Innovative Finance *Primer*

FEDERAL HIGHWAY ADMINISTRATION • U.S. DEPARTMENT OF TRANSPORTATION

Message From the Federal Highway Administrator

I am pleased to present the Federal Highway Administration's *Innovative Finance Primer*, a handbook describing Federal policies and programs that can help you bridge the investment gap between available resources and transportation infrastructure needs.

Over the past several years, we have been working with our public and private partners to explore and implement an array of innovative techniques and tools for financing surface transportation improvements. Our track record of successful application of these financing approaches is demonstrated by the case studies included in this primer. By sharing comprehensive information on how and why to use the tools, we hope to build a better understanding of these non-traditional financing methods.

I believe you will find this primer to be a useful resource. Our commitment is to continue working with the transportation community, both public and private, to expand project financing opportunities to help meet the Nation's transportation investment needs.

Mary E. Peters
Federal Highway Administrator

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PREFACE

This *Innovative Finance Primer* is a resource guide to support the use of innovative finance techniques for highway projects financed with Federal funds. The intended audience includes Federal, state, and local transportation officials who seek to overcome cash flow shortages and attract new sources of capital to transportation investment.

The techniques covered in this primer range from fairly modest strategies that permit states greater flexibility in satisfying the standard matching requirements for receipt of Federal funds, to very ambitious credit enhancement strategies suitable for capital-intensive projects. Key to the effective use of innovative finance is the ability to recognize what techniques are suitable to what types of projects. An appreciation for how tools operate and what they are designed to accomplish is an important first step in this analysis, and it is this kind of understanding that the primer seeks to foster.

Following an introductory chapter, the primer is organized around four major types of techniques:

1. Grant management strategies, suitable mainly for traditional grant-funded projects and as a companion to other less traditional techniques;
2. Grant Anticipation Revenue Vehicles, or GARVEE bonds, whereby future Federal funds provide the revenue stream needed to pay debt service and other bond-related costs for debt-financed projects;
3. Credit assistance strategies, by which Federal funds can help improve the financial feasibility of debt-financed projects; and
4. Tolling options, which allow greater flexibility in the use of Federal funds for tolled facilities.

For each technique, the primer explains the nature of the innovation, discusses what kinds of projects are good candidates for use of the technique, catalogues some of the key requirements that attach to use of the technique, and offers a step-by-step overview of how the technique functions in practice. Brief case studies illustrate how techniques have been used to finance specific projects; more detailed case studies are provided in the second part of this primer.

While this primer provides a good reference point for those considering new ways to fund projects more quickly and expand investment levels, it is no substitute for direct consultation with the Federal Highway Administration (FHWA). The majority of strategies included in this document are the result of diligent efforts by project sponsors committed to finding a better way to pay for the facilities. FHWA welcomes discussion with state, local, and private project sponsors on new financing ideas, as undoubtedly those discussions will form the basis for a larger array of strategies to complement the ones discussed in the following pages.

Chapter 1
Introduction

Transportation officials at all levels of government face a significant challenge when considering ways to pay for improvements to our nation's transportation infrastructure. Traditional government funding sources are insufficient to meet the increasingly complex and diverse needs of America's transportation system. Despite record levels of investment in surface transportation infrastructure in recent years, funding is not keeping pace with demands for improvements to maintain the vitality of the nation's transportation system.

The U.S. Department of Transportation (U.S. DOT) has documented this funding gap in a 1999 report to Congress. This report, *1999 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance* indicated that highway capital spending by all levels of government would need to increase by 16 percent (in constant dollars) between 1998 and 2017 simply to maintain the physical condition of the existing system. Moreover, in order to improve the system and achieve the best economic outcomes for the nation, a 93 percent increase in spending (in constant dollars) would be needed.

Over the last decade, the Federal government has responded to the investment gap by providing new funding techniques that complement and enhance existing grant reimbursement programs. This *Innovative Finance Primer* describes those techniques and provides examples of the techniques as applied by state and local partners. The techniques described in this primer will continue to evolve, and U.S. DOT staff hope that this publication also lays the groundwork for identification of additional innovative strategies for financing surface transportation investments.

1.1 Paving the Way for Innovation

In 1994, the Federal Highway Administration (FHWA) launched a major initiative to identify barriers to highway infrastructure investment and develop strategies to overcome them. This "Test and Evaluation" program initiative, designated as TE-045, broke new ground by asking states to identify flexible approaches to blending Federal and non-Federal highway funds and leverage existing Federal resources. The states responded enthusiastically,

A Legislative History of Innovative Finance

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) introduced several new concepts designed to increase transportation investment levels by encouraging the use of user fees. For example, ISTEA:

- Created a loan program, in which states could lend Federal funds to toll projects; and
- Permitted certain toll revenue expenditures to serve as a credit against non-Federal matching requirements.

The National Highway System Designation Act of 1995 contained several innovative finance provisions that built upon the experience of ISTEA and codified tools tested under the FHWA's Innovative Finance Test and Evaluation (TE-045) program. For example, the NHS Designation Act:

- Established a State Infrastructure Bank (SIB) Pilot Program, permitting certain states to use Federal highway funds to capitalize a transportation revolving fund;
- Increased the Federal matching ratio for toll projects;
- Expanded the opportunity for states to retire the costs of debt financing with future Federal aid;
- Allowed loans of Federal aid to non-toll projects; and
- Broadened the types of funding commitments eligible to satisfy non-Federal matching requirements.

The Transportation Equity Act for the 21st Century (TEA-21):

- Enacted the Transportation Infrastructure Finance and Innovation Act (TIFIA) to provide up to $10.6 billion in credit assistance to major projects of national significance;
- Continued the SIB pilot program in a limited form, with additional capitalization opportunities available only to four states; and
- Provided additional flexibility in non-Federal matching share requirements.

What is Innovative Finance?

"Innovative Finance" for transportation is a broadly defined term that encompasses a combination of specially designed techniques that supplement traditional highway financing methods. While many of these techniques may not be new to other sectors, their application to transportation is innovative.

Historically, through the Federal-aid program, FHWA has financed highways primarily through grants that generally cover up to 80 percent of project costs. However, because this approach alone cannot meet the nation's current and future transportation investment needs, U.S. DOT's innovative finance initiatives respond to the need to supplement – rather than replace – traditional financing techniques.

The primary objectives of innovative finance are to:

- Maximize the ability of states and other project sponsors to leverage Federal capital for needed investment in the nation's transportation system;
- More effectively utilize existing funds;
- Move projects into construction more quickly than under traditional financing mechanisms; and
- Make possible major transportation investments that might not otherwise receive financing.

and the TE-045 initiative ultimately incorporated this fresh thinking into an array of innovative financing techniques. New techniques supplement traditional financing techniques and move the transportation financing process from a single strategy of Federal funding on a "grant reimbursement" basis to a diversified approach that cuts the time needed to get projects underway and extends, or leverages, the value of existing resources.

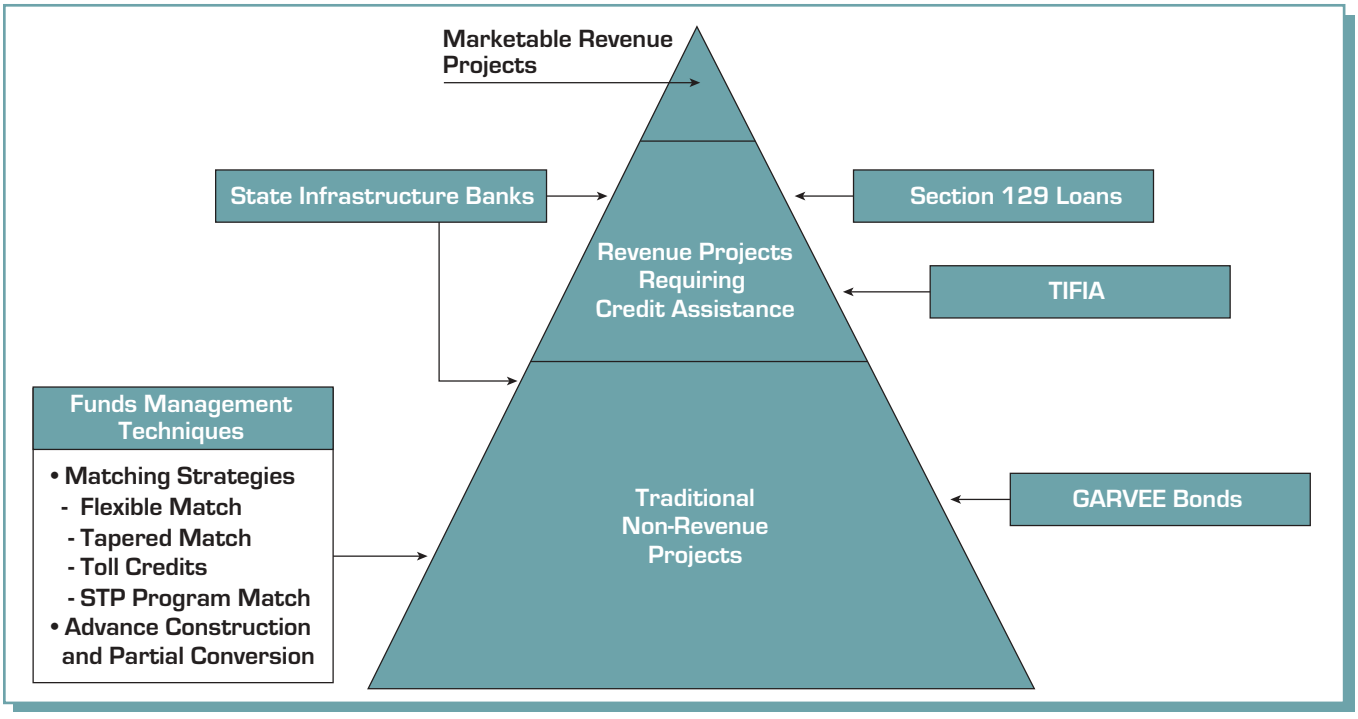
Many of the innovations proposed under the TE-045 initiative were enacted into law under the National Highway System Designation Act (NHS Act) of 1995. As a result, a number of techniques previously considered "experimental" – and therefore requiring special approvals – became common practice. The Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998, made further strides in broadening project sponsors' options for financing Federally assisted highway projects.

Most notably, the legislation established the Transportation Infrastructure Finance and Innovation Act (TIFIA) credit program, under which the Federal government can provide loans, loan guarantees, and lines of credit to public and private sponsors of major surface transportation projects.

1.2 The Right Tool for the Right Job

Since launching its innovative finance initiative in 1994, FHWA has advanced a broad range of innovative techniques that can be used in combination with traditional transportation funding programs. The resulting toolbox of innovative finance techniques and strategies has been put to use for hundreds of projects nationwide, resulting in the acceleration of critical infrastructure investments and attracting new resources to transportation investment.

Figure 1.1 – Project Finance Tools



One key to effective use of innovative finance strategies is to recognize what kinds of projects can most benefit from which kinds of tools. As states and private sector sponsors look to applying innovative finance tools, it is important to recognize the potential synergy in combining tools to advance a project. Figure 1.1 introduces the major categories of innovative financing strategies and aligns those categories with some of the key financial characteristics of candidate projects.

The base of the pyramid represents the majority of highway projects that continue to rely primarily upon grant-based funding because they do not generate revenues, but can benefit from innovative finance tools that enhance flexibility and maximize resources. Various Federal funds management techniques, such as advance construction, tapered match, and grant-supported debt service, can help to move these projects to construction more quickly. When circumstances support the advisability of debt financing (as opposed to pay-as-you-go grant funding), these projects are prime candidates for GARVEE-style debt instruments, in which future Federal highway apportionments are used to pay debt service and other debt-related costs.

The mid-section of the pyramid represents those projects that can be at least partially financed with project-related revenues, but may also require some form of public credit assistance to be financially viable. State Infrastructure Banks can offer various types of assistance in the form of low-interest loans, loan guarantees, and other credit enhancements to state, regional, and local projects. State loans of Federal grant funds, known as Section 129 loans, are another possibility. And the new TIFIA Federal credit program is designed to assist large-scale projects of regional or national significance that might otherwise be delayed or not constructed at all because of their risk, complexity, or cost.

The peak of the pyramid reflects the very small number of projects that may be able to secure private capital financing without any governmental assistance. These relatively few projects may be developed on high-volume corridors where the revenues from user fees are sufficient to cover capital and operating costs.

1.3 Organization of the Innovative Finance Primer

The techniques and strategies presented in this primer are grouped into four classifications as shown in Table 1.1. Three of these – funds management, debt financing, and credit assistance – represent the tools captured in the bottom and mid-section of the pyramid. The fourth classification – tolling – cuts across all sections of the pyramid and deals with what remains the most direct beneficiary-based revenue stream in common use today.

The following chapters discuss in detail specific innovative finance techniques associated with each classification.

The primer also describes the basic steps required to implement each technique. Note that these steps do not include all the basic Federal-aid requirements (such as following Federal-aid contracting and other procedures, placing projects on the STIP, etc.), but are focused on outlining the basic steps that must be taken in order to put each tool into practice. Virtually, all of the tools begin with the selection of an appropriate project, followed by consultation with FHWA, usually with the state division office.

Table 1.1 – Finance Techniques

Classification	Strategies
Innovative Management of Federal Funds	♦ Advance Construction ♦ Partial Conversion of Advance Construction ♦ Tapered Match ♦ Flexible Match ♦ Toll Credits
Debt Financing	♦ Grant Anticipation Revenue Vehicles (GARVEEs)
Credit Assistance	♦ Section 129 Loans ♦ State Infrastructure Banks (SIBs) ♦ Transportation Infrastructure Finance and Innovation Act (TIFIA)
Tolling	♦ General Toll Provisions ♦ Interstate Reconstruction and Rehabilitation Program ♦ Value Pricing Pilot Program

Chapter 2

Innovative Management of Federal Funds

The Federal funds management techniques described in this chapter are designed to provide states with greater flexibility in managing Federal-aid highway funds. The principal objective of these management techniques is to ease restrictions on the timing of obligations and reimbursements and create a broader range of options for meeting matching requirements. While it is usual to think of the transportation financing challenge simply in terms of finding more money, sometimes the problem facing states and project sponsors has more to do with how best to align funds' availability with funding needs. For this reason the grant management strategies are commonly termed cash flow tools.

Expediting project construction through the use of these techniques can generate real economic returns through such benefits as travel time savings and safety improvements. The four techniques for managing Federal funds are summarized in the following table, with the details provided in the remainder of this chapter. These techniques are available to all states as part of the regular Federal-Aid Highway Program.

What's New?

Under the Federal-Aid Highway Program, states receive annual shares of Federal obligation authority and then obligate, or commit Federal funds for individual projects throughout the fiscal year. The act of obligation commits the Federal government to reimburse expenditures on the project up to a predetermined matching share (usually 80 percent).

Technique	What Does It Do?
Advance Construction (AC) and Partial Conversion of Advance Construction (PCAC)	AC allows a state to begin a project even if the state does not currently have sufficient Federal-aid obligation authority to cover the Federal share of project costs. Under PCAC, a state may elect to obligate funds for an advance-constructed project in stages.
Tapered Match	With tapered match, the non-Federal matching requirement applies to the aggregate cost of a project rather than on a payment-by-payment basis.
Flexible Match	Flexible match allows states to substitute private and other donations of funds, materials, land, and services for the non-Federal share of funding for highway projects.
Toll Credits	States may use revenue from toll facilities as a credit toward the non-Federal matching share of certain highway projects.

2.1 Advance Construction/ Partial Conversion of Advance Construction

Advance construction and partial conversion of advance construction are cash flow management tools that allow states to begin projects with their own funds and only later convert these projects to Federal assistance. Advance construction allows a state to request and receive approval to construct Federal-aid projects in advance of the apportionment of authorized Federal-aid funds. Under normal circumstances, states "convert" advance-constructed projects to Federal aid at any time sufficient Federal-aid funds and obligation authority are available, and do so all at once. Under partial conversion, a state may obligate funds for advance-constructed projects in stages.

Advance-constructed projects differ from conventionally funded Federal-aid projects in that a state obligates Federal funds for an advance-constructed project after the project is started, rather than before. This technique allows a state to initiate a project using non-Federal funds, while preserving eligibility for future Federal-aid funds. Why would a state elect to use this technique? Under advance construction, a state can move a project forward even if available obligation authority is insufficient to cover the entire Federal share before construction starts. The requirement that states set aside obligation authority before beginning construction often presents difficulties when several large projects are being advanced at the same time, and can impede construction of other projects, particularly if the large projects consume a significant share of the state's annual obligation authority.

Advance construction has been part of the Federal-Aid Highway Program since 1956, but the TE-045 process and several subsequent changes to Federal law have now eased certain restrictions on its use. Section 308 of the NHS Act eliminated the requirement that future year authorizations be in effect one year beyond the fiscal year for which the advance construction application was sought. Now FHWA can approve an advance construction project at any time provided the project is on the state's transportation improvement program (STIP). This change provides greater flexibility to use advance construction based on anticipated apportionments beyond the final year of an authorization act. This flexibility was also important in making Grant Anticipation Revenue Vehicles (i.e., GARVEE bonds) feasible.

Partial conversion of advance construction is a relatively new form of advance construction that enables states to convert an advance-constructed project to a Federal-aid project in stages rather than all at once. This feature was implemented by FHWA through a *Federal Register* notice on July 15, 1995.

The resulting refinement to the advance construction procedure enables a state to tailor its use of Federal-aid obligation authority and receipt of subsequent cash reimbursements to match its cash flow needs. The tool is especially helpful in cases where the project is so large that an all-at-once conversion would consume so much of a state's obligation authority in the given year of conversion that the obligation would impact progress on other Federal-aid projects planned for that year.

In addition to securing project benefits earlier and improving cash flow, partial conversion is particularly useful when a variable revenue stream (e.g., sales taxes, development impact fees, local option taxes, and tolls) is dedicated to the cost of a project. At the start of a project, when there is no revenue history, the amount of Federal funding needed by the project may be uncertain. Partially converting the Federal share of the project once revenues have materialized economizes the use of Federal funds.

AC/PCAC Steps in the Process

1. State identifies project(s) and requests AC designation.
2. FHWA ensures state meets financial preconditions for AC.
3. FHWA reviews and approves AC designation for project. Project agreement executed.
4. State constructs project (following Federal-aid requirements).
5. State requests conversion to Federal-aid project (full or partial) and project agreement is modified.
6. FHWA obligates Federal-aid funds per modified project agreement.
7. State requests reimbursement for costs incurred (full or partial as needed).
8. FHWA reimburses Federal-aid share of costs to state.

Candidate Projects and Key Requirements

All advance construction projects must be eligible for Federal assistance under Title 23 U.S.C. and must comply with the requirements that are attached to any other Federal-aid project. This is one of the reasons why a state must identify and receive Federal approval to advance construct any project that it intends later to convert to Federal aid.

A state may request advance construction designations for projects that will be funded from the following program categories:

- National Highway System (NHS)
- Interstate Construction (IC)
- Interstate Maintenance (IM)
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality (CMAQ) Improvement Program
- Bridge Replacement and Rehabilitation (BRR)
- State Planning and Research
- Metropolitan Planning

Except for projects using NHS, IC, or IM funds, one of the following must be met to qualify for advance construction:

- The state has obligated all the funds apportioned or allocated for the specific program;
- The state has used all of its obligation authority for the current fiscal year; or
- The state can demonstrate it will consume all of its obligation authority before the end of the fiscal year.[1]

An advance construction project is processed in the same manner as a regular Federal-aid project, except that FHWA approval does not constitute a commitment of Federal funds on the project. The Federal obligation is

[1] *Unlike apportionments, obligation authority is not program-specific; rather, it is provided as a lump sum.*

created when the project is converted to a regular Federal-aid project. The project must be included on the STIP, and meet the tests of financial constraint.

Advance Construction and Partial Conversion of Advance Construction in Practice

The first step for a state considering use of advance construction or partial conversion of advance construction is to ensure that it meets the requirements for advance construction as summarized above and detailed in FHWA guidance.

The next step is to obtain Federal approval to designate a project for advance construction under a given program funding category (e.g., NHS or STP). At the time of approval, FHWA and the state will execute a project agreement. Even though the state is using its own funds to pay for design and construction, the state must ensure the project complies with all Federal-aid requirements in order to preserve eligibility for conversion to Federal aid at a later date. An advance construction project may be converted to a regular Federal-aid project at any time provided sufficient Federal apportionments and obligation authority are available. Following obligation, the state can submit a voucher and obtain reimbursement of eligible project costs up to the obligated amount.

With *partial conversion of advance construction*, the state requests that only a portion of the Federal share of project costs be converted in a given period with the remainder converted at a later time provided that funds are available. Therefore, varying amounts of the project's eligible costs are obligated over time, depending on cash flow needs and the availability of obligation authority. This form of advance construction eliminates a major single year "draw down" of Federal funds, and obligation of funds for the entire Federal share of the project. Partial conversion of advance construction also makes bond and note financing more viable (see GARVEE discussion in Chapter 3).

PCAC: An Example

- Assume a state has insufficient obligation authority to fund a $100 million Federal-aid bridge project. The Federal share is $80 million (80 percent) and would consume one-third of the state's $240 million annual obligation authority.
- The state decides to use the PCAC technique and obligate the funds over a four-year period, based on cash flow needs and availability of obligation authority.
- Annually, the state partially converts the project and obligates $20 million, until the entire Federal share of $80 million is used for the project.
- The state may bill FHWA for reimbursement of the Federal share of costs incurred at any point following each obligation of funds.

PCAC In Connecticut and Pennsylvania

The following examples illustrate how state DOTs are using partial conversion of advance construction to manage capital for larger projects:

- The *Connecticut* State DOT advanced a major bridge project with a total construction cost of $55.4 million through partial conversion of a $35.7 million component. Connecticut spread its Federal-aid obligations for the I-95 bridge project over two years, enabling it to redirect some funds to other smaller bridge projects.
- Three major reconstruction projects along high-volume expressways and Interstates were advanced by the *Pennsylvania* Department of Transportation (PennDOT) using partial conversion of advance construction. These projects had a total estimated cost of $47.2 million with a Federal share of $42.5 million. With this technique, PennDOT was able to advance the construction of all three projects by one year and save obligation authority.

2.2 Tapered Match

Tapered match enables the project sponsor to vary the non-Federal share of a Federal-aid project over time, as long as the Federal contribution toward the project does not exceed the Federal-aid limit.

What's New

Since inception of the Federal-Aid Highway Program, Title 23 of the U.S. Code has required that states match Federal grants for individual highway projects on a payment-by-payment basis. Under this approach, states had to shoulder the required non-Federal matching share of project costs each and every time they sought reimbursement of eligible project costs. This requirement not only ensured that the state would pay the required non-Federal share over the life of a project's construction, but also that the state would do so at every step of the way to completion.

Following several years of experimentation with tapered match under the TE-045 innovative finance initiative, a legislative change was made in Section 1302 of TEA-21 removing the longstanding requirement for a payment-by-payment match. The removal of this restriction creates the option for states to use the tapered match approach within the context of the regular Federal-Aid Highway Program.

Under the tapered match approach, the non-Federal matching ratio is imposed on projects rather than individual payments. Thus, Federal reimbursement of state expenditures can be as high as 100 percent in the early phases of a project provided that by the time the project is complete, the overall Federal contribution does not exceed the statutory Federal-aid limit for the project in question.

Candidate Projects and Key Requirements

States may request use of a tapered match approach for most projects eligible for Federal-aid assistance under Title 23. However, a few exceptions exist: tapered match cannot be used on advance construction projects, STP projects for which the non-Federal match is being provided on a program-wide basis, or projects that are financed with GARVEE bonds. These activities are considered to be inconsistent with the intent of tapered match.

Tapered Match Steps in the Process

1. State submits tapered match project request to FHWA.
2. FHWA determines that requirements are met and establishes Federal-aid share to be applied to total project costs.
3. State and FHWA agree on taper schedule.
4. FHWA approves match and executes project agreement specifying non-Federal match schedule.
5. State submits billings for progress payments.
6. FHWA reimburses costs according to schedule.
7. By close of project, Federal/non-Federal share equals agreed ratio.

States typically find tapered match most useful in cases where the government sponsor of a Federal-aid project lacks sufficient funds to match Federal grants at the start of the project, but expects to accumulate the match over the life of the project.

For example, tapered match may be beneficial when states need to overcome a near-term gap in state matching funds. As another example, tapered match may benefit a project when a local government has recently enacted a local transportation tax but has not yet begun to collect the revenues. Using tapered match, the project can move forward immediately using 100 percent Federal funds, allowing time for the transportation tax revenues to accumulate. The locally generated revenues would be used to fund the final 20 percent of project costs. As a third example, states can also benefit from use of tapered match in cases where they seek to advance a project before fully securing capital market financing.

It is necessary for the state to document the rationale for using tapering. The use of tapered match is subject to the approval by the FHWA Division Office, which can authorize use of tapered match for a given project in cases where the approach would:

- Expedite a project's completion when compared to the use of traditional match procedures;
- Reduce a project's overall costs; or
- Provide for additional non-Federal funds to be attracted to the project.

The reason for these conditions is to assure that a benefit occurs when Federal funds are paid out first.

Tapered Match in Practice

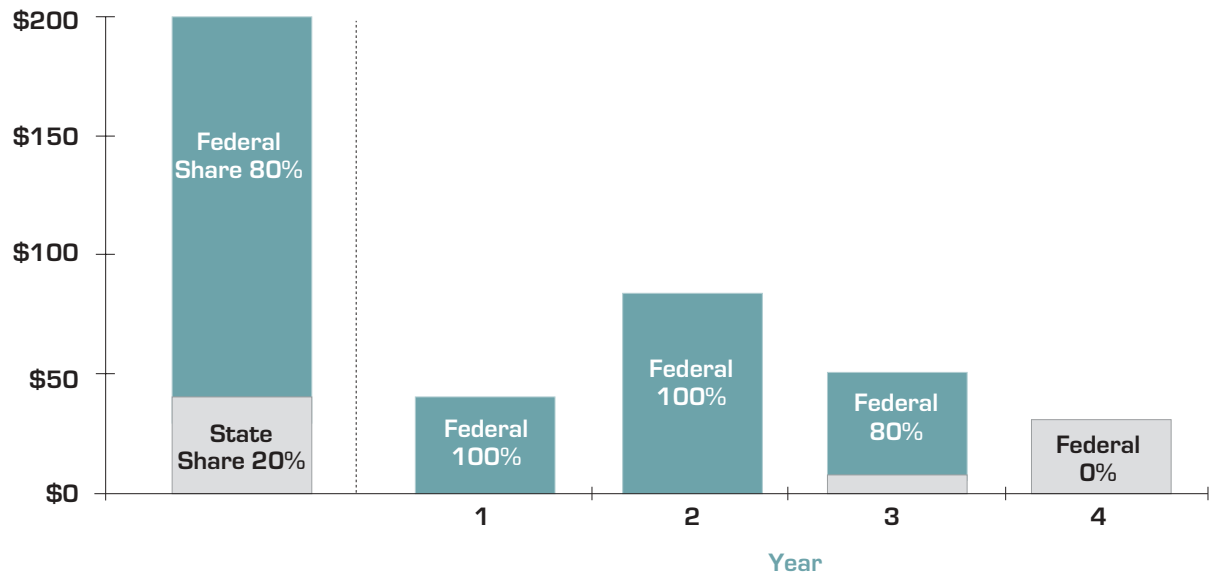
As noted above, states must obtain the appropriate FHWA Division Office approval before using tapered match on any given project. The first step in the process is to submit a request to use tapered match. This request must be accompanied by a statement indicating that the use of tapered match will achieve at least one of the three objectives noted above.

As with any Federal-aid project, the legal Federal share for a project is established at the time that the Division Office approves the project. The Federal share may be expressed either as a pro rata percentage of total project costs or as a lump sum amount. Either way, upon approval of the project the total amount of Federal funds being obligated for the project is entered on the project agreement. It is possible for this amount to be revised when a contract for the project is actually awarded. The agreement also specifies the point at which the state will provide the non-Federal share of funds.

Tapered Match in Washington State

In Washington State, limits on state expenditures threatened to delay by a year or more a $35.9 million project to construct high-occupancy vehicle lanes and make related road improvements for State Route 520, near the high-tech cities of Bellevue and Redmond. By using tapered match, the Washington State DOT was able to obtain Federal reimbursement of 100 percent of its expenditures on the project until the maximum Federal contribution had been reached. By that time a new state budget cycle had begun, providing the state DOT with the spending authority for completion of the project with 100 percent state funds. Tapering together with the use of partial conversion of advance construction allowed this project to get underway two years sooner than might otherwise have been possible.

Figure 2.1 – Illustrative Tapered Match Project



Dollars (millions)		Year 1	Year 2	Year 3	Year 4	Total
	Federal	$40	$80	$40	$0	$160
	State	$0	$0	$10	$30	$40
	Total	$40	$80	$50	$30	$200

Figure 2.1 presents an illustrative example of a tapered match project with total project costs of $200 million. In this example the required non-Federal match is equal to 20 percent of total project costs, or $40 million. The project construction timeframe is four years. During the first two years of construction, the Federal contribution is equal to 100 percent of project costs. The state begins to provide the non-Federal share starting in year 3, and by the end of year 4 has provided its entire $40 million share of funding for this project – that is, the entire 20 percent of total contributions to the project.

2.3 Flexible Match

Flexible match allows a wide variety of public and private contributions to be counted toward the non-Federal match for Federal-aid projects.

What's New

The Federal-Aid Highway Program has traditionally required that recipients of Federal assistance themselves contribute toward the total cost of any given project. Historically, Federal law placed limits on both the types of contributions that can satisfy the matching requirement and the sources of those contributions. Cash contributed by state and local governments could satisfy the matching requirement while other types and sources of funding for Federally-assisted transportation projects simply reduced the total project cost. The standard matching requirement continued to apply to the remaining project cost.

Provisions in the NHS Act and TEA-21 introduced new flexibility to the Federal-Aid Highway Program's matching requirements by allowing certain public donations of cash, materials, and services to satisfy the non-Federal matching requirement. These legislative changes, known collectively as flexible match provisions, increase a state's ability to fund its transportation programs by:

- Accelerating certain projects that receive donated resources;
- Allowing states to reallocate funds that otherwise would have been used to meet Federal-aid matching requirements; and
- Promoting public-private partnerships by providing incentives to seek private donations.

The majority of flexible match opportunities now available were authorized under Section 322 of the NHS Act and are codified at Section 323 of Title 23. TEA-21 broadened the states' flexible matching options by expanding the opportunity to match Federal highway funds with certain other types of Federal funds. These changes are codified principally at Sections 120(k), 120(l), and 133(e) (5)(c) of Title 23.

Table 2.1 – Eligibility for Credit Against Non-Federal Match

Type of Donation	Source of Donation	Conditions
Funds	Private – Yes	Funds must be received during the period between project approval and submittal of final voucher
	State – Yes	Same as above
	Local Govt. – Yes	Same as above
Land (right-of-way)	Private – Yes	Property must be appraised to determine fair market value
		Value must be included in total project cost
		Property may be donated anytime during the project development
		Donation does not influence environmental assessment
	State – Yes	Same as above
	Local Govt. – Yes	Same as above
Materials	Private – Yes	Materials must be appraised to determine fair market value
	State – No	
	Local Govt. – Yes	Materials must be appraised to determine fair market value
Services	Private – Yes	Grantee must document the market value of services
	State – Limited	Publicly-contributed services count toward match for only Transportation Enhancement projects
	Local Govt. – Limited	Publicly-contributed services count toward match for only Transportation Enhancement projects

TEA-21 also authorized program approvals for the STP and transportation enhancement programs. These provisions are codified in Section 133(e) of Title 23. Program approval allows a number of projects to be approved as a single activity. The matching requirement would then apply to the program instead of individual projects.

Candidate Projects and Key Requirements

Any Federal-aid project for which a non-Federal match is required may employ some form of flexible match, though it is necessary for the project sponsor (generally, a state DOT) to obtain approval for use of flexible match from the FHWA Division Office beforehand. States have found that flexible match is useful in cases where a public or private partner (e.g., a sponsor of a new industrial park) has a clear interest in seeing a given project advance and is willing to make a contribution toward the project's construction. Any project employing flexible match must comply with all provisions that apply to any other Federal-aid highway project.

Flexible Match Steps in the Process

1. State identifies candidate project for match.
2. State identifies non-Federal funds or materials for match.
3. FHWA reviews proposed match and valuation and approves match.
4. Non-Federal funds or materials are used on project, documented, and then applied as match when state submits billings for progress payments.
5. FHWA reimburses Federal share of costs.

Table 2.2 – Federal-to-Federal Matching Opportunities

Source of Federal Grant Funding	Eligible Categories of Highway Projects
Federal Land Management Agencies, including but not limited to: ♦ U.S. Forest Service ♦ Bureau of Indian Affairs ♦ Bureau of Reclamation ♦ Bureau of Land Management ♦ National Park Service ♦ Numerous military agencies Authorized at 23 U.S.C. 120(k).	Federal highway projects funded under the following program categories: ♦ Interstate Maintenance ♦ National Highway System ♦ Surface Transportation Program ♦ Congestion Mitigation and Air Quality Program ♦ Recreational Trails Program ♦ Scenic Byways Programs (providing access to Federal or Indian Lands)
Federal Lands Highway Program Authorized at 23 U.S.C. 120(l).	Federal highway projects funded under the programs shown above and that serve or provide access to Federal or Indian lands, except Scenic Byways
Federal programs with special legislative authorization to match other Federal funds, including funds provided under: ♦ State and Local Assistance Act ♦ HUD Community Development Block Grants ♦ Public Works Employment Act of 1976 ♦ Delaware and Lehigh Navigation Canal National Heritage Corridor Act of 1988	Any Federal-aid highway project

Most of the conditions related to the use of flexible match concern the types of contributions that are eligible to offset the standard non-Federal matching requirements. The critical part of this eligibility determination is the combination of the source of the contribution (private, local, state, or Federal) and the nature of the contribution (cash, materials, land, services, or buildings and equipment). Table 2.1 lists the basic tests that determine whether a given non-Federal contribution can satisfy Federal-aid matching requirements under the flexible match provisions.

Table 2.2 displays the conditions that attach to use of other Federal funds to satisfy the Federal-aid highway matching requirements.

The fair market value of the non-monetary contributions discussed in Table 2.1 must be determined and documented in order for the credit to be applied as non-Federal match. Also, the value of the public or private contribution must be included in the total project cost; it cannot both reduce the cost of the project and be credited towards the required non-Federal share of the remaining project costs.

Flexible Match: An Example

The following example offers a hypothetical illustration of a flexible match project. Assume that:

- A new industrial complex requires the reconstruction of an existing interchange to accommodate increased traffic resulting from the opening of the new facility;
- The reconstruction project will cost $5 million; and
- The developer of the industrial complex is willing to make a contribution of land and cash to expedite access to the new complex.

The non-Federal matching requirement could be met through a private donation of right-of-way as well as a cash contribution. Assuming that the value of the donated right-of-way is $500,000 and the developer contributes an additional $500,000 in cash, the entire $1 million donation would account for the 20 percent non-Federal match necessary for the $5 million project.

Flexible Match in Practice

The first step in using flexible match is for a state or local government to identify the non-Federal funds, materials, property, or services or eligible Federal grant funding that could be applied to a given Federal-aid project. If the state finds it desirable to use those contributions to offset non-Federal matching requirements, the next step is to request FHWA Division Office approval. As part of this process, it is essential to document the value of any non-monetary contributions during the approval process.

Once FHWA has approved use of flexible match, Federal-aid highway funds can be obligated for the remaining Federal share of project costs. Donations, except donations of land, must be made after the date the project receives FHWA approval to proceed with the project using flexible match, but prior to approval of the final reimbursement voucher. Land may be donated anytime during project development.

2.4 Toll Credits

States may apply toll revenue used for capital expenditures to build or improve public highway facilities as a credit toward the non-Federal matching share of certain transportation projects.

What's New

The United States has a long history of financing roads, bridges, and tunnels with toll receipts. In some states, independent toll authorities have been established to build, maintain, and operate these facilities. Until the 1990s, toll receipts, concession sales, or right-of-way leases used to finance public highways for interstate commerce were not recognized as investments that could potentially be applied as the state's share of Federal-aid projects. The toll credit provisions first authorized in ISTEA changed that.

Now, Section 1044 of ISTEA (Public Law 102-240) permits a state to use certain toll revenue expenditures as a credit toward the non-Federal matching share of all programs authorized by ISTEA and Title 23. Section 1111(c) of TEA-21 incorporated into 23 U.S.C. 120(j) toll credit provisions initially set forth in ISTEA. This provision allows the Federal obligation to be increased up to 100 percent of project costs to the extent that credits are available.

The credit the state can earn for any Federal fiscal year is determined by the amount of toll revenue used by toll authorities for capital expenditures to build or improve public highway facilities that serve interstate travel. To qualify for the credit, the state's total non-Federal highway and transit transportation capital expenditures must equal or exceed the average of prior years. This is called the maintenance of effort (MOE) calculation. The MOE test is required at the time the credit amount is established.

Flexible Match in Pennsylvania and Maine

- In *Pennsylvania*, the use of flexible match accelerated construction of a $3.2 million project that encompassed seven individual transportation enhancement projects. Of the total cost, $1.0 million was funded from private sources. These funds directly offset the non-Federal matching fund requirement; no state funds were directed to this project. The ability to substitute private funds for public matching funds offered PennDOT a means to expedite construction of these projects that lacked the required public match.
- The flexible match technique was used in *Maine* to advance construction of the first phase of the Auburn Intermodal facility, a truck/rail transfer facility located on trackage operated by the St. Lawrence & Atlantic Railroad (SLR). The project was important to the state, recognizing the air quality benefits of removing heavy truck traffic from the state's major highways. Federal CMAQ funding was available for the project, but the state did not have the required non-Federal match. Through a public-private partnership, the City of Auburn and the railroad provided the 20 percent required match, enabling the Federal CMAQ funds to be used on the project. Using the flexible match technique, the value of the railroad's contributions of materials, equipment, and labor, totaling $300,000, was credited toward the match.

Once a credit amount is appropriately established, this credit will remain available until used by the state.

Candidate Projects and Key Requirements

The toll facility that generates the toll credits must be open to public travel. It may be operated by a public, quasi-public, or private toll authority. The amount of credit earned is based on toll revenues that the toll authority subsequently spends on eligible expenses for public highway facilities (including bridges, tunnels, and certain ferry systems) that serve interstate commerce. Expenditures for routine maintenance (e.g., snow removal, mowing), debt service, or costs of collecting tolls cannot be included. All such expenditures must have been made entirely from non-Federal sources.

The revenues may derive from toll receipts, concession sales, right-of-way leases, interest earnings, or bond or loan proceeds that are backed by these revenue streams. State grants are not considered to be revenues generated by the toll authority and cannot be used in calculating earned toll credits.

States may apply toll credits toward the non-Federal matching share of any Federal-aid highway project, except

Toll Credits Steps in the Process

Phase 1: Toll Credit Approval

1. State spends toll funds on capital roadway improvements serving interstate travel.
2. State submits certifications and request for use of toll credits to FHWA with Maintenance of Effort (MOE) documentation.
3. FHWA determines whether state meets requirements.
4. FHWA approves MOE and toll credits for later use.
5. State establishes a special account to track toll credits.
6. Credit remains available until used by state.

Phase 2: Toll Credit Use

1. State identifies candidate project(s) for application of toll credits.
2. State determines the amount of credit applied to project(s).
3. Credit is debited from state's account when project agreement is executed.
4. State submits billings for progress payments and toll credits applied as non-Federal share.
5. FHWA reimburses Federal share according to project agreement.

for emergency relief projects. Toll credits may also be applied toward the non-Federal matching share of transit projects eligible under Chapter 53 of Title 49. The state must establish a special account to track toll credits as they are earned and used.

Toll Credits in Practice

In order to apply earned toll credits toward the non-Federal matching share of an eligible project, the state must make a request to FHWA at the time the project is put under agreement (project agreement for obligation of Federal funds) or before the funds are transferred to another Federal agency (i.e., Federal Transit Administration) responsible for administering the "receiving" project. The amount of credit (up to the total non-Federal share) should be debited from the special account set up for tracking approved toll credits.

2.5 Off-System Bridge Credits

Similar to toll credits, state and local funds expended on off-system bridges may be credited to the non-Federal share of Federal-aid bridge projects. The provision, codified in Title 23, Section 144(n), allows amounts exceeding 20 percent of construction costs of certain off-system bridges to be used to reduce the amount of state and local funds needed to match Federal-aid bridge replacement and rehabilitation projects.

Toll Credits in Pennsylvania and Florida

- The *Pennsylvania* Department of Transportation is using toll credits to increase Federal funding to 100 percent for betterment projects. Toll credits are also used as a match for the construction phase of Transportation Enhancement projects where the sponsor has completed the engineering and right-of-way phase with 100 percent local funds. In addition, critical bridge projects that have not yet been authorized in the state's capital budgets are also being advanced through the application of toll credits. As of September 2001, Pennsylvania's credits totaled $1.2 billion, of which $68.9 million has been applied as a match.
- *Florida* has been applying toll credits on a statewide basis since FY 1993. In FY 1999, the state changed its approach and is now using toll credits on almost every new project, so that most of its Federal highway program is 100 percent Federally funded. The Florida Department of Transportation has used approximately $646 million of $1.8 billion in approved toll credits for highway projects. In addition $263 million has been transferred to the Federal Transit Administration for transit projects.

Chapter 3
Debt Financing

Some transportation projects or programs of projects are so large that their costs exceed available current grant funding and tax receipts, or would consume so much of these current funding sources as to delay many other planned projects. For this reason, when states and local agencies consider ways to pay for these large projects, they often look to financing the projects through borrowing. The most common method of borrowing is to issue municipal bonds. The bond issuance yields an immediate influx of cash in the form of bond proceeds. The state or local agency then retires its obligation by making principal and interest payments to the investors over time.

Municipal Bonds

Municipal bonds are interest-bearing obligations issued by state or local government to finance public facilities' capital or operating costs. The principal characteristic that has differentiated municipal bonds from other capital market securities is that the interest they pay to investors is exempt from Federal income tax.

Municipal bonds take a number of forms and merit a more complete discussion than possible here. For a thorough discussion of the municipal bond market and its interaction with Federal transportation funding, see, for example, *Bond Financing and Transportation Infrastructure: Exploring Concepts and Roles*, published by the Federal Highway Administration (Publication No. FHWA-PL-94-014).

Although bond financing imposes interest and other debt-related costs, bringing a project to construction more quickly than otherwise possible can sometimes offset these costs. Delaying projects can impose costs that derive from a variety of sources: inflation, lost driver time, freight delays, wasted fuel, and forgone or deferred economic development. Any analysis of the financial costs and benefits of debt financing weighs the costs of borrowing against the economic, safety, and mobility benefits of completing the project sooner than would be possible with pay-as-you-go funding. In recent years, Federal policy makers have examined strategies under which Federal-aid funds can better support states that elect to accelerate projects through borrowing.

Repayment of bond financing necessitates a stream of future revenues, which can come from a variety of sources. A few examples of traditional options have included general state and local taxes, fuel taxes or vehicle-related fees, and toll receipts. In recent years, Federal law has expanded states' ability to tap Federal-aid highway funds as another potential repayment source: apportioned Federal-aid highway funds. In this variation of a grant anticipation note, states can pledge a share of future Federal highway funding toward payment of debt service on a long-term bond issue. Bonds repaid with future Federal funds are commonly referred to as GARVEEs, or Grant Anticipation Revenue Vehicles. The remainder of this chapter discusses pledges of future Federal-aid highway funds under the GARVEE financing mechanism.

3.1 Grant Anticipation Revenue Vehicles (GARVEEs)

GARVEEs permit states to pay debt service and other bond-related expenses with future Federal-aid highway apportionments.

What's New

While some debt service payments have been eligible for reimbursement from Federal-aid highway funds since the beginning of the modern Federal-Aid Highway Program in 1956, this opportunity was of limited practical use. For example, prior to 1995, states could use their apportioned Federal-aid highway funds to repay only the principal component of debt service on certain categories of projects, and interest costs were eligible for reimbursement only for some Interstate projects.

The NHS Act, which amended Section 122 of Title 23 to expand FHWA's bond reimbursement provisions, effected two significant changes:

- The NHS Act expanded the types of debt-related costs eligible for Federal-aid reimbursement to include interest expense for all projects, debt issuance costs, and the cost of purchasing commercial bond insurance.
- The NHS Act eliminated provisions that restricted the amount and timing of advance construction authorizations. The limitation was replaced with a requirement that advance construction projects be on the approved STIP, enabling FHWA to approve an advance construction project at any time.

The change to the advance construction provisions is explained in greater detail in the preceding chapter concerning the management of Federal funds.

The ability to convert advance construction in a future authorization period is critical to the GARVEE process. Under the former rules, it would have been necessary to obligate the Federal share of debt service payments within the bounds of available obligation authority. Under the new rules, it is possible to obligate Federal funds for debt service expenses over a longer period.

Candidate Projects and Key Requirements

Candidates for GARVEE financing are typically larger projects (or programs of projects) that have the following characteristics:

- They are large enough to merit borrowing rather than pay-as-you-go grant funding, with the costs of delay outweighing the costs of financing;
- They do not have access to a revenue stream (such as local taxes or tolls) and other forms of repayment (such as state appropriations) are not feasible; and
- The sponsors (generally state DOTs) are willing to reserve a portion of future year Federal-aid highway funds to satisfy debt service requirements.

GARVEEs Steps in the Process

1. State seeks approval for advance construction of GARVEE project(s).
2. State makes election to receive reimbursements for construction or debt service.
3. FHWA approves project as debt-financed project and executes project agreement(s).
4. State issues bonds and uses proceeds for construction.
5. State requests partial conversion of AC project(s) for semi-annual/annual debt service payments.
6. FHWA obligates Federal funds for requested debt service payment.
7. State claims reimbursement for Federal share of bond debt service and funds are paid to state account.
8. State uses Federal-aid reimbursement for debt service on bonds.

In addition, candidate projects must be eligible for Federal-aid highway funding under one or more program funding categories for which advance construction is available. (Section 115 of Title 23 specifies these categories, and they are also listed in Section 2.1 of this primer.) The projects must also appear on the STIP.

In general, projects financed with the proceeds of a GARVEE debt instrument are administered in the same manner and are subject to the same requirements as other Title 23 projects. As discussed below, the primary difference relates to the reimbursement process.

Costs Eligible for Reimbursement

One of the important changes effected by the NHS Act was to broaden the types of debt-related costs eligible for reimbursement. Costs eligible for reimbursement now include the following:

- Interest payments and retirement of principal (including any capitalized interest) under an eligible debt financing instrument;
- Issuance costs (including but not limited to underwriters' discounts, rating agency fees, fees paid to financial advisors and bond counsel, and printing costs) and credit enhancement fees (such as bond insurance premiums); and
- Any other related incidental costs as determined by the Secretary (including ongoing trustee fee and audit costs).

Under certain conditions, capitalization from bond proceeds of a required reserve account or contingency fund may also be eligible for Federal-aid reimbursement.

Matching Requirements

Reimbursements on GARVEE-financed projects are subject to the same matching share requirements that attach to any other project funded from the same program category.

One of the more fundamental decisions for states structuring a GARVEE transaction is whether to match the Federal reimbursement of debt service up front (by, for example, reducing the borrowing requirements through a direct pay-as-you-go contribution toward project costs) or on a payment-by-payment basis. In the former case, it is acceptable for the state match to be provided as an in-kind match (under the flexible match provisions) or with toll credits. In the latter case, the state would provide its matching contribution on a nominal, current-year basis, with each debt service payment matched at the proper pro rata share.

As noted in a previous chapter, states cannot use tapered match on GARVEE-financed projects.

Eligible Issuers and Debt Instruments

By law, GARVEEs must be issued by a state, a political subdivision of a state, or a public authority. These categories include State Infrastructure Banks (SIBs) and 63-20 corporations[1] as eligible issuers. In cases where a SIB issues

[1] *These non-profit corporations are known as 63-20 corporations, in reference to a 1963 Internal Revenue Service Ruling that created the opportunity for certain non-profit entities to issue bonds for which investors' interest payments are exempt from Federal income tax, as with municipal bonds.*

GARVEE bonds, reimbursement of debt service expense incurred by the SIB would not be viewed as SIB capitalization grants. Eligible financing instruments include bonds, notes, certificates, mortgages, leases, or other debt financing techniques.

Terms of the Transaction

The issuer of a GARVEE bond has significant flexibility in structuring the terms of the transaction. Coverage ratios, interest rates, the term of the obligation, the level of debt service reserves, and the use of bond insurance are all matters determined by the issuer and the credit markets. An additional consideration for any state contemplating a GARVEE issuance is the extent to which the state is willing to place claims on future Federal funding, as a GARVEE today means debt service tomorrow – and commitment of Federal monies that would otherwise be available to fund pay-as-you-go projects. Some states may need enabling legislation to issue GARVEEs; in some states, legislation includes clauses that place limits on the volume of GARVEE debt that can be issued.

Another key decision left to the state's discretion is how to structure the revenue pledge, leading to two major types of GARVEEs: non-recourse GARVEEs and back-stopped GARVEEs, each of which is described below.

- Non-Recourse GARVEEs – States may elect to pledge their obligations of future Federal-aid funds as the only security backing the Federal share of the obligation to investors. Because of the additional risk associated with any non-recourse financing, and in the absence of bond insurance, these issues may carry higher interest rates and therefore be a bit more expensive than recourse financings.

  The market may also perceive risk when the pledge of future Federal-aid funds spans authorization periods. This is because there is no guarantee that the Federal highway program will be reauthorized at the end of the authorization period (such as TEA-21 which expires in 2003). Moreover, Section 122 makes it clear that a debt financing instrument's eligibility for reimbursement with future Federal-aid highway funding does not constitute a commitment, guarantee, or other obligation by the United States, nor does it create any right of a third party (such as an investor) against the Federal government for payment.

- Back-stopped GARVEEs – States may elect to pledge other sources of revenue as a back-stop for the future Federal-aid funds. In these cases, states have pledged a secondary source of revenues, such as state fuel tax revenues or local property taxes, to payment of debt service in the event that future Federal-aid highway funds are not available. This will generally result in lower interest costs on the bonds. The offsetting disadvantage of this structure, of course, is that it requires another source of revenue to be available for the back-stop pledge.

What is an Indirect GARVEE?

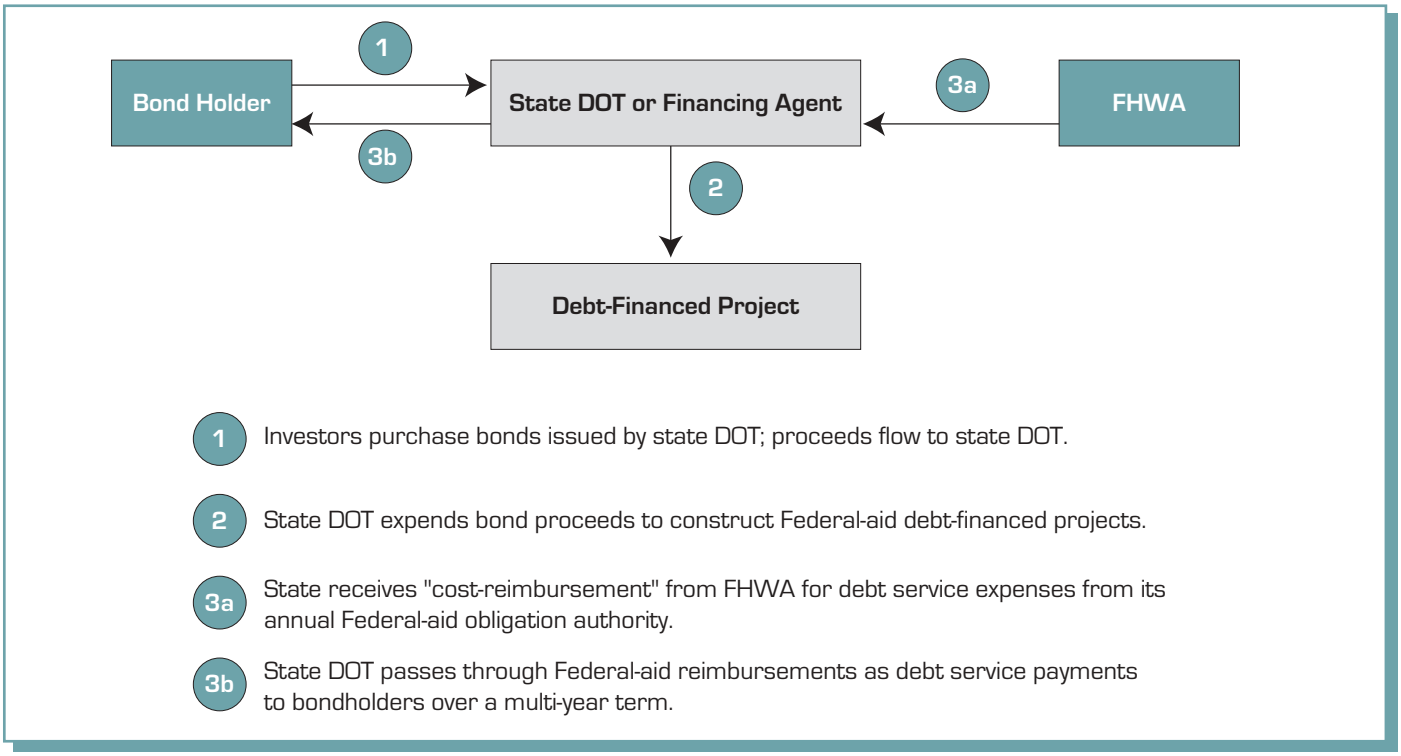
FHWA uses the term "GARVEE" to apply to projects authorized under 23 U.S.C. Section 122. However, some states have issued grant anticipation notes pledging, as a source of revenue, Federal highway funds that will be paid to the state as Federal-aid projects are constructed. These Federal-aid projects may not even relate to the purpose for which the grant anticipation notes are being issued. As soon as the Federal highway funds are received by the state for the cost of work completed, they become state funds and may be used for any purpose authorized by state law, including debt service payments. Some states have referred to these grant anticipation notes as indirect GARVEEs or Federal reimbursement anticipation notes.

GARVEEs in New Mexico and Arizona

- *New Mexico* sold its first GARVEE bond in September 1998, to finance 118 miles of improvements on Corridor 44, a primary trade and tourist route for northwestern New Mexico. The New Mexico Financing Authority was the conduit issuer for the New Mexico State Highway and Transportation Department. This was the first state to issue bonds backed solely by a pledge of future Federal-aid funds, paving the way for other states to issue debt repaid with Federal funds without a backstop of state revenues. The $100 million GARVEE issue also incorporated an innovation in the form of a "present-value" match that was approved under TE-045. A second issue for $18.5 million was sold in February 2001 to finance the U.S.70 Corridor reconstruction project. This issue is unique in that it is the first GARVEE issue to be repaid with Federal Forest Highway funding.

- The *Arizona* Department of Transportation is using GARVEEs, in combination with SIBs, to finance acceleration of the Maricopa Country freeway system. Plans call for issuing about $450 million of GARVEEs, designated as GANs in Arizona. The first issue of $39.4 million was advanced in June 2000 and the second issue, totaling $142.9 million, sold in May 2001. Arizona has structured its issues with a stand-alone pledge of only Federal funds, as New Mexico has done. Also the issues are characterized by relatively short maturities.

Figure 3.1 – GARVEE Bonds



GARVEEs in Practice

When a project or a program of projects is selected for GARVEE financing, it must first be approved as a Federal-aid debt financed project(s). Discussions with bond counsel are always advisable during the process of identifying GARVEE candidate projects. FHWA approves only the project or program of projects to be debt financed, not the bond issue; the bond issue itself is under state authority.

FHWA approval must be received to designate the project(s) for advance construction under the appropriate funding categories, and the project(s) must appear on the STIP. At this time, FHWA also approves the project(s) for the GARVEE financing mechanism, and can provide advice on the finer points of the interaction between the GARVEE instrument and the Federal-Aid Highway Program. A method is then selected for matching the Federal contribution, either through an up-front non-Federal contribution or a payment-by-payment match. It is also possible for states to issue a separate series of bonds to satisfy the non-Federal matching requirement.

As illustrated in Figure 3.1, debt is issued by the state or its designated financing agent, and construction proceeds on the project(s) using proceeds of the GARVEE issue to fund eligible costs. Funds are obligated as debt service comes due, generally through the use of partial conversion of advance construction. PCAC is an especially appropriate technique, since debt service payments will spread out over a number of years and states will find it advantageous to consume only the necessary amount of obligation authority each year. Debt service payments can be sent to either a state-designated account or a trustee.

Chapter 4
Credit Assistance

One of the most significant developments in Federal transportation finance during the 1990s was the advent of new ways for Federal transportation funds to help project sponsors access credit – that is, borrow – more easily. These strategies are known collectively as Federal credit assistance.

Federal credit assistance can take one of two forms: loans, where a project sponsor borrows Federal highway funds directly from a state DOT or the Federal government; and credit enhancement, where a state DOT or the Federal government makes Federal funds available on a contingent (or standby) basis. Credit enhancement helps reduce risk to investors and thus allows the project sponsor to borrow at lower interest rates. Loans can provide the capital necessary to proceed with a project or reduce the amount of capital borrowed from other sources. In this latter case, Federal loans can serve a dual function. Not only do they provide capital directly, but under certain conditions they can also serve a credit enhancement function by reducing the risk borne by other investors.

The pressure to close the gap between investment needs and available resources has caused public agencies at all levels of government to look at ways to leverage fixed amounts of public funding or to offer assistance that imposes less of an impact on public budgets. Credit assistance is one of the leading methods to achieve these objectives, for it encourages the use of pay-as-you-use financing and often introduces new revenue streams (such as toll receipts) into the pool of transportation investment. When sufficient grant funding is not available, credit assistance can also enable sponsors to build projects sooner than would otherwise be possible. So, while most project sponsors naturally prefer "free" money over loans that must be repaid, that preference might well change if the choice is between credit assistance today versus grant funding 20 years from now.

Federal transportation funds can provide credit assistance – rather than grant funding – through several mechanisms. First, states may directly lend their apportioned Federal-aid highway funds to individual projects through Section 129 loans. Second, states may use their regularly apportioned Federal-aid highway funds, under specific Federal legislative provisions, to capitalize revolving loan funds (in the transportation sector, known as State Infrastructure Banks). Third, the Transportation Infrastructure Finance and Innovation Act (TIFIA) allows U.S. DOT itself to provide special credit assistance funding to project sponsors directly.

4.1 Section 129 Loans

Section 129 loans allow states to use regular Federal-aid highway apportionments to fund loans to projects with dedicated revenue streams.

What's New

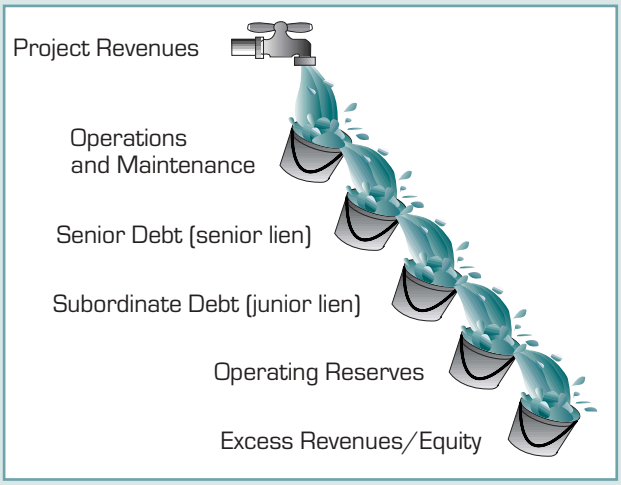
Until 1991, Federal-aid highway funds could be used only on a "grant" reimbursement basis for eligible highway projects. This changed with Section 1012 of ISTEA, which made state loans to certain transportation projects eligible for reimbursement from Federal-aid highway funds. This new opportunity provided states with a means to recycle

Technique	What Does It Do?
Section 129 Loans	Allows states to use regular Federal-aid highway apportionments to fund direct loans to projects with dedicated revenue streams.
State Infrastructure Banks	Allows certain states to use regular Federal-aid highway apportionments to capitalize state-administered revolving funds known as State Infrastructure Banks (SIBs). SIBs can offer loans and credit enhancement to both public and private transportation project sponsors. Banks can also be capitalized with state funds.
TIFIA	Allows U.S. DOT to provide direct credit assistance to sponsors of major transportation projects. Credit assistance can take the form of loans, loan guarantees, or lines of credit; the total amount of credit cannot exceed 33 percent of eligible project costs.

Federal-aid highway funds by lending them out, obtaining repayments from project revenues, and then reusing the repaid funds on other highway projects.

Focus on Subordination

Subordination is the key to most public credit assistance programs, as it allows a public agency to absorb a share of the risk that revenues will fall short of debt service requirements. The figure below provides a simplified illustration of how subordination works.



Revenue available for debt service flows first to those with the senior lien, and then – only if there is revenue still available – to those with the junior, or subordinate, lien.

Example:

	Amount	Coverage Ratio
Revenues	$100	
Senior Claims	$75	100/75=1.33x
Junior Claims	$15	100/(75+15)= 1.11x

If revenues available for debt service are $100 and total debt service is $90, the "coverage" is 100/90, or 1.11x. This coverage ratio, in most circumstances, is considered low and probably would not merit an investment grade rating.

Coverage can be improved on a portion of the financing, however, by dividing the debt into two tranches, a senior tranche and a subordinate tranche. Because the senior tranche includes only a portion of the total debt obligation, but has a first claim on all the revenue available for debt service, its coverage is increased. In the example shown above, if debt service for the senior tranche is $75, coverage is 100/75, or 1.33x. While coverage for all debt service is unchanged at 1.11x, a portion of the debt is now at a sufficiently higher coverage ratio to obtain an investment grade rating – and the lower interest cost that attends it.

Section 313(b) of the NHS Act built greater flexibility into the original statutory language established under ISTEA by broadening the range of projects eligible to receive loans. Originally, states could use their apportioned Federal-aid highway funds only to provide loans to toll projects. Now, given provisions in the NHS Act, it is possible to provide a loan to any project eligible for Federal-aid highway funding so long as it has a dedicated revenue source to repay the loan; the revenue source need not be a toll.

The loan provisions, as amended, are codified at Section 129(a)(7) of Title 23, and for this reason loans under this program are commonly referred to as Section 129 loans.

One of the key advantages to Section 129 loans is the opportunity for states to get more mileage out of their annual apportionments. States benefit because every loaned dollar is repaid and recycled into further investment in the transportation system. From a project sponsor's perspective, loans are useful in offsetting up-front capital requirements that might otherwise have to be borrowed in the open market at higher rates. Further, Section 129 loans can serve a credit enhancement function by reducing the cost of other borrowing where the Section 129 loan is in a subordinate position as described below.

Candidate Projects and Key Requirements

Any Federal-aid highway project is a potential candidate for a Section 129 loan. States may make loans to public or private project sponsors. The project sponsor must pledge revenues from a dedicated source to repayment of the loan. Dedicated revenues may include, but are not limited to, tolls, excise taxes, sales taxes, property taxes, motor vehicle taxes, and other beneficiary fees. Federal funds cannot be used as a revenue source. Loans can be in any amount, up to 80 percent of the project cost, provided that a state has sufficient obligation authority to fund the loan.

Use of Loan Proceeds

Proceeds from Section 129 loans can fund the costs of engineering, right-of-way acquisition, and physical construction. However, only those costs incurred after the date FHWA authorizes the loan may be funded by the loan; no costs incurred prior to the loan authorization can be reimbursed retroactively with loan proceeds.

Compliance with Federal Regulations

All projects receiving Section 129 loans must comply with all Federal regulations that attach to any other Federal-aid highway project. There is one exception to this rule. If the Section 129 loan represents the only Federal participation in the project, it is acceptable for the project sponsor to select consultants and contractors consistent with state law; the Brooks Act and Title 23 competitive bidding procedures do not apply in this instance.

Section 129 Loan Steps in the Process

1. State identifies project(s) for potential loan and dedicated source(s) for repayment.
2. State requests authorization of Federal-aid funding for the loan to the project and provides written assurance that repayment pledge has been secured.
3. State negotiates repayment schedule and terms with project sponsor.
4. FHWA determines if requirements are met, then approves the project for a loan and executes project agreement.
5. State makes loan to project.
6. State obligates funds and receives Federal share of loan.
7. Project sponsor (borrower) repays loan on approved schedule.
8. State uses repayments for grants or loans to eligible projects.

Loan and Repayment Terms

The NHS Act requires that borrowers begin to repay Section 129 loans within five years after the project is opened to traffic or otherwise completed. The loan must be wholly repaid within 30 years from the date Federal funds are authorized for the loan. States have the discretion to determine interest rates that best meet their program needs so long as the rates are at or below market rates, and improve the financial feasibility of the project receiving the loan.

Setting interest rates for Section 129 loans can be a balancing act. On the one hand, lower interest rates reduce project sponsors' cost of borrowing and thus reduce the projects' ultimate cost. On the other hand, lower interest rates can cause debt service (i.e., principal and interest payments on the loan) to lag behind the time value of money. For this reason, below-market-rate interest rates are often referred to as subsidized interest rates. While subsidized interest rates are advantageous to project sponsors, they are less effective than market rate interest payments at recycling public funds.

States may subordinate the Section 129 loan to other debt. This means that other investors in the project, such as bondholders, could have a first (or senior) lien on project revenues. Subordination is the key to making a loan behave also as a credit enhancement product, as it improves debt service coverage on the obligations owed to senior bondholders (see box on "Focus on Subordination").

Use of Loan Repayments

States may use loan repayments to fund any project eligible for funding under Title 23 or credit enhancement in the form of bond insurance purchases or as a capital reserve for project debt. These credit enhancement opportunities can improve project sponsors' access to the credit markets or to lower interest rates specifically for projects eligible for funding under Title 23. No Federal requirements attach to projects advanced with loan repayments.

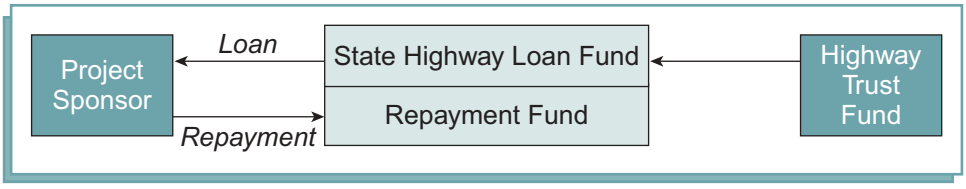
Section 129 Loans in Practice

The process for funding a Section 129 loan is very similar to the process for committing funds to and obtaining reimbursement for any other Federal-aid project. The first step is for the state to identify a candidate project and a project sponsor that could benefit from public credit assistance through a Section 129 loan, determine the approximate amount of the loan, and the amount and source of Federal-aid highway funding to be committed to the loan. Apportionments from any program category may be committed to Section 129 loans as long as the project receiving the loan is eligible for funding from that program category.

After identifying the candidate project, the next step is for the state to discuss the project and loan structure with the FHWA Division Office. After ensuring that the project meets all the requirements specific to Section 129(a)(7), the Division Office will authorize either the entire amount of the loan or an incremental amount, depending on project cash flow needs. At this point in the process, Federal-aid funds are obligated for whatever portion of the loan was authorized. Federal reimbursements can be received after the state actually disburses loan funds to the project sponsor. The non-Federal matching share for all Section 129 loan projects is 20 percent. Figure 4.1 illustrates the flow of funds.

Use of Section 129 loans for project financing has been very limited. One reason for this is the creation of the TIFIA direct Federal credit program in 1998, which created new, Federally administered credit opportunities – as well as a new pot of funding – for the same kinds of projects that would likely use Section 129 loans. However, for projects that do not meet the cost threshold required for TIFIA projects (as discussed later in this chapter) or do not otherwise fit the profile of TIFIA projects, Section

Figure 4.1 – Section 129 Flow of Funds



129 loans remain a good alternative. A Section 129 loan was first used under TE-045 for State Highway 190, also known as the George Bush Turnpike, in Texas (see case study for more information).

4.2 State Infrastructure Banks

State Infrastructure Banks (SIBs) are revolving infrastructure investment funds for surface transportation that are established and administered by states. SIBs may be capitalized with regular Federal-aid highway apportionments and state funds and can offer a range of flexible financial assistance, including loans and various forms of credit enhancement.

What's New

Prior to 1995, Federal law did not permit states to allocate Federal highway funds to capitalize revolving loan funds. However, in the early 1990s transportation officials began to explore the possibility of adding revolving loan fund capitalization to the list of eligible uses for certain Federal transportation funds. The appeal of this concept derived largely from the capacity of revolving funds to maximize the amount of infrastructure investment that could be supported from the given level of Federal funding used to capitalize the revolving fund. Money from the revolving fund would be loaned out to project sponsors, repaid, and thus recycled back into the revolving fund, and subsequently reinvested in the transportation system through additional loans.

The Current SIB Landscape

Currently, any state that capitalized a State Infrastructure Bank with Federal funds distributed in Federal fiscal years 1996 or 1997 may continue to operate that bank with whatever Federal funds have already been deposited in the bank. These states are free also to supplement the initial capitalization with additional state or local funds.

Four states named in TEA-21 (California, Florida, Missouri, and Rhode Island) may continue to use Federal highway and transit funding to further capitalize their banks.

In 1995, the Federally-capitalized transportation revolving loan fund concept took shape as the State Infrastructure Bank (SIB) pilot program, authorized under Section 350 of the NHS Act. This pilot program was originally available only to a maximum of 10 states, but then was expanded to include 38 states plus Puerto Rico under the 1997 U.S. DOT Appropriations Act. TEA-21 established a new SIB pilot program, but limited participation to four states – California, Florida, Missouri, and Rhode Island. These four states may enter into cooperative agreements with the U.S. DOT to capitalize their banks with Federal-aid funds authorized in TEA-21 for fiscal years 1998 through 2003. The SIB authorization in TEA-21 also modified some of the key provisions of the NHS Act.

As noted above, SIBs are a close relative of revolving loan funds, as they can lend money to an initial group of projects and then use the subsequent repayments to fund a future generation of loans. However, SIBs can also provide credit enhancement products (such as lines of credit and payment guarantees) in addition to loans.

Candidate Projects and Key Requirements

Designed to complement traditional transportation funding programs, SIBs can give states significantly increased flexibility in project selection and financial management. Much like a private bank, a SIB uses seed capitalization funds to get started and offers customers a range of loans and credit enhancement products. States participating in the SIB program either as authorized under the NHS Act or TEA-21, enter into a cooperative agreement with FHWA that provides the framework for SIB implementation, including the basic structure and purpose of the SIB, the roles of each party, the administration of funds, and reporting and audit requirements. While the authorizing Federal legislation establishes basic requirements and the overall operating framework for a SIB, states have the flexibility to tailor the bank to meet state-specific transportation needs. A critical step in implementing a state SIB is ensuring that there is legal authority to achieve the intended objectives of the program.

Eligible Transportation Projects

Candidate projects for SIB assistance include any highway project eligible for Federal assistance under Title 23 of the U.S. Code and any transit capital project eligible for Federal assistance under Title 49 of the U.S. Code. SIBs can provide financial support to both public and private sponsors of eligible transportation projects, and can assist in financing any stage of the project's development. There are no Federal share restrictions on the cost of projects eligible to receive SIB assistance.

Forms of Credit Assistance

SIBs can provide two principal forms of credit assistance: loans and credit enhancement products.

- Loans. Loans are the most common form of assistance offered by SIBs. The primary benefit of providing loans to projects is that loan repayments are recycled for future generations of projects. Each SIB has flexibility to structure loans specifically to meet an individual project's needs by offering below market interest rates and favorable repayment terms. Types of loans that SIBs can offer include subordi-

nate loans, short-term construction loans, and interest-only loans during construction periods.

Alternative forms of loans, such as grant anticipation notes (GANs) and similar short-term debt instruments, can be issued in anticipation of future revenues, including Federal reimbursement of state transportation expenditures and state appropriations. For example, the SIB could issue GARVEEs or GANs in the private capital markets on behalf of project sponsors or as a method of capitalizing the SIB.

- Credit Enhancement. Credit enhancement products offered through a SIB can provide additional security or credit support to transportation projects that are funded primarily through other means, such as the municipal bond market or private participation. This additional security can result in higher investor confidence which in turn creates lower interest rates, improved marketability of bonds, and lower overall project financing costs. From a statewide perspective, providing credit enhancement through a SIB can be more advantageous than providing direct loans because fewer resources are tied up, and as a result more projects can be assisted. States have broad discretion as to the kinds of credit enhancement products they wish to offer; possibilities include guarantees, interest rate subsidies, lines of credit, bond insurance, and provision of capital reserve funds.

During the first round of assistance with Federal capitalization funds, SIBs may not provide project sponsors with grant funding.

Terms of Credit Assistance

The Federal government places very few constraints on the terms that attach to individual loans or credit arrangements offered by a SIB. This means that each SIB determines what types of credit products to offer, what interest rates to charge, how to screen applicants, and other matters related to the day-to-day business of the SIB. There is also discretion to determine what forms of repayment are acceptable. Even though it is desirable for a SIB to introduce new revenue streams (such as toll receipts) into the pool of funding available for transportation investment, it is possible for SIB loans to be repaid with existing state resources or even Federal funds.

Although the Federal government gives states discretion to establish most credit terms, U.S. DOT requires that most SIB-assisted projects comply with the regulations that apply to grant-funded projects. All projects that receive so-called "first round" assistance – meaning loans or other credit support that derives from the initial Federal capitalization grants – must comply with these regulations.

For SIBs approved under the NHS Act, projects receiving second round assistance are not subject to the standard Federal highway or transit requirements, with one exception. If the first-round assistance was repaid with other Federal funds, any project receiving second-round assistance derived from those repayments must continue to comply with all Federal requirements.

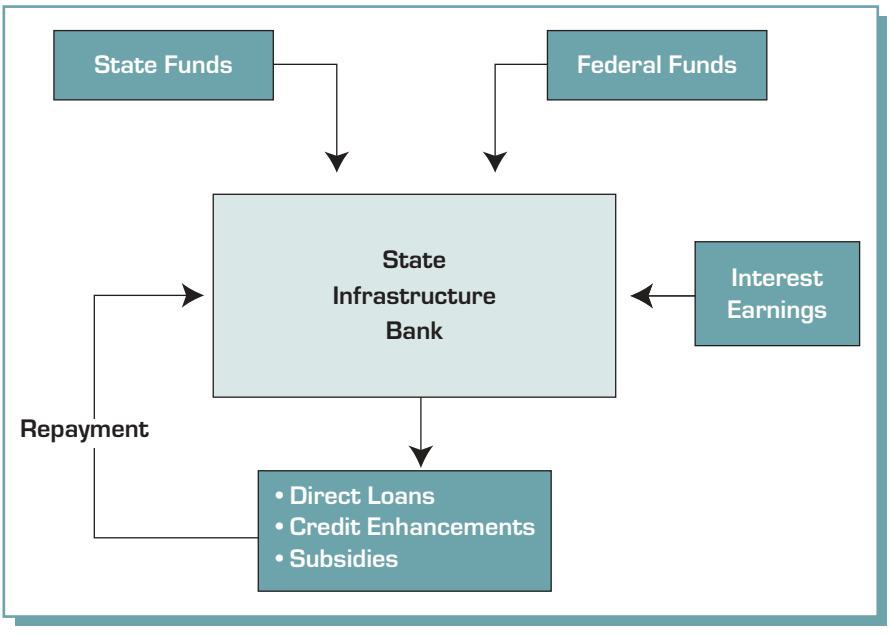
For SIBs approved under TEA-21, Federal requirements apply to all SIB-funded projects, regardless of round. At present this requirement applies only to Florida and Missouri, as those are the only states that have requested and been approved to operate under the TEA-21 provisions.

State Infrastructure Banks in Practice

Before a state can offer financial assistance to surface transportation projects through a SIB, it must first take the appropriate steps to establish and capitalize the bank. States may need to adopt specific enabling legislation to authorize the creation of a SIB. The types of assistance offered by a SIB will depend on the specific transportation financing needs of a particular state and the statutory authority given each SIB.

The critical feature of a SIB established under the Federal pilot program, and a key distinction from the TIFIA program, is that it is *capitalized* with Federal funds but *operated* by the administering state. The administration and opera-

Figure 4.2 – SIB Capitalization, Lending, and Repayment Process



tion of the SIB can be located within the state DOT, in an independent entity, or split between multiple agencies. Typically, the organization responsible for the SIB's daily operations is overseen by an oversight body, such as an appointed transportation commission.

Figure 4.2 illustrates the basic structure of a SIB. The structure is designed to allow for initial seed capital to be used to supply loans and credit enhancements on a revolving basis to eligible surface transportation projects. Many states are adding their own money to Federal funds to enhance the effectiveness of the SIB.

A SIB, like a private bank, needs equity capital to get started. The NHS Act allowed states participating in the first pilot program to allocate up to 10 percent of their Federal apportionment as a Federal capitalization grant to their SIB. States were required to match the Federal monies with funds from non-Federal sources. States can choose to contribute funds in excess of the required state match. The TEA-21 pilot states do not have a percentage limitation on Federal capitalization funds.

The mechanics of the capitalization process with Federal funds involve a variation of advance construction known as advance capitalization, as well as transfers from the originating program categories followed by obligations and outlays. The process is somewhat involved, as outlays, which translate into actual deposits into the banks, must be spread out over time in order to minimize the impact on the Federal budget.[1] Although this guidance applies to the 1995 pilot program, the steps in the capitalization process remain largely the same under the TEA-21 program.

The 1995 pilot program requires that states keep highway and transit funds separate, but TEA-21 removed this requirement, allowing the funds to be melded. Also some states that capitalized their banks with funds apportioned in 1996 and 1997 found it desirable to maintain separate accounts for initial capitalization grants and funds made available for second-round assistance. This structure is not necessary for any Federal capitalization funding under TEA-21, as the same Federal regulations apply to all projects receiving SIB assistance, regardless of the round of assistance.

Options for Structuring a SIB

Basically, SIBs can be structured either as a leveraged SIB or unleveraged SIB. A "leveraged" SIB would issue bonds against its initial capitalization, significantly increasing the amount of funds available for loans. Rather than loaning Federal funds and state matching funds, these funds together with anticipated loan repayments can be pledged as security for the bond issue. The proceeds from the debt issuance can then be provided to project sponsors as either loans or credit enhancements. This approach can make sense if demand for SIB assistance is greater than the cash available in the bank for loans.

An "unleveraged" SIB would simply lend available funds or provide credit enhancement to projects. The loan repayments would then be recycled for funding future projects, but there would be a time lag before the SIB would be replenished through repayments from its original borrowers. In order to maximize replenishment of a SIB, some state DOTs have limited borrowings to short-term loans.

SIBs Versus Section 129 Loans

The process for capitalizing a SIB and for offering a Section 129 loan is similar, as both activities are simply viewed as another kind of eligible expenditure of Federal-aid funds. The key difference is that a Section 129 loan provides financing to an individual project; funding a SIB capitalizes a financial entity that can assist multiple projects.

The decision of whether or not to leverage will depend on the assessment of overall loan demand and policies relative to bond financing. A state may need specific state-legislated authority to issue SIB loans. In practice, the leveraging decision may be made later in the SIB's life cycle when loan demand can be more easily identified and quantified. States also have the option, if demand for SIB financial assistance exceeds the initial Federal and state capitalization monies, to contribute additional state funds above the required match. While most SIBs are unleveraged, leveraging is a viable alternative for states to facilitate a larger dollar investment in transportation. For leveraged SIBs, credit and rating considerations will be factors in the overall SIB structure.

An Overview of SIB-Assisted Projects

As of September 2001, 32 states had entered into 245 loan agreements with a dollar value of over $2.8 billion. The following examples of state SIB programs demonstrate the flexibility and diversity possible in structuring SIBs to best meet state needs.

- As of September 2001, the Oregon SIB had executed nine loan agreements with an aggregate value of over $11 million. The size, scope, and repayment sources of the SIB's loans are diverse. The bank has funded two transit projects, three bridge retrofits, a large right-of-way purchase, new street construction, and a reconstruction project to repair a road damaged by

[1] *The interaction of the Federal-Aid Highway Program and the Federal appropriations process is a complex topic beyond the scope of this primer. Readers are advised to consult Financing Federal-Aid Highways (Publication No. FHWA-PL-99-015, August 1999) for further information.*

SIB Web Resources

Several SIBs have Internet web sites that provide good information on the activities of those state programs.

Arizona – http://www.dot.state.az.us/about/help/index.htm

Florida – http://www11.myflorida.com/financialplanning/sib.htm

Michigan – http://www.mdot.state.mi.us/programs/sibank/

Minnesota – http://www.oim.dot.state.mn.us/TRLF/

Ohio – http://www.dot.state.oh.us/sib1/

Oregon – http://www.odot.state.or.us/fsbpublic/otib.htm

Texas – http://www.dot.state.tx.us/revexp/sib/sibtoc.htm

Vermont – http://www.aot.state.vt.us/planning/sibinfo.htm

land slides. Loan maturities have ranged from two to 20 years with interest rates generally in the 3.5-5.0 percent bracket. State law permits the bank to be leveraged; it can issue up to $200 million in bonds, but has not yet used this authority.

- South Carolina's SIB provides the best example of a large, leveraged SIB. Since its inception, the SIB has approved financing and begun development of $3.0 billion in projects for eight applicants. SIB loans are financing most of the project costs. The SIB has issued over $1.2 billion in revenue bonds to provide funds for approved SIB projects. The SIB expects to issue another $800 million in revenue bonds over the next several years. The SIB financing mechanism is helping to condense 27 years of projects into seven years (see case study for more details).
- Puerto Rico's SIB program is unique in that the SIB monies have been leveraged to support the issuance of highway bonds. The Puerto Rico Highway and Transportation Authority used $15 million in combined Federal and state SIB "seed" money to establish a trust fund which was used as partial security for a $75 million bond issue. The bond issue financed critically needed highway and bridge projects throughout Puerto Rico.
- Both Florida and Arizona enacted state legislation that significantly expanded the states' ability to capitalize their respective SIBs.
  - Initially, the Arizona SIB, designated as the Highway Expansion and Extension Loan Program (HELP), was capitalized with Federal dollars and state matching funds. In light of funding demands and limited Federal capitalization funds, comprehensive state legislation (SB 1201) was enacted in 1999 to enhance funding through a combination of direct General Fund appropriations, additional state highway funds, and an innovative financing mechanism called Board Funding Obligations (BFOs). Over the FY 1999-2007 period, by leveraging the new funding sources through short-term loans, the HELP program will provide an estimated $600 million in loans to accelerate needed highway projects (see case study for more details).
  - In Florida, as in Arizona, SIB loan demands have exceeded available resources, even though the state had enjoyed expanded capitalization opportunities as one of the four TEA-21 SIBs. To meet increasing transportation needs in the state, the 2000 legislature passed a major transportation funding package. This package included state funding of $150 million for Florida's SIB, phased in over three years. This funding is capitalizing a new "flexible" state SIB which will in turn provide assistance to a wide range of transportation projects.

4.3 TIFIA – Direct Federal Credit

TIFIA allows U.S. DOT to provide direct credit assistance, up to 33 percent of eligible project costs, to sponsors of major transportation projects. Credit assistance can take the form of a loan, loan guarantee, or line of credit.

What's New

In 1998, the Congress authorized the Transportation Infrastructure Finance and Innovation Act (TIFIA) under Sections 1501-1504 of TEA-21, subsequently codified at Sections 181-189 of Title 23 of the U.S. Code. Like Section 129 loans and SIBs, the program's goal is to provide credit rather than grants to sponsors of surface transportation projects. However, TIFIA differs from these programs in two important ways. First, U.S. DOT directly negotiates with private and public sponsors of eligible transportation projects. Second, because the TIFIA legislation authorizes new funding for such credit assistance, TIFIA does not draw from funds already apportioned to the states for grant assisted projects.

The TIFIA legislation authorizes two types of funding over the five-year life of the TIFIA authorization (Federal fiscal years 1999 through 2003): 1) a credit amount of $10.6 billion to directly assist projects, and 2) potential budget authority of $530 million to cover U.S. DOT's costs to reduce defaults or interest rate swings.

Building on successful financings of three specially authorized projects (see the box on "TIFIA Trailblazers"), the TIFIA program was designed to achieve a range of linked objectives, including:

TIFIA Trailblazers

Prior to enactment of the TIFIA legislation, it literally took an act of Congress to obtain Federal credit assistance for surface transportation projects. The Alameda Corridor, the San Joaquin Hills Toll Road, and the Foothill/Eastern Toll Road, all in southern California, each received special congressional appropriations for credit support.

The Alameda Corridor project involves construction of a 20-mile grade-separated transportation corridor. The project is estimated to cost $2.4 billion by the time it is completed in 2002. Appropriations legislation passed for fiscal year 1997 provided a $400 million subordinate loan for this project. Provision of this loan improved debt service coverage for a financing package backed by user-based cargo fees and ultimately helped the sponsors of this project issue over $1 billion in taxable and tax-exempt bonds.

The San Joaquin Hills and Foothill/Eastern toll roads received lines of credit under the fiscal years 1993 and 1995 appropriations acts, respectively. For the San Joaquin Hills toll road, a $120 million Federal line of credit provided a standby source of cash should toll receipts prove insufficient to repay bondholders. The project was refinanced in 1997, with the marketability of the bonds improved thanks to the availability of this secondary source of funds. In the case of the Foothill/Eastern toll road, another $120 million line of credit helped improve coverage on more than $1.5 billion in bond financing.

- Improving the financial feasibility of projects on the brink of obtaining capital markets investment by offering credit assistance with flexible terms and a junior claim on repayment revenues;
- Attracting new private and non-Federal public investment in transportation facilities that otherwise would be delayed or not constructed at all;
- Encouraging new revenue streams, especially user fees, and improving their capacity to secure debt obligations; and
- Providing credit assistance in a responsible fashion, relying on the disciplines and practices of capital market participants to achieve a balance between flexible credit terms and repayment, and security.

The TIFIA program offers three credit assistance products: direct loans, loan guarantees, and lines of credit. Direct loans reimburse a project sponsor's expenditures for eligible project costs including right-of-way acquisition, design, construction, and financing costs. Loan guarantees and lines of credit provide sources of capital should project revenues fall short of amounts needed to repay commercial project investors. TIFIA credit instruments can offer project sponsors an excellent way to boost debt service coverage and enhance senior project obligations at an affordable cost.

Candidate Projects and Key Requirements

The TIFIA objectives are reflected in the program's threshold requirements, which fall into two broad categories related to: 1) project characteristics, and 2) project financial plans. Selected requirements from each category are profiled below.

Project-Related Requirements

In general, to be eligible for TIFIA credit assistance, a project must be eligible for grant assistance from applicable Federal surface transportation funding programs, and the project rules are the same as those for grant assistance.

Eligible Types of Projects – Highway, transit, passenger rail, and certain intermodal projects are eligible to receive TIFIA assistance. These include any project eligible for regular grant funding under Chapter 1 of Title 23 of the U.S. Code (highways) or Chapter 53 of Title 49 (public transit). Eligible projects may also include intercity passenger bus or rail facilities and vehicles (including Amtrak) and publicly-owned intermodal surface freight transfer facilities, so long as these facilities are located on or adjacent to National Highway System routes and are not airports or seaports.

Eligible Borrowers – Both public and private entities may apply for TIFIA assistance. Such entities include, but are not limited to state DOTs, local governments, transit

TIFIA Steps in the Process

1. Project sponsor submits letter of interest to U.S. DOT to determine if the project meets basic eligibility requirements.
2. If eligibility is confirmed, sponsor submits application, including fee (currently $30,000), and makes oral presentation to U.S. DOT.
3. U.S. DOT determines whether to provide TIFIA credit assistance.
4. If project is selected, U.S. DOT issues term sheet details that commits to the basic credit assistance.
5. U.S. DOT and project sponsor negotiate and execute final loan agreement.
6. (If direct loan) Loan proceeds are disbursed on agreed draw down schedule; project sponsor draws down funds to reimburse project costs.
7. (If direct loan) Project sponsor repays U.S. DOT per the terms of the credit agreement.

Eligible Project Costs

A number of TIFIA requirements reference "eligible project costs." What does this phrase mean?

Eligible costs include the cost of:

- Development phase activities (planning, feasibility analysis, revenue forecasting, environmental review, permitting, preliminary engineering and design work, and other preconstruction activities);
- Construction, reconstruction, and rehabilitation;
- Acquisition of real property;
- Acquisition of equipment and materials;
- Construction contingencies;
- Costs of environmental mitigation; and
- Certain financing costs, including capitalized interest, reasonably required reserve funds, and debt issuance expenses.

Costs incurred more than three years before the date of the application for TIFIA assistance will be considered on a case-by-case basis to be deemed eligible.

agencies, special authorities or districts, railroad companies, and private firms or consortia. However, intermodal freight transfer facilities must be publicly owned to receive TIFIA assistance.

Project Cost – In general, the candidate project's eligible costs must reach at least $100 million. There are two exceptions to this requirement. A project need cost only $30 million if its principal purpose involves installation of intelligent transportation systems. Also, the $100 million requirement can be waived if the cost of the project amounts to at least 50 percent of the state's annual apportionment of Federal-aid highway funds.

Public Approval – Any project seeking TIFIA assistance must be consistent with the state's long-range transportation plan and appear in the fiscally constrained STIP.

Environmental and Other Requirements – A TIFIA-assisted project must comply with the relevant Federal regulations that attach to grant-funded transportation projects of the same type. Thus, all requirements appearing in Chapter 1 of Title 23 or Chapter 53 of Title 49, as appropriate, apply, as do overarching Federal requirements such as Title VI of the Civil Rights Act of 1964 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. To ensure that all projects conform to the National Environmental Policy Act of 1969, TIFIA requires that before a project receives credit assistance the project must have environmental approval from the responsible Federal agency (FHWA, Federal Transit Administration, or Federal Railroad Administration).

Financial Requirements and Credit Considerations

The TIFIA program attempts to balance the Federal government's financial risk against the goal of assisting projects that may face difficulty in accessing traditional capital markets. On the one hand, U.S. DOT aims to assist those projects that genuinely require credit assistance in order to obtain investment from other sources. On the other hand, TIFIA seeks credit terms that reflect standard commercial lending safeguards.

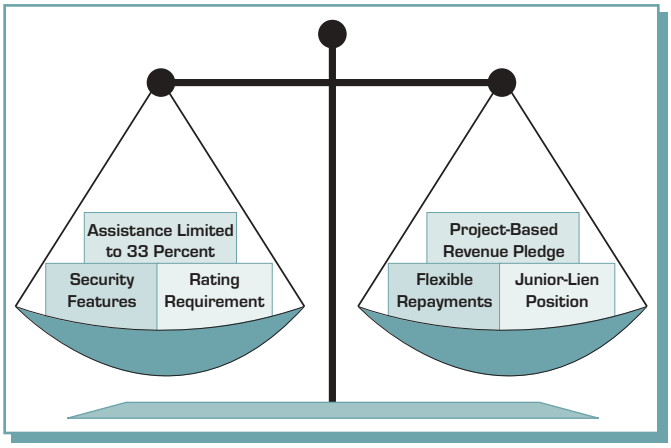
Figure 4.3 displays how selected financial requirements play out in this balancing act. Provisions to the left of the scale seek to demonstrate the creditworthiness of the investment. Provisions to the right of the scale seek to improve the feasibility of projects that may otherwise have difficulty accessing capital market financing. Of course, a project may simply be too risky to merit investment from prospective creditors – including the Federal government. A brief description of the key provisions shown in the figure follows.

Rating Requirement – Prior to executing a credit agreement, TIFIA requires that each project's senior debt obligations receive an investment-grade rating of Baa3/BBB- or higher from a nationally recognized credit rating agency.

The rating process is also a critical component of U.S. DOT's process for evaluating candidate projects. Any applicant for TIFIA assistance must provide a preliminary rating opinion letter from one of the national rating agencies as part of its application. While a preliminary opinion letter does not assign a rating to a project's obligations, it must express an opinion as to the proposed senior debt obligations' capacity to attain an investment-grade rating and must also express an opinion as to the anticipated credit quality of the proposed TIFIA credit instrument.

Federal Government as Minority Investor – TIFIA credit products can account for no more than 33 percent of all eligible project costs. This limitation helps ensure that the

Figure 4.3 – TIFIA's "Balancing Provisions"



TIFIA program attracts, rather than displaces, co-investment. Also, like the rating requirement described above, the limitation helps ensure that capital market discipline applies to the project.

Security Features – Each TIFIA credit agreement must include terms that offer sufficient assurance to U.S. DOT of repayment. For example, U.S. DOT requires certain covenants regarding coverage and flow of funds for common streams of revenue shared by senior bondholders and U.S. DOT. This ensures that the investment-grade rating on senior bonds provides a meaningful indication of the revenue risk borne by the Federal government.

Credit Terms – While the three preceding financial requirements speak to the U.S. DOT's efforts to safeguard its position as a creditor, other opportunities presented by the TIFIA statute and exercised in practice highlight the program's efforts to assist projects on the brink of financial feasibility. For example, repayment terms for TIFIA loans can be very flexible. The repayment period can extend for up to 35 years following substantial completion of the project. Also, it is possible for borrowers to propose repayment structures that match anticipated cash flows; U.S. DOT will not necessarily insist on level debt service payments if the borrower can make a convincing case for a more backloaded payment structure. Credit terms for loan guarantees and lines of credit are similarly flexible.

Subordination – As noted above, it is acceptable – and, in practice, typical – for a TIFIA loan to have a junior claim on project revenues, with bondholders enjoying the first claim. There is one important exception to a TIFIA credit instrument's functional subordination in the flow of funds, however. In the event of bankruptcy, insolvency, or liquidation of the borrower, the TIFIA credit instrument's claim on revenues must, by law, rise to parity with that of the senior obligations.

Dedicated Revenue Source – A TIFIA project must pledge repayment of credit assistance in whole or in part from user charges (such as tolls or user fees), special assessments (such as taxes specifically pledged to retiring project debt), or other non-Federal sources. While many dedicated revenue sources are less secure than general obligation pledges, the TIFIA program places a priority on encouraging new revenue streams and user-based charges (see box on "TIFIA and Project Finance"). Federal funds cannot be pledged to repay TIFIA credit assistance.

TIFIA and Project Finance

A true project financing is a stand-alone transaction, in which investors rely wholly on project-based revenues for repayment. Project financings are thus "non-recourse" deals, as investors have no recourse to other cash sources (such as a general obligation of the governmental sponsor) should project revenues prove insufficient to meet obligations. Thus, project financings are often riskier investments than projects backed by general obligation bonds or at least one additional layer of back-up revenue.

In administering the TIFIA program U.S. DOT looks favorably on project financings, since these transactions better fit the goals of encouraging new revenue streams and filling capital market gaps. At the same time, U.S. DOT recognizes the risk inherent in project financings and is likely to seek security provisions that will help safeguard the Federal government's financial position.

Forms of Assistance

As noted above, the TIFIA program makes three types of credit products available. Each has distinct benefits, and different products may be combined as long as the cumulative value of the credit assistance remains within 33 percent. Following is a brief description of the purposes served by the three forms of assistance.

Direct Loans – Direct loans provide flexible long-term financing for a portion of construction costs. Loans must be repaid within 35 years following project completion. The interest rate must be equal to or greater than the yield on U.S. Treasury securities of a comparable maturity. In practice, U.S. DOT has offered the comparable U.S. Treasury rate to all borrowers with no distinction for credit risk.

Loan Guarantees – Loan guarantees are intended to promote private investment in transportation projects by providing a Federal guarantee of debt service payments due to a commercial lender over the life of the loan. The terms of a loan guarantee are similar to those of a direct loan. The interest rate will be negotiated between the borrower and the lender and approved by U.S. DOT.

Lines of Credit – Standby lines of credit represent a U.S. DOT commitment to provide one or more direct loans contingent on shortfalls in revenues during the 10 years following substantial completion of a project. Lines of credit thus provide a secondary source of capital during this so-called "ramp-up" period when project-based revenues (such as toll receipts) are most likely to fall short of expectations. Up to 20 percent of the line can be converted into a loan in any given year during the 10-year window, and all draws on the line of credit are payable within 35 years of project completion. The interest rate on the line is established upon execution of a term sheet and must equal or exceed the current yield on 30-year Treasury securities.

TIFIA in Practice

Under TIFIA's rolling application process, each sponsor can determine the best timing of a TIFIA application, based on the status of project development and the project's particular needs.

The first step for a project sponsor considering credit assistance to finance the project is to contact the U.S. DOT's TIFIA Joint Program Office (JPO) in order to determine the project's potential suitability for TIFIA assistance. Then to begin the application process, the prospective applicant submits a detailed letter of interest to the TIFIA JPO. On the basis of the letter of interest, U.S. DOT will determine whether the project meets the basic eligibility requirements for participation in the TIFIA program. Upon U.S. DOT's confirmation that the project meets the basic eligibility criteria, the project sponsor may submit a formal application, following published guidelines. At the time of application, the project sponsor is required to pay a non-refundable application fee, currently $30,000.

Depending on the modal characteristics of the project, U.S. DOT may establish an evaluation team representing several offices and agencies to lead the review of the project application. Also, U.S. DOT typically employs the services of an expert financial advisor to assist with financial and credit risk assessments of the project. If the application passes the initial screening process for completeness and compliance with TIFIA program requirements, the project sponsor will be invited to make an oral presentation to the TIFIA JPO and the U.S. DOT evaluation team.

Based on the financial information in the application and the oral presentation (and any supplemental materials), U.S. DOT will estimate the subsidy cost for the proposed credit assistance. Concurrent with the preliminary calculation of the project's subsidy cost, the evaluation team will assess the strengths of the application in light of the eight selection criteria specified in law (see box on "TIFIA Selection Criteria").

On the basis of the overall evaluation and score, the TIFIA JPO will prepare a recommendation regarding credit assistance to the TIFIA Credit Council, which provides policy direction for the TIFIA program. The TIFIA Credit Council will make a recommendation to the Secretary of Transportation who has the final determination regarding TIFIA assistance.

Following selection, U.S. DOT will issue a term sheet that establishes the legal commitment to credit assistance and triggers the obligation of budget authority for the project. U.S. DOT will then initiate negotiations, concluding in the execution of a credit agreement. The credit agreement is the definitive agreement between U.S. DOT and the borrower, containing all the terms and conditions pursuant to which the credit assistance is provided. U.S. DOT will assess a credit processing fee to cover its outside consulting expenses during the negotiations, typically expected to range from $100,000 to $300,000.

If the form of credit assistance is a direct loan, funds will be disbursed on a reimbursable basis in accordance with an agreed draw down schedule, based on the project's financing needs. The borrower will be required to provide repayments according to the terms of the credit agreement.

The first 11 projects approved for TIFIA assistance (beginning in 1999) are valued at a combined total cost of more than $15 billion; case studies for two of these projects – the Miami Intermodal Center and SR 125 – are highlighted in Chapter 6. Pending execution of credit agreements for each of these 11 projects, TIFIA will provide $3.6 billion in credit assistance at an estimated budgetary cost of about $190 million. Thus, based on preliminary subsidy estimates, each TIFIA dollar invested in these projects is expected to support approximately $80 in capital investment.

TIFIA Selection Criteria

U.S. DOT evaluates all applicants for TIFIA assistance in light of the following eight statutory selection criteria.

National or Regional Significance – The extent to which the project is nationally or regionally significant, in terms of generating economic benefits, supporting international commerce, or otherwise enhancing the national transportation system.

Creditworthiness – The creditworthiness of the project, including a determination by the Secretary that any financing for the project has appropriate security features, such as a rate covenant, to ensure repayment.

Private Participation – The extent to which assistance would foster innovative public-private partnerships and attract private debt or equity investment.

Project Acceleration – The likelihood that assistance would enable the project to proceed at an earlier date than would otherwise be possible.

Technological Innovation – The extent to which the project uses new technologies, including intelligent transportation systems, which enhance the efficiency of the project.

Budgetary Cost – The amount of budget authority required to fund the Federal credit instrument made available to the project.

Environmental Impacts – The extent to which the project maintains or protects the environment.

Reduction of Grant Assistance – The extent to which credit assistance would reduce the contribution of Federal grant assistance to the project.

Chapter 5

Innovative Uses Of Tolling

Given the long history of tolling transportation facilities in the country, and the fact that tolls are collected in a majority of states, tolling is not viewed as an especially new or innovative financing approach. However, during the 1990s changes to Federal law provided states with greater flexibility than ever before to levy tolls on highway segments that have also received Federal highway funds. In addition, new Federal funding opportunities are now available for sponsors of highway projects that seek to reduce traffic congestion through the use of road pricing strategies.

While often controversial, tolls offer the opportunity to expand investment in the transportation system by introducing a new source of revenue into the transportation system. Finally, toll finance adheres to a "user pays" principle in which revenues derive from the individuals who most directly benefit from the facility.

Highway law now permits tolling on most non-Interstate highway projects and some Interstate projects so long as the sponsor of the toll facility commits to spending the resulting toll revenues first and foremost on debt service and operations and maintenance of the tolled facility. In addition, TEA-21 established a new pilot program permitting tolling of up to three reconstructed or rehabilitated Interstate highway segments. And another pilot program is available to provide special funding to states that seek to test "value pricing." This pilot program is designed to encourage research on the capacity of various toll and parking fee strategies to reduce traffic congestion.

5.1 Toll Provisions for Federal-Aid Highways

Toll provisions allow states to consider a tolling option for certain permitted types of Federal-aid projects on the projects' own merits without the penalty of a reduced Federal share.

What's New

ISTEA and the NHS Act significantly modified Section 129 of Title 23, which governs the use of tolls on Federal-aid highways. Among the changes were new opportunities to levy tolls on Federally-supported highways, and, with the NHS Act in 1995, an increase in the Federal matching share to 80 percent of total eligible costs.

The Surface Transportation and Uniform Relocation Assistance Act of 1987 provided a toll road pilot program in which nine states were given the authority to pursue development and construction of toll roads with up to 35 percent Federal-aid funds. Ultimately, three projects were constructed, and sufficient progress was demonstrated that Congress expanded the toll provisions under amendments to 23 U.S.C. 129. Section 1012 of ISTEA, now incorporated in Section 129 of Title 23, was designed to provide state and local governments with more flexibility in generating new capital for needed highway investments.

The amended 23 U.S.C. 129(a)(1) established five broad categories of toll activities eligible for Federal-aid highway funding and the amended 23 U.S.C. 129(a)(3) covers the use of toll revenues. If Federal-aid funds are used to construct a toll facility or approach to a toll facility or if a state plans to reconstruct and convert a free highway, bridge, or tunnel previously constructed with Federal-aid highway funds to a toll facility, an agreement under Section 129(a)(3) must be executed. The agreement requires that all toll revenues are used first for debt service, reasonable return on private investment, and operation and maintenance, including 4R work. At the option of the state, the agreement could also include a provision regarding toll revenues in excess of those needed for the required uses. This provision would entitle the state to use the excess revenues for purposes authorized under Title 23. Toll agreements executed prior to December 18, 1991, required the facility to become free when debt is retired. The new

Technique	What Does It Do?
Tolling Federal-Aid Highways	Provides states the discretion to levy tolls on most non-Interstate Federal-aid highways.
Interstate Reconstruction and Rehabilitation Pilot Program	Allows up to three pilot projects to convert reconstructed or rehabilitated free Interstate highway segments into tollways.
Value Pricing Pilot Program	Sponsors the testing and evaluation of road and parking pricing concepts designed to achieve reductions in highway congestion.

Section 129 toll agreement allows the state to determine whether a toll facility is to become free when debt is retired, or at some future point in time or whether tolls are to continue indefinitely.

The opportunity for states, toll authorities, and their private partners to levy tolls on Federal-aid highways came at an opportune time in the mid and late 1990s when Congress approved and FHWA implemented several programs that provide Federal capital assistance for projects with the capacity to generate revenues (such as toll receipts). These programs include the Federally capitalized, state administered SIB program and several direct Federal loan programs, including the TIFIA Federal credit program. These programs are described in Chapter 4.

Candidate Projects and Key Requirements

A Federal-aid highway project's eligibility for toll finance depends both on the type of facility and the nature of the project. Five categories of projects are eligible for Federal funds:

1. Initial construction of non-Interstate highways, bridges, and tunnels.
2. Resurfacing, restoration, rehabilitation, and reconstruction (4R) of existing toll facilities.
3. Reconstruction or replacement of Interstate or non-Interstate bridges and tunnels. The essential feature of this category is the conversion of a free bridge or tunnel to toll finance following the reconstruction or replacement.
4. Reconstruction of non-Interstate highways. Again, this category involves the conversion of a free facility to a toll facility. This option exists only for Federal-aid highways that are not on the Interstate system. However, conversion of free Interstate highway segments to tolled facilities is possible through a special pilot program described in the next section.
5. Preliminary studies to determine the feasibility of any of the toll construction activities described above.

Eligible expenditures include debt service, operations and maintenance, establishment of necessary reserve funds, and a reasonable return on private investment for projects that include private participation.

Tolling Federal-Aid Highways in Practice

If a state or toll authority wishes to use Federal-aid funds for construction or improvements to a toll facility or to convert an existing Federally funded free facility to a toll facility, the first step is to execute a toll agreement with FHWA. No agreement is necessary for preliminary studies.

The toll agreement must include five items:

1. The Section 129(a)(1) category that permits tolling;
2. A description of the toll facility covered by the agreement;
3. A commitment that all revenues will be used for debt service, operations and maintenance, a reasonable return on private investment, and establishment of necessary reserve funds;
4. If excess toll revenues are to be collected, a provision of how any excess toll revenues will be used; and
5. A stipulation regarding FHWA's access to records.

No model agreement has been developed, but samples of past agreements are available from FHWA.

The Federal matching share for all expenditures on tolled facilities is up to 80 percent – an increase from the 50 percent share originally authorized under ISTEA. In the case of privately owned facilities it is acceptable for the private owner to take responsibility for the non-Federal share of eligible project costs.

5.2 Interstate Reconstruction and Rehabilitation Pilot Program

This pilot program allows up to three projects to convert reconstructed or rehabilitated free Interstate segments into tollways.

What's New

Since the inception of the Interstate system in 1956, Federal law has generally prohibited new tolls on Interstate highways. Section 1216(b) of TEA-21 authorized a partial departure from this prohibition by establishing the Interstate Reconstruction and Rehabilitation Pilot Program. The purpose of the program is to provide for the reconstruction or rehabilitation of Interstate highway corridors where estimated improvement costs exceed available funding sources, and work cannot be advanced without the collection of tolls. This means that the candidate project must be for the conversion of a free Interstate highway to a toll facility in conjunction with needed reconstruction or rehabilitation. An analysis is needed to demonstrate that the facility could not be maintained or improved to meet current or future needs within the limits of the state's apportionments and allocations.

The program is to provide a construction revenue source and is not to be used as a traffic management tool.

Under this program the U.S. Secretary of Transportation has authority to select up to three pilot projects in which states will convert reconstructed or rehabilitated free

Interstate segments into tollways. No more than one project may be undertaken in any one state. No new Federal funding is available for projects approved under this program. The tolled facility will be evaluated for a period of no less than 10 years.

Candidate Projects and Key Requirements

Any Interstate highway segment is a candidate for this program so long as the project involves rehabilitation or reconstruction of a free facility and its conversion to a toll facility. Bridges or tunnels may be included in the segment, but are not specifically sought out under this program as Federal law already allows states to convert reconstructed or replaced free bridges and tunnels to tolled facilities.

A project's eligibility for the program also depends on the state demonstration that it has satisfied the following conditions:

- Demonstrated that the Interstate facility cannot be maintained or improved from current and future funding to be received under TEA-21 or from other sources without toll revenues;
- Completed a facility management plan covering imposition of tolls, a financial plan, and other appropriate information; and
- Assured FHWA that the local metropolitan planning organization (MPO) has been consulted concerning the placement and amount of tolls on the facility, if the project is in a metropolitan area.

Also, the state sponsoring the project must commit to using toll revenues for eligible uses, which comprise costs necessary to improve, operate, and maintain the facility; debt service; and a reasonable return on investment for any private party financing the project. Once renovation to the facility is complete, tolls must be collected for at least 10 years.

Since no additional Federal funding is authorized for this program, any project sponsor wishing to supplement toll revenues with Federal funds must use regular Federal-aid highway funding – except for funds from the Interstate Maintenance program category. By law, Interstate Maintenance funds cannot be used on any road approved under this pilot project.

Interstate Tolling in Practice

A *Federal Register* notice published on February 10, 1999 (Vol. 64, No. 27) provides detailed guidance on how to apply for the pilot program. Officials from any state interested in participating in this pilot program should contact the appropriate FHWA Division Office.

5.3 Value Pricing Pilot Program

The intent of the Value Pricing Pilot Program is to evaluate the capacity of road and parking pricing concepts to achieve significant reductions in highway congestion.

What's New

Section 1216(a) of TEA-21 authorized the Value Pricing Pilot Program. This program is an outgrowth of the congestion pricing pilot program established under ISTEA legislation. As with the congestion pricing pilot program, funds are available to help cover costs associated with pre-implementation activities for up to three years prior to a given project's implementation. These activities might include, for example, project design and planning and public information and outreach. Funding under this program is also available to reimburse eligible implementation costs for up to three years from the time the project is implemented. Academic studies of the theoretical impacts of value pricing or broad area-wide planning studies which incorporate value pricing as an option will not be funded under this program.

While the content of the pilot program has changed very little from its predecessor program, the TEA-21 Value Pricing Pilot Program authorizes $51 million in new funding for up to 15 public entities to undertake projects approved under the program. The period of availability of both the program and the funding runs from 1999 through 2003, the final year of the TEA-21 authorization period.

Value pricing, also known as congestion pricing or peak-period pricing, is a way of harnessing the power of the market to reduce congestion and the economic and environmental costs that congestion imposes. Value pricing is not synonymous with tolling, for it can involve other kinds of charges – such as parking fees – that are similarly designed to influence drivers' behavior. Still, tolls continue to represent a pre-eminent tool in the value pricing arsenal.

The key difference between a typical toll structure and a value pricing toll is variability. The key is for toll rates to vary with the level of congestion on the tolled roadway. Thus, rates tend to be higher during rush hour. This concept of assessing relatively higher prices for travel during peak periods reflects other industries' similar pricing responses to peak-use demands – airlines offer off-peak discounts; hotel rooms cost more during peak tourist seasons. Road-use charges that vary with the level of congestion provide incentives to shift some trips to off-peak times, less congested routes, or alternative modes of transportation. Value pricing can also encourage drivers to combine some lower-valued trips with other trips or to eliminate them altogether. Research on congestion pricing

during the late 1990s showed that elimination of a relatively small proportion of peak-period trips can lead to substantial reductions in overall congestion.[1]

Candidate Projects and Key Requirements

Public toll authorities as well as local, regional, and state sponsors of pricing projects designed to reduce congestion may apply for funding under the Value Pricing Pilot Program. Although public agencies must be the grant recipient of record and sign the project agreement with FHWA, it is acceptable for the project team to include private participants as well.

Candidate projects for this program should seek to reduce congestion through the use of pricing mechanisms. Just a sample of possibilities includes:

- Single lane tolling;
- Tolling multiple or single corridors;
- Area-wide road pricing;
- Time-of-day parking pricing strategies, such as peak-period surcharges or cash payments to employees who forego subsidized parking.

Legislation directs U.S. DOT to give priority to proposals with the greatest potential to reduce congestion and advance current knowledge of price effects, operations, enforcement, revenue generation, equity, and monitoring and evaluation mechanisms. FHWA will also give priority to promising but untried technological, operational, and institutional innovations. Projects with strong evaluation programs, significant commitment by implementing organizations, and evidence of stakeholder support are also encouraged. Finally, it is necessary for proposals to include a consideration of the potential financial effects on low-income drivers. The projects may include mitigation measures to correct potential adverse effects on this population.

It is permissible for any value pricing project selected under this program to levy tolls on the Interstate system, notwithstanding the general prohibition on tolls on the Interstate system. Interstate toll projects approved under this program do not count against the three Interstate toll projects permitted under the Interstate Reconstruction and Rehabilitation Pilot Program described in the preceding section.

Activities eligible for Federal-aid reimbursement under this program include planning for, establishing, managing, operating, monitoring, evaluating, and reporting on value pricing projects. The standard Federal share of costs for projects selected under this program is 80 percent, just as for most other Federal-aid highway programs.

Tolling Federal-Aid Highways in Practice

A *Federal Register* notice published on May 7, 2001 (Vol. 66, No. 88) solicited applications for the Value Pricing Pilot Program and provides the particulars on the application process.

Applicants are encouraged to discuss the nature of their proposed projects with FHWA before submitting an application. As part of the application project sponsors should prepare and submit a sketch plan that describes the congestion problem, the nature of the pricing project, and potential equity consequences of the proposed project. Following FHWA's review of the sketch plan, FHWA will work with the project sponsor to develop a detailed proposal, including a plan for monitoring and evaluating the project and a detailed finance and revenue plan. A team comprising several offices within U.S. DOT as well as the Environmental Protection Agency will review the proposal, though U.S. DOT has the ultimate authority to approve the proposals. If approval is granted, the next step is for FHWA and the project sponsor to sign a cooperative agreement defining the scope of work and funding commitments.

Value Pricing in Action

Projects in 12 states are currently being funded under the program. Three projects were undertaken in the original Congestion Pricing Pilot Program established under ISTEA, and are continuing in operation.

- I-15 HOT Lanes (San Diego, California) – Two existing reversible HOV lanes in the median of the congested I-15 Freeway in San Diego were opened to single-occupant vehicles that paid a toll.
- Midpoint and Cape Coral Bridge Variable Pricing Project (Lee County, Florida) – The toll schedules for two existing bridges were modified to provide discounts to customers who chose to travel in the period before and after the commute peaks. Significant shifts in traffic by eligible vehicles was observed during this experiment.
- IH-10 HOT Lanes (Houston, Texas) – On the congested IH-10 Freeway in Houston, the existing HOV lane was restricted to three or more occupants. Under the Value Pricing Pilot Program project, HOVs with two occupants were allowed to buy the right to use the HOV lanes.

[1] *See, for example, Publication No. FHWA-PL-99-014 HPTS/3-99(5M)E.*

Chapter 6

Case Studies

State DOTs have responded enthusiastically to the toolbox of innovative finance techniques developed in cooperation with U.S. DOT and FHWA. Since the TE-045 innovative finance initiative was launched in 1994, more than 100 projects in 42 states with a total construction value of over $7 billion have been approved to apply these techniques. And still more projects are being advanced with innovative finance techniques to address continued transportation funding challenges. Techniques have been applied individually or in combination, and a track record of success is evidenced by the case studies presented in this section.

The 10 case studies that follow illustrate the ways in which many of the innovative finance techniques described in this primer have been put into practice by the states. These case studies describe the financing challenge confronted by a state DOT on a particular project or program of projects, the solution afforded by innovative financing techniques, and the benefits resulting from application of the techniques. By classification of technique, these case studies are as follows:

Innovative Management of Federal Funds

- Flexible Match – Franklin Boulevard Interchange, Idaho
- Section 1044 Toll Credits – New Jersey

Debt Financing

- GARVEEs – Arkansas Interstate Rehabilitation Program
- GARVEEs – Southeast Corridor Project (T-Rex), Colorado

Credit Assistance

- Section 129 Loan – The George Bush Turnpike, Texas
- SIB – Arizona's HELP Program
- SIB – South Carolina: "27 in 7" Peak Performance
- TIFIA – Miami Intermodal Center, Florida
- TIFIA – SR 125, California

Finally, a case study for Ohio is presented which highlights a combination of innovative finance techniques.

Franklin Boulevard Interchange

The Financing Challenge

In mid-1999, the Idaho Transportation Department initiated a six-month, $2.7 million construction project to double the capacity and relieve congestion on the interchange between Interstate 84 and Franklin Boulevard in Nampa, Idaho. The Franklin Boulevard overpass crossing Interstate 84 was widened from two to four lanes, and traffic signals were installed at the intersections of the ramps with Franklin Boulevard, which provides access to downtown Nampa and nearby offices. The Franklin Boulevard project was built as a public/private partnership between Micron PC and the Idaho Transportation Department.

The construction project was intended to relieve congestion along Franklin Boulevard, which connects the Interstate to downtown. Franklin Boulevard also provides access to several major employers in Nampa, including Micron PC, a manufacturer of computer equipment and the area's largest employer.

Although the Franklin Boulevard project was a high priority for Micron PC and other Nampa area employers, the Idaho Transportation Department had committed much of its resources to other projects around the state, including the $75 million reconstruction of the Interstate 84 interchange with Interstate 184 in nearby Boise (the "Wye interchange"). The Franklin Boulevard interchange was not scheduled to be improved by the state until after 2002, when the Wye interchange in Boise is scheduled to be completed. Funds were not available to pay for the interchange on an accelerated schedule. However, an improved interchange was central to the expansion plans of Micron PC.

The Innovative Solution

To accelerate the construction of the Franklin Boulevard interchange, a public/private partnership was formed between the Idaho Transportation Department, Micron PC, and the City of Nampa. Central to the terms of this partnership was a $1 million contribution by Micron for interchange construction costs; the City of Nampa contributed $550,000. The private sector contribution had three key benefits. First, it allowed the interchange to be built years earlier than would otherwise have been possible if Idaho had financed the project on its own; accelerated construction also avoided inflation costs. Second, the $1 million was credited as part of the state's share of matching funds for the project, using the flexible match provisions that allow contributions from the private sector to qualify as local match. Third, the contribution meant that Idaho was able to reprogram the $1 million to other construction projects in the state.

The Results

The State of Idaho, the City of Nampa, and Micron PC all benefited from the public/private partnership established to construct the Franklin Boulevard interchange project. The project was completed in December 1999 on an accelerated schedule, resulting in lower project costs and improved traffic conditions on the interchange serving Micron PC and other businesses in Nampa. In addition, the project illustrates how state and Federal dollars can be leveraged by private sector contributions enabled by U.S. DOT's flexible match provisions.

New Jersey's Leveraging Approach

The Financing Challenge

As in other Mid-Atlantic states, New Jersey's transportation resources are barely sufficient to maintain the existing system, let alone increase capacity. A large percentage of transportation infrastructure has reached – or will soon reach – the end of its useful life. Meanwhile, a growing population and a recent economic expansion is straining the existing system, making capacity improvements increasingly urgent.

The New Jersey Department of Transportation (NJDOT) has made a strong commitment to the preservation and maintenance of New Jersey's existing transportation system, through such activities as reconstruction and rehabilitation of structurally deficient bridges and the improvement of pavement quality. The state estimates that structurally deficient bridges alone will require over $3.5 billion to fix.[1]

The nation's most densely populated state is also one of the most congested. New Jersey must continue to expand its transportation system in order to maintain, if not improve, mobility for both private automobiles and commercial vehicles. New Jersey's well-known and well-traveled toll roads make up about 20 percent of state-maintained highways. A portion of the toll revenues is deposited into the state's Transportation Trust Fund, along with proceeds from a motor fuel excise tax and heavy truck fees.

Recognizing the urgency of the state's funding problems, New Jersey voters approved a $500 million bond issue for transportation in November of 1999. Half of the proceeds will pay for local bridge repairs on an accelerated schedule and the remainder of the bonds are available for other transportation improvements. Even with the bond issue, however, the state's transportation needs far outstrip its financial resources.

The Innovative Solution

New Jersey has funded almost all toll road construction in the state with toll revenue bonds. Large capital projects, such as a $361 million widening of the New Jersey Turnpike in the mid-1990s, have helped New Jersey build up substantial toll credits. Under the "soft match" provisions of Title 23, Section 120 (j), New Jersey has been able to use these toll credits to secure 100 percent Federal funding for state transportation projects. As of September 2001, New Jersey has used approximately $860 million of $1.9 billion in approved toll credits for highway projects. In addition, $902 million has been transferred to the Federal Transit Administration for transit projects.

New Jersey Transit, the statewide transit agency, used toll credits to cover the non-Federal share of project costs for a one-mile, $200 million extension of the Newark City Subway light rail line, which will eventually connect Newark with Elizabeth. The 6.1-mile, $1 billion Hudson-Bergen Light Rail project was another candidate for soft match funds. Finally, NJDOT was able to allocate $15 million in toll credits for the southbound US 1/9 Waverly Yards Viaduct reconstruction project, also located in Newark.

The Results

These projects illustrate how the capital investment New Jersey has made in its toll system can be used to leverage Federal funds for other projects eligible for Federal aid. Through the Section 1044 toll credit provisions, the expenditures that New Jersey has made in improving and expanding its interstate toll system can be counted as the local match for eligible projects. This has allowed the state to advance more projects sooner and receive up to 100 percent Federal funding on other capital projects.

[1] *New Jersey Transportation Fact Book, 2000.*

Arkansas Interstate Rehabilitation Program

The Financing Challenge

While Arkansas's state highway system of about 16,300 miles accounts for one-fifth of the state's mileage, it carries over three-fourths of the state's traffic. Road needs have been steadily increasing and conditions have been deteriorating on some segments, particularly Interstates. In 1996 about 30.5 percent of rural Interstates and 25.2 percent of urban Interstates were rated in poor condition. A study in the mid-1990s identified a total state system need of about $6.9 billion over 10 years with a funding gap of $2.3 billion, based on existing revenue sources at the time of the study. The Interstate's 10-year repair needs were estimated at about $1.075 billion.

In 1995, a proposed bonding package for highway improvements was defeated in a vote of the citizens by a margin of 13 to 87 percent. Recognizing that road conditions were continuing to decline and that the state's economy was being impacted by poor road conditions, the Governor in 1997 appointed a Citizens Council on Highways and Transportation to address future road and bridge needs and review financing mechanisms to fund needed improvements to Arkansas's state highway system.

The Innovative Solution

In October 1998, the Council issued its report, *Arkansas's Highway and Waterway Transportation Needs: A Road Map for the 21st Century*. The Council recommended that the funding gap be met by the issuance of bonds secured by future transportation funding (i.e., GARVEE bonds) and that the match be funded by a combination of existing state funds and a phased increase in the tax on truck diesel fuel.

With the support of the Arkansas State Highway Commission and the Governor, the Arkansas General Assembly in 1999 passed a comprehensive funding package which put the question of issuing GARVEE bonds to a vote of the people. The package also included a phase-in of a three cent gasoline tax increase and a four cent diesel fuel tax increase over two years.

On June 15, 1999, Arkansas voters overwhelmingly approved by a four-to-one margin the proposal to allow the Commission to issue $575 million in GARVEE bonds to help finance reconstruction of Arkansas' Interstate highways on an accelerated schedule. The Interstate Rehabilitation Program (IRP), as it is known, will rebuild approximately 380 miles, or 60 percent of Arkansas' total Interstate miles within five years. The total cost of this rehabilitation program is estimated to be $950 million.

Arkansas sold its first GARVEE issue of $175 million in March 2000 and a second issue of $185 million in July 2001. The third issue is planned for 2002. The Arkansas bonds are backed by a full faith and credit pledge of the state, plus state motor fuel taxes. Future Federal funds, together with the required state matching funds and the proceeds from the phased-in four cent diesel fuel tax, will be used to retire the bonds.

The Results

Construction began under the Interstate Rehabilitation Program in the spring of 2000. The Arkansas Highway and Transportation Department will rehabilitate about 125 miles of Interstates yearly, compared to 12 to 15 miles previously with pay-as-you-go financing. The Department is on schedule to have all Interstate rehabilitation projects underway in three years and completed in five years. The first five projects were completed by the summer of 2001, marking the beginning of safer, more convenient travel on the Interstate system in Arkansas.

Arkansas recognized that GARVEEs could facilitate urgent highway rehabilitation needs in the state by advancing the work years earlier than would have been possible with traditional financing methods. The state investigated a broad range of traditional and innovative financing approaches to meet its rehabilitation needs, and identified GARVEEs as the best solution to quickly respond to the state's gap in available funding. The result is reconstruction of 60 percent of Arkansas' interstate system to improve safety, enhance mobility, and support continued economic growth in the state.

SOUTHEAST CORRIDOR PROJECT (T-REX)

THE FINANCING CHALLENGE

The Southeast Corridor of I-25 and I-225 has long been recognized as one of the Denver region's highest priority travel corridors. More than 230,000 vehicles drive through it every day. I-25 is the only north-south freeway in the state, and I-225, which provides access to I-70, is the region's major freeway bypass. The corridor connects the two major employment centers in the metro Denver area – the Denver Central Business District, or downtown, and the Southeast Business District. More than 180,000 people work in these two employment centers. Traffic volumes have risen faster than increases in population and employment with the result that the Southeast Corridor has surpassed its original estimated capacity and is Colorado's most heavily congested corridor.

Studies over a 20-year period consistently recommended that improvements be made to the highway corridor and that a mass transit element be incorporated in the overall improvement plan. The two responsible transportation agencies, the Colorado Department of Transportation (CDOT) for the highway component and the Regional Transportation District (RTD) for the public transit component, faced many challenges as they explored options for the future of the corridor, including both financial and political barriers. Numerous alternatives were considered during the Southeast Corridor Major Investment Study (MIS) conducted between 1995 and 1997. With the initiation of the environmental impact statement process in 1998, the question of how to pay for the Southeast Corridor project became a significant issue. Constitutional issues limit Colorado's options for accelerating transportation construction, specifically prohibiting the government from contracting debt in any form, including bonds and other long-term debt, without voter approval. Further restrictions limit yearly spending increases to the rate of inflation plus the percentage increase in population in the previous year.[1]

Not only was Colorado faced with a funding problem for the Southeast Corridor project, but 27 other high priority projects had been identified and placed on an accelerated construction schedule as part of a Strategic Transportation Investment Program, otherwise known as the 7th Pot Program. This program was adopted by the Colorado Transportation Commission in 1996.

THE INNOVATIVE SOLUTION

The project alternative that was selected to meet the Southeast Corridor traffic demands is comprised of highway widening, safety improvements, and light rail transit components. The proposed highway improvements are currently estimated to cost $795 million, and the transit portion $879 million. CDOT and RTD, in a collaborative effort, evaluated a number of funding options to finance the estimated $1.7 billion cost of the Southeast Corridor project which is being advanced as a single design-build contract. Their objective was to develop a fiscally responsible, flexible financial plan to respond to the funding gap. A bonding strategy was pursued in order to accelerate completion and save inflation costs, but enabling legislation and voter approval were needed.

Based on an extensive public outreach effort by CDOT, and with strong support from the Governor, the Colorado Legislature in the 1999 session enacted legislation that authorized CDOT to issue Transportation Revenue

[1] *Colorado Attorney General Formal Opinion No. 99-3, March 2, 1999.*

Anticipation Notes (TRAN) or GARVEE bonds to fund the 7th Pot projects, including the Southeast Corridor project. The TRANs statute limits annual principal and interest to 50 percent of Colorado's Federal highway apportionments in the year prior to issuance.

In November 1999, two bond initiatives were placed on the ballot: 1) $1.7 billion in TRANs bond principal for the 28 high priority projects; and 2) $457 million in sales tax bond principal for the light rail element of the Southeast Corridor. Both were overwhelmingly approved. Of the $1.7 billion in TRANs, approximately $600 million will be allocated to the Southeast Corridor project.

Southeast Corridor Project Funding

Revenue Source	CDOT	RTD
FTA (FFGA)		$ 525 million
Bond proceeds	$ 600 million	$ 324 million
Sales and use tax revenues	$ 195 million	
Local funds		$ 30 million
TOTAL	$ 795 million	$ 879 million

In addition, the Federal Transit Administration (FTA) signed a Full Funding Grant Agreement (FFGA) for the project in December 2000, with a pledge of $525 million in Federal funding over seven years. Various local governments have pledged a total of $30 million in matching funds.

Without the ability to issue GARVEE bonds to provide up-front capital and use future Federal highway dollars for debt service, CDOT would not have been able to bridge the funding gap. With pay-as-you-go financing, the Southeast Corridor project would not be completed until 2017.

The Results

The Southeast Corridor project, now known as the Transportation Expansion Project or T-REX, represents a true multimodal undertaking and exemplifies the innovation that is taking place today as transportation agencies meet the challenge of limited resources and growing infrastructure needs. Through partnerships, innovative delivery, and leveraging Federal resources with the GARVEE mechanism, CDOT and the RTD are building the Southeast Corridor project years earlier, and at a lower cost, than would have been possible under traditional approaches.

Funded without any new or increased taxes, the $1.67 billion project will relieve congestion, enhance safety, and provide needed accessibility to meet the growing population and employment in the corridor.

The George Bush Turnpike

The Financing Challenge

The President George Bush Turnpike is a 30-mile outer beltway under construction north and east of Dallas, Texas. The $700 million facility will have four to eight toll lanes (the Turnpike) in addition to four to six toll-free frontage road lanes (designated State Route 190) linking seven cities in three counties. The Turnpike is being built and operated by the North Texas Tollway Authority, which became responsible for the construction and operation of toll facilities in the Dallas-Fort Worth "Metroplex" region after the state-level Texas Turnpike Authority was dissolved by the Texas Legislature.

The Metroplex grew by more than one million residents between 1990 and 2000 and continues to grow at a rapid pace—more than 2.6 million people and 1.7 million new jobs are projected to move to the Metroplex by 2025.[1] The communities north of Dallas are absorbing the largest share of this growth, leading to severe peak-period congestion on existing freeways. Interstate 635, which lies south of the Bush Turnpike corridor, is currently the only major east-west highway north of Dallas, and needs to be expanded by three lanes in each direction at a cost of over $1 billion.[2] According to the Texas Department of Transportation (TXDOT), the I-635 expansion will reduce the duration of the peak period, but will not eliminate congestion altogether.

The George Bush Turnpike will provide a second east-west limited access highway through the center of the rapidly growing "Telecom Corridor," which contains corporate headquarters for several large firms. A Turnpike extension to Interstate 30 east of Dallas and a connection with I-635 and State Highway 161 northwest of Dallas will increase mobility throughout the Metroplex by linking Dallas-Fort Worth International Airport with employment centers and residential areas in northern and eastern suburbs.

The George Bush Turnpike faced many of the financial obstacles common to large construction projects. Specifically, the high cost of construction would have easily overwhelmed available financial resources. Traditional financing mechanisms were ill-equipped to advance a project of this magnitude without consuming most available funds and delaying other transportation projects. Further complicating the financial outlook for the project was the fact that TXDOT did not have statutory authority to issue bonds. Consequently, the primary means available for funding the George Bush Turnpike was traditional pay-as-you-go expenditures from motor fuel taxes and vehicle registration fee receipts.

TXDOT has reported that only one-third of the funds needed to maintain current levels of mobility in Texas will be available in the next 25 years. Local governments are required by TXDOT to purchase right-of-way for major facilities and raise matching funds for state and Federal grants. Since many local governments do not have the resources to raise the large amounts of cash necessary for transportation projects, TXDOT is advancing the concept of using toll revenues to finance new highway construction in order to avoid the constraints of traditional funding approaches. Toll roads and high-occupancy/toll (HOT) lanes have become a major component of transportation plans in every region of the state due to their ability to accelerate construction schedules of major projects.

The Texas Turnpike Authority (now the North Texas Tollway Authority) was given responsibility for constructing the George Bush Turnpike as a toll facility so that scarce state and Federal funds could be directed to other projects in

[1] *North Central Texas Council of Governments. Mobility 2025: The Metropolitan Transportation Plan.*

[2] *Texas Department of Transportation. I-635 (LBJ Freeway) Major Investment Study.*

the Metroplex. In order to maintain high bond ratings, the Authority requires a toll facility to generate revenues at least 1.20 times the amount of bonds outstanding. The $700 million cost of the George Bush Turnpike precluded financing the project exclusively with revenue bonds, since tolls were not projected to generate sufficient revenue to obtain a satisfactory credit rating in bond markets.

The Innovative Solution

To address the obstacles confronting implementation of the project, TXDOT and the Texas Turnpike Authority (TTA) formed a unique alliance to finance and construct the project as a turnpike. The partnership was supported by a change in Texas legislation in 1991 that allowed greater flexibility in turnpike project financing and the lending of highway funds for turnpike projects. The new legislation allowed the project to take advantage of Federal-aid funds available to TXDOT as well as TTA's bonding authority. The project partnership expanded to include three counties and seven cities, resulting in the donation of several locally owned rights-of-way to the project.

Leveraging this partnership was a proposal to use innovative financing tools available under ISTEA and FHWA's TE-045 program. TXDOT provided a $135 million Section 129 loan – using Surface Transportation Program (STP) funds – to TTA as part of the project's plan of finance. This funding gave TTA the ability to reduce the coverage (net revenues divided by net debt service) on its combined debt, and greatly enhance the creditworthiness of TTA's $446 million in revenue bonds issued for the first four segments of the project. Furthermore, the loan enabled TTA to contribute $20 million to the project from funds that might otherwise have been required as reserves for the debt.

TTA's repayment obligation on the Section 129 loan will be subordinate to the repayment of its toll revenue bond debt service. Repayment of the Section 129 loan is spread over 25 years and does not begin until 2004. Interest for the revenue bonds is capitalized through 2004, with the first annual debt service payment scheduled for 2005. Both repayment schedules protect investors from the risk associated with the project's construction and startup period.

The Section 129 loan was disbursed in five payments of $20 million, $35 million, $20 million, $40 million, and $20 million over a four-year period. TXDOT employed partial conversion of advance construction to spread the designation of Federal obligation authority over four years rather than incurring the upfront $135 million impact to its Federal obligation authority.

The Results

The use of creative partnerships and innovative finance tools enabled Texas to overcome significant financial barriers to construction of the George Bush Turnpike with the result that the project will be accomplished over a decade sooner than would have been possible under traditional pay-as-you-go financing.

The financial benefits of the Section 129 loan's inclusion in the mix of financing are highlighted below:

- The loan's subordinated status improved the credit quality of the senior bonds;
- TTA obtained below-market interest rates on their revenue bonds, reducing the debt burden on the project; and
- The loan repayments will provide the foundation for a self-sustaining revolving fund.

Through a combination of a Section 129 loan and partial conversion of advance construction, TXDOT structured a finance plan for the project that responded to the state's debt and cash flow constraints, allowing this and other important projects throughout the state to proceed more quickly than would otherwise be possible.

ARIZONA'S HELP PROGRAM

THE FINANCING CHALLENGE

Population growth and economic expansion are increasing the demands on Arizona's highway system. A 2001 analysis of Arizona's transportation revenues and needs predicts a $20.3 billion shortfall over the 20-year period from 2001 to 2020. Of this, an estimated $16.6 billion is in the category of roads and highways. While Arizona is not alone in its shortage of transportation funds, the rate of population growth (double the national average) and the accompanying traffic congestion are straining the system and funding is not keeping pace with the demands for new or upgraded facilities and increasing costs to maintain existing facilities. Faced with the challenge of trying to close the funding gap between needs and existing revenues without new or increased taxes, Arizona in the mid-1990s launched a comprehensive transportation investment strategy which included the application of innovative financing mechanisms to help bridge the funding gap and accelerate construction of priority projects in both the urban and rural areas of the state. The establishment of a State Infrastructure Bank (SIB) was a key component of the plan developed by the Arizona Department of Transportation (ADOT) to stretch limited transportation dollars and accomplish these objectives.

THE INNOVATIVE SOLUTION

Arizona was one of the first states approved by the U.S. Department of Transportation to participate in the SIB pilot program in 1996. The SIB concept in Arizona was initially tested under existing state law to demonstrate the benefits of the tool. However, in order to realize the full benefits of the program, comprehensive legislation (HB 2488) was enacted in 1998. This legislation established the Highway Expansion and Extension Loan Program (HELP), Arizona's SIB. The program is intended to accelerate the funding of highway construction throughout the state by offering loans or credit assistance to eligible projects.

The HELP program was initially funded with FHWA capitalization grants under the provisions of the NHS Act and state matching funds, totaling about $50 million. It was soon recognized that this level of HELP funding was insufficient to accelerate priority projects to complete the freeway system in Maricopa County and build needed projects in Pima County and Greater Arizona. ADOT, working with the Governor and the Legislature, explored options for additional sources of capitalization in order to fund an expanded HELP program to provide loans for project acceleration. In the spring of 1999, the Arizona Legislature passed Senate Bill 1201 that enhanced funding to the HELP program through a combination of direct General Fund Appropriations, additional state highway funds, and the creation of an innovative financing mechanism called a Board Funding Obligation (BFO). The additional capitalization that has been provided for Arizona's HELP Program includes:

- Authority for the State Transportation Board to issue up to $340 million in Board Funding Obligations. BFOs are short-term obligations purchased by the State Treasurer and paid back from ADOT program funds. The interest rate on BFOs is tied to U.S. Treasury rates.
- An appropriation of $20 million in fiscal year 2000 from the State Highway Fund.
- A State General Fund Appropriation of $20 million in fiscal year 2001.

In total, these new HELP capitalization sources, combined with the initial Federal and state capitalization monies and a strategy of making short-term loans, will provide in excess of $600 million in loan capacity over the fiscal year 2000-2004 period. Of this total, 50 percent of the loan funds must be allocated to projects in Maricopa County, 25 percent in Pima County, and 25 percent in the other 13 counties.

ADOT has partnered with local governments in advancing several Maricopa Freeway System projects. Local sponsors are sharing in the interest costs on HELP loans, increasing the pool of funds available for future loans. One freeway system project, located near a major new shopping mall, attracted private capital with the developer paying a portion of the local government's share of interest costs.

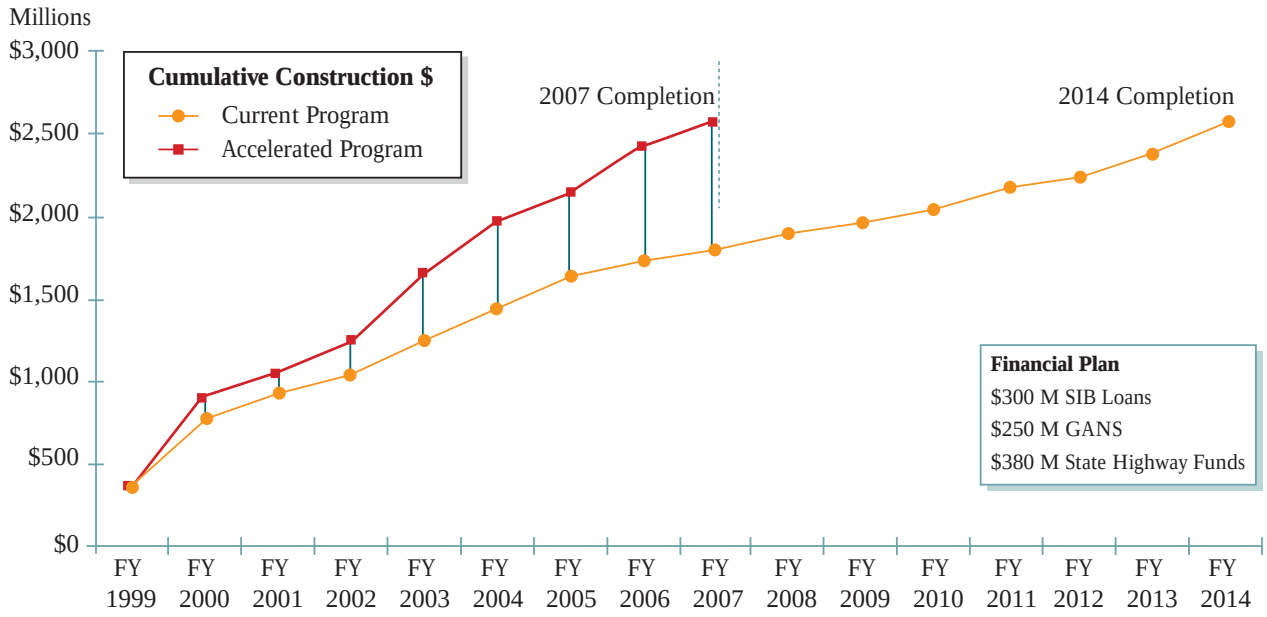
A key characteristic of Arizona's HELP program is that it provides mostly short-term loans. The average life of loans in the HELP portfolio is 3.5 years, enabling ADOT to recycle funds more quickly and therefore finance a larger volume of projects.

The Results

The increased investment in Arizona's highway infrastructure made possible through the HELP Program is improving mobility and safety on roadways throughout the state contributing to economic development, and avoiding escalating construction costs. As of September 2001, Arizona's HELP program has approved 23 loans totaling $373 million. Projects funded by HELP range from a $100 million right-of-way acquisition for the Maricopa County urban freeway system to a $2 million reconstruction and streetscape improvement of Sixth Avenue in Tucson and a $300,000 intersection improvement in the Town of Chino Valley.

Significant progress has been made in accelerating the completion of the Maricopa Freeway System. Using a combination of SIB loans and Grant Anticipation Notes (i.e., GARVEEs), ADOT anticipates completing the Maricopa Freeway System in 2007, seven years earlier than the scheduled completion date of 2014. Since fiscal year 1999, loans for freeway projects have totaled $223 million and another $150 million is planned through fiscal year 2004. In addition, the proceeds from GANS will finance $250 million in freeway work. Clearly, the benefits of innovative finance are demonstrated in the progress that is being made to complete the freeway system. This accelerated schedule would not have been possible with traditional financing approaches and existing taxes. The following chart demonstrates the synergy provided by the two innovative financing mechanisms.

Maricopa Freeway Program Acceleration Plan



In summary, Arizona's Highway Expansion and Extension Loan Program is enabling the state to better meet its transportation infrastructure needs and in doing so is making an important contribution to Arizona's transportation future.

SOUTH CAROLINA: "27 IN 7" PEAK PERFORMANCE

THE FINANCING CHALLENGE

South Carolina is the 11th fastest growing state in the country, outpacing the nation overall in terms of major economic indicators. Growth driven by tourism, business services, and international trade has created pressures on the state's transportation infrastructure. With its location at the heart of the southeast, South Carolina's transportation network must serve not only residents, but also tourists and cross-state traffic. Interstate 95, the main transportation corridor along the eastern seaboard, passes through the eastern half of the state, and commercial traffic destined for the nearby cities of Atlanta and Charlotte competes with commuters and tourists for space on the state's roadways. The Port of Charleston has grown with the state's economy, placing increasing demands on Interstate highways and other access routes.

Recognizing that the state's economic performance is strongly linked to its transportation network, the South Carolina Department of Transportation (SCDOT) in recent years has been faced with the challenge of how to keep pace with its transportation needs. In addition to meeting demands for new roads to serve growing areas of the state, SCDOT maintains the fourth-largest highway system in the United States, which includes 42,000 miles of state highways and 800 miles of Interstates. Traditional highway funding sources on a pay-as-you go basis have been insufficient to finance needed highway improvements. Not only does the state rank low in terms of Federal funds, but only five states have lower gasoline taxes than South Carolina, and six states have lower diesel fuel taxes.

South Carolina could not wait for years or decades until it could afford to pay for projects on its long-range transportation plan. Over the FY 1999-2008 period, SCDOT identified an estimated $940 million annual shortfall to meet the state's transportation needs. In an environment where needs substantially exceeded traditional funding mechanisms, SCDOT looked to new ways of doing business to accomplish its highway program.

THE INNOVATIVE SOLUTION

Using an array of innovative financing concepts, SCDOT is advancing 27 years of road and bridge projects in just seven years. By putting aside conventional ways of doing business, SCDOT has launched an ambitious $5 billion program of highway construction known as "27 in 7" Peak Performance. This accelerated program has put South Carolina in the fast lane, making a reality of projects that otherwise would not have been built for many years. Key innovations integral to implementation of this program are financial assistance through a SIB, public-private partnerships, and new ways of leveraging Federal dollars. New toll roads and a TIFIA loan have also been part of the financing package for the 27 in 7 program.

The cornerstone of SCDOT's accelerated program is the South Carolina Transportation Infrastructure Bank created in 1997 by the General Assembly to assist in financing major projects. South Carolina was one of the first 10 states selected to participate in the SIB Pilot Program established under the NHS Act. The South Carolina SIB is unique in several ways. First, the SIB is focused on funding larger transportation projects – those exceeding $100 million. Second, it is one of two SIBs nationally that is currently leveraging its capital through bonding. Another distinctive feature of the SIB is its authority to provide grants as well as loans for project financing.

The major sources of revenue for the SIB include $66 million from the State General Fund as a one-time source of capitalization and state recurring monies which include a share of a one-cent per gallon gas tax (approximately $22 million annually) and truck registration fees (approximately $53 million annually). Other sources include contributions from the borrowers who have received SIB funding in the form of loan repayments and additional contributions from SCDOT.

The South Carolina SIB has significantly leveraged these revenue sources through the issuance of bonds. To date, the SIB has issued $1.2 billion in revenue bonds to finance projects in the 27 in 7 program. The SIB expects to issue another $800 million in revenue bonds over the next several years. In addition, the SIB has received a TIFIA loan in the amount of up to $215 million to help finance the replacement of the Cooper River Bridges in Charleston.

Partnerships with the private sector and local governments have also been important in the advancement of projects in the 27 in 7 program. For example, SCDOT has entered into a public-private partnership with two construction and resource management firms to extend their staff and manage increased workload without inflating the size of the agency. At the local level, Metropolitan Planning Organizations (MPOs) and Councils of Government (COGs) have partnered with SCDOT to accelerate projects in their respective areas. A key part of this local project acceleration program involves issuance of a series of State Highway Bonds to supplement current Federal funds during the construction period. A portion of the MPOs and COGs future Federal fund allotments is being used for debt service on the bond issues under the Section 122 provisions.

The Results

The SCDOT is meeting the challenge of closing the gap between funding and transportation needs by pursuing an array of innovative solutions. The table below provides a summary of the accelerated program.

This ambitious program could not have been accomplished without the SIB financing mechanism to help accelerate major road and bridge projects across the state. By leveraging the SIB, South Carolina has been able to advance a significant amount of construction work in a relatively short period of time. More than $3.0 billion worth of projects have begun development as part of the 27 in 7 program, all of which are financed in part by funds from the SIB. Of the total project amount, the SIB is contributing 45 percent, the project sponsors are providing 45 percent, and SCDOT is contributing the remaining 10 percent. Agreements are currently in place for five projects.

Innovative Solutions
SCDOT's Accelerated Program Summary

(equates to about 2.7 times the normal program)

	($ in Billions)
State Infrastructure Bank Projects (bonded)	$ 2.60
Metropolitan Planning Organization Acceleration Program (bonded)	$ 0.62
Council of Governments Acceleration Program (bonded)	$ 0.62
Interstate Improvement Program (bonded)	$ 0.31
System/Intermodal Connectivity	$ 0.45
Anticipated Additional TEA-21 Funding	$ 0.70
Total	$ 5.30

Prominent projects benefiting from the 27 in 7 program include the Conway Bypass, a $387 million 28.5-mile road that reduces travel time for Myrtle Beach-bound traffic bypassing inland towns. Another SIB project is a $667 million replacement bridge for the U.S. 17 Cooper River Bridges in Charleston. Further inland, widening of a 15-mile section of Interstate 85 in Greenville and a five-mile section of Interstate 77 south of Charlotte, North Carolina will receive financial assistance from the SIB.

Under the 27 in 7 program, SCDOT also is accelerating upgrades to the Interstate system. Using up to $130 million in State Highway Bonds with debt service funded through future Federal funds, the program of Interstate improvements is expected to be finished in three to five years. It would have taken up to 15 years using traditional funding methods.

By compressing 27 years of planned work into seven years, South Carolina will realize many benefits, including enhanced mobility for its citizens and visitors, reduced congestion, more effective financing at low interest rates, and avoidance of inflation costs.

Miami Intermodal Center

The Financing Challenge

The Miami Intermodal Center (MIC), a $2.25 billion project located just east of Miami-Dade International Airport (MIA), is envisioned as a consolidated transfer center for passengers using the airport, intercity and commuter trains, rapid transit, local and intercity buses, and cruise ships in the Port of Miami. The project is being developed by the Florida Department of Transportation (FDOT) and the Miami-Dade Aviation Department, with cooperation from the Miami-Dade Expressway Authority, Miami-Dade Transit, Amtrak, and various rental car agencies serving the airport. The MIC is the centerpiece of a series of projects, including a consolidated rental car facility for MIA, a peoplemover connection to the airport, and a number of road access improvements around the airport.

The MIC "core" will include 1.45 million square feet of developable space, with longer range plans calling for 500,000 square feet of office space, 600 hotel rooms, 350,000 square feet of retail and entertainment space, and 1,400 parking spaces. Parcels surrounding the MIC core will allow over 12 million square feet of associated development governed by a new zoning overlay. Rental car fees will finance the construction of the rental car facility, and airport user fees will pay for the automated peoplemover connecting the MIC to the airport terminals.

Airport terminal roadways are faced with increasing congestion due to growth in air travel. Surrounding highways used to access the airport are clogged with traffic, in part due to the airport's location in the center of the Miami metropolitan area, the nation's third most-congested. In addition to new ramps and upgraded interchanges on airport access roads, an improved link between two major east-west highways, SR 836 and SR 112, will separate through traffic from local airport traffic in the vicinity of the airport entrance.

Approximately 80 percent of the passengers destined for nearby cruise terminals arrive at MIA and travel from the airport to the seaport by bus.[1] Further adding to congestion on airport roadways, the 28 on-airport rental car companies each use courtesy vans to shuttle customers between the airport terminals and their respective lots. The MIC core will provide enhanced bus service areas for cruise ship passengers, and a consolidated rental car facility with an automated peoplemover connecting to the terminals will eliminate the need for rental car shuttles.

With a total cost of over $2.25 billion, financing the MIC has presented a challenge for the State of Florida and Miami-Dade County. Phase 1 alone will cost $1.4 billion over five years, and has receives funding from a variety of sources. For Phase 1, the MIC will receive approximately $165 million in FHWA grants, over $386 million of FDOT state funds, and a $25 million Florida State Infrastructure Bank (SIB) loan. The Miami-Dade Expressway Authority is providing $87 million in toll-backed funding and has received $18 million from Florida's SIB for the SR 836/SR 112 connector. The Miami-Dade Aviation Department will fund the $400 million MIA-MIC Connector with airport user fees.[2]

[1] *MIC Project Web Site: http://www.micdot.com.*

[2] *Ibid.*

The large overall size of the MIC program prevented funding the entire project in a short period of time on a pay-as-you-go basis. The State of Florida, Miami-Dade County MPO, and Miami-Dade County had committed funding for Phase 1 of the overall project; however, the funds were spread over 15 years. These cash flow constraints would have caused the Phase 1 elements to be spread over 10 or more years resulting in significantly higher costs for right-of-way acquisition and construction. In addition, this would have resulted in the disruption of traffic in the area for an extended period of time.

The Innovative Solution

TIFIA has been instrumental in helping the MIC accelerate the Phase I improvements. Through the award of two direct loans under the TIFIA program in 1999 totaling $433 million, MIC will be able to accelerate right-of-way acquisition and construction of the MIC core saving over $100 million in overall project cost. A $269 million TIFIA loan secured by state motor fuel tax revenues will enable the fast-tracked acquisition of right-of-way and initiation of work on the MIC core. The second TIFIA loan, for $164 million, will be used to finance the consolidated rental car facility, and will be secured by rental car fees. Other major sources of funds include state gasoline tax revenues, SIB loans, and Federal funds as described above.

The Results

Through the TIFIA credit program, completion of the MIC core will be advanced by at least five years. The MIC is a critical and significant investment in the region and the state, and will be an integral part of a safe, efficient, economical, attractive, and integrated multimodal transportation system. As a significant component of the region's transportation network, strategically located near and integrated with Miami International Airport, the MIC will help solve the mobility problems in the congested and growing South Florida area.

SR 125

The Financing Challenge

The State Route 125 South project will consist of 11.5 miles of new highway alignment in San Diego County, California, extending from SR 905 near the U.S.-Mexico border to SR 54 near Sweetwater Reservoir. SR 125 South has long been regarded as a "missing link" in the San Diego highway network. In addition to serving cross-border traffic fueled by the North American Free Trade Agreement (NAFTA), the road is needed to accommodate population and economic growth in the southern San Diego region. Further, SR 125 South is vital to reducing out-of-direction travel by providing an inland alternative to Interstates 5, 15, and 805, which serve central San Diego and points north and south.

SR 125 South has been part of the California freeway/expressway system since 1959. Although formally adopted into the state highway system by the California Transportation Commission in the early 1960s, the route adoption was rescinded by the Commission in 1976 due in part to lack of funding. In 1984, the San Diego Association of Governments (SANDAG), the regional MPO, added SR 125 to the Regional Transportation Plan as part of San Diego County's future freeway system, but funding issues continued to affect the development of the project.

In April 1988, San Diego began collecting a voter-approved one-half-cent sales tax dedicated to transportation, as part of a local transportation improvement plan called "TransNet," a supplemental funding plan for transportation improvements administered by SANDAG. The motivation behind the TransNet initiative was a decline in state and Federal funding for highway projects during the mid-1980s and a growing backlog of needs. While the northern sections of SR 125 were partially funded by the TransNet program, only a two-mile segment of SR 125 from SR 54 south to San Miguel Road was included in the TransNet Ordinance. The remaining 9.5-mile portion of SR 125 South, from San Miguel Road to SR 905 was not included in the original legislation, and funding for SR 125 South was not expected to be available until 2020 or later.

In fact, SANDAG has identified a $12 billion shortfall in transportation funding over the 20-year period from 1999 through 2020, assuming the TransNet sales tax will not be extended when it expires in 2008. A new local sales tax dedicated to transportation would require a two-thirds majority in a ballot initiative. Further, Federal funds were not likely to increase substantially, and raising the motor fuel tax or initiating new user fees to fund transportation projects would have been very difficult. Given these constraints on public funding, California looked to the private sector to finance SR 125 South through tolls, private equity, and credit enhancement options.

The Innovative Solution

In order to attract private capital to highway projects and build roads faster, California passed enabling legislation (Assembly Bill 680) in 1989, which allowed the state to enter into partnerships with private firms for the development of privately-financed transportation projects. The SR 125 South project was one of the four demonstration projects approved under the AB 680 legislation. In 1991, the California Department of Transportation (Caltrans) signed a franchise agreement with California Transportation Ventures (CTV), a private consortium, to design and construct the new SR 125 South facility as a limited access toll road. CTV will operate and maintain the toll road for 35 years at which time control reverts back to Caltrans.

The SR 125 South project will initially be constructed as a four-lane, 11.5-mile limited access highway. The project includes a two-mile non-tolled segment funded by SANDAG, known as the San Miguel Connector, and a 9.5-mile privately-financed toll road. CTV is combining both project elements into one design-build arrangement to realize economies of scale. Project design and construction are expected to begin in 2002 with the opening of the toll road by 2005.

The San Miguel Connector, including the freeway-to-freeway interchange between Route 54 and SR 125, will be funded by a mix of Federal funds and local funds from the one-half-cent sales tax TransNet Program. This $130 million portion of the project, once constructed, will be operated and maintained by Caltrans.

The 9.5-mile SR 125 South toll facility, currently estimated to cost $ 390 million (excluding financing costs during construction), will be funded on a "project financing" basis with the private capital markets and sponsor equity providing approximately two-thirds of the funding for the project. In addition, TIFIA credit assistance currently in the form of a $94 million direct loan and a $33 million line of credit will close the funding gap and enhance the creditworthiness of the project. Toll revenues will be the primary source to repay senior debt and the TIFIA direct loan.

The SR 125 South project is unique among major new transportation projects in the country today in that it encompasses a number of significant innovations:

- Franchise Agreement with Caltrans
  - SR 125 was one of the first highway projects in the country to be advanced as a privately-financed road under a concession agreement with a state DOT. CTV, the private operator, will set and collect tolls and can earn a "reasonable return on its investment."
- TIFIA Credit Assistance
  - SR 125 was among the first five projects selected by the U.S. DOT in September 1999 to benefit from the TIFIA credit program. The TIFIA direct loan will improve access to the capital markets, facilitating financial close. Also the flexible TIFIA repayment features with deferred interest and principal will reduce debt service pressure during the early years of the loan.
  - In addition, the line of credit will serve in effect as a traffic guarantee during the first 10 years of operation.
- Private Participation
  - CTV and its investors are expected to contribute around $80 million of equity and donated land as part of the overall financing plan. In fact, approximately 70 percent of the right-of-way needed for the toll road will be donated from private landowners who hope that improved access offered by the roadway will increase property values and provide a catalyst for development.
- Design-Build
  - Project delivery will be through a design-build contract that requires the contractor to complete the construction for a fixed price and by a set date.

The Results

With the innovative blending of private equity investment, debt issuance through the private capital markets, and the support of TIFIA credit assistance, the SR 125 South project is being advanced without any state or Federal funding assistance. If Caltrans had funded the project using traditional methods of financing, the operation of the road segment would have been delayed to 2020 or later. The delay would increase congestion, slow economic development, and continue to constrain international trade. In addition, funding delays would have increased project costs over time due to inflation.

Given anticipated growth of the region, combined with the increased trade and traffic across the border, SR 125 South will provide congestion relief, reduced emissions, improved traffic flow, and access to border area employment centers. SR 125 South will open as a four-lane highway with the southernmost 9.5 miles operated as a toll road with electronic toll collection. The project calls for ultimate construction of a six to eight-lane highway plus possible future carpool lanes and/or transit facilities in the median.

As a result of innovative funding and institutional approaches, an important link in the nation's highway network will be built ahead of schedule, with beneficiaries ranging from San Diego residents to international trucking companies and their clients. The infusion of private funding, combined with TIFIA credit assistance, will help ensure the timely completion of SR 125 South, providing access vital to the economic success of the San Diego region.

COMBINING INNOVATIVE FINANCE TECHNIQUES: OHIO'S APPROACH

THE FINANCING CHALLENGE

Like other large midwestern states, Ohio boasts an extensive transportation system which relies heavily on motor fuel taxes to fund ongoing operations and maintenance as well as improvement and expansion. Ohio has the tenth largest highway network in the country and the fifth highest volume of traffic. Given increasing traffic volumes, Ohio's congestion is growing and the state is near the top of the "second tier" states that are now facing the type of congestion that cities such as Atlanta and Los Angeles have faced for decades. At the same time, system maintenance requirements are escalating. These trends are having a major effect on funding needs. The Ohio Department of Transportation (ODOT) must decide each year how to allocate its approximately $2 billion budget. The preservation of the large existing network consumes 85 percent of ODOT's revenue, limiting the state's ability to fund new capacity.

In order to meet essential capital needs, ODOT is restraining operational growth. Over the last several years, ODOT has implemented cost reduction and operational efficiency measures that have resulted in a savings of more than $400 million in actual and deferred operating costs since 1994. At the same time, however, Ohio drivers have increased their use of more environmentally-friendly ethanol-based fuels, which are taxed at a lower rate than traditional fuels; consumption of these fuels has increased from 16 percent to 40 percent of total gasoline consumption over the last five years, and is expected to continue. The high consumption levels of more environmentally friendly fuels is negatively impacting both state gas tax revenues and Federal funds.

While ODOT's operating cost reductions have enabled the issuance of more than $200 million in bonds between FY 1996 and FY 2000, revenue bonding capacity in the future is constrained. In this environment of minimal state growth in revenues and limited bonding backed by traditional revenues sources, ODOT has looked to Federal financing innovations to bolster its ability to fund needed infrastructure improvements.

THE FINANCING SOLUTION

Recognizing that traditional financing approaches are no longer sufficient to meet the state's growing transportation needs, ODOT has implemented an array of new leveraging techniques to stretch both state and Federal dollars. ODOT's toolbox includes a very active SIB program, GARVEEs, and the application of Federal matching techniques. ODOT was the first state approved for participation in the Federal SIB program and the first state to leverage Federal dollars through GARVEEs. In order to further optimize these techniques, ODOT is combining new techniques and realizing a multiplier effect.

This case study focuses on Ohio's use of toll credits to match the Federal share of GARVEE bonds. As of December 2001, Ohio had earned $653 million in toll credits from investments in the 241-mile Ohio Turnpike System. The state has used $286 million toward the non-Federal matching share of eligible projects. Ohio is using these toll credits at the state level to match GARVEE bonds and also is sharing its credits with local government agencies for both highway and transit projects.

Toll credits have provided the state matching share of Federal bond reimbursements for the Spring-Sandusky Corridor, a group of nine major improvement projects to be financed with the proceeds of an estimated $130 million in GARVEE bonds. These bonds have been sold in three tranches: $70 million in May 1998, $20 million in August 1999, and $100 million in September 2001, of which $30 million was allocated to the Spring-Sandusky project. Both Interstate and National Highway System (NHS) funds are being used to pay principal and interest on the Spring-Sandusky GARVEE bonds. It is estimated that ODOT will use toll credits of approximately $15.6 million for the entire corridor project.

Toll credits are also being used to help finance the new Maumee River Bridge in Toledo, Ohio. GARVEE proceeds from the September 2001 issue will fund $15 million of the estimated $390 million cost of the bridge, the largest single project ODOT has undertaken. The new river crossing, the number one transportation priority in northwest Ohio, will provide a vital link from the Port of Toledo to other points in the region. Future GARVEE bond issues will contribute another $200 million to the financing package for this project. ODOT plans to apply about $32 million in toll credits for this project.

Also on the drawing board is ODOT's plan to apply toll credits to future GARVEE financings for the Southeast Ohio Plan, a combination of eight projects in the southeast part of the state. Construction of this major improvement plan will be accomplished through a series of GARVEE bond issues, estimated to total $145 million. An estimated total of $29 million in toll credits will be used to advance the Southeast Ohio Plan.

The following table summarizes ODOT's GARVEE financings, both actual and planned, and shows the estimated application of toll credits.

Ohio's GARVEE Bond Issues (dollars in millions)

		Anticipated Allocation of GARVEE Proceeds		
Bond Issues	**Face Amount of Issue**	**Spring-Sandusky**	**Maumee River Bridge**	**Southeast Ohio Plan**
May 1998	$70	$70	$0	$0
August 1999	$20	$20	$0	$0
September 2001	$100	$30	$15	$55
Planned Issues	$290	$0	$200	$90
Planned Use of Toll Credits		$15.6	$32	$29

The Results

The issuance of GARVEE bonds in Ohio, combined with toll credits, has facilitated the advancement of three major infrastructure improvement initiatives, totaling an estimated $807 million: the Spring-Sandusky Corridor, the new Maumee River Crossing, and the Southeast Ohio Plan. By combining two innovative finance tools, GARVEEs and toll credits, ODOT has optimized limited transportation dollars and increased its investment in projects of critical importance to the state's mobility. These projects are being completed years in advance of when they would have been constructed using traditional financing techniques. Toll credits, as demonstrated here, can be of significant value to a state, by freeing up cash resources to be allocated to other priorities, such as system maintenance requirements.

Selected Resources

Additional sources of information on innovative financing techniques for transportation projects are available through a wide range of web sites, publications, and contacts. These include general innovative financing resources and resources specific to each of the techniques described in this primer.

General Resources

Federal Highway Administration. Innovative Finance Home Page.
www.fhwa.dot.gov/innovativefinance/

Federal Highway Administration. *Innovative Finance Newsletter* (October 1996 – June 1997) and *Innovative Finance Quarterly* (September 1997 – present).
www.fhwa.dot.gov/innovativefinance/ifpubs.htm

Federal Highway Administration. *An Evaluation of the TE-045 Innovative Finance Research Initiative,* October 1996.
www.fhwa.dot.gov/innovativefinance/index.htm

National Cooperative Highway Research Program. *Innovative Financing Clearinghouse.*
www.innovativefinance.org

Transportation Research Board, *Transportation Finance for the 21st Century*, Proceedings of a Conference, Dallas, Texas, April 23–25, 1997, 1997.

Federal Transit Administration. "Innovative Finance Handbook." May 1996.
www.fta.dot.gov/library/ntl/budet.html

Federal Transit Administration. "Innovative Finance Techniques for America's Transit Systems." September 1998.
www.fta.dot.gov/library/ntl/budet.html

Contacts:

Federal Highway Administration, Federal-Aid Financial Management Division
400 7th Street, S.W., Room 4313
Washington, DC 20590
(202) 366-0673

TIFIA Joint Program Office
400 7th Street, S.W., Room 4301
Washington, DC 20590
(202) 366-5785

Federal Highway Administration, Southern Resource Center
61 Forsyth Street, S.W., Suite 17T26
Atlanta, GA 30303
(404) 562-3680

Federal Highway Administration, Western Resource Center
210 Mission Street, Suite 2100
San Francisco, CA 94105
(415) 744-3102

Federal Highway Administration, Midwestern Resource Center
19900 Governors Drive, Suite 301
Olympia Fields, IL 60461
(708) 283-3513

Innovative Management of Federal Funds

Advance Construction/Partial Conversion of Advance Construction

Federal Highway Administration, *Federal-Aid Policy Guide, Subpart G – Advance Construction of Federal-Aid Projects,* May 25, 2000.
http://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0630g.htm

Federal Highway Administration. *Guidance on Section 308: Advance Construction of Federal-aid Projects,* May 1996.
http://www.fhwa.dot.gov/innovativefinance/sc308510.htm

Tapered Match

Federal Highway Administration. "Memorandum: Tapered Match on Federal-aid Projects." July 1999.
http://www.fhwa.dot.gov/innovativefinance/tapered.htm

Inman, Max. "Grant Management Techniques: Tapered Match May Provide a Better Fit." *Innovative Finance Quarterly* (Summer/Fall 1999).
http://www.fhwa.dot.gov/innovativefinance/ifq52.htm, or
http://www.fhwa.dot.gov/innovativefinance/ifq52.pdf (pdf version)

Flexible Match

Federal Highway Administration. *Fact Sheet: Federal Matching Flexibility*, September 14, 1998.
http://www.fhwa.dot.gov/tea21/factsheets/matching.htm

Federal Highway Administration. "Guidance on Section 322: Third Party Donations of Funds, Materials, or Services for Federally Assisted Projects." May 1996.
http://www.fhwa.dot.gov/innovativefinance/sc322510.htm

Toll Credits

Federal Highway Administration. "Memorandum: Toll Credit for Non-Federal Share, Section 1111(c) of TEA-21, Implementing Guidance." August 1998.
http://www.fhwa.dot.gov/tea21/tollcred.htm

Debt Financing

Federal Highway Administration. *GARVEE Bond Guidance.* August 2000.
http://www.fhwa.dot.gov/innovativefinance/garguid1.htm

Credit Assistance

Section 129 Loans

Federal Highway Administration. *Guidance on Section 313(b) of the NHS Act: Loan Provisions under Section 129(a)(7) of Title 23.* May 1996.
http://www.fhwa.dot.gov/innovativefinance/ifg.htm

State Infrastructure Banks

Federal Highway Administration, SIB web site, including guidance and best practices.
http://www.fhwa.dot.gov/innovativefinance/sib.htm

Federal Highway Administration. *State Infrastructure Bank Primer.* September 1997.
http://www.fhwa.dot.gov/innovativefinance/sibprimr.htm

Federal Highway Administration. *FHWA Guidance for Administering the State Infrastructure Bank Pilot Program.* October 1997.
http://www.fhwa.dot.gov/innovativefinance/guidance.htm

TIFIA

Federal Highway Administration. TIFIA web site, including legislation and regulations, a program guide and application, *TIFIA Times,* and links to TIFIA credit enhancement projects.
http://tifia.fhwa.dot.gov/

Tolling

Tolling Federal-Aid Highways

Federal Highway Administration. *Guidance on Section 313(a) of the NHS Act: Toll Facilities Under Section 129 of Title 23.* May 1996.
http://www.fhwa.dot.gov/innovativefinance/sc313510.htm

Interstate Reconstruction and Rehabilitation Pilot Program

Federal Highway Administration. "Memorandum: Interstate Highway Reconstruction/Rehabilitation Pilot Program Section 1216(b) of TEA-21 Solicitation for Candidate Proposals," December 24, 1998.
http://www.fhwa.dot.gov/tea21/tollpilt.htm

Value Pricing Pilot Program

The State and Local Policy Program of the Hubert H. Humphrey Institute of Public Affairs within the University of Minnesota hosts a web page for the value pricing pilot program.
http://www.valuepricing.org

Federal Highway Administration. Value Pricing Pilot Program web site, including program information, best practices, newsletters, reports, and outreach activities.
http://www.fhwa.dot.gov/policy/13-hmpg.htm

Federal Highway Administration. *Value Pricing Pilot Program: Notice of Grant Opportunities.* Updated March 2000.
http://www.fhwa.dot.gov/policy/vppp.htm

U.S. Department of Transportation. *TEA 21, Value Pricing Pilot Program Fact Sheet.* September 1998.
http://www.fhwa.dot.gov/tea21/factsheets/valpr.htm

Innovative Finance Glossary

63-20 Corporations Corporations established under IRS Revenue Rule 63-20, which permits non-profit corporations other than solely governmental bodies to issue tax-exempt debt.

Advance Capitalization (ACAP) Relates to the SIB pilot program only. A Federal-aid funding procedure that permits each SIB pilot state to notify FHWA when it has identified an amount of Federal assistance that it may ultimately convert to a SIB capitalization grant. ACAP simply establishes a baseline from which to calculate the maximum amount of Federal funding that may be deposited into a SIB during succeeding years. The ACAP process is not used in capitalizing transit accounts. Instead, a similar process, in which grantees commit an amount of grant funds to SIB capitalization, is employed.

Advance Construction (AC) States or local governments independently raise up-front capital required for a Federally approved project and preserve eligibility for future Federal-aid reimbursement for that project. At a later date, the state can obligate Federal-aid highway funds for reimbursement of the Federal share. This tool allows states to take advantage of access to a variety of capital sources, including its own funds, local funds, anticipation notes, revenue bonds, bank loans, etc., to speed project completion.

Authorization Act Basic substantive legislation that establishes or continues Federal programs or agencies and establishes an upper limit on the amount of funds for the program(s) for a certain period (historically, four to six years). The current authorization act for surface transportation programs is the Transportation Equity Act for the 21st Century (TEA-21).

Bond Counsel A lawyer or law firm, with expertise in bond law, retained by the issuer to render an opinion upon the closing of a municipal bond issue regarding the legality of issuance and other matters including the description of security pledged and an opinion as to the tax-exempt status of the bond.

Bond Insurance A financial guarantee provided by a major insurance company (usually AAA rated) as to the timely repayment of interest and principal of a bond issue.

Budget Authority Authority provided by law to enter into financial obligations that will result in immediate or future outlays of Federal government funds. Budget authority includes the credit subsidy costs for direct loan and loan guarantee programs. Basic forms of budget authority include appropriations, borrowing authority, contract authority, and authority to obligate and expend offsetting receipts and collections.

Capitalization Process of depositing various funds as seed capital into a SIB to enable financial assistance.

Capitalized Interest A specified portion of the original bond proceeds which will be used to pay interest on the bonds until revenue from planned sources becomes available upon completion of construction.

Cooperative Agreement (SIB) Written consent between a state and the Federal government used to define the process of SIB implementation. The agreement outlines the basic structure and purpose of the SIB and roles of each party, and sets forth how the funds of the SIB will be administered.

Credit Enhancement Financial guarantees or other types of assistance that improve the credit of underlying debt obligations. Credit enhancement has the effect of lowering interest costs and improving the marketability of bond issues.

Credit Ratings Credit quality evaluations of bonds and notes made by independent rating services. A higher bond rating generally lowers the interest rate that the borrower must pay and, therefore, overall capital costs.

Debt Service The amount of money necessary to pay principal and interest on a debt instrument.

Debt Service Coverage The margin of safety for payment of debt service on a revenue bond, reflecting the number of times (e.g.,1.2) by which annual revenues after operations and maintenance costs exceed annual debt service.

Equity Commitment of money from public or private sources for project finance, with a designated rate of return target.

Flexible Match Any non-Federal match that is allowed under FHWA laws and regulations other than state and local cash contributions to a project. Flexible matches permitted under new regulations include use of private cash and in-kind contributions, publicly-owned right-of-way, and funds from other Federal agencies.

Full Faith and Credit The pledge of the full taxing and borrowing powers of a government to pay its debt obligations.

General Obligation (G.O.) Bond A security backed by the full faith and credit of a state, locality, or other governmental authority. In the event of a default, holders of general obligation bonds have the right to compel a tax levy, other borrowing, or legislative appropriation in order to satisfy the debt obligation.

Grant Anticipation Notes (GANs) Short-term debt that is secured by grant money expected to be received after debt is issued. A GARVEE is a special type of GAN that is repaid with Federal highway funds (see GARVEE).

Grant Anticipation Revenue Vehicle (GARVEE) A GARVEE is any bond or other form of debt repayable, either exclusively or primarily, with future Federal-aid highway funds under Section 122 of Title 23 of the United States Code. Although the source of payment is Federal-aid funds, GARVEEs cannot be backed by a Federal guarantee, but are issued at the sole discretion of, and on the security of, the state issuing entity.

Intelligent Transportation Systems The application of advanced electronics and communication technologies to enhance the capacity and efficiency of surface transportation systems, including traveler information, public transportation, and commercial vehicle operations.

Interest Subsidy The net present value cost of providing credit assistance (e.g., direct loans or loan guarantees) at a rate below the rate of U.S. Treasury securities issued for a comparable term.

Investment Grade Describes the top four rating categories of relatively secure bonds suitable for a conservative investor. Standard & Poor's rating service looks upon all bonds between the AAA and BBB ratings as investment grade. Generally speaking, any bonds rated below BBB are considered to have speculative features and are deemed sub-investment grade or junk bonds.

Junior Debt Debt having a subordinate or secondary claim on an underlying security or source of payment for debt service, relative to another issue with a higher priority claim. (See Subordinate Claim).

Letter of Credit An instrument or document issued by a bank guaranteeing debt holder payment by enabling the bond trustee to draw from the bank the full amount of principal and interest due on each debt payment date.

Long-Range Transportation Plan The transportation plan covers a 20-year period and includes both short and long-term actions that develop and maintain an integrated, intermodal transportation system. The plan must conform to regional air quality implementation plans.

Municipal Bonds Interest bearing obligations issued by state or local governments to finance operating or capital costs. The principal characteristic that has traditionally set municipal bonds apart from other capital market securities is the exemption of interest income from Federal income tax.

Non-Federal Match The commitment of state or other non-Federal funds required to receive Federal funds.

Obligation The Federal government's legal commitment (promise) to pay or reimburse the states or other entities for the Federal share of a project's eligible costs.

Outlay Actual cash payment made to the states or other entities. Outlays are provided as reimbursement for the Federal share for approved highway program activities.

Parity Debt Debt obligations issued or to be issued with an equal claim to other debt obligations on the source of payment for debt service.

Partial Conversion of Advance Construction (PCAC) Process allowing states to begin a project with their own source of funding, and then incrementally obligate Federal funds.

Pay-As-You-Go Financing Describes government financing of capital outlays from current revenues or grants rather than by borrowing.

Preliminary Rating A credit opinion from a rating agency based on a preliminary assessment assigned to a proposed bond issue.

Ramp-up Phase The phase in a project's life cycle immediately following construction. It is during this phase, the early years of operation, that a project's revenue stream is established.

Rate Covenant A contractual agreement in the legal documentation of a bond issue requiring the issuer to charge rates or fees for the use of specified facilities or operations at least sufficient to achieve a stated minimum debt service coverage level.

Rating Agency An organization that assesses and issues opinions regarding the relative credit quality of bond issues.

Revenue Bonds Bonds whose principal and interest are payable exclusively from earnings of a public enterprise.

Revolving Fund Financing tool that recycles funds by providing loans, receiving loan repayments, and then providing further loans.

Section 129 Loan Section 129 of Title 23 of U.S. Code permits states to use Federal-aid funds to make loans to any Federally-eligible project. The loans must be repaid with a dedicated, non-Federal source.

Senior Debt Debt obligations having a priority claim on the source of payment for debt service.

Start-up Project A separate, free-standing and new facility dependent on its own revenue stream to generate earnings to cover operating and capital costs.

State Infrastructure Bank A state or multi-state revolving fund that provides loans, credit enhancement, and other forms of financial assistance to surface transportation projects.

State Transportation Improvement Program (STIP) A short-term transportation planning document covering at least a three-year period and updated at least every two years. The STIP includes a priority list of projects to be carried out in each of the three years. Projects included in the STIP must be consistent with the long-term transportation plan, must conform to regional air quality implementation plans, and must be financially constrained (achievable within existing or reasonably anticipated funding sources).

Subordinate Claim A claim on an underlying source of payment for debt service which is junior or secondary to that securing another debt obligation. (See Junior Debt).

Subsidy Cost The estimated long-term cost to the Federal government of providing credit assistance (e.g., direct loans or loan guarantees), calculated on a net present value basis at the time of disbursement and excluding administrative costs.

Tapered Match Permitting the Federal/non-Federal share of payments to vary over the life of a project, as long as the appropriate matching ratio is achieved by the end of the project.

TE-045 Innovative Finance Initiative A research program begun by FHWA in 1994 in response to Executive Order 12893. This finance initiative is designed to increase investment, accelerate projects, promote the use of existing innovative finance provisions, and establish the basis for future initiatives by waiving selected Federal policies and procedures, thus allowing specific transportation projects to be advanced through the use of non-traditional finance mechanisms.

Title 23 of the United States Code Highway title that includes many of the laws governing the Federal-Aid Highway Program. The title embodies substantive provisions of law that Congress considers permanent and need not be reenacted in each new highway authorization act.

Title 49 of the United States Code Transportation title that includes laws governing various transportation-related programs and agencies, including the Department of Transportation, general and intermodal programs, interstate commerce, rail and motor vehicle programs, aviation programs, pipelines, and commercial space transportation.

Toll Credits Section 1044 of the Intermodal Surface Transportation Efficiency Act permitted states to apply the value of certain highway expenditures funded with toll revenues toward the required state match on current

	Federal-aid projects. States may only substitute toll credits for state match if they demonstrate a "maintenance of effort" (MOE). The MOE test requires that a state's prior-year highway spending equaled or exceeded the average of the previous three years' expenditures.
Transportation Infrastructure Finance and Innovation Act (TIFIA)	A new Federal transportation credit program authorized as part of TEA-21 that provides direct Federal loans, lines of credit, and loan guarantees provided through U.S. DOT to large projects of national significance, under criteria developed by Congress.
Value Pricing	Using pricing of parking and road usage to manage congestion; encouraging users to vary usage by increasing user costs during peak periods.

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