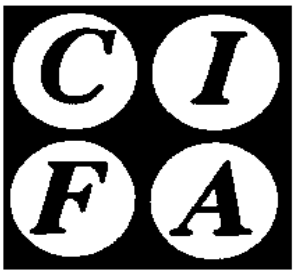
Adapting The SRF For New Financing

Prepared by



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ABOUT THE AUTHOR

James N. Smith, now mainly retired, has had a long career in Washington, D.C. involved in governmental affairs and public policy, much of it in the areas of conservation, environment and infrastructure financing. The former Executive Director of CIFA from 1990 to 2000, Smith also served as a Legislative Assistant to a United States Senator, staff to a Cabinet Officer, Executive Director of a Presidential Advisory Commission, Deputy Director of the National Commission on Water Quality, Sr. Associate of the Conservation Foundation , a Fellow of the Aspen Institute and consultant to philanthropy, business industry, and government. He now lives in Bozeman, Montana.

FOREWARD

In recent years there has been an increased focus on strategies to reduce non-point source water pollution as an important component of realizing the goals of the Clean Water Act. In both Congressional consideration of legislation to reauthorize the State Revolving Funds and the annual funding of the Clean Water State Revolving Fund through the appropriations process, the policy interest in non-point source approaches is evident.

The CWSRF, as the core program for funding efforts to reduce water pollution, will be experiencing more interest in and demand for loans addressing non-point source projects. This type of financing presents some significant challenges.

This Monograph explores those challenges and points to a promising approach of using a conduit lending arrangement, via a municipality, to provide loans to nontraditional borrowers. It represents an important contribution to the underlying policy discussion supporting the continued development of the SRF model.

Rick Farrell

Executive Director, CIFA

ADAPTING THE SRF FOR NEW FINANCINGS

Prepared For CIFA

by

James N. Smith

INTRODUCTION

While many states provide loans to address control of non-point source water pollution, some inherent limitations on the flexibility of lending to nonpublic entities, which constitute the vast majority of non-point polluters, present barriers to effectively reaching many of these sources with low-cost SRF loans. This paper explores one possibility of reaching these potential borrowers through a conduit lending arrangement via a municipality. Under this arrangement, the state would provide a SRF loan to a publicly owned treatment system (hereafter referred to as the municipality) which in turn would provide the proceeds of the loan to land owners in the watershed to implement non-point source controls aimed at reducing nutrient loading into the water body. As the borrower, the municipality would bear responsibility for loan origination and repayment, even though the proceeds of the loan would be dedicated to implementation of best management practices (BMPs) to control nutrient loadings from privately owned lands. Such loan funds could be made available by the municipal borrower through sub-loan arrangements, preferably at attractive rates, including zero interest, or in certain cases, as outright grants. It is also conceivably that where advisable, the repayment period for

these sub-loans could be extended beyond the statutorily limited 20 years, so long as the originating loan was paid back to the SRF within the mandatory period.

The inducement for a municipality to enter into such a conduit lending arrangement with the non-point polluter would be economics, pure and simple. In areas where municipalities discharge into waters identified as "impaired" or potentially "impaired", a municipal treatment system can face enormous costs for the addition of advanced waste treatment to remove or limit nutrient loadings. In certain circumstances, the off-set of nutrient load reduction from non-point sources could be sufficient to restore or maintain the quality of the water body, thus alleviating the municipality of the additional treatment costs as well as the continuing associated operation and maintenance costs of the additional treatment facility.

While not regulated under the control strategy of the Clean Water Act and its **National Pollutant Discharge Elimination System (NPDS**), non-point sources are acknowledged to be a major source of quality impairment in many of the nation's waters. EPA estimates that even with the application of controls to point source discharges, approximately 40% of the rivers, 45% of the streams and 50% of the lakes still do not support designated water quality standards. The accepted explanation for this is the contribution of uncontrolled surface and subsurface run off from non-point sources. Since these non-point sources are not subject to permits under the NPDES system, the only regulatory tool available to the federal or state enforcer is that of imposing further controls on point sources discharging into the impaired waters; a process that can be especially costly and onerous for the municipal discharger. Because the pollutant critical to achieving quality waters in many of these cases, is nutrient loading, the trade-off between point and non-point dischargers can make economic and environmental sense. The SRF could potentially be an available and economic source of financing. Originally this idea was advanced in an Advisory to the EPA Administrator from the **Environmental Financial Advisory Board**.(April 30, 2002) with a recommendation that EPA support the initiation of one or two demonstration projects to test the feasibility of a SRF financed point / non-point source trade.

Simple in concept, the actual application of this type of SRF lending to facilitate a trade-off between point and non-point sources, can be complicated by a number of factors including state and local limitations on providing public assistance to private parties, constraints on some local governments from extending financial assistance outside their jurisdictions and the vagaries of the Clean Water regulatory process with its allocation of **Total Maximum Daily Loads (TMDLs**) to the "quality limited waters". Another complicating factor is the uncertainty associated with the indirect environmental effects of the application of BMPs in specific drainages. Even so, the idea of accomplishing such trades in certain water bodies where additional permit limitations on municipal discharges appear imminent, is attracting interest both academically and practically. A growing interest in the potential for banking and trading water pollution control "credits" similar to the ongoing trade in air quality credits, has encouraged EPA to issue a **Water Quality Trading Policy** (January 13, 2003), and fostered interest in the application of trading point and non-point control credits in a number of watersheds. Although not a pristine example of the academic prototype for credit trading, the concept advanced here—that of facilitating a point/non-point source trade with an SRF loan, provides an example of the practical application of a bilateral trading arrangement between a point and non point source, which might stimulate some interest on the part of the state lender and the municipal discharger.

BACKGROUND

EPA has identified run-off from exurban and rural lands as a major uncontrolled source of pollution to the nation's waters. These so called "non-point" sources of water pollution are not regulated or controlled under the strategy of the Federal Clean Water Act enacted in l972, which concentrates exclusively on point sources dischargers.

Subsequent amendments to the Act in ensuing years did nothing to alter this basic control strategy. Consequently, the effects of increasing urban and suburban growth and development, and intensified agricultural practices in some watersheds, are making non-point sources a major contributor to water pollution; in some cases obviating the progress made through application of the Clean Water Act's point source control strategy. This is especially relevant in what are identified as "quality limited" or "impaired" waters where the application of first round point source controls are failing to achieve or maintain an ambient level of quality in the impacted area of discharge. Numerous waters, on a continuous basis or during season periods, fall into this category of non-achievement.

The Clean Water Act anticipated this eventuality and mandated an increasingly rigorous control of permitted point source discharges in order to achieve or maintain water quality in such impacted waters. Under this strategy, waters determined to be in violation of designated quality standards are subjected to pollution loading allocations that calculate the amount of pollution discharged from permitted sources and develop more restrictive discharge limitations which, mathematically at least, allow the specific water body to come into compliance. These calculations are referred to as total maximum daily loadings (**TMDLs**), and have become the focus of multiple legal and administrative actions aimed either at enforcing the incremental regulatory strategy embodied in the Act, or disputing the efficacy of its application to certain waters. The law is clear, however. No surface waters in the United States are exempt from these quality achieving requirements.

For municipal dischargers, the implications of this strategy can be extremely costly, requiring the application of advanced waste treatment technologies to the municipal waste stream to further reduce the amount of nutrient loadings into the receiving water. In these circumstances, the potential for reduction in other sources of nutrient loading from agricultural operations or development in unsewered areas would seem a practical and cost-effective solution to achieving water quality in a given area.[1]

[1] This same trade-off could also be applicable to industrial point sources in a given watershed, but private sources of discharge are not eligible for direct SRF lending.

But since no-point sources are exempt from federal regulation, and likely to remain so, there is no compelling reason for them to participate in the control strategy. Costs to the farmer or land developer for implementation of BMPs aimed at controlling run-off, are relatively expensive, and while advantageous to the farmer in terms of preventing soil lose from run-off, are not necessarily high priority, especially with farms, which at best, are often economically marginal operations. (see attachment A for example of BMPs to reduce non-point source nutrient loadings)

TRADING; THE CONCEPT AND APPLICATION

With limited regulatory tools, the dilemma confronting EPA is finding inducements for voluntary application of BMPs by non-point sources, especially in areas of impaired waters. One possibility is that of developing a market for exchange of credits allowing the non-point source to receive remuneration in exchange for the application of nutrient controls on their farm lands. EPA has been actively advancing this concept of credit trading markets in water pollution and is instrumental in the creation of a number of watershed based trading operations which are striving to implement a marketing arrangement between point and non-point sources. A recent analysis of this mechanism and its potentials and limitations, identifies 37 nutrient trading programs in the United States.[2] And EPA's Region 10 has been particularly active in advancing the concept, including the development of a **Water Quality Trading Assessment Handbook**, to guide in the development of these trading arrangements.[3] In addition, the nongovernmental sector has indicated interest in the trading concept. The non-profit **World Resources Institute** is reportedly developing an electronic market place for nutrient trading focused on specific Chesapeake Bay tributaries where interested parties can go to size up the economic viability of the market place.[4]

In their pure form, these trades are conceived as market-based arrangements where credits for non-point source controls will be freely and actively traded in a specific

[2] Dennis King and Peter Kuch, Environmental Law Reporter, 33 ELR 10352, 2003
[3]EPA Handbook, 910-B-003
4 Bay Journal, "Is It Time For A Trade For the Bay?", Karl Blankenship, Vol 13, March 2003

watershed. To date, however, according to King and Kuch, few if any actual trades have been accomplished between point and non-point sources. The reason, they conclude, is not a failure of the economics of supply and demand, but rather institutional problems these trading arrangements confront.[5] Mainly, the obstacles are attributed to the difficulty in dealing with the water quality regulatory process. Anticipating such problems, the Chesapeake Bay Nutrient Trading Program developed some "Fundamental Principles of Nutrient Trading" which are included here in Attachment B.

A variation on this trading concept, that is the subject here and one that is offered here, is a bilateral trade-off in a watershed between the municipal treatment operation and non-point sources, subsidized with low-cost State Revolving Loan Fund lending. In effect, the trade would entail an explicit federal, state and municipal subsidy to the land owner. This arrangement, using the municipality as a lending conduit to reach the non-point sources with low-cost financing, does not meet the efficiency test of pure economic trading as envisioned by EPA, but might present both the municipality and the farmer with a more assured and tangible arrangement for nutrient trades. And, a bilateral trade between the municipal discharger and one or more non-point sources, might prove more reassuring to the state water control regulators. Unlike the trading arrangement where a third party, such as a watershed authority, would serve as broker to facilitate the trades in a market environment, assuring reimbursement to the farmer for the market value of their control measures, this arrangement would simply provide the land owner with low cost financing to undertake the control measures. The source of the funding, the SRF, would be provided through the municipality serving as a conduit borrower and secondary lender. Although not a pure trading arrangement, much of the materials developed by EPA for credit trading have application to this SRF financed arrangement, especially with respect to the suitability of nutrient trading arrangements (see Appendix A, B and C of the EPA Water Quality Trading Assessment Handbook).

[5] Op Cit., King and Kuch

CONDUIT LENDING

The concept of providing SRF loans through a conduit borrower is not novel. In order to reach certain borrowers, including farm operations, a number of states have pioneered in lending arrangements through both commercial and public entities that serve as a conduit to deliver the low-cost loan funds to the ultimate borrower. These arrangements, several of which are detailed in a **Council of Infrastructure Financing** (**CIFA) Monograph**, "Credit Considerations for Reaching Nonpoint Source SRF Borrowers.", demonstrate the ingenuity and resourcefulness that are often applied in this lending process. These lending arrangements fall roughly into three categories; (1) partnering with a commercial lender, (2) enlisting another public or quasi-public agency to act as an intermediary in the transaction, or (3) involving a cooperative or other not-for –profit producer related enterprise as the conduit. Mainly, these are lending arrangements that circumvent the strictures of state law or policy toward providing direct financial assistance to private parties.[6]

So far, none of these conduit arrangements have involved a municipality as the initiating borrower, but the potential would seem to exist, especially in areas where trades in nutrient loadings could be economically attractive to the municipality. The purpose here is to explore how such an arrangement might work and what advantages and limitations it might hold.

As explained earlier, the municipality would be the originating SRF borrower bearing the responsibility of both loan origination and repayment. Structuring such an arrangement, at least initially, would require the active participation of the state loan program as well as the cooperation of the state water regulatory arm. The imminent threat of the regulatory application of TMDLs would be the likely catalyst for initiating a bi-lateral lending arrangement between the municipality and the non-point sources in the

[6] It should be noted that the Clean Water Act also restricts SRF lending to private parties, but permits lending to control problems attributable to non-point sources so long as they are identified and included in the state's non-point source management plan authorized under Sec. 319 of the Act or the National Estuary Program's Comprehensive Conservation and Management Plans referenced under Sec. 320 of the statute.

watershed. As a recent article on potential trading in the Chesapeake Bay area explains, "Trading is not a substitute for regulations. In fact, it can only be successful if there are strict regulatory programs that force pollution reduction: without these, there is no incentive to trade."[7]

The municipality would provide the proceeds of the SRF loan to the farmer or other non-point source contributor to undertake BMPs aimed at reducing nutrient loadings. This arrangement between the originating borrower and the non point source, could take the form of low interest loans, including zero interest, or depending on how anxious the municipality was to accomplish nutrient reductions, could offer an extended repayment period, or even take the form of a partial or total grant on behalf of the municipality. The only prevailing requirement is that the loan be repaid by the original borrower, in this case the municipality, over the statutory 20 year repayment period.

THE ROLE OF THE STATE

For the SRF interested in advancing non-point source control, this type of conduit arrangement via a municipal borrower, is a win, win situation. Not only does the state gain improved water quality through reduced nutrient loadings, but the state loan fund is sheltered from the uncertain and sometimes fairly shaky credit worthiness of the non-point source borrower. Unlike traditional SRF loans to municipalities where user charges and tax revenues can be pledged as a reasonably assured source of debt repayment, loans to farmers, ranchers, homeowners, developers and nonprofit operations, can be highly speculative. Absent the traditional security arrangement available to local government borrowers, the lender must apply a different set of credit considerations comparable to those used in commercial lending where sources of loan repayment, security and collateral take on new significance. In these cases, the applicant's financial history, current circumstances such as income, debt and liabilities, as well as future economic prospects, become critical considerations. Under a municipal conduit borrowing

[7] Bay Journal, "Is it Time For A Trade For The Bay?", Karl Blankenship, Vol 13, March 2003

arrangement, the SRF is sheltered from these credit concerns since the responsibility for repayment of the originating loan rests with the municipality.
It is noteworthy, that with more than $ 43.5 billion in outstanding SRF Clean Water loans, there has yet to be a single default, an unusual circumstance for any major lending operation.

Equally attractive, from the perspective of the SRF lender, is the potential to circumvent state legal provisions that might otherwise constrain their ability to lend to private parties. Many states are limited by laws or constitutional provisions from providing direct financial assistance to private parties. Using the municipality as the conduit in the lending arrangement effectively circumvents such restrictions. But most important, the state would be making progress in restoring or maintaining the environmental quality of certain of its impaired or threatened waters.

Initially, at least, the state loan program would need to devote some staff resources to assisting the municipality in structuring the lending arrangement and performing the credit analysis, areas where the city may lack experience. It would also be incumbent on the SRF to make the loan terms highly attractive to encourage municipal participation in such an arrangement. While the SRF needs to recoup some costs from the lending in order to advance the loan program toward its statutory goal of achieving "perpetuity", the impact on the financial stability of the SRF from a low or no interest loan passed through to the non-point source borrower, would be inmaterial. Compared to the capital costs of most municipal treatment works, the application of BMPs is relatively inexpensive and should not impose an excessive drain on the loan funds. Also, the fact that the risk associated with traditional SRF loans has, so far, been negligible, might encourage SRFs to be more venturesome in dedicating a small portion of their loan fund to these purposes in order help achieve improvement in impaired waters.

To facilitate this borrowing arrangement, the SRF might consider the establishment of an account upon which the municipality could draw as exchanges between the city and the non point sources were worked out. This latter arrangement

would have the advantage of providing the municipality with assurance of a credit reserve, while relieving it of the need to gain SRF approval of each sub-lending arrangement. Title 603 (d) (5) of the Clean Water Act also authorizes an SRF to provide loan guarantees for similar revolving funds established by municipal or inter-municipal agencies to finance eligible projects. Some have suggested that this might be an attractive arrangement for facilitating lending to non-point sources. However, this loan guarantee option offered by the statute has never been exercised, suggesting that the slight subsidy offered by the guarantee of loan repayment is not sufficient to attract the borrower, especially when compared to the deeper subsidy of reduced interest rates offered by all state loan programs.

In affecting a point/non-point source trade, the state regulatory agency would need to be closely involved in evaluating the proposed non-point source control measures and their potential effectiveness on the quality of the receiving waters. To enter into such a conduit lending arrangement, the municipality would want state assurances that the proposed trade-off had official approval. Without the cooperation and approval of the state water quality regulator, a trade-off between the municipality and the non-point sources would be futile. In some cases, this critical component may be difficult to achieve.

Application of the TMDL process has been fraught with controversy, and legal disputes have delayed and frustrated its implementation in many watersheds. Without the load allocation and accompanying NPDS permit requirements for further limiting point source discharges, there is no regulatory imperative driving a trading arrangement. As explained in EPA's recent handbook on Water Quality Trading "Total Maximum Daily Loads (TMDLs) are the leading market drivers for WQT (water quality trading) markets today because they potentially create the "need" to alter behavior by reducing pollutant loadings discharged to waterways."[8]

[8] Op Cit, p .

Where loading allocations do exist, together with increased permit limitations, the regulator will need to participate in the development of a so called "pollutant budget" allocated across point and non-point sources within the watershed to see what trade-offs can effectively be accomplished. Most trades contemplate a reduction in nutrient (e.g., total phosphorus and total nitrogen) and sediment loadings. Thus farm and land management practices become the critical component in devising a ratio of point and non-point source reductions for nutrient loads. Such a ratio for nutrient trading might take the form of 2:1 as in 2 pounds of reduction from a non-point source equals one pound of nutrient reduction from a permitted point source.[9] The accuracy and acceptability of the ratio, or what is referred to as its "equivalency" will depend on a number of factors characteristic of the watershed or river basin. These include the location and fate and transport of the pollutant in the actual water system as well as the unique conditions of the watershed. This can be difficult to determine with any reasonable degree of accuracy; a job made more difficult by the paucity of monitoring information on non-point source discharges in most aquatic systems. Again, the EPA Handbook on Water Quality Trading explains, "… a pound of phosphorus discharged into a river can 'disappear' as it travels down a river through uptake by aquatic plants, settling out, and/or water diversion for agricultural or other uses," thus diminishing the value of a credit as it moves downstream.[10] Other factors such as hydrology, soil type, vegetation, weather patterns, etc., also influence the equivalency ratio. (See box below).

[9] King and Kuch report that accepted ratios are more in the area of 3:1 or 4:1`
[10] Op Cit, p .

How Ratios Are Used to Establish Environmental Equivalence

Most trading systems use equivalence ratios, or similar mechanisms, to adjust for the complex fate and transport characteristics of pollutants and variable watershed conditions. In these systems, each source or trade transaction is assigned a ratio to account for the effects of inputs, withdrawals, and other effects on the pollutant between the seller and buyer's discharge points, and any other monitoring points, to assure the equivalent environmental impact from pollutants present in the water column. Ratios allow trading partners to adjust the amount of reductions to assure trades create environmentally equivalent outcomes at the point(s) of environmental concern. Ratios are often based on each source's location along the river, tributary, or agricultural drain in relation to other market participants and/or designated instream compliance points. They can also be based on other site location factors that reflect the potential for further diversion and reuse of water below the point of discharge. Other site location factors for nonpoint sources include soil type and permeability, slope, vegetation, amount of rainfall, etc. Some demonstration programs use separate ratios to account for river location and other site location factors. Others use a composite ratio that accounts for all factors.

The example of phosphorus helps illustrate why equivalence ratios are needed. A pound of phosphorus discharged upstream may not arrive as a pound of phosphorus at a given point downstream. Some may be lost as the stream is diverted for agricultural use or for other water supply needs. Phosphorus can also drop out of the water and be deposited as sediment, transmitted to groundwater through infiltration, or taken up by plants along the way.

The ratio reflects the best estimate of the effect of reduction that will be realized at the buyer's discharge point, or other compliance points. For example, a 3:1 ratio indicates that for every three pounds of phosphorus released by a discharger, one pound will reach and have an environmental effect on water quality at the critical monitoring point. River location ratios are often calculated using modeling. Often, modeling (such as mass balance calculation) has already been used for TMDL development.

CONSIDERATIONS FOR THE MUNICIPAL BORROWER

Inducement for the municipality to become the conduit borrower and subsequent lender is the potential for cost savings, both in major capital outlays, and subsequent increased costs for operating and maintaining advanced treatment systems. Borrowing from the SRF does not directly commit or encumber municipal financial resources. Also,

using the SRF funds for non-point controls relieves the municipality from going to the capital debt market (i.e. borrowing with revenue secured bonds), which entail certain transaction costs including those for financial advisor, bond counsel, rating agency and underwriter, as well as some credit exposure for the borrower which would pledge anticipated utility revenues as the main source of bond repayment. While the same source of user fee generated revenue would securitize the SRF loan, the implications on overall municipal credit would not be as exacting. The amount of increased bonded indebtedness for large capital outlays can especially be an issue in municipalities where the utility is not legally separated from the financial operations of the city, as in an independent utility authority. Credit consideration for new bonded indebtedness can affect the entire financial structure of the city budget and its other needs for infrastructure investment. Also, as mentioned earlier, the capital costs of even a series of non-point source remedial improvements will be substantially less than the capital requirements for construction of an advanced waste treatment system.

Potentially, an additional benefit for the municipality in entering into a trading arrangement with the non-point source in the watershed is the initiation of a working arrangement between the city and the surrounding farm community that could serve to facilitate future land conservation and water quality improvement practices. This, of course, is conjectural and would depend on the success of the initial trading arrangement, but does not seem an unreasonable expectation. Well managed farm lands contribute to the surrounding amenities of the community and maintain open-space which many urbanizing communities are actively pursuing in adjacent undeveloped areas.

Disadvantages, from the perspective of the municipality, would be the cost of originating and repaying the SRF loan, identifying the contributing no-point sources and negotiating the sub-lending arrangements with the land owners as well as servicing the loans. The amount of subsidy the city would be willing to pass through to the ultimate borrower would be a critical consideration. Under present law, the Clean Water SRF can make zero-interest loans to certain borrowers, but obviously cannot expose a large percentage of their funds to non earning loans. At present, the weighted average interest

on all SRF loans is around 2.2 percent, but some state legislatures have set them at uniformly higher rates with no provision for deeper subsidy. In any event, in negotiating loans with the land owners, the municipality would not be obliged to maintain the same rate at which they borrowed from the SRF and could, in fact, offer the funds as a total grant to the land owner in return for conservation improvements. The only stipulation is that the original SRF loan be repaid to the fund within a period of twenty years.

In considering what type of subsidy they might be prepared to offer, if any, the municipality would need to carefully assess the costs and benefits of the transaction including the risk that some loans might not be repaid. As a prudent measure, the municipal lender might want to calculate a certain percentage of failure from the non-point source borrowers, an acceptable practice in commercial lending. In making calculations on a viable lending arrangement, the municipality would also need to factor in the amount of subsidy that a land owner can now obtain through programs administered by the U.S. Department of Agricultures' Natural Resources Conservation Service, where changes in the 2002 Farm Bill created an Environmental Quality Incentive Program that offers farmers a 50 – 75 percent match for the costs of undertaking environmental conservation measures. So generous, in fact, are these federal subsidies that some believe they will discourage implementation of the broader credit trading program since the farmer cannot market credits generated by reductions achieved through direct federal subsidy. One possibility that might be explored is that of combining an SRF financed loan with the Natural Resources Conservation Service grant. Since the SRF funds would be provided via the municipality, they would not encounter the same restrictions on private use of the funds, and in any event, SRF funds are often combined with other federal financed sources of funding to provide attractive packages of financing for rural water quality improvement projects.

If the SRF loan subsidy is compared to rates and conditions of obtaining financing from a commercial source, it becomes quite attractive. Conditions of a commercial bank loan to a farmer for land conservation improvements extend in the neighborhood of 7 to 10 years at rates of prime plus 1 and ½ percent, or market rates

which are currently 7 and ½ percent and expected to climb.. Moreover, except for fixed rate home mortgage loans, most banks will not lock in loan rates beyond 5 years and, in any event, will require a lean on the property for loan security as well as some evidence that the land improvements will result in increased income to the farming operation. Altogether, when compared to the financing conditions from a SRF pass-through, commercial sources are not attractive options for the borrower.

In becoming the conduit lender, the municipality will also have a responsibility to help identify the non-point source contributors, arrange the lending and probably initiate some continued oversight with regard to achievement and compliance from the land conservation measures. These so called "transaction costs" will probably involve staff time, travel expenses and retention of special expertise such as legal advice. This would be a new role for the municipality, and one for which they may presently be ill equipped. An SRF interested in facilitating such a trade-off, could initially provide the city with assistance in structuring the sub-loans, evaluating the credit risk of the non-point source borrower and setting up the loan repayment system. Presumably, the SRF could also perform a strategic role in involving the state regulatory agency (in many cases a branch or division of the same state agency) in evaluating and approving the proposed trade and its anticipated impact on TMDL load reduction. .

SUMMARY

In summary, the Clean Water SRFs have proven to be extremely versatile in reaching borrowers to provide financing for public wastewater treatment systems. The history of the program and the dimension of its multibillion dollar loan portfolio, attest to this. In addition, the management of the SRF programs in many states has been inventive and adept at designing loan programs to reach non-traditional borrowers, including non-point sources, demonstrating that the program is amenable to great flexibility. An example is the use of conduit lending arrangements to reach borrowers that otherwise

would not be able to take advantage of the SRF's low cost financing to make water quality improvements. An extension of this arrangement, with the municipality as the conduit borrower to reach non-point sources, would seem to be a workable solution to advancing non-point source controls, especially in areas of impaired water quality where the trade-off in nutrient loadings offered economies to the municipal point source discharger.

Since there is no actual experience with this type of conduit lending via a municipality, its workability is speculative and needs the test of actual experience to see how effectively it can be applied. Nevertheless, the coincidence of a set of conditions, not uncommon to the area of water pollution control, may combine to make such a lending arrangement attractive and, hopefully, workable. First, is an economically motivated community, faced with the prospect of new and increased NPDES permit limitations to reduce nutrient loadings. Second, there must be identifiable and reasonably quantifiable sources of non-point discharge within the water shed where a bilateral trade on nutrient loading could be transacted. Third, since non-point sources are under no regulatory strictures to control their nutrient loadings, there must be sufficient economic incentive to encourage their participation.

Substantial subsidy in the lending arrangement between the city and the farmer might help facilitate the trade-off. Unlike the broader market trading concept being advanced by EPA, where non-point sources would have the opportunity to sell their margin of nutrient control to interested point source buyers, this envisions a direct trade between the municipality and the non-point source where the municipality would extend the SRF loan funds to the farmer to undertake nutrient control measures. Obviously, the terms of the transaction need to be sufficiently attractive to induce the farmer or other non-point source to undertake the necessary control measures. Finally, for this arrangement to work, the state will need to be proactive, especially in the area of water quality regulation where state approval is requisite for any nutrient trades. Further, in order to facilitate the lending arrangement, the SRF may need to be proactive, as well, bringing the two transacting parties together, at least until an actual prototype is developed, and assisting the municipality in structuring the sub-lending arrangements. But, as the coincidence of these above-listed circumstances become increasingly

common, states and municipalities may find compelling reasons to cooperate in trying this type of nutrient trade.

BMPs included in Ohio's Load Reduction Spreadsheet

Worksheet	Possible Practices
Gully Stabilization	Grade stabilization structure Grassed waterway Critical area planting in areas with gullies Water and sediment control basins
Bank Stabilization	Animal trails and walkways Stream channel stabilization Streambank protection
Agricultural Fields	Prescribed grazing Residue management, mulch till Conservation crop rotation Conservation cover Cover and green manure Critical area planting Stripcropping, contour Stripcropping, field Filter strips
Feedlots	Animal waste systems
Septic Systems	Septic system pumping or rehabilitation
Stream Restoration	Restoration of natural stream function
Urban Runoff	Vegetated filter strips Grass swales Infiltration devises Extended wet detention Wetland detention Dry detention Settling basin Sand filters WQ inlets Weekly street sweeping Infiltration basin Infiltration trench Porous pavement Concrete grid pavement Sand filter/infiltration basin WQ inlet w/sand filter Oil/grit separator Wet pond

FUNDAMENTAL PRINCIPLES OF NUTRIENT TRADING

From 1999 through early 2001, a team representing diverse interests throughout the Bay watershed met to set broad guidelines for the development of nutrient trading programs in the region. As part of that effort, they adopted a set of "fundamental principles" to serve as a foundation for its guidelines and for all nutrient trading in the watershed. The principles are:

1. Trades must not produce water quality effects locally, downstream or Baywide that:
   - violate water quality standards or criteria;
   - do not protect designated uses; or
   - adversely impact living resources and habitat.

2. Trading will be allowed only within each major Bay tributary (i.e., Susquehanna, Potomac, Rappahannock, York, James, Patuxent, Maryland Western Shore, Virginia Western Shore, Maryland Eastern Shore, Virginia Eastern Shore) and among all signatory states and non-signatory states if they adopt the appropriate allowance and are consistent with the Chesapeake Bay Program's nutrient trading guidelines and state tributary strategies.

3. The nutrient trading program must be consistent with federal, state, and local laws and regulations, be flexible enough to adapt to future changes in these laws and regulations and enable the participation of all potential sources as determined by the marketplace.

4. The nutrient trading program must be consistent with the Chesapeake Bay Program's nutrient reduction goals and state tributary strategies.

5. Each trade must result in a net reduction in nutrient loadings or contribute to the maintenance of a tributary nutrient cap. The net reduction in loadings or the maintenance of a cap shall be calculated abased upon the estimated tributary loadings at a point in time determined by the state.

6. Sources should implement nutrient reduction actions to achieve the 40 percent reduction goal, as well as the goals adopted for the tributaries south of the Potomac River, prior to pursuing a nutrient trading option.

7. Traders must be in substantial compliance with all local, state and federal environmental laws, regulations and programs.

8. The involvement of a diverse group of stakeholders must be sought in the design and implementation of state trading programs and related public education initiatives.

The entire document, "Chesapeake Bay Program Nutrient Trading Fundamental Principles and Guidelines," is available on the Bay Program's website: www.chesapeakebay.net

ABOUT CIFA

The Council of Infrastructure Financing Authorities (CIFA) is a national, non-profit organization of State and local authorities providing financial assistance to meet infrastructure needs. CIFA seeks to: (1) encourage the exchange of information on infrastructure financing among the states and between the states, the national government and the private sector; (2) conduct research on issues, trends and events of interest to its members; and (3) advocate sound public policies governing infrastructure financing. The CIFA monograph series is intended to provide a national platform for the presentation of new ideas and analyses of issues affecting the Federal, State and local infrastructure programs.

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