

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
ENVIRONMENTAL FINANCIAL ADVISORY BOARD**

MAR 16 2005

Honorable Stephen L. Johnson  
Acting Administrator  
United States Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Mr. Johnson:

The Environmental Financial Advisory Board (EFAB) is pleased to submit the enclosed report, "Application of Innovative Finance Techniques in the Transportation Infrastructure & Financial Innovation Act of 1998 to Environmental Finance Issues," for the Agency's consideration and use.

EFAB has an established history of providing advice to EPA on innovative ways to pay for environmental protection. The Board has recently examined the Transportation Infrastructure & Financial Innovation Act of 1998 (TIFIA) and determined that innovative financing techniques authorized therein could be of great value to a number of areas of vital interest to EPA, including: brownfields redevelopment and affordable water and wastewater infrastructure development in rural areas.

TIFIA contains a provision commonly referred to as "backloading" in which debt repayment is scheduled towards the back-end of a project. This approach is very useful for projects which require substantial up-front capital, yet the revenues to service the debt do not materialize for some time. TIFIA has been used successfully in toll road development where the roadway is built, but traffic and toll revenues grow slowly over time. With the Federal government providing security as a "patient investor", debt repayment is scheduled on the back-end of the project as revenues are realized.

EFAB believes that backloading techniques could be successfully used to support brownfields redevelopment and to address affordability needs in rural infrastructure development. In both cases, financing is often stymied by the fact that revenues are not immediately forthcoming. Given a reasonable assurance that revenues will grow over time to properly service the project debt, a backloaded repayment schedule could help projects in these areas to proceed. Of course, there may be substantial risk in this approach; but with the security provided by a "patient investor," and/or a credit worthy guaranty, the risk could be mitigated to enable the project to proceed.

In the case of brownfields redevelopment, the remediation/rehabilitation of a site must often occur prior to attracting a substantial user, and/or where the annual income from the substantial user is insufficient to sustain the cost of the project. Backloading could be used in conjunction with other financial techniques (such as Tax Increment Financing) to fund projects where the capital improvements must take place prior to the attraction of a major user or users, the revenues from which would, over time, sustain the financing.

In rural areas, water and wastewater projects are often deemed unaffordable because the required capital investment in new facilities can not be immediately serviced by user charges. Moreover, the hook-ups/connections to water and wastewater facilities often proceed slowly. As connections are made and the service area rate base increases, user charge revenues grow to support the debt repayment needs. Backloading could be instrumental in enabling a project to proceed; thus solving an immediate environmental need, while deferring financial issues of “affordability” of debt repayment to a later time.

We recommend that the Agency seek to obtain TIFIA-like authority as a complement to its infrastructure assistance programs. EPA should consider developing the means to deploy backload repayment schedules and to implement various guaranty mechanisms. These mechanisms could enable EPA to address immediate environmental needs while structuring the solutions to financial issues to a later stage of the project. EFAB would be happy to provide additional assistance with this innovative financing tool.

Sincerely,

/S/

\_\_\_\_\_  
Lyons Gray  
Chair

/S/

\_\_\_\_\_  
A. Stanley Meiburg  
Executive Director

Enclosure

cc: Charles E. Johnson, Chief Financial Officer  
Benjamin H. Grumbles, Assistant Administrator for Water  
Thomas P. Dunne, Acting Assistant Administrator for  
Solid Waste and Emergency Response

# **The Application of Innovative Finance Techniques in the Transportation Infrastructure & Financial Innovation Act of 1998 to Environmental Finance Issues**

## **Transportation Innovations**

The Environmental Financial Advisory Board (EFAB) has examined the provisions of the Transportation Infrastructure & Financial Innovation Act of 1998 (TIFIA) to determine if any of the innovative financial techniques authorized therein could be adapted to other statutes to help finance environmental infrastructure. The TIFIA program provides for a strong federal role to encourage private investment in transportation facilities. Among the tools used by the program are direct federal loans and loan guarantees. In effect, the Federal government under TIFIA becomes a “patient investor” that provides projects with a credit-worthy capital markets platform.

### *Backloading*

The Board has identified an exciting TIFIA innovative financing technique commonly referred to as “backloading” which could prove very useful in several important environmental financing areas. “Back loaded” financing, in the TIFIA context, recognizes the ramping-up of revenues associated with the introduction of a new service to be supported by user fees. This ramp-up often occurs with parking garages, toll roads, and transit services.

For example, an airport authority might decide to build a parking garage in circumstances where inexpensive, ample, ancillary parking already exists. The airport is projecting that, over time, the conveniences of the new garage will lure travelers away from the less costly alternatives. Thus, the garage revenues will be zero until the garage is built, and then build slowly to levels where they can carry the full debt service. When a new toll road is built, the community must become accustomed to the tolls and the new traffic patterns; thus, it may take years for the volume of traffic to build to the point where revenues are sufficient to repay monies borrowed for construction.

In each of the cases described above, project revenues ramp up over time from zero to, hopefully, levels able to support operations and service debt. However, these demand (or revenue) risks are often difficult to forecast, and private investors are often unwilling to assume the risks associated with the ramp-up or with the potential that actual revenues may be lower than projected.

### *Patient Investor*

TIFIA addresses these factors by recognizing an appropriate role for the federal government as a “patient investor.” In particular, the TIFIA program allows the federal government to be repaid after the private investors. Thus, the debt service schedule can

be skewed over time, and the TIFIA program funds can be used for those segments of the financing where the projected revenue flows are more problematic.

## **Environmental Opportunities**

In evaluating the potential applicability and utility of these transportation financing innovations to the environmental arena, the Board believes that they could serve well in several important areas: smart growth, brownfields redevelopment, and the development of water and wastewater infrastructure in rural communities.

### *Smart Growth*

In the smart growth area, backloading could be used where the rehabilitation of an older site must be accomplished prior to attracting a substantial user, or where the annual income from the substantial user alone, without ancillary users, is insufficient to sustain the cost of the project.

### *Brownfields Redevelopment and Land Revitalization*

So, too, in the case of the redevelopment of brownfields, back-end loading could be used in conjunction with other creative financial techniques such as Tax Increment Financing (TIF) to fund projects where the capital improvements must take place prior to the attraction of a major user or users, the revenues from which would over time sustain the financing.

In both the land revitalization and brownfields areas, backloading is warranted since the increase in property values (and revenues from new site uses) that may be expected to arise from site mitigation and redevelopment is not likely to occur immediately, so the capacity of a private owner or a public agency to service a debt in the early years of such a conversion would be far lower than its capacity in later years.

### Large Projects

Large scale land revitalization (of factories, mines, railroad yards, shopping malls and the like) either requires a public agency to remediate the site prior to attracting a substantial user or master developer or requires that such an investor be prepared to take on remediation activity prior to redevelopment work.

If such projects were financed or subsidized by a local government through the ever-more-frequently used TIF tool, the use of backloading would make it possible for the public sector participant to raise more capital, since debt servicing capacity would be higher after the tax increment from the revitalization was realized from the higher property values. (TIFs, by design, involve no higher tax rates, but just a capture of the higher value of property.) Those rising property values that could help service a back loaded bond are likely to occur off-site, around the major redevelopment project, and not just from the development itself.

### Small Projects

In the small scale (under one-half acre) brownfields redevelopment area, backloading and the use of TIFs could help make possible the revitalization of whole neighborhoods beset with environmental and economic problems. Since such small sites may account for more total contaminated land area than the large sites in private hands, any advance in attracting investment in this setting would be extremely valuable.

In an area with depressed property values and multiple abandoned, underutilized and/or contaminated sites, no one reclamation project is likely to significantly raise area property values. Thus, the possible use of a TIF is limited by the absence of substantial off-site impacts. Such impacts may be attainable only from a series of revitalizations of problem sites. The cash flow to finance the first site, therefore, may never be available unless all sites are done simultaneously, which is extremely unlikely. Back loaded debt financing through a TIF, however, could attract a developer to begin the series of private sector investments needed to turn around a neighborhood and provide the area-wide tax increments needed to service the debts when higher payments come due.

### *Affordable Rural Water and Wastewater Infrastructure*

In rural and developing areas, back-end loading could be used in financing water and wastewater projects where hook-up fees and user charges only begin to flow after a project is completed. Infrastructure projects in such areas are often judged unaffordable because the debt associated with the capital investment needed for new facilities cannot be immediately serviced by user charges. In fact, new hook-ups/connections to water and wastewater facilities often occur slowly. As connections are made and the service area rate base increases, user charge revenues grow to support debt repayment. Backloading could enable projects to proceed because it solves immediate environmental needs by deferring financial issues of “affordability” of debt repayment to a later time.

This approach might be especially valuable along the US-Mexican border, where the North American Development Bank (NADBank) could guaranty a bond issue with a highly skewed amortization schedule that allows for the build-out of the system and the build-up of operating revenues to sustain long-term debt service. In this case, the new water/wastewater system would enjoy the very low interest rates provided by the NADBank guaranty until such time as the system revenues could provide substantial debt service coverage.

In each of the examples above, it should be noted that, without a NADBank, or other credit-worthy guaranty, the financings could only be accomplished at speculative rates which would further compound the problem being addressed. Thus, back-end loading, coupled with such a guaranty, could prove very valuable indeed.

### **Recommendation**

We, therefore, recommend that, as the Agency reviews its core legislation and its action programs in the water, wastewater, brownfields and smart growth areas, it gives consideration to the use of financial mechanisms such as guaranties and direct loans that will accommodate back loaded financing. We further recommend that the Agency seek to obtain TIFIA-like authority as a complement to its infrastructure assistance programs. EPA should consider developing the means to deploy backload repayment schedules and to implement various guaranty mechanisms. These mechanisms could enable EPA to address immediate environmental needs while structuring the solutions to financial issues to a later stage of the project. EFAB would be happy to provide additional assistance with this innovative financing tool.

June 17, 2005

Mr. Lyons Gray  
President, Downtown Winston-Salem Partnership  
500 W. 4th Street  
Suite 101  
Winston Salem, NC 27101-2782

Dear Mr. Gray:

Thank you for your letter to Administrator Stephen L. Johnson dated March 16, 2005, in which you transmit on behalf of the Environmental Financial Advisory Board (EFAB), the white paper entitled *The Application of Innovative Finance Techniques in the Transportation Infrastructure & Financial Innovation Act of 1998 to Environmental Finance Issues*. I once again appreciate the opportunity to review and examine any input from EFAB. I found EFAB's previous report on useful life financing to be particularly helpful in a time in which we at the Environmental Protection Agency (EPA) are trying to maximize the environmental benefit of every available dollar.

The report addresses the practice of "backloading," a financing technique authorized in the Transportation Infrastructure & Financial Innovation Act of 1998 (TIFIA). While TIFIA's authorizing language does not provide any type of authorization for use of these financing techniques in EPA's financing programs, EFAB recommends that EPA seek authorization to apply "backloading" to its own programs. With EFAB's permission, and the understanding that responses from other EPA offices will be forthcoming, this response will deal only with applying "backloading" to EPA's State Revolving Fund (SRF) programs.

"Backloading" is a practice in which debt repayment is scheduled towards the back-end of a project. This is a useful technique for financing projects which require substantial capital, but will not realize revenue from the project until some years into the future. For instance, when redeveloping a brownfield site, a developer will need substantial capital for development, yet the benefits deriving from the redevelopment will not be realized until after the project has been completed, the new development has been marketed, and the space developed is occupied.

A situation in which "backloaded" wastewater loans could be used to a community's advantage is where a small community needs to build improvements in its treatment plant, but does not believe it will have the user fee capacity in the near-term to repay the loan. If the community expects to have the capacity in the future, a "backloaded" loan will provide the necessary capital to complete the project. Of course, there is a risk that the community will not have the ability to make payments on the loan when they come due.

Under the SRF programs, States have the authority to issue “backloaded” loans. The only repayment requirement in the program is that the borrower must begin repaying a loan one year after project completion. The State and the borrower, however, may negotiate the specific terms of the loan repayment schedule and may agree to schedule the bulk of the payments at the back-end of the loan. For instance, the City of Burlington was allowed to schedule a “balloon” payment on its loans from the Vermont Clean Water SRF program. It should be noted, however, that while the use of “backloaded” loans for a few small borrowers may bring benefits to those communities, heavy use of such loans will deplete the level of loan repayments being made to the SRF programs, and thereby undermine the essential purpose of an SRF program, the ability to fund needed projects indefinitely into the future.

Thank you again for providing this valuable input. The use of “backloading” in EPA’s water infrastructure financing programs is an option that will remain available to future borrowers; however, the technique should be used discriminately. I encourage you to continue examining innovative methods for addressing the nation’s infrastructure needs. If you have any questions or wish to speak further about this issue, please contact James A. Hanlon, Director, Office of Wastewater Management, at (202) 564-0748.

Sincerely,

/original signed by Benjamin H. Grumbles/

Benjamin H. Grumbles  
Assistant Administrator

June 17, 2005

Mr. A. Stanley Meiburg  
Executive Director, EFAB  
61 Forsythe Street, SW  
Atlanta, GA 30303

Dear Mr. Meiburg:

Thank you for your letter to Administrator Stephen L. Johnson dated March 16, 2005, in which you transmit on behalf of the Environmental Financial Advisory Board (EFAB), the white paper entitled *The Application of Innovative Finance Techniques in the Transportation Infrastructure & Financial Innovation Act of 1998 to Environmental Finance Issues*. I once again appreciate the opportunity to review and examine any input from EFAB. I found EFAB's previous report on useful life financing to be particularly helpful in a time in which we at the Environmental Protection Agency (EPA) are trying to maximize the environmental benefit of every available dollar.

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Thank you again for providing this valuable input. The use of “backloading” in EPA’s water infrastructure financing programs is an option that will remain available to future borrowers; however, the technique should be used discriminately. I encourage you to continue examining innovative methods for addressing the nation’s infrastructure needs. If you have any questions or wish to speak further about this issue, please contact James A. Hanlon, Director, Office of Wastewater Management, at (202) 564-0748.

Sincerely,

/original signed by Benjamin H. Grumbles/

Benjamin H. Grumbles  
Assistant Administrator



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JUN 6 2005

OFFICE OF  
SOLID WASTE AND  
EMERGENCY RESPONSE

**MEMORANDUM**

**SUBJECT:** Environmental Financial Advisory Board Report on Innovative Finance Techniques and OSWER Programs

**FROM:** Thomas P. Dunne   
Deputy Assistant Administrator

**TO:** Charles E. Johnson  
Chief Financial Officer

Thank you for sharing a copy of the Environmental Financial Advisory Board (EFAB) report, *The Application of Innovative Finance Techniques in the Transportation Infrastructure & Financial Innovation Act of 1998 to Environmental Finance Issues*. The EFAB Report presented a case for using a "backloading" approach to loan repayment to defray upfront costs associated with the cleanup of brownfields and other contaminated property.

Since 1997, EPA's Brownfields program has given grants to local governments to capitalize revolving loan funds for brownfields cleanup. The grant recipients structure the loan terms and repayment schedules with borrowers. The Brownfields program would be happy to speak with the EFAB about this existing loan program and the backloading concept.

If you or your staff would like to discuss this paper and OSWER's cleanup programs, please contact me or Linda Garczynski, Director, Office of Brownfields Cleanup and Redevelopment at 202-566-2731 or Ed Chu, Acting Director, Land Revitalization Office at 202-566-2743.

cc: Linda Garczynski, OBCR  
Ed Chu, OSWER