Metropolitan Waste Control Commission (MWCC) communities) conducted by the Agency. A summary follows:

- o The average annual Sewer Service Charge paid by single family households in Greater Minnesota communities is: \$ 95.66 (\$7.97 mo.)
- o The weighted average annual Sewer Service Charge paid by single family households in Greater Minnesota communities is: \$ 90.74 (\$7.56 mo.)
- o The weighted average annual Sewer Service Charge as a Percentage of Median Household Income, paid by single family households in Greater Minnesota communities is: 0.608 %.

- o The median annual Sewer Service Charge paid by single family households in Greater Minnesota communities is: \$ 82.61 (\$6.88 mo.)
- o The median annual Sewer Service Charge as a Percentage of Median Household Income, paid by single family households in Greater Minnesota communities is: 0.607 %.

Appendix G outlines the results of a 1985 survey of wastewater treatment costs for Metropolitan Waste Control Commission Communities (MWCC) conducted by the Agency. A summary follows:

- o The average annual Sewer Service Charge paid by single family households serviced by the MWCC is: \$ 170.09 (\$14.17 mo.)
- o The weighted average annual Sewer Service Charge paid by single family households serviced by the MWCC is: \$ 124.77 (\$10.40 mo.)
- o The weighted average annual Sewer Service Charge as a Percentage of Median Household Income, paid by single family households serviced by the MWCC is: 0.683 %.
- o The median annual Sewer Service Charge paid by single family households serviced by the MWCC is: \$ 130.19 (\$10.84 mo.)
- o The median annual Sewer Service Charge as a Percentage of Median Household Income, paid by single family households serviced by the MWCC is: 0.607 %.

Perhaps more significant than the averages weighted averages, and medians indicated by the survey, however, is the extreme variability of charges. This is evident in the wide range from the lowest to the highest (\$ 4.43 annually to \$ 403.09 annually for Greater Minnesota communities and \$36.73 to \$719.51 annually for MWCC communities).

WHY DOES THE COST OF WASTEWATER TREATMENT VARY TO SUCH A GREAT EXTENT?

The cost of wastewater treatment can be defined as "The cost of pollution abatement provided on a continuous basis". In other words, it is the cost of meeting the conditions of the National Pollutant Discharge Elimination System (NPDES) permits and the State Disposal System (SDS) permits.

The cost of wastewater treatment in any given community will be impacted by at least the following:

- 1) Whether or not a community is adequately addressing the immediate cost of wastewater treatment so that permit conditions are being met.

Residential sewer service charges can be inordinately low where a community is not providing adequate treatment, whether it be because an adequate facility has not been constructed, or because operation is underbudgeted. If a community does not provide sufficient funds for personnel, supplies, equipment, testing, etc., and if a community does not exercise its institutional and legal obligation to enforce restrictions on the discharge of prohibited substances and ensure financial integrity of the system through the collection of charges, pollution abatement will not occur.

- 2) Whether or not a community is adequately addressing the continuing cost of wastewater treatment including provisions for constructing a new facility

when the existing facility is no longer servicable.

A community may operate facilities for the short term only. They may keep the facility in operation day to day, but neglect maintenance, repair, equipment replacement, etc. However, the results are that the city will fail to meet permit conditions, and/or they will prematurely incur the expense of building new facilities. The city, in effect, uses up a capital asset, which is not sound financial management. If the community obtained the capital asset at a cost that is artificially low because of substantial grants, they may not fully appreciate the asset or reasonably weigh it against the attraction of underbudgeting for maintenance.

Responding to the cost of providing wastewater treatment on a continuous basis means that a community will utilize the "Enterprise Fund" accounting procedures common to other public utilities (e.g., gas, electric, telephone) to keep track of the depreciation of the equipment, appurtenances, and physical structures of the facilities, thereby taking into account the true cost of wastewater treatment. Sound financial planning for continuous service means that a community will, by means of a sinking fund or other financial instrument, make provisions for constructing a new facility when the existing facility is no longer servicable.

3) The stage of the life cycle of the community's existing facility.

A community operating a facility constructed 25 years ago, on which it has completely retired its debt, can provide adequate wastewater treatment at considerably less expense than a similar community just initiating operation of a new facility. Moreover, the community which constructed 25 years ago would have faced much lower construction and engineering costs at that time.

Appendix F illustrates the increased cost of providing wastewater treatment for communities at or near the beginning of the life cycle.

4) The level of grants and/or low interest loans, or other financial assistance provided.

The variability of outside funding for wastewater treatment, particularly the percentage of federal grant assistance, has been a major factor influencing the variability of sewer service charges. As discussed in the Introduction, the local share of federally funded projects has varied from 6% to 70% under various federal funding programs.

5) Certain communities may not be operating their facilities efficently.

6) The population of a community and the corresponding economies of scale available.

While facilities servicing 10,000 people are obviously larger and more costly than those servicing 500 people, the cost per per household will generally be higher in the latter case, where fewer people are available to share the burden.

During any given year certain communities are not paying debt service, while others are making payments on recently constructed facilities. Other communities are not adequately budgeting for operation and maintenance, while still others are not meeting final permit limits.

Given such variability, it is difficult to detect significant tendencies regarding charges, with one notable exception: the effect of economies of scale. Because there is a threshold cost which must be met to construct and

operate a facility which meets permit requirements, regardless of the size of the community, smaller cities with fewer connections to share the cost are clearly more vulnerable to prohibitive treatment costs. This is particularly true for communities that have recently constructed or are now constructing facilities. The graph in Appendix E plots population against sewer service charges and illustrates this point. Appendix F indicates how economies of scale have become more critical over time as communities construct new facilities.

B. HOW MUCH WILL COMMUNITIES PAY IN THE FUTURE?

This section illustrates the impact of various methods of financing wastewater treatment facilities on 29 communities scheduled to receive federal and/or state grants during Fiscal Year 1987. The costs and charges provided are based on estimated costs after construction. Financial information on these communities is contained in Appendix A. A brief summary follows:

- o The average annual Sewer Service Charge per single family household is \$ 295.84. (\$24.65 mo.)
- o The weighted average annual Sewer Service Charge per single family household is \$ 234.30. (\$19.52 mo.)
- o The median annual Sewer Service Charge per single family household is \$ 226.59. (\$18.88 mo.)

Appendix C, Section 1 illustrates the cost of providing treatment WITHOUT grant assistance. The data is summarized below:

- o The average annual Sewer Service Charge per single family household is \$ 584.21. (\$48.68 mo.)
- o The weighted average annual Sewer Service Charge per single family household is \$ 420.88. (\$35.07 mo.)
- o The median annual Sewer Service Charge per single family household is \$ 373.19. (\$31.10 mo.)

This is an increase in the average Sewer Service Charge of 97% over the average Sewer Service Charge with grant assistance.

Appendix C, Section 2 illustrates the cost of providing treatment WITHOUT grant assistance and WITH provision for a sinking fund to address the construction of a new treatment facility once the existing facility is no longer servicable. For these 29 communities these charges may be said to indicate the complete cost of continuously providing wastewater treatment. The data is summarized below:

- o The average annual Sewer Service Charge per single family household is \$ 728.95. (\$60.74 mo.)
- o The weighted average annual Sewer Service Charge per single family household is \$ 590.99. (\$49.25 mo.)
- o The median annual Sewer Service Charge per single family household is \$ 539.03. (\$44.92 mo.)

This is an increase in the average Sewer Service Charge of 146% over the average Sewer Service Charge with grant assistance and without provision for a

sinking fund.

WHO SHOULD PAY?

A discussion of what cities will pay in the future is not complete without considering who should bear the cost burden. With the reduction of the federal grant percentages, and with government at all levels attempting to reduce expenses and wisely allocate limited resources, the question of who should pay for wastewater treatment and how much they should pay is receiving greater attention. In general, the answers are based on one or a combination of the following:

- 1) LOCAL RESPONSIBILITY - Those responsible for bringing about a particular expense should pay. The local community should be fully responsible for the cost of pollution abatement.
- 2) BENEFIT - Those who derive direct and immediate benefits and those who will derive indirect and long term benefits from the pollution abatement should pay.
- 3) AFFORDABILITY - The cost of addressing wastewater treatment should be distributed proportionately according to the ability of different parties to pay.
- 4) EQUITY - Those who are paying less due to financial assistance from public entities should ease the burden for those facing higher costs due to reduced financial assistance and higher inflation.

Even if the local community is willing to accept full responsibility for the pollution it generates, there are many small communities where the cost of constructing and operating an adequate facility totally at local expense would be prohibitive and a significant disincentive to further growth or economic development. (See Appendix C)

A graphic example of the difficulty of balancing the four options is provided by the City of Taylors Falls.

Taylors Falls is currently operating a WPA 1930's trickling filter while planning and designing a new treatment facility. In general, the trickling filter is meeting interim permit limits granted in anticipation of a new facility which will meet final limits. The final discharge limits are considerably more restrictive than is generally the case, and are much more restrictive than if the City were discharging to a judicial ditch in a remote location with little impact on fishable or swimmable waters. Moreover, these more restrictive standards are necessary because Taylors Falls discharges to the lower St. Croix, one of the prime recreational rivers in the State and a National Scenic River. Also, its current discharge point is directly above two state parks and proximate to a third.

The question of who derives the benefit and who should cover the costs of the new advanced treatment facility is not quite so obvious. The facility will be expensive, in part because of the high effluent standards and the steep topography of the area, but also because of the need to include additional capacity to accommodate a state park and its recreational vehicle dump station.

Those who will directly benefit from the new facility include the residents of the State and, in particular, the residents of the Twin Cities Area who utilize the parks and the river for recreation. Wisconsin residents also will derive considerable direct benefit from the new facility. Finally, since the river is a national Scenic River, there will clearly be a national benefit from the new facility.

It is relevant to note the anticipated financial burden facing Taylors Falls. Were the City to receive a 55% federal grant and a state supplemental grant of approximately 6.5% (in keeping with current projections) the annual Sewer Service Charge per single family household would be approximately \$440, or \$36.65 per month. Survey results of Metropolitan Waste Control Commission charges indicate that such a charge is well over double the average charge paid by single family households in the Metropolitan Area; and, coincidentally, Metro Area communities generally have a considerably higher median household income than the \$13,359 for Taylors Falls (1980 census). Should Taylors Falls be expected to pay to such an extent for the general benefit?

HISTORY OF FINANCIAL ASSISTANCE

The goal of the federal grants program and the corresponding state grants program has been to address the problem of water pollution, in keeping with the needs and goals of the Clean Water Act. In addition to addressing the need for pollution abatement, the federal and state governments tended to address the local affordability problem by providing 90% grants (available prior to Fiscal Year 1985). However, even at 90%, certain communities found themselves struggling to provide for local debt service and, in particular, operation, maintenance and equipment replacement.

While the reduced 55% basic federal grant and the 50% basic state grant continue to address the need for pollution abatement, such reduced levels of assistance no longer include sufficient funding to address the affordability question. Moreover, such fixed grant percentages do not provide any flexibility. An initial step in addressing the problem was taken by the State with the establishment of the state supplemental hardship grant of from zero to fifteen percent, allocated on the basis of a comparative ranking of three factors: Median Household Income, Per Capita Adjusted Assessed Valuation, and Per Connection Cost.

METHODS OF DETERMINING HOW MUCH COMMUNITIES SHOULD PAY

While the primary and continuing goal of a municipal wastewater treatment assistance program will necessarily be pollution abatement, the application of available resources to this goal could be modified according to various alternatives to respond to the problem of affordability.

An example of one such alternative, in which grant allocations are modified on the basis of a criterion of affordability, is provided in Appendix D. In this example, each community is provided a grant sufficient to reduce the annual per household debt service involved in constructing the facility to a fixed percentage of that community's MEDIAN HOUSEHOLD INCOME.

In the example, the existing grant funds are reallocated so that each of the 29 communities pays the same percentage of its median household income for debt retirement (1.106%). This adjusted debt retirement charge is then combined with the city's own local charge for operation and maintenance to yield a total Sewer Service Charge. This approach would involve the transfer of grant funds from those larger communities that benefit from economies of scale to smaller communities where the cost of the project is critical. A comparison of the Sewer Service Charges resulting from this reallocation and the Sewer Service Charges anticipated under the current allocation of grant funds seems to indicate the alleviation of the critical affordability problems without the imposition of an undue financial burden on the more populous communities represented.

Other possibilities for addressing the affordability issue are:

- 1) The possibility of setting a percentage of median household income as that

part of the construction cost of a facility that the local community would be responsible for. Low interest loans, negative interest loans or supplemental grants could then be used to "buy down" the cost to the established percentage.

2) The possibility of tying the above percentage to the average percent of median household income paid by Metropolitan Waste Control Commission (MWCC) communities, thereby establishing a degree of equity between MWCC and Greater Minnesota charges and assistance.

3) An arrangement that required communities to bond for wastewater treatment in an amount equal to the difference between their existing debt and their established debt limit. While utilities financed through revenue bonds are not subject to the city's general obligation debt limit, such a debt limit could still serve as a barometer of the financial capability of the community. This "maximum reasonable effort" approach differs from the alternative above inasmuch as it takes into account the existing financial burdens facing the community.

A potential drawback of this approach is that it may provide a disincentive to conservative bonding and fiscal policy on the part of local communities. Moreover, communities could manipulate their level of eligibility by scheduling other major projects immediately prior to the determination of their available debt liability.

Various methods of financing wastewater treatment facilities are explored in the following section.

APPENDIX A

FY 1987 PROJECT LIST

MPCA CONSTRUCTION GRANTS PROGRAM

FINANCIAL CAPABILITY ASSESSMENT

The twenty-nine communities described in Appendix A, and used throughout our discussion illustrate today's costs of constructing and operating a treatment facility. These communities were selected on the basis of their status as communities on the Agency's Municipal Needs List (MNL) scheduled to receive a grant during Fiscal Year 1987. While these communities do not necessarily constitute a statistically un-biased sample of the entire MNL, they do illustrate the variability of costs typical of communities on the MNL as well as certain re-occurring problems of affordability.

PART I. FINANCIAL CAPABILITY ASSESSMENT SUMMARY SHEETS FOR 'A' STATUS PROJECTS ON THE DRAFT FY 1987 MUNICIPAL PROJECTS LIST (Arranged according to FY 87 Rank)

Section A: List of Communities According to FY 87 Rank

Section B: Summary Sheets

PART II. STATISTICAL SUMMARY OF PROJECTS

Section A: Projects ranked according to Annual/Monthly Sewer Service Charge

(Sewer Service is the total cost per residential connection, including debt service and operational costs, billed as an annual sewer charge.)

Section B: Projects ranked according to Annual Sewer Service Charge as a Percentage of Median Household Income (1980 Census)

Section C: Projects ranked according to Total Project Cost

Section D: Projects ranked according to Total Project Cost as a Percentage of the Community's Adjusted Assessed Valuation

Section E: Projects ranked according to Total Project Cost per Residential Connection

PART I Section A: List of Projects According to FY 1987 Rank

002 Akeley
014 Perham
017 Barnum
020 Hutchinson
021 Hibbing (South & Interceptor)
022 Cleveland
025 New Prague
030 Sandstone
031 Minneota
032 Nashwauk
033 Nisswa
034 Maple Lake
035 Menahga
036 Grand Meadow
037 Browns Valley
038 Cook
039 Minnesota Lake
040 Lake Park
041 Battle Lake
042 Silver Lake
044 Pequot Lakes
045 Clarissa
047 Stewart
048 Clearbrook
057 Wanda
059 Worthington
064 Stewartville
082 Lakefield
083 Appleton

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Akeley

FY 87 Rank: 002 Step: 4 Status: A Population: 486

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost (Treatment and Collection).....	\$1,945,167
Grant Assistance: EPA eligible cost..	\$866,500
55.0 % EPA Grant	\$476,575
EPA I/A Grant.....	\$180,893
12.0 % State Supplemental.....	\$103,980
Combined Grant Amount.....(	\$761,448)
Net Cost to City.....	\$1,183,719
Project Related Costs (financing, legal etc.)	\$39,000
Total Local Capital Cost for Project.....	\$1,222,719

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$14,315
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$143,621

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	192
100 % OM&R Assigned Residential Users.....	\$14,315
100 % Debt Ret. Assigned Residential Users...	\$143,621
Total Annual Expense to Residential Users.....	\$157,936
Total Project Cost / Connection.....	\$10,131
Local Project Cost / Connection.....	\$6,368
Annual Sewer Service Charge / Connection.....	\$822.58
Monthly Sewer Service Charge / Connection.....	\$68.55
Median Household Income (1980 Census).....	\$9,917
Annual Sewer Service Charge as % MHI.....	8.295 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	
Total Adjusted Assessed Valuation.....	\$1,359,632
Total Adj. Asses. Valuation Per Capita..	\$2,798
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	143.1 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Perham

FY 87 Rank: 014 Step: 4 Status: A Population: 2,086

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,319,970
Grant Assistance: EPA eligible cost..	\$2,203,970
55.0 % EPA Grant	\$1,212,184
EPA I/A Grant.....	\$440,794
4.0 % State Supplemental.....	\$88,159
Combined Grant Amount.....(	\$1,741,137)
Net Cost to City.....	\$578,833
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$578,833

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$124,720
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$67,990

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	662
32 % OM&R Assigned Residential Users.....	\$39,910
32 % Debt Ret. Assigned Residential Users...	\$21,757
Total Annual Expense to Residential Users.....	\$61,667
Total Project Cost / Connection.....	\$1,121
Local Project Cost / Connection.....	\$280
Annual Sewer Service Charge / Connection.....	\$93.15
Monthly Sewer Service Charge / Connection.....	\$7.76
Median Household Income (1980 Census).....	\$10,511
Annual Sewer Service Charge as % MHI.....	0.886 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$1,160,000
Total Adjusted Assessed Valuation.....	\$10,314,579
Total Adj. Asses. Valuation Per Capita..	\$4,945
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	22.5 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Barnum

FY 87 Rank: 017 Step: 4 Status: C Population: 464

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$1,714,030
Grant Assistance: EPA eligible cost..	\$1,612,900
55.0 % EPA Grant	\$887,095
12.5 % State Supplemental.....	\$201,613
Combined Grant Amount.....	(\$1,088,708)
Net Cost to City.....	\$625,322
Project Related Costs (financing, legal etc.)	\$79,000
Total Local Capital Cost for Project.....	\$704,322

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$12,600
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$82,730

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	143
85 % OM&R Assigned Residential Users.....	\$10,710
85 % Debt Ret. Assigned Residential Users...	\$70,321
Total Annual Expense to Residential Users.....	\$81,031
Total Project Cost / Connection.....	\$10,188
Local Project Cost / Connection.....	\$4,187
Annual Sewer Service Charge / Connection.....	\$566.65
Monthly Sewer Service Charge / Connection.....	\$47.22
Median Household Income (1980 Census).....	\$11,339
Annual Sewer Service Charge as % MHI.....	4.997 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$372,000
Total Adjusted Assessed Valuation.....	\$1,069,330
Total Adj. Asses. Valuation Per Capita..	\$2,305
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	160.3 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Hutchinson

FY 87 Rank: 020 Step: 3 Status: A Population: 9,244

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$15,417,100
Grant Assistance: EPA eligible cost..	\$13,721,130
55.0 % EPA Grant	\$7,546,622
EPA I/A Grant.....	\$1,007,131
2.5 % State Supplemental.....	\$343,028
Combined Grant Amount.....	(\$8,896,781)
Net Cost to City.....	\$6,520,319
Project Related Costs (financing, legal etc.)	\$248,700
Total Local Capital Cost for Project.....	\$6,769,019

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$836,200
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$795,089

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	2,900
49 % OM&R Assigned Residential Users.....	\$409,738
49 % Debt Ret. Assigned Residential Users...	\$389,594
Total Annual Expense to Residential Users.....	\$799,332
Total Project Cost / Connection.....	\$2,605
Local Project Cost / Connection.....	\$1,144
Annual Sewer Service Charge / Connection.....	\$275.63
Monthly Sewer Service Charge / Connection.....	\$22.97
Median Household Income (1980 Census).....	\$17,215
Annual Sewer Service Charge as % MHI.....	1.601 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$15,510,000
Total Adjusted Assessed Valuation.....	\$58,527,090
Total Adj. Asses. Valuation Per Capita..	\$6,331
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	26.3 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Hibbing (South & Interceptor)

FY 87 Rank: 021

Step: 3

Status: B

Population:

21,193

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$5,829,710
Grant Assistance: EPA eligible cost..	\$4,600,000
55.0 % EPA Grant	\$2,530,000
EPA I/A Grant.....	\$28,980
0.0 % State Supplemental.....	
Combined Grant Amount.....(	\$2,558,980)
Net Cost to City.....	\$3,270,730
Project Related Costs (financing, legal etc.)	\$242,288
Total Local Capital Cost for Project.....	\$3,513,018

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$144,450
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$412,639

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	1,112
38 % OM&R Assigned Residential Users.....	\$54,891
38 % Debt Ret. Assigned Residential Users...	\$156,803
Total Annual Expense to Residential Users.....	\$211,694
Total Project Cost / Connection.....	\$1,992
Local Project Cost / Connection.....	\$1,200
Annual Sewer Service Charge / Connection.....	\$190.37
Monthly Sewer Service Charge / Connection.....	\$15.86
Median Household Income (1980 Census).....	\$18,989
Annual Sewer Service Charge as % MHI.....	1.003 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$4,610,000
Total Adjusted Assessed Valuation.....	\$17,873,230
Total Adj. Asses. Valuation Per Capita..	\$843
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	32.6 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Cleveland

FY 87 Rank: 022 Step: 4 Status: A Population: 699

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....		\$1,076,762
Grant Assistance: EPA eligible cost..	\$890,934	-----
55.0 % EPA Grant		\$490,014
4.0 % State Supplemental.....		\$35,637
Combined Grant Amount.....(		\$525,651)
Net Cost to City.....		\$551,111
Project Related Costs (financing, legal etc.)		\$5,000
Total Local Capital Cost for Project.....		\$556,111

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$12,450
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$65,321

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	253
75 % OM&R Assigned Residential Users.....	\$9,338
75 % Debt Ret. Assigned Residential Users...	\$48,991
Total Annual Expense to Residential Users.....	\$58,328
Total Project Cost / Connection.....	\$3,192
Local Project Cost / Connection.....	\$1,649
Annual Sewer Service Charge / Connection.....	\$230.55
Monthly Sewer Service Charge / Connection.....	\$19.21
Median Household Income (1980 Census).....	\$16,111
Annual Sewer Service Charge as % MHI.....	1.431 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$70,000
Total Adjusted Assessed Valuation.....	\$2,564,939
Total Adj. Asses. Valuation Per Capita..	\$3,669
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	42.0 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

New Prague

FY 87 Rank: 025 Step: 4 Status: A Population: 2,952

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$5,829,710
Grant Assistance: EPA eligible cost..	\$4,600,000
55.0 % EPA Grant	\$2,530,000
EPA I/A Grant.....	\$28,980
1.0 % State Supplemental.....	\$46,000
Combined Grant Amount.....(	\$2,604,980)
Net Cost to City.....	\$3,224,730
Project Related Costs (financing, legal etc.)	\$242,288
Total Local Capital Cost for Project.....	\$3,467,018

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$144,450
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$407,236

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	1,112
40 % OM&R Assigned Residential Users.....	\$57,780
40 % Debt Ret. Assigned Residential Users...	\$162,894
Total Annual Expense to Residential Users.....	\$220,674
Total Project Cost / Connection.....	\$2,097
Local Project Cost / Connection.....	\$1,247
Annual Sewer Service Charge / Connection.....	\$198.45
Monthly Sewer Service Charge / Connection.....	\$16.54
Median Household Income (1980 Census).....	\$15,644
Annual Sewer Service Charge as % MHI.....	1.269 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$4,610,000
Total Adjusted Assessed Valuation.....	\$17,893,230
Total Adj. Asses. Valuation Per Capita..	\$6,061
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	32.6 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Sandstone

FY 87 Rank: 030 Step: 4 Status: A Population: 1,594

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,869,400
Grant Assistance: EPA eligible cost..	\$2,621,448
55.0 % EPA Grant	\$1,441,796
8.5 % State Supplemental.....	\$222,823
Combined Grant Amount.....(	\$1,664,619)
Net Cost to City.....	\$1,204,781
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$1,204,781

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$27,433
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$141,514

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	445
57 % OM&R Assigned Residential Users.....	\$15,637
57 % Debt Ret. Assigned Residential Users...	\$80,663
Total Annual Expense to Residential Users.....	\$96,300
Total Project Cost / Connection.....	\$3,675
Local Project Cost / Connection.....	\$1,543
Annual Sewer Service Charge / Connection.....	\$216.40
Monthly Sewer Service Charge / Connection.....	\$18.03
Median Household Income (1980 Census).....	\$9,418
Annual Sewer Service Charge as % MHI.....	2.298 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$230,000
Total Adjusted Assessed Valuation.....	\$2,799,740
Total Adj. Asses. Valuation Per Capita..	\$1,756
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	102.5 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Minnesota

FY 87 Rank: 031 Step: 4 Status: A Population: 1,470

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,138,400
Grant Assistance: EPA eligible cost..	\$1,992,315
55.0 % EPA Grant	\$1,095,773
5.0 % State Supplemental.....	\$99,616
Combined Grant Amount.....(	\$1,195,389)
Net Cost to City.....	\$943,011
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$943,011

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$19,100
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$110,766

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	526
90 % OM&R Assigned Residential Users.....	\$17,190
90 % Debt Ret. Assigned Residential Users...	\$99,689
Total Annual Expense to Residential Users.....	\$116,879
Total Project Cost / Connection.....	\$3,659
Local Project Cost / Connection.....	\$1,614
Annual Sewer Service Charge / Connection.....	\$222.20
Monthly Sewer Service Charge / Connection.....	\$18.52
Median Household Income (1980 Census).....	\$12,793
Annual Sewer Service Charge as % MHI.....	1.737 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$390,000
Total Adjusted Assessed Valuation.....	\$4,628,480
Total Adj. Asses. Valuation Per Capita..	\$3,149
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	46.2 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Nashwauk

FY 87 Rank: 032 Step: 4 Status: A Population: 1,419

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$3,451,000
Grant Assistance: EPA eligible cost..	\$3,451,000
55.0 % EPA Grant	\$1,898,050
8.5 % State Supplemental.....	\$293,335
Combined Grant Amount.....(	\$2,191,385)
Net Cost to City.....	\$1,259,615
Project Related Costs (financing, legal etc.)	\$123,500
Total Local Capital Cost for Project.....	\$1,383,115

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$43,000
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$162,461

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	460
100 % OM&R Assigned Residential Users.....	\$43,000
100 % Debt Ret. Assigned Residential Users...	\$162,461
Total Annual Expense to Residential Users.....	\$205,461
Total Project Cost / Connection.....	\$7,502
Local Project Cost / Connection.....	\$3,007
Annual Sewer Service Charge / Connection.....	\$446.65
Monthly Sewer Service Charge / Connection.....	\$37.22
Median Household Income (1980 Census).....	\$15,798
Annual Sewer Service Charge as % MHI.....	2.827 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$582,000
Total Adjusted Assessed Valuation.....	\$2,655,838
Total Adj. Asses. Valuation Per Capita..	\$1,872
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	129.9 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Nisswa

FY 87 Rank: 033 Step: 2 Status: L Population: 1,407

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost (Treatment and Collection).....	\$4,400,000
Grant Assistance: EPA eligible cost..	\$2,420,000
55.0 % EPA Grant	\$1,331,000
EPA I/A Grant.....	\$279,178
0.5 % State Supplemental.....	\$12,100
Combined Grant Amount.....(	\$1,622,278)
Net Cost to City.....	\$2,777,722
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$2,777,722

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$26,325
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$326,271

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	464
90 % OM&R Assigned Residential Users.....	\$23,693
90 % Debt Ret. Assigned Residential Users...	\$293,644
Total Annual Expense to Residential Users.....	\$317,336
Total Project Cost / Connection.....	\$8,534
Local Project Cost / Connection.....	\$5,388
Annual Sewer Service Charge / Connection.....	\$683.91
Monthly Sewer Service Charge / Connection.....	\$56.99
Median Household Income (1980 Census).....	\$14,495
Annual Sewer Service Charge as % MHI.....	4.718 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$10,000
Total Adjusted Assessed Valuation.....	\$19,854,304
Total Adj. Asses. Valuation Per Capita..	\$14,111
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	22.2 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Maple Lake

FY 87 Rank: 034 Step: 4 Status: A Population: 1,132

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....		\$936,620
Grant Assistance: EPA eligible cost..	\$908,521	-----
55.0 % EPA Grant		\$499,687
0.0 % State Supplemental.....		
Combined Grant Amount.....(		\$499,687)
Net Cost to City.....		\$436,933
Project Related Costs (financing, legal etc.)		\$123,600
Total Local Capital Cost for Project.....		\$560,533

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$43,400
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$65,840

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	405
90 % OM&R Assigned Residential Users.....	\$39,060
90 % Debt Ret. Assigned Residential Users...	\$59,256
Total Annual Expense to Residential Users.....	\$98,316
Total Project Cost / Connection.....	\$2,081
Local Project Cost / Connection.....	\$1,246
Annual Sewer Service Charge / Connection.....	\$242.76
Monthly Sewer Service Charge / Connection.....	\$20.23
Median Household Income (1980 Census).....	\$15,400
Annual Sewer Service Charge as % MHI.....	1.576 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$399,000
Total Adjusted Assessed Valuation.....	\$6,323,647
Total Adj. Asses. Valuation Per Capita..	\$5,586
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	14.8 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Menahga

FY 87 Rank: 035 Step: 4 Status: C Population: 980

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$1,127,789
Grant Assistance: EPA eligible cost..	\$1,098,460
55.0 % EPA Grant	\$604,153
7.5 % State Supplemental.....	\$82,385
Combined Grant Amount.....(	\$686,538)
Net Cost to City.....	\$441,251
Project Related Costs (financing, legal etc.)	\$51,000
Total Local Capital Cost for Project.....	\$492,251

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$22,100
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$57,820

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	350
90 % OM&R Assigned Residential Users.....	\$19,890
90 % Debt Ret. Assigned Residential Users...	\$52,038
Total Annual Expense to Residential Users.....	\$71,928
Total Project Cost / Connection.....	\$2,900
Local Project Cost / Connection.....	\$1,266
Annual Sewer Service Charge / Connection.....	\$205.51
Monthly Sewer Service Charge / Connection.....	\$17.13
Median Household Income (1980 Census).....	\$7,952
Annual Sewer Service Charge as % MHI.....	2.584 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$2,338,666
Total Adjusted Assessed Valuation.....	\$3,137,990
Total Adj. Asses. Valuation Per Capita..	\$3,202
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	35.9 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Grand Meadow

FY 87 Rank: 036

Step: 4

Status: A

Population:

965

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,914,600
Grant Assistance: EPA eligible cost..	\$2,633,660
55.0 % EPA Grant	\$1,448,513
10.0 % State Supplemental.....	\$263,366
Combined Grant Amount.....	(\$1,711,879)
Net Cost to City.....	\$1,202,721
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$1,202,721

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$20,050
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$141,272

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	323
82 % OM&R Assigned Residential Users.....	\$16,441
82 % Debt Ret. Assigned Residential Users...	\$115,843
Total Annual Expense to Residential Users.....	\$132,284
Total Project Cost / Connection.....	\$7,399
Local Project Cost / Connection.....	\$3,053
Annual Sewer Service Charge / Connection.....	\$409.55
Monthly Sewer Service Charge / Connection.....	\$34.13
Median Household Income (1980 Census).....	\$11,771
Annual Sewer Service Charge as % MHI.....	3.479 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$884,000
Total Adjusted Assessed Valuation.....	\$2,796,303
Total Adj. Asses. Valuation Per Capita..	\$2,898
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	104.2 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Browns Valley

FY 87 Rank: 037 Step: 4 Status: A Population: 887

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$3,069,100
Grant Assistance: EPA eligible cost..	\$2,854,263
55.0 % EPA Grant	\$1,569,845
EPA I/A Grant.....	\$570,853
13.5 % State Supplemental.....	\$385,326
Combined Grant Amount.....(	\$2,526,024)
Net Cost to City.....	\$543,076
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$543,076

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$21,500
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$63,790

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	335
89 % OM&R Assigned Residential Users.....	\$19,135
89 % Debt Ret. Assigned Residential Users...	\$56,773
Total Annual Expense to Residential Users.....	\$75,908
Total Project Cost / Connection.....	\$8,154
Local Project Cost / Connection.....	\$1,443
Annual Sewer Service Charge / Connection.....	\$226.59
Monthly Sewer Service Charge / Connection.....	\$18.88
Median Household Income (1980 Census).....	\$10,043
Annual Sewer Service Charge as % MHI.....	2.256 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$838,000
Total Adjusted Assessed Valuation.....	\$1,623,167
Total Adj. Asses. Valuation Per Capita..	\$1,830
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	189.1 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Cook

FY 87 Rank: 038 Step: 4 Status: A Population: 800

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$1,170,745
Grant Assistance: EPA eligible cost..	\$1,014,800
55.0 % EPA Grant	\$558,140
7.0 % State Supplemental.....	\$71,036
Combined Grant Amount.....(	\$629,176)
Net Cost to City.....	\$541,569
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$541,569

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$21,620
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$63,613

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	247
76 % OM&R Assigned Residential Users.....	\$16,431
76 % Debt Ret. Assigned Residential Users...	\$48,346
Total Annual Expense to Residential Users.....	\$64,777
Total Project Cost / Connection.....	\$3,602
Local Project Cost / Connection.....	\$1,666
Annual Sewer Service Charge / Connection.....	\$262.26
Monthly Sewer Service Charge / Connection.....	\$21.85
Median Household Income (1980 Census).....	\$13,011
Annual Sewer Service Charge as % MHI.....	2.016 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$133,000
Total Adjusted Assessed Valuation.....	\$2,034,298
Total Adj. Asses. Valuation Per Capita..	\$2,543
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	57.6 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Minnesota Lake

FY 87 Rank: 039 Step: 4 Status: A Population: 744

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$919,000
Grant Assistance: EPA eligible cost..	\$753,000
55.0 % EPA Grant	\$414,150
2.0 % State Supplemental.....	\$15,060
Combined Grant Amount.....(	\$429,210)
Net Cost to City.....	\$489,790
Project Related Costs (financing, legal etc.)	\$39,000
Total Local Capital Cost for Project.....	\$528,790

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$14,000
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$62,112

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	286
80 % OM&R Assigned Residential Users.....	\$11,200
80 % Debt Ret. Assigned Residential Users...	\$49,690
Total Annual Expense to Residential Users.....	\$60,890
Total Project Cost / Connection.....	\$2,571
Local Project Cost / Connection.....	\$1,479
Annual Sewer Service Charge / Connection.....	\$212.90
Monthly Sewer Service Charge / Connection.....	\$17.74
Median Household Income (1980 Census).....	\$15,288
Annual Sewer Service Charge as % MHI.....	1.393 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$865,000
Total Adjusted Assessed Valuation.....	\$2,455,978
Total Adj. Asses. Valuation Per Capita..	\$3,301
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	37.4 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Lake Park

FY 87 Rank: 040 Step: 4 Status: A Population: 716

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$1,700,000
Grant Assistance: EPA eligible cost..	\$1,506,000
55.0 % EPA Grant	\$828,300
9.5 % State Supplemental.....	\$143,070
Combined Grant Amount.....(	\$971,370)
Net Cost to City.....	\$728,630
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$728,630

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$35,100
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$85,585

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	333
90 % OM&R Assigned Residential Users.....	\$31,590
90 % Debt Ret. Assigned Residential Users...	\$77,027
Total Annual Expense to Residential Users.....	\$108,617
Total Project Cost / Connection.....	\$4,595
Local Project Cost / Connection.....	\$1,969
Annual Sewer Service Charge / Connection.....	\$326.18
Monthly Sewer Service Charge / Connection.....	\$27.18
Median Household Income (1980 Census).....	\$12,379
Annual Sewer Service Charge as % MHI.....	2.635 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$240,000
Total Adjusted Assessed Valuation.....	\$2,184,494
Total Adj. Asses. Valuation Per Capita..	\$3,051
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	77.8 %

Battle Lake

708

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Silver Lake

FY 87 Rank: 042 Step: 4 Status: A Population: 698

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,022,000
Grant Assistance: EPA eligible cost..	\$1,801,000
55.0 % EPA Grant	\$990,550
6.5 % State Supplemental.....	\$117,065
Combined Grant Amount.....	(\$1,107,615)
Net Cost to City.....	\$914,385
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$914,385

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$20,200
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$107,404

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	275
90 % OM&R Assigned Residential Users.....	\$18,180
90 % Debt Ret. Assigned Residential Users...	\$96,664
Total Annual Expense to Residential Users.....	\$114,844
Total Project Cost / Connection.....	\$6,617
Local Project Cost / Connection.....	\$2,993
Annual Sewer Service Charge / Connection.....	\$417.61
Monthly Sewer Service Charge / Connection.....	\$34.80
Median Household Income (1980 Census).....	\$12,000
Annual Sewer Service Charge as % MHI.....	3.480 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$140,000
Total Adjusted Assessed Valuation.....	\$2,849,607
Total Adj. Asses. Valuation Per Capita..	\$4,083
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	71.0 %

Pequot Lakes

681

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Clarissa

FY 87 Rank: 045 Step: 4 Status: A Population: 663

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$912,000
Grant Assistance: EPA eligible cost..	\$648,210
55.0 % EPA Grant	\$356,516
10.5 % State Supplemental.....	\$68,062
Combined Grant Amount.....(	\$424,578)
Net Cost to City.....	\$487,422
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$487,422

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$13,150
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$57,253

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	192
76 % OM&R Assigned Residential Users.....	\$9,994
76 % Debt Ret. Assigned Residential Users...	\$43,512
Total Annual Expense to Residential Users.....	\$53,506
Total Project Cost / Connection.....	\$3,610
Local Project Cost / Connection.....	\$1,929
Annual Sewer Service Charge / Connection.....	\$278.68
Monthly Sewer Service Charge / Connection.....	\$23.22
Median Household Income (1980 Census).....	\$8,400
Annual Sewer Service Charge as % MHI.....	3.318 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$1,145,000
Total Adjusted Assessed Valuation.....	\$1,738,415
Total Adj. Asses. Valuation Per Capita..	\$2,622
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	52.5 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Stewart

FY 87 Rank: 047

Step: 4

Status: A

Population:

616

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$600,000
Grant Assistance: EPA eligible cost..	\$530,000
55.0 % EPA Grant	\$291,500
4.0 % State Supplemental.....	\$21,200
Combined Grant Amount.....(	\$312,700)
Net Cost to City.....	\$287,300
Project Related Costs (financing, legal etc.)	\$8,000
Total Local Capital Cost for Project.....	\$295,300

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$7,900
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$34,686

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	240
82 % OM&R Assigned Residential Users.....	\$6,478
82 % Debt Ret. Assigned Residential Users...	\$28,443
Total Annual Expense to Residential Users.....	\$34,921
Total Project Cost / Connection.....	\$2,050
Local Project Cost / Connection.....	\$1,009
Annual Sewer Service Charge / Connection.....	\$145.50
Monthly Sewer Service Charge / Connection.....	\$12.13
Median Household Income (1980 Census).....	\$12,308
Annual Sewer Service Charge as % MHI.....	1.182 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$245,000
Total Adjusted Assessed Valuation.....	\$2,033,850
Total Adj. Asses. Valuation Per Capita..	\$3,302
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	29.5 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Clearbrook

FY 87 Rank: 048 Step: 4 Status: A Population: 579

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost (Treatment and Collection).....	\$772,500
Grant Assistance: EPA eligible cost.. \$681,000 -----	
55.0 % EPA Grant \$374,550	
12.0 % State Supplemental..... \$81,720	
Combined Grant Amount.....(	\$456,270)
Net Cost to City.....	\$316,230
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$316,230

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$12,100
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$37,144

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	198
71 % OM&R Assigned Residential Users.....	\$8,591
71 % Debt Ret. Assigned Residential Users...	\$26,372
Total Annual Expense to Residential Users.....	\$34,963
Total Project Cost / Connection.....	\$2,770
Local Project Cost / Connection.....	\$1,134
Annual Sewer Service Charge / Connection.....	\$176.58
Monthly Sewer Service Charge / Connection.....	\$14.72
Median Household Income (1980 Census).....	\$7,824
Annual Sewer Service Charge as % MHI.....	2.257 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$508,700
Total Adjusted Assessed Valuation.....	\$1,499,769
Total Adj. Asses. Valuation Per Capita..	\$2,590
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	51.5 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Wanda

FY 87 Rank: 057 Step: 4 Status: A Population: 118

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....		\$603,300
Grant Assistance: EPA eligible cost..	\$545,000	-----
55.0 % EPA Grant		\$299,750
12.5 % State Supplemental.....		\$68,125
Combined Grant Amount.....(		\$367,875)
Net Cost to City.....		\$235,425
Project Related Costs (financing, legal etc.)		
Total Local Capital Cost for Project.....		\$235,425

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$6,300
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$27,653

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	54
100 % OM&R Assigned Residential Users.....	\$6,300
100 % Debt Ret. Assigned Residential Users...	\$27,653
Total Annual Expense to Residential Users.....	\$33,953
Total Project Cost / Connection.....	\$11,172
Local Project Cost / Connection.....	\$4,360
Annual Sewer Service Charge / Connection.....	\$628.76
Monthly Sewer Service Charge / Connection.....	\$52.40
Median Household Income (1980 Census).....	\$6,161
Annual Sewer Service Charge as % MHI.....	10.2 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	
Total Adjusted Assessed Valuation.....	\$367,000
Total Adj. Asses. Valuation Per Capita..	\$3,110
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	164.4 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Worthington

FY 87 Rank: 059 Step: 3 Status: A Population: 10,243

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$9,200,000
Grant Assistance: EPA eligible cost..	\$8,100,000
55.0 % EPA Grant	\$4,455,000
EPA I/A Grant.....	\$147,420
0.0 % State Supplemental.....	
Combined Grant Amount.....(	\$4,602,420)
Net Cost to City.....	\$4,597,580
Project Related Costs (financing, legal etc.)	
Total Local Capital Cost for Project.....	\$4,597,580

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$380,000
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$540,032

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	3,300
35 % OM&R Assigned Residential Users.....	\$133,000
35 % Debt Ret. Assigned Residential Users...	\$189,011
Total Annual Expense to Residential Users.....	\$322,011
Total Project Cost / Connection.....	\$976
Local Project Cost / Connection.....	\$488
Annual Sewer Service Charge / Connection.....	\$97.58
Monthly Sewer Service Charge / Connection.....	\$8.13
Median Household Income (1980 Census).....	\$15,494
Annual Sewer Service Charge as % MHI.....	0.630 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$9,850,000
Total Adjusted Assessed Valuation.....	\$55,087,895
Total Adj. Asses. Valuation Per Capita..	\$5,378
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	16.7 %

MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986

Stewartville

FY 87 Rank: 064 Step: 2 Status: A Population: 3,925

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$3,485,100
Grant Assistance: EPA eligible cost..	\$2,204,600
55.0 % EPA Grant	\$1,212,530
0.0 % State Supplemental.....	
Combined Grant Amount.....(	\$1,212,530)
Net Cost to City.....	\$2,272,570
Project Related Costs (financing, legal etc.)	\$70,000
Total Local Capital Cost for Project.....	\$2,342,570

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$154,000
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$275,158

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	1,600
90 % OM&R Assigned Residential Users.....	\$138,600
90 % Debt Ret. Assigned Residential Users...	\$247,642
Total Annual Expense to Residential Users.....	\$386,242
Total Project Cost / Connection.....	\$1,960
Local Project Cost / Connection.....	\$1,318
Annual Sewer Service Charge / Connection.....	\$241.40
Monthly Sewer Service Charge / Connection.....	\$20.12
Median Household Income (1980 Census).....	\$18,511
Annual Sewer Service Charge as % MHI.....	1.304 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$3,834,000
Total Adjusted Assessed Valuation.....	\$17,175,587
Total Adj. Asses. Valuation Per Capita..	\$4,376
Total Project Cost as a % of Total	
Adjusted Assessed Valuation.....	20.3 %

**MPCA CONSTRUCTION GRANTS PROGRAM
FINANCIAL CAPABILITY ASSESSMENT - AUGUST 22, 1986**

Lakefield

FY 87 Rank: 082 Step: 2 Status: A Population: 1,845

PART I. COST OF PROJECT & GRANT ASSISTANCE

Total Project Cost.....	\$2,112,000
Grant Assistance: EPA eligible cost..	\$2,041,200
55.0 % EPA Grant	\$1,122,660
EPA I/A Grant.....	\$52,560
3.0 % State Supplemental.....	\$61,236
Combined Grant Amount.....	(\$1,236,456)
Net Cost to City.....	\$875,544
Project Related Costs (financing, legal etc.)	\$81,700
Total Local Capital Cost for Project.....	\$957,244

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

Annual Operation, Maintenance & Replacement Expense.....	\$87,400
Project Bond/Loan Terms: 10% - 20yrs.	
Project Annual Debt Retirement.....	\$112,438

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

Total Number of Residential Connections.....	866
90 % OM&R Assigned Residential Users.....	\$78,660
90 % Debt Ret. Assigned Residential Users...	\$101,194
Total Annual Expense to Residential Users.....	\$179,854
Total Project Cost / Connection.....	\$2,195
Local Project Cost / Connection.....	\$995
Annual Sewer Service Charge / Connection.....	\$207.68
Monthly Sewer Service Charge / Connection.....	\$17.31
Median Household Income (1980 Census).....	\$13,447
Annual Sewer Service Charge as % MHI.....	1.544 %

PART IV. CITY'S DEBT AND ASSESSED VALUATION

Total Bonded Indebtedness.....	\$1,249,000
Total Adjusted Assessed Valuation.....	\$6,292,566
Total Adj. Asses. Valuation Per Capita..	\$3,411
Total Project Cost as a % of Total Adjusted Assessed Valuation.....	33.6 %

Appleton

PART I. COST OF PROJECT & GRANT ASSISTANCE

PART II. CITY'S ANNUAL EXPENSE (OM&R and Debt Service)

PART III. FINANCIAL IMPACT ON RESIDENTIAL USERS

PART IV. CITY'S DEBT AND ASSESSED VALUATION

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SECTION A

PROJECTS RANKED ACCORDING TO ANNUAL/ MONTHLY SEWER SERVICE CHARGE

CITY NAME	ANNUAL SEWER SERVICE CHARGE	MONTHLY SEWER SERVICE CHARGE	POPULATION	TOTAL PROJECT COST
Perham	\$93.15	7.76	2,086	\$2,319,970
Worthington	\$97.58	8.13	10,243	\$9,200,000
Stewart	\$145.50	12.13	616	\$600,000
Battle Lake	\$158.76	13.23	708	\$1,649,080
Pequot Lakes	\$169.00	14.08	681	\$1,369,678
Clearbrook	\$176.58	14.72	579	\$772,500
Hibbing (South & Int	\$190.37	15.86	21,193	\$5,829,710
New Prague	\$198.45	16.54	2,952	\$5,829,710
Menahga	\$205.51	17.13	980	\$1,127,789
Lakefield	\$207.68	17.31	1,845	\$2,112,000
Minnesota Lake	\$212.90	17.74	744	\$919,000
Sandstone	\$216.40	18.03	1,594	\$2,869,400
Minneota	\$222.20	18.52	1,470	\$2,138,400
Appleton	\$225.59	18.80	1,842	\$2,801,500
Browns Valley	\$226.59	18.88	887	\$3,069,100
Cleveland	\$230.55	19.21	699	\$1,076,762
Stewartville	\$241.40	20.12	3,925	\$3,485,100
Maple Lake	\$242.76	20.23	1,132	\$936,620
Cook	\$262.26	21.86	800	\$1,170,745
Hutchinson	\$275.63	22.97	9,244	\$15,417,100
Clarissa	\$278.68	23.22	663	\$912,000
Lake Park	\$326.18	27.18	716	\$1,700,000
Grand Meadow	\$409.55	34.13	965	\$2,914,600
Silver Lake	\$417.61	34.80	698	\$2,022,000

Nashwauk	\$446.65	37.22	1,419	\$3,451,000
Barnum	\$566.65	47.22	464	\$1,714,030
Wanda	\$628.76	52.40	118	\$603,300
Nisswa	\$683.91	56.99	1,407	\$4,400,000
Akeley	\$822.58	68.55	486	\$1,945,167

	AVERAGE	MEDIAN	STANDARD DEVIATION
ANNUAL SEWER SERVICE CHARGE:	\$295.84	\$226.59	\$179
MONTHLY SEWER SERVICE CHARGE:	\$24.65	\$18.88	

SECTION B

PROJECTS RANKED ACCORDING TO ANNUAL SEWER SERVICE CHARGE (SSC)
AS A PERCENTAGE OF MEDIAN HOUSEHOLD INCOME (MHI)

CITY NAME	SSC AS % MHI	ANNUAL SEWER SERVICE CHARGE	MONTHLY SEWER SERVICE CHARGE	MEDIAN HOUSEHOLD INCOME	LOCAL CAPITAL COST/RESIDENTIAL CONNECTION
Worthington	0.630 %	\$97.58	8.13	\$15,494	\$488
Perham	0.886 %	\$93.15	7.76	\$10,511	\$280
Hibbing (South & Int	1.003 %	\$190.37	15.86	\$18,989	\$1,200
Stewart	1.182 %	\$145.50	12.13	\$12,308	\$1,009
New Prague	1.269 %	\$198.45	16.54	\$15,644	\$1,247
Stewartville	1.304 %	\$241.40	20.12	\$18,511	\$1,318
Battle Lake	1.312 %	\$158.76	13.23	\$12,102	\$868
Minnesota Lake	1.393 %	\$212.90	17.74	\$15,288	\$1,479
Cleveland	1.431 %	\$230.55	19.21	\$16,111	\$1,649
Lakefield	1.544 %	\$207.68	17.31	\$13,447	\$995
Maple Lake	1.576 %	\$242.76	20.23	\$15,400	\$1,246
Hutchinson	1.601 %	\$275.63	22.97	\$17,215	\$1,144
Minneota	1.737 %	\$222.20	18.52	\$12,793	\$1,614
Pequot Lakes	1.959 %	\$169.00	14.08	\$8,629	\$596
Cook	2.016 %	\$262.26	21.86	\$13,011	\$1,666
Appleton	2.190 %	\$225.59	18.80	\$10,300	\$1,221
Browns Valley	2.256 %	\$226.59	18.88	\$10,043	\$1,443
Clearbrook	2.257 %	\$176.58	14.72	\$7,824	\$1,134
Sandstone	2.298 %	\$216.40	18.03	\$9,418	\$1,543
Menahga	2.584 %	\$205.51	17.13	\$7,952	\$1,266
Lake Park	2.635 %	\$326.18	27.18	\$12,379	\$1,969
Nashwauk	2.827 %	\$446.65	37.22	\$15,798	\$3,007
Clarissa	3.318 %	\$278.68	23.22	\$8,400	\$1,929
Grand Meadow	3.479 %	\$409.55	34.13	\$11,771	\$3,053

Silver Lake	3.480 %	\$417.61	34.80	\$12,000	\$2,993
Nisswa	4.718 %	\$683.91	56.99	\$14,495	\$5,388
Barnum	4.997 %	\$566.65	47.22	\$11,339	\$4,187
Akeley	8.295 %	\$822.58	68.55	\$9,917	\$6,368
Wanda	10.2 %	\$628.76	52.40	\$6,161	\$4,360

	AVERAGE	MEDIAN	STANDARD DEVIATION
SSC AS % MHI:	2.895	2.016	
ANNUAL SEWER SERVICE CHARGE:	\$295.84	\$226.59	\$179
MONTHLY SEWER SERVICE CHARGE:	\$24.65	\$18.88	

SECTION C

PROJECTS RANKED ACCORDING TO TOTAL PROJECT COST

CITY NAME	TOTAL PROJECT COST	POPULATION	SEWER SERVICE CHARGE	TOTAL PROJECT/ RESIDENTIAL CONNECTION
Stewart	\$600,000	616	\$145.50	\$2,050
Wanda	\$603,300	118	\$628.76	\$11,172
Clearbrook	\$772,500	579	\$176.58	\$2,770
Clarissa	\$912,000	663	\$278.68	\$3,610
Minnesota Lake	\$919,000	744	\$212.90	\$2,571
Maple Lake	\$936,620	1,132	\$242.76	\$2,081
Cleveland	\$1,076,762	699	\$230.55	\$3,192
Menahga	\$1,127,789	980	\$205.51	\$2,900
Cook	\$1,170,745	800	\$262.26	\$3,602
Pequot Lakes	\$1,369,678	681	\$169.00	\$3,075
Battle Lake	\$1,649,080	708	\$158.76	\$3,150
Lake Park	\$1,700,000	716	\$326.18	\$4,595
Barnum	\$1,714,030	464	\$566.65	\$10,188
Akeley	\$1,945,167	486	\$822.58	\$10,131
Silver Lake	\$2,022,000	698	\$417.61	\$6,617
Lakefield	\$2,112,000	1,845	\$207.68	\$2,195
Minneota	\$2,138,400	1,470	\$222.20	\$3,659
Perham	\$2,319,970	2,086	\$93.15	\$1,121
Appleton	\$2,801,500	1,842	\$225.59	\$2,350
Sandstone	\$2,869,400	1,594	\$216.40	\$3,675
Grand Meadow	\$2,914,600	965	\$409.55	\$7,399
Browns Valley	\$3,069,100	887	\$226.59	\$8,154
Nashwauk	\$3,451,000	1,419	\$446.65	\$7,502
Stewartville	\$3,485,100	3,925	\$241.40	\$1,960
Nisswa	\$4,400,000	1,407	\$683.91	\$8,534

Hibbing (South & Int	\$5,829,710	21,193	\$190.37	\$1,992
New Prague	\$5,829,710	2,952	\$198.45	\$2,097
Worthington	\$9,200,000	10,243	\$97.58	\$976
Hutchinson	\$15,417,100	9,244	\$275.63	\$2,605

	AVERAGE	MEDIAN	STANDARD DEVIATION
TOTAL PROJECT COST:	\$ 2,908,837	\$ 2,022,000	\$ 3,063,135
AVERAGE TOTAL PROJECT/ RESID. CONNECTION	\$ 4,332	\$ 3,150	\$ 2,958

SECTION D

PROJECTS RANKED ACCORDING TO TOTAL PROJECT COST AS A PERCENTAGE OF
TOTAL ADJUSTED ASSESSED VALUATION

CITY NAME	TOTAL PROJECT % ADJ. ASSESS.	ADJUSTED ASSESSED VALUATION	TOTAL PROJECT COST
Maple Lake	14.8 %	\$6,323,647	\$936,620
Worthington	16.7 %	\$55,087,895	\$9,200,000
Stewartville	20.3 %	\$17,175,587	\$3,485,100
Nisswa	22.2 %	\$19,854,304	\$4,400,000
Perham	22.5 %	\$10,314,579	\$2,319,970
Hutchinson	26.3 %	\$58,527,090	\$15,417,100
Pequot Lakes	27.6 %	\$4,964,717	\$1,369,678
Stewart	29.5 %	\$2,033,850	\$600,000
Hibbing (South & Int	32.6 %	\$17,873,230	\$5,829,710
New Prague	32.6 %	\$17,893,230	\$5,829,710
Lakefield	33.6 %	\$6,292,566	\$2,112,000
Menahga	35.9 %	\$3,137,990	\$1,127,789
Minnesota Lake	37.4 %	\$2,455,978	\$919,000
Cleveland	42.0 %	\$2,564,939	\$1,076,762
Battle Lake	42.9 %	\$3,841,678	\$1,649,080
Minneota	46.2 %	\$4,628,480	\$2,138,400
Clearbrook	51.5 %	\$1,499,769	\$772,500
Clarissa	52.5 %	\$1,738,415	\$912,000
Appleton	52.6 %	\$5,324,173	\$2,801,500
Cook	57.6 %	\$2,034,298	\$1,170,745
Silver Lake	71.0 %	\$2,849,607	\$2,022,000
Lake Park	77.8 %	\$2,184,494	\$1,700,000
Sandstone	102.5 %	\$2,799,740	\$2,869,400
Grand Meadow	104.2 %	\$2,796,303	\$2,914,600

Nashwauk	129.9 %	\$2,655,838	\$3,451,000
Akeley	143.1 %	\$1,359,632	\$1,945,167
Barnum	160.3 %	\$1,069,330	\$1,714,030
Wanda	164.4 %	\$367,000	\$603,300
Browns Valley	189.1 %	\$1,623,167	\$3,069,100

	AVERAGE	MEDIAN	STANDARD DEVIATION
TOTAL PROJECT COST AS A % OF ADJ. ASSESSED VALUATION	63.4 %	42.9 %	49.6
ANNUAL SEWER SERVICE CHARGE:	\$295.84	\$226.59	\$179
MONTHLY SEWER SERVICE CHARGE:	\$24.65	\$18.88	

SECTION E

PROJECTS RANKED ACCORDING TO TOTAL PROJECT COST
PER RESIDENTIAL CONNECTION

CITY NAME	TOTAL PROJECT/ RESIDENTIAL CONNECTION	TOTAL PROJECT COST	RESIDENTIAL CONNECTIONS	SEWER SERVICE CHARGE
Worthington	\$976	\$9,200,000	3,300	\$97.58
Perham	\$1,121	\$2,319,970	662	\$93.15
Stewartville	\$1,960	\$3,485,100	1,600	\$241.40
Hibbing (South & Int	\$1,992	\$5,829,710	1,112	\$190.37
Stewart	\$2,050	\$600,000	240	\$145.50
Maple Lake	\$2,081	\$936,620	405	\$242.76
New Prague	\$2,097	\$5,829,710	1,112	\$198.45
Lakefield	\$2,195	\$2,112,000	866	\$207.68
Appleton	\$2,350	\$2,801,500	775	\$225.59
Minnesota Lake	\$2,571	\$919,000	286	\$212.90
Hutchinson	\$2,605	\$15,417,100	2,900	\$275.63
Clearbrook	\$2,770	\$772,500	198	\$176.58
Menahga	\$2,900	\$1,127,789	350	\$205.51
Pequot Lakes	\$3,075	\$1,369,678	392	\$169.00
Battle Lake	\$3,150	\$1,649,080	267	\$158.76
Cleveland	\$3,192	\$1,076,762	253	\$230.55
Cook	\$3,602	\$1,170,745	247	\$262.26
Clarissa	\$3,610	\$912,000	192	\$278.68
Minneota	\$3,659	\$2,138,400	526	\$222.20
Sandstone	\$3,675	\$2,869,400	445	\$216.40
Lake Park	\$4,595	\$1,700,000	333	\$326.18
Silver Lake	\$6,617	\$2,022,000	275	\$417.61
Grand Meadow	\$7,399	\$2,914,600	323	\$409.55
Nashwauk	\$7,502	\$3,451,000	460	\$446.65

Browns Valley	\$8,154	\$3,069,100	335	\$226.59
Nisswa	\$8,534	\$4,400,000	464	\$683.91
Akeley	\$10,131	\$1,945,167	192	\$822.58
Barnum	\$10,188	\$1,714,030	143	\$566.65
Wanda	\$11,172	\$603,300	54	\$628.76

	AVERAGE	MEDIAN	STANDARD DEVIATION
AVERAGE TOTAL PROJECT/ RESID. CONNECTION	\$ 4,332	\$ 3,150	\$ 2,958
TOTAL PROJECT COST:	\$ 2,908,837	\$ 2,022,000	\$ 3,063,135

APPENDIX B

RESULTS OF THE 1985 MPCA SURVEY OF WASTEWATER TREATMENT COSTS GREATER MINNESOTA COMMUNITIES

PART 1 STATISTICAL SUMMARY:

AVERAGE ANNUAL SEWER SERVICE CHARGE	MEDIAN ANNUAL SEWER SERVICE CHARGE	HIGHEST ANNUAL SEWER SERVICE CHARGE	LOWEST ANNUAL SEWER SERVICE CHARGE	AVERAGE ANNUAL SEWER SERVICE CHARGE AS A PERCENT OF MEDIAN HOUSEHOLD INCOME
\$95.66	\$82.61	\$403.09	\$4.43	0.712 %
WEIGHTED ANNUAL AVERAGE SEWER SERVICE CHARGE	STANDARD DEVIATION SEWER SERVICE CHARGE	STANDARD DEVIATION SSC AS A PERCENT MHI	WEIGHTED AVERAGE ANNUAL SEWER SERVICE CHARGE AS A PERCENT OF MEDIAN HOUSEHOLD INCOME	
\$90.74	\$64.95	.497 %	.608 %	

PART 2: CITIES RANKED ACCORDING TO ANNUAL SEWER SERVICE CHARGE

CITY NAME	SEWER SERVICE CHARGE	SSC PER MONTH	SSC AS A PERCENT OF MEDIAN HOUSEHOLD	MEDIAN HOUSEHOLD INCOME	POPULATION
Saint Michael	\$4.43	\$0.37	0.023 %	\$19,635.00	1,519
Kinney	\$4.80	\$0.40	0.023 %	\$20,739.00	447
Westbrook	\$5.12	\$0.43	0.047 %	\$10,871.00	978
Littlefork	\$7.53	\$0.63	0.050 %	\$15,000.00	918
Cyrus	\$8.45	\$0.70	0.077 %	\$10,938.00	334
Ulen	\$8.93	\$0.74	0.087 %	\$10,313.00	514
Hendricks	\$10.14	\$0.85	0.106 %	\$9,535.00	737
Twin Valley	\$11.56	\$0.96	0.129 %	\$8,980.00	907
Fairfax	\$11.94	\$1.00	0.118 %	\$10,139.00	1,405

Cass Lake	\$12.22	\$1.02	0.132 %	\$9,291.00	1,001
Crosby	\$15.65	\$1.30	0.166 %	\$9,412.00	2,218
Eagle Bend	\$17.56	\$1.46	0.184 %	\$9,524.00	593
Elmore	\$20.26	\$1.69	0.160 %	\$12,647.00	882
Breckenridge	\$21.85	\$1.82	0.146 %	\$15,010.00	3,909
Gibbon	\$22.11	\$1.84	0.193 %	\$11,453.00	787
Wells	\$22.76	\$1.90	0.172 %	\$13,242.00	2,777
Big Falls	\$22.78	\$1.90	0.224 %	\$10,147.00	490
Sherburn	\$23.57	\$1.96	0.180 %	\$13,114.00	1,275
Dunnell	\$23.78	\$1.98	0.171 %	\$13,929.00	216
Coleraine	\$24.00	\$2.00	0.122 %	\$19,735.00	1,116
Kettle River	\$25.23	\$2.10	0.216 %	\$11,667.00	174
Northrop	\$25.31	\$2.11	0.162 %	\$15,625.00	269
Sacred Heart	\$25.98	\$2.17	0.228 %	\$11,375.00	666
Le Roy	\$26.35	\$2.20	0.220 %	\$11,983.00	930
Starbuck	\$27.07	\$2.26	0.307 %	\$8,831.00	1,224
Brandon	\$27.97	\$2.33	0.263 %	\$10,625.00	473
Loretto	\$28.93	\$2.41	0.139 %	\$20,833.00	297
Springfield	\$29.99	\$2.50	0.236 %	\$12,687.00	2,303
Lamberton	\$30.01	\$2.50	0.247 %	\$12,139.00	1,032
Crookston	\$30.07	\$2.51	0.195 %	\$15,386.00	8,628
Ironton	\$30.91	\$2.58	0.250 %	\$12,375.00	537
Buffalo	\$32.20	\$2.68	0.193 %	\$16,724.00	4,560
Minneota	\$32.38	\$2.70	0.253 %	\$12,793.00	1,470
Truman	\$33.74	\$2.81	0.248 %	\$13,578.00	1,392
Canton	\$34.23	\$2.85	0.385 %	\$8,882.00	386
Callaway	\$35.11	\$2.93	0.328 %	\$10,714.00	238
Hancock	\$35.25	\$2.94	0.259 %	\$13,633.00	877
Becker	\$35.43	\$2.95	0.211 %	\$16,806.00	601
Perham	\$35.47	\$2.96	0.337 %	\$10,511.00	2,086
Gaylord	\$35.91	\$2.99	0.246 %	\$14,604.00	1,933

Waterville	\$36.07	\$3.01	0.260 %	\$13,860.00	1,717
Henning	\$36.32	\$3.03	0.405 %	\$8,977.00	832
Fulda	\$36.51	\$3.04	0.267 %	\$13,692.00	1,308
Maynard	\$36.59	\$3.05	0.277 %	\$13,203.00	428
Waldorf	\$37.58	\$3.13	0.334 %	\$11,250.00	249
Bovey	\$38.35	\$3.20	0.296 %	\$12,941.00	813
Wrenshall	\$41.35	\$3.45	0.218 %	\$18,942.00	333
Owatonna	\$41.53	\$3.46	0.249 %	\$16,678.00	18,632
Lake Park	\$41.85	\$3.49	0.338 %	\$12,379.00	716
Baudette	\$41.92	\$3.49	0.368 %	\$11,392.00	1,170
Amboy	\$42.82	\$3.57	0.359 %	\$11,923.00	606
Rushford	\$42.93	\$3.58	0.329 %	\$13,029.00	1,478
Hayfield	\$43.40	\$3.62	0.289 %	\$15,037.00	1,243
Hoffman	\$43.90	\$3.66	0.468 %	\$9,375.00	631
Belview	\$46.89	\$3.91	0.324 %	\$14,479.00	438
Olivia	\$46.93	\$3.91	0.286 %	\$16,416.00	2,802
Ashby	\$47.41	\$3.95	0.468 %	\$10,139.00	486
Dexter	\$48.57	\$4.05	0.291 %	\$16,667.00	279
Thief River Falls	\$48.84	\$4.07	0.347 %	\$14,065.00	9,105
Osakis	\$49.43	\$4.12	0.466 %	\$10,599.00	1,355
Campbell	\$49.71	\$4.14	0.315 %	\$15,789.00	286
Albany	\$49.78	\$4.15	0.379 %	\$13,135.00	1,569
Milan	\$49.98	\$4.17	0.433 %	\$11,534.00	417
Waseca	\$50.02	\$4.17	0.318 %	\$15,717.00	8,219
Winona	\$50.88	\$4.24	0.372 %	\$13,695.00	25,075
Edgerton	\$51.09	\$4.26	0.384 %	\$13,301.00	1,123
Hollandale	\$51.15	\$4.26	0.372 %	\$13,750.00	290
Hawley	\$52.86	\$4.41	0.393 %	\$13,455.00	1,634
Chokio	\$53.87	\$4.49	0.473 %	\$11,397.00	559
Canby	\$54.50	\$4.54	0.532 %	\$10,250.00	2,143
Jasper	\$55.60	\$4.63	0.525 %	\$10,583.00	731

Lake City	\$55.70	\$4.64	0.410 %	\$13,594.00	4,505
Lake Benton	\$55.74	\$4.65	0.583 %	\$9,566.00	869
Pelican Rapids	\$56.46	\$4.71	0.531 %	\$10,641.00	1,867
Hokah	\$58.50	\$4.88	0.440 %	\$13,281.00	686
Mazeppa	\$59.70	\$4.98	0.423 %	\$14,125.00	680
Stewart	\$60.81	\$5.07	0.494 %	\$12,308.00	616
Clements	\$61.65	\$5.14	0.617 %	\$10,000.00	227
Saint Leo	\$62.19	\$5.18	0.498 %	\$12,500.00	147
Vernon Center	\$62.77	\$5.23	0.453 %	\$13,864.00	365
Dodge Center	\$63.18	\$5.27	0.407 %	\$15,521.00	1,816
Riverton	\$63.22	\$5.27	0.460 %	\$13,750.00	112
New Richland	\$64.72	\$5.39	0.459 %	\$14,111.00	1,263
Saint James	\$65.09	\$5.42	0.440 %	\$14,805.00	4,346
Red Wing	\$65.15	\$5.43	0.386 %	\$16,888.00	13,736
New York Mills	\$65.67	\$5.47	0.684 %	\$9,602.00	972
Cannon Falls	\$65.99	\$5.50	0.435 %	\$15,170.00	2,653
Newfolden	\$66.57	\$5.55	0.723 %	\$9,205.00	384
Dent	\$67.16	\$5.60	0.985 %	\$6,818.00	167
Montgomery	\$68.20	\$5.68	0.551 %	\$12,371.00	2,349
Le Sueur	\$69.26	\$5.77	0.382 %	\$18,146.00	3,763
Wadena	\$69.50	\$5.79	0.613 %	\$11,342.00	4,699
La Crescent	\$70.40	\$5.87	0.401 %	\$17,540.00	3,674
Blackduck	\$70.48	\$5.87	0.581 %	\$12,132.00	653
Blue Earth	\$70.65	\$5.89	0.491 %	\$14,379.00	4,132
Mahnomen	\$71.17	\$5.93	0.741 %	\$9,611.00	1,283
Elgin	\$71.63	\$5.97	0.452 %	\$15,850.00	667
Harris	\$72.28	\$6.02	0.489 %	\$14,773.00	678
Comstock	\$72.73	\$6.06	0.388 %	\$18,750.00	110
Litchfield	\$72.81	\$6.07	0.519 %	\$14,042.00	5,904
Mapleton	\$74.06	\$6.17	0.525 %	\$14,111.00	1,516
Delano	\$74.19	\$6.18	0.431 %	\$17,205.00	2,480

Silver Lake	\$74.24	\$6.19	0.619 %	\$12,000.00	698
Ghent	\$74.31	\$6.19	0.534 %	\$13,906.00	356
Kandiyohi	\$74.91	\$6.24	0.502 %	\$14,922.00	447
Princeton	\$75.96	\$6.33	0.577 %	\$13,170.00	3,146
Bigfork	\$76.46	\$6.37	0.816 %	\$9,375.00	457
New Germany	\$77.26	\$6.44	0.649 %	\$11,905.00	347
Houston	\$77.34	\$6.45	0.667 %	\$11,588.00	1,057
Virginia	\$77.62	\$6.47	0.500 %	\$15,528.00	11,056
Annandale	\$77.77	\$6.48	0.537 %	\$14,469.00	1,568
Clarkfield	\$78.20	\$6.52	0.607 %	\$12,881.00	1,171
Kenyon	\$78.30	\$6.53	0.596 %	\$13,140.00	1,529
Brownsdale	\$78.40	\$6.53	0.657 %	\$11,932.00	691
Dawson	\$78.48	\$6.54	0.586 %	\$13,396.00	1,901
Clarissa	\$79.01	\$6.58	0.941 %	\$8,400.00	663
Taylors Falls	\$79.53	\$6.63	0.595 %	\$13,359.00	623
Atwater	\$79.68	\$6.64	0.607 %	\$13,125.00	1,128
Plainview	\$80.23	\$6.69	0.505 %	\$15,893.00	2,416
Grey Eagle	\$80.32	\$6.69	0.906 %	\$8,864.00	338
Ellendale	\$81.26	\$6.77	0.523 %	\$15,541.00	555
Center City	\$81.86	\$6.82	0.416 %	\$19,688.00	458
Paynesville	\$82.30	\$6.86	0.625 %	\$13,167.00	2,140
Motley	\$82.61	\$6.88	0.958 %	\$8,625.00	444
Winnebago	\$82.93	\$6.91	0.617 %	\$13,451.00	1,869
Rochester	\$83.52	\$6.96	0.425 %	\$19,648.00	57,890
Orr	\$83.68	\$6.97	0.715 %	\$11,705.00	294
Alexandria	\$84.69	\$7.06	0.773 %	\$10,952.00	7,608
Windom	\$84.82	\$7.07	0.530 %	\$15,990.00	4,666
Rothsay	\$84.93	\$7.08	0.718 %	\$11,827.00	476
Grand Rapids	\$85.83	\$7.15	0.529 %	\$16,226.00	7,934
Utica	\$86.64	\$7.22	0.701 %	\$12,361.00	249
Hibbing	\$87.52	\$7.29	0.461 %	\$18,989.00	21,193

Saint Cloud	\$87.80	\$7.32	0.571 %	\$15,367.00	42,566
Ely	\$88.26	\$7.36	0.648 %	\$13,622.00	4,820
Cook	\$88.87	\$7.41	0.683 %	\$13,011.00	800
Braham	\$89.55	\$7.46	0.777 %	\$11,520.00	1,015
Menahga	\$89.76	\$7.48	1.129 %	\$7,952.00	980
Norwood	\$89.78	\$7.48	0.537 %	\$16,734.00	1,219
Austin	\$89.93	\$7.49	0.547 %	\$16,448.00	23,020
Cold Spring	\$92.28	\$7.69	0.558 %	\$16,525.00	2,294
Alden	\$92.88	\$7.74	0.639 %	\$14,531.00	687
Lafayette	\$92.93	\$7.74	0.620 %	\$15,000.00	507
Cokato	\$94.74	\$7.90	0.603 %	\$15,712.00	2,056
Melrose	\$95.28	\$7.94	0.684 %	\$13,925.00	2,409
La Prairie	\$95.43	\$7.95	0.481 %	\$19,844.00	536
Stewartville	\$95.63	\$7.97	0.517 %	\$18,511.00	3,925
Bertha	\$96.02	\$8.00	0.934 %	\$10,282.00	510
Waltham	\$96.33	\$8.03	0.979 %	\$9,837.00	176
Morristown	\$96.44	\$8.04	0.723 %	\$13,333.00	639
Erskine	\$97.01	\$8.08	1.100 %	\$8,819.00	585
Milroy	\$97.61	\$8.13	0.826 %	\$11,818.00	242
Madison Lake	\$97.62	\$8.14	0.661 %	\$14,773.00	592
Wood Lake	\$98.29	\$8.19	0.891 %	\$11,029.00	420
Marshall	\$99.24	\$8.27	0.604 %	\$16,436.00	11,161
Zumbrota	\$99.63	\$8.30	0.667 %	\$14,932.00	2,129
International Falls	\$100.69	\$8.39	0.651 %	\$15,458.00	5,611
Miltona	\$100.87	\$8.41	1.223 %	\$8,250.00	187
Maple Lake	\$101.83	\$8.49	0.661 %	\$15,400.00	1,132
Pine City	\$101.95	\$8.50	0.935 %	\$10,905.00	2,489
Cloquet	\$102.13	\$8.51	0.647 %	\$15,779.00	11,142
New Prague	\$103.73	\$8.64	0.663 %	\$15,644.00	2,952
Waverly	\$104.15	\$8.68	0.766 %	\$13,594.00	470
Silver Bay	\$105.08	\$8.76	0.390 %	\$26,944.00	2,917

Albert Lea	\$105.53	\$8.79	0.657 %	\$16,067.00	19,200
Mountain Iron	\$105.76	\$8.81	0.486 %	\$21,751.00	4,134
Staples	\$106.99	\$8.92	0.955 %	\$11,207.00	2,887
Kerkhoven	\$107.29	\$8.94	0.902 %	\$11,893.00	761
Renville	\$108.64	\$9.05	0.740 %	\$14,688.00	1,493
Howard Lake	\$109.35	\$9.11	0.837 %	\$13,060.00	1,240
Henderson	\$109.41	\$9.12	0.823 %	\$13,295.00	739
Le Center	\$109.45	\$9.12	0.821 %	\$13,333.00	1,967
Willmar	\$111.37	\$9.28	0.778 %	\$14,313.00	15,895
Moorhead	\$112.03	\$9.34	0.683 %	\$16,408.00	29,998
Sauk Centre	\$112.34	\$9.36	0.858 %	\$13,086.00	3,709
Warroad	\$113.64	\$9.47	0.909 %	\$12,500.00	1,216
Holdingford	\$114.18	\$9.52	0.841 %	\$13,583.00	635
Brainerd	\$115.17	\$9.60	1.001 %	\$11,509.00	11,489
Saint Hilaire	\$116.81	\$9.73	0.963 %	\$12,132.00	388
Porter	\$116.98	\$9.75	1.195 %	\$9,792.00	211
Walker	\$118.19	\$9.85	0.990 %	\$11,941.00	970
Buhl	\$118.49	\$9.87	0.676 %	\$17,538.00	1,284
Babbitt	\$121.78	\$10.15	0.528 %	\$23,060.00	2,435
Rose Creek	\$122.05	\$10.17	1.007 %	\$12,120.00	371
Backus	\$122.72	\$10.23	1.560 %	\$7,868.00	255
Adams	\$123.27	\$10.27	0.827 %	\$14,900.00	797
Clarks Grove	\$124.33	\$10.36	0.783 %	\$15,875.00	620
Watertown	\$124.99	\$10.42	0.771 %	\$16,213.00	1,818
Clearwater	\$125.20	\$10.43	0.905 %	\$13,828.00	379
Aitkin	\$125.71	\$10.48	1.457 %	\$8,628.00	1,770
Madelia	\$125.75	\$10.48	0.869 %	\$14,477.00	2,130
Mantorville	\$126.83	\$10.57	0.728 %	\$17,411.00	705
Jackson	\$126.92	\$10.58	0.915 %	\$13,878.00	3,797
West Concord	\$127.84	\$10.65	0.886 %	\$14,423.00	762
Hector	\$128.80	\$10.73	0.880 %	\$14,638.00	1,252

Northfield	\$128.97	\$10.75	0.730 %	\$17,664.00	12,562
Aurora	\$129.32	\$10.78	0.679 %	\$19,059.00	2,670
Mankato	\$131.44	\$10.95	0.911 %	\$14,431.00	28,651
Zimmerman	\$133.64	\$11.14	0.748 %	\$17,857.00	1,074
Clear Lake	\$133.79	\$11.15	1.038 %	\$12,885.00	266
Glenville	\$134.86	\$11.24	0.761 %	\$17,730.00	851
Rogers	\$135.94	\$11.33	0.706 %	\$19,265.00	652
Balaton	\$136.75	\$11.40	1.134 %	\$12,059.00	752
Kimball	\$136.83	\$11.40	1.368 %	\$10,000.00	651
Wabasha	\$141.85	\$11.82	1.022 %	\$13,874.00	2,372
Morgan	\$143.36	\$11.95	1.160 %	\$12,356.00	975
Pequot Lakes	\$143.57	\$11.96	1.664 %	\$8,629.00	681
Floodwood	\$144.37	\$12.03	1.559 %	\$9,261.00	648
Goodhue	\$145.86	\$12.16	1.066 %	\$13,684.00	657
Hutchinson	\$148.03	\$12.34	0.860 %	\$17,215.00	9,244
Lester Prairie	\$150.61	\$12.55	0.998 %	\$15,089.00	1,229
North Branch	\$150.88	\$12.57	1.127 %	\$13,389.00	1,597
Saint Martin	\$152.56	\$12.71	1.664 %	\$9,167.00	220
Elk River	\$155.47	\$12.96	0.734 %	\$21,173.00	6,785
Isanti	\$160.91	\$13.41	0.990 %	\$16,250.00	858
Ogilvie	\$161.09	\$13.42	1.128 %	\$14,286.00	423
Pipestone	\$162.61	\$13.55	1.354 %	\$12,010.00	4,887
Waite Park	\$164.82	\$13.74	1.028 %	\$16,037.00	3,496
Cottonwood	\$165.97	\$13.83	1.253 %	\$13,250.00	924
Wilmont	\$167.84	\$13.99	1.207 %	\$13,906.00	380
Glencoe	\$174.62	\$14.55	1.069 %	\$16,329.00	4,396
Little Falls	\$176.65	\$14.72	1.464 %	\$12,068.00	7,250
Lake Wilson	\$193.52	\$16.13	1.577 %	\$12,273.00	380
Wahkon	\$193.88	\$16.16	1.675 %	\$11,576.00	271
Lindstrom	\$197.21	\$16.43	1.520 %	\$12,977.00	1,972
Stockton	\$208.53	\$17.38	1.232 %	\$16,932.00	517

Richmond	\$210.11	\$17.51	2.064 %	\$10,179.00	867
Breezy Point	\$215.54	\$17.96	1.212 %	\$17,778.00	384
Deer Creek	\$219.28	\$18.27	2.528 %	\$8,675.00	392
Hoyt Lakes	\$219.44	\$18.29	0.907 %	\$24,198.00	3,186
Winsted	\$222.04	\$18.50	1.252 %	\$17,734.00	1,522
Marietta	\$223.53	\$18.63	2.254 %	\$9,917.00	279
Donnelly	\$228.42	\$19.04	2.064 %	\$11,065.00	317
Freeborn	\$229.31	\$19.11	1.276 %	\$17,969.00	323
Saint Francis	\$234.04	\$19.50	1.270 %	\$18,429.00	1,184
Medford	\$235.60	\$19.63	1.216 %	\$19,375.00	775
Keewatin	\$237.50	\$19.79	1.301 %	\$18,250.00	1,443
Borup	\$239.81	\$19.98	1.881 %	\$12,750.00	160
Monticello	\$242.71	\$20.23	1.526 %	\$15,910.00	2,830
Foreston	\$244.73	\$20.39	1.821 %	\$13,438.00	283
Beaver Bay	\$258.82	\$21.57	1.210 %	\$21,394.00	283
Ranier	\$259.56	\$21.63	1.149 %	\$22,596.00	237
Russell	\$282.76	\$23.56	2.488 %	\$11,364.00	412
Stacy	\$292.88	\$24.41	1.559 %	\$18,782.00	996
Brownton	\$296.71	\$24.73	2.073 %	\$14,310.00	697
Grand Marais	\$333.11	\$27.76	2.513 %	\$13,256.00	1,289
Twin Lakes	\$403.09	\$33.59	3.365 %	\$11,979.00	210

PART 3: CITIES LISTED ACCORDING TO NAME

CITY NAME	SEWER SERVICE CHARGE	SSC PER MONTH	SSC AS A PERCENT OF MEDIAN HOUSEHOLD	MEDIAN HOUSEHOLD INCOME	POPULATION
Adams	\$123.27	\$10.27	0.827 %	\$14,900.00	797
Aitkin	\$125.71	\$10.48	1.457 %	\$8,628.00	1,770
Albany	\$49.78	\$4.15	0.379 %	\$13,135.00	1,569
Albert Lea	\$105.53	\$8.79	0.657 %	\$16,067.00	19,200
Alden	\$92.88	\$7.74	0.639 %	\$14,531.00	687
Alexandria	\$84.69	\$7.06	0.773 %	\$10,952.00	7,608
Amboy	\$42.82	\$3.57	0.359 %	\$11,923.00	606
Annandale	\$77.77	\$6.48	0.537 %	\$14,469.00	1,568
Ashby	\$47.41	\$3.95	0.468 %	\$10,139.00	486
Atwater	\$79.68	\$6.64	0.607 %	\$13,125.00	1,128
Aurora	\$129.32	\$10.78	0.679 %	\$19,059.00	2,670
Austin	\$89.93	\$7.49	0.547 %	\$16,448.00	23,020
Babbitt	\$121.78	\$10.15	0.528 %	\$23,060.00	2,435
Backus	\$122.72	\$10.23	1.560 %	\$7,868.00	255
Balaton	\$136.75	\$11.40	1.134 %	\$12,059.00	752
Baudette	\$41.92	\$3.49	0.368 %	\$11,392.00	1,170
Beaver Bay	\$258.82	\$21.57	1.210 %	\$21,394.00	283
Becker	\$35.43	\$2.95	0.211 %	\$16,806.00	601
Belview	\$46.89	\$3.91	0.324 %	\$14,479.00	438
Bertha	\$96.02	\$8.00	0.934 %	\$10,282.00	510
Big Falls	\$22.78	\$1.90	0.224 %	\$10,147.00	490
Bigfork	\$76.46	\$6.37	0.816 %	\$9,375.00	457
Blackduck	\$70.48	\$5.87	0.581 %	\$12,132.00	653
Blue Earth	\$70.65	\$5.89	0.491 %	\$14,379.00	4,132
Borup	\$239.81	\$19.98	1.881 %	\$12,750.00	160
Bovey	\$38.35	\$3.20	0.296 %	\$12,941.00	813
Braham	\$89.55	\$7.46	0.777 %	\$11,520.00	1,015

Brainerd	\$115.17	\$9.60	1.001 %	\$11,509.00	11,489
Brandon	\$27.97	\$2.33	0.263 %	\$10,625.00	473
Breckenridge	\$21.85	\$1.82	0.146 %	\$15,010.00	3,909
Breezy Point	\$215.54	\$17.96	1.212 %	\$17,778.00	384
Brownsdale	\$78.40	\$6.53	0.657 %	\$11,932.00	691
Brownton	\$296.71	\$24.73	2.073 %	\$14,310.00	697
Buffalo	\$32.20	\$2.68	0.193 %	\$16,724.00	4,560
Buhl	\$118.49	\$9.87	0.676 %	\$17,538.00	1,284
Callaway	\$35.11	\$2.93	0.328 %	\$10,714.00	238
Campbell	\$49.71	\$4.14	0.315 %	\$15,789.00	286
Canby	\$54.50	\$4.54	0.532 %	\$10,250.00	2,143
Cannon Falls	\$65.99	\$5.50	0.435 %	\$15,170.00	2,653
Canton	\$34.23	\$2.85	0.385 %	\$8,882.00	386
Cass Lake	\$12.22	\$1.02	0.132 %	\$9,291.00	1,001
Center City	\$81.86	\$6.82	0.416 %	\$19,688.00	458
Chokio	\$53.87	\$4.49	0.473 %	\$11,397.00	559
Clarissa	\$79.01	\$6.58	0.941 %	\$8,400.00	663
Clarkfield	\$78.20	\$6.52	0.607 %	\$12,881.00	1,171
Clarks Grove	\$124.33	\$10.36	0.783 %	\$15,875.00	620
Clear Lake	\$133.79	\$11.15	1.038 %	\$12,885.00	266
Clearwater	\$125.20	\$10.43	0.905 %	\$13,828.00	379
Clements	\$61.65	\$5.14	0.617 %	\$10,000.00	227
Cloquet	\$102.13	\$8.51	0.647 %	\$15,779.00	11,142
Cokato	\$94.74	\$7.90	0.603 %	\$15,712.00	2,056
Cold Spring	\$92.28	\$7.69	0.558 %	\$16,525.00	2,294
Coleraine	\$24.00	\$2.00	0.122 %	\$19,735.00	1,116
Comstock	\$72.73	\$6.06	0.388 %	\$18,750.00	110
Cook	\$88.87	\$7.41	0.683 %	\$13,011.00	800
Cottonwood	\$165.97	\$13.83	1.253 %	\$13,250.00	924
Crookston	\$30.07	\$2.51	0.195 %	\$15,386.00	8,628
Crosby	\$15.65	\$1.30	0.166 %	\$9,412.00	2,218

Cyrus	\$8.45	\$0.70	0.077 %	\$10,938.00	334
Dawson	\$78.48	\$6.54	0.586 %	\$13,396.00	1,901
Deer Creek	\$219.28	\$18.27	2.528 %	\$8,675.00	392
Delano	\$74.19	\$6.18	0.431 %	\$17,205.00	2,480
Dent	\$67.16	\$5.60	0.985 %	\$6,818.00	167
Dexter	\$48.57	\$4.05	0.291 %	\$16,667.00	279
Dodge Center	\$63.18	\$5.27	0.407 %	\$15,521.00	1,816
Donnelly	\$228.42	\$19.04	2.064 %	\$11,065.00	317
Dunnell	\$23.78	\$1.98	0.171 %	\$13,929.00	216
Eagle Bend	\$17.56	\$1.46	0.184 %	\$9,524.00	593
Edgerton	\$51.09	\$4.26	0.384 %	\$13,301.00	1,123
Elgin	\$71.63	\$5.97	0.452 %	\$15,850.00	667
Elk River	\$155.47	\$12.96	0.734 %	\$21,173.00	6,785
Ellendale	\$81.26	\$6.77	0.523 %	\$15,541.00	555
Elmore	\$20.26	\$1.69	0.160 %	\$12,647.00	882
Ely	\$88.26	\$7.36	0.648 %	\$13,622.00	4,820
Erskine	\$97.01	\$8.08	1.100 %	\$8,819.00	585
Fairfax	\$11.94	\$1.00	0.118 %	\$10,139.00	1,405
Floodwood	\$144.37	\$12.03	1.559 %	\$9,261.00	648
Foreston	\$244.73	\$20.39	1.821 %	\$13,438.00	283
Freeborn	\$229.31	\$19.11	1.276 %	\$17,969.00	323
Fulda	\$36.51	\$3.04	0.267 %	\$13,692.00	1,308
Gaylord	\$35.91	\$2.99	0.246 %	\$14,604.00	1,933
Ghent	\$74.31	\$6.19	0.534 %	\$13,906.00	356
Gibbon	\$22.11	\$1.84	0.193 %	\$11,453.00	787
Glencoe	\$174.62	\$14.55	1.069 %	\$16,329.00	4,396
Glenville	\$134.86	\$11.24	0.761 %	\$17,730.00	851
Goodhue	\$145.86	\$12.16	1.066 %	\$13,684.00	657
Grand Marais	\$333.11	\$27.76	2.513 %	\$13,256.00	1,289
Grand Rapids	\$85.83	\$7.15	0.529 %	\$16,226.00	7,934
Grey Eagle	\$80.32	\$6.69	0.906 %	\$8,864.00	338

Hancock	\$35.25	\$2.94	0.259 %	\$13,633.00	877
Harris	\$72.28	\$6.02	0.489 %	\$14,773.00	678
Hawley	\$52.86	\$4.41	0.393 %	\$13,455.00	1,634
Hayfield	\$43.40	\$3.62	0.289 %	\$15,037.00	1,243
Hector	\$128.80	\$10.73	0.880 %	\$14,638.00	1,252
Henderson	\$109.41	\$9.12	0.823 %	\$13,295.00	739
Hendricks	\$10.14	\$0.85	0.106 %	\$9,535.00	737
Henning	\$36.32	\$3.03	0.405 %	\$8,977.00	832
Hibbing	\$87.52	\$7.29	0.461 %	\$18,989.00	21,193
Hoffman	\$43.90	\$3.66	0.468 %	\$9,375.00	631
Hokah	\$58.50	\$4.88	0.440 %	\$13,281.00	686
Holdingford	\$114.18	\$9.52	0.841 %	\$13,583.00	635
Hollandale	\$51.15	\$4.26	0.372 %	\$13,750.00	290
Houston	\$77.34	\$6.45	0.667 %	\$11,588.00	1,057
Howard Lake	\$109.35	\$9.11	0.837 %	\$13,060.00	1,240
Hoyt Lakes	\$219.44	\$18.29	0.907 %	\$24,198.00	3,186
Hutchinson	\$148.03	\$12.34	0.860 %	\$17,215.00	9,244
International Falls	\$100.69	\$8.39	0.651 %	\$15,458.00	5,611
Ironton	\$30.91	\$2.58	0.250 %	\$12,375.00	537
Isanti	\$160.91	\$13.41	0.990 %	\$16,250.00	858
Jackson	\$126.92	\$10.58	0.915 %	\$13,878.00	3,797
Jasper	\$55.60	\$4.63	0.525 %	\$10,583.00	731
Kandiyohi	\$74.91	\$6.24	0.502 %	\$14,922.00	447
Keewatin	\$237.50	\$19.79	1.301 %	\$18,250.00	1,443
Kenyon	\$78.30	\$6.53	0.596 %	\$13,140.00	1,529
Kerkhoven	\$107.29	\$8.94	0.902 %	\$11,893.00	761
Kettle River	\$25.23	\$2.10	0.216 %	\$11,667.00	174
Kimball	\$136.83	\$11.40	1.368 %	\$10,000.00	651
Kinney	\$4.80	\$0.40	0.023 %	\$20,739.00	447
La Crescent	\$70.40	\$5.87	0.401 %	\$17,540.00	3,674
La Prairie	\$95.43	\$7.95	0.481 %	\$19,844.00	536

Lafayette	\$92.93	\$7.74	0.620 %	\$15,000.00	507
Lake Benton	\$55.74	\$4.65	0.583 %	\$9,566.00	869
Lake City	\$55.70	\$4.64	0.410 %	\$13,594.00	4,505
Lake Park	\$41.85	\$3.49	0.338 %	\$12,379.00	716
Lake Wilson	\$193.52	\$16.13	1.577 %	\$12,273.00	380
Lamberton	\$30.01	\$2.50	0.247 %	\$12,139.00	1,032
Le Center	\$109.45	\$9.12	0.821 %	\$13,333.00	1,967
Le Roy	\$26.35	\$2.20	0.220 %	\$11,983.00	930
Le Sueur	\$69.26	\$5.77	0.382 %	\$18,146.00	3,763
Lester Prairie	\$150.61	\$12.55	0.998 %	\$15,089.00	1,229
Lindstrom	\$197.21	\$16.43	1.520 %	\$12,977.00	1,972
Litchfield	\$72.81	\$6.07	0.519 %	\$14,042.00	5,904
Little Falls	\$176.65	\$14.72	1.464 %	\$12,068.00	7,250
Littlefork	\$7.53	\$0.63	0.050 %	\$15,000.00	918
Loretto	\$28.93	\$2.41	0.139 %	\$20,833.00	297
Madelia	\$125.75	\$10.48	0.869 %	\$14,477.00	2,130
Madison Lake	\$97.62	\$8.14	0.661 %	\$14,773.00	592
Mahnomen	\$71.17	\$5.93	0.741 %	\$9,611.00	1,283
Mankato	\$131.44	\$10.95	0.911 %	\$14,431.00	28,651
Mantorville	\$126.83	\$10.57	0.728 %	\$17,411.00	705
Maple Lake	\$101.83	\$8.49	0.661 %	\$15,400.00	1,132
Mapleton	\$74.06	\$6.17	0.525 %	\$14,111.00	1,516
Marietta	\$223.53	\$18.63	2.254 %	\$9,917.00	279
Marshall	\$99.24	\$8.27	0.604 %	\$16,436.00	11,161
Maynard	\$36.59	\$3.05	0.277 %	\$13,203.00	428
Mazeppa	\$59.70	\$4.98	0.423 %	\$14,125.00	680
Medford	\$235.60	\$19.63	1.216 %	\$19,375.00	775
Melrose	\$95.28	\$7.94	0.684 %	\$13,925.00	2,409
Menahga	\$89.76	\$7.48	1.129 %	\$7,952.00	980
Milan	\$49.98	\$4.17	0.433 %	\$11,534.00	417
Milroy	\$97.61	\$8.13	0.826 %	\$11,818.00	242

Miltona	\$100.87	\$8.41	1.223 %	\$8,250.00	187
Minneota	\$32.38	\$2.70	0.253 %	\$12,793.00	1,470
Montgomery	\$68.20	\$5.68	0.551 %	\$12,371.00	2,349
Monticello	\$242.71	\$20.23	1.526 %	\$15,910.00	2,830
Moorhead	\$112.03	\$9.34	0.683 %	\$16,408.00	29,998
Morgan	\$143.36	\$11.95	1.160 %	\$12,356.00	975
Morristown	\$96.44	\$8.04	0.723 %	\$13,333.00	639
Motley	\$82.61	\$6.88	0.958 %	\$8,625.00	444
Mountain Iron	\$105.76	\$8.81	0.486 %	\$21,751.00	4,134
New Germany	\$77.26	\$6.44	0.649 %	\$11,905.00	347
New Prague	\$103.73	\$8.64	0.663 %	\$15,644.00	2,952
New Richland	\$64.72	\$5.39	0.459 %	\$14,111.00	1,263
New York Mills	\$65.67	\$5.47	0.684 %	\$9,602.00	972
Newfolden	\$66.57	\$5.55	0.723 %	\$9,205.00	384
North Branch	\$150.88	\$12.57	1.127 %	\$13,389.00	1,597
Northfield	\$128.97	\$10.75	0.730 %	\$17,664.00	12,562
Northrop	\$25.31	\$2.11	0.162 %	\$15,625.00	269
Norwood	\$89.78	\$7.48	0.537 %	\$16,734.00	1,219
Ogilvie	\$161.09	\$13.42	1.128 %	\$14,286.00	423
Olivia	\$46.93	\$3.91	0.286 %	\$16,416.00	2,802
Orr	\$83.68	\$6.97	0.715 %	\$11,705.00	294
Osakis	\$49.43	\$4.12	0.466 %	\$10,599.00	1,355
Owatonna	\$41.53	\$3.46	0.249 %	\$16,678.00	18,632
Paynesville	\$82.30	\$6.86	0.625 %	\$13,167.00	2,140
Pelican Rapids	\$56.46	\$4.71	0.531 %	\$10,641.00	1,867
Pequot Lakes	\$143.57	\$11.96	1.664 %	\$8,629.00	681
Perham	\$35.47	\$2.96	0.337 %	\$10,511.00	2,086
Pine City	\$101.95	\$8.50	0.935 %	\$10,905.00	2,489
Pipestone	\$162.61	\$13.55	1.354 %	\$12,010.00	4,887
Plainview	\$80.23	\$6.69	0.505 %	\$15,893.00	2,416
Porter	\$116.98	\$9.75	1.195 %	\$9,792.00	211

Princeton	\$75.96	\$6.33	0.577 %	\$13,170.00	3,146
Ranier	\$259.56	\$21.63	1.149 %	\$22,596.00	237
Red Wing	\$65.15	\$5.43	0.386 %	\$16,888.00	13,736
Renville	\$108.64	\$9.05	0.740 %	\$14,688.00	1,493
Richmond	\$210.11	\$17.51	2.064 %	\$10,179.00	867
Riverton	\$63.22	\$5.27	0.460 %	\$13,750.00	112
Rochester	\$83.52	\$6.96	0.425 %	\$19,648.00	57,890
Rogers	\$135.94	\$11.33	0.706 %	\$19,265.00	652
Rose Creek	\$122.05	\$10.17	1.007 %	\$12,120.00	371
Rothsay	\$84.93	\$7.08	0.718 %	\$11,827.00	476
Rushford	\$42.93	\$3.58	0.329 %	\$13,029.00	1,478
Russell	\$282.76	\$23.56	2.488 %	\$11,364.00	412
Sacred Heart	\$25.98	\$2.17	0.228 %	\$11,375.00	666
Saint Cloud	\$87.80	\$7.32	0.571 %	\$15,367.00	42,566
Saint Francis	\$234.04	\$19.50	1.270 %	\$18,429.00	1,184
Saint Hilaire	\$116.81	\$9.73	0.963 %	\$12,132.00	388
Saint James	\$65.09	\$5.42	0.440 %	\$14,805.00	4,346
Saint Leo	\$62.19	\$5.18	0.498 %	\$12,500.00	147
Saint Martin	\$152.56	\$12.71	1.664 %	\$9,167.00	220
Saint Michael	\$4.43	\$0.37	0.023 %	\$19,635.00	1,519
Sauk Centre	\$112.34	\$9.36	0.858 %	\$13,086.00	3,709
Sherburn	\$23.57	\$1.96	0.180 %	\$13,114.00	1,275
Silver Bay	\$105.08	\$8.76	0.390 %	\$26,944.00	2,917
Silver Lake	\$74.24	\$6.19	0.619 %	\$12,000.00	698
Springfield	\$29.99	\$2.50	0.236 %	\$12,687.00	2,303
Stacy	\$292.88	\$24.41	1.559 %	\$18,782.00	996
Staples	\$106.99	\$8.92	0.955 %	\$11,207.00	2,887
Starbuck	\$27.07	\$2.26	0.307 %	\$8,831.00	1,224
Stewart	\$60.81	\$5.07	0.494 %	\$12,308.00	616
Stewartville	\$95.63	\$7.97	0.517 %	\$18,511.00	3,925
Stockton	\$208.53	\$17.38	1.232 %	\$16,932.00	517

Taylor's Falls	\$79.53	\$6.63	0.595 %	\$13,359.00	623
Thief River Falls	\$48.84	\$4.07	0.347 %	\$14,065.00	9,105
Truman	\$33.74	\$2.81	0.248 %	\$13,578.00	1,392
Twin Lakes	\$403.09	\$33.59	3.365 %	\$11,979.00	210
Twin Valley	\$11.56	\$0.96	0.129 %	\$8,980.00	907
Ulen	\$8.93	\$0.74	0.087 %	\$10,313.00	514
Utica	\$86.64	\$7.22	0.701 %	\$12,361.00	249
Vernon Center	\$62.77	\$5.23	0.453 %	\$13,864.00	365
Virginia	\$77.62	\$6.47	0.500 %	\$15,528.00	11,056
Wabasha	\$141.85	\$11.82	1.022 %	\$13,874.00	2,372
Wadena	\$69.50	\$5.79	0.613 %	\$11,342.00	4,699
Wahkon	\$193.88	\$16.16	1.675 %	\$11,576.00	271
Waite Park	\$164.82	\$13.74	1.028 %	\$16,037.00	3,496
Waldorf	\$37.58	\$3.13	0.334 %	\$11,250.00	249
Walker	\$118.19	\$9.85	0.990 %	\$11,941.00	970
Waltham	\$96.33	\$8.03	0.979 %	\$9,837.00	176
Warroad	\$113.64	\$9.47	0.909 %	\$12,500.00	1,216
Waseca	\$50.02	\$4.17	0.318 %	\$15,717.00	8,219
Watertown	\$124.99	\$10.42	0.771 %	\$16,213.00	1,818
Waterville	\$36.07	\$3.01	0.260 %	\$13,860.00	1,717
Waverly	\$104.15	\$8.68	0.766 %	\$13,594.00	470
Wells	\$22.76	\$1.90	0.172 %	\$13,242.00	2,777
West Concord	\$127.84	\$10.65	0.886 %	\$14,423.00	762
Westbrook	\$5.12	\$0.43	0.047 %	\$10,871.00	978
Willmar	\$111.37	\$9.28	0.778 %	\$14,313.00	15,895
Wilmont	\$167.84	\$13.99	1.207 %	\$13,906.00	380
Windom	\$84.82	\$7.07	0.530 %	\$15,990.00	4,666
Winnebago	\$82.93	\$6.91	0.617 %	\$13,451.00	1,869
Winona	\$50.88	\$4.24	0.372 %	\$13,695.00	25,075
Winsted	\$222.04	\$18.50	1.252 %	\$17,734.00	1,522
Wood Lake	\$98.29	\$8.19	0.891 %	\$11,029.00	420

Wrenshall	\$41.35	\$3.45	0.218 %	\$18,942.00	333
Zimmerman	\$133.64	\$11.14	0.748 %	\$17,857.00	1,074
Zumbrota	\$99.63	\$8.30	0.667 %	\$14,932.00	2,129

* Two hundred and sixty five communities of greater Minnesota responded to the Survey. We have included the results of two hundred and forty seven communities. The eighteen communities we have excluded from the above results represent cases where obvious errors have been made in completing the Survey, and we have not yet been able to contact the communities in question to determine the correct values.

APPENDIX C

SECTION 1

FY 1986 PROJECT LIST ALTERNATIVE COST DETERMINATIONS

SUMMARY OF SEWER SERVICE CHARGES FOR THE 29 PROJECT LIST COMMUNITIES
WITHOUT GRANT ASSISTANCE AT TODAY'S CONSTRUCTION COSTS.

PART 1 STATISTICAL SUMMARY:

AVERAGE ANNUAL SEWER SERVICE CHARGE	WEIGHTED AVERAGE ANNUAL SEWER SERVICE CHARGE	MEDIAN ANNUAL SEWER SERVICE CHARGE
\$584.21	\$420.88	\$373.19

PART 2 CITIES LISTED ALPHABETICALLY

CITY NAME	CURRENT SEWER SERVICE CHARGE	SEWER SERVICE CHARGE WITHOUT GRANT FUNDING
Akeley	\$822.58	\$1288.41
Appleton	\$225.59	\$369.20
Barnum	\$566.65	\$1326.77
Battle Lake	\$158.76	\$426.85
Browns Valley	\$226.59	\$1014.86
Clarissa	\$278.68	\$476.08
Clearbrook	\$176.58	\$368.76
Cleveland	\$230.55	\$413.58
Cook	\$262.26	\$489.65
Grand Meadow	\$409.55	\$920.02
Hibbing (South & Int	\$190.37	\$293.09

Hutchinson	\$275.63		\$452.20
Lake Park	\$326.18		\$634.55
Lakefield	\$207.68		\$358.62
Maple Lake	\$242.76		\$373.19
Menahga	\$205.51		\$412.87
Minneota	\$222.20		\$462.45
Minnesota Lake	\$212.90		\$353.92
Nashwauk	\$446.65		\$1006.22
New Prague	\$198.45		\$308.51
Nisswa	\$683.91		\$1053.52
Pequot Lakes	\$169.00		\$460.18
Perham	\$93.15		\$192.01
Sandstone	\$216.40		\$466.85
Silver Lake	\$417.61		\$843.40
Stewart	\$145.50		\$271.00
Stewartville	\$241.40		\$321.52
Wanda	\$628.76		\$1428.96
Worthington	\$97.58		\$154.92

APPENDIX C

SECTION 2

FY 1986 PROJECT LIST ALTERNATIVE COST DETERMINATIONS

SUMMARY OF SEWER SERVICE CHARGES FOR THE 29 PROJECT LIST COMMUNITIES WITH CURRENT GRANT ASSISTANCE AT TODAY'S CONSTRUCTION COSTS - AND INCLUDING A SINKING FUND CHARGE TO GENERATE ENOUGH REVENUE TO CONSTRUCT A NEW FACILITY AT THE END OF AN ASSUMED 30 YEAR USEFUL LIFE OF THE CURRENT FACILITY. THE SINKING FUND IS BASED ON THE DEPOSIT OF 1/30 OF THE COST OF THE CURRENT FACILITY IN A DEDICATED FUND. THIS IS A CONSERVATIVE APPROACH SINCE IT TENDS TO ADDRESS TODAY'S COST OF A FACILITY AND INFLATION.

CITY NAME	CURRENT SEWER SERVICE CHARGE		SEWER SERVICE CHARGE WITH CURRENT GRANT ASSISTANCE AND INCLUDING A SINKING FUND FACTOR.
Akeley	\$822.58		\$1160.28
Appleton	\$225.59		\$303.91
Barnum	\$566.65		\$906.26
Battle Lake	\$158.76		\$263.76
Browns Valley	\$226.59		\$498.38
Clarissa	\$278.68		\$399.01
Clearbrook	\$176.58		\$268.92
Cleveland	\$230.55		\$336.95
Cook	\$262.26		\$382.34
Grand Meadow	\$409.55		\$656.19
Hibbing (South & Int	\$190.37		\$256.78
Hutchinson	\$275.63		\$362.46
Lake Park	\$326.18		\$479.33
Lakefield	\$207.68		\$280.84
Maple Lake	\$242.76		\$312.14
Menahga	\$205.51		\$302.18
Minneota	\$222.20		\$344.16

Minnesota Lake	\$212.90		\$298.59
Nashwauk	\$446.65		\$696.72
New Prague	\$198.45		\$268.35
Nisswa	\$683.91		\$968.39
Pequot Lakes	\$169.00		\$271.49
Perham	\$93.15		\$130.53
Sandstone	\$216.40		\$338.91
Silver Lake	\$417.61		\$638.19
Stewart	\$145.50		\$213.83
Stewartville	\$241.40		\$306.75
Wanda	\$628.76		\$1001.17
Worthington	\$97.58		\$130.11

AVERAGE SEWER
SERVICE CHARGE
WITH GRANT
AND INC.
SINKING FUND
CHARGE

\$440.58

STANDARD DEVIATION
OF SEWER SERVICE CHARGE
WITH GRANT
AND INC.
SINKING FUND
CHARGE

\$269.91

APPENDIX D

FY 1986 PROJECT LIST COMMUNITIES

SEWER SERVICE CHARGES WITH AVAILABLE GRANT FUNDS REDISTRIBUTED ACCORDING TO AFFORDABILITY

ALL COMMUNITIES HAVE AN ANNUAL DEBT SERVICE CHARGE WHICH IS 1.106% OF MEDIAN HOUSEHOLD INCOME. THIS WAS ACCOMPLISHED BY USING TOTAL CURRENT COSTS AND TOTAL GRANT FUNDS AVAILABLE FOR THE 29 MNL 'A' RANK COMMUNITIES

THE COLUMNS ON THE RIGHT INDICATE THE TOTAL SSC (AND SSC AS A % OF MEDIAN HOUSEHOLD INCOME) USING THE METHOD DESCRIBED ABOVE. (EACH CITY IS RESPONSIBLE FOR PAYING ITS OWN OPERATION, MAINTENANCE, AND EQUIPMENT REPLACEMENT CHARGES).

(THE COLUMNS ON THE LEFT ARE THE CURRENT ESTIMATED SEWER SERVICE CHARGES, AND SEWER SERVICE CHARGES AS A PERCENT OF MEDIAN HOUSEHOLD INCOME USING CURRENT MNL FY '87 COSTS, AND GRANT AMOUNTS ALLOCATED ACCORDING TO THE CURRENT PROGRAM).

"MHI" - MEDIAN HOUSEHOLD INCOME.

CITY NAME	SEWER SERVICE CHARGE AS A PERCENT MHI	SEWER SERVICE CHARGE	SEWER SERVICE CHARGE AS A PERCENT MHI	SEWER SERVICE CHARGE
Akeley	8.295 %	\$822.58	1.86 %	\$184.36
Appleton	2.190 %	\$225.59	1.91 %	\$196.22
Barnum	4.997 %	\$566.65	1.77 %	\$200.47
Battle Lake	1.312 %	\$158.76	1.58 %	\$190.85
Browns Valley	2.256 %	\$226.59	1.68 %	\$168.32
Clarissa	3.318 %	\$278.68	1.73 %	\$145.07
Clearbrook	2.257 %	\$176.58	1.66 %	\$130.04
Cleveland	1.431 %	\$230.55	1.34 %	\$215.24
Cook	2.016 %	\$262.26	1.62 %	\$210.52
Grand Meadow	3.479 %	\$409.55	1.54 %	\$181.16
Hibbing (South & Int	1.003 %	\$190.37	1.37 %	\$259.58
Hutchinson	1.601 %	\$275.63	1.93 %	\$331.91
Lake Park	2.635 %	\$326.18	1.87 %	\$231.86
Lakefield	1.544 %	\$207.68	1.78 %	\$239.63

Maple Lake	1.576 %	\$242.76		1.73 %	\$266.88
Menahga	2.584 %	\$205.51		1.82 %	\$144.89
Minneota	1.737 %	\$222.20		1.36 %	\$174.24
Minnesota Lake	1.393 %	\$212.90		1.36 %	\$208.38
Nashwauk	2.827 %	\$446.65		1.70 %	\$268.41
New Prague	1.269 %	\$198.45		1.44 %	\$225.12
Nisswa	4.718 %	\$683.91		1.46 %	\$211.48
Pequot Lakes	1.959 %	\$169.00		2.25 %	\$194.50
Perham	0.886 %	\$93.15		1.68 %	\$176.69
Sandstone	2.298 %	\$216.40		1.48 %	\$139.39
Silver Lake	3.480 %	\$417.61		1.66 %	\$198.96
Stewart	1.182 %	\$145.50		1.33 %	\$163.20
Stewartville	1.304 %	\$241.40		1.58 %	\$291.55
Wanda	10.2 %	\$628.76		3.00 %	\$184.89
Worthington	0.630 %	\$97.58		1.37 %	\$211.80

APPENDIX E

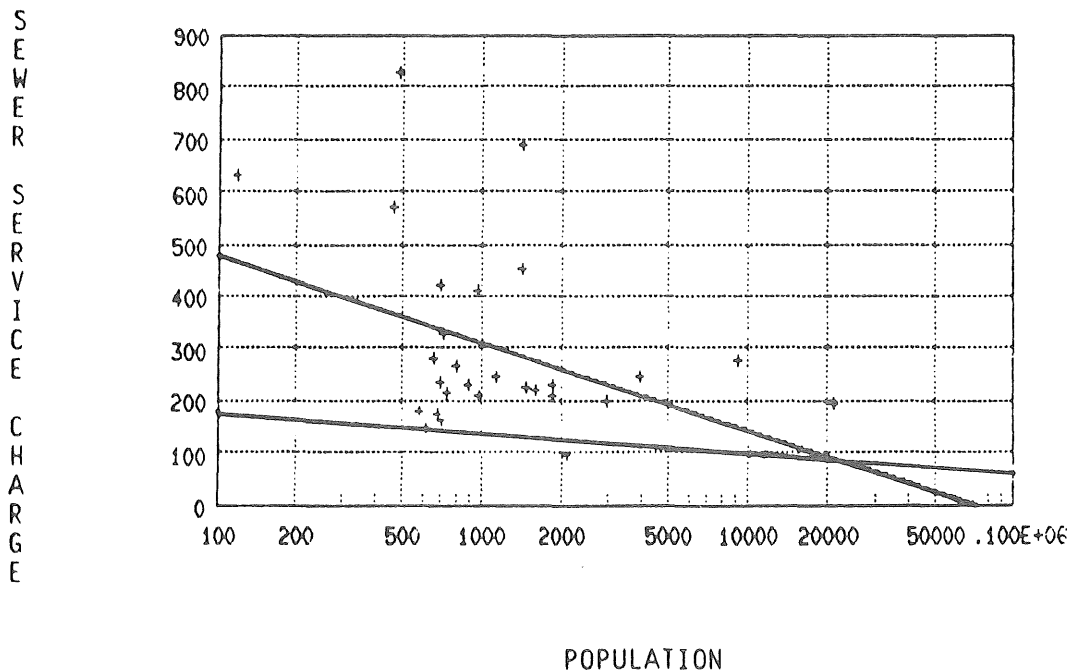
FY 1986 PROJECT LIST AND 1985 GREATER MINNESOTA SEWER RATE SURVEY COMMUNITIES

GRAPHIC REPRESENTATION OF ECONOMIES OF SCALE

The graphs presented below are simple linear regressions plotting COMMUNITY POPULATION against AVERAGE ANNUAL SEWER SERVICE CHARGES. (Note: The population scale has a different gradation than the Sewer Service Charge Scale)

The lower "shallower" line is the plot for communities included in results of the 1985 Wastewater Treatment Survey who have constructed wastewater treatment plants since 1975. This group was selected because it more clearly reflects the current cost of providing wastewater treatment than the general results of the survey. The plot indicates the general tendency of smaller communities, which lack economies of scale, to pay higher sewer service charges.

The upper "steeper" line is the plot for the 29 communities with "A" Rank on the FY 1987 Municipal Projects List. The steeper incline of this line suggests that while costs generally increase from the Survey to the FY '87 projects, this increase is disproportionately higher for smaller communities.



APPENDIX F

RESULTS OF THE 1985 MPCA SURVEY OF GREATER MINNESOTA SEWER SERVICE CHARGES A COMPARISON OF COMMUNITIES BY POPULATION AND AGE OF TREATMENT PLANT

(See next page for key to abbreviations)

POPULATION	TREATMENT CONST. Before 1965	TREATMENT CONST. Between '66 & '75	TREATMENT CONST. Since 1976
< 500	[27]	[20]	[13]
SSC WT. AV.	\$81.31	\$100.31	\$186.40
SSC AV.	\$79.71	\$ 98.98	\$176.85
SSCMHI WT. AV.	.701 %	.916	1.26
SSCMHI AV.	.696 %	.894	1.34
500 TO 1,000	[30]	[23]	[10]
SSC WT. AV.	\$63.87	\$112.37	\$114.51
SSC AV.	\$64.07	\$115.16	\$117.71
SSCMHI WT. AV.	.558 %	.843	.854
SSCMHI AV.	.553 %	.861	.835
1,000 TO 3,500	[37]	[21]	[16]
SSC WT. AV.	\$60.57	\$103.50	\$115.20
SSC AV.	\$66.47	\$107.45	\$116.93
SSCMHI WT. AV.	.447 %	.754	.682
SSCMHI AV.	.484 %	.786	.695
3,500 TO 10,000	[11]	[8]	[5]
SSC WT. AV.	\$84.45	\$84.91	\$108.98
SSC AV.	\$87.32	\$84.70	\$110.95
SSCMHI WT. AV.	.591 %	.548	.833
SSCMHI AV.	.606 %	.554	.730
> 10,000	[3]	[3]	[9]
SSC WT. AV.	\$83.37	\$72.81	\$96.47
SSC AV.	\$79.37	\$79.21	\$101.33
SSCMHI AV.	.515 %	.479	.655

TOTALS BY DATE OF TREATMENT CONSTRUCTION (TREATMENT CONST.)

	[108]	[75]	[53]
SSC WT. AV.	\$74.10	\$88.75	\$102.68
SSC AV.	\$71.59	\$104.00	\$128.56
SSCMHI WT. AV.	.402 %	.457	
SSCMHI AV.	.570 %	.801	.877

TOTALS BY POPULATION

	< 500	500-1,000	1,000-3,500	3,500-10,000	> 10,000
	[63]	[65]	[77]	[26]	[16]
SSC WT. AV.	\$116.46	\$89.95	\$89.22	\$89.13	\$90.20
SSC AV.	108.15	\$91.81	\$90.88	\$90.72	\$93.11
SSCMHI WT. AV.	.910	.707	.610	.618	
SSCMHI AV.	.887	.708	.630	.609	.595

KEY

TREATMENT CONST. - The date construction was completed on the treatment plant the City operated during a given period.
(Before 1965 includes 1965, between 1966 and 1975 includes 1966 and 1975, after 1976 includes 1976)

[] - Indicates the total number of communities in a particular group

SSC WT. AV. - The weighted average Sewer Service Charge.

SSC AV. - The average Sewer Service Charge.

SSCMHI WT.AV. - The weighted average Sewer Service Charge as a percentage of the Median Household Income (1980 Census).

SSCMHI AV. - The average Sewer Service Charge as a percentage of the Median Household Income (1980 Census).

APPENDIX G

RESULTS OF THE 1985 MPCA SURVEY

OF WASTEWATER TREATMENT COSTS

METROPOLITAN WASTE CONTROL COMMISSION COMMUNITIES (MWCC)

PART 1 STATISTICAL SUMMARY:

AVERAGE ANNUAL SEWER SERVICE CHARGE	MEDIAN ANNUAL SEWER SERVICE CHARGE	HIGHEST ANNUAL SEWER SERVICE CHARGE	LOWEST ANNUAL SEWER SERVICE CHARGE	AVERAGE ANNUAL SEWER SERVICE CHARGE AS A PERCENT OF MEDIAN HOUSEHOLD INCOME
\$170.09	\$130.19	\$719.51	\$36.73	0.710
WEIGHTED ANNUAL AVERAGE SEWER SERVICE CHARGE	STANDARD DEVIATION SEWER SERVICE CHARGE	STANDARD DEVIATION SSC AS A PERCENT MHI	WEIGHTED AVERAGE ANNUAL SEWER SERVICE CHARGE AS A PERCENT OF MEDIAN HOUSEHOLD INCOME	WEIGHTED AVERAGE MWCC CHARGE PER HOUSEHOLD
\$124.77	\$132.38	0.4668	0.683	\$77.37

Forty of one hundred and ten MWCC service area communities responded to the survey. These forty constitute 67% of the entire population of the MWCC service area.

PART 2: CITIES RANKED ACCORDING TO ANNUAL SEWER SERVICE CHARGE

CITY NAME	SEWER SERVICE CHARGE	SSC PERCENT MHI	MEDIAN HOUSEHOLD INCOME	TOTAL MWCC CHARGES TO COMMUNITY AS A % OF TOTAL BUDGET
Roseville	\$36.73	0.147 %	\$25,038.00	69.09 %
Saint Louis Park	\$36.99	0.173 %	\$21,362.00	81.43 %
Bloomington	\$63.63	0.244 %	\$26,083.00	65.78 %
Shakopee	\$65.99	0.309 %	\$21,345.00	91.24 %
Brooklyn Park	\$72.12	0.325 %	\$22,160.00	82.32 %
West Saint Paul	\$77.92	0.410 %	\$19,004.00	74.65 %
Brooklyn Center	\$78.89	0.354 %	\$22,282.00	73.19 %

Golden Valley	\$79.25	0.263 %	\$30,186.00	72.19 %
Falcon Heights	\$81.27	0.442 %	\$18,370.00	80.93 %
Hastings	\$81.46	0.387 %	\$21,071.00	70.43 %
Fridley	\$87.02	0.381 %	\$22,850.00	58.70 %
Oak Park Heights	\$87.96	0.441 %	\$19,968.00	30.87 %
Spring Park	\$88.69	0.530 %	\$16,723.00	40.89 %
Richfield	\$99.20	0.486 %	\$20,424.00	47.99 %
Blaine	\$102.51	0.427 %	\$23,992.00	60.74 %
Mendota Heights	\$106.91	0.316 %	\$33,855.00	54.83 %
Saint Paul	\$112.38	0.701 %	\$16,029.00	71.84 %
Anoka	\$116.22	0.607 %	\$19,135.00	62.12 %
Bayport	\$120.50	0.544 %	\$22,137.00	67.94 %
South Saint Paul	\$123.34	0.617 %	\$19,988.00	83.58 %
Willernie	\$137.05	0.751 %	\$18,239.00	34.56 %
North Saint Paul	\$143.28	0.688 %	\$20,823.00	71.60 %
Minneapolis	\$145.54	1.014 %	\$14,351.00	69.32 %
Lino Lakes	\$155.65	0.659 %	\$23,615.00	51.55 %
Lilydale	\$158.65	0.546 %	\$29,063.00	03.85 %
Mound	\$159.54	0.740 %	\$21,548.00	53.45 %
Lakeville	\$160.21	0.661 %	\$24,234.00	78.76 %
Tonka Bay	\$166.28	0.624 %	\$26,638.00	32.78 %
Inver Grove Heig	\$176.18	0.800 %	\$22,036.00	63.43 %
Mounds View	\$217.59	0.996 %	\$21,842.00	00.00 %
Plymouth	\$219.32	0.788 %	\$27,840.00	38.91 %
Stillwater	\$226.10	0.986 %	\$22,929.00	61.87 %
North Oaks	\$226.90	0.426 %	\$53,285.00	92.91 %
Farmington	\$232.45	1.232 %	\$18,874.00	95.81 %
Oakdale	\$288.05	1.275 %	\$22,597.00	48.33 %
White Bear Towns	\$340.30	1.324 %	\$25,700.00	18.87 %
Deephaven	\$367.38	1.126 %	\$32,627.00	13.70 %
Centerville	\$393.58	1.543 %	\$25,500.00	29.34 %

Woodbury	\$451.25	1.623 %	\$27,811.00	24.12 %
Medina	\$719.51	2.491 %	\$28,883.00	29.15 %

PART 3: CITIES LISTED ACCORDING TO NAME

CITY NAME	SEWER SERVICE CHARGE	POPULATION	MWCC CHARGE PER RESIDENTIAL CONNECTION	AVERAGE MWCC CHARGE PER HOUSEHOLD AS A % OF TOTAL AVERAGE RESIDENTIAL SSC
Anoka	\$116.22	15,634	\$72.20	62.12 %
Bayport	\$120.50	2,932	\$81.86	67.94 %
Blaine	\$102.51	28,558	\$62.26	60.74 %
Bloomington	\$63.63	81,831	\$41.85	65.77 %
Brooklyn Center	\$78.89	31,230	\$57.74	73.19 %
Brooklyn Park	\$72.12	43,332	\$59.38	82.33 %
Centerville	\$393.58	734	\$115.46	29.34 %
Deephaven	\$367.38	3,716	\$50.36	13.71 %
Falcon Heights	\$81.27	5,291	\$62.94	77.45 %
Farmington	\$232.45	4,370	\$222.71	95.81 %
Fridley	\$87.02	30,228	\$51.08	58.70 %
Golden Valley	\$79.25	22,775	\$57.21	72.18 %
Hastings	\$81.46	12,827	\$57.33	70.37 %
Inver Grove Heig	\$176.18	17,171	\$111.75	63.43 %
Lakeville	\$160.21	14,790	\$126.18	78.76 %
Lilydale	\$158.65	417	\$6.11	3.85 %
Lino Lakes	\$155.65	4,966	\$80.24	51.55 %
Medina	\$719.51	2,623	\$209.73	29.15 %
Mendota Heights	\$106.91	7,288	\$58.62	54.83 %
Minneapolis	\$145.54	370,951	\$100.89	69.32 %
Mound	\$159.54	9,280	\$85.27	53.45 %
Mounds View	\$217.59	12,593		
North Oaks	\$226.90	2,846	\$210.81	92.91 %
North Saint Paul	\$143.28	11,921	\$102.58	71.60 %
Oak Park Heights	\$87.96	2,591	\$34.37	39.07 %
Oakdale	\$288.05	12,123	\$139.22	48.33 %

Plymouth	\$219.32	31,615	\$80.16	36.55 %
Richfield	\$99.20	37,851	\$47.60	47.99 %
Roseville	\$36.73	35,820	\$25.38	69.09 %
Saint Louis Park	\$36.99	42,931	\$30.12	81.42 %
Saint Paul	\$112.38	270,230	\$80.73	71.84 %
Shakopee	\$65.99	9,941	\$60.17	91.18 %
South Saint Paul	\$123.34	21,235	\$113.12	91.71 %
Spring Park	\$88.69	1,465	\$36.27	40.90 %
Stillwater	\$226.10	12,290	\$139.89	61.87 %
Tonka Bay	\$166.28	1,354	\$72.58	43.65 %
West Saint Paul	\$77.92	18,527	\$58.17	74.65 %
White Bear Towns	\$340.30	5,921	\$64.23	18.87 %
Willernie	\$137.05	654	\$47.37	34.56 %
Woodbury	\$451.25	10,297	\$108.83	24.12 %

FINANCING WASTEWATER TREATMENT FACILITIES - ALTERNATIVES

I. ISSUE STATEMENT

The following discussion describes various methods of assisting and enhancing local financing of wastewater treatment through involvement by the state and the private sector. Advantages, disadvantages, and potential ramifications are outlined along with each alternative.

II. DISCUSSION

A. STATE ASSISTANCE PROGRAMS

This section describes various methods of acquiring funds for a state assistance program and alternatives for employing these funds to meet the needs of local communities.

1. METHODS OF GENERATING REVENUE

a) Bonding

One capitalization mechanism that would generate revenue for a state assistance program is bonding. Because structuring and managing a bond financed assistance program is an extremely complex undertaking, this Report is limited to a general overview which highlights certain aspects of such a program.

There are two different bonding options available - state revenue bonds and state general obligation bonds. Revenue bonds are retired through, and dependent upon, revenue derived from specific charges or user fees. General obligation bonds are generally retired through general fund revenues and are backed by the full faith and credit of the state.

Revenue bonds, sold specifically for the purpose of funding wastewater treatment facilities, are a financing option. Such bonds would be retired by a surcharge or special tax on water and sewer charges and would not be financed or secured by the state's general fund. If revenue bonds are used, additional security would be necessary to make such bonds marketable since a number of communities participating in the program would have limited financial capability and low bond ratings, and there would be a risk associated with attaining revenue on a continuous basis from such communities. According to the Department of Finance, which oversees use of the state's bonding authority, security corresponding to approximately 15% of the proceeds from bond sales would be necessary for collection and servicing uncollected accounts. These additional funds could be acquired through additional bond sales or through general appropriations. The interest accrued in such a fund would contribute to the general income of the assistance program.

According to the Department of Finance the life of the bond issue should correspond to the approximate design life of the project it is financing, which in the case of treatment facilities would be approximately twenty years. Bond sales would be scheduled and implemented according to anticipated funding requirements for treatment facilities. Interest rates available at the time of sale, and interest earned on the fund balance would vary dependent upon market conditions.

ADVANTAGES of General Obligation Bonds -

- o Generally they involve the lowest interest rate available based on the State's credit rating.

DISADVANTAGES of General Obligation Bonds -

- o The state's debt would be increased.
- o It would be necessary to raise taxes to pay for the bonds.
- o Legislative approval would be required for bonding authority.
- o Would not encourage public awareness of the true cost of wastewater treatment.

ADVANTAGES of Revenue Bonds -

- o Since the bonds would be secured with a dedicated revenue stream and a commitment from the state, a lower interest rate than general obligation bonds may be available.
- o State bonding limits may not be affected.
- o Debt service would be paid by those who benefit.
- o Would increase public awareness of the true cost of wastewater treatment.

DISADVANTAGES of Revenue Bonds -

- o Additional charges are unpopular.
- o Charges would not be tax deductible by users.

OTHER CONSIDERATIONS -

- o With variations in available market interest rates, it may be possible to take advantage of favorable market conditions, earning additional interest income on a short-term basis (up to three years). Conversely, market conditions could cause interest paid on a given bond issue to exceed interest earned on the existing fund balance.

b) State Bond Bank

The State would issue bonds for several cities. The State credit rating would be used. The cities would pay the debt service to the lender, or the State would act as an agent for the cities.

ADVANTAGES -

- o A lower interest rate based on the State's credit rating could be utilized.
- o The State's bonding limit would not be affected.
- o Reduced bond issuance costs for the cities could be realized.
- o It would provide access to the national tax-exempt market.
- o Bonding ability of communities with limited financial resources would be enhanced.

DISADVANTAGES -

- o The State would have to administer the program.
- o The State may be contingently liable if a city defaults.

c) Appropriation of General Fund Revenues

A state assistance program could be funded by appropriation of General Fund revenues.

ADVANTAGES -

- o State debt would not be increased.
- o The appropriation could insure a stated amount of funding for a given period of time and hence a predictable environment for community planning would exist.

DISADVANTAGES -

- o Taxes would be increased.
- o The Legislature is reluctant to increase taxes.
- o The appropriation would be subject to change by the Legislature.
- o Would not encourage public awareness of the true cost of wastewater treatment.

d) Cigarette Tax

The current cigarette tax bill states that the revenue produced by a tax of five percent on the wholesale sales price or cost of tobacco products must be credited to the Minnesota State Water Pollution Control Fund. The Water Pollution Control Fund is being used to finance wastewater treatment grants and the combined sewer separation program. Under provisions of the current cigarette tax, State funding for water pollution from this source is anticipated to remain fairly constant.

ADVANTAGES -

- o The cigarette tax can be used to finance such areas as hardship cases or the additional amount required for bonding security.

DISADVANTAGES -

- o The cigarette tax does not provide enough funding for municipal wastewater treatment.
- o Would not encourage public awareness of the true cost of wastewater treatment.

c) Generation of Revenue from 90% Grant Recipients

One alternative for generating revenue is to surcharge those communities which received 90% to 94% construction grant funding prior to Fiscal Year 1985 (FY 1985). In addition to providing capitalization, such an approach would to a certain extent compensate for the disparity in grant funding facing communities receiving reduced levels of grant funding under the current federal and state programs.

The current basic federal grant percentage is 55%. When combined with the state supplemental grant and innovative and alternative funding the typical total grant percentage ranges from 55% to 75%.

Prior to FY 1985 grantees received a 75% basic federal grant and a combination of additional federal and state funds which resulted in construction grant percentages from 90% to 94%. One hundred and eighty two Minnesota communities with a combined population of 2,845,000 and approximately 1,054,000 facility connections received 90% to 94% construction grants.

Appendix A, Section 1 illustrates the additional debt service that twenty-two Greater Minnesota communities would have incurred HAD THEY RECEIVED A 55% BASIC GRANT rather than the 75% basic grant available prior to FY 1985. The twenty-two communities are a sample of those communities who responded to the Agency's Wastewater Treatment Survey. A summary follows:

- o The CURRENT weighted average monthly sewer service charge for the 22 90-94% grant recipients listed in Appendix A, Section 1 is:
\$ 8.88 per month (\$ 106.56 annually).
- o The ADDITIONAL weighted average monthly debt service charge that would be incurred at a 20% basic grant reduction is: \$ 2.79 (\$ 33.48 annually).

Appendix A, Section 2 illustrates the same point using the 29 communities on the Agency's Municipal Needs List scheduled to receive grants during FY 1987. In this example project costs and total eligible grant amounts have been 'brought back' to 1980 costs using the ENR INDEX (This index adjusts costs for inflation) and each community has been given a 92% grant to approximate the 90% to 94% funding available prior to FY 1985.

- o The CURRENT (i.e estimated at construction) weighted average monthly sewer service charge for the 29 Municipal Needs List communities in Appendix A, Section 2 is: \$ 11.44 per month (\$ 137.28 annually).
- o The REDUCTION in the weighted average monthly Sewer Service Charge HAD these communities constructed with 92% grants and 1980 costs is:
\$ 8.09 (\$ 97.08 annually).

Below are two alternatives for generating revenue from the 90% grant recipients.

- o Connection Surcharge - A monthly surcharge on each connection to a collection system going to a centralized wastewater treatment facility which was built with a 75% basic federal grant. The surcharge would be billed by the Agency to the city, collected by the municipality, and paid by the municipality to the Water Pollution Control Fund via the Department of Finance. Each residential connection with Sewer Service Charges in excess of a certain predetermined amount (e.g. \$20 per month) could be exempted from this surcharge so as not to impose a financial hardship.

Under this alternative:

- \$1 per month per connection would generate approximately \$12,000,000 annually.
- \$2 per month per connection would generate approximately \$23,500,000 annually.
- \$3 per month per connection would generate approximately \$35,000,000 annually.
- \$4 per month per connection would generate approximately \$46,500,000 annually.
- \$5 per month per connection would generate approximately \$58,300,000 annually.

In order for this alternative to be assessed further, additional information regarding median household Sewer Service Charges would have to be gathered and

analyzed. Also, data regarding the number of commercial, governmental and industrial users would need to be factored into the surcharge mechanism.

- o Plant Design Capacity-based Surcharge - A monthly surcharge based on design capacity would be placed on each community with a centralized wastewater treatment facility built with a 75% basic federal grant. The surcharge would be billed to the city by the Agency and paid by the municipality to the Water Pollution Control Fund via the Department of Finance. Communities with monthly Sewer Service Charge rates for residential users in excess of a certain predetermined amount (e.g. \$20 per month) could be exempted from this surcharge so as not to impose a financial hardship.

Under this alternative:

\$30,000 per month, per million gallons design capacity would generate about	\$12,800,000
\$60,000 per month, per million gallons design capacity would generate about	\$25,600,000
\$90,000 per month, per million gallons design capacity would generate about	\$38,300,000
\$120,000 per month, per million gallons design capacity would generate about	\$51,200,000
\$150,000 per month, per million gallons design capacity would generate about	\$64,000,000

The design capacity of the projects funded at the 75% federal grant level and higher is 448.25 million gallons per day. If we assume that approximately 5% of this capacity is in communities with Sewer Service Charges in excess of \$20 per month, the net capacity base would be 426 million gallons per day.

These surcharge alternatives attempt to compensate for the effects of the change from 75% federal basic grants to 55% federal basic grants and the corresponding decline in federal funds facing Minnesota.

A number of communities targeted for surcharge payment (i.e. communities who received 75% basic grants) were made aware of this proposal and in turn raised the following concerns regarding its feasibility:

- o The communities received their grants and proceeded in good faith, and are now being asked to in effect 'return' a portion of the funds.
- o Communities cannot afford the additional costs.
- o The need for additional grant funds is the result of federal and state pollution control mandates, and the federal government and the state should assume responsibility for generating the necessary funds.
- o Collection of replacement funds for their own facilities is already being done and they are now being asked to aid in replacement of other communities' systems.

Another major concern is whether or not the larger communities would also be the major contributors to this surcharge system. Because of the priority system used in grant distribution it appears that the larger communities have been the recipients of the earlier grants. However, for a more comprehensive look at fund distribution in Minnesota, refer to Appendix B, which is a listing of projects and/or communities, with grant amounts, by legislative districts.

ADVANTAGES -

- o It could raise a considerable amount of revenue for the program.
- o It could equalize the difference between past and future funding levels.
- o It could equalize the difference between the cost of facilities built eight or more years ago and the costs of those built during recent inflationary years.
- o It could equalize the difference between the lower user costs of high density areas (which were for the most part first to be funded) and the higher user costs of smaller communities, due to economies of scale.
- o A majority of the revenue collection and administration would be performed by the municipalities, and would therefore require minimal state staff.
- o Minnesota would be able to continue to assist communities in the statewide environmental goals.

DISADVANTAGES -

- o It will be construed as another tax (not unlike the current pollution control permit fees).
- o It appears to penalize those communities which either were first in line because of the state and federal priority listing, or those who initiated a wastewater treatment facilities project in order to comply with state and federal standards.
- o Determining the method of application of the surcharge (i.e. by facility connections, design capacity, actual use) will be difficult.
- o The larger cities may be in the position of paying the larger portion of the surcharge while continuing to incur the heavier tax burden of current pollution control.
- o Some past grantees received 90-94% funding for only a portion of their wastewater treatment needs.

f) State Lottery

The State lottery could be the funding source for either a grants program or a loan program. It would generate funds for the program as the public supported the lottery and the Legislature made the allocation.

ADVANTAGES -

- o No State bonds would be issued.
- o It would be a new funding source which is not a tax.
- o The Fund could generate a significant amount for a state assistance program.
- o Participation in a lottery is voluntary.

DISADVANTAGES -

- o Many other programs and agencies would be competing for such funds.
- o The amount of revenues available would be uncertain.
- o A Board or Agency would need to be established to administer the lottery.
- o Would not encourage public awareness of the true cost of wastewater treatment.

g) Sales Tax Charged on Sewer and Water Charges

ADVANTAGES -

- o No State appropriation would be required.

DISADVANTAGES -

- o Taxes are unpopular.
- o It would be difficult to develop an equitable tax because the various methods used by cities to charge users for sewer and water service would impact the level of taxation.
- o It would be administratively complex to determine which charges, fees, assessments, etc. should be subject to such a tax.
- o It would impose a burden on low and fixed income citizens.

2. METHODS OF DISTRIBUTING FUNDS

a) Revolving Loan Program

The transition to a non-federal program for constructing wastewater treatment plants presents state and local governments with the challenge of establishing financing mechanisms that would create a lasting source of monies to meet wastewater treatment needs. When the federal role in the program changes, several options will be open for states to finance wastewater treatment projects. One option is that of continuing with the grant program using both state and federal funding and state funding alone when federal funding is discontinued. Another option is the establishment of a state revolving loan fund using either state or federal funding or a combination of both. Combinations of grant and loan funding would also create possible options. For instance, one such alternative might be grant funding for hardship cases and loans for those who could afford them. Another alternative might be loans for part of each city's funding requirement and supplemental grants (based on need and financial hardship) for the remainder of the funding requirement. State Revolving Funds (SRFs), whether capitalized with federal or state contributions, can provide a growing, long-term source of funds that can be targeted to finance needed projects, while maintaining a local financial role through loan repayments.

The purpose of this portion of the paper is to suggest a method for establishing a Minnesota SRF, and how the SRF would work to meet the potential wastewater treatment needs on a self-sufficient basis.

Essentially, the State of Minnesota would administer a loan program that would utilize state appropriations and/or proceeds from the sale of bonds to finance loans to local cities. The program requires that loans and loan repayments be made to the fund so that revenues will increase the amount of funds available in the SRF. The SRF would lend money to the local governments, the local governments would repay the loans, and the SRF would re-lend (revolve) the repayments to other local governments. The State would set the priorities for loan distribution, interest rates, and maturities of the loans. The State could invest the funds not being utilized in securities and use the interest to replenish the fund or reduce the interest rates charged for the loans.

An SRF can be capitalized by using an unleveraged or leveraged strategy, or a combination of both.

Under the unleveraged method, state appropriations to the fund would be used to make loans to communities. As repayments of principal and interest are made to the fund, the amount of funds in the SRF would steadily increase if the interest rate exceeds the inflation rate.

Under the leveraged method, state money is used as security for state bond sales, the proceeds from which would be lent to communities. Generally, the state money would be used to fund a debt service reserve fund that guarantees repayment of the bonds even if local repayments prove to be insufficient. This reduces the risk to bondholders and helps lower the interest rate the state would pay.

An unleveraged fund may require minimal administration; however, a leveraged fund would allow annual financing of at least twice the total value of the original capitalization. A leveraged fund would have more money from loan repayments to use for relending because it can lend more money. Therefore, treatment needs of a larger number of communities would be met more quickly with a leveraged fund. However, the value of the unleveraged fund would

increase over time with the unleveraged fund worth slightly more than the leveraged fund as bond repayments were made. The timing of this value intersection would depend on the lives of the loans and bonds, the amount of project cost coverage, and the amount and timing of state appropriations.

The fund's growth will be based on several factors:

- o appropriation amounts
- o net earnings from bond issues (if the fund is leveraged)
- o loan interest rates
- o loan maturities
- o loan defaults.

For instance, the fund will grow at a faster rate with greater interest rates, shorter maturities, and lower default rates.

An initial legislative appropriation is almost mandatory for a leveraged fund because it is very difficult to market bonds with reasonable interest rates without establishing reserves and a repayment schedule. Under the leveraged method, the growth of the fund will also be affected by the net earnings of the bond issue. If debt service payments to bondholders are greater than local loan repayments, the growth of the fund will be limited.

Interest paid by communities should cover State borrowing costs. However, there may be a need to give low interest loans to some communities. Interest rates could be brought down by blending rates from bond proceeds with appropriated funds.

Decisions made on the first repayment year, the life of the loan, and the number of repayments each year will affect both the growth and liquidity of the fund. If lending terms become more lenient, the long-term lending potential of the fund will be reduced.

Loans made to local communities should be backed by dedicated sources of local revenue sufficient to cover both principal and interest. For instance, an agreement pledging sewer service fees would provide this security. To prevent loan default, many states have obtained the power to require sewer service charge increases. Some states have also obtained the power to intercept local aid and apply it toward payment default.

Many questions must be answered and issues resolved when considering the establishment of a State Revolving Loan Fund. These questions and issues have been examined by other states with existing revolving loan funds, and different responses to these questions have been presented. (Cf. The Environmental Protection Agency, Office of Municipal Pollution Control, Planning and Analysis Division, Policy and Analysis Branch, "Appendix A" issued April, 1986.) For instance, can an SRF function adequately within the existing legal environment? To respond to this question, the following items have been examined by other states and, perhaps, should be examined by the State of Minnesota:

- o State Constitutional prohibitions against deficit spending
- o Specific appropriation requirements
- o Handling of tax issues
- o Restriction on the fund's ability to earn or retain interest on accounts
- o Other.

Appendix C below describes a number of established or proposed state revolving loan funds or bond/loan programs.

What capitalization mechanisms would be available to the SRF and how would the State agency which is managing the fund market bonds?

- o State revenue bonds
- o State general obligation bonds
- o Legislative appropriations out of general revenues
- o Dedicated revenues such as a sales tax, mineral tax or revolving loan repayments
- o Appropriations funded by the sale of severance tax bonds
- o Other.

What forms of assistance would be available to local communities?

- o Loans
- o Grants
- o State bond bank
- o Bond pool (State buys municipal bonds and reissues as State bonds)
- o Bond guarantees
- o Interest subsidies or buy-downs
- o Credit enhancements
- o Bond insurance
- o State provision of financial/technical assistance
- o Other.

What eligibility requirements would be considered mandatory for participation in the SRF?

- o Statement of financial and management capability
- o Ability to repay the loan
- o Establishment of dedicated repayment source which covers O&M and debt service
- o Assurance of ability to effectively operate and maintain the facility for its useful life
- o Compliance with environmental standards
- o Provision for financial and environmental assurances
- o Full utilization of all local revenue sources
- o Following of compliance procedures
- o Provision for notice upon completion of construction and initiation of operation
- o Compliance with State procurement rules
- o Evidence of necessity of project
- o Other.

What forms of assistance would be available to communities under financial hardship?

- o Grants
- o Purchase of the loan and/or bond insurance for the community
- o Guarantee of local bonds or loans
- o Refinancing of local debt incurred for construction of the wastewater treatment facility
- o Provide some or all of the debt service on local bonds
- o Variable loan terms such as interest rates, maturity dates, origination fees, grace periods and timing of installment payments.
- o Other.

What items should be considered when establishing interest rates?

- o Rates can be fixed or variable
- o If variable, rates could range from 0% to the market rate
- o Variable rates would require review on a regular basis
- o A sliding scale rate schedule could be set up for communities under financial hardship
- o Other.

From examining other SRFs, interest rates are generally near or equal to the rate paid by the state on bonds. Anywhere from 0% to just below the bond rate is charged for hardship cases.

What amount of funding would be available through an SRF?

- o It would depend on amount of State participation
- o A maximum loan amount must be established
- o Loans could be limited according to total dollar amount and/or percentage of total project costs.

How would disbursements be handled?

- o Based on priority list or some other quantifiable set of criteria
- o As a lump sum when loan is made
- o On a reimbursement basis as construction is completed
- o As a lump sum upon completion of the project
- o Other.

What items should be considered when establishing a repayment schedule?

- o Limit on term of loan. According to current Department of Finance policy, loans could not exceed 20 years.
- o When should repayment begin?
- o Should repayment terms fixed or flexible?
- o Should there be several payments per year or a single annual installment ?
- o Other.

From examining other SRFs, repayment usually starts after completion of construction with bi-annual or annual payments.

What items should be considered when establishing default procedures?

- o Grace periods
- o No moratorium on repayment of principal and interest
- o Late payment fee
- o No prepayment penalty
- o Re-negotiation of loan conditions for delinquencies
- o Use of interest earned on fund to cover temporary late payments
- o Tying Sewer Service Charges to loan defaults
- o Tying State aid to loan defaults
- o Other.

After the questions (listed above) have been resolved, legislation must be proposed that will provide for an effective institutional structure. Some of the key objectives for this task would be:

- o Choose a new, modified, or existing entity to operate the fund.
- o Give the entity the authority to receive appropriations and repayments, make loans or grants to communities, and market bonds.
- o Require the entity and communities to maintain financial records which must be audited on a regular basis.
- o Establish compliance procedures.
- o Insure that the entity administering the fund can meet the legal and market requirements to assure successful bond issues.

ADVANTAGES of an SRF:

- o The fund would provide a continuing source of loan funds.
- o The fund revenues would be predictable and permit long-term planning.
- o The fund would essentially be self-supporting.
- o The State would be able to meet future wastewater treatment and collection

- needs based on the growth of the fund.
- o Hardship considerations could be given to communities through variable loan terms such as the interest rate or length of the loan.
- o The loan fund could provide funding for any percentage of the total project costs.
- o The refinancing feature of the revolving loan program would eliminate the disincentive to begin construction immediately that now exists with the grants program.
- o The SRF could reduce the costs of borrowing for a community by guaranteeing local debt obligations.
- o The SRF can earn interest on fund accounts and use up to 4 percent of the amounts available for administrative purposes.
- o States can use all or a portion of their funds available for capitalization grants for SRFs.
- o The fund would promote local, self-sufficient financing of projects and create strong incentives for efficient decisionmaking since the loans would have to be repaid.
- o The SRF could enable more projects to be built in a shorter period of time than in the grants program.
- o Lower interest rate available based on State rating.
- o Cities would not be required to issue bonds on an individual basis.
- o Interest rates can be subsidized by the State.

DISADVANTAGES of an SRF:

- o Loans are less attractive than grants.
- o Communities could be delinquent in making payments or default on loans
- o Legislature must commit to significant fund capitalization for several years.
- o The SRF would assume certain risks of default by guaranteeing local debt obligations.
- o New legislation would be required to set up institutions or rules to manage the fund.
- o Time required to establish and implement the program.
- o The possibility of a lag in repayment and replenishing of the fund, curtailing revolving of additional loans.
- o It is politically unpopular to turn grant funds into a loan, though this is less expensive for the State.
- o Many existing state revolving loan funds include cities with a population of 10,000 or more. It is uncertain if an SRF would work in Minnesota with its large proportion of very small cities because many of the small cities cannot even afford to construct with grant funding, and would be unable to make principal and interest payments on a loan.

Appendix D is a scenario for a twenty year state revolving loan fund (SRF) assuming loans are made available at 5% interest, and a 5% rate of return is realized on loan funds invested.

b) Reimbursement Program

Another approach for states to utilize in financing wastewater treatment projects is through a reimbursement program. A reimbursement program could encourage municipalities to proceed with construction of wastewater treatment systems without waiting for grants, reduce state expenditures and involvement in the funding of local wastewater treatment projects, increase local control, and improve the efficiency of wastewater treatment.

The existing State Reimbursement Program allows communities that do not have a priority ranking high enough to be reached with the available funds to proceed

with construction and be reimbursed when state grant funds become available. Under this program, cities with an immediate need may proceed with construction of wastewater treatment facilities without jeopardizing their eligibility for state grant participation. Additionally, cities may be able to achieve compliance with the Clean Water Act by the July 1, 1988 deadline and avoid future state or federal enforcement action. Projects are funded in priority order and reimbursement is contingent upon future state appropriations for the Construction Grants Program. Under current legislation, no grantee may receive more than 20 percent of the total amount of new grants awarded from the state appropriation for wastewater treatment facility construction grants in any fiscal year. This means that communities may have to be reimbursed over a number of years.

In order to proceed under the Reimbursement Program, a community must:

- o Submit and receive approval of plans and specifications;
- o Submit and receive approval of a sewer use ordinance and user charge system;
- o Request placement on the reimbursement portion of the Municipal Project List (MPL);
- o Comply with all rules and regulations governing procurement;
- o Obtain written permission from the MPCA before bidding the project;
- o Be receiving a state or federal wastewater treatment construction grant for the first time.

Proposed modifications of the existing reimbursement program include not requiring communities to submit plans and specifications for Agency review in order to be eligible for funding, and continuing eligibility for funding regardless of whether construction had been started or completed.

Under this proposal, an applicant would have to submit an application for reimbursement and for a disposal system permit along with other information as required by the rules of the Agency. An applicant may not be required to comply with any design or construction criteria beyond what is required by law for the Agency to issue an industrial disposal system permit. The Agency would complete a review of the application and issue a disposal system permit within 60 days of receipt of the completed application.

Commitments for funding would be made on a first-come, first-serve basis for the first one-half of funds allocated to the reimbursement program. After the first one-half of funds were committed, each remaining application for reimbursement would receive a priority ranking in relation to all other pending applications for reimbursement, based on the municipal needs list priority ranking.

Once a project's reimbursement application was approved and state appropriations were available for funding, annual reimbursements would be made over a reimbursement period of not less than ten or more than 30 years and starting after one year of project operation. The total amount of reimbursement to each applicant would be based on the eligible costs of projects involving similar technology funded by federal or state grants and completed during state fiscal years 1983 to 1985. Included in the reimbursement amount would be:

1. An amount equal to 50 percent of the average amount per capita expended for the above-mentioned projects;
2. 12-1/2 percent of the average amount per gallon of hydraulic capacity expended for the projects;
3. 12-1/2 percent of the average amount per unit of biological oxygen demand treatment capacity expended for the projects; and

4. An interest amount calculated at the rate of eight percent on the outstanding balance of the anticipated payments to be received, after the first payment by the municipality, over the remainder of the reimbursement period.

The Agency would also calculate a percentage increase for each of the cost items stated above equal to any percentage increase in the construction index since December 31, 1985. Reimbursement for each applicant would be limited to four percent of the total amount available for reimbursement in any fiscal year.

A municipality would not receive reimbursement of eligible costs for any year in which applicable state and federal water quality standards were violated as determined by the Agency. Recipients of reimbursement would conduct regular tests during the reimbursement period and submit the results of those tests to the MPCA. Reimbursement will be subject to NPDES permit conditions.

ADVANTAGES -

- o Progress towards meeting the 1988 municipal compliance deadline would be aided because municipalities could proceed with construction using their own funds.
- o It could reduce state expenditures and involvement in the funding of local wastewater treatment projects.
- o It would increase local control and self-sufficiency.
- o It would provide more flexibility to municipalities that have significant pollution problems to resolve the problems as quickly as possible.
- o Municipalities could save considerable money by constructing immediately, as opposed to several years in the future when inflation has added to the costs.
- o Municipalities can retain the funding offered by other sources by proceeding with construction.

DISADVANTAGES -

- o Municipalities choosing to proceed under this option would be assuming a significant risk, as reimbursement funding is dependent on future appropriations by the Legislature.
- o A community may have to have other funding in order to proceed with construction outside of the grants program. For example, the cities on the reimbursement list that are proceeding with construction at this time have Department of Energy and Economic Development funding.
- o Under the existing reimbursement program, a community may not actually be funded as rapidly as it might have been under the federal grants program because projects are funded in priority order and reimbursement is based on state funding.

c) Septic Tank Funding Program

Currently the state and federal wastewater treatment grant programs fund septic tank system development and construction. However, the programs require the processes of facilities planning and design. For the smaller communities and

unincorporated areas this is often outside of their capabilities for one or more of the following reasons:

- They are usually unsewered.
- There is a low tax base and many times no industry to aid in support of the project.
- There is usually a smaller financial resource base.

And in the unincorporated areas specifically:

- Government is less sophisticated and structured.
- There is a low population density.
- Therefore, a simpler and faster program might better conform to the expertise, population, pollution problems, and resources of these communities.

An example of the high costs of providing collection and treatment systems for unsewered communities is found in Appendix A of "Financing Wastewater Treatment Facilities - A General Introduction," the preceding Section of this Report. Of the 29 cities listed in Appendix A, three are unsewered (Akeley, Nisswa, and Wanda). Their estimated sewer service charges are the highest of the 1987 Municipal Project List (MPL) cities listed. Of these three the City of Wanda is the lowest; however, its monthly Sewer Service Charge still is in excess of \$52.

The unsewered cities of Alberta, Vesta, and Wendell all received construction grants at the higher percentages available prior to FY 1985. Upon completing construction of treatment facilities and collection systems, their estimated sewer service charges will be \$535, \$312, and \$624 per year, respectively. While these three have lower sewer service charges than the three described above (due to additional grant funds), each city's Sewer Service Charge still exceeds EPA's recommendation that sewer charges not exceed 1.5% of the city's median household income. There are other communities which have not proceeded in the program because of high annual costs.

Another consideration for Minnesota's small unsewered communities which have pollution problems may be to upgrade their septic tanks. A septic tank program would afford these small communities the opportunity of avoiding the more time consuming and expensive alternatives. It could be quick and simple when compared to the existing grant programs.

According to EPA, septic tank funding programs are relatively new and are being developed by individual states and tailored to their specific needs and priorities. An example of a state that most nearly parallels Minnesota's needs and priorities and has a septic tank funding program is Wisconsin. Under its program, individuals make application to the county for assistance on specific components of their on-site systems. The county then sends all its applications, once a year, to the state, which assembles them and separates them into three groups.

- Priority 1 - Direct contamination to rivers, streams, etc.
- Priority 2 - Ground discharge of sewage (not in Priority 1)
- Priority 3 - All others (Not to be funded)

Depending upon the amount of funds available (a line item state budget amount) and the number of applications, the state determines how much money each individual in the Priority 1 category will receive, up to a limit of \$3,000 per individual system. If funds are still available following the allotments for Priority 1, funds will then be made available to individuals on the Priority 2 listing.

The counties are notified as to which individuals are eligible and the individual funding amounts. If the individual accepts, he/she enters into a contract with an installer and has the necessary work performed. After the work/repair has been completed, the county certifies the individual systems to the state. The state then sends each county its total allotment of funds,

based on the individuals that are participating, to be disbursed to the individuals in accordance with their previous application.

An alternative proposal would be to set aside 2% of each year's independent state grant program allotment for the replacement of on-site septic tank systems. The state would provide 50% of the cost of the system up to a total of \$2,000. Each county, in turn, would not be eligible to receive more than 20% of the set-aside of any single year. To receive these funds, placement on the Municipal Needs List would not be required. As in Wisconsin, payments would be made to the counties for distribution. Projects would be funded as requests are received.

Each request would have to be accompanied by a certification by the county sanitarian stating that the need for replacement and actual replacement of the system is in accordance with current Minnesota rules and regulations. Appendix D of "Creative Technology" the concluding section of this report indicates current practices of county sanitarians regarding Minnesota Rules Chapter 7080 (Septic Tank Criteria).

Due to this proposal's reliance on the counties and their sanitarians, a survey of the 87 counties is being prepared to update and complete the current septic tank and sanitarian statistical information. Because of time constraints a random sample survey was done by telephone of 11 (or 14%) of the non-metro counties. Eight of the 11 counties have a person whose job, at least in part, is county sanitarian or inspector. Available statistics from the eight counties with a sanitarian are:

- * Each county uses as guidelines, at least partially, MN Rules Chapter 7080 or its older counterpart, WPC 40.
- * The average number of septic tank rehabilitations, rebuildings, and/or replacements per year is 175 with a range low of 15 and a high of 400.
- * All eight counties responded that more work is needed to some degree in their counties.
- * Six of eight counties felt that a State septic tank program would increase the number of requests for rehabilitations, rebuilding, and replacements.
- * All eight counties indicated a willingness to be the focal point in a State program of this nature.
- * Seven of the eight counties were totally in favor of and encouraged the development of a program of this type.

The advantages and disadvantages of some type of septic tank funding program are:

ADVANTAGES -

- o It is probably more affordable for many small communities.
- o It is a simplified solution to a large number of small communities' problems, as the traditional planning and design processes are almost eliminated.
- o The state would be able to more quickly provide grants to a larger number of communities.
- o The state would be in a position to direct the current federal and state funds to more complicated projects for which the septic tank program would not be workable.

DISADVANTAGES -

- o This would place a heavier burden and responsibility on the staff of the county.
- o Septic tanks require servicing and maintenance at regular intervals, which is at present, and would continue to be, the sole responsibility of the individual owners. This would be difficult to regulate at best.
- o Septic tanks cannot be used in all cases due to various soil types, lot

sizes, etc.

d) Decentralizing Funding From The Minnesota Pollution Control Agency

Decentralizing funding from the Minnesota Pollution Control Agency has been suggested as another method of distributing funds. Several different options would be available if this course of action was chosen. First, another existing government agency could administer the financing. Possible existing government agencies include state planning, public health, finance, economic development or community development. Second, a new government financing authority could be created. A third option would be to create a sub-unit within an existing government agency with the authority and ability to administer the financing.

ADVANTAGES -

- o Funding could more readily be coordinated with other infrastructure improvements.

DISADVANTAGES -

- o The emphasis would no longer be on environmental goals.
- o Setting priorities would become more complicated.
- o It would be difficult to predict funding for a particular city.
- o Coordination with enforcement efforts would be more complicated.
- o It would be difficult to coordinate and satisfy responsibilities delegated by the USEPA regarding utilization of federal funds allocated under the Clean Water Act.
- o There is a question as to who would report to the Legislature and how reports would be made if different agencies were administering different parts of the program.

B. PRIVATIZATION

This section describes various methods whereby the private sector can become a participant in providing municipal wastewater treatment.

Privatization is a concept, or practice, whereby a private entity provides the services, facilities, and equipment usually provided by a governmental unit. The main hope for privatization of wastewater treatment facilities is that it may provide a service to the public at a cost lower than the governmental unit cost. Minnesota Statutes Section 297A.258, "Private Suppliers of Public Services", provides the legal authority for municipalities to enter into privatization agreements.

Proper agreements for privatization provide many advantages for public entities. Annual costs for providing wastewater treatment are estimated to be 10 percent, or more, lower than for conventional bond financing for sewage treatment plant designs. The private owner assumes all aspects of the design, construction and operation of the facility; however, the performance of the facility in meeting the required standards for effluent is the responsibility of the private owner and the public entity. The financing of the project is also the responsibility of the owner, and the entity's debt structure is not impacted.

Several financial plans are used to establish the roles for the public and private sectors in arranging a privatization agreement. Some of these include:

- A. Contract operations
- B. Tax-exempt municipal lease
- C. Sale and leaseback
- D. Sale-service contract
- E. Full service contract

Some of the features, advantages, disadvantages, and legal considerations of these financial plans will be discussed.

In a Contract Operations Agreement, a private firm provides the operating personnel to manage and operate the treatment facility. Ownership of the facility remains with the local agency. Efficiencies derive from the experience and resources of the private firm to improve operation of the facility. The terms of the agreement are negotiated by the parties involved; therefore, legal issues are decided at that time.

A Tax-Exempt Municipal Lease is a method of financing whereby the municipality leases the facility from a lessor and assumes all responsibility of ownership and operations for a stated period of time. At the conclusion of the lease, the municipality may purchase the facility for an agreed price. Since the agreement may be structured to terminate at a given date, the lease is not considered a long-term obligation or debt of the municipality. An advantage to the lessor is that the interest portion of the lease payment is not subject to federal income taxes.

A Sale-Leaseback Contract is an agreement whereby the municipality which owns the facility sells the facility to an investor and then leases the project back from the investor. A source of funds for the project may come from the sale of Industrial Development bonds by a local Economic Development authority. The depreciation allowance on the facility is deductible from the federal income tax of the buyer. This method may be advantageous for a small community. It would allow the community to solve its needs for a period until it could

improve its ability to finance and operate the facility. It could also be a form of grant anticipation financing.

Federal legislation changing depreciation schedules for this type of arrangement may make this plan less attractive to a private investor. At this time, no Minnesota municipalities have used this method of financing. Federal grant funds may not be used by the municipality to fund this type of project.

In a Sale-Service Contract, the municipality can sell the treatment facility to a private company which will then own and operate the facility. The municipality pays for the service and is not responsible for the project or its operation. Federal or state funds may not be used in the construction of the facility.

This type of contract is under scrutiny by the federal government and may be subject to rulings affecting investment tax and depreciation schedules which, again, may make this type of arrangement unattractive to investors.

A Full Service Contract is an agreement between a municipality and a private company. The private company would design, construct, and operate the facility. The municipality would agree to pay an annual fee to the company. The method of collecting charges and fees from the users is the responsibility of the municipality.

More than a dozen privatization projects are in the planning or construction stages in the United States. Some are complete treatment plants; others are for a phase of the treatment process. At this time, the smallest project is for a community with a population of 4,900. Since each project is unique, it is necessary to determine whether the particular concept is financially feasible for the specific project. Issues such as the community's ability to pay the required service charges and the cost-effectiveness of privatization compared to other financing plans should be assessed. The feasibility of plans for communities with populations under 3,000 are also very dependent on attracting investor participation.

The plans outlined above are only some of the basic ideas for privatization. The legal aspects of these plans are vast, and any proposed plans should be examined by legal and financial counsel to assure that the program is the most advantageous method of providing wastewater treatment.

ADVANTAGES:

- o Financing flexibility.
- o Flexibility in structuring service charges.
- o Possible reduction of operating costs.
- o Risk is shared by the municipality and the private vendor.

DISADVANTAGES:

- o Surrender of control of the project by the municipality
- o Possible reduction of services by the vendor to reduce costs.
- o Possible loss of control by the municipality over charges for service.
- o Monopoly in provision of services could lead to abuses by the vendor.

An example of a successful privatization project is a sludge handling facility in Hoboken, New Jersey.

A private company entered into a three-year agreement with the City to provide sludge treatment and dewatering. The Company designed and installed a proprietary treatment system at a cost of \$1,500,000 in a building leased from the City. The Company is responsible for the operation of the system, training

of operators, and supervising the facility for the three-year term of the agreement. At the end of the agreement, the City may purchase the facility, enter into a new agreement, or not renew the agreement.

The cost savings to the City, based on the previous cost of operations, was approximately \$60,000 per year. It is believed that the cost savings was made possible by the Company's ability to design, build, and finance the facility using its own technology.

Since the Company financed and owned the facility, any tax benefits accrued to the Company. However, at this time the effect of the recently enacted Federal tax laws on future transactions of this type has not been determined.

Another example of a successful privatization agreement is a water storage facility in Maryland.

A Limited Partnership was formed by the service provider to design, construct, and provide water supply and ancillary services to a regional sanitary commission. The service agreement is for an initial term of thirty years, with a renewable option for an additional 7.5 years. The Partnership is financing the construction of the facility with the proceeds of economic development bonds issued by the County and loaned to the Partnership.

The Partnership will operate the facility and perform all maintenance and security. However, the Sanitary Commission will be considered the owner of the water and is responsible for water quality.

These are two examples of Privatization projects which are viable. They are only intended to describe two possible scenarios. The extent of privatization agreements appears to be limited only by the creativity of the participants.

The ability of local governments to finance wastewater treatment facilities and other projects depends to a large extent upon the availability of tax exempt financing, and the tax implications of such on investment for the private investment community. The cost recovery and tax-exempt bond provisions in the Internal Revenue Code are being threatened by major changes. Any of these changes will have a serious effect on privatization plans as they are presently structured.

Current laws prevent a direct grant to the private owner of a treatment system. However form of grant assistance could be given to a city as a yearly appropriation, or a direct grant to be used as a subsidy of the fees paid to the private owner could be provided.

If a direct grant is given to the City, the funds could be invested, with the interest used for a fee subsidy. A combination of the interest earned, and the amortization of the principal grant amount over the term of the contract, could be used to abate the part of the fee attributable to the plant cost. This method would be a grant to the City and not a direct grant to the owner of the facility. Either of these methods would result in a reduction of cost for the City. These, in combination with any advantages of savings by privatization, would assist in making the cost of the wastewater treatment affordable to the residents of the City.

ADVANTAGES:

- o Cities would benefit from the advantage of both grants and privatization programs.
- o The City would administer the program.

DISADVANTAGES:

- o A Legislative appropriation would be required.
- o The city may lack the necessary administrative capability.
- o It may be inequitable to other cities who received conventional grants or loans.

A special program could be established for grants to cities to pay the cost of alternative or innovative technology used by the privatizer. This would encourage construction of pilot plants to prove the feasibility of treatment methods. Without assistance the privatizer would be reluctant to construct a system and bear the total risk. The program could be structured similar to the present program, where the grant may be increased up to 20% for this purpose.

ADVANTAGES:

- o This would encourage the use of new technology.
- o The project could be assigned priority points for the Needs List.
- o A special appropriation could be set aside for this purpose.

DISADVANTAGES:

- o Legislative appropriations would be required.
- o Cities may not be interested in experimenting.
- o If the project fails, additional funds would be required to replace part or all of the system.

APPENDIX A - SECTION 1

Part 1, column 1 indicates the Sewer Service Charges of 22 communities who responded to the MPCA 1985 Wastewater Treatment Costs Survey and who received a 75% basic grant and approximately 90% total funding through the grants program. Column 2 indicates the ADDITIONAL DEBT SERVICE CHARGE THESE COMMUNITIES WOULD NOW FACE HAD THEY RECEIVED BASIC GRANTS OF 55% RATHER THAN 75%. Column 3 presents the existing Sewer Service Charge combined with the increased debt service of column 2.

Parts 2, and 3 present supplemental data on these twenty-two communities.

This comparison is predicated on controlling for variables other than grant reduction by simulating Sewer Service Charges for the same group of communities at a grant reduced by 20%. The simulation assumes bond amortization at 10% over 20 years on the additional local cost of a reduced grant.

PART 1

CITY NAME	1. CURRENT SSC PER MONTH	2. INCREASED DEBT SERVICE AT 20% GRANT REDUCTION	3. 'NEW' COMBINED MONTHLY SSC	4. CURRENT SSC AS A % OF MED HOUSE-INC.	5. 'NEW' SSC AS A % OF MED HOUSE-INC.
Albert Lea	\$8.79	\$3.18	\$11.97	0.657 %	0.894 %
Annandale	\$6.48	\$2.74	\$9.22	0.537 %	0.765 %
Backus	\$10.23	\$6.37	\$16.60	1.560 %	2.531 %
Beaver Bay	\$21.57	\$12.87	\$34.44	1.210 %	1.932 %
Brainerd	\$9.60	\$2.32	\$11.92	1.001 %	1.243 %
Buhl	\$9.87	\$7.66	\$17.54	0.676 %	1.200 %
Cokato	\$7.90	\$1.71	\$9.61	0.603 %	0.734 %
Cottonwood	\$13.83	\$3.36	\$17.19	1.253 %	1.557 %
Foreston	\$20.39	\$10.21	\$30.60	1.821 %	2.733 %
Lester Prairie	\$12.55	\$6.43	\$18.98	0.998 %	1.510 %
Little Falls	\$14.72	\$5.92	\$20.64	1.464 %	2.052 %
Marietta	\$18.63	\$8.50	\$27.13	2.254 %	3.283 %
Monticello	\$20.23	\$5.18	\$25.41	1.526 %	1.916 %
Moorhead	\$9.34	\$1.74	\$11.08	0.683 %	0.810 %
Mountain Iron	\$8.81	\$1.97	\$10.79	0.486 %	0.595 %
New York Mills	\$5.47	\$2.96	\$8.43	0.684 %	1.054 %

Northfield	\$10.75	\$3.78	\$14.53	0.730 %	0.987 %
Paynesville	\$6.86	\$7.78	\$14.64	0.625 %	1.335 %
Rochester	\$6.96	\$2.40	\$9.36	0.425 %	0.572 %
Rushford	\$3.58	\$1.63	\$5.21	0.329 %	0.480 %
Watertown	\$10.42	\$1.71	\$12.13	0.771 %	0.898 %
Zumbrota	\$8.30	\$2.28	\$10.59	0.667 %	0.851 %

STATISTICAL SUMMARY

WEIGHTED AVERAGE SSC PER MONTH	WEIGHTED AVERAGE ADDITIONAL DEBT SERVICE PER MONTH	WEIGHTED AVERAGE 'NEW' SEWER SERVICE CHARGE PER MONTH
\$ 8.88	\$ 2.79	\$ 11.67
AVERAGE SSC PER MONTH	AVERAGE ADDITIONAL DEBT SERVICE PER MONTH	AVERAGE 'NEW' SEWER SERVICE CHARGE PER MONTH
\$11.15	\$4.67	\$15.82

ADDITIONAL NOTES ON DATA PRESENTED IN PART 1:

CURRENT SSC PER MONTH - This is the city's actual 1985 monthly residential sewer service charge, including operating and capital costs, as reported on the MPCA Survey.

INCREASED DEBT SERVICE AT 20% GRANT REDUCTION - This is the additional amount each city would be paying for debt service IF they had received a grant amount 20% LESS than the amount listed on the previous page, AND if they had financed this additional local expense at 10% over 20 yrs and distributed this cost in the same manner as they distributed their actual 1985 charges.

'NEW' COMBINED MONTHLY SSC - Here the additional debt service charge has been added to the 1985 charge.

CURRENT SSC AS A % OF MED HOUSE-INC. - The 1985 Sewer Service Charge is presented as a percentage of the city's median household income (1980 census).

'NEW' SSC AS A % OF MED HOUSE-INC. - The 'New' Sewer Service Charge is presented as a percentage of the city's median household income. (1980 census)

PART 2 INFORMATION ON GRANT AWARDS AND PERCENTAGES

CITY NAME	GRANT AWARD DATE	TOTAL ELIGIBLE COST	TOTAL GRANT %	TOTAL GRANT AMOUNT
Albert Lea	28-Sep-1979	\$34,817,000	91	\$31,650,524
Annandale	13-Jun-1980	\$1,144,300	93	\$1,065,602
Backus	06-Apr-1982	\$604,965	94	\$568,668
Beaver Bay	11-Aug-1978	\$1,099,900	94	\$1,033,906
Brainerd	29-Jun-1979	\$9,137,642	90	\$8,231,630
Buhl	29-Dec-1982	\$1,972,800	90	\$1,775,520
Cokato	01-Dec-1980	\$730,637	90	\$657,606
Cottonwood	21-Aug-1980	\$785,056	90	\$706,550
Foreston	15-May-1980	\$533,000	90	\$479,700
Lester Prairie	21-Jan-1981	\$1,925,152	90	\$1,736,333
Little Falls	23-Sep-1983	\$7,080,000	90	\$6,378,852
Marietta	16-Dec-1980	\$645,275	90	\$580,747
Monticello	04-Jun-1980	\$5,505,614	90	\$4,997,496
Moorhead	26-Sep-1980	\$21,927,300	91	\$19,867,154
Mountain Iron	29-Sep-1978	\$1,865,800	90	\$1,679,220
New York Mills	30-Sep-1980	\$607,243	94	\$570,808
Northfield	29-Dec-1980	\$6,915,800	91	\$6,272,742
Paynesville	30-Jun-1980	\$4,491,700	94	\$4,213,914
Rochester	28-Sep-1979	\$56,301,400	90	\$50,933,336
Rushford	30-Jun-1981	\$841,800	89	\$748,118
Watertown	19-Dec-1980	\$873,840	91	\$798,660
Zumbrota	28-Sep-79	\$3,001,748	91	\$2,739,902

PART 3 INFORMATION ON PROJECT CHANGE IN DEBT SERVICE
 GENERAL INFORMATION ON COMMUNITIES

CITY NAME	ADDITIONAL LOCAL CAPITAL COST OF 20% GRANT REDUCTION	DEBT SERVICE ON ADDITIONAL CAPITAL COST	POPULATION	MEDIAN HOUSEHOLD INCOME
Albert Lea	\$6,330,105	\$743,534	19,200	\$16,067.00
Annandale	\$213,120	\$25,033	1,568	\$14,469.00
Backus	\$113,734	\$13,359	255	\$7,868.00
Beaver Bay	\$206,781	\$24,289	283	\$21,394.00
Brainerd	\$1,646,326	\$193,377	11,489	\$11,509.00
Buhl	\$355,104	\$41,711	1,284	\$17,538.00
Cokato	\$131,521	\$15,448	2,056	\$15,712.00
Cottonwood	\$141,310	\$16,598	924	\$13,250.00
Foreston	\$95,940	\$11,269	283	\$13,438.00
Lester Prairie	\$347,267	\$40,790	1,229	\$15,089.00
Little Falls	\$1,275,770	\$149,852	7,250	\$12,068.00
Marietta	\$116,149	\$13,643	279	\$9,917.00
Monticello	\$999,499	\$117,401	2,830	\$15,910.00
Moorhead	\$3,973,431	\$466,719	29,998	\$16,408.00
Mountain Iron	\$335,844	\$39,448	4,134	\$21,751.00
New York Mills	\$114,162	\$13,409	972	\$9,602.00
Northfield	\$1,254,548	\$147,359	12,562	\$17,664.00
Paynesville	\$842,783	\$98,993	2,140	\$13,167.00
Rochester	\$10,186,667	\$1,196,526	57,890	\$19,648.00
Rushford	\$149,624	\$17,575	1,478	\$13,029.00
Watertown	\$159,732	\$18,762	1,818	\$16,213.00
Zumbrota	\$547,980	\$64,366	2,129	\$14,932.00

APPENDIX A - SECTION 2

This Section illustrates the effect of reduced grant percentages (i.e. from 90-94% to approximately 55-75%) using the 29 communities on the Agency's Municipal Needs List scheduled to receive grants during FY 1987. Monthly Sewer Service Charges at a 92% grant have been calculated to approximate what costs WOULD HAVE BEEN had FY 1987 projects received 90-94% grants as opposed to approximately 55-75% grants. This illustration also incorporates the effects of inflation by 'bringing back' current estimated construction costs to 1980 costs using the ENG INDEX (This index adjusts costs for inflation).

Each community has been given a 92% grant to approximate the 90% to 94% funding available prior to FY 1985.

PART 1: STATISTICAL SUMMARY

WEIGHTED AVERAGE MONTHLY SSC AT 92% GRANT AND 1980 CONSTRUCTION COSTS	WEIGHTED AVERAGE CURRENT MONTHLY SSC*	DIFFERENCE IN WEIGHTED AVERAGES OF MONTHLY SSC
\$ 11.44	\$ 19.53	\$ 8.09
AVERAGE MONTHLY SSC AT 92% GRANT AND 1980 CONSTRUCTION COSTS	AVERAGE CURRENT MONTHLY SSC	DIFFERENCE IN AVERAGES OF MONTHLY SSC
\$ 13.49	\$ 24.65	\$ 11.16

* Estimated at construction.

PART 2: CITIES RANKED ACCORDING TO NAME

CITY NAME	MONTHLY SEWER SERVICE CHARGE AT 92% GRANT AND 1980 COSTS	DIFFERENCE IN MONTHLY CHARGE	CURRENT MONTHLY SEWER SERVICE
Akeley	\$52.68	\$15.86	\$68.55
Appleton	\$12.18	\$6.62	\$18.80
Barnum	\$20.06	\$27.17	\$47.22
Battle Lake	\$8.56	\$4.67	\$13.23
Browns Valley	\$13.61	\$5.27	\$18.88
Clarissa	\$13.73	\$9.49	\$23.22

Clearbrook	\$7.55	\$7.16	\$14.72
Cleveland	\$8.92	\$10.30	\$19.21
Cook	\$11.03	\$10.83	\$21.86
Grand Meadow	\$13.62	\$20.51	\$34.13
Hibbing (South &	\$8.84	\$7.02	\$15.86
Hutchinson	\$15.64	\$7.33	\$22.97
Lake Park	\$14.29	\$12.89	\$27.18
Lakefield	\$10.04	\$7.27	\$17.31
Maple Lake	\$11.79	\$8.44	\$20.23
Menahga	\$7.99	\$9.14	\$17.13
Minneota	\$6.65	\$11.86	\$18.52
Minnesota Lake	\$8.84	\$8.90	\$17.74
Nashwauk	\$14.32	\$22.90	\$37.22
New Prague	\$9.31	\$7.23	\$16.54
Nisswa	\$35.95	\$21.05	\$56.99
Pequot Lakes	\$10.10	\$3.98	\$14.08
Perham	\$6.09	\$1.68	\$7.76
Sandstone	\$7.33	\$10.70	\$18.03
Silver Lake	\$14.49	\$20.31	\$34.80
Stewart	\$5.34	\$6.78	\$12.13
Stewartville	\$13.67	\$6.44	\$20.12
Wanda	\$23.91	\$28.49	\$52.40
Worthington	\$4.75	\$3.38	\$8.13

APPENDIX B

**MINNESOTA
CONSTRUCTION PROJECT GRANTS
AWARDED PRIOR TO OCTOBER 1, 1984**

**LISTED BY CITY/PROJECT
WITHIN LEGISLATIVE DISTRICT**

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M B	O I N F	F M N	P S T	I N T	C O L	O T H	% CP
271437C030	CARVER COUNTY	3	3,094,635	09-28-83	04-09-84	11-28-85	03-15-86	CP										88
279049C020	MWCC - APPLE VALLEY	3	2,301,519	08-11-78	11-01-78	04-22-81	11-20-79	CP		0		X						CP
279050C020	MWCC - EMPIRE	3	13,557,263	12-30-76	05-12-77	06-16-83	06-30-82	CP		X	X	X	X					CP
279134N010	MWCC - LOWER BELTLINE I	3	2,245,350	09-29-84	12-05-84	09-22-86	12-01-85	CP										83
270661N010	MWCC - MWWT	3	1,645,513	06-29-73	09-25-73	12-20-77	07-20-76	CP		0			X	X	X			CP
279091N010	MWCC - MWWT	3	10,334,328	10-23-79	04-17-80	09-15-82	12-31-82	CP		N	N	N	N	N	N	N	Y	CP
279103C020	MWCC - MWWT ADDITIONAL	3	14,702,279	04-14-82	08-10-82	01-17-85	01-14-86	CP		N	N	N	N	N	N	N	Y	CP
270665C020	MWCC - MWWT AERATION &	3	35,480,389	10-24-74	03-13-75	06-28-80	12-30-82	64		1							X	CP
270665C030	MWCC - MWWT AERATION &	3	1,507,408	06-28-76	10-04-76	07-26-80	01-18-78	CP		X							X	CP
270666C020	MWCC - MWWT COMPRESSOR	3	2,355,433	11-28-75	09-09-76	09-18-82	12-10-83	CP		0							X	CP
279000C070	MWCC - MWWT COMPUTER B	3	1,455,630	09-28-78	02-12-79	04-22-81	08-19-80	CP		0								99
279000C040	MWCC - MWWT DIGITAL CO	3	6,641,439	07-26-77	02-03-78	03-31-83	06-30-83	CP		1							X	CP
270662C020	MWCC - MWWT EFFLUENT P	3	4,522,864	05-24-74	10-18-74	01-20-78	12-13-77	CP		X				X			X	CP
270616N010	MWCC - MWWT FLOOD PROT	3	6,647,593	07-31-73	11-07-73	01-03-78	05-07-76	CP		0							X	CP
279000C050	MWCC - MWWT INCINERATO	3	7,195,713	07-31-78	09-28-78	06-06-83	08-16-83	CP		1	X	X	X	X	X	X	X	CP
279095N010	MWCC - MWWT INTERIM SL	3	492,845	02-28-79	10-04-79	10-06-80	10-24-80	CP		1							X	CP
270663N010	MWCC - MWWT PRETREATME	4	11,211,972	06-29-73	10-22-74	07-01-83	12-10-83	80		X							X	CP
270664N010	MWCC - MWWT PRIMARY TR	4	16,069,976	06-29-73	10-24-74	06-27-79	05-23-79	CP		X							X	CP
279100C020	MWCC - MWWT RETROFIT	3	10,194,600	06-28-83	10-22-84	09-28-88	05-10-86	73		Y	N	N	N	N	N	N	N	50
279094N010	MWCC - MWWT RIVERVIEW	3	1,413,225	03-12-79	07-02-79	05-04-81	12-16-80	CP		0								CP
279097C030	MWCC - MWWT SECONDARY	3	2,168,925	09-14-84	04-08-85	11-28-86	06-07-86	99										88
279000C020	MWCC - MWWT SLUDGE CON	3	26,566,882	06-28-76	05-21-77	09-14-82	12-31-83	CP		X							X	CP
279000C030	MWCC - MWWT SLUDGE DEW	3	10,193,652	12-30-76	05-16-77	03-10-83	11-16-82	CP		0							X	CP
279000C060	MWCC - MWWT SLUDGE PRO	3	56,653,725	07-25-77	02-25-78	11-17-83	12-15-81	CP		1							X	91
279000N010	MWCC - MWWT SLUDGE THI	3	22,825,115	05-27-76	09-22-76	01-19-82	12-31-83	CP		1							X	CP
279093N010	MWCC - MWWT WAREHOUSE	3	3,703,066	09-17-80	05-14-81	12-28-82	06-30-83	CP										CP
279012N010	MWCC - ORONO/LONG LAKE	3	2,892,903	09-29-78	02-20-79	01-07-81	01-20-81	CP		0								CP
279001N010	MWCC - SENECA DEWATERIN	3	212,086	11-29-79	04-14-80	06-16-83	11-30-84	CP		N	N	N	N	N	N	N	N	CP
270749C020	MWCC - WACONIA INTERCEP	3	1,270,849	06-03-76	10-18-76	06-19-78	05-26-78	CP		0			X	X	X	X		CP
271441C020	OAK GROVE TOWNSHIP	4	643,365	09-30-83	08-14-85	10-28-86	05-24-86	79										92
270825N010	OAKLAND SD#1, FREEBORN	3	97,151	10-29-76	07-12-77	08-04-78	09-12-83	98		X		X	X	X	X			CP
271361C030	OTTER TAIL LAKES SEWER	3	4,575,210	09-30-83	06-15-84	11-29-85	05-02-86	CP										97
271434C020	WASHINGTON COUNTY	4	8,806,935	09-27-83	07-24-85	12-28-86	08-31-86	57										30
270748C020	WESTERN LAKE SUPERIOR S	3	17,643,857	08-08-74	10-15-74	10-15-81	04-27-82	99		X			X	X	X		X	CP
270748C030	WESTERN LAKE SUPERIOR S	3	39,481,885	06-24-75	09-12-75	10-19-81	06-30-83	CP		X		X					X	CP
270748C040	WESTERN LAKE SUPERIOR S	3	2,683,111	09-30-75	12-10-75	08-30-81	04-27-82	CP		0			X	X	X		X	CP
270748C050	WESTERN LAKE SUPERIOR S	3	426,397	11-08-78	12-08-78	10-15-81	04-22-80	50		0					X			CP
270748C060	WESTERN LAKE SUPERIOR S	3	18,325,125	05-21-76	09-16-76	10-31-82	12-31-84	CP		X							X	CP
270748C070	WESTERN LAKE SUPERIOR S	3	589,200	09-20-78	09-11-78	09-23-82	09-23-82	CP		0								CP

372,829,413
39

271043C020 WARROAD, CITY OF 4 1,633,575 06-11-84 04-01-86 11-01-87 01A

PLT - TREATMENT PLANT CMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS OUT - OUTFALL SEWERS INT - INTERCEPTOR SEWERS
FMN - FORCE MAIN INF - SEWER INFILTRATION CORRECTIONS PST - PUMPING STATION COL - COLLECTOR SEWER OTH - OTHER

10-08-86
REPORT NO: PCA-503

WASTEWATER TREATMENT PROJECTS AWARDED UNDER P.L. 92-500

PAGE 2

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M B	O I N F	F I N T	I N T E R C E P T O R	C O L L E C T O R	%CP					
			1,633,575 1																		
271177C020	ARGYLE, CITY OF	4	456,675	06-06-84	07-10-86	07-30-87	08-25-86	18	01B							05					
271240C020	BROOKS, CITY OF	4	333,455 790,130 2	06-11-84	06-01-86	09-15-86			01B												
271157C020	FERTILE, CITY OF	4	546,000	03-30-84	06-11-85	11-30-85	08-14-86	CP	02B							99					
271110C020	FOSSTON, CITY OF	4	367,125	07-18-84	07-16-86	04-26-87	08-31-86	45	02B							20					
271263C020	MAHONOMEN, CITY OF	4	320,195 1,233,320 3	12-18-80	07-28-82	08-30-83	11-29-83	CP	02B			Y	N	Y	Y	Y	N	Y	N	CP	
270989C020	DEER RIVER, CITY OF	4	524,925	03-29-84	09-01-85	05-01-87	02-16-85		03A							03					
271489C020	NORTH KOCHICHING AREA	3	8,259,815 8,784,740 2	06-30-83	04-15-84	06-12-86	01-01-86	97	03A							92					
271048C020	COLERAINE - BOVEY SEWER	4	2,571,675	07-31-84	05-12-86	08-01-87	08-01-86	24	03B							19					
271138C020	MARBLE/CALUMET, CITIES	4	1,418,130 3,989,805 2	03-29-84	04-22-86	09-29-87	09-01-86	53	03B							41					
270864C040	BEMIDJI, CITY OF	3	10,823,865 10,823,865 1	03-31-83	10-03-83	10-30-85	01-23-86	CP	04A			Y	N	Y	Y	N	Y	N	N	N	96
270954C030	CASS LAKE, CITY OF	3	972,910	06-22-83	01-16-84	10-30-86	07-19-85	95	04B							93					
271221C020	HACKENSACK, CITY OF	4	738,225 1,711,135 2	08-17-84	05-23-86	05-15-87	07-25-86	50	04B							50					
270828C020	BUHL/KINNEY, CITIES OF	4	1,479,600 1,479,600 1	09-30-82	05-20-85	09-26-86	04-30-86	CP	05A			Y	N	Y	Y	Y	Y	Y	N	Y	89

PLT - TREATMENT PLANT CMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS OUT - OUTFALL SEWERS INT - INTERCEPTOR SEWERS
FMN - FORCE MAIN INF - SEWER INFILTRATION CORRECTIONS PST - PUMPING STATION COL - COLLECTOR SEWER OTH - OTHER

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T B	C M U N	O I F T	F M S N	P I N T	C O T F L	%CP
270811C040	CHISHOLM/BUHL/KINNEY, C	3	353,430 353,430 1	09-02-83	08-01-84	08-15-85	08-23-85	CP	05B							93
271423C030	KNIFE RIVER SANITARY DI	3	1,885,520 1,885,520 1	05-31-83	11-01-83	09-20-85	11-13-85	CP	06A							91
270822C030	AURORA, CITY OF	3	916,991 916,991 1	09-28-78	05-01-79	09-01-81	06-01-83	CP	06B	X					X	CP
271365C020	ELIZABETH, CITY OF	3	200,351	12-27-76	09-09-77	10-15-79	03-16-82	98	10B	X	X	X	X			CP
270860C030	FERGUS FALLS, CITY OF	3	7,722,580 7,922,931 2	05-31-83	10-17-83	11-26-85	09-08-85	CP	10B	Y	N	Y	Y	Y	N	92
271398C020	ALBERTA, CITY OF	4	304,950	08-09-84	01-01-86	01-01-87	12-15-85		11A	Y	N	Y	Y	Y	N	03
271145C020	BENSON, CITY OF	4	2,119,460	12-29-80	03-28-83	01-15-85	02-28-86	99	11A	Y	N	Y	Y	Y	N	CP
270876C030	MORRIS, CITY OF	3	339,824	09-26-79	10-08-80	10-20-82	05-16-83	99	11A							CP
271245C020	ORTONVILLE, CITY OF	4	2,250,120 5,014,354 4	01-07-81	04-11-83	11-28-86	01-24-84	99	11A	Y	N	N	N	Y	N	92
270844C020	ALEXANDRIA LAKE AREA SD	3	9,322,824	02-27-76	05-27-76	09-21-78	12-31-79	98	11B	1	0	1	1	1	0	CP
271025C020	MILLERVILLE, CITY OF	4	655,095	09-30-83	08-29-85	06-01-86	07-01-86	CP	11B							80
271356C020	WENDELL, CITY OF	4	233,025 10,210,944 3	06-11-84		10-28-88	12-15-84		11B							03
271472C020	BLUFFTON, CITY OF	4	202,385	08-09-84	06-15-86	09-30-87	04-30-85	05	12A							03
271123C020	NEW YORK MILLS, CITY OF	4	516,156 718,541 2	09-30-80	09-29-82	07-20-83	12-22-83	CP	12A	N	N	N	N	Y	N	CP
270848C020	NELSON, CITY OF	3	92,118 92,118 1	04-26-76	04-12-77	06-19-78	05-19-78	CP	12B					X	X	CP

PLT - TREATMENT PLANT
FMN - FORCE MAINCMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS
INF - SEWER INFILTRATION CORRECTIONSOUT - OUTFALL SEWERS
PST - PUMPING STATIONINT - INTERCEPTOR SEWERS
COL - COLLECTOR SEWER
OTH - OTHER

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M B	O U T	I N T	F P S	P I N T	C O L L	O T H	%CP
270863C030	BRAINERD, CITY OF	3	6,872,610	06-29-79	05-28-80	08-01-82	05-31-85	CP	13A	1		1	1	1	4			CP
270845C020	BREEZY POINT, CITY OF	3	666,935 7,539,545 2	09-27-76	01-23-77	09-05-79	11-03-82	CP	13A	X				X	X			CP
271190C020	FLensburg, CITY OF	4	211,355	01-14-80	06-15-82	10-28-82	08-09-83	CP	13B	1	0	1	1	0	0	0	0	CP
270833C030	LITTLE FALLS, CITY OF	3	5,327,130 5,538,485 2	09-23-83	07-24-84	02-04-86	06-30-86	CP	13B									97
271094C020	CROMWELL, CITY OF	4	700,830 700,830 1	02-18-81	10-01-83	07-15-87	09-01-84	90	14A	Y	N	N	Y	Y	Y	N	Y	81
271052C020	BELGRADE, CITY OF	4	1,261,155	03-31-81	09-26-83	11-14-85	01-02-85	CP	15A	1	0	0	0	1	1	1	0	CP
271268C020	CYRUS, CITY OF	4	734,485	03-29-84	05-27-86	05-28-87	07-08-86	38	15A									46
271167C020	GLENWOOD, CITY OF	4	8,741,375 10,737,015 3	03-24-82	08-22-85	06-28-87	08-31-86	86	15A	N	N	N		Y	Y	Y	N	90
271377C030	GREEN LAKE SD (KANDIYOH	3	7,512,810	08-12-83	05-01-84	11-01-85	03-15-86	98	15B									97
270851C020	PENNOCK, CITY OF	4	293,025	07-18-84	10-15-86	04-15-87	10-31-85		15B	Y	N	\	Y	Y	Y	N	Y	CP
270881C030	WILLMAR, CITY OF	3	6,750,150 14,555,985 3	07-31-80	03-02-81	10-03-83	06-30-83	CP	15B	Y	N	Y	Y	Y	Y	N	N	CP
271373C020	ALBANY, CITY OF	4	2,403,392	06-30-81	09-19-83	09-27-85	09-30-85	CP	16B	1	0					0		CP
270832C020	CLEARWATER/CLEAR LAKE,	3	709,411	09-19-78	04-25-77	05-29-80	04-30-80	93	16B	X		X	X	X	X			CP
271491N010	KIMBALL, CITY OF	4	1,471,605	06-10-83	10-15-84	07-01-86	08-22-86	CP	16B									99
270746C020	PAYNESVILLE, CITY OF	4	3,797,235 8,381,643 4	06-30-80	07-18-84	07-28-87	06-30-86	98	16B	1	0	0	0	1	1	0	0	89
270747N010	SAINT CLOUD, CITY OF	3	10,831,261	06-29-73	02-08-74	12-01-77	08-09-76	CP	17B	X		X	X	X	X		X	CP
270807C030	SAINT CLOUD, CITY OF	3	2,863,327 13,694,588 2	05-30-79	04-02-80	10-05-81	02-16-82	CP	17B	0								CP

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FMN - FORCE MAINCMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS
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GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M B	O I N F	I N T	F I N	P I N	I N T	C O L	O T H	%CP
270962C020	FORESTON, CITY OF	3	399,750 399,750 1	05-15-80	09-22-80	11-18-81	01-04-82	CP	18A										CP
270958C020	BIG LAKE, CITY OF	3	3,528,617	09-28-79	03-01-80	01-01-82	08-03-82	CP	18B	Y	N	Y	Y	Y	Y	N	Y	N	CP
270854C020	ELK RIVER, CITY OF	3	1,299,981	01-24-77	07-05-77	09-04-79	09-10-80	95	18B	X	X	X	X						CP
270838N010	ZIMMERMAN, CITY OF	3	138,065 4,966,663 3	07-11-74	10-29-74	08-12-77	08-12-77		18B	X		X	X						CP
271039C020	MADISON, CITY OF	4	1,983,315	09-27-83	01-23-86	10-28-87	07-21-86	34	20A										31
270830C020	MARIETTA, CITY OF	4	483,956	12-16-80	05-15-82	10-28-83	12-31-83	CP	20A										CP
271336C020	MURDOCK, CITY OF	4	328,125 2,795,396 3	03-29-84	09-09-85	12-28-86	12-23-85	95	20A										50
270978C020	REDWOOD FALLS, CITY OF	4	802,404	09-30-81	09-01-86	11-28-87	08-31-86		20B	Y	N								31
271011C020	VESTA, CITY OF	3	477,825 1,280,229 2	06-11-84	03-15-85	10-28-86	03-01-86	94	20B										93
270985C020	DASSEL, CITY OF	3	2,175,515	03-30-84	08-28-84	10-31-85	03-25-86	97	21A										97
271287N010	EDEN VALLEY, CITY OF	4	1,123,029	03-31-81	12-14-82	11-14-83	08-30-84	99	21A	1	0	0	1	1	1	0	0	0	CP
270991C020	WATKINS, CITY OF	4	1,510,654 4,809,198 3	06-30-81	03-05-84	06-04-85	09-30-84	CP	21A	1	0	0	0	1	1	0	1	1	CP
271368C020	BIRD ISLAND, CITY OF	4	113,158	01-31-80	07-15-81	10-28-81	07-22-82	CP	21B	1	1	1	1	1	1	1	1	1	CP
270969C020	MORTON, CITY OF	4	723,900	01-22-81	07-02-84	10-28-86	09-28-85	93	21B	1	0	1	1	1	1	0	0	0	89
271038C020	OLIVIA, CITY OF	4	1,757,580 2,594,638 3	02-29-80	05-01-82	05-18-84	04-09-85	CP	21B	Y	N	Y	Y	N	Y	Y	N		CP
270956C030	ANNANDALE, CITY OF	3	963,576	06-13-80	03-17-81	08-02-82	09-16-83	CP	22A										CP
270925C030	BUFFALO, CITY OF	3	2,166,051	09-28-79	04-16-80	03-09-83	07-31-83	CP	22A	X		X	X		X				CP
270855C030	MONTICELLO, CITY OF	3	4,235,312 7,364,939 3	06-04-80	11-20-80	03-09-83	03-18-85	CP	22A	1		1	1						CP

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271087C020	ALBERTVILLE, CITY OF	4	981,920	09-02-83	04-15-85	09-17-86	07-10-86	CP	22B										97
270953C030	COKATO, CITY OF	3	548,005	12-01-80	10-05-81	07-28-83	09-26-83	CP	22B	0	0	1	0	1	1	1	0	1	CP
271443C020	GREENFIELD, CITY OF	4	665,465	09-02-83	01-16-86	12-28-86	06-01-85	73	22B										51
271442C020	INDEPENDENCE, CITY OF	4	1,832,595	09-27-83	12-19-85	12-28-86	10-12-86	68	22B										86
271051C030	ROCKFORD, CITY OF	3	808,279	12-29-80	06-01-81	10-31-82	09-27-83	CP	22B	1	0	0	1	1	1	0	0	0	CP
			4,836,264																
			5																
270824N010	KASOTA, CITY OF	3	182,318	01-16-75	03-18-75	09-01-78	08-29-78		23B						X	X	X		CP
271388C020	SAINT PETER, CITY OF	4	1,365,926	01-25-82	01-10-84	06-25-85	12-31-85	CP	23B	Y	Y	N	Y	N	Y	Y	N		CP
			1,548,244																
			2																
270826C030	MANKATO/NORTH MANKATO,	3	4,844,520	06-30-83	11-24-83	01-01-86	07-31-86	99	24A	N	N	N	N	N	Y	Y	N	Y	95
			4,844,520																
			1																
270902C020	LAKE CRYSTAL, CITY OF	4	2,563,980	09-28-83	04-08-85	11-28-86	08-01-86	95	24B										94
270970N010	MADISON LAKE, CITY OF	3	411,368	04-17-75	07-01-75	05-16-79	06-01-79	CP	24B	X		X		X	X				CP
			2,975,348																
			2																
270842C030	NORTHFIELD, CITY OF	3	5,308,200	12-29-80	05-27-82	02-28-87	12-01-85	CP	25A	X								X	98
			5,308,200																
			1																
270871N010	FARIBAULT, CITY OF	3	2,849,175	11-14-74	03-07-75	10-15-81	11-29-78	CP	25B	X									98
272000C020	FARIBAULT, CITY OF	3	76,162	12-21-76	07-05-77	04-26-78	12-12-77	CP	25B									X	CP
			2,925,337																
			2																
270932C020	CANNON FALLS, CITY OF	4	1,210,645	01-13-81	08-18-85	02-15-87	08-21-86	80	26A	Y	N	Y	Y	Y	Y	N	Y	N	81
270831C030	RED WING, CITY OF	3	3,275,889	06-29-79	05-05-80	02-15-82	02-08-83	CP	26A	X					3		X		CP
271374C020	WANAMINGO, CITY OF	4	1,162,125	02-20-80	04-19-84	06-25-85	09-11-86	CP	26A	1	0	0	0	0	0	1	0	X	CP
			5,648,659																
			3																
271375C020	GOODHUE, CITY OF	4	462,864	12-01-80	05-28-83	05-28-83	10-01-84	CP	26B										CP

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270803N010	LAKE CITY, CITY OF	3	59,529	08-16-74	11-06-74	08-24-77	06-13-77		26B						X	X		CP	
270889N010	PINE ISLAND, CITY OF	4	1,263,281	12-23-80	09-23-83	06-25-85	12-30-85	CP	26B	1	0	0	0	0	1	0	0	X	CP
271262C020	PLAINVIEW - ELGIN SANIT	4	3,424,080	08-17-84	07-01-86	07-01-88	07-31-85		26B									02	
271386C020	ZUMBRO FALLS, CITY OF	4	305,175	06-11-84	06-30-86	02-28-87	12-31-84		26B									03	
270887C020	ZUMBROTA, CITY OF	4	2,347,132	09-28-79	01-27-84	01-01-86	08-31-86	99	26B	Y	N	N	N	N	N	N	N	CP	
			7,862,061																
			6																
270937C030	COTTONWOOD, CITY OF	3	588,791	08-21-80	03-16-81	06-28-82	08-17-82	CP	27A	1	0	1	1	1	1	1	0	CP	
271142C020	LYND, CITY OF	4	501,225	03-29-84	08-15-86	08-15-87	01-01-85		27A									03	
270949N010	MARSHALL, CITY OF	3	3,417,798	12-05-74	03-24-75	05-12-78	04-05-78	CP	27A	X		X	X	X	X		X	CP	
270949N020	MARSHALL, CITY OF	3	132,320	06-05-78	03-24-75	10-01-80	10-23-79	CP	27A	0							X	CP	
270837C020	TAUNTON, CITY OF	3	92,976	07-13-76	10-19-76	08-31-77	08-31-84	CP	27A	X		X		X	X			CP	
			4,733,110																
			5																
271321C020	HOLLAND, CITY OF	4	325,350	03-31-81	09-27-84	12-30-85	11-30-85	CP	27B	1	0	R	0	1	1	0	0	94	
271419C020	KENNETH, CITY OF	4	62,705	08-06-81	12-06-83	06-28-84	11-30-83		27B	Y	N	N	Y	Y	N	Y	N	CP	
271474C020	STEEN, CITY OF	4	174,225	03-29-84	07-23-85	11-30-86	07-31-86	90	27B									88	
			562,280																
			3																
270936C020	TRIMONT, CITY OF	4	764,850	12-04-80	04-29-85	04-15-86	05-31-86	CP	28B									97	
			764,850																
			1																
271392C020	CEYLON, CITY OF	4	668,205	06-29-84	03-28-86	06-28-87	05-18-85		29A									03	
			668,205																
			1																
270938C020	WEST CONCORD, CITY OF	4	486,875	01-28-80	06-01-84	06-25-85	01-31-85	CP	30A	Y	N	N	Y	N	N	N	N	CP	
			486,875																
			1																
270888N010	KASSON, CITY OF	4	2,497,868	06-30-80	04-11-83	11-21-84	08-31-86	CP	30B									CP	
271027C020	WASECA, CITY OF	4	4,525,950	07-31-84	10-01-85	08-31-87	07-31-86	42	30B									49	
			7,023,818																
			2																

PLT - TREATMENT PLANT
FMN - FORCE MAINCMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS
INF - SEWER INFILTRATION CORRECTIONSOUT - OUTFALL SEWERS
PST - PUMPING STATION
COL - COLLECTOR SEWER
INT - INTERCEPTOR SEWERS
OTH - OTHER

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P T	C B	O M	I U	F N	P M	I S	C N	O O	%CP
270909C030	ALBERT LEA, CITY OF	3	26,601,127	09-28-79	10-20-80	09-30-83	09-30-84	CP	31A	X									CP
270964C020	ALDEN, CITY OF	4	548,918 27,150,045 2	03-25-80	04-30-82	07-30-83	07-31-84	CP	31A	1	0	0	0	0	1	0	0	X	CP
270905N010	BYRON, CITY OF	4	2,268,237	03-13-80	06-15-82	06-01-84	08-15-84	CP	32A	Y	N	Y	Y	Y	Y	N	Y	N	CP
270743C030	DOVER-EYOTA-ST CHARLES	3	2,562,592	11-19-75	04-12-76	10-14-81	03-24-81	CP	32A	X	X	X	X						CP
270743C050	DOVER-EYOTA-ST CHARLES	3	50,758 4,881,587 3	09-26-79	07-01-80	10-14-81	03-15-82	CP	32A										CP
271047C020	FOUNTAIN, CITY OF	4	1,317,415	01-21-81		05-31-87	01-27-86		32B	1	0	0	1	1	1	0	1	X	14
271111C040	PRESTON, CITY OF	3	904,650	09-27-83	08-30-84	10-19-85	01-31-86	CP	32B										95
270893C020	RUSHFORD, CITY OF	4	629,016	06-30-81	01-16-83	05-15-84	06-30-84	CP	32B										CP
271083C020	SPRING VALLEY, CITY OF	4	3,630,020 6,481,101 4	08-29-83	10-21-85	05-14-87	06-30-86	57	32B										79
270804C030	ROCHESTER, CITY OF	3	42,881,240 42,881,240 1	09-28-79	09-08-80	12-01-83	06-15-84	CP	33B	X									CP
270943C020	BROWNSVILLE, CITY OF	4	1,441,685	08-17-84	08-06-86	05-31-89	08-04-86		34A	Y	N	N	Y	Y	Y	N	Y	N	07
270877C030	CALEDONIA, CITY OF	4	902,625	07-31-84	10-31-86	12-30-86	08-31-85		34A										02
270818N010	STOCKTON, CITY OF	3	187,350 2,531,660 3	03-04-75	04-14-75	02-15-78	02-15-78	CP	34A	X			X	X					CP
270904C020	GAYLORD, CITY OF	4	2,486,250	09-27-83	07-15-85	11-28-87	10-31-85		35A										02
271153C020	GREEN ISLE, CITY OF	4	312,375	09-27-83	09-28-85	09-28-86	10-31-84		35A										03
270984N010	LESTER PRAIRIE, CITY OF	4	1,453,104	01-21-81	04-25-83	04-25-84	06-13-85	CP	35A										CP
270980C020	WINSTED, CITY OF	4	2,744,925	09-30-82	02-25-86	04-28-87	07-31-86	56	35A	Y	N	Y	Y	Y	Y	N	N	N	50
271073C020	WINTHROP, CITY OF	4	1,533,300 8,529,954 5	12-16-80	10-17-84	09-12-86	07-31-86	CP	35A										95
271098C020	CARVER, CITY OF	4	2,175,380	09-02-83	06-16-86	09-28-87	08-29-86	15	35B										30
270930C020	COLOGNE, CITY OF	4	380,866	01-29-81	09-08-82	12-22-83	12-31-83	CP	35B										CP
270740C020	NORWOOD, CITY OF	4	3,659,855	07-31-80	04-20-85	10-28-86	09-15-86	93	35B	1									89

PLT - TREATMENT PLANT
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GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M B	O I N F	F I N T	P P S T	I N T E R	C O L L E C T O R	%CP
270979C030	WATERTOWN, CITY OF	3	655,380 6,871,481 4	12-19-80	06-01-81	08-26-82	12-23-82	CP	35B								CP
270884C020	JORDAN, CITY OF	4	1,699,350 1,699,350 1	05-02-83	02-01-86	12-28-86	08-22-86	55	36B								42
279050C040	MMCC - LAKEVILLE/FARMIN	3	206,250 206,250 1	05-10-83	05-28-85	07-19-85	12-30-85	CP	36B37B								CP
271035C020	HAMPTON, CITY OF	4	571,346	12-30-80	09-11-82	12-22-83	06-27-85	CP	37B								CP
279008C020	MMCC - HASTINGS	3	6,233,400 6,804,746 2	03-22-83	09-20-83	06-30-86	05-10-86	CP	37B	Y	N	Y	N	N	N	N	99
271358C020	BACKUS, CITY OF	4	514,221	04-06-82	04-15-84	10-17-84	10-31-85	CP	4B	N	N	N	N	Y	Y	N	CP
270990C020	PINE RIVER AREA SANITAR	4	1,955,592 2,469,813 2	02-05-80	05-15-82	07-15-83	06-28-84	CP	4B	X				X			CP
271414N010	MEDINA, CITY OF	4	388,277 388,277 1	09-03-80	10-19-81	08-29-83	11-15-83	CP	48A	N	N	N	Y	Y	Y	N	CP
270741C020	ROGERS, VILLAGE OF	3	260,138 260,138 1	08-20-76	11-15-76	01-23-79	11-21-78	99	49A	X							CP
270823C030	GILBERT, CITY OF	3	1,532,113	09-29-78	03-26-79	11-28-81	11-01-82	CP	5A	X					X		CP
270821C030	MOUNTAIN IRON, CITY OF	3	1,391,635	09-29-78	05-01-79	03-11-82	05-20-83	CP	5A	1	0	1	1	1	1	1	CP
270720N010	VIRGINIA, CITY OF	4	1,904,250 4,827,998 3	07-31-73	03-15-74	08-14-79	07-26-79	98	5A	X						X	CP
270811C030	CHISHOLM, CITY OF	3	1,108,725	09-29-78	02-26-79	10-29-81	10-19-83	CP	5B	X							CP

PLT - TREATMENT PLANT CMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS OUT - OUTFALL SEWERS INT - INTERCEPTOR SEWERS
FMN - FORCE MAIN INF - SEWER INFILTRATION CORRECTIONS PST - PUMPING STATION COL - COLLECTOR SEWER OTH - OTHER

10-08-86
REPORT NO: PCA-503

WASTEWATER TREATMENT PROJECTS AWARDED UNDER P.L. 92-500

PAGE 10

GRANT NO. TYPE SEQ. NO. STATE: MN	APPLICANT	STEP	GRANT AMT.	AWARD DATE	START DATE	ESTIMATED COMPL DT	LAST PAY DT	% COMP	LEGISLATIVE DISTRICT	P L T	C M T	O U N	I M T	F N T	P I N T	C O F L	O T H	%CP
			1,108,725 1															
270742N010	FOREST LAKE, CITY OF	4	14,218 14,218 1	07-13-73	10-15-73	04-19-74	04-19-74		55A							X		CP
271411C020	LAKE ELMO, CITY OF	4	457,385 457,385 1	09-02-83	08-05-86	07-28-87	03-31-84		55B									02
270839N010	BEAVER BAY, CITY OF	3	934,915 934,915 1	08-11-78	02-28-79	11-03-81	11-14-80	CP	6A		X		X					CP
270817C020	BABBITT, CITY OF	3	301,787	12-08-76	10-18-77	07-25-80	05-23-80	CP	6B		X						X	CP
270817C030	BABBITT, CITY OF	3	35,585	07-14-77	08-15-77	08-01-79	05-15-78		6B								X	CP
270815C030	EVELETH- LEONIDAS, CITI	3	1,002,240	06-30-81	05-15-82	10-17-83	01-31-84	CP	6B		1	0	0	1	1	1	1	CP
270816C030	HOYT LAKES, CITY OF	3	434,394 1,774,006 4	09-28-78	03-15-79	10-30-81	10-24-83	CP	6B		X					X		CP
270870C030	MOORHEAD, CITY OF	3	4,256,472	09-28-79	04-07-80	12-01-81	11-10-83	CP	9A									CP
270870C050	MOORHEAD, CITY OF	3	16,766,141 21,022,613 2	09-26-80	04-01-81	08-31-83	05-31-85	CP	9A		0	0	1	X	X	1	0	CP
			707,232,589 181															

PLT - TREATMENT PLANT
FMN - FORCE MAIN

CMB - SEPARATION OF COMBINED STORM/SANITARY SEWERS
INF - SEWER INFILTRATION CORRECTIONS

OUT - OUTFALL SEWERS INT - INTERCEPTOR SEWERS
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APPENDIX C

COMPARATIVE MATRIX OF STATE REVOLVING LOAN FUNDS AND BOND/LOAN PROGRAMS

STATE	PROGRAM STRUCTURE	STATUS	STAFF SIZE & ANNUAL BUDGET	FORMS OF ASSISTANCE	CAPITALIZATION	ELIGIBILITY	DEFAULT/ ACTION
MASSACHUSETTS (MASSBANK)	MASSBANK would provide debt financing for water, wastewater, highways, bridges, and tunnels.	Proposed	- Anticipate small staff - \$250,000 start-up budget; increasing to \$1.0 million annually.	Will purchase local community debt obligations with proceeds from revenue bonds.	Start-up appropriation of \$2 million. Subsequent capitalization solely from revenue bond proceeds.	Any governmental unit which has authorized the financing of a local project.	No experience yet. Ability to intercept State aid.
NEW JERSEY (Environmental Infrastructure Trust)	Trust authorized to issue debt for wastewater, resource recovery, secured landfills, and landfill closure.	Established 1985	- Anticipate small staff - Budget not to exceed \$250,000.	Loans at or near the interest rate on the most recent bond issue.	Initial capitalization is \$190 million. Sources include: G.O. bond proceeds and State appropriations.	Facility must be on approved priority list (1972 Act).	No experience yet. Local aid may be intercepted and applied toward payment default.
OHIO (Water Development Authority)	Finances water, wastewater, and solid waste facilities for local govt. agencies.	Established 1968; through 1984, more than \$1.5 billion had been allocated for 369 projects.	- 7 persons - \$0.59 million budget capitalized from an admin. fee (0.35%) charged to participating govt. agencies.	Loans at or near market rates. Interest rates may be subsidized as low as 2% for hardship cases.	Initial capitalization from \$100 million State appropriation. Subsequent capitalization has been solely from revenue bond proceeds.	Any legitimate project costs (up to 100%) may be funded on a first-come, first-served basis.	No defaults. Authority to serve a court-ordered rate increase to prevent default.
OKLAHOMA (Water Resources Board)	Water Resources Fund finances wastewater, water conservation and development projects.	Established 1979	- 5 persons - Budget is approximately 1.5% of the program.	Loans and emergency grants. Interest rate charged is close to the State borrowing costs on the most recent issue.	Initial capitalization was a \$25 million appropriation. Subsequent capitalization solely from revenue bond proceeds.	Financing provided first-come, first-served basis. Local communities must provide financial info. to verify their ability to repay loans.	No defaults. Have the power to require a user-fee increase.
TENNESSEE (Local Development Authority)	Provides financial assistance for the construction of wastewater treatment plants, water projects, and solid waste resource recovery facilities.	Established 1970	- 6 persons (some part-time). - Budget is approximately \$60,000, derived from interest earnings.	Loans and grants. Interest rates are subsidized on loans (up to 100% of costs). Grants (5-35%) are given to communities determined to be less able to pay.	Authorized to issue \$339.4 million in revenue bonds.	All communities are eligible; the project must meet dept. stds. and EPA eligibility criteria.	No defaults. Authority has power to: increase user fees, withhold State-share taxes, and collect ad valorem tax, in the event of a default.

STATE	PROGRAM STRUCTURE	STATUS	STAFF SIZE & ANNUAL BUDGET	FORMS OF ASSISTANCE	CAPITALIZATION	ELIGIBILITY	DEFAULT/ ACTION
TEXAS	Finances waste-water, water supply, and reservoir projects.	Established 1957	- 6 persons - Budget is over \$1.0 million, funded by legislative appropriation.	Loans at or near the rate on the most recent G.O.	Authorized to issue up to \$980 million in State of Texas G.O. bonds and loan guarantees.	Projects are dealt with on a first-come, first-served basis. Communities must show that they have had difficulty entering the bond market.	Have the power to force a user-charge increase, or appoint a trustee to own and operate the project.
UTAH (Loan and Credit Enhancement Program)	The program finances waste-water, drinking water, and water projects through the purchase of local bonded debt.	Established 1983	- 3 persons - Budget is 1% of bond proceeds. Anticipated to increase to 2%.	Loans, credit enhancement, and interest rate buy-down. Interest rate on loans has been at or near the rate on the State bond issue.	\$50 million initial capitalization from legislative appropriation.	Projects selected must demonstrate repayment ability, cost effectiveness, and health benefits.	No defaults. Empowered to force a user-charge increase.
WASHINGTON (Public Works Trust Fund)	Provides infrastructure financing assistance for streets, bridges, water supply, and storm & sanitary sewage systems.	Established 1985	- Small staff - Budget not determined; will most likely correspond (%) to magnitude of activity.	Low interest loans, as low as 0% for disaster or hardship cases. Loan guarantees are also available.	Capitalized from dedicated tax revenue (water, sewer, refuse, and conveyance taxes). Expect \$20.5 million per year.	Eligible communities must have tax dedicated to capital purposes, a long-term financing plan, & use all local revenue sources reasonably available.	No experience yet.
WEST VIRGINIA (Water Development Authority)	Finances waste-water and drinking water facility construction.	Established 1975	- 5 persons - Budget is approximately \$250,000; paid from earnings from bond and loan program.	Low-interest (10%) supplemental loans are given by blending 12% interest bond proceeds with 0% appropriated funds. Hardship grants are also offered.	Initial capitalization from State appropriation. Subsequent capitalization from revenue bond proceeds and State appropriations.	Prospective pool of applicants served on a first-come, first-served basis.	No monetary defaults. Have resolved technical defaults.
WYOMING (Harm Loan Program)	Finances municipal development including water supply, wastewater systems, streets, public health facilities, and recreational facilities.	Established 1974-75	- 3 persons - Operational costs paid out of State's general fund.	Loans and grants. Interest rate is currently at 8.5%.	Loan program initially capitalized from \$100 million appropriation. Grant monies from coal and mineral royalties are approximately \$15 and \$18 million respectively. Have authority to issue up to \$60 million in revenue bonds--has never been used.	Applicant must be municipality or district, and demonstrate that all local revenue resources are fully utilized.	(One default. Emphasize preventative measures (adequate assurances) to avoid problems.

APPENDIX D

STATE REVOLVING LOAN FUND MODEL OF FULL 20 YEAR REPORT

*****SIRF FULL 20 YEAR REPORT*****

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
SOURCES OF FUNDS					
BEGINNING BALANCE		149,990	2,446,376	4,576,053	6,530,685
CAPITALIZATION					
Current	\$0	0	0	0	0
Cumulative	\$0	0	0	0	0
BONDS ISSUED					
Current	\$23,500,000	23,500,000	23,500,000	23,500,000	23,500,000
Cumulative	\$23,500,000	47,000,000	70,500,000	94,000,000	117,500,000
OTHER INCOME (INCLUDING PENALTIES)					
Current	\$0	0	0	0	0
Cumulative	\$0	0	0	0	0
LOAN ACTIVITY					
LOAN REPAYMENTS					
Current	\$0	2,037,044	4,074,088	6,111,133	8,148,177
Cumulative	\$0	2,037,044	6,111,133	12,222,265	20,370,442
LOAN DEFAULTS					
Current	\$0	0	0	0	0
Cumulative	\$0	0	0	0	0
NET LOAN REPAYMENTS					
Current	\$0	2,037,044	4,074,088	6,111,133	8,148,177
Cumulative	\$0	2,037,044	6,111,133	12,222,265	20,370,442
INVESTED FUNDS	\$3,000,000	5,187,034	7,215,298	9,076,852	10,763,362
Interest Rate for Invested Funds	5.00%	5.00%	5.00%	5.00%	5.00%
Interest on Invested Funds	\$150,000	\$259,352	\$360,765	\$453,843	\$538,168
TOTAL SOURCES OF FUNDS					
Current	\$23,650,000	25,946,386	30,381,229	34,641,028	38,717,030
Cumulative	\$23,650,000	49,596,386	79,977,615	114,618,643	153,335,672
USES OF FUNDS					
BOND RETIREMENT					
Current	\$0	0	2,305,167	4,610,333	6,915,500
Cumulative	\$0	0	2,305,167	6,915,500	13,830,999
TOTAL BOND INSURANCE FEE	\$0	0	0	0	0
--LOAN ACTIVITY--					
LOANS MADE					
Current	\$20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	\$20,000,000	40,000,000	60,000,000	80,000,000	100,000,000
GRANTS MADE					
Current	\$0	0	0	0	0
Cumulative	\$0	0	0	0	0
TOTAL LOANS & GRANTS MADE					
Current	\$20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	\$20,000,000	40,000,000	60,000,000	80,000,000	100,000,000
ADMINISTRATIVE/OPERATIONAL COSTS	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
TOTAL USES OF FUNDS					
Current	\$20,500,000	20,500,000	22,805,167	25,110,333	27,415,500
Cumulative	\$20,500,000	41,000,000	63,805,167	88,915,500	116,330,999
****FUND BALANCE**** (END OF YEAR)					
	\$149,990	\$2,446,376	\$4,576,053	\$6,530,685	\$8,301,520
INFLATION ANALYSIS OF FUND					
INFLATION RATE	0.00%	0.00%	0.00%	0.00%	0.00%
CONSTANT DOLLARS	\$149,990	2,446,376	4,576,053	6,530,685	8,301,520

*****SIRF FULL 20 YEAR REPORT*****

	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
SOURCES OF FUNDS					
BEGINNING BALANCE	8,301,520	12,018,265	15,920,847	19,737,030	23,462,494
CAPITALIZATION					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
BONDS ISSUED					
Current	23,500,000	23,500,000	23,500,000	23,500,000	23,500,000
Cumulative	141,000,000	164,500,000	188,000,000	211,500,000	235,000,000
OTHER INCOME (INCLUDING PENALTIES)					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
LOAN ACTIVITY					
LOAN REPAYMENTS					
Current	12,222,265	12,222,265	14,259,309	16,296,353	18,333,398
Cumulative	32,592,707	44,814,972	59,074,281	75,370,635	93,704,032
LOAN DEFAULTS					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
NET LOAN REPAYMENTS					
Current	12,222,265	12,222,265	14,259,309	16,296,353	18,333,398
Cumulative	32,592,707	44,814,972	59,074,281	75,370,635	93,704,032
INVESTED FUNDS	14,303,119	18,019,864	21,654,324	25,202,385	28,659,726
Interest Rate for Invested Funds	5.00%	5.00%	5.00%	5.00%	5.00%
Interest on Invested Funds	\$715,156	\$900,993	\$1,082,716	\$1,260,119	\$1,432,986
TOTAL SOURCES OF FUNDS					
Current	44,738,941	48,641,523	54,762,873	60,793,503	66,728,878
Cumulative	198,074,613	246,716,137	301,479,009	362,272,512	429,001,390
USES OF FUNDS					
BOND RETIREMENT					
Current	9,220,666	9,220,666	11,525,833	13,830,999	16,136,166
Cumulative	23,051,665	32,272,331	43,798,164	57,629,163	73,765,328
TOTAL BOND INSURANCE FEE	0	0	0	0	0
--LOAN ACTIVITY--					
LOANS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	120,000,000	140,000,000	160,000,000	180,000,000	200,000,000
GRANTS MADE					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
TOTAL LOANS & GRANTS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	120,000,000	140,000,000	160,000,000	180,000,000	200,000,000
ADMINISTRATIVE/OPERATIONAL COSTS	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
TOTAL USES OF FUNDS					
Current	29,720,666	29,720,666	32,025,833	34,330,999	36,636,166
Cumulative	146,051,665	175,772,331	207,798,164	242,129,163	278,765,328
FUND BALANCE (END OF YEAR)	\$12,018,265	\$15,920,847	\$19,737,030	\$23,462,494	\$27,092,702
INFLATION ANALYSIS OF FUND					
INFLATION RATE	0.00%	0.00%	0.00%	0.00%	0.00%
CONSTANT DOLLARS	12,018,265	15,920,847	19,737,030	23,462,494	27,092,702

****SIRF FULL 20 YEAR REPORT****

	YEAR 11	YEAR 12	YEAR 13	YEAR 14	YEAR 15
SOURCES OF FUNDS					
BEGINNING BALANCE	27,092,702	32,761,789	38,714,330	44,682,970	50,668,513
CAPITALIZATION					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
BONDS ISSUED					
Current	23,500,000	23,500,000	23,500,000	23,500,000	23,500,000
Cumulative	258,500,000	282,000,000	305,500,000	329,000,000	352,500,000
OTHER INCOME (INCLUDING PENALTIES)					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
LOAN ACTIVITY					
LOAN REPAYMENTS					
Current	22,407,486	22,407,486	24,444,530	26,481,574	28,518,618
Cumulative	116,111,518	138,519,004	162,963,534	189,445,108	217,963,727
LOAN DEFAULTS					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
NET LOAN REPAYMENTS					
Current	22,407,486	22,407,486	24,444,530	26,481,574	28,518,618
Cumulative	116,111,518	138,519,004	162,963,534	189,445,108	217,963,727
INVESTED FUNDS	34,058,856	39,727,943	45,412,362	51,112,879	56,830,300
Interest Rate for Invested Funds	5.00%	5.00%	5.00%	5.00%	5.00%
Interest on Invested Funds	\$1,702,943	\$1,986,397	\$2,270,618	\$2,555,644	\$2,841,515
TOTAL SOURCES OF FUNDS					
Current	74,703,131	80,655,672	88,929,478	97,220,188	105,528,646
Cumulative	503,704,521	584,360,193	673,289,671	770,509,859	876,038,505
USES OF FUNDS					
BOND RETIREMENT					
Current	18,441,332	18,441,332	20,746,499	23,051,665	25,356,832
Cumulative	92,206,660	110,647,992	131,394,491	154,446,156	179,802,987
TOTAL BOND INSURANCE FEE	0	0	0	0	0
--LOAN ACTIVITY--					
LOANS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	220,000,000	240,000,000	260,000,000	280,000,000	300,000,000
GRANTS MADE					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
TOTAL LOANS & GRANTS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	220,000,000	240,000,000	260,000,000	280,000,000	300,000,000
ADMINISTRATIVE/OPERATIONAL COSTS	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
TOTAL USES OF FUNDS					
Current	38,941,332	38,941,332	41,246,499	43,551,665	45,856,832
Cumulative	317,706,660	356,647,992	397,894,491	441,446,156	487,302,987
****FUND BALANCE**** (END OF YEAR)	\$32,761,789	\$38,714,330	\$44,682,970	\$50,668,513	\$56,671,805
INFLATION ANALYSIS OF FUND					
INFLATION RATE	0.00%	0.00%	0.00%	0.00%	0.00%
CONSTANT DOLLARS	32,761,789	38,714,330	44,682,970	50,668,513	56,671,805

*****SIRF FULL 20 YEAR REPORT*****

	YEAR 16	YEAR 17	YEAR 18	YEAR 19	YEAR 20
SOURCES OF FUNDS					
BEGINNING BALANCE	56,671,805	64,832,629	63,719,796	62,269,792	60,465,759
CAPITALIZATION					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
BONDS ISSUED					
Current	23,500,000	23,500,000	23,500,000	23,500,000	23,500,000
Cumulative	376,000,000	399,500,000	423,000,000	446,500,000	470,000,000
OTHER INCOME (INCLUDING PENALTIES)					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
LOAN ACTIVITY					
LOAN REPAYMENTS					
Current	32,592,707	32,592,707	34,629,751	36,666,795	38,703,839
Cumulative	250,556,434	283,149,141	317,778,892	354,445,687	393,149,526
LOAN DEFAULTS					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
NET LOAN REPAYMENTS					
Current	32,592,707	32,592,707	34,629,751	36,666,795	38,703,839
Cumulative	250,556,434	283,149,141	317,778,892	354,445,687	393,149,526
INVESTED FUNDS					
Interest Rate for Invested Funds	5.00%	5.00%	5.00%	5.00%	5.00%
Interest on Invested Funds	\$3,230,126	\$3,177,134	\$3,108,086	\$3,022,179	2,918,572
TOTAL SOURCES OF FUNDS					
Current	115,994,637	124,102,470	124,957,632	125,458,767	125,588,171
Cumulative	992,033,143	1,116,135,612	1,241,093,245	1,366,552,011	1,492,140,182
USES OF FUNDS					
BOND RETIREMENT					
Current	27,661,998	36,882,664	39,187,831	41,492,997	43,798,164
Cumulative	207,464,985	244,347,649	283,535,480	325,028,477	368,826,641
TOTAL BOND INSURANCE FEE	0	0	0	0	0
---LOAN ACTIVITY---					
LOANS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	320,000,000	340,000,000	360,000,000	380,000,000	400,000,000
GRANTS MADE					
Current	0	0	0	0	0
Cumulative	0	0	0	0	0
TOTAL LOANS & GRANTS MADE					
Current	20,000,000	20,000,000	20,000,000	20,000,000	20,000,000
Cumulative	320,000,000	340,000,000	360,000,000	380,000,000	400,000,000
ADMINISTRATIVE/OPERATIONAL COSTS	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
TOTAL USES OF FUNDS					
Current	48,161,998	57,382,664	59,687,831	61,992,997	64,298,164
Cumulative	535,464,985	592,847,649	652,535,480	714,528,477	778,826,641
FUND BALANCE (END OF YEAR)	\$64,832,629	\$63,719,796	\$62,269,792	\$60,465,759	\$58,289,997
INFLATION ANALYSIS OF FUND					
INFLATION RATE	0.00%	0.00%	0.00%	0.00%	0.00%
CONSTANT DOLLARS	64,832,629	63,719,796	62,269,792	60,465,759	58,289,997

AGENCY REVIEW AND COMMUNITY ASSISTANCE

Engineering and Administrative

I. ISSUE STATEMENT

This section evaluates the roles of the Minnesota Pollution Control Agency (the Agency), engineering consultants, cities and other interested parties in the planning, design and construction of wastewater treatment projects; examines the engineering/technical and administrative assistance efforts of the Agency; and explores several alternative strategies for the Agency to follow.

II. BACKGROUND

The Agency, in its efforts to provide service and to administer and enforce environmental regulations, is active in technical and administrative review and in providing assistance to municipalities proposing wastewater treatment plants. This effort is to protect Minnesota's water quality by insuring adequate construction of wastewater treatment facilities which meet effluent standards and to allow municipalities to benefit from Agency experience with wastewater treatment facilities planning, design and construction.

In addition, Agency review is necessary to insure compliance with applicable state and federal law, protect public funds by determining the eligibility of items for grant participation, to determine actual costs for reimbursement purposes and to protect municipalities from audit deficiencies at the end of the project.

Conflicts have arisen among the Agency, municipalities, consulting engineers and interested parties outside municipalities in planning and constructing wastewater treatment facilities. The Agency has made a concerted effort to mitigate those conflicts and improve the efficiency of its technical and administrative reviews to reduce the time required to plan and construct successful wastewater treatment projects.

Three alternative strategies labelled "Enforcement", "Review and Assistance", and "Performance of Municipal Engineering Services" were evaluated as different approaches to agency review and community assistance as part of the Agency's overall program to control pollution and protect the environment.

III. DISCUSSION

A. ROLES OF THE AGENCY, CONSULTANTS, MUNICIPALITIES, AND OTHER PARTIES DURING PLANNING OF WASTEWATER TREATMENT PROJECTS:

Each of the participants in the process of planning a wastewater treatment project has its own goals, priorities and constraints. For example, while a municipality may place a high priority on limiting operating expenses for a treatment plant, a nearby resident to a plant might place a higher priority on proper operation or control of odors, and may have little concern over operational costs to achieve these goals unless they are also a user and will be billed monthly for the service.

Because each participant has its own goals and priorities, it is expected that conflicts will arise during the process of planning, enforcement of

pollution requirements, design, construction, financing and permitting of wastewater treatment plants.

The roles of participating parties can be summarized as follows:

1) Minnesota Pollution Control Agency:

COMMUNITY ASSISTANCE. The Agency assists cities in progressing through the grants programs by updating consultants and municipalities on program developments through a monthly newsletter, working with all parties to resolve conflicts on controversial projects, developing procedures to insure efficient processing of projects, and providing reviews on proposed projects which can sometimes reduce project costs and improve efficiency of design.

ADMINISTRATION. The Agency administers construction grant funds by preparing project lists and conducting eligibility, administrative, technical and environmental reviews, all required to pass through federal dollars to communities. During the permitting process, the Agency documents that the project has a reasonable assurance of meeting effluent limits and will not adversely affect the surrounding environment, and that public input has been considered.

REGULATION. The Agency enforces effluent and water quality regulations and takes appropriate enforcement actions when standards are violated. It insures that the Federal Clean Water Act requirements are met.

2) Municipalities:

Municipalities are responsible for conforming with environmental rules and regulations. They must manage contracts with consultants and contractors to plan, design and construct wastewater treatment facilities. They are responsible to resolve local controversies in siting wastewater treatment facilities, select the most cost effective and environmentally sound alternative and finance and properly operate treatment facilities.

3) Consulting Engineer:

The Consultant is responsible to plan and design wastewater treatment facilities for clients in conformance with applicable rules, regulations, design standards and law. The engineer must complete tasks on a schedule as developed in the grant agreements, and act as an independent contractor. A key element of designing facilities is the selection of an appropriate site.

4) Interested Parties Outside the Municipalities:

Nearby residents and "downstream" residents to another municipality's wastewater treatment facility are often very concerned about the reliability and adequacy of design, monitoring to detect any problems with the facility and operations to guarantee that the plant is adequately operated and maintained to avoid any pollution or nuisance conditions.

The specifics of the current Agency review are detailed in Appendix A. As can be seen from the summaries above, roles can tend to merge depending on

the specific interests of individual engineers, municipalities and outside parties.

B. RECENT AGENCY EXPERIENCE - REVIEW OF WASTEWATER TREATMENT PROJECTS:

Many municipalities, including most of Minnesota's larger cities, have successfully constructed adequate treatment projects in a timely fashion. However, conflicts and problems have arisen during the process of planning, designing and constructing wastewater treatment projects, especially for smaller cities. Some of these problems are discussed below.

1) Increasing Costs

With decreasing grant monies, uncertain economic conditions, high per capita costs, and increasing emphasis on municipal compliance, many small cities are unwilling or unable to complete treatment projects.

Without continued substantial financial assistance, many small cities not yet under construction that have discharges that do not comply with their permit conditions, will not achieve compliance by the federal deadline of July 1, 1988.

2) Delay

Concern has been raised over the length of time necessary for projects to begin construction and the level of detail of Agency project reviews. Many cities and consultants have been working for many years on projects and have questioned delays in project review and approval and in grant assistance. The reason for the Agency's historically detailed reviews is that facility plans prepared by the private consulting firms have not conformed with EPA regulations and policies prior to the Agency's review and comment.

Concern has also been expressed that Agency staff are inexperienced and that the Agency has high turnover. At the time that the Division of Solid and Hazardous Waste was staffing up, a number of experienced people were hired out of the grants programs. That loss has subsided and the programs currently have 9 registered professional engineers on staff. As discussed elsewhere, extensive training programs are conducted by the experienced staff, and a quality control group reviews the work of staff.

A major cause of delay is the level of funding available. As discussed in Appendix A, the major portion of a project's delay, when considering the overall project from initiation of planning to completion of construction, is attributable to the wait for the next grant, either a design grant (Step 2), design and construction (Step 2+3) or construction grant (Step 3).

The State of Wisconsin has established a state program, The Wisconsin Fund, that is administratively similar to the Minnesota Construction Grants Program in that it is based upon the Federal program. The major difference is the level of funding. The Fund was initiated in 1979 and through fiscal year 1983 the Wisconsin Fund had a budget of \$348,509,592. The Federal funds for the State of Wisconsin were allocated to the City of Milwaukee. There was not the delay between steps due to lack of continued funding because the Wisconsin Fund was available and adequately funded.

3) Quality of Work Products

Due to limited budgets and a competitive climate for clients, consultants may be limited in their time to resolve problems on projects and may assign inexperienced staff to projects. This has resulted in differences in the quality of work among consultants.

In order to resolve local controversies or reduce project costs, cities have proposed projects that still contain serious technical defects. The above pressures have resulted in some cities proposing ponds or drainfields on wetlands or other unsuitable sites. Constructing facilities on unsuitable sites in the past resulted in project failure and a major expenditure of local funds to correct the defects. Other cities in the past have inappropriately constructed advanced mechanical treatment plants, which have placed an operational burden on the city, and in fact do not meet standards due to facilities operations.

When projects have failed, municipalities have not always had financial resources to resolve the problem, resulting in long term non-compliance with permit conditions and environmental pollution. Increased financial stress upon the city to correct either design or construction problems is sure to occur. Design and construction problems are often difficult to correct after the construction is complete, due to these budgetary considerations.

In 1978 the legislation was passed requiring the Agency to publish yearly in the State Register a list of consultants and contractors that were more than 90 days behind schedule or were responsible for substandard projects. However, because of the due process provisions, each case had to be treated essentially as litigation. Extensive staff time was required with minimal results. The legislation sunsetted and was not renewed.

C. RECENT AGENCY EFFORTS TO IMPROVE THE EFFICIENCY OF REVIEW:

To address issues raised by interested outside parties and improve the overall operation of the program, the following changes have been made:

- 1) The Agency has streamlined the organization of the construction grants program staff.

All functions relating to review of construction grants projects have been combined into the new Municipal Wastewater Treatment Section. New project review units have been established to insure complete project review, from application review through technical review and project construction, by one team to improve responsiveness to communities.

- 2) The Agency has reduced review times.

PLANS AND SPECIFICATIONS

A top priority has been placed on review of plans and specifications. As a result, with few exceptions, final actions are being taken within 90 days.

APPLICATIONS

During the 1985-86 State legislative session, the Legislature mandated that the Agency review and approve applications for construction grant funding within 90 days of Agency receipt. The staff emphasis is to get the information necessary to submit an acceptable application to the grantee/applicant in an understandable format, thereby eliminating subsequent delays resulting from additional submittals or resubmittals.

New methods of expediting the review, such as furnishing a suggested Table of Contents, suggested language for required resolutions and a suggested format for the submittal of updated construction costs are being initiated. Fiscal Year 1987 is the first year that many of these changes will occur.

- 3) **The Agency has improved its efforts toward quality control in the technical review of projects.**

A design review committee was established to insure consistency of Agency reviews and to improve training of inexperienced staff. In the new organization, a quality control/quality assurance unit has been established to continue to monitor the quality and quantity of technical review.

- 4) **The Agency has increased its cooperative efforts with outside parties to share information and make necessary program refinements.**

The Agency technical staff have been regularly meeting for several years with the Consulting Engineers Council to discuss topics of mutual interest, including the Agency review criteria. Recently, the Agency has been meeting with the legislatively established Technical Advisory Committee to discuss Agency regulations and related issues in the water pollution control program.

Work with the Consulting Engineers Council and other interested professional groups has resulted in the creation of task forces to address such issues as cost overruns, water quality standards, new secondary treatment regulations, technical design criteria, and related topics. The Agency encourages outside parties to provide input into Agency technical criteria. Thus far, discussions have focused on the roles of the various parties involved in the grants process.

D. POSSIBLE STRATEGIES FOR AGENCY REVIEW AND COMMUNITY ASSISTANCE:

Different strategies available to the Agency in pursuing its objectives of community assistance, administration, and regulation are examined below in light of its legal responsibilities to all citizens of Minnesota.

- 1) **Enforcement (goal-oriented) Strategy**

This strategy would focus Agency efforts on achieving compliance with rules and regulations relating to environmental discharges and to environmental and social impacts of new project

construction. Community assistance efforts to share Agency design and construction knowledge could be limited at the request of the municipality. Communities and consultants would bear sole responsibility for project design and integrity. The Agency's role would be limited to providing financial assistance with a minimum of review.

ADVANTAGES

- The system would be simplified.
- The city and its consultant could design the system of their choice, assuming the level of risk desired.
- The city could have greater control over their wastewater treatment budget.
- The Agency's grants programs' budget and staffing needs would be reduced.

DISADVANTAGES

- Less regulation could result in a decrease in design quality and an increase in system failure.
- No state assurance could be given to neighbors and downstream residents of the project's quality (ground water pollution, odors, stream pollution, etc.), leading to more local conflicts.
- Cities may not benefit from Agency experience on similar projects during design work.
- Cities would have to fund corrections themselves unless the State decided to participate.
- The Agency's enforcement budget and staffing would be increased.

The specific areas of the process that could be modified are detailed in Appendix B.

2) Review and Community Assistance (Current Procedure) Strategy

This strategy engages the Agency in a service role to share its experience and insure statewide consistency of treatment facilities, as well as in a role as enforcer of regulations and administrator of program requirements.

This strategy is carried out through development of design criteria; review, negotiation and approval of projects; provision of operator training and assistance to operators; and provision of assistance to cities to resolve controversies on new projects or to resolve bid protests. This represents the Agency's current mode of operation and is required by federal regulations for Minnesota to receive federal construction funds.

The Agency's actions could also be expanded somewhat to include

development of standard planning and design criteria to be utilized by consultants. For example, the Agency could develop a model streamlined stabilization pond facilities plan and plans and specifications. Standardization of generic design criteria could have advantages in reduced engineering fees and construction costs resulting from uniform designs which would become familiar to contractors.

Technical review and assistance could also be expanded into direct coordination with cities to manage projects. The Agency could assist cities in hiring a consultant, determining project needs, understanding the pollution control programs, conducting public meetings, etc.

ADVANTAGES

- The quality of approved projects is better assured.
- Projects designed in Minnesota receive the benefit of statewide experience with similar systems.
- There may be a reduced likelihood of catastrophic project failure which cities cannot afford to correct.
- Negotiation is facilitated to allow resolution of legitimate conflicts between parties with different goals.
- Minnesota can continue to receive federal appropriations.

DISADVANTAGES

- Significant time is required for Agency review.
- State resources are necessary to support review staff.
- Questions arise relating to overall project responsibility when design changes are requested by the Agency.
- The cities and their consultants must "defend" the adequacy of the designs to the Agency before it can be constructed.

The specific areas that can be modified are detailed in Appendix C.

3) Performance of Municipal Engineering Services

This strategy would eliminate the time consuming process of negotiating project approvals between consultants and the Agency and would address problems of quality control of engineering design by assigning the responsibility of planning, design and possibly construction management directly to the state. This would probably increase the staffing needs of the Agency and strengthen Agency control over project planning, design and construction. The Agency could work directly with cities in all phases of the project to provide various levels of engineering services.

ADVANTAGES

- Quality control of designs could be improved.
- There could be an overall reduction in expenses for engineering, planning and design resulting from standardization of certain design elements, such as stabilization ponds, and elimination of the review element.
- The Agency could play a more active role in addressing questions on project design to project opponents.
- There could be a reduction in delays occurring in the two-tiered program of Agency review and approval of proposals developed by consulting engineers.
- It relieves small cities of responsibilities that they don't have the expertise or finances to fulfill.

DISADVANTAGES

- Agency staff and budgetary needs for the grants programs could increase, but they could decrease in enforcement and legal efforts.
- Available business for consultants would be reduced.
- Control of the project could be removed from the city.
- Increased liability for errors and omissions would accrue to the state (this would likely not be construed as a disadvantage by the cities).

The specific areas that can be modified are detailed in Appendix C.

APPENDIX A

CURRENT EXTENT OF AGENCY REVIEW AND ASSISTANCE

A. PLANNING

Facilities Planning involves the city and its consultant, in conjunction with the agency, in a process structured to analyze the wastewater treatment needs of the city. That analysis results in the selection of a treatment alternative that meets the technical and environmental requirements of this agency, and is also determined to be the most cost effective solution.

The activities of each participant are as follows:

CITY

1. Evaluate and hire a consultant.
2. Evaluate the consultant's recommendations for solving the city's wastewater treatment problem.
3. Evaluate the financial capabilities of the city.
4. Hold a public meeting to advise the citizens of the selected alternative and its costs.
5. Submit the facility plan to the Agency for approval of the selected alternative.

CONSULTANT

1. Develop and compare alternatives.
2. Do a site evaluation.
3. Prepare the facility plan.
4. Propose the cost effective alternative to the city.

AGENCY

1. Conduct a meeting with the city and its consultant during the planning process to monitor progress.
2. Conduct site inspections to determine the adequacy of the proposed site.
3. Advise the city of funding and financial considerations.
4. Advise the city of permit and water quality standard requirements.
5. Reviews for:
 - a. Adverse environmental impacts.

- b. Technical adequacy of the plan to meet the permit requirements.
- c. Technical Reliability.
- d. Cost effectiveness.
- e. Financial capability of the city to pay for the project.
- f. Public knowledge of the project's impacts and costs.

B. DESIGN

Once a facility plan is completed, design of the facility can begin. Initiation of design has often been delayed due to lack of funding. The city could proceed with design using their own monies, anticipating reimbursement in the future when they received a grant. Often the city could or would not fund the design until a grant was actually available. That delay between Step 1 (facilities planning) and Step 2 (design) could be several years dependent upon funding levels and the cities placement on the funding priority list.

The 1981 amendments to the Clean Water Act made design monies more easily available to cities by providing for Advances of Allowances for design of wastewater treatment facilities. The State manages the allocation of the Advance funds and has been granting Advances of Allowances for design to cities that have requested such consideration and that have fully completed facilities planning.

The city's consultant develops plans and specifications for the alternative selected by the city and approved by the Agency. The Agency meets with the consultant and/or the city at the following times:

1. PRE-DESIGN MEETING

Before design begins, the Agency and the consultant/city meet to verify that the facility plan recommendations are still correct and no changes are needed.

2. MID-COURSE MEETING

At the halfway point in design, a meeting is held to discuss any changes that should be made in the plans and specifications to better comply with federal and state regulations and policies and to answer any questions.

3. PRE-SUBMITTAL MEETING

Toward the end of design, a meeting is held to give the reviewer an overview of the project, facilitating a more efficient agency review.

Upon submittal of the plans and specifications, the Agency reviews for the following:

- 1. Adherence to Agency criteria, federal and state regulations, Ten State Standards and other standard engineering practices.

2. The eligibility and allowability of the costs.
3. Compliance with the originally approved facility plan.
4. Compliance with all Davis-Bacon, minority and equal opportunity requirements.

The Agency reviews the initial submittal in 30 days and sends written comments to the city and its consultant, who have 30 days to correct deficiencies. An agency design review committee has been established to ensure quality and consistency of review. The review process takes 90 days from initial submittal to agency final action. If a set of plans and specifications are received that have major inadequacies, they are returned to the community and identified as an inadequate submittal.

C. CONSTRUCTION

Once the plans and specifications are approved, the city is theoretically ready to proceed to construction by advertising for bids. A city that wishes to retain their eligibility for grant funding cannot begin construction until a construction grant has been awarded. The project may be delayed at this point due to a lack of funding. The city may be ready to proceed, having approved plans and specifications, but the funding dollars may not reach them on the funding priority list.

When funds become available the construction process consists of the following:

THE CONSTRUCTION ACTIVITIES ARE DELEGATED AS FOLLOWS:

CITY/CONSULTANT

1. Prepare the bidding documents.
2. Advertise for bids.
3. Distribute the plans and specifications to interested contractors.
4. Receive and open bids.
5. Review the bids to determine the low, responsive, responsible bidder.
6. Submit the bidding documents to the Agency for review.

AGENCY

1. Concur with city's determination of low, responsive, responsible bidder.
2. Determine that all federal and state regulations, including Davis-Bacon and minority utilization, have been met.
3. Determine that the bids are consistent with the last bid estimate done by the city and consultant.

THE CONSTRUCTION PHASE CONSISTS OF THE FOLLOWING:

1. A project management conference is held by the Agency to instruct the city on construction management techniques.
2. A preconstruction meeting is held at which the contractor, consultant, city and Agency discuss the project.
3. The construction is initiated by the contractor.
4. The day to day construction activities, inspection, and interface with the agency are conducted.
5. The project is completed.
6. The city, within one year, certifies that the facilities will meet permit conditions for their design life.
7. The agency gives final approval and final grant payment.

APPENDIX B

METHODS AND EFFECTS OF LIMITING AGENCY REVIEW

PLANNING AND DESIGN

1. REDUCE OR ELIMINATE FEDERAL ENVIRONMENTAL ASSESSMENT (EA) AND STATE ENVIRONMENTAL ASSESSMENT WORKSHEET (EAW) REVIEW REQUIREMENTS.

The EA and EAW are required by federal and state statutes, respectively. Each document is developed and goes on public notice for 30 days to determine any adverse public opinion. Much time is involved in these two documents, and if the cities could take responsibility for the public hearing and subsequent mailing and newspaper notices informing the public of the nature of the project and its costs and environmental impacts, Agency review could be reduced.

The effects of this could be:

- a. Reduce review.
- b. More city responsibility for the impacts of the project on the environment and risks in meeting the public notice requirements.
- c. Reduced Agency budget and staff needs in the grants programs.
- d. Reduced assurance to neighbors and downstream residents of the limited impacts on the environment, including groundwater pollution, odors and stream pollution.
- e. Increased costs to the city for mailings and notices.

2. REDUCE OR ELIMINATE THE AGENCY'S FINANCIAL REVIEW AND REQUIREMENTS.

The effects of this could be:

- a. No independent assurance of the proper use of tax dollars or selection of the cost effective alternative.
- b. Cities proceeding with projects they may be unable to afford now or in the future, leading to inadequate operation and failure to meet permit requirements.
- c. More responsibility to the city to be financially responsive to the community's needs; greater control over its budget for pollution control.
- d. Reduced Agency budget and staff needs in the grants program, but increased budget and staff needs in enforcement - a shift from providing service to enforcement stance.

3. REDUCE OR ELIMINATE THE AGENCY'S ENGINEERING REVIEW AND REQUIREMENTS.

The effects of this could be:

- a. More violations of permits because of inadequately constructed facilities.
- b. Increased adverse environmental impact to downstream people and cities.
- c. Forfeiture of Agency experience on facilities that have and have not functioned in the past.
- d. Increased legal efforts and costs for the Agency and cities related to permit violations, fines, corrective actions, etc. for plants that do not function.
- e. More responsibility to the city and its consultant to design a working facility, and increased liabilities to the city if the project does not function. Stated another way, assumption by the city and its consultant of the level of risk they desire for the system of their choice.
- f. Reduced Agency budget and staff needs in the grants area, but increased budget and staff in enforcement and Attorney General's staff - a shift from providing service to enforcement stance.
- g. Streamlined review and approval.

4. REDUCE REGULATORY AND ADMINISTRATIVE REVIEW.

The effects of this could be similar to those of numbers 1, 2 and 3, plus:

- a. Increased instances of cities having to repay grant dollars, after audits have been conducted, due to non-compliance with regulations.

5. REDUCE OR ELIMINATE COST EFFECTIVENESS CONSIDERATIONS.

The effects of this could be similar to those of numbers 1, 2 and 3.

B. CONSTRUCTION

1. REDUCE OR ELIMINATE THE AGENCY INVOLVEMENT IN BIDDING REQUIREMENTS.

The effects of this could be:

- a. Award of the project to a non-responsive, non-responsible bidder which could result in bid protests, rebidding of the project, costly change orders, inadequate construction, or costly grant ineligible legal action by the city against the contractor.
- b. Violation of state and federal laws regarding bidding, resulting in audit exceptions.
- c. Faster construction initiation.

d. Reduced Agency budget and staffing levels in the grants program.

2. REDUCE THE AGENCY INVOLVEMENT IN REVIEW AND INSPECTION OF CONSTRUCTION AS IT IS UNDERWAY.

The effects of this could be:

- a. More mistakes in construction that may cause the plant to fail to meet permit limits, resulting in additional correction costs later.
- b. Higher costs due to overruns.
- c. Forfeiture of Agency knowledge of construction problems.
- d. Increased responsibility to the city and consultant.
- e. Streamlined grant process.
- f. Lack of consistency across projects.
- g. Reduced Agency budget and staff in the grants programs.

3. REDUCE THE AGENCY INVOLVEMENT IN APPROVING CHANGES DURING CONSTRUCTION AND DETERMINING THE ALLOWABILITY AND ELIGIBILITY OF THESE DESIGN CHANGES.

The effects of this could be:

- a. Jeopardizing the meeting of permit conditions if significant changes are made to the project.
- b. Increases in cost due to changes.
- c. Increased city and consultant responsibility to determine the validity of changes and to decide how the money should best be spent.
- d. Streamlined construction process.
- e. Reduced Agency staff and budget in the grants programs.

4. REDUCE THE AGENCY INVOLVEMENT IN ASSURING THAT THE PLANT, ONCE COMPLETED, OPERATES PROPERLY AND IS CAPABLE OF MEETING THE PERMIT CONDITIONS.

The effects of this could be:

- a. Reduced assurance of meeting permit conditions.
- b. No independent oversight of tax dollars.
- c. Adverse impacts on the environment and potential complaints from nearby and downstream residents.
- d. Greater responsibility on the city and its consultant to obtain a quality product.
- e. Faster operation initiation and project closeout.

5. REDUCE OR ELIMINATE OPERATOR TRAINING CONDUCTED BY THE AGENCY.

The effects of this could be:

- a. Reduced educational opportunities for operators.
- b. More permit violations.
- c. Reduced Agency budget and staff in the grants programs, with increases in enforcement and Attorney General's staff costs.
- d. Greater responsibility on the city to check the credentials of its prospective operators and increased costs for cities to seek training from private sources for those in need of it.

6. REDUCE OR ELIMINATE THE OPERATOR OUTREACH PROGRAMS.

The effects of this could be:

- a. More permit violations.
- b. Improper plant maintenance and reduction of its design life.
- c. New opportunities for the private sector to provide assistance.
- d. Increased staff and budget for enforcement and Attorney General's Office.

APPENDIX C

METHODS AND EFFECTS OF INCREASING AGENCY INTERACTION WITH COMMUNITIES

A. PLANNING

1. EDUCATE GRANTEES TO BE PROJECT MANAGERS.

The effects of this could be:

- a. More knowledgeable cities, better enabling them to control their projects and oversee their consultants' and contractors' work.
- b. More Agency grants program staff time, offset by "c" below.
- c. Fewer problems between the Agency, cities and consultants due to better communications and better city understanding of the program and Agency understanding of the cities and their needs.

2. PERFORM EVALUATION OF POSSIBLE TREATMENT ALTERNATIVES.

The effects of this could be:

- a. Reduced planning costs to the cities.
- b. Utilization of Agency experience across the State.
- c. Increased Agency budget and staff for the grants programs, but possible reductions in enforcement and Attorney General staff.

3. LIMIT THE SCOPE OF PLANNING FOR SMALL COMMUNITIES.

The effects of this could be the same as "a" and "b" above, plus:

- a. Consistency in project construction and meeting permit conditions.

4. PERFORM SITE EVALUATIONS.

The effects of this could be the same as those of number 2 above.

5. DETERMINE FLOWS TO THE FACILITIES.

The effects of this could be the same as those of number 2 above, plus:

- a. Better facilities based on more accurate flow data. This has been a historical problem in the field.
- b. Increased Agency liability.

6. CONDUCT PUBLIC PARTICIPATION ACTIVITIES.

The effects of this could be:

- a. Better communications between the Agency and the cities.
- b. Reduced costs for planning and engineering.
- c. Increased Agency liability.

B. DESIGN

1. PROVIDE OBJECTIVE INFORMATION ON CONSULTANTS TO CITIES.

The effects of this could be:

- a. Selection of quality consultants by the cities.
- b. Reduced numbers of poorly designed facilities.
- c. Monopolies by the better qualified firms.
- d. Encouragement for poor firms to improve.
- e. Elimination of some firms from the field.
- f. Increased Agency liability and law suits.

2. PREPARE DESIGN DATA AND PLANS AND SPECIFICATIONS FOR SMALL CITIES IN A GENERIC FASHION FOR PONDS, DRAINFIELDS, AND ON-SITE SYSTEMS.

The effects of this could be:

- a. Reduced design and engineering costs to the city.
- b. Increased staff time initially for development of generic p&s, but reduced staff time long term.
- c. Lower construction costs and consistency of construction due to contractors' familiarity with generic p&s.
- d. Option for the city to release some control of their projects to the Agency if they feel they do not have the expertise or time to oversee them.
- e. Reduced work for consulting firms.

C. CONSTRUCTION

1. INCREASE INSPECTION ACTIVITIES OF THE AGENCY OR ASSUME FULL RESPONSIBILITY IF THE CITY WISHES.

The effects of this could be:

- a. Reduced consulting fees.

- b. Increased Agency grants programs budget, staffing, and liability, but perhaps reduced enforcement and Attorney General's staff.
- c. Provision of an inspector whose primary concern is to protect water quality.
- d. Reduced cost overruns and construction problems.
- e. Reduced delays due to the current need for coordination with Agency staff who were not present when a problem arose.
- f. Reduced work for consulting firms.

2. INCREASE AGENCY INVOLVEMENT IN CONTRACT DISPUTES, I.E., ACT AS AN ARBITRATOR BETWEEN THE CITY, THE CONSULTANT, AND THE CONTRACTOR.

The effects of this could be:

- a. Reduced legal costs.
- b. Reduced delays and costs due to shutdowns.
- c. Increased Agency budget, staffing, and liability.
- d. Loss of staff objectivity ("distance" from the project).

CREATIVE TECHNOLOGY

I. ISSUE STATEMENT

Without grant funds, the cost to a community of a new wastewater treatment facility can be unaffordable. This situation is a concern to many of Minnesota's smaller communities which now need new or upgraded wastewater treatment facilities (WWTF) to meet current water quality standards. For a number of reasons, such as economy of scale or the need to also construct a wastewater collection system, small communities usually are faced with more serious financial problems than large cities if they are to construct typical new or upgraded WWTFs. Consequently, many of these communities have expressed hope that something can be done to reduce the cost to construct and operate acceptable treatment facilities.

The use of creative technology (the use of new technologies or new application of existing technologies) is one option for dealing with the high cost of municipal wastewater treatment.

This section describes recent Minnesota experience with creative technology, explains associated risks and considers alternative strategies for the MPCA to employ in managing the application of creative technology in Minnesota.

A detailed description and critique of specific technologies is not within the scope of this report. However, some of the more recent applications of creative technology are enumerated in Appendix A.

II. BACKGROUND

A. *MUNICIPALITY'S RESPONSIBILITY TO PROVIDE ADEQUATE WASTEWATER TREATMENT*

As discussed in the Agency Review and Community Assistance Section, the Agency is responsible to protect Minnesota's water quality by insuring adequate construction of municipal wastewater treatment facilities which meet effluent standards. To accomplish this, the Agency is active in technical and administrative review and providing technical assistance to municipalities proposing wastewater treatment plants.

As further described in the above referenced section, municipalities are responsible to plan, design, construct and operate wastewater treatment facilities in conformance with environmental regulations. In most municipalities, a consulting engineer is contracted to perform professional engineering services to assist the municipality with these responsibilities.

B. *APPLICATION OF CREATIVE TECHNOLOGY IN FACILITIES PLANNING*

When a municipality has a need for improved wastewater treatment resulting from a raw sewage discharge, anticipated growth, failing septic tanks or overloaded facilities, proper planning is required to develop an acceptable solution to the problem. Planning for municipalities is accomplished through an engineering report which evaluates feasible treatment options and insures that engineering, environmental, social and economic factors have been considered. When construction grant funds are involved, the engineering report is referred to as a Facilities Plan. Existing Minnesota and federal grant and environmental regulations contain many specific requirements for facilities planning. These

requirements are in addition to a basic engineering report. In addition, facilities planning should result in a treatment system which will provide the necessary degree of treatment, have minimal adverse impacts on the environment and be the most cost-effective (generally least costly over the typical 20-year design period).

A number of different options usually exist for a community and their engineer to consider when evaluating the different technologies and types of WWTFs available to provide the necessary degree of treatment. For example, one of the primary requirements of a WWTF is to consistently produce an effluent which meets the discharge standards required by federal and state agencies. These standards can vary between type of discharge (e.g. surface vs. ground water), location of a discharge, the use of a water body, etc. After various combinations of all the relevant factors are evaluated, however, the ultimate issue that usually determines the WWTF that will be designed and constructed is cost, unless it can be shown that overriding, adverse environmental impacts would occur with the least costly alternative.

In addition to financial concerns, citizens have become increasingly more attuned over the past decade to the environmental effects caused by man's activities. This occasionally is illustrated by the heightened resistance which has been observed towards proposed wastewater treatment technologies or facilities which are new or different and have little or no past success record. Citizens are aware that new WWTFs and technologies carry with them unknown risks, and they are often not willing to sacrifice any safety to their environment and health when such safety may be inherent with old, tried and true methods. As a result, a typical community in the WWTF planning stage will often choose the least costly conventional technology alternative. Conventional technology is that which generally offers minimal, known risks and has a time-proven success record. Two examples of conventional systems are a wastewater stabilization pond system and a custom-built activated sludge plant. Both of these systems discharge treated wastewater to surface waters.

C. FEDERAL INNOVATIVE AND ALTERNATIVE TECHNOLOGY PROGRAM

Since 1978, federal law has provided for an Innovative and Alternative Technology (I/A) program in conjunction with the construction grants program. For federal grants projects, communities are offered an additional 20% grant (revised from 10% in October, 1984) if they construct wastewater treatment projects utilizing I/A technology. The federal I/A program promotes use of innovative technologies which are not totally untried or experimental, but which may only have been tried successfully in a few cases. Examples of innovative technology are wetland treatment/discharge, sequencing batch reactors (SBR), alum addition to stabilization ponds for phosphorus removal, small diameter and/or pressure collection systems, and ultraviolet disinfection. A major intent of the program is to reduce unknowns and risks by learning from funded innovative systems so that someday the I/A technologies will be in general use and will result in cost savings.

The federal I/A program also promotes alternative technology, which basically means systems which dispose of wastewater or sludges on land. Examples of such systems are stabilization ponds with spray irrigation, septic tank drainfields, and land spreading of sludge. In many cases, the alternative type of system is more cost effective than a conventional system to build, especially in rural areas where land is cheaper and more available.

In the past, the MPCA has approved about 170 systems for communities that were or are considered innovative or alternative. In some cases, the technology has proven successful; in others the technology or application of it has failed. There has only been one verified failure of an innovative process in Minnesota so far. In most cases, where there have been problems with innovative

systems, the problems were caused by design or application errors rather than the innovative systems themselves.

With I/A systems or technology, careful consideration of the potential risks and liabilities to the municipality are paramount. For instance, although federal regulations state that failed innovative systems are eligible for 100% replacement funding, Minnesota's rules place low priority for funding on failed I/A systems. This is intended to preserve the limited grant funds for communities who have not received an initial grant.

Therefore, the burden of finding an interim or final solution for failed I/A systems may lie partially or totally with the community. The result is continued degradation of the environment while the community waits for additional grant funds or pursues legal action to determine if the technology is the cause for project failure. The City of Cromwell, which has a failed alternative (land application) system, is an example.

On the other hand, there have been successes with I/A technology in the past, and the detrimental effects of wastewater discharges have been reduced at substantial cost savings to communities. It should be noted, though, that usually the cost savings to communities has not resulted from significantly lower construction costs of the I/A systems, but was due to the increased grant assistance given for these types of systems. Without the supplemental grant funds, many I/A systems offer limited or no cost savings at all.

III. DISCUSSION

A. *CURRENT EVALUATION OF CREATIVE TECHNOLOGY IN MINNESOTA*

Many small municipalities have remaining wastewater treatment needs and face very high projected costs for wastewater treatment. Consequently, potential cost savings from creative technology are attractive. At this time, many vendors are promoting new technologies which are unproven or untried in their proposed application (experimental technology).

In some situations, experimental systems may be the result of publicly funded research by a private organization or educational institution. In others, experimental systems may be developed by privately funded researchers or organizations that have applied for a patent for the system or treatment method. In the latter case, claims of great cost savings are many times used to attract communities to the system or product. Regardless of origination, though, these systems often are high risk and untried on large scales or under conditions similar to those which would be experienced in a Minnesota community. In the past, state and federal agencies have been reluctant to give the typical financial grant assistance to communities proposing experimental technology due to the associated high financial risks, liability issues, and concerns over setting precedent. These concerns are based heavily on past experiences with similar situations. For example, Ely, Minnesota built a WWTF research and development project which turned out to be so costly to operate that the facility is to be partially abandoned. The city now faces the cost of reevaluating, redesigning and reconstructing a portion of the WWTF with considerably reduced or nonavailable grant funding.

Recently, promoters of particular technologies have been very active in promoting their products to state and federal governmental officials and policy makers in addition to consulting engineers and municipal officials. However, the municipal officials in consultation with consulting engineers make decisions on which technology to employ for a specific project. The MPCA staff, MPCA Board and State Legislature, which have been contacted in the past by individual product promoters, establish public policy and review proposals. However, they do not select particular designs or proprietary products for

specific projects.

Should a community decide to take the risks associated with a particular system or technology, there are means available to reduce the associated liability. For example, this might entail a guarantee or bond from the community's design engineer or the technology/system supplier. Experience has shown that this often illustrates the designer's or supplier's true confidence or lack of it in the proposed technology or system. Even in this situation, though, careful consideration must be given to potential hidden costs of litigation to prove fault if the system or technology fails. In short, experimental systems may offer significant cost savings to cities willing to take a chance; however, certain guarantees must be part of the contract.

At this time financial assistance can be given for an experimental technology or system. For example, a demonstration project on a small community-wide scale might be specially funded after detailed evaluation determines that prospects are good that the technology will not only work as planned, but also offer potentially significant cost savings. Regardless of the technology and its risks, though, the MPCA has taken the position that cities should make their own decisions. To assist cities, the MPCA currently attempts to gather information from around the country and portray all the facts and unknowns to a city so that their decisions are based on an understanding of all the facts and risks.

As long as supplemental I/A technology funding remains, this option will exist as a means to lower wastewater treatment costs to some communities. In recent years, however, efforts have been made at the federal level to eliminate or severely cut back federal aid for I/A systems. The consequences, in many cases, could be I/A technologies offering no financial advantage to communities while carrying a higher risk to the city alone. Unless I/A grant assistance is continued, perhaps through designated state funding, many I/A systems and technologies may never be given a chance to provide wastewater treatment at a lower cost.

Over and above the I/A and experimental technologies, there are always opportunities to find new and creative ways of modifying existing conventional technology or methods of application. In the case of the Washington County project, the engineer simply reduced the size of one large project to a number of smaller projects which resulted in greater competition from a larger number of small contractors. The net result was receipt of contract bids roughly one third of what had previously been experienced with single contracts and would have been expected had the project not been separated into smaller projects. These are the types of solutions to cost problems which remain to be discovered. For further discussion of non-conventional solutions for expensive wastewater treatment problems refer to Appendix B.

B. POSSIBLE STRATEGIES FOR AGENCY REVIEW OF CREATIVE TECHNOLOGY PROPOSALS

1) Risk Avoidance Strategy (discourage unproven ideas or unproven technologies)

This strategy would place a high priority on maximizing the chances of a project's technical success and meeting performance criteria. The Agency would require several examples of proven success in similar applications of a design, plus financial guarantees and warranties before approval. Projects with above average risk of failure would not be approved.

The MPCA would not promote the use of grant incentives for innovative technology.

ADVANTAGES:

- Approved projects would have a high probability of success.
- There may be more consistent and uniform design of treatment facilities in Minnesota.
- Substantial information could be given to downstream residents and project neighbors on the known impacts of the resulting project.

DISADVANTAGES:

- New ideas and innovation could be discouraged in Minnesota.
- The resulting projects might be more expensive.
- The Agency might curtail the rights of municipalities and consulting engineers to design the systems of their choice.

2) Facilitator Strategy

This strategy provides for the MPCA to review and comment on proposed creative technology and provide the service of evaluating and disseminating information on new technology to municipalities. The MPCA, however, would focus its efforts on evaluating risks and benefits of new ideas, and would stress to municipalities their responsibility to select proper treatment technologies and to correct problems with failed designs.

The MPCA could provide grant incentives to propose and build innovative technology while placing primary responsibility for repairing or replacing failed designs on the municipality.

The MPCA could serve as a clearinghouse for innovative design information and could continue to administer the federal I/A technology program. However, municipalities would retain primary responsibility for the consequences of the technology they select.

ADVANTAGES:

- A flexible approach allows for a balance between the risks and benefits of new ideas.
- Communities would have more freedom to select treatment technology.
- New treatment technology could be introduced into Minnesota.

DISADVANTAGES:

- Communities could face substantial costs for correcting projects which do not meet performance standards.
- Downstream residents and project neighbors could suffer environmental consequences if unproven technology fails to perform to expectations.
- Communities may be reluctant to try unproven technology.

3) Promotion Strategy

This strategy would cast the Agency in the role of encouraging and promoting innovative technology. This could include the Agency's "approving" or "endorsing" particular products and providing an expanded program of second round replacement grants for failed innovative systems before other communities have received initial construction grants. Such a strategy could result in an

increase in innovative and creative designs with higher risk and a decrease in conventional designs.

ADVANTAGES:

- The strategy would address the concerns of vendors who are frustrated by Agency review requirements and the current practice of municipalities being responsible for selecting their treatment technology.
- An increase of new and innovative designs could result.
- The potential would exist for cost savings to the cities if their projects were successful.

DISADVANTAGES:

- Increased Agency liability could result from endorsing particular new technologies, financing failed projects, and providing extra grant incentives.
- Promoting and providing guarantees for unproven innovative technology could provide "over-incentives" and discourage proven designs.
- The Agency could interfere with consultant's choice of technology by providing strong incentives for certain designs.

C. SUMMARY

Creative technology in the past has usually centered around the federal innovative/alternative (I/A) program which has been in existence since 1977. Systems designated as I/A have received 10% (20% now) more federal funding than conventional systems. Approximately sixty innovative (unproven but potentially more cost effective, or having significant environmental benefit) systems and 110 alternative (land application) systems have been approved for construction in Minnesota since 1977. The Minnesota Pollution Control Agency Division of Water Quality has served as a facilitator of such innovative and alternative technologies by disseminating information and by assisting municipalities, consultants, and vendors as needed. The consultants and municipalities, however, have historically been reluctant to propose or utilize new, unproven technologies unless substantial funding incentives existed or unless the cost saving was substantial in relation to the total project.

The use of creative technology in the past has not resulted in substantial cost savings to the wastewater grants program because its costs have been similar to those of conventional systems. However, some creative systems now being proposed, such as sequencing batch reactors, do appear to cost significantly less, and the use of such creative technologies as spray irrigation of wastewater on land instead of adding chemicals to remove phosphorus does have substantial benefits in that the phosphorus containing discharge to a lake or river is totally eliminated. Although the use of creative technology in the future is desirable, it should be noted that one of the main incentives may be removed in that the Federal I/A program may be severely cut back or eliminated in the near future. However, the drop in grant percentages has contributed to an increase in the exploration of innovative technologies.

With or without the federal I/A program, alternative strategies the Agency could utilize in managing creative technology are "Risk Avoidance", "Facilitation" and "Promotion". Possible actions involved with these strategies range from active discouragement and refusal to fund creative technology, to solicitation and endorsement of creative treatment methods and provision of funding for any failure corrections. The Agency could also facilitate partial plant upgrades and "low tech" solutions.

APPENDIX A

SOME CREATIVE TECHNOLOGIES IN USE IN MINNESOTA AND THE NATION

A. WHOLE PLANT PROCESS OR MAJOR TREATMENT UNIT

1. Stabilization pond with alum addition

a. Purpose - Removal of phosphorus by the batch (twice per year) additions of alum to the stabilization pond contents immediately prior to the wastewater discharge. The alum combines with all particulates in the wastewater (algae, floating solids, etc.) and causes them to be precipitated to the pond bottom. The clarified water is then discharged.

b. Major benefits - The relatively inexpensive and simple process allows the use of stabilization ponds rather than complicated mechanical plants with chemical addition and associated sludge removal and disposal. It is working well in Albany and Albertville, Minnesota.

2. Sequencing batch reactor

a. Purpose - It is an adaptation of an activated sludge mechanical plant. The plant is designed with two tanks which provide all the main treatment processes at the plant and serve the multiple purposes of equalization, wastewater degradation via the activated sludge process, and final clarification.

b. Major benefits - Cost savings may be realized due to the elimination of equalization basins, final clarifiers, and associated pipes and pumps. It is working well at Grundy Center and Sabula, Iowa, and Huron, South Dakota. Four are proposed in Minnesota.

3. Ecolo-Chief system

a. Purpose - It is an adaptation of a conventional activated sludge process. It is designed with an anaerobic/anoxic primary clarifier which conditions the incoming solids to promote the more efficient removal of solids. It also uses a simplified method of construction with fewer materials and less labor (for example, corrugated steel tanks instead of concrete.)

b. Major benefits - Cost savings are associated with the use of corrugated steel tanks. It is in use in Blue Fin Bay, Tofte, Minnesota; Grand Island, Nebraska, Fort Dodge, Iowa, and Rensselaer, Indiana. It currently is not meeting effluent limits at Blue Fin Bay. After it has been in use in these locations for some time period, the longevity of the materials and construction can be assessed.

4. Aquaculture system

a. Purpose - It removes dissolved solids, BOD₅, phosphorus and metals. Wastewater is passed through basins with hyacinths, duckweed, alligator weeds, cattails, etc., which remove the pollutants for use in plant growth.

b. Major benefits - It is most often used for nutrient removal and additional treatment of secondary effluent, which can show a cost savings as opposed to mechanical processes. Systems are in use in Mississippi, Texas and Florida. Results vary with the facility. Use in Minnesota may be limited to the summer months with stabilization ponds.

5. Wetland treatment/discharge

a. Purpose - It is usually used for additional nutrient removal from secondary treatment plants' effluent.

b. Major benefits - It is used in place of chemical addition in mechanical plants and eliminates costs associated with chemicals and sludge removal and disposal.

6. Community septic tank and mound drainfield system

a. Purpose - It is used in areas where groundwater levels preclude regular drainfields for small flows (less than 5000 gallons per day).

b. Major benefits - It can be constructed near the point of origination of the wastewater, avoiding the cost of lift stations and forcemains, in addition to avoiding the cost of mechanical facilities. It is in use in Kandiyohi County, Washington County and Cromwell, Minnesota. They work well if designed and constructed properly. The Cromwell system has problems due to hydraulic overloading (underdesign).

B. INDIVIDUAL UNIT TREATMENT PROCESSES

1. Phostrip process

a. Purpose - It is a combination of chemical and biological methods of phosphorus removal.

b. Major benefits - It can remove phosphorus with far fewer chemicals than conventional alum precipitation methods. It also saves the cost of sludge removal. It is in use in Rochester, Minnesota; Amherst and Ithaca, New York; and Brookton, Maine. The Rochester facility is not consistently meeting limits.

2. Solar heating

a. Purpose - It utilizes solar power for heat.

b. Major benefits - It saves fuel and electricity costs. It is in use in Lake Crystal, Minnesota.

3. Ultraviolet disinfection

a. Purpose - It disinfects wastewater without using chlorine.

b. Major benefits - It eliminates the need for chlorine, which can be harmful to fish and is extremely dangerous to handle. It is in use in Northfield, Albert Lea, Bemidji, Morton and North Koochiching County, Minnesota. It works well with tertiary treatment plants. Northfield experienced significant problems with it and is modifying the system.

4. Ozonation

a. Purpose - It disinfects wastewater.

b. Major benefits - It eliminates the use of chlorine, which is dangerous to handle and toxic to fish. It is in use in Moorhead, Minnesota. The ozone generators have caused problems, but the ozone itself works well. Cost savings over chlorine use is negligible.

5. Coordinate Chemical Bonding and Adsorption (CCBA)

a. Purpose - It is a variation of an activated sludge process and produces a conditioned sludge.

b. Major benefits - The sludge is easier and less costly to dispose of. It is in use in San Diego, California as an experimental system of about 66,000 gallons per day, and is being run by highly trained and educated personnel.

The plant does not have a permit, and its effluent is discharged into a permitted facility. It may be beneficial for cities with flows of 5,000,000 gallons per day or more, and its practicality in Minnesota's climates is unknown.

6. Interchannel clarifier

a. Purpose - It incorporates the final clarifier structure into some other structure, such as an oxidation ditch.

b. Major benefits - It reduces the cost of separate structures and piping. It is in use in other states and will be constructed in Spring Valley, Minnesota. Actual cost savings are yet to be determined.

7. Vacuum assist drying beds

a. Purpose - It accelerates the drying of sludge without heat. A vacuum is applied to a layer of sludge in a specially constructed building.

b. Major benefits - Less sludge storage capacity is needed and it is simple to use. It is in use at Chisholm and Buhl-Kinney, Minnesota; Belle Plaine, Iowa; and Gillman, Illinois. Some systems work, but some have experienced problems with achieving the desired sludge dryness.

8. Fixed growth biological nitrification process

a. Purpose - It provides nitrification with a trickling filter type of process. Wastewater is pumped over fixed media (wood planks, plastic forms, etc.). The organic film on the media removes the ammonia.

b. Major benefits - It is less costly than chemical addition or other forms of nitrification. It is under construction at Redwood Falls, Minnesota. It works well in other states.

APPENDIX B

PARTIAL PLANT UPGRADES OR "LOW TECH" SOLUTIONS

Related to creative technology are non-conventional solutions to wastewater treatment problems. Some options may be partial plant upgrades or "low tech" solutions that offer potential cost savings to municipalities facing high costs in solving pollution problems.

Partial plant upgrades would focus on rehabilitation and reuse of existing treatment facilities and possibly a shorter design life to reduce costs of wastewater treatment facility expansion. Examples are:

- Raising the dikes on existing stabilization ponds.
- Replacing worn out mechanical equipment at mechanical treatment plants, but retaining as much equipment as possible.
- Staging construction of upgrades to existing facilities to determine the effectiveness of the initial upgrades prior to further plant upgrades.

"Low-tech" solutions to wastewater treatment needs focus on greater use of individual septic tank and drainfield systems, zoning controls and water conservation measures to avoid the need for expensive collection sewers and centralized wastewater treatment. Another type of "low-tech" solution is supplemental wastewater treatment in wetlands to substitute for expensive mechanical tertiary wastewater treatment.

Both partial upgrades and low tech solutions involve increased risk of failure compared to conventional "tried and true" solutions and may require relaxation of certain environmental requirements. However, as discussed, many communities are finding conventional wastewater treatment technology unaffordable. Consultants have had no incentive to design "low tech" treatment because they are paid more, due to the time involved, for technical, complicated facilities.

As with creative technology, the Agency could adapt alternative strategies of Risk Avoidance, Facilitation or Promotion of these more risky but promising solutions to high cost wastewater treatment problems for small municipalities. Refer to the discussion in creative technology for an elaboration of these strategies. The advantages and disadvantages of creative technology, partial plant upgrades and "low tech" solutions are similar due to increased risk and liabilities to all parties involved, especially if a proposed solution fails to perform up to design standards. Meanwhile, the environment suffers while creative failures are replaced.

A final comment is that the current regulations and rules governing facilities planning encourage complete plant upgrades and "high tech" solutions. This is a result of facilities planning requirements which:

- Require comprehensive planning for all needs within a planning area;
- Require a 20 year planning period;
- Do not allow for staged construction;
- Make it difficult and unlikely for communities to obtain second round grants

for failed treatment systems; and

- Provide for uniform statewide design and performance standards.

However, utilization of partial plant upgrades and "low-tech" solutions could be encouraged if current state grants regulations could be changed.

Providing grants to upgrade septic tank and drainfield systems, as discussed in the section on financing alternatives, could allow for upgrade of the most serious septic tank and drainfield problems without the effort and delay associated with areawide planning.

Providing grants to municipalities for staged construction or partial plant upgrades would require major revisions of current state rules governing construction grants. This would have the benefits of flexibility and potential cost savings for "less than full solutions," but would offer challenges in the area of negotiating performance standards for proposed projects.

APPENDIX C

INDIVIDUAL SEWAGE TREATMENT SYSTEMS IN THE CONSTRUCTION GRANTS PROGRAM

HISTORY

The Minnesota Pollution Control Agency (MPCA) has been involved with the funding, planning, design and construction of individual sewage treatment system (ISTS) projects in the construction grants program for about 10 years (see Table 1). Land application systems such as these have traditionally received additional grant funding through the federal innovative and alternative (I/A) program. Some of the projects have exclusively involved land application, utilizing variations of septic tank and drainfield systems. Other projects have included ISTSs as a means to correct problems in the outlying unsewered portions of larger sewer areas served primarily by centralized wastewater treatment facilities. When the I/A program began in 1977, cost incentives were quite significant for projects utilizing I/A technology, to include ISTSs. Consequently, a number of the proposed projects attempted to maximize I/A technology in the form of ISTSs because: 1) the additional grant funding available for ISTSs was a key factor, especially for smaller, unsewered communities, and 2) ISTS construction and O&M costs were often estimated to be significantly lower than other feasible alternatives.

Unfortunately, many communities with ISTSs that were funded through the grants program have discovered that the cost incentives have not resulted in the cost savings that were originally contemplated (see Table 2). This appears to have caused a shift in the relative number of projects proposing ISTSs versus some other form of conventional, centralized wastewater treatment. Had the costs that were originally projected actually materialized, this shift may not have occurred. This change, however, may also be due to several other factors. One of the more likely possibilities is that of public awareness and opposition to ISTSs. It often appears that many individuals believe ISTSs are short term, second rate solutions to wastewater treatment problems, and that ISTSs carry a high risk of failure. This concept is incorrect if ISTSs are designed, constructed and operated properly. However, united groups may continue to oppose projects proposing ISTSs where they are not well received.

COST ISSUES

As more and more ISTS projects in the construction grants program let bids, the data base available for cost analyses and future estimates becomes an ever increasingly important and valuable tool. The reason for this is that consultants performing cost effectiveness analyses previously had to rely on cost estimates for ISTSs that were not grant funded. As history reveals itself, this was an erroneous and inappropriate procedure. Unless significant changes in the construction grants program are made, these old cost estimating procedures must be abandoned. Information based on the experience of past projects in the construction grants program must be utilized in order to provide communities with realistic estimates of the costs required when ISTS projects are proposed.

In general, there are a number of reasons which account for the higher costs experienced by grant funded ISTS projects versus those typically funded by individual home or business owners. These items are briefly discussed below.

1. Any project in the construction grants program requires engineering reports, designs, etc. to be performed by a licensed professional engineer. Non-grant ISTS projects for individual homes are usually designed and constructed by one small contractor. This program requirement adds a "technical expertise" cost.

2. A project in the construction grants program must first go through a process known as facilities planning, where a comprehensive evaluation determines the most cost effective alternative. An ISTS project will not be constructed until this process is complete. The costs associated with this process are not characteristic of ISTSs funded by individual owners.

3. If an ISTS is determined to be the cost effective alternative for a grant funded project, the next requirement is for an engineer to complete plans and specifications. Normally, only a sketch filed with the local permitting authority is required for a non-grant ISTS for an individual owner.

4. Grant funded ISTSs must be designed to meet minimum state standards per MN Rules, Chapter 7080. While many local permitting authorities have the same or similar requirements, some do not. Furthermore, the ones that do have such requirements usually do not have the staff to ensure strict enforcement. Consequently, substandard ISTSs are still being constructed throughout the state; individual owners funding their own ISTSs often unknowingly choose the cheapest contractor who may not be providing a system which meets standards.

5. ISTS construction grants projects are often a compilation of many individual ISTSs. These projects are usually bid as one or two large contracts. The size of the project/contract and the bonding requirement for grants projects do not have to be very large to effectively eliminate many smaller contractors from the initial bidding process. Consequently, competition is reduced and larger contractors with higher overhead requirements get the contract(s). Then, if subcontractors are used a "middle man" is created, thereby adding an extra cost for general contractor profit, etc.

6. In the past, there typically have been only a few large contractors bidding on ISTS construction grants projects in Minnesota. These contractors bid higher average costs per ISTS than do the smaller contractors who usually are hired by individual owners. Much of the average bid cost differences may be accounted for in construction grants requirements (e.g. Davis-Bacon wage rates, insurance/bonding requirements, etc.). However, some may also be due to general contractor "cost padding" to account for desired profit levels, safety margins to cover unforeseen expenses, etc.

7. ISTS projects in the grants program require operation and maintenance (O&M) to be performed or contracted out by the grantee, a public entity. These O&M costs are often higher in the grants program when compared to individually funded ISTSs because the latter do not have administrative expenses, etc.

SUMMARY

The above reasons account for most of the costs associated with higher user fees for ISTS projects funded in the construction grants program. Yet, since many smaller communities in Minnesota are unsewered and grant funds are diminishing, the costs to construct and operate a centralized wastewater collection and treatment system are even higher. Therefore, upgrading existing substandard or failing ISTSs within a community is often the only feasible solution for their wastewater treatment needs. Given the current trend in costs for ISTSs in the grants program, the costs per user will remain substantially higher than those for nongrant funded ISTSs. In order to provide a realistic comparison of alternative solutions for future wastewater treatment needs, a careful examination of a community's situation will be required early on in the planning stages when problems are first identified. It might be discovered that the cost

to meet their needs may be substantially lower if a community does not participate in the construction grants program when ISTSs are involved.

TABLE 1

Following is a list of communities that have had or have projects in the construction grants program which include individual sewage treatment systems (ISTS). The number of ISTSs range from only a few to several hundred per project. The projects are in various stages from initial planning to completed construction.

1. Carver County
2. Clearbrook
3. Erskine
4. Evansville
5. Glenwood/Long Beach
6. Greenfield
7. Green Lake
8. Hinkley
9. Independence
10. Knife River
11. Lake Elmo
12. Moose Lake
13. Nisswa
14. North Koochiching Sanitary District
15. Oak Grove Township
16. Ottertail County
17. Pine River
18. Quamba
19. Washington County

TABLE 2

Following is a list of five projects in the construction grants program which have extensively used individual sewage treatment systems (ISTS). Brief descriptions of each total project are given along with a summary of costs for only the ISTS. The average costs per system are presented to show the relative magnitude of cost decreases/increases from planning through construction.

CARVER COUNTY
(C271437-03)

1. TOTAL PROJECT DESCRIPTION.

The major project components consist of:

- 1) individual septic tanks, collection and interceptor sewers serving 203 users,
- 2) 3 community drainfields and 1 intermittent sand filter serving 48 users, and
- 3) 36 onsite ISTS upgrades or replacements.

Construction was completed in 1985.

2. COST SUMMARY.

Average Cost per Individual Sewage Treatment System (ISTS):

	<u>Facility Plan Estimate</u>		<u>P&S Estimate</u>		<u>Bid Price</u>	
	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>
Standard Drainfield Systems	\$5,600	unavailable (ua)	\$ 6,200	\$ 3,900 to \$11,800	\$ 8,800	\$ 5,900 to \$13,300
Mound Systems	\$5,200	ua	\$14,100	\$ 9,800 to \$17,500	\$19,800	\$10,000 to \$26,000

GREEN LAKE
(C271377-03)

1. TOTAL PROJECT DESCRIPTION.

The major project components consist of:

- 1) 8 community drainfield systems serving 201 users, and
- 2) 321 onsite ISTS upgrades or replacements.

Construction was completed in 1985.

2. COST SUMMARY.

Average Cost per Individual Sewage Treatment System (ISTS):

	<u>Facility Plan Estimate</u>		<u>P&S Estimate</u>		<u>Bid Price</u>	
	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>
Standard Drainfield Systems	ua	ua	\$4,390	ua	\$4,980	ua
Mound Systems	ua	ua	\$5,710	ua	\$5,700	ua

LAKE ELMO
(C271411-02)

1. TOTAL PROJECT DESCRIPTION.

The major project components consist of:

- 1) 13 community drainfield systems serving 33 users, and
- 2) 95 onsite ISTS upgrades or replacements.

Construction began in 1986 and is underway.

2. COST SUMMARY.

Average Cost per Individual Sewage Treatment System (ISTS):

	<u>Facility Plan Estimate</u>		<u>P&S Estimate</u>		<u>Bid Price</u>	
	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>
Standard Drainfield Systems	\$3,790 (breakdown ua)	ua	\$12,920	ua	\$9,375	ua
Mound Systems						

OAK GROVE TOWNSHIP
(C271441-02)

1. TOTAL PROJECT DESCRIPTION.

The major project components consist of:

- 1) 2 community drainfield systems serving 61 users, and
- 2) 32 onsite ISTS upgrades or replacements.

Construction was substantially completed in 1986.

2. COST SUMMARY.

Average Cost per Individual Sewage Treatment System (ISTS):

	<u>Facility Plan Estimate</u>		<u>P&S Estimate</u>		<u>Bid Price</u>	
	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>
Standard Drainfield Systems	\$2,400 (breakdown ua)	ua	\$3,200	ua	\$5,800	ua
Mound Systems						

WASHINGTON COUNTY
(C271434-02)

1. TOTAL PROJECT DESCRIPTION.

The major project components consist of:

- 1) 5 community drainfield systems serving 383 users, and
- 2) up to 875 onsite ISTS upgrades or replacements.

Construction began in 1985 and is underway.

Note: This project was divided into many small contracts with 10 to 16 ISTS per contract to facilitate greater competition between small contractors.

2. COST SUMMARY.

Average Cost per Individual Sewage Treatment System (ISTS):

	<u>Facility Plan Estimate</u>		<u>P&S Estimate</u>		<u>Bid Price</u>	
	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>	<u>Ave.</u>	<u>Range</u>
Standard Drainfield Systems	\$5,100 (breakdown ua)	ua	\$4,460	\$2,850 to \$5,980	\$4,350	\$ 3,400 to \$ 8,200
Mound Systems			\$6,640	\$5,700 to \$7,400	\$8,400	\$ 6,900 to \$10,0000

APPENDIX D

USE BY COUNTIES OF MN RULE 7080
INDIVIDUAL SEWAGE TREATMENT SYSTEMS
IN ADMINISTERING AND REGULATING
INDIVIDUAL SYSTEMS
1984 SURVEY

RESULTS OF 1984 SURVEY

S = Shoreland Only; U = Using Chapter 7080 for Design/Review
R = Reported Under Category I or II in 1979 Survey

I.

Counties Which Have Adopted Chapter 7080 by Reference

Benton	Mille Lacs
Beltrami (S)	Morrison
Brown	Mower
Carver	Murray
Chippewa	Nicollet
Clearwater	Nobles
Cook	Pope (S)
Crow Wing	Redwood
Dodge	Rice
Douglas	Scott
Hubbard	Sherburne
Isanti	Steele
Itasca	Stevens
Kanabec	Todd
Lake	Wakasha
Lake of the Woods	Waseca
LeSeuer	Watsonwan
Martin	Wright
McLeod	Yellow Medicine

II.

Counties Which Have Adopted An Ordinance Patterned After Chapter 7080

Aitkin	Meeker
Becker	Norman
Big Stone (S)	Olmstead
Cottonwood	Ottertail
Dakota (S)	Polk (S)
Freeborn	Roseau (S)
Goodhue	St. Louis
Houston	Stearns
Jackson	Wadena
Kandiyohi	Washington
Marshall (S)	Winona

III.

Counties Which Have Not Adopted Chapter 7080 by Reference Or An Ordinance Patterned After Chapter 7080

Blue Earth (U)	Lincoln
Carlton (U)	Pennington (U)
Chisago (U)	Pine (U)
Fillmore	Pipestone
Grant	Red Lake
Kittson	Rock
Lac Qui Parle	Sibley (U)

IV.

Counties Not Responding to the Survey

Anoka (R)	Mahnomen
Cass (R)	Renville
Clay (R)	Swift
Faribault	Traverse (R)
Koochiching (R)	Wilkin (R)
Lyon (R)	

Ramsey and Hennepin not surveyed, although it is known many townships and municipalities would fall under Categories I or II above.