



Alaska Department of Transportation & Public Facilities

State Infrastructure Banks

And Other Borrowing Instruments

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This document provides a summary description of state infrastructure banks (SIBs): what they are; where they sit among the several alternatives for raising cash; and how they are applied to surface transportation projects. This document is intended to support discussions in Alaska about the ways and means to finance highway construction projects in a city or borough's transportation plan.

A. Scope

The scope of the research underlying this document is to explain to a non-technical audience the circumstances in which a state infrastructure bank may be a better form of financing, relative to the alternatives: municipal bonds, Build America Bonds, and private equity. A key question is whether Alaska needs a new institution in addition to the Alaska Municipal Bond Bank Authority to operate a state infrastructure bank that can finance projects in cities and boroughs.

B. Summary

Our findings are summarized in the answers to a series of questions below.

What is a state infrastructure bank?

A state infrastructure bank is a borrowing instrument that encumbers future revenues and incurs interest expenses in order to accelerate projects. It makes a succession of loans from a revolving fund, such that the capital repaid and interest earned on one loan provides funds for a subsequent loan. The capital provided to the bank by its sponsoring governments is not repaid to those governments but is left in the bank to fund this succession of loans, one after the other.

On what sorts of surface transportation projects should a state infrastructure bank be used?

State infrastructure banks can fund most types of surface transportation projects. They are best applied to a series of small, short projects that justify some user fees or generate some increases in tax revenue that are sufficient to repay the principal plus pay interest.

How does a state infrastructure bank differ from other forms of municipal debt?

Municipal bonds are generally issued for a project or a program, with the intent of repaying the funds through the project's useful life. State infrastructure banks add the flexibility to move the funds from one project to another and to divide a single issue of debt among several smaller projects. Providing that the financial returns from projects are sufficient, state infrastructure banks can also lever the funds contributed to them into more capital with secondary issues of debt.

State infrastructure banks can also offer contingent credit, i.e., credit in form other than cash, to those projects that need only partial financing. Such forms, such as letters of credit and other “calls,” allow the bank’s available capital to be spread across more projects than other forms of debt.

How is a state infrastructure bank capitalized?

A state infrastructure bank’s initial capital must be equity provided by its sponsoring governments, i.e., it must be an appropriation of revenues from those governments that they do not expect to have repaid to them. Inside that requirement, initial capital can take the form of:

- Federal aid apportionments, in which case the funds can be loaned in the first round of lending only to projects that are eligible for federal aid;
- A general obligation bond issued by state or local government sponsoring the bank that will be serviced from that government’s revenues;
- Revenues of the sponsoring state or local government paid into the bank as equity then held as a reserve to allow the bank itself to issue a bond; or
- Revenues of the sponsoring state or local government held on call and paid into the bank if necessary to keep the bank solvent.

Build America Bonds could be used to capitalize a state infrastructure bank but Transportation Investment Generating Economic Recovery (TIGER) grants could not.

Does Alaska need a new legislation to operate a state infrastructure bank?

Yes, if Alaska wishes to fund projects other than those that are eligible for federal aid. The Alaska Industrial Development and Export Authority has the legislative authority to do the things that state infrastructure banks must do; however, it is not clear that the Authority’s purpose extends to financing regional and local transportation infrastructure.

Does Alaska need a new institution to operate a state infrastructure bank?

No, unless local governments contribute equity and the bank must issue common shares to those governments.

What are the implications of using a state infrastructure bank to fund regional and community transportation plans?

The cash that state infrastructure banks provide for projects are debt, not revenue, and revenue must still be found for every project that is to be funded by the bank. State infrastructure banks and other forms of debt cannot add projects to a program; they can only accelerate the completion of projects for which there are sufficient revenues.

Where is it advantageous to use a state infrastructure bank?

Where two conditions are met:

- When accelerating projects with debt financing will yield benefits that can be captured as user revenues or increased tax receipts and are sufficient to repay the principal plus pay the interest expense; and
- When the projects to be accelerated are several smaller projects rather than just one project, or require only contingent security, such that municipal bonds and private equity are impractical for financing them.

These two conditions are often met in new and growing communities.

C. Context

Surface transportation facilities - roads, rail, and transit – require considerable amounts of cash. The up-front costs to design and construct a facility are large and, even if the facility generates revenue, many years can elapse before accumulated revenues catch up to and equal accumulated costs. The cumulative cash flow of a facility will be negative through those many years.

1. Sources of Cash for a Single Project

The cash required for a surface transportation project must come from some other source than the project itself. The many potential sources can be categorized into:

- Revenue surpluses from older facilities. A facility built many years prior might have revenues associated with it: either direct revenues from user fees or the indirect revenues such as the sales tax or property tax receipts generated the increased economic activities that the facility allows. To the extent these revenues exceed the ongoing costs of the facility, the surplus can be allocated to the funds required for a current project.
- Debt financing. The public agency that owns the proposed project borrows the required funds from a lender, promising the lender defined interest payments and pledging that revenues will be available from a specified source to both pay the interest and repay the principal.
- Equity financing. In return for the required funds, the public agency sells some degree of control over the proposed facility's revenues or costs to a private sector partner, giving the investor an opportunity to use that control to earn a return on their investment.

Equity financing of public transportation facilities usually occurs through public-private partnerships, which are still rare in the United States. While there may be projects in the state's or the regions' transportation plans that are amenable to public-private partnerships, they are beyond the scope of this paper; only cash from revenues and debt financing are considered here.

2. Sources of Cash for a Program

Individual transportation facilities connect together to make up transportation networks and systems and the projects to construct individual facilities connect together to make up a transportation program. In this context, the purpose of the transportation plan is to ensure that the right projects are included in the program so that the right network is built and maintained.

When a program consists of many projects begun and completed over many years, as programs often do, funding it becomes a problem in sustaining an equilibrium: the transportation system must generate or receive sufficient cash to both sustain itself and to grow as demands upon it grow. While the sources of cash remain the same, revenue and debt financing are applied differently to programs than they are to projects, with those applications falling into two categories:

- “Pay-as-you-go” programs, in which all projects are funded from revenues already received and projects are added to the program only as other projects are completed; in effect, a steady flow of revenue is directed to one project after another.
- Debt-financed programs, in which some or all projects are funded with cash borrowed against revenues expected in future years, and within the program projects are completed earlier than they would have been if funded directly from revenues.

The use of debt in funding transportation programs is governed by two financial rules:

a. Debt proceeds are not revenue.

Lenders look to be repaid and any rational lender will require assurances that revenues will be available in future years to repay their loan. As a program’s revenues in future year are pledged against debt, those revenues are no longer available to fund future projects on a “pay-as-you-go” basis. In the long run, debt financing cannot add projects to a program; it can only accelerate them.

Debt is a commitment of future years; so every project in a program, whether it is debt-financed or pay-as-you-go, requires an allocation of the program’s revenues to fund it. The only dimension that debt adds to potential revenues is the ability to encumber revenues that are produced by the next generation.

b. Debt financing is expensive.

The interest paid on the funds borrowed is a real and additional cost to the highway projects that are financed with debt; highway revenues that are used to pay interest represent a lost opportunity to fund additional projects. Figure 1 shows the debt service costs paid on a debt of \$1 at a rate of 5%, compounded annually, over varying terms.¹

¹ Financial Compound Interest and Annuity Tables, 5th Edition, 1978.

Figure 1: Illustration of Costs of Debt

<i>Term, in years</i>	<i>Principal</i>	<i>Interest Compounded Annually</i>	<i>Cost, Principal + Interest</i>
1	\$1	\$0.05	\$1.05
5	\$1	\$0.28	\$1.28
10	\$1	\$0.63	\$1.63
20	\$1	\$1.65	\$2.65
30	\$1	\$3.21	\$4.21

These cost increases are shown in nominal dollars and, as payments of interest, they contain an inflation component and a risk component that sum to the cost of money.

From the perspective of funding a program, debt financing will reduce the revenues available to the program in perpetuity by an amount slightly greater than the rate of interest; in the example above, by 5%.

Given that debt financing carries a significant and real cost, it can be used to financial benefit in only two situations:

1. When direct financial benefits offset the added cost of debt financing.

Only two benefits qualify as direct financial benefits:

- Additional revenues, such as toll revenues, either from the debt-financed expenditure or from other parts of the transportation system; and
- Reduced expenditures on preservation and maintenance.

When the sum of these two financial benefits exceeds the additional cost of debt, there are sufficient financial benefits to justify debt financing of a project.

2. When cash flow demands it, i.e., when the amount of cash required to execute one project is so big that it would force unacceptable deferrals of other needed projects.

D. State Infrastructure Banks

A state infrastructure bank is an infrastructure bank operated by the state as a revolving fund. Defining each of those terms in turn:

- A *revolving fund* is fund whose capital is replenished so that it may make loans repeatedly to a series of projects.

- In this context, a *bank* is a revolving fund whose: [1] capital is replenished by the repayment of loans; and [2] expenses, including loans written off, are paid by income earned on those loans such that the revolving fund can operate in perpetuity.
- A *state infrastructure bank* is a bank owned and operated by the state government whose purpose it is to make loans that fund infrastructure projects.

1. Design of a State Infrastructure Bank

A state infrastructure bank is, in essence, a bank; the considerations that dictate how a bank is created and operated apply also to a state infrastructure bank.

a. Capitalization

A bank must have, at its outset, cash on hand equal to or greater than its first round of lending. The process of injecting this initial cash onto the bank's balance sheet is sometimes called capitalization. Depending on some of the decisions made with respect to risk and income, one of the following methods of capitalizing an infrastructure bank will be the most appropriate:

(1) *Equity*

The governments that own the bank contribute cash that, in turn, can be raised from a federal, state, or municipal general obligation bond. Such a general obligation bond is usually secured by all of the revenues of the issuing government, and not the revenues raised by projects that are completed with the initial capital. The injection of capital is seen within the bank as equity even though it will appear in that government's public accounts as debt.

Arizona limited the duration of its equity contribution to its infrastructure bank by funding it not with a normal municipal bond but with a five-year promissory note to the State Treasurer called a board funding obligation. This required that the Arizona infrastructure bank return the initial equity contribution to the State Treasurer after five years and retire the obligation from another source of cash.

(2) *Leveraging Debt with Equity*

Owner governments can stretch their initial capitalization of the bank by leveraging their equity. For example, the owner governments can contribute about ¼ of the initial capital required for the first round of lending then having the infrastructure bank itself issue a bond to raise the balance of the capital required. Such a strategy requires that the first round of projects funded by the infrastructure bank be of a commercial nature, as the bank will have to make debt service payments from revenues earned by these projects.

Of 32 states that had infrastructure banks in place in 2001, 9 have authorized their SIBs to leverage the state's equity by issuing bonds in the name of the infrastructure bank, secured with revenues that the infrastructure bank expected to earn from its first round of funded projects. Minnesota, South Carolina and Puerto Rico have leveraged their equity in this manner.

(3) *Paid-In and Callable Equity*

In this variation of leveraging, owner governments pay in a portion of the required initial capital and pledge to have the remainder of the equity required by the bank “on call,” i.e., the governments promise to pay any or all of that remaining equity to the bank when the bank calls for it. The infrastructure bank issues a bond to obtain the balance of the capital required but, with the call on the owner governments backstopping it: the portion of paid-in capital can be lower than the $\frac{1}{4}$ normally required for leveraged capitalization, say, about 10% to 15%; and interest due on the capitalizing bond is likely to be at a lower rate.

b. Lending

A state infrastructure bank must have clear guidelines and limits on the eligibility of projects and the governments that propose them for loans: the maximum size of any one loan and the maximum duration of any loan. These guidelines and limits will inform municipalities and regions which of their projects are eligible for funding from the bank and which are not.

Most likely, there will be more eligible projects than there are funds available for them. Projects for funding can be chosen with the priorities articulated in state and regional transportation plans; however, the credit criteria listed below must be considered for the sake of the infrastructure bank itself:

- The payback period on each loan and how, when mixed together, the payback of all loans is balanced over time to reduce risks of sudden shortfalls of cash.
- The risk of default, either from the project failing to generate expected user revenues and tax receipts, or from the changed financial circumstances of the government proposing the project. Again, the mix of all outstanding loans must be considered to ensure that the overall risk faced by the bank is acceptable.
- The securities offered by the borrowing government that reduce the consequence to the bank of a default.

c. Reserves and Earnings

A commercial bank will offer different interest rates on loans of differing risk: the higher the risk, the higher the interest rate. Its aims in doing so are to: [1] earn a profit on every individual loan; and [2] earn as high a rate of return as competition will allow on its entire portfolio of loans. A state infrastructure bank need not tailor interest rates to risks on individual loans; nor need make a profit. However, a state infrastructure bank must set an average interest rate high enough that interest earnings are enough to pay operating costs and to finance a sustainable reserve against write-offs of loans in default.

If government expects its infrastructure bank to be sustainable, the bank must maintain a reserve against expected losses. The directors of the bank can trade-off equity against earnings in maintaining the bank’s reserves. A bank’s reserves are comprised of the amount of cash on hand that is not loaned out plus the capability of the bank’s net earnings to underwrite a loss. There is

a trade-off between the two: the larger the amount of equity that is not loaned out, the lower net earnings can be.

2. The Special Case of Federal State Infrastructure Banks

Most the state infrastructure banks in the United States, including the Alaska Transportation Infrastructure Bank, are operated in accordance with FHWA rules and procedures², which are summarized below:

a. Capitalization

FHWA supplies the initial capital. The revenue appropriations for the initial capital are treated as an advance on the state's apportionments in the program areas that are eligible for lending. The maximum amount allowed is 10% of one year's apportionments in all of those categories, plus 10% of the state's Equity Bonus³. The cash comes, presumably, from a U.S. Treasury bond.

The amount of federal capital is not all provided to the bank in its first year but according to the following schedule:

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
Annual Rate	15%	53%	16%	5%	3%	3%	2%	2%	1%
Cumulative	15%	68%	84%	89%	92%	95%	97%	99%	100%

The bank must be a state entity. Local governments and private interests cannot contribute equity to or own shares in the bank.

b. Lending

Assistance is provided only to projects that are eligible for Federal Aid in the following categories:

- Highways. National Highway System, Highway Bridge (on system only); and Surface Transportation Program except for enhancements, safety and rural areas. For any project in an urbanized area, the MPO must concur. This assistance can be pooled with private equity in commercially viable projects; e.g. the bank can participate in a public-private partnership.

² First established in S. 350, *National Highway System Designation Act*, 1995 (Public Law 104-59) Continued in S. 1602, *Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users*, 2005

³ SAFETEA-LU Sections 1102 and 1104. The Equity Bonus Program provides funding to States above and beyond the major programs in SAFETEA-LU to ensure that each state receives, in total: [1] a minimum rate of return on the revenues collected in that state that become contributions to the Highway Account of the Highway Trust Fund; and [2] a minimum increase relative to the average dollar amount of apportionments under TEA-21. The Equity Bonus Program replaced TEA-21's Minimum Guarantee Program.

- Transit. Capital projects eligible for: Urbanized Area Formula Grants, Capital Investment Grants; and Formula Grants for other Than Urbanized Areas.
- Rail. Capital projects eligible under Subtitle V (Rail Programs) of Title 49, U.S. Code: generally, local freight and high-speed passenger rail projects.

Disbursements must be accompanied by matching state funds; usually 25% of the funds disbursed from the bank, i.e., 20% of the total project cost. These matching funds must come from state or local sources, not the earnings of the infrastructure bank. As in any eligible federal aid project, the match can be donated in funds or in kind by third parties, e.g. municipalities or private firms.

Repayment must start within 5 years of project completion and finish within 35 years of project completion.

Assistance can be in the form of loans, letters of credit⁴, lines of credit⁵, other standby forms of credit, certificates of participation⁶, purchase agreements, or lease agreements.

c. Reserves and Earnings

Reserves or other cash balances, if invested, must be invested in U.S. Treasury Bonds. Interest rates charged on loans and fees for other forms of assistance must not exceed market rates. Annual expenses of up to 2% of capital are permitted.

3. Required Legislative Authorities

To operate a state infrastructure bank that is restricted to the federal case, i.e., is capitalized with federal funds and lends only to projects that are eligible for federal aid, no additional legislative authority is required at the state level. The existing legislation that authorizes the Department of Transportation & Public Facilities to administer federal aid highway funds is sufficient: Alaska is only required to comply with the terms of an agreement with the Federal Highway Administration to administer the funds according to federal legislation. In this case, the principal legislative authority flows from the federal *Safe, Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users*, 2005 (SAFETEA-LU).

To operate an infrastructure bank more widely than the federal legislation allows, Alaska would need legislation in place in order to, among other things:

⁴ A promise to pay directly to a project creditor an amount only in the event of a funding shortfall on a project. This form of contingent debt differs from a line of credit in that the funds are payable to the creditor, not the project sponsor.

⁵ A promise to provide funds to a project sponsor in the event of a funding shortfall on a project. This form of contingent debt differs from a letter of credit in that the funds are payable to the project sponsor.

⁶ Tax-exempt obligations secured with a specified revenue source such as an equipment or facilities lease. Used to give a private interest that is sponsoring a project access to tax-exempt capital, most often in the case of manufacturers of transit vehicles.

- Accept capital contributions of state and local funds into the bank's paid up capital;
- Establish calls for capital on state and local governments;
- Issue shares in the bank for paid up and callable capital from state and local governments;
- Lend for projects that are not eligible for federal aid; or
- Issue its own bonds to lever its equity.

Alaska's statutes grant such powers to the Alaska Industrial Development and Export Authority. These powers, some of which are listed below, are the legislative authorities required to operate a flexible infrastructure bank that can be effective at the local level:

AS 44.88.080(5)	"To acquire an interest in a project as necessary or appropriate to provide financing for the project."
AS 44.88.080(6)	"To lease to others a project acquired by [the Authority] for the rentals and upon the terms and conditions the authority may consider advisable, including, without limitation, provisions for options to purchase or renew."
AS 44.88.080(7)	"To issue bonds and otherwise to incur indebtedness...in order to pay the cost of a project or development projects...the authority may also secure payment of the bonds or other indebtedness...."
AS 44.88.080(8)	"To sell...exchange, donate, convey, or encumber in any manner...real or personal property owned by it...including a project..."
AS 44.88.080(9)	"To accept gifts, grants, or loans from, and enter into contracts or other transactions regarding them, with a federal agency or an agency or instrumentality of the state, a municipality, private organization, or other source"

These powers cannot be used outside the purpose of the Alaska Industrial Development and Export Authority, which is defined in the Alaska Statutes. The following elements of the Authority's purpose seem to be the closest to those of an infrastructure bank:

AS 44.88.070(5)	"Establishing a source of funding credit guarantees and insurance, not otherwise available, to support export development."
AS 44.88.070(5), AS 44.88.010	"Providing various means of financing ... industrial, manufacturing, export, small business, and business enterprises and the other facilities...[in] areas of the state in which seasonal and nonseasonal unemployment exist; [and] this unemployment is a serious menace to the health, safety, and general welfare, not only to the people in those areas, but also to the people of the entire state."

It is not clear that the financing of local and regional transportation infrastructure falls within the Authority's purpose.

Florida, Georgia, Kansas, Missouri, and Ohio have passed legislation that allows them to operate infrastructure banks that are capitalized with state and local funds and are thus free from federal rules to assist projects that are not eligible for federal aid. Texas has passed more comprehensive

legislation that allows regional mobility authorities to exercise these and other funding powers in support of local and regional transportation systems.

4. Institutional and Management Requirements

These requirements are not onerous. In the accounting function, only a separate account with both a balance sheet and an income statement is needed. The required management functions are: [1] an outreach effort to solicit candidate projects for loans; [2] a project selection committee to choose projects from among the candidates; and [3] a credit and risk management committee that ensures the resulting loan portfolio is sustainable.

Most states simply administer their state infrastructure banks within their departments of transportation, maintaining a separate account for the bank either in the state's General Fund or in its Highway Fund. There are some exceptions: Missouri and South Carolina established separate government entities outside their departments of transportation; and Vermont placed its infrastructure bank within the Vermont Economic Development Authority.

E. Financing Projects: Banks versus Bonds

The common alternative to financing transportation infrastructure through a state infrastructure bank is to fund them directly with a state or municipal bond issued through the Alaska Municipal Bond Bank Authority.

Such bonds must be issued with the security of a general obligation against the full faith and credit of the issuing government or with a pledge of first call on specified revenues from the financed project itself or another source of revenue. Because the principal of a bond is due and payable at the end of the bond's term, the bondholder may also require that the sponsoring government make regular contributions into a sinking fund during the term of the bond, such that the accumulated balance in the sinking fund is equal to the amount of principal owing at the end of the bond's term.

Municipal and state bonds are tax-exempt bonds, meaning that bond-holders do not pay tax on the income that they earn from the bonds. This tax exemption allows states and municipalities to sell bonds at rates of interest that are, historically, about 20% lower than interest rates offered in taxable commercial bonds. Build America Bonds, currently available to states and municipalities as one of the instruments in the *American Reinvestment and Recovery Act*, 2009, are taxable commercial bonds issued by a state or municipality with the added feature that the U.S. Government pays a subsidy to the issuing state or municipality equal to 35% of the interest costs of the bond. This subsidy payment lowers the state or municipality's net borrowing costs to about that of a tax-exempt bond but allows the bond holder to earn a commercial rate of return. Offering a commercial rate of return, Build America Bonds are of interest to a broader group of investors than those who typically invest in tax-exempt bonds.

Because bondholders expect to be repaid, bonds are an advantageous instrument to use when funding a single large project or program with a finite life. Once the project or program is completed, it will generate the revenues required to repay the bond within the term of the bond.

State infrastructure banks are more advantageous when financing a mix of project and programs; some larger than others; some taking longer than others; some requiring more cash and credit than others. By offering a mix of credit instruments, and with the expectation that the initial capital will be reinvested, state infrastructure banks can offer more credit from a given amount of available cash.

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