U.S. Department
of Transportation

Roundtable Discussions on GARVEE Bonds

June 2017

U.S. Department of Transportation
Federal Highway Administration

OFFICE OF INNOVATIVE PROGRAM DELIVERY

Contents

1 Introduction

This report summarizes the noteworthy practices and issues related to the GARVEE bond program discussed at two roundtables held in Denver, Colorado and Arlington, Virginia in June 2017.

1.1 Background

The National Highway System Designation Act of 1995 allowed Federal-aid funds to be used to reimburse debt service, as well as debt-related expenses, on bonds issued to finance Federal-aid eligible highways. The Federal Highway Administration (FHWA) refers to these bonds as Grant Anticipation Revenue Vehicles, or GARVEEs, for short. By the end of 2016, 26 States and territories had issued almost $21 billion in GARVEEs.

The FHWA's Center for Innovative Finance Support (Center) issued revised guidance on the GARVEE program in 2014. Recognizing that strategies used by States to fund and finance transportation projects evolve as needs and markets change, the Center organized two roundtable discussions to identify the current state of the practice. The feedback gained from the roundtables will help inform the Center of any changes in guidance or technical assistance that may be needed, and if there are legislative changes to the program that would improve its effectiveness.

1.2 Objective

The objective of the roundtables was to have an open discussion on the state of the practice relating to the GARVEE program. By having the States share successes, concerns, barriers and recommended improvements, the Center will be able to identify areas where the program can be improved to better serve the needs of the States.

The discussions were loosely structured into three general topics:

- Strategies for using GARVEEs
- Management of GARVEE projects
- Oversight of the GARVEE program

1.3 Participation

Most of the roundtable participants were State and territory transportation agency officials and FHWA field office representatives. There were also a few outside experts and other observers who added to the richness of the exchange. Each of the two roundtables involved a mix of States that have extensively used GARVEEs and States that have not used GARVEEs but are currently considering their use. Appendix A provides a summary of three state experiences with GARVEEs.

Appendix B lists all of the participants in the two roundtables. Appendix C is the roundtable agenda that was used to organize the discussions.

1.3.1 Denver (CO) Roundtable

The States and territories represented at the Denver, CO roundtable were Colorado, Guam, Hawaii, Idaho, Michigan, New Mexico, and Oklahoma. Four of these participants have issued GARVEEs, one has issued “indirect” GARVEEs (discussed in Section 2), and two have not issued any GARVEEs but may do so in the future. The State / territory representatives provided short overviews of their respective programs or potential plans. Dave Tolman of Idaho then provided a more detailed case study of his State’s experience with GARVEEs to help kick off the group discussions. Idaho has issued six series of GARVEEs totaling approximately $850 million since 2006 to help advance 59 projects in six corridors. In addition, Arkansas officials (who could not attend the roundtable) provided a short written summary of their State’s GARVEE bond program for the benefit of the group.

1.3.2 Arlington (VA) Roundtable

The States and territories represented at the Arlington, VA roundtable were Connecticut, District of Columbia, New York, North Carolina, Ohio, Puerto Rico and Virgin Islands. Five of these participants have issued GARVEEs and the other two may do so in the future. After the State / territory representatives provided short overviews of their respective programs and plans, Michelle Overby of North Carolina provided a more detailed case study of her State’s experience with GARVEEs to facilitate each of the discussion sessions that followed. North Carolina has issued five series of GARVEEs totaling more than $1.1 billion since 2007 to help advance dozens of priority projects on strategic corridors throughout the State. In addition, Scott Zuchorski of Fitch Ratings made a presentation on credit considerations for GARVEE bonds.

2 GARVEE Strategies

The use of GARVEEs presents various policy and financial considerations. As the roundtable participants discussed their plans and strategies for issuing GARVEEs the following key questions emerged:

- Why utilize GARVEEs?
- How much GARVEE debt should be issued?
- What are the major credit rating factors?
- How are GARVEE programs structured from State to State?
- What are typical features of GARVEE debt?
- Should a State issue variable-rate GARVEEs?
- Should a State issue refunding GARVEEs?
- What are reasonable issuance costs?
- Can GARVEEs be issued by a local government?
- Is there a place for "indirect" GARVEEs?

2.1 Why utilize GARVEEs?

The participating States emphasized the significant benefits of being able to accelerate important projects / programs by issuing debt backed by their Federal-aid highway funds. Two important factors to consider are obtaining the necessary approvals to issue such debt and identifying the projects to be financed.

Some States issue GARVEEs backed solely with Federal funds (no State funds are pledged) without having to obtain voter approval that is required when State-funded bonds are issued. Even so, enabling legislation is typically required – though it ranges from broad and flexible to narrow and prescriptive. Often the State DOT identifies the projects to be financed according to its oversight body (e.g., the State Transportation Commission) and within the legislative framework. Selection of the "right" project or program of projects is a central driver of a successful GARVEE program.

States (through their financial advisors) do consider the interest costs of GARVEEs and generally find them similar to or even favorable compared with the costs of other State-issued bonds. Some states conduct a cost-benefit analysis as part of the decision-making process to quantify the benefits of acceleration of a project versus the interest costs.

2.2 How much GARVEE debt should be issued?

States have various limits on the amount of GARVEEs they can issue. Sometimes the enabling legislation or bond authorization contains specific limits. Often the State has developed debt policies with limits. A few States do not have formal limits but do have internal policies that get reviewed periodically. GARVEE limits typically are expressed as a percentage of the Federal funds received or expected to be received by the State over a period of time that will be used to make GARVEE debt service payments. Most of the participating States reported that their GARVEE debt service is limited to a small fraction of the State's Federal funds (often in the 15 percent to 30 percent range, although in a couple of cases it has exceeded 30 percent). TRB's National

Cooperative Highway Research Program (NCHRP) has produced a report entitled Evolving Debt Finance Practices for Surface Transportation that provides an overview of debt mechanisms and tools for financing transportation infrastructure. [1]

2.3 What are the major credit rating factors?

The most important rating factor is the perceived reauthorization risk associated with the Federal-aid Highway Program and the Federal Highway Trust Fund. That risk has grown in recent years – as reauthorization has been less regular / frequently delayed and General Fund transfers have been required to maintain current spending levels – such that most standalone GARVEE ratings have been lowered a notch or two.

Other key rating factors deal with the structural features of the GARVEE bonds (e.g., early obligation of Federal funds for debt service, additional bonds test, bond maturity, and back-up pledge) and the resources available to the State (potential sources of available liquidity in the event of a Federal funding disruption).

2.4 How are GARVEE programs structured from State to State?

State GARVEE programs have ranged from funding a single large project to a series of smaller projects for local entities. Some States have ongoing programs whereby they periodically issue series of GARVEE bonds to finance multiple projects that are part of a corridor or other large infrastructure program. Whether GARVEEs finance a single or occasional major project or support a large program has implications for GARVEE management and oversight activities (as noted in Sections 3 and 4).

Some States are required to ensure an equitable distribution of the GARVEE bond proceeds throughout the State. This can present a challenge for the State considering the unpredictability of project advancement. Some States have managed this by funding only part of each project's costs with bond proceeds (with the other portion funded under the normal pay-as-you-go process) allowing the State more flexibility in increasing or decreasing the bond-funded portion of each project.

Some States mentioned that right-of-way (ROW) acquisition can have unpredictable timing that can complicate the timely use of bond proceeds. To manage this (or any other project that might not advance according to schedule) they can fund ROW by other means or have multiple substitute projects ready to go.

Several participants stressed the importance of issuing GARVEE debt for "appropriate" capital projects that provide compelling public benefits. This is a matter of good politics as well as good economic policy.

2.5 What are typical features of GARVEE debt?

Most GARVEEs have been issued as long-term fixed-rate debt with a maturity of 10-20 years. Usually there is a broad pledge of eligible Federal funds. The additional bonds test (ABT) often requires coverage (Federal funds to debt service) of two or three times (or more). Sometimes there is a backup pledge of State funds though many States issue standalone GARVEEs with no pledge of State funds in order to avoid having to obtain voter approval to issue State-backed debt.

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[1] NCHRP Synthesis 513: Evolving Debt Finance Practices for Surface Transportation: http://www.trb.org/NCHRP/Blurbs/176092.aspx

2.6 Should a State issue variable-rate GARVEEs?

Most States issue longer-term fixed-rate bonds. Some States have issued variable-rate GARVEEs. One State described the management challenges of continually allocating costs of variable-rate GARVEES to numerous projects in its GARVEE program. Some participants discussed whether the relatively modest benefits of issuing variable-rate GARVEEs mitigates the extra management effort and risk. Others noted that the potential interest cost savings of variable-rate debt fluctuate over time depending on market conditions.

2.7 Should a State issue refunding GARVEEs?

Several States have refunded their GARVEEs in order to reduce interest costs. They relied on customary policies and procedures (including advice from their advisors) to make that determination. No particular concerns were expressed about this practice.

2.8 What are reasonable issuance costs?

There was a discussion about the determination of "reasonable" issuance costs incurred by States when they issue GARVEE bonds. Participants talked about both relatively fixed costs (e.g., bond rating fees) and variable costs (e.g., underwriters' fees) associated with the issuance of bonds. Some asked about a "rule of thumb" for estimating the likely costs of issuance. Others pointed out that the States and their advisors determine what costs of issuance are reasonable. Several participants emphasized the benefits of seeking competitive bids from multiple underwriters (instead of a negotiated sale with a lead underwriter or senior manager).

2.9 Can GARVEEs be issued by a local government (or a metropolitan planning organization)?

One State described having explored under what conditions a local government might issue GARVEEs backed by its sub-allocated share of the State's Federal funds. While this is not prohibited (any public agency can serve as the issuer), there have been few instances (perhaps only two or three) when a GARVEE bond was issued by a local entity to finance local projects. It is more common for the State to issue the bonds on behalf of local governments that will use the proceeds and manage the projects. If a local government is to issue the GARVEEs and/or manage the GARVEE-assisted projects the State will need to reach an agreement with the local entity on how various responsibilities will be undertaken since the State DOT ultimately is responsible for ensuring that all Federal requirements are satisfied.

States with smaller programs have issued direct GARVEEs with Federal reimbursements tied to debt service on the Federal-aid projects approved under section 122 of Title 23.

It was noted that despite the technical differences between GARVEEs and "indirect" GARVEEs the descriptions of the designated source of payments (the Federal HTF through the FHWA) are virtually identical in the bond offering documents. In addition, the rating agencies do not make a credit distinction between GARVEEs and "indirect" GARVEEs – ultimately it's a function of reliable, uninterrupted payments from FHWA to the State for eligible costs.

3 GARVEE Management

The roundtable participants addressed the following procedural and technical issues when discussing the implementation and management of a GARVEE program:

- GARVEE memorandum of understanding
- Staffing and technical training
- FMIS
- Non-Federal match
- Payment mechanics
- Tax compliance

3.1 GARVEE Memorandum of Understanding (MOU)

States using GARVEEs have a GARVEE MOU between the State and FHWA describing such things as GARVEE procedures, responsibilities, projects, etc. Some States questioned the need for an MOU stating that relevant processes and responsibilities are documented in other places including the existing stewardship agreement between the State and FHWA and the Official Statement for the bond offering. Most States consider the MOU a useful document because it contains the relevant information in one place and identifies procedures and responsibilities not related to regular projects. Some participants noted that the MOU is viewed as an important document for rating analysts and bond investors because it helpfully summarizes the Federal participation in bond-related costs and documents the working relationship between the State and FHWA. It also can be a valuable bond marketing tool. Others pointed out that it can be a useful memorialization of GARVEE program decisions and can be useful for succession planning as new staff is brought onboard.

In addition to the MOU, one State described how it has developed and maintains an internal GARVEE Resource Document that provides detailed information and instruction on program requirements and schedule, data resources and procedures, and program accounts and accounting practices.

There was discussion about the level of detail that could or should be contained in the MOU. Should it be a "robust" high-level framework for the GARVEE program that rarely gets modified or should it be supplemented periodically so that it is a fairly comprehensive "one-stop" resource for the GARVEE program? There was also discussion about whether FHWA should update the template for the MOU.

3.2 Staffing and Technical Training

As with any program, quality staffing and proper training are essential. Some States have developed a GARVEE team, which often includes outside advisors and consultants in addition to public employees from various State offices. A team might include representatives from the State DOT finance office and project programming office, the State office that issues the bonds, financial advisor, bond counsel, underwriters, FHWA and others. Close coordination among team members can make for a more successful program.

Training is also important. FHWA provides a lot of information on its website along with webinars and training upon request on the GARVEE program. There was discussion about requesting more targeted training from FHWA to help States compare best practices and get new staff up to speed.

3.3 Fiscal Management Information System (FMIS)

The participants varied in their understanding of the proper way to enter GARVEE project data into FMIS. Some States enter the full amount of debt service (principal and interest) on the line item identified as "debt service." When initially created this line item was intended to show only additional debt-related project costs, i.e., interest expense and issuance costs. Some States have established a "GARVEE project" (umbrella project) that is separate from the individual construction projects using the bond proceeds. The debt service is paid from the special GARVEE project and internal transfers are made to the construction projects. This raises questions about how the information is recorded in FMIS. It is the intent that the updated GARVEE guidance will address FMIS questions. Several participants discussed their willingness to be part of a "task force" to examine FMIS issues with respect to GARVEE projects.

The general view was that FMIS does not provide useful GARVEE program information and cannot be easily used to generate summary reports for program managers or policy makers. FHWA in cooperation with some States currently is testing a separate GARVEE database that should be more useful to the States as well as to FHWA for program management purposes. It was noted that this database perhaps should also cover "indirect" GARVEEs since the capital markets and policy makers do not distinguish them from "real" GARVEEs. Some participants discussed how much effort might be required to maintain this new database and asked about the proper roles of State and FHWA personnel in that effort.

3.4 Non-Federal Match

Several States indicated that they use toll credits as a "soft match" for their required non-Federal share of project costs. Other States apply GARVEE bond proceeds to the construction phase of a project and use the State funds they provided for the preliminary engineering and right-of-way phases as their non-Federal share, combining the phases into a single project.

A few States have experimented with other matching concepts under the innovative finance research program, TE-045. In two cases, a State considered using a present-value method to calculate its up-front contribution to a project. Several participants remarked how beneficial and logical it might be for FHWA to consider more flexible matching approaches with GARVEE programs where the Federal participation in debt-related costs occurs well beyond the construction period of the projects being financed.

3.5 Payment Mechanics

Most States request GARVEE payments from FHWA twice a year, when debt service payments to bondholders are due (e.g., January and July or March and September). Often the GARVEE bonds have first claim on the State's annual Federal funds (obligation authority for eligible apportionments).

Some States use GARVEE proceeds for a portion of project costs with the remainder of the payments made on a pay-as-you-go basis. In this case the State may need additional controls to ensure that Federal payments are made properly.

There was one instance where a territory's Federal-aid payment was intercepted by the U.S. Treasury Department under its Offset Program. Treasury is authorized to intercept Federal payments to a grantee if the grantee owes money to the Treasury on another Federal program. This rare occurrence could interrupt the funds intended for a debt service payment.

3.6 Tax Compliance

There were discussions about Internal Revenue Service rules requiring that tax-exempt bond proceeds be spent for eligible purposes within a certain period of time. A few States indicated that they have struggled with meeting those requirements because their bond proceeds can only be used on a specific project or projects. When a project is delayed, the State may have limited flexibility to use the proceeds elsewhere. Strategies used by other States include issuing GARVEE bonds for a corridor or a program containing numerous eligible projects or to issue the bonds over time in series that better align with their anticipated cash flow needs.

Several States discussed the need to have the organizational capacity to manage debt programs – including policies and procedures for tracking the use of bond proceeds, ensuring compliance with continuing disclosure to investors, and satisfying other tax law provisions. Tax compliance is an important function of the bond issuer, which in some cases is the State DOT (or the State's Transportation Commission) and in many cases is another State office (such as the State Treasurer or another office that issues debt on behalf of the State DOT).

4 GARVEE Oversight

The participants discussed several issues relating to the oversight of GARVEE projects and GARVEE programs:

- State management
- Federal stewardship
- GARVEE database and transaction reporting
- GARVEE guidance
- Supplemental information
- Issuance costs

4.1 State Management

Many participants talked about the organizational aspects of managing a successful GARVEE program. Best practices may include: having an identified GARVEE team with close coordination and proper training; having formal polices and written procedures in place, including a detailed internal guidebook and at least a high-level framework in the form of an MOU with FHWA; having a robust accounting / reporting system for both financial information and project data; and communicating frequently with FHWA to avoid surprises and try to ensure a smooth working relationship.

4.2 Federal Stewardship

It is apparent that good communication between the State and FHWA helps smooth over many potential wrinkles. In addition to utilizing an MOU between the State and FHWA, participants talked about periodic GARVEE program reviews and the extent to which they can be informed by sample questions. Some participants emphasized that oversight activities and reports should focus on simplifying some of the processes which, in turn, will enhance program integrity and improve program management.

4.3 GARVEE Database and Transaction Reporting

Some State representatives are participating in the "beta testing" of a GARVEE database that FHWA intends to use for internal reporting purposes as well as make available to all GARVEE States (potentially through a SharePoint drive). While there was general agreement that GARVEE program tracking / reporting should be improved, there was some discussion about who should be responsible for periodically entering the data and reviewing its accuracy. FHWA maintains that it will be more efficient for the States to enter the data instead of having to review data that FHWA obtains and enters about the States' GARVEE issuances. Participants talked about whether the new GARVEE database can be helpful to the States (e.g., they should be able to readily compare their respective programs) in addition to FHWA staff and leadership. It was noted by several participants that occasional requests from State policy makers or Members of Congress about the status of GARVEEs need to be answered quickly and reliably.

4.4 GARVEE Guidance

FHWA participants reiterated that one of the chief purposes of the roundtables is to inform the GARVEE Guidance document, which was last updated in 2014. The current guidance is concise; it has six sections covering 14 pages with four technical appendices, including the MOU template and program review sample questions. Some participants noted that the current document does not provide detailed guidance where it might be beneficial, such as setting up GARVEE projects in FMIS. Others, however, cautioned against developing overly prescriptive guidance that could take away important flexibility the States now have in establishing their various programs. Most participants agreed to review the current guidance and provide input as requested by FHWA.

4.5 Supplemental Information

Several participants mentioned information that would be "nice to have" in addition to the guidance document. Some materials already are appended to the guidance, such as the MOU template (possibly refined) and the program review sample questions (possibly refined). Others could be made available on the FHWA website, such as frequently asked questions (FHWA used to post FAQs in years past), or through the SharePoint site where the GARVEE database resides (under development). Several participants identified FMIS data entry as a topic that could be addressed through supplemental materials as well as training. And there was a discussion about comparing GARVEEs to other potential financing tools and what information already exists or could be developed to help States and other stakeholders more easily determine how best to match finance tools with program needs. This was characterized as a potential "toolkit" for evaluating GARVEE and other "innovative financing" approaches similar to how the Build America Bureau / FHWA P3 toolkit helps evaluate potential project delivery approaches.

5 Next Steps

The roundtable participants discussed many aspects of the GARVEE program, ranging from big-picture thoughts about where the program may be heading due to increasingly uncertain Federal funding reauthorizations to technical questions about FMIS data entry. A recurring theme was the flexibility the States have in establishing and managing disparate programs that suit their various circumstances. Many participants emphasized their desire to simplify some of the GARVEE processes while maintaining program flexibility. The following next steps were identified to maximize the benefit of the roundtable discussions:

1. FHWA will develop a high-level summary of the roundtable discussions. This summary will include some suggested best practices and potentially identify some issues requiring further review that can be used to inform the GARVEE Guidance and supplemental materials.
2. FHWA will seek input on the current GARVEE Guidance document, including the MOU template, the GARVEE database / transaction report, and other appendices. Best practices identified in the roundtable discussions will be incorporated into the updated guidance.
3. There will be opportunities to further explore the development of additional materials, technical assistance and targeted training.

Appendix A State DOT Summaries of GARVEE Experiences

This appendix provides an overview of three State experiences with GARVEE bonds. The states are Idaho, North Carolina, and Arkansas.

IDAHO GARVEES

ITD GARVEE Program
Dave Tolman, Idaho Transportation Department
June 5, 2017 Presentation Summary

Brief History

Idaho launched its GARVEE program with enabling legislation in 2005. The legislation initially identified 13 corridors across the State within which projects would be advanced with the proceeds of GARVEE bonds (one corridor subsequently was removed in 2017). The legislation limited GARVEE debt service to not more than 30 percent of Federal funds during the first five years and not more than 30 percent thereafter. It created a new GARVEE Capital Projects Fund (into which the bond proceeds are deposited) and a Debt Service Fund (into which the Federal funds for debt service are deposited). And it authorized the State Highway Account to pay debt service (to satisfy the non-Federal match requirement on a debt service payment basis). The legislation also authorized the Idaho Housing and Finance Association (IHFA) to be the issuer of the GARVEE debt.

Idaho (through the IHFA) has issued seven series of GARVEE bonds, pursuant to six appropriation bills from 2006 through 2011, totaling nearly $858 million. The bond proceeds currently are financing 59 projects in six corridors.

Bond Basics

- The GARVEEs are standalone bonds, backed by future Federal funds with no pledge of State funds; they have credit ratings of A2 / A+ (by Moody's and Fitch, respectively).
- Each bond series has a maturity of 18 years, with a standard 10-year call period.
- The weighted interest rate on the bonds is about 4.1 percent.
- Debt service totals about $58 million per year; interest payments are made in January and interest plus principal payments are made in July.
- Federal funds pay 92.66 percent of debt service and State funds pay 7.34 percent (the non-Federal share).
- Idaho has refunded some GARVEE bonds (from Series 2006 and Series 2008), reducing the interest rate by more than 1.50 percent and saving about $12.7 million on a present-value basis.

Program Management

The Idaho Transportation Department (ITD) entered into a Memorandum of Agreement (MOA) with FHWA in 2005, the year of the enabling legislation, to set forth the governance of the program. Also in 2005, the ITD entered into a Master Finance Agreement with the IHFA, which is the authorized issuer of the bonds. The IHFA issued an RFP for investment banks and selected Citigroup as its underwriter. It also has a legal team including bond counsel.

The ITD identifies projects within eligible corridors, requests bond authorizations from the legislature, and requests approval from the Idaho Transportation Board. After the IHFA Board also approves the request, the finance team develops the package and issues the bonds.

The selected projects are approved by FHWA and identified as Advance Construction in FMIS. Once contracts are awarded for design and construction the project costs are paid from the bond proceeds deposited into the GARVEE Capital Projects Fund. The GARVEE proceeds must be expended within three years.

Next Steps

In 2017 the Idaho legislature approved an additional $300 million in GARVEE authority. The Idaho Transportation Board has approved the ITD to begin working on utilizing half of that authority ($150 million). The next GARVEE bond issue is planned for the spring of 2018.

NORTH CAROLINA GARVEES

Grant Anticipation Revenue Vehicle Bonds Best Practices
Michele Overby, Funds Administration Director, NCDOT
June 7, 2017 Presentation Summary

Brief History

North Carolina GARVEE legislation was adopted in 2005 with these key provisions:

- Debt is payable solely from Federal revenues
- Outstanding principal may not exceed Federal funds authorized in the prior Federal fiscal year
- Total debt service may not exceed 15 percent of the expected annual Federal transportation funds in the most recent Transportation Improvement Program
- Allows for recurring bond issuances
- Provides flexibility in project selection and substitution
- Requires a geographic distribution of bond proceeds (based on NCDOT districts)
- The State has issued five series of GARVEEs, from 2007 through 2015, totaling more than $1.1 billion. The bond proceeds are used to help finance significant projects on Strategic Corridors (including turnpike projects) as defined in the NCDOT Long Range Transportation Plan.

Bond Basics

- The GARVEEs are standalone bonds, backed by future Federal funds with no pledge of State funds.
- The planned amortization period of the bonds ranges from 7 to 15 years, depending on the series.
- North Carolina plans to refund GARVEE bonds for the first time in 2017.

Program Management

The GARVEE Memorandum of Understanding (MOU) was executed in 2007 with three parties – NCDOT, the State Treasurer, and FHWA. The MOU documents the project selection and reimbursement processes. Among other things, it requires project approval by the NC Board of Transportation and applicable Metropolitan Planning Organizations and allows for project additions and deletions. The MOU is comprehensive and does not require regular revisions.

The Master Trust Indenture establishes that the GARVEE bonds have first claim on the annual Federal apportionments, that NCDOT agrees to reserve Federal obligation authority for the debt service, and that NCDOT covenants to maintain full compliance with the Federal program.

NCDOT maintains a GARVEE Resource Document that provides detailed instructions and information on program requirements and schedules; data resources and procedures; and program accounts and accounting practices.

To ensure proper oversight of the program, NCDOT: tracks anticipated debt service for compliance with the statutory debt service limitation; monitors actual and forecast expenditures of bond proceeds to adhere to the 24-month bond expenditure test; and maintains project listings by GARVEE series showing total project costs and amount of bond proceeds applied to each project.

NCDOT has been fortunate to have the same financing team working on its five bond issues. The team includes FHWA, the State Treasurer, senior managing underwriters, financial advisor, co-bond counsel, disclosure counsel, and co-underwriter's counsel.

Best Practices

The State's summary of program strengths includes:

- Conservative debt service coverage ratios
- Billing proficiency in converting obligation authority to cash
- Annual requirement to reserve the first available obligation authority for Advance Construction conversion to fund annual debt service
- Flexible "evergreen" structure with regard to selecting projects and issuing bonds within authorized parameters
- Well-defined legal framework (legislation, GARVEE MOU, Master Trust Indenture)
- Sophisticated project monitoring tools

Next Steps

The 10-year Draft Statewide Transportation Improvement Program (STIP) beginning in 2018 for the NCDOT includes 1,421 projects totaling $27 billion. About five percent of the program ($1.3 billion) is expected to be financed with GARVEE bonds.

ARKANSAS GARVEES

Summary of GARVEE Bond Usage in Arkansas

Brief History

In 1972, Arkansas became only the eighth State to have a debt-free highway system. The last bonds issued by the Highway Commission had been in 1951. Arkansas stayed debt-free regarding its highways for nearly 50 years until the citizens voted in 1999 to allow the Arkansas Highway Commission to issue up to $575 million in GARVEE bonds to help finance improvements and repairs to existing Interstates. Combining $575 million in bond revenue with existing Federal and State funds allowed Arkansas to undertake more than $1 billion in actual improvements on 355 miles of Interstate highways.

The citizens of Arkansas voted again in 2011 to allow for the issuance of up to $575 million in GARVEE bonds to help finance improvements to Interstate highways. These bonds were sold in 2012, 2013, and 2014 with maturities of up to 12 years. The accumulated bond premium was nearly $100 million. National Highway Performance Program funds were used for debt service.

Bond Basics

- All bonds in the 1999 Interstate Rehabilitation Program (IRP) were retired using $58 million annually from Federal Interstate Maintenance funds along with the required State match.
- All three original bond series (2000, 2001, and 2002) sold at a premium, which means the State received more than face value for the bonds.
- The outstanding balances on all three series were combined and refinanced in 2010 at a lower interest rate. This did not extend the final maturity but did save approximately $13 million in interest. The refinanced bonds also sold at a premium.
- Spread over a 14-year period, interest expense amounted to less than $15 million per year. The bonds from the 1999 IRP were completely retired in 2014.

Summary

Arkansas has benefited greatly from the use of GARVEE bonds over the past 17 years. GARVEE bonds have allowed Arkansas to improve and keep its Interstate highways at acceptable condition levels. Under the 1999 IRP, Interstate conditions went from 63 percent being in poor or mediocre condition in 1999 to only 14 percent in poor or mediocre condition upon completion of the program. At completion, 72 percent were in good condition.

Appendix B Roundtable Participants

DENVER

Name	Affiliation
John Caldwell	Colorado DOT
Michael Krochalis	Colorado DOT
Sam Pappas	Colorado DOT
Cindra Thompson	FHWA Colorado Division
Andre Compton	FHWA Colorado Division
Joaquin Blaz	Guam Department of Public Works
Glenn Leon Guerrero	Guam Department of Public Works
Richelle Takara	FHWA Hawaii Division
Dave Tolman	Idaho DOT
Randy Rhuman	FHWA Idaho Division
Patrick McCarthy	Michigan DOT
Eric Purkiss	FHWA Michigan Division
Marcos Trujillo	New Mexico DOT
Monica Gourd	FHWA New Mexico Division
Russel Hulin	Oklahoma DOT
Carl Selby	FHWA Oklahoma Division
Elizabeth Romero	FHWA Oklahoma Division
Mark Sullivan	FHWA (CIFS)
Fred Werner	FHWA (CIFS)
Peter Mancauskas	FHWA (CIFS)
Lisa Fenner	Fenner Consulting LLC
Bryan Grote	Mercator Advisors LLC
Kevin Pula	National Conference of State Legislatures
Terry Regan	Volpe Center

ARLINGTON

Name	Affiliation
Patricia Hustus	Connecticut DOT
Debra Ramirez	FHWA Connecticut Division
Kathryn Valentine	District of Columbia DOT
Chris Lawson	FHWA District of Columbia Division
Charlena Young	FHWA District of Columbia Division
John Formosa	FHWA New York Division
Michelle Overby	North Carolina DOT
Marc Travis	Ohio DOT
Robert Moore	FHWA Ohio Division
Angel Felix Cruz	Puerto Rico DOT
Jomo McClean	Virgin Islands Department of Public Works
Michael Figueroa	FHWA Puerto Rico / USVI Division
Mark Sullivan	FHWA (CIFS)
Fred Werner	FHWA (CIFS)
Peter Mancauskas	FHWA (CIFS)
Jennifer Brickett	AASHTO / BATIC Institute
Scott Zuchorski	Fitch Ratings
Bryan Grote	Mercator Advisors LLC
Max Inman	Mercator Advisors LLC
Suzanne Sale	Advisor

Appendix C Roundtable Agenda

(8:00 am – 3:15 pm)		
Session	Description	Presenters / Facilitators
	Registration (8:00 – 8:20) • Welcome from the hosts • Overview of the day	
	Welcome and Introductions (8:20 – 9:00) • Participants introduce themselves • Each State DOT participant provides a short overview (2-4 minutes) of their GARVEE "state of affairs"	• Fred Werner / Mark Sullivan / • Peter Mancauskas (FHWA)
1	**GARVEE Strategies** (9:00 – 10:15) • Participant opening remarks (5 minutes) • Participant opening remarks (5 minutes) • Facilitated discussion (65 minutes)	• State DOT representative • State DOT representative • Bryan Grote (Mercator Advisors)
	Break (10:15 – 10:30)	•
2	**GARVEE Management** (10:30 – 12:00) • Participant opening remarks (5 minutes) • Participant opening remarks (5 minutes) • Participant opening remarks (5 minutes) • Facilitated discussion (75 minutes)	• State DOT representative • State DOT representative • FHWA representative • Bryan Grote (Mercator Advisors)
	Lunch (12:00 – 1:00) • Working Lunch - Group Discussion Boxed lunch	• Peter Mancauskas (FHWA) / • Bryan Grote (Mercator Advisors)
3	**GARVEE Oversight** (1:00 – 2:00) • Participant opening remarks (5 minutes) • Participant opening remarks (5 minutes) • Facilitated discussion (50 minutes)	• State DOT representative • FHWA representative • Bryan Grote (Mercator Advisors)
	Break (2:00 – 2:15)	•
4	**Roundtable Wrap-Up** (2:15 – 3:15) • Round Robin Discussion (45 minutes) • Summary of Recommendations for Future Improvements (15 minutes) • Completion of roundtable evaluations	• Fred Werner / Mark Sullivan / • Peter Mancauskas (FHWA) • Bryan Grote (Mercator Advisors)