

# Effectively Using the Clean Water State Revolving Fund to Improve Iowa Water Quality

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A report from

## **The Iowa Policy Project**

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# The Iowa Policy Project

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The 2003 Iowa Water Summit brought together diverse groups to identify solutions to Iowa's water quality problems. Recommendations from the Summit included (1) applying a more comprehensive and watershed-based approach, (2) using existing water protection programs more effectively, and (3) putting more resources into research and education. During the latest legislative session, Governor Vilsack requested \$5 million from the Environment First Fund to implement specific initiatives recommended at the Summit. However, the Legislature did not approve the funds.

The purpose of this report is to show how a current program—the Clean Water State Revolving Fund (SRF)—can be used to fund proposals that emerged from the Governor's Iowa Water Summit. The Clean Water SRF program is the primary source of federal assistance for implementing Clean Water Act goals. Through this program, the federal government provides annual grants for capitalizing state revolving loan funds. States are required to provide a 20 percent fund match, which is generated primarily by bonding.

Although states are encouraged to fund a wide range of projects, Iowa's SRF program has almost exclusively funded traditional point source (PS)<sup>1</sup> projects in the form of municipal wastewater treatment plants. This is despite the fact that non-point source (NPS)<sup>2</sup> contamination is the primary cause of Iowa's failure to meet water quality standards. In 2002, changes to Iowa's SRF program were implemented to make NPS projects eligible for funding.

The U.S. Environmental Protection Agency (EPA) has officially recognized that the Iowa Department of Natural Resources (DNR) has managed the SRF program adequately and that it is in compliance with program rules, regulations and agreements. At the same time, the EPA reports that Iowa has historically underutilized its assets. Considerable funds are currently available to undertake additional water quality projects in Iowa.

This report starts with an overview of the major environmental problems that impact Iowa's water quality. Then, it details the Governor's initiatives that are suitable to be funded through the SRF. Next, the Clean Water State Revolving Fund is broadly analyzed, followed by a description of its specific operation and functioning in the state of Iowa. Finally, the report recommends three changes in order to improve the effectiveness of the program and the quality of Iowa's waterways.

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<sup>1</sup> Point source pollution happens when a pollutant comes from an identified source, generally from the pipes of industrial facilities and municipal sewage treatment plants.

<sup>2</sup> Non-point source pollution results from many diffuse sources of human and animal pollution that are carried into surface water, and even underground sources of drinking water, by rainfall and snowmelt.

A survey conducted by researchers at Iowa State University in 1995 found that ninety percent of Iowans considered water quality to be their number one environmental concern (Iowa State University, quoted by Iowa Association of Naturalists, 1998). Recognizing these concerns, Governor Vilsack has made improving Iowa's water quality a priority of his Administration. At the Governor's Iowa Water Summit in November 2003, he declared that "water quality is not just a side issue- it is a central issue to Iowa's economic and cultural future." The Clean Water State Revolving Fund is an often-overlooked source of funding for improving Iowa's water quality. Before getting into a detailed description of the program, an overview of Iowa's water quality problems is appropriate.

### **What is the Quality of Iowa's Water Bodies?**

Iowa has rich and varied water resources, which consist of 71,655 miles of rivers and streams; 161,366 acres of lakes, reservoirs and ponds; and 125,155 acres of freshwater wetlands (Iowa State NPS Management Program, 2000). However, not all of these surface water sources are actually supporting their designated uses.

In 1998, Iowa had 157 impaired water bodies that did not meet acceptable contamination standards as defined by the pollutant's total maximum daily load or TMDL. In 2002, Iowa registered 205 impaired water bodies, an increase of 30 percent in four years (Iowa DNR website). A water body can be impacted by several pollutants, and the number of pollutants has also increased since 1998. In fact, there were 220 impairments listed in 1998 and 286 impairments listed in 2002, also an increase of 30 percent.<sup>3</sup>

Not all impaired waters have been identified, and further investigation is needed to monitor all the shortcomings of Iowa water. An accurate list of impaired waters is essential to prioritizing cleanup plans.

### **What is NPS Pollution?**

Non-point source (NPS) pollutants are the primary cause for Iowa's failure to meet water quality standards. NPS pollution refers to the many diffuse sources of human and animal pollution that are carried into surface water, and even underground sources of drinking water, by rainfall or snowmelt.

Iowa's intensive land use practices create large amounts of NPS pollution. Originally a prairie state, more than ninety percent of Iowa's land is now used for agriculture. Agricultural activity has increased erosion and nutrient concentrations. According to the most recent National Water Quality Inventory, agricultural practices are the main cause for Iowa's contaminated rivers, lakes, and groundwater, as well as for the degradation of Iowa's wetlands. This fact places Iowa in front of a challenging task, which is to perpetuate agriculture production in the context of environmental protection and restoration.

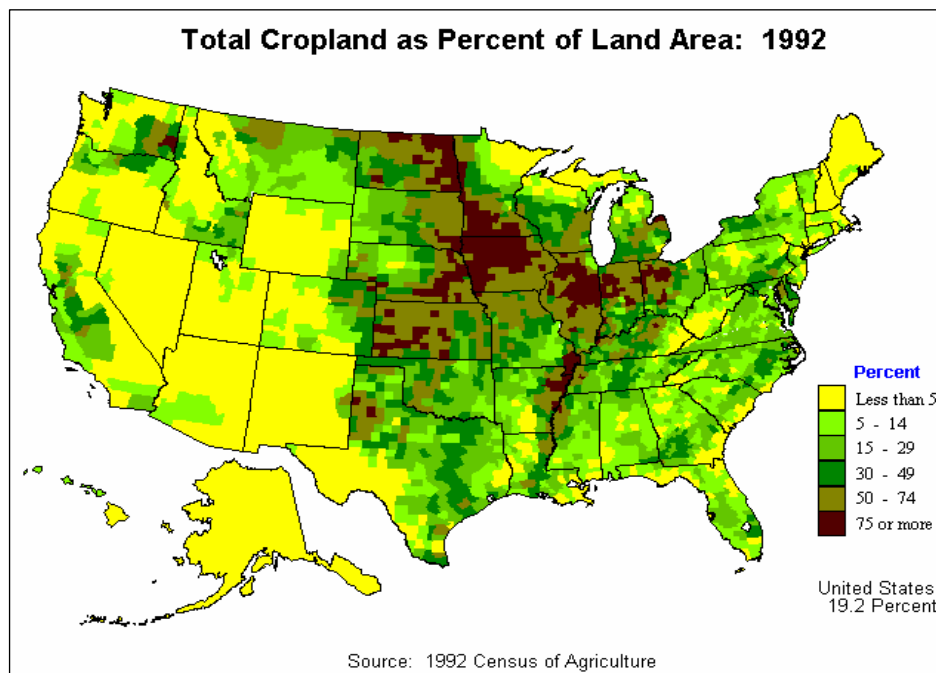
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<sup>3</sup> For a map of Iowa's impaired waterways, see <http://www.earthweshare.org/303dmap.html>

According to the Iowa Department of Natural Resources' Non-point Source Management Plan and the Iowa Environmental Council, the top NPS pollutants in Iowa for 2002 include:

- Biological pollutants
- Sediments from rural and urban areas (construction sites and eroding streambanks) that cause siltation and turbidity
- Excess nutrients (such as nitrates) and pesticides from rural and urban areas
- Oil, grease and toxic chemicals from urban runoff and transportation systems
- Habitat and flow alteration
- Bacteria from natural sources, livestock facilities and human and animal wastes
- Atmospheric deposition (See the Appendix for more information on Iowa's pollutants).

Figure 1 shows the high concentration of land devoted to agriculture in Iowa.



**Figure 1. Source: 1992 Census of Agriculture**

Agricultural activities include confined animal facilities, grazing, plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting. This map also depicts the unique needs of Iowa and the mid-west in general for more expansive programs to combat contamination of waterways from non- point source pollutants.

Another change in Iowa's landscape is the loss of green space due to the expansion of urban areas that do not necessarily coincide with population growth. Urban sprawl measures include, but are not limited to: 1) density of new urbanization, 2) loss of prime farmland, 3) loss of natural wetlands, 4) loss of core forest habitat, and 5) increase of impervious surfaces (Hasse & Lathrop, 2003). Taking into account only two of these indicators, one can measure the pace of urban sprawl in Iowa:

- 1) Loss of prime farmland. Between 1988 and 1998, Iowa converted 314,719 acres of agricultural land into non agricultural types of properties, wherein more than half was destined for residential land use (Cosner, 2001).
- 2) Loss of natural wetlands. The U.S. Fish and Wildlife Service estimates that Iowa has suffered the third highest percentage of wetland loss. Between 1970 and 1980, 89 percent of Iowa's wetlands were destroyed (Al-Kaisi, 2000).

Urban sprawl increases the amount of impervious surfaces. Rainfall cannot percolate and the volume and rate of runoff rises, carrying pollutants that impact the hydrology and habitat of the receiving waterways. Non-point urban runoff produces harmful consequences similar to municipal and industrial point sources discharges. According to the Iowa Water Quality Assessment Report, urban runoff could eventually become even more destructive than agriculture non point source contamination.

Atmospheric deposition also negatively affects water quality, and its impact reaches beyond state boundaries. Two monitoring sites in Iowa have encountered high concentration levels of ammonium and nitrate ion generated from fertilizer use and livestock production. Rainfall deposits these chemicals, which adds contaminates to Iowa's water.

Waste disposal (landfills) and on-site residential wastewater disposal (septic tanks) constitute other non-point threats to the quality of surface and groundwater in Iowa.

Combating point source (PS) pollution (also known as end of pipe pollution) from industrial facilities and sewage treatment plants, had been a priority in Iowa even before the Clean Water SRF program. However, wastewater treatment plants are only part of an effort to improve Iowa's water quality. Non point source pollutants—from agricultural runoff, habitat degradation and other watershed disturbances—are an even larger threat to Iowa's waterways.

It is important to stress that reducing and repairing environmental damage by controlling pollutants at the point where they are discharged to the environment (end of pipe) is an old paradigm. The U.S. Pollution Prevention Act of 1990 embraces the idea of managing waste where it is created.

### **What Proposals Emerged from the Governor's 2003 Iowa Water Summit?**

The Iowa Water Summit identified threats to Iowa's water quality, and linked water protection and restoration to quality of life and economic development. Some key recommendations from the Iowa Water Summit were the following:

1. As water quality is a manifestation of the activities held in the watershed, it was suggested to emphasize a watershed approach. This includes:
  - Grants to watershed organizations for clean-up projects and best management practices, complemented with appropriate targeting technology, such as Geographic Information Systems (GIS)
  - Structuring efficient watersheds organizations.
2. As there are limits on available funding and multiple funding sources, it was suggested to prioritize projects and to streamline existing programs. This proposal consists of:
  - Expanding monitoring activities to provide better data
  - Completing a comprehensive NPS needs assessment

- Engaging stakeholders in the TMDL planning process
  - Directing at least half conservation cost-share and federal funds controlled by states to appropriate technology for watershed projects.
  - Efficiently operating Clean Water and Drinking Water State Revolving Funds.
  - Developing and implementing a statewide comprehensive stormwater management program that emphasizes Best Management Practices.
3. As public education, new research and demonstration projects are also very important, it was suggested that Iowa also invest in these types of efforts:
- Developing a research grant program to support nutrient management and agronomic upgrading.
  - Developing innovative and efficient nitrogen management strategies for environmental protection.
  - Developing numeric standards for nitrogen and phosphorus.
  - Creating pilot demonstration programs for nitrogen and phosphorus reduction.
  - Implementing statewide nutrient efficiency management methods.

Each of these proposed ideas requires financial resources. An opportunity to find these financial resources is contained in the Clean Water State Revolving Fund.

### **What is the Clean Water State Revolving Fund?**

Each year, the U.S. Environmental Protection Agency provides grants for capitalizing state revolving loan funds. States must provide a 20 percent match, which, is generated primarily by bonding in Iowa. The EPA provides great flexibility to the states for determining their own uses of SRF program funds. States are able to fund a wide range of projects, including non-point source projects and traditional point-source projects, such as municipal wastewater treatment systems. The funds must be used for loans. The EPA allows states to charge interest rates anywhere between 0 percent and market rate, and to offer loan terms of up to 20 years. Despite this flexibility, Iowa has almost exclusively funded municipal wastewater treatment projects with low-interest loans (currently at a fixed interest rate of 3 percent).

Nationwide, the EPA provided \$21 billion in capitalization grants between 1988 and 2003, and states contributed an additional \$4.4 billion. The cumulative amount of funds that have been made available for loans is \$47 billion.<sup>4</sup> Altogether, states have invested about \$1.8 billion on non-point source projects (National Information Management System (NIMS)). More than 56 percent of these funds were invested between 2000 and 2003.

Since 1988, the Clean Water SRF program has funded \$40 billion in wastewater treatment projects nationwide (see Figure 2 for the types of wastewater projects that have been funded). These projects have produced major improvements in the quality of the nation's water bodies. The program has also been important to local economies. Wastewater treatment plants are fundamental to economic vitality. In addition, the SRF program can be thought of as an "export" industry, bringing out-of-state money into the Iowa economy. One report estimates that \$1

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<sup>4</sup> Besides the federal capitalization grants, and the state's contribution, the SRF available funds also include leverage bonds, investment earnings, loan interest and loan principal repayments. This cumulative figure is also net of transfers to Drinking Water State Revolving Funds. (A 1996 amendment to the Safe Drinking Water Act established the Drinking Water State Revolving Fund. This revolving fund provides loans for the installation and rehabilitation of infrastructure that improves drinking water quality).

billion of SRF investments creates around 20,000 jobs in construction and related industries (Norfleet, 2002).

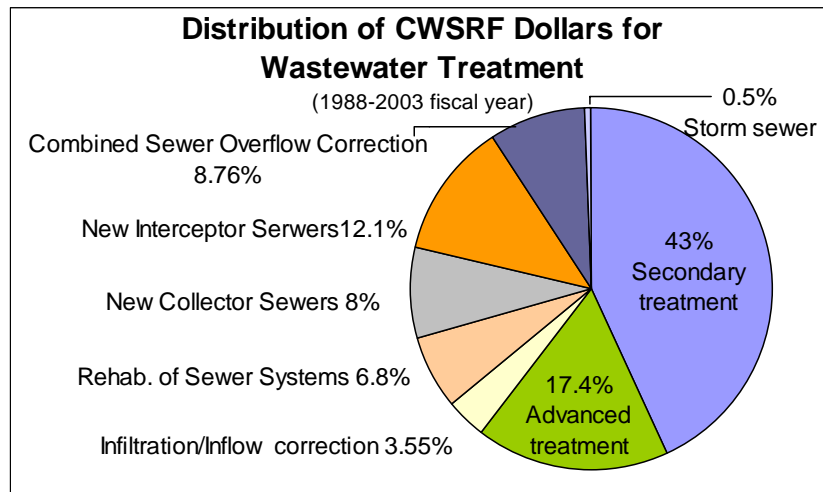


Figure 2. Source: NIMS reports from the EPA

Between 1988 and 2002, thirty states funded NPS pollution control and estuary projects. States are increasingly using the Clean Water SRF for non-point source projects. In 2000, 45 percent of all funds were committed to non-point source and estuary projects, while in 2003 that percentage increased to 51 percent. Figure 3 shows the percentage of funds loaned to NPS projects in each state in 2000. Iowa did not have any non-point source projects in 2000.

Figure 4 shows that most of the NPS projects are “unclassified.” The second largest amount of NPS funds—\$290 million—has been loaned to landfill projects, followed by agricultural BMPs, and replacement or upgrading of storage tanks.





## How does the Clean Water SRF Program Work in Iowa?

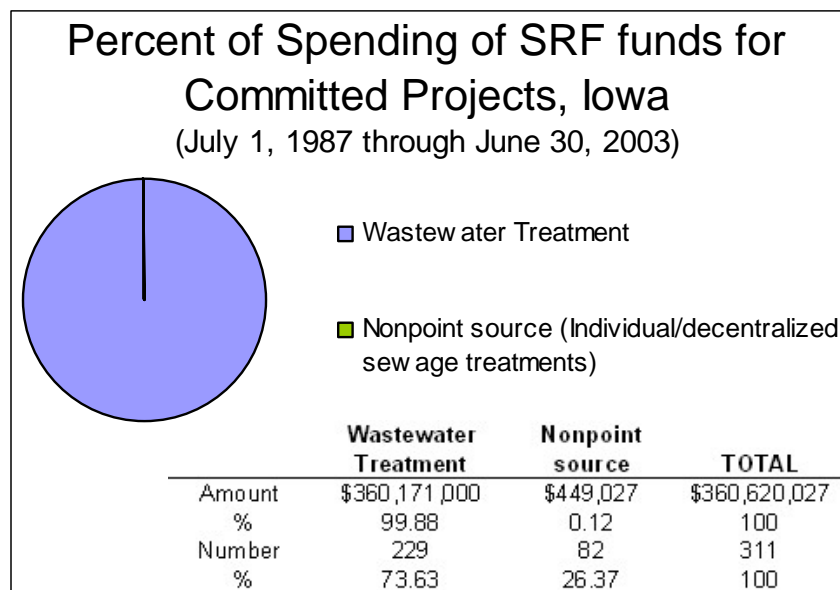
- Administration

The Iowa Department of Natural Resource (IDNR) and the Iowa Finance Authority (IFA) share responsibility for administration of the Clean Water SRF program. Each year, Iowa can apply for a capitalization grant from the EPA. The amount of the grant is based on a federal formula. The IDNR writes the Intended Use Plan, which identifies the specific projects that have applied for and are eligible for loans. The IDNR has full responsibility for applying for capitalization grants and for approving plans for wastewater treatment facilities. The IFA issues government bonds that provide the 20 percent state match.

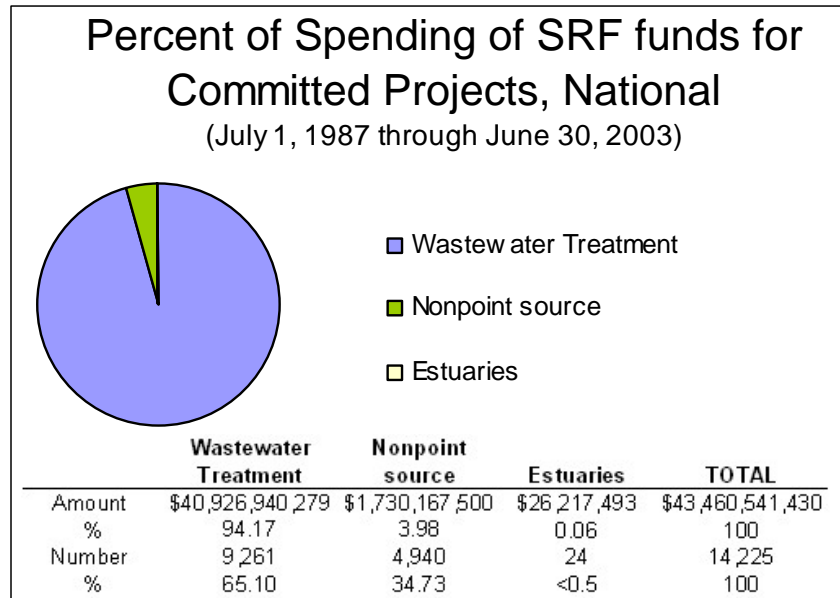
- Types of funded projects

Since 1988, Iowa has committed \$360.2 million in loans to 229 wastewater treatment projects. Changes to Iowa's SRF program were implemented in 2002 in order to make NPS projects eligible for funding. Since then, \$449,027 has been committed to NPS projects. However, all of this money has funded individual septic tanks and not any other types of NPS projects even though loans can be used for a wide variety of projects.

Only public entities (primarily municipalities) are eligible to receive Section 212 (wastewater treatment plant) loans. On the other hand, non-point source loans can be made to private entities—including farmers, conservation agencies, corporations, and land trusts. Figures 5 and 6 compare the proportion of committed loans for NPS projects in Iowa with the nation. Overall, Iowa's financial assistance to NPS projects is about 4 percentage points less than the national average.



**Figure 5. Source: NIMS reports from the EPA**



**Figure 6. Source: NIMS reports from the EPA**

The need for NPS projects is recognized in the State Non-point Source Pollution Control Plan. The IDNR has responded by establishing three “set aside” programs for non-point source projects (these are in addition to the individual septic tank program):

- Animal feeding operations, under the Livestock Water Quality Facilities Program (LWQ)
- Stream water protection projects, under the Local Water Protection Program (LWP)
- All other non-point source projects, under the General Non-point Source Program (GNS)

In FY2004, the LWQ and the LWP programs were allocated \$3 million each, while the GNS program was unfunded. No projects were funded or even applied for funding from these set asides. The IDNR needs to actively market these new programs in order to increase demand.

SRF loans can be used for capital investments, but not operation and maintenance costs, salaries, and capital projects that are out of the scope of the project. In the case of a NPS pollution control project, this capital part might include planting vegetation to restore riparian areas.

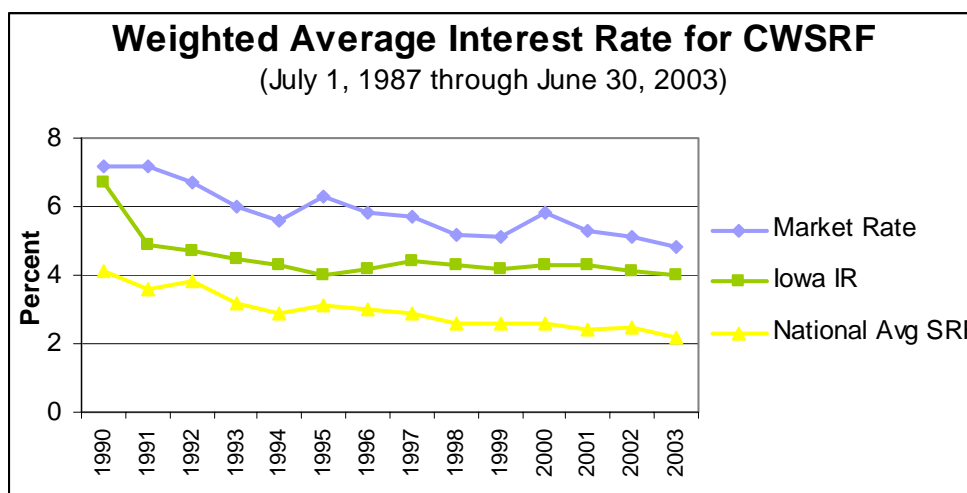
In the FY2005 Intended Use Plan, \$6 million is provided for the non-point set asides. In addition, the IDNR reserved \$31 million for supplemental NPS projects. This is a five-fold increase compared to the amount proposed in FY2004 and a step in the right direction. However, it is important that the IDNR also develop a plan to ensure that non-point source projects are actually funded.

- Types of Financing Mechanisms

The EPA allows Iowa to set the interest rate anywhere between 0 percent and market rate. Currently, the rate is fixed at 3 percent for wastewater infrastructure, which is comparable to the average rate of inflation for the last 20 years. While three percent interest is a good deal compared to market rate, Iowa charges a higher interest rate than the national average, which has contributed to the build-up in the fund balance. Iowa’s clean water loans are now earning 1.9 percentage points above the national SRF average interest rate. Iowa has earned \$24 million more in interest than if Iowa charged the average interest rate for the nation. During the eight years of the Vilsack Administration, the incremental interest will equal \$64 million.

NPS projects are financed differently from the municipal wastewater treatment projects. Two different funding mechanisms are used for NPS projects:

- **Linked deposit:** The local bank makes a loan to a landowner for an SRF project which has been approved by the local soil and water conservation district. An amount equal to the loan amount is then deposited by IFA into a certificate of deposit in the bank. The interest earned on the CD is lower than the market interest rate allowing the bank to charge a lower interest rate to the landowner. Recipients repay the loan to the bank and the bank repays the state.



**Figure 7. Source: NIMS reports from the EPA**

- **Pass-through:** another government agency—the Iowa Agricultural Development Authority—underwrites loans for LWQ projects. Upon origination, the IDNR deposits the amount of the loan and makes withdrawals as loans are repaid.

Pass-through and linked-deposit financing gives responsibility for project approval and loan approval to local agencies (such as soil and water conservation districts) and local lenders who often have better knowledge about the proposed projects and their borrowers. These mechanisms provide the state with protection from loan defaults.

## What are the finances of Iowa's Clean Water SRF Program?

Between 1988 and 2003, Iowa received \$248.9 million in federal capitalization grants, or about 1.2 percent of the total federal funds allocated nationwide (see Table 1). This amount places Iowa in the 25<sup>th</sup> position for total funds received.

The 20 percent state required match has contributed a cumulative amount of \$53.1 million. Including all sources, Iowa had generated \$485.3 million in available funds through FY 2003.<sup>5</sup> Of this amount, \$360.6 million has been committed (loan agreements signed) to 311 projects. The total amount of funds that has actually been disbursed, or loaned to projects in Iowa, is \$314.5 million (see Table 1).

	<b>National</b>	<b>Iowa</b>	<b>Percent</b>
Federal Capitalization Grants	\$20,803,598,371	\$248,867,873	1.20
State Contribution	\$4,388,519,514	\$53,123,575	1.21
SRF Funds Available for Projects	\$46,954,900,000	\$485,263,453	1.03
SRF Projects Committed	\$43,460,541,430	\$360,620,027	0.83
SRF Project Disbursed	\$36,369,035,489	\$314,450,561	0.86
Number of SRF Assistance Agreements	14,225	311	2.19

**Table 1. Iowa's Clean Water SRF Resources, 1988-2003. Source: EPA NIMS**

The composition of available funds is displayed in Figure 8.<sup>6</sup> Capitalization grants, leveraged bonds, and the 20 percent state match have provided 85 percent of the available funds since 1989. Loan repayments<sup>7</sup> and net interest earnings<sup>8</sup> have been a smaller source of income for the Clean Water SRF program, providing 15 percent of the funds available for projects.

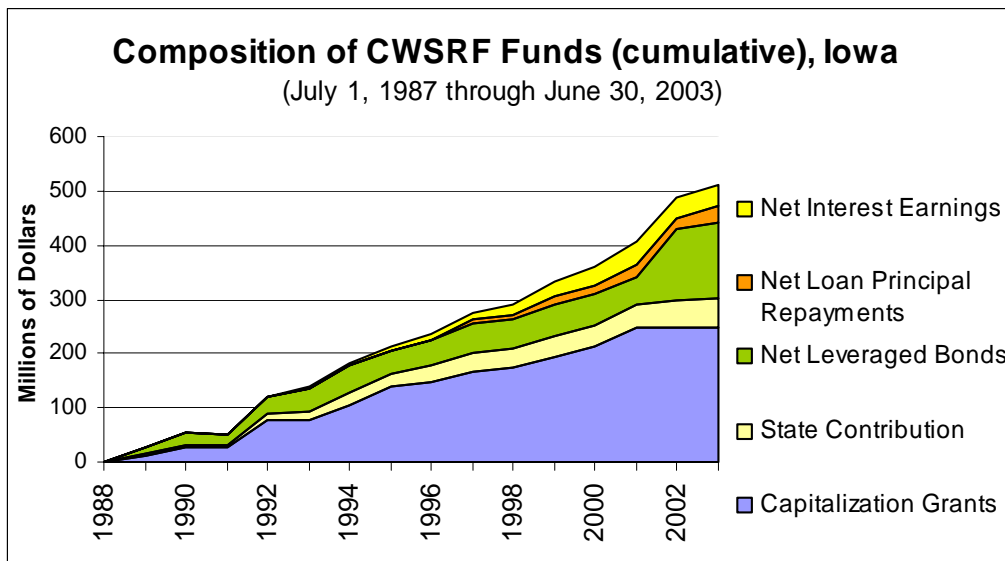
While capitalization grants and state matching funds are the seed money for the SRF program, leveraging can also provide additional funds if the capitalization grants and state match are insufficient to meet loan demand. Leveraging is when states use SRF funds as collateral to issue more revenue bonds beyond the required state match. Bond proceeds are then used to make new loans to eligible SRF water projects.

<sup>5</sup> Total Funds Available include: Federal Capitalization Grants, the 20% State Match, Leverage Bonds, Investment Earnings, Loan Interest and Loan Repayments.

<sup>6</sup> As a clarification note, this figure shows higher available funds than the \$485.3 million stated before because it does not deduct transfers to the Drinking Water SRF (\$16.8 million) and the 4 percent of Administrative Set-Aside (\$10 million).

<sup>7</sup> Amount that remains in the CWSRF fund after payments of principal on leveraged bonds.

<sup>8</sup> The earnings include the interest rate on the loans and the interest earned from investing the issued bonds before making loans to the borrowers. The expenses include the payments on leveraged and state match bonds and on principal state match bonds.



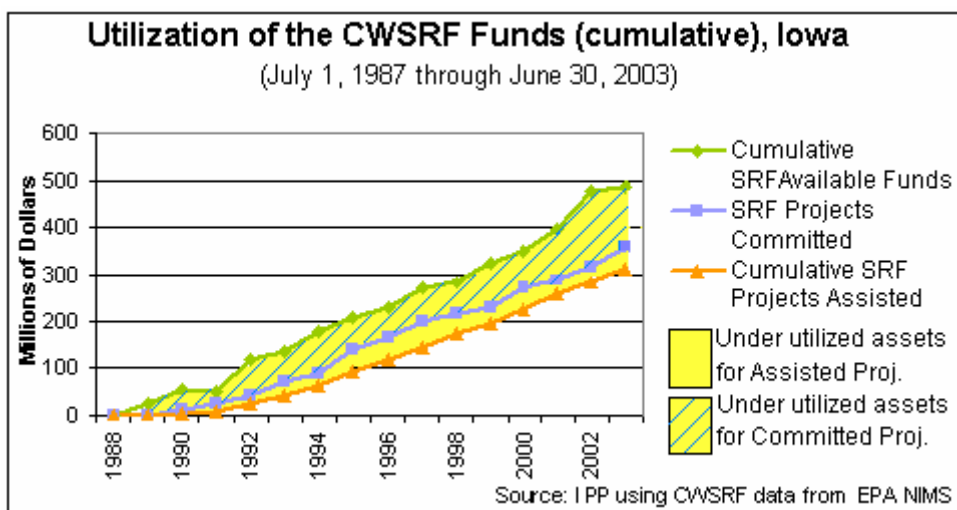
**Figure 8. Source: NIMS reports from the EPA**

Iowa is one of 27 states that has leveraged within the Clean Water SRF program. However, Iowa discontinued this practice in 2000 because there was no loan demand to justify it. In fact, Iowa has only increased its loans by 2 percent due to leveraging. Due to leveraging, Iowa has generated \$130 million in available funds that were never loaned because demand has not materialized. By comparison, Minnesota, Kansas, and Missouri increased their loans by 145 percent, 129 percent, and 80 percent respectively. Minnesota and Kansas have actually made more loans as a result of leveraging than from capitalization grants and state matches.

A good measure of how effective Iowa has been at maximizing the financial resources of the Clean Water SRF is the federal return on investment (ROI). The ROI is equal to program loans as a share of EPA grants. The EPA reports that Iowa’s federal return on investment is 144 percent, much less than the national average of 197 percent. Iowa’s neighboring states, such as Minnesota, Kansas and Missouri, register a ROI far above the national average, at 295 percent, 288 percent and 215 percent respectively.

Iowa has loaned only 44 percent more than it has received in EPA grants, while Minnesota has used leveraging in order to loan about triple the amount it has received from the EPA. Iowa’s revolving loan fund is revolving at about half of the speed of the national average and at less than a quarter of the speed in Minnesota. Iowa is not making full use of SRF funds. Funds received several years ago still need to be spent, and FY2003 and FY2004 EPA capitalization grants have not even been tapped yet. Iowa should not be concerned about generating too much demand for loans because leveraging provides the capacity to raise more program revenue.

In terms of capacity, the program is only using a fraction of the funds available. Figure 9 provides a visual display of this underutilization of the CWSRF since the program’s inception in 1988. The orange line represents money disbursed, or loaned to projects (“projects assisted”); the blue line represents the amount of money “committed” to projects (loan agreements signed); and the green line represents available funds. The distance between the orange line and green line equals \$170 million in available funds that has never been loaned to water quality projects. The distance between the blue line and green line equals \$124 million in available funds that has not even been committed to clean water projects.



**Figure 9. Source: NIMS reports from the EPA**

Some of the difference between the amount of money disbursed and the amount committed (the distance between the blue and orange lines, or roughly \$46 million) is due to the natural time lag between when a loan agreement is signed and when costs are incurred (loans are not disbursed until costs are incurred).<sup>9</sup> However, some “committed” projects are never undertaken, are delayed for many years, or switch to another financing source. About 13 percent of “committed” funds are never actually disbursed. The distance between the green line, which represents total available funds, and the other two lines has increased since 2000—indicating greater difficulty in utilizing SRF money in recent years. In the last five years, only 62 percent of available funds have actually been disbursed and only 72 percent of available funds have been “committed”. Only 12 states have a larger share of un-disbursed funds and only 3 states have a larger share of un-committed funds.

Iowa has enough available funds (\$124 million) to assist current projects without yet accessing FY 2003 and 2004 capitalization grants. Although the 2004 Intended Use Plan (IUP) lists \$134 million in eligible projects, less than half of those projects will actually sign a loan agreement within the year. A comparison between the 2004 IUP and the proposed 2005 IUP shows that of the \$134 million worth of projects on the 2004 fundable list, over \$75 million has been carried over to the 2005 IUP.<sup>10</sup> Thus, only \$59 million in projects listed on the 2004 IUP will sign loan agreements within the year, and an even smaller amount will be disbursed.

In addition, in each of the last two years (FY2002 and FY2003), SRF fund balances (money not yet loaned) have earned less interest than the Iowa Finance Authority pays on the state bonds that were used to match and leverage the EPA grants. This further justifies putting all funds to use for program loans as soon as possible.

<sup>9</sup> For example, the delay could be a result of projects that are still negotiating the application process or waiting for their construction or NPDES permit (loan documents are signed before the DNR has issued a construction permit).

<sup>10</sup> Of the \$134 million reserved to fund the projects on 2004 IUP, only \$59 million were loaned that year (counting projects that were listed in previous year).

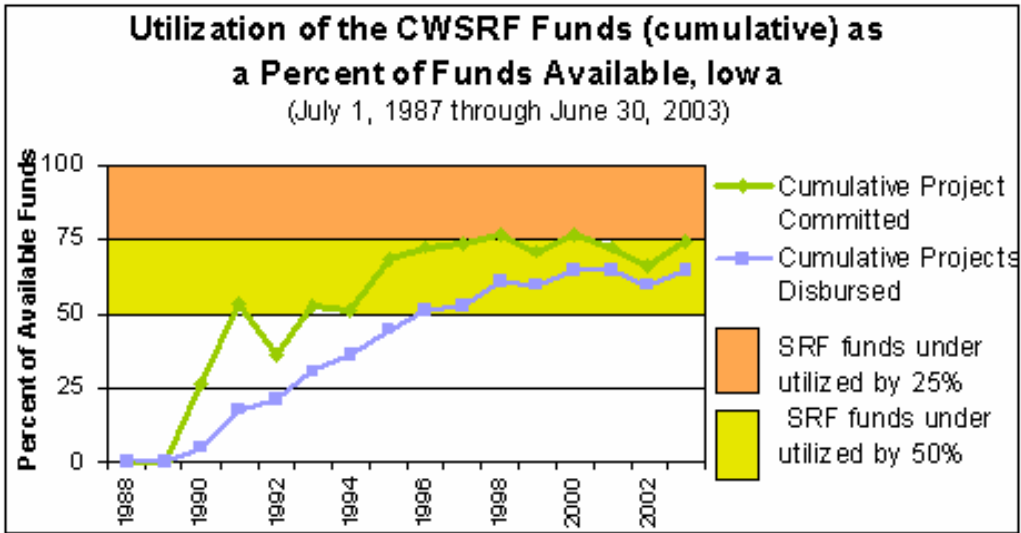


Figure 10. Source: NIMS reports from the EPA

Figure 10 shows the share of available SRF funds that have been loaned (disbursed) and committed in Iowa since 1988. While Iowa has made improvements, the share of un-disbursed and un-committed funds has hovered around 40 percent and 25 percent respectively since the mid-nineties.

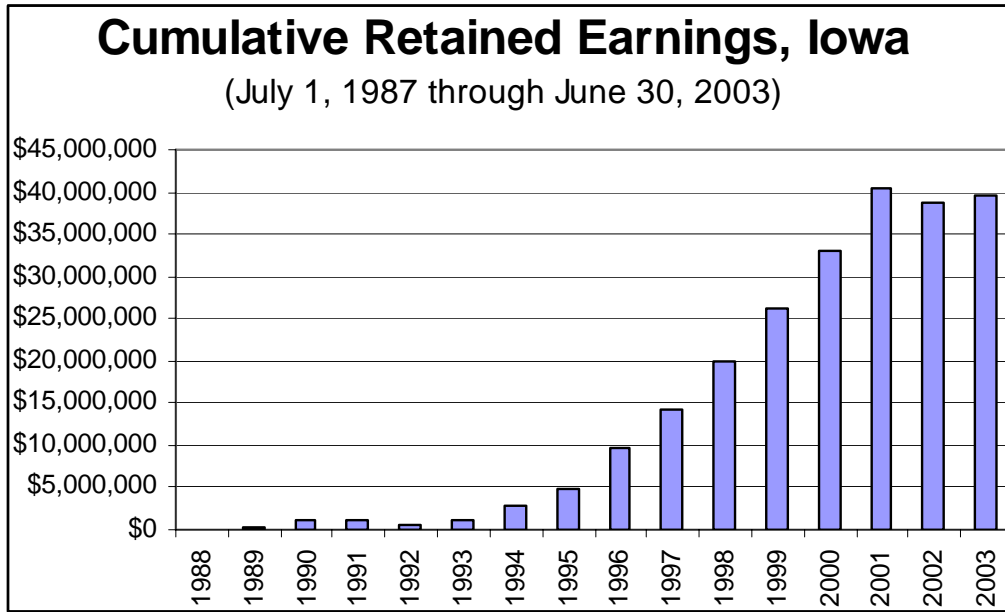


Figure 11. Source: NIMS reports from the EPA

Iowa’s Clean Water SRF program is ranked high in terms of sustainability, which is measured by retained earnings (defined here as net interest earnings).<sup>11</sup> Figure 11 shows cumulative retained

<sup>11</sup> Retained earnings is the same as net interest earnings (Amount of interest earnings from loans and investments that remain in the CWSRF after payment of interest expense on all bonds (leveraged and state match) and principal on state match bonds)

earnings since the program's inception. Interest earnings have exceeded interest payments in all years, except 1992 and 2002. Since 1988, the Clean Water SRF program has retained \$39 million in earnings.

Finally, the EPA encourages assistance to small and disadvantaged communities. As Figure 12 shows, Iowa has followed this suggestion. There is an inverse relationship between population size and level of financial assistance. In fact, since 2000, 72 percent of committed loans have been to communities with fewer than 10,000 people. The explanation for this is partially because bigger cities often choose to issue bonds instead of participating in the SRF program.

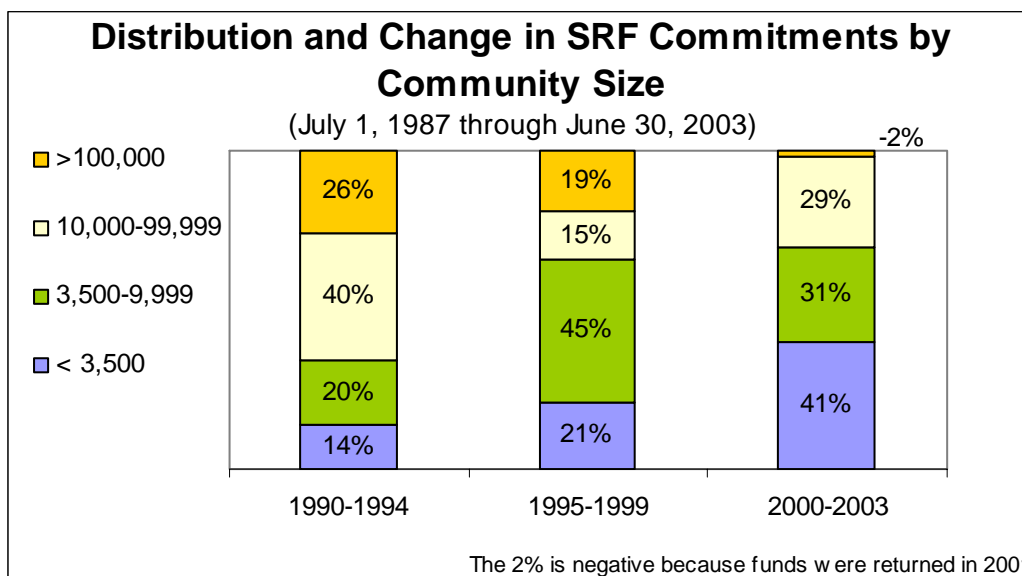


Figure 12. Source: NIMS reports from the EPA

### Why is the Clean Water SRF Underutilized?

As noted before, Iowa has \$124 million in un-committed SRF funds, which are not being used. Historically, the IDNR has reserved such funds for infrastructure projects listed in the Intended Use Plan (IUP) but without loan agreements signed. Yet many projects are listed in the IUP for several years before finally signing loan agreements. And some projects never sign an agreement and are eventually removed from the list altogether. For example, the FY2004 Intended Use Plan still lists two projects from the FY1998 IUP. There are multiple possible explanations for this backlog of projects. Projects could be waiting for federal grants (for example, a Community Development Block Grant), projects could be held up because of technical issues, or projects could be delaying compliance with DNR enforcement action.

Another explanation may be lack of aggressive enforcement that characterizes the permit system in Iowa. A lenient regulatory enforcement doesn't impel communities to take care of their environmental compliance in a timely manner, and therefore the demand for water control pollution loans may be less than other states. In a report released by US PIRG entitled *Troubled Waters: An analysis of Clean Water Act Compliance*, (U.S. PIRG, 2004) it was found that more than 71 percent of industrial and municipal facilities all over Iowa discharged more pollutants than allowed in their Clean Water Act Permit limits between January 2002 and June 2003.



Measures of nutrients reduction/increase in Iowa waters are not available because of a lack of historic monitoring data. This must be changed so that Iowa can identify its highest priority NPS needs and stimulate new projects in those areas.

### **How can Iowa incorporate a watershed approach into a program that has historically just funded wastewater treatment plants?**

Iowa has only recently joined the 36 states that finance NPS projects. It is in our best interest to learn about what has worked well in other states.

Ohio has developed the Water Resource Restoration Sponsor Program, an innovative program that links wastewater treatment and water resource restoration. Between October 2000 (when the program was implemented) through June 2004, approximately \$52.1 million has been spent for 20 projects protecting or restoring more than 40 miles of stream corridor and more than 4,000 acres of wetlands. In 2004, \$15 million was proposed to fund additional sponsored projects.

The program has an incentive-based logic. It works by lowering the interest rate on infrastructure loans to as low as 0.2 percent for those communities who are applying for wastewater treatment loans *and* also agree to sponsor NPS projects that restore and protect water resources as well. The community actually saves money by completing the desired sewage treatment plant and in addition carries out a restoration project that otherwise might have not been done. The participant community usually enters into a sponsorship agreement with another entity such as a land trust or park district that takes responsibility to implement the restoration plan, but does not participate in repaying the loan. One drawback to Ohio's program is that the low interest earnings may affect the sustainability of the program. On occasion, it has been necessary to allocate more money because of cash flow problems.

### **What NPS projects are funded in other states?**

Examples of NPS projects that are funded in other states are listed below. Most of the case studies are available at the EPA webpage.

- Agricultural and Forestry Best Management Practices (BMPs)

Several states use CWSRF funds for agriculture and forestry BMPs that entail projects like waste management systems, erosion control and chemical use reduction. Minnesota's CWSRF has developed an Agriculture Best Management Loan Program. Managed by the Minnesota Department of Agriculture, the program has loaned \$51 million between 1994 and 2003 and has assisted around 4,500 pollution reduction projects. Part of the success of this program is the active involvement of various stakeholders. Soil and water conservation districts assist with needs assessment, planning, design, and counties manage agricultural loan programs at a local level. The funding process is guided by Local Comprehensive Water Plans, and the loan repayment terms are between 1 and 10 years at 3 percent interest rate. The types of projects that have been funded so far include: manure basins, manure spreaders, conservation tillage equipment (some percentage of ground is covered by crop residues after seeding, preventing soil loss), sediment control basins, terraces, diversions, buffer and filter strips, cattle exclusion, windbreaks, gully repair stabilization of stream banks, efficient spray equipment and educational programs.

- Brownfields and Underground Storage Tank (UST) remediation

Brownfield redevelopment can transform environmentally impaired property into productive uses, revitalizing economically neighborhoods and addressing sources that threaten surface and underground water quality. Brownfield projects that are eligible include site assessment, excavation and disposal of UST, excavation, removal and disposal of contaminated soil or sediment, capping wells or soil, remediation of stormwater runoff (stormwater actions subject to NPDES are considered point sources, and therefore qualified for funds under publicly owned projects), wetlands construction (filtering mechanism), and monitoring groundwater and surface water for contamination. Even though New York and Ohio have led in the funding of these initiatives, other states, such as Wisconsin, have joined the effort. Wisconsin passed legislation in 2002 that allocated \$20 million of the CWSRF funds to municipalities to redevelop brownfield sites that impair water quality. In 2001, two projects were funded under this modality. One of these projects entailed site investigation and landfill cleanup for a site that was used to dispose of construction debris, commercial and industrial waste. The \$1.3 million loan allowed covering the landfill and installing groundwater monitoring equipment. The 20 year-loan has a 0 percent interest rate.

- Conservation Easement for ecosystem preservation: riparian, wetlands, water and recharge land

Conservation easements are one of the most effective ways to protect the quality of streams as they work as buffers and intercept contaminated runoff. Conservation easements involve the purchase or donation of a property's development rights usually by land trusts, parks, municipalities or NGOs that ensures natural resources preservation. Landowners retain ownership and control of their land, and obtain property or state tax breaks due to a reduction of the land's commercial value. Conservation easements are suitable to fund purchases of wetlands, riparian corridors and groundwater recharge lands.

Ohio's Clean Water SRF provided loans for Riparian Zone Conservation projects. The \$264,000 loan was used to purchase conservation easements that protect 383 acres along the Ohio Brush Creek and undertake restoration activities such as planting the riparian corridor for streambank stabilization. The interest rate has been set at 3.2 percent and has a repayment term of 5 years. The project repays the loans through collection of membership fees and other funds.

- Best Stormwater Management Practices

Another application of BMPs is for residential developments. In Ohio, a loan of \$1.1 million was provided to the Hidden Creek Developers for the installation of structural and non-structural practices to protect Big Darby Creek watershed- an extremely sensitive watershed. The undertaken actions for runoff prevention included the construction of sediment and stormwater retention lakes, the construction of grassed waterways for stormwater treatment, the restoration of the wooded stream corridor, and the establishment of an emergent wetland. The developer also purchased conservation easements to protect 203 acres of riparian stream corridors and wetlands. In addition, the funds have served to finance an educational program to train homeowners about watershed protection measures. The interest rate is 3.2 percent, with a repayment period of five years. The Environmental Law Institute awarded this housing project for its work in protecting the watershed, illustrating that environmental sensitiveness and profit can go together.

- Wetlands Protection and Restoration

Although wetland projects are considered in the aforementioned categories, addressing it separately seems important since Iowa has lost 89 percent of its original wetlands and the EPA

would like more CWSRF funds to be allocated toward this type of water quality project. The types of projects eligible for funds include: cleanup and enhancement (restoration), buffer zones, purchase, and non point source BMPs (protection), and construction for treatment of stormwater or wastewater. An opportunity exists for Iowa is to capitalize wetlands mitigation banks with CWSRF loans, which is strongly encouraged by the EPA.

- Landfill capping and closure/ New landfills and leachate treatment facilities

Landfills are nontraditional projects whose primary purpose is waste disposal but that directly impact water quality. In North Dakota, 10 cities benefited from CWSRF low- interest loans to close landfills, expand others and construct new landfills with modern protection measures and procedures. The interest rate was set at 3 percent with a repayment period of 20 years.

Other projects that might be eligible are in-stream and in-lake chemical treatment and aeration and prairie restoration projects. The later is a return to the original landscape of Iowa, and therefore a restoration of the original hydrologic functioning. The environmental benefits that this type of project represents as a non-point source pollution control include: soil erosion reduction, water quality improvement, air pollution (especially associated with pollen allergies) and noise pollution reduction, climatologically benefits and reduction in greenhouse effect, habitat restoration and protection, and enhanced regional corridors for animal migration. In order to be eligible, prairie restoration should be identified in the NPS Management Plan and Iowa SRF rules should be adopted to pay for only the portion of the project that benefits water quality.

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## RECOMMENDATIONS

The EPA encourages states to use the SRF to assist the widest variety of high priority water quality projects. In 2002, Iowa embraced this idea by welcoming a range of NPS pollution projects. However, due to insufficient outreach and shortcomings of the “set asides,” no non-point source projects (except septic tanks) were funded in 2004.

Since NPS projects are high priority projects for water protection, a series of recommendations are presented to advance the use of the Clean Water SRF to invest in these types of projects and to finance at least three of Governor Vilsack’s proposals.

## A. Main recommendations

### **1. Develop a Sponsor Program to address both pollution prevention and treatment**

As mentioned earlier, Ohio has developed an innovative program that links wastewater treatment and water resource restoration by lowering the interest rate on infrastructure loans to as low as 0.2 percent for those municipalities that also agree to sponsor NPS projects. The interest rate is lowered enough so that the participant community actually pays less in interest despite receiving a larger loan. The participant community usually enters into a sponsorship agreement with another entity, such as a land trust or park district, that takes responsibility to implement the restoration plan, but does not participate in repaying the loan. In that sense, a sponsorship program allows Clean Water SRF loans to be converted to grants.

The IDNR has said that sponsorship programs would be an effective and unique method for a city to improve both their wastewater treatment facility and restore nearby aquatic habitat. Iowa recently changed its SRF rules to allow for sponsorship projects: “The [Environmental Protection] Commission may grant interest rate reductions or other favorable loan incentives to applicants that sponsor a project that improves impaired waters or restores the physical, chemical or biological integrity of receiving waters impacted by the wastewater treatment facility.”<sup>12</sup> However, the IDNR has not developed an actual sponsor projects program. At the very least, the IDNR should make sure that all communities who apply for wastewater treatment loans are aware of the option to lower the interest rate by sponsoring a non-point source project.

The IDNR recognizes that the discharge of treated effluents also impacts the water quality of the receiving waters, and that projects to decrease non-point source water pollution are critical in order to improve the health of the receiving waters. By cleaning Iowa’s water, NPS projects can also decrease the long-run costs of treating water for drinking. Studies have shown that some NPS projects, such as grass buffers, provide a storage area that lowers the rate of heavy metals and removes a significant percentage of nutrients.

As done in Ohio, eligible projects for the sponsor program should be divided into two main categories: 1) watershed-based projects and 2) statewide projects. The former would specialize in those restoration and protection projects that meet with Total Maximum Daily Load (TMDL) plans. Statewide projects are all other projects that are not included in the watershed plan, but that benefit Iowa’s water quality.

A sponsor program is able to finance at least three of the ideas proposed in the 2003 Iowa Water Summit:

- 1) The \$2,000,000 for grants to watershed organizations for clean-up projects and best management practices.
- 2) The \$800,000 for TMDL planning and implementation projects.
- 3) Implementation of nutrient efficiency management methods within a state framework.

A well-developed sponsor program in Iowa would help ameliorate the current levels of effluent discharge. It would be ideal if the sponsor program worked in coordination with the state’s Total Maximum Daily Load process in order to target impaired waters that need the most urgent financial aid. Through accelerated implementation of the total maximum daily load (TMDL)

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<sup>12</sup> See the Iowa Administrative Code Chapter 62.6 (10) e.

program, a comprehensive nutrient management plan and a watershed scale to approach water quality problems, a sponsor program can address cumulative impacts to stream segments by reducing pollution.

## **2. Offer alternative financing structures**

The IDNR should offer alternative financing structures to meet the individual needs of borrowers by implementing the use of a balloon repayment structure<sup>13</sup> or lowering the interest rate if the borrower agrees to a shorter repayment period. Balloon loans are ideal for certain types of non-point source projects, such as establishing wetland mitigation banks. This payment structure also rewards those projects that can repay the loan in early periods. If the payments are larger at the end of the loan contract, it may even be possible that earnings from the funded project could be used to repay the loan. A lower interest rate on loans may be more appropriate for disadvantaged communities with priority state needs. By implementing a sponsor program, Iowa could also offer lower interest rates to municipalities that agree to sponsor non-point source projects. By offering flexible financing, Iowa would also stimulate greater demand for loans.

## **3. Develop an integrated planning and priority setting list that equally weights the construction of wastewater treatment plants and non-point source projects**

As required by Title VI, every state must prioritize applicants for Section 212 loans (wastewater treatment projects) as part of the project selection process. However, this requirement does not apply to NPS projects. In order to efficiently target water quality projects, the EPA encourages states that financially assist NPS pollution and estuary management projects to employ an integrated planning and priority list. Iowa currently does not. We recommend that Iowa incorporate such a list into the Intended Use Plan and select the highest priority projects from that list for funding.

This integrated list enables states to identify the most important water quality projects. In that sense, projects with a primary purpose other than water pollution control, but that still have a direct impact on water quality are also considered for funding. Examples of these projects include a salt storage shed, new landfill, a bird sanctuary, or the purchase of leaf removal equipment. EPA recommends two ways to structure these project lists. One is based upon setting a goal: For example, to reduce the impaired waters in the 303(d) list by 10 percent in the next 10 years. The other is based on an equal evaluation basis for all types of eligible projects.

In 2001, there were 16 states<sup>14</sup> that used integrated lists with a variety of approaches. Some states score eligible projects across project categories and others score projects within separate categories. For example, Ohio uses different criteria when considering projects that impact groundwater, wetlands, or streams, rivers and lakes. The completion of annual priority lists requires professional judgment in order to set aside funding for the highest priority needs. The evaluation of projects might be subjected to the value of the waterway that the project is addressing, the threat or impairment that the waterway presents and the efficacy of the project in tackling the impaired or treated waterway

### **B. Minor recommendations**

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<sup>13</sup> A large, lump-sum payment scheduled at the end of a series of considerably smaller periodic payments.

<sup>14</sup> California, Delaware, Idaho, Maryland, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Rhode island, Utah, Washington, and Wyoming.

#### **4. Incorporate Smart Growth strategies into the Clean Water SRF program**

Wastewater treatment plants are often constructed to accommodate new development. The decision to build new treatment plants should also consider the new costs imposed by accommodating growth, such as for roads, utility pipes and other public services (police, fire, schools, etc). Communities should also consider the impact of new development on the hydrologic patterns in the watershed. In order to guarantee that new or expanded wastewater treatment plants support only “smart growth” instead of unnecessary sprawl, the IDNR should make sure that the size of a community’s planned infrastructure is appropriate given population projections.

#### **5. Allow the purchase of land and conservation easements**

As mentioned earlier, purchases of land and conservation easements by conservation agencies, such as land trusts and private nonprofits, have historically not been eligible for funding. Yet, land acquisition is a critical tool for protecting water quality by reducing non-point source pollution and directing growth away from sensitive areas in the watershed.

The IDNR has made some changes to allow for the purchase of conservation lands if the project is granted a special exception or variance by the Environmental Protection Commission.<sup>15</sup> Despite these changes, page 13 of the FY2005 Intended Use Plan still reads as follows: “Costs for the purchase of land are not eligible costs.” The Intended Use Plan and the Clean Water SRF application need to clearly explain the types of eligible NPS projects. At the current time, it is unclear if land acquisition, land clearance, environmental insurance, streambank stabilization habitat restoration, and other nonpoint source projects are eligible for loans.

#### **6. Encourage coordinated actions in different dimensions**

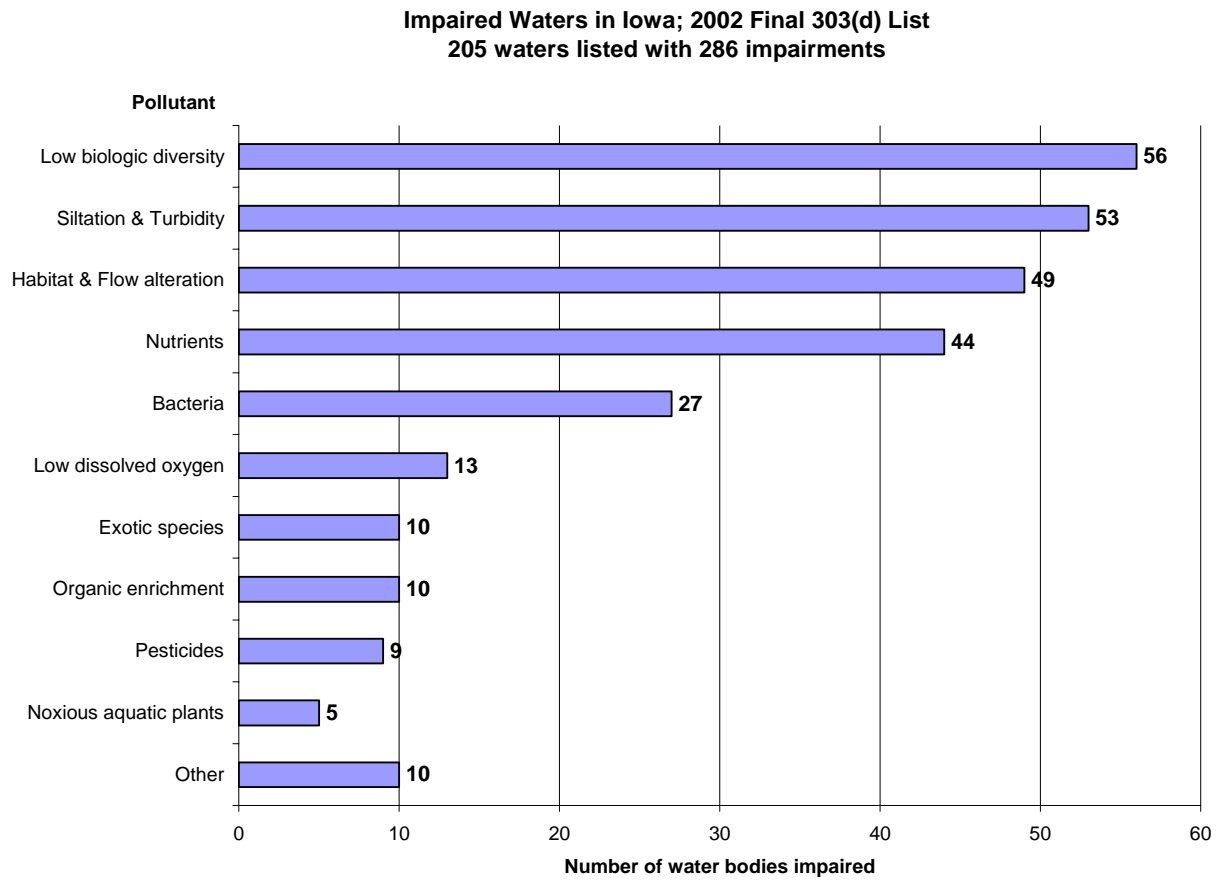
- a. Promote a more coordinated use of the various funds available for water quality projects, such as between Section 319 grants and the Clean Water SRF. Coordinated use of grants and loans can make NPS projects more affordable.
- b. Coordinate with state compliance and enforcement efforts in order to increase the demand for SRF loans and ensure perpetual use of the program.
- c. Partner with other states to address the water quality problems that intrinsically cross state boundaries.
- d. Consider developing a one-stop shop for water quality loans and grants. A single application process for multiple programs and an integrated priority list would fund the highest priority projects with the most appropriate programs.

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<sup>15</sup> See p.11 of INDR’s report to the Environmental Protection Commission:  
<http://www.iowadnr.com/epc/03sep15/9.pdf>

The CWSRF program is much more than a loan and subsidy for wastewater treatment facilities. In fact, the CWSRF program is the primary source of federal assistance to implement Clean Water Act goals. The flexibility that characterizes this program allows targeting the most varied types of projects and loan recipients to achieve the greatest public benefit. However, a weak demand for loans from private and public entities may reduce the amount of future EPA grants to Iowa. As highlighted in the Iowa SRF Performance Evaluation Report, all the SRF funds are required to be expended in a timely and expeditious manner. This calls to the need for additional marketing and outreach efforts to increase appeal from borrowers, stimulate demand for funds, and address clean water state priority projects.

Iowa can do much better in protecting and restoring its waters. The use of more tools and the existing available funding capacity of the Clean Water SRF will enable Iowa to achieve many significant recommendations of the 2003 Water Summit and to accelerate Governor's Vilsack goal of cleaning up all impaired water by 2010.

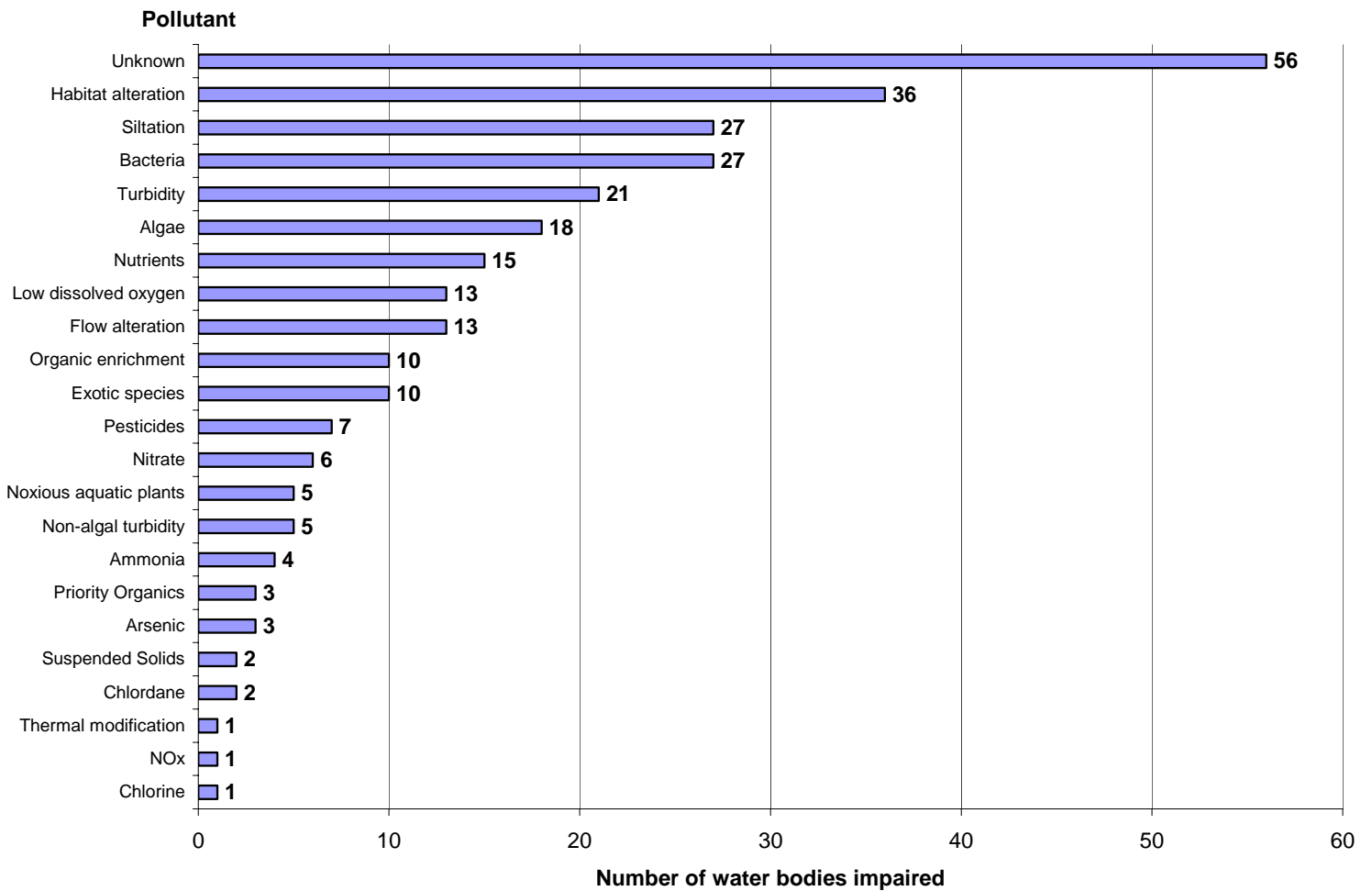
**Chart A-1:** Combined categories of causes of water impairments (2002 303(d) list).

**Source: Iowa Environmental Council**



**Chart A-2:** All the causes of water impairments (2002 303(d) list).

**Impaired Waters in Iowa; 2002 Final 303(d) List  
205 waters listed with 286 impairments**



**Source: Iowa Environmental Council**

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- Innovative Use of the CWSRF for Nonpoint Source Pollution (Linked Deposit Pass Through Loans)
- Funding Nonpoint Source Activities with the Clean Water State Revolving Fund
- Cleaning Up Polluted Runoff with the Clean Water State Revolving Fund
- Funding Agricultural Best Management Practices with the Clean Water State Revolving Fund
- Protecting Wetlands with the Clean Water State Revolving Fund
- Ohio CWSRF Provides Loans for Development Best Management Practices
- Ohio CWSRF Provides Loans for Riparian Zone Conservation
- Ohio's Restoration Sponsor Program Integrates Point Source & Nonpoint Source Projects
- CWSRF Funded Wetlands Projects
- Financing America's Clean Water Since 1987. A Report of Progress and Innovation. 2001
- Integrated Planning and Priority Setting in the Clean Water State Revolving Fund Program, 2001
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Personal Interview with Duane Sand, from Iowa Natural Heritage Foundation (INHF). Friday, July 30, 2004.

**Figure 5:** Project Distribution of Total SRF Committed, Iowa (July 1, 1987 through June 30, 2003)

	<b>Wastewater Treatment</b>	<b>Nonpoint source</b>	<b>TOTAL</b>
Amount	\$360,171,000	\$449,027	\$360,620,027
Percent	99.88	0.12	100.00

**Figure 6:** Project Distribution of Total SRF Committed, U.S. (July 1, 1987 through June 30, 2003)

	<b>Wastewater Treatment</b>	<b>Nonpoint source</b>	<b>Estuaries</b>	<b>TOTAL</b>
Amount	\$40,926,940,279	\$1,730,167,500	\$26,217,493	\$43,460,541,430
Percent	94.17	3.98	0.06	100.00

**Figure 7:** Weighted Average Interest Rate for Clean Water SRF Assistance (Percent)

	<b>Market Rate</b>	<b>Iowa IR</b>	<b>National Avg SRF</b>
1990	7.2	6.7	4.1
1991	7.2	4.9	3.6
1992	6.7	4.7	3.8
1993	6.0	4.5	3.2
1994	5.6	4.3	2.9
1995	6.3	4.0	3.1
1996	5.8	4.2	3.0
1997	5.7	4.4	2.9
1998	5.2	4.3	2.6
1999	5.1	4.2	2.6
2000	5.8	4.3	2.6
2001	5.3	4.3	2.4
2002	5.1	4.1	2.5
2003	4.8	4.0	2.2

**Figure 8:** Composition of CWSRF Funds (cumulative), Iowa (July 1, 1987 through June 30, 2003)

	Capitalization Grants	State Contribution	Net Leveraged Bonds	Net Loan Principal Repayments	Net Interest Earnings
1988	\$0	\$0	\$0	\$0	\$0
1989	\$12.77	\$2.55	\$12.25	\$0.00	\$0.37
1990	\$25.97	\$5.19	\$22.39	\$0.015	\$1.10
1991	\$25.97	\$5.19	\$17.80	\$0.35	\$1.16
1992	\$78.19	\$10.51	\$29.93	\$1.12	\$0.63
1993	\$78.19	\$15.64	\$40.90	\$2.63	\$1.16
1994	\$106.10	\$21.21	\$48.95	\$2.27	\$2.87
1995	\$138.87	\$24.44	\$41.90	\$1.75	\$4.91
1996	\$148.62	\$27.77	\$46.88	\$3.05	\$9.64
1997	\$166.17	\$33.23	\$57.40	\$4.82	\$14.34
1998	\$174.59	\$34.92	\$52.62	\$7.50	\$19.81
1999	\$192.97	\$38.59	\$60.10	\$15.99	\$26.32
2000	\$211.20	\$38.59	\$57.97	\$18.39	\$32.96
2001	\$247.37	\$42.24	\$52.94	\$22.77	\$40.33
2002	\$247.37	\$49.47	\$133.61	\$18.76	\$38.71
2003	\$248.87	\$53.12	\$138.22	\$32.17	\$39.64

**Figure 9:** Utilization of the Clean Water SRF, Iowa. (July 1, 1987 through June 30, 2003).

	Cumulative SRF Available Funds	Cummulative Committed Projects	Cumulative SRF Assisted Projects
1988	\$0	\$0	\$0
1989	\$27,400,000	\$0	\$0
1990	\$53,600,000	\$14,184,000	\$2,771,418
1991	\$49,400,000	\$26,236,000	\$8,787,830
1992	\$117,200,000	\$42,587,000	\$24,575,656
1993	\$135,300,000	\$70,718,000	\$41,300,397
1994	\$177,000,000	\$90,246,000	\$64,210,495
1995	\$206,200,000	\$139,823,000	\$92,064,414
1996	\$229,900,000	\$165,661,000	\$118,031,534
1997	\$269,200,000	\$198,095,000	\$142,074,204
1998	\$282,300,000	\$215,320,000	\$173,028,403
1999	\$326,100,000	\$230,277,000	\$193,721,286
2000	\$350,500,000	\$269,443,000	\$225,314,718
2001	\$395,600,000	\$286,008,000	\$256,063,384
2002	\$477,900,000	\$316,606,000	\$283,693,240
2003	\$485,100,000	\$360,620,027	\$314,450,561

**Figure 10:** Utilization of the Clean Water SRF as a Percent of Funds Available (July 1, 1987 through June 30, 2003)

	Cumulative Project Committed	Cumulative Projects Disbursed
1988	0.0	0.0
1989	0.0	0.0
1990	26.5	5.2
1991	53.1	17.8
1992	36.3	21.0
1993	52.3	30.5
1994	51.0	36.3
1995	67.8	44.6
1996	72.1	51.3
1997	73.6	52.8
1998	76.3	61.3
1999	70.6	59.4
2000	76.9	64.3
2001	72.3	64.7
2002	66.2	59.4
2003	74.3	64.8

**Figure 11:** Cumulative Retained Earnings, Iowa. (July 1, 1987 through June 30, 2003)

	Cumulative Retained
1988	0
1989	\$385,222
1990	\$1,093,522
1991	\$1,158,686
1992	\$629,808
1993	\$1,156,835
1994	\$2,868,725
1995	\$4,911,909
1996	\$9,640,376
1997	\$14,344,420
1998	\$19,805,838
1999	\$26,318,237
2000	\$32,961,195
2001	\$40,325,939
2002	\$38,706,258
2003	\$39,641,048

**Figure 12:** CWSRF Assistance Agreement and Dollar amount of Assistance by Community Size. (July 1, 1987 through June 30, 2003)

	<b>&lt; 3,500</b>	<b>3,500-9,999</b>	<b>10,000-99,999</b>	<b>&gt;100,000</b>
1990-1994	14%	20%	40%	26%
1995-1999	21%	45%	15%	19%
2000-2003	41%	31%	29%	-2%