NCHRP Project 19-15

Guidebook for Effective Policies and Practices for Managing Surface Transportation Debt

Case Study Reports

[Task 9]

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Disclaimer

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Introduction

1 Study Purpose

The purpose of this study is to provide surface transportation debt financing practitioners a detailed step-by-step guide of the debt issuance and management process and to highlight a diverse suite of effective practices issuers can use to inform their decisions. Prior studies identified challenges currently facing surface transportation agency debt management professionals These challenges include: 1) accessing complete information about the state or agency's comprehensive debt obligations, making it difficult for issuers to effectively do their jobs and 2) responding to economic uncertainty following economic downturns, uncertainty surrounding federal funding and new federal tax reforms, and 3) technological disruptions that have impacted traditional revenue sources like the gas tax. To address these challenges practitioners can benefit from the guidance developed through this research in order to effectively manage the specific day-to-day duties of their role.

The study was informed by eight case studies, which are documented in this report. The eight case studies include Arizona, Colorado, Florida, Massachusetts, Ohio, New York Metropolitan Transportation Authority, Pennsylvania Turnpike Commission, and Virginia.

2 Case Study Approach

The research team conducted eight case studies to understand and identify effective practices for debt management by surface transportation agencies, including:

- How surface transportation debt programs are structured and monitored for affordability and risk management. The research team focused on issuers' debt policies regarding affordability and capacity
- How surface transportation debt is issued and managed effectively
- How policies and disclosure procedures are designed in compliance with state statute as well as MSRB, SEC and IRS requirements
- What software and tools are utilized to structure individual debt issuances and manage the overall debt portfolio, with the understanding that many state departments of transportation (DOTs) use spreadsheets to track their debt program, while financial advisors (FAs) and bond trustees may use off the shelf debt sizing tools such as DBC Debt Structuring Solutions®
- How debt program information is disseminated to regulatory agencies, investors and the public based on MSRB requirements and industry effective practices
- What specific cashflow and debt management challenges that surface transportation agencies face and the procedures they implement to address these challenges

Six of these case studies focused on state DOTs, while one case study focused on a toll authority, and one case study focused on a major transit agency. Incorporating case studies focusing on these other types of agencies was used as a strategy to provide a more complete and enriched view of transportation debt management practices.

In developing case study questionnaires, the research team inquired about effective practices from state entities in charge of state DOT and other governmental debt issuances, since there is often a single issuer for multiple agencies at the state level. The research team used the case studies to both reveal a core set of effective practices and lessons learned that could be applicable in a variety of contexts, and to identify effective practices that may be more useful for specific typologies of issuers. Four chapters of the Guidebook, one for each stage of the debt issuance process, offer a synthesis of the effective practices and lessons learned from this research.

2.1 Case Study Selection

A preliminary list of case study criteria described in detail how the team selected the surface transportation agencies included for case study analysis to represent different typologies, a process guided by the "five W/one H" questions:

- WHERE does the authority to issue debt reside?
- WHO is responsible for day-to-day debt decision-making?
- WHAT types of debt are possible?
- WHEN does debt mature?
- WHY is the debt being issued?
- HOW MUCH capacity is available for debt repayment?

Research methods for studying each case include document review and interviews of key players. Since most agencies now have their policy and procedure documents on either the internet or agency intranet, the research team reviewed these documents directly or requested an electronic copy of documents available via email. Interviews of key players were designed to engage the CFO and the debt manager within a state DOT or surface transportation agency and, as appropriate, the staff responsible for surface transportation debt issuance and management within the office of a state treasurer, comptroller and/or bond commission/finance committee.

An interview guide focused on information to complete the document review, such as the assessment of the efficiency of the state DOT's debt management practices by interviewees. The literature review helped to shed light on more detailed questions, for example, those regarding debt ceiling practices.

Each case study led to a detailed case study report, including the list of documents reviewed, interview notes and a summary of findings related to tools and methods that could be useful for other agencies. This summary of findings was designed to be organized according to the four phases of the debt management and issuance process.

The case studies, including Arizona, Colorado, Florida, Ohio, Massachusetts, New York MTA, PTC, and Virginia, represent a diversity of surface transportation agencies regarding debt management policies, procedures and practices, agency size, debt history and other relevant factors including state credit rating.

2.2 Case Study Research

Each case study report is organized according to the four phases of the debt issuance and management process, while highlighting which classification of surface transportation agencies the effective practices, tools and methods apply. Then, the research team developed a memo summarizing the preliminary findings on effective practices and strategies, tools, and methods from the initial set of three case studies based on materials identified in a desktop search and interviews with key players.

The eight case study reports documented for this study follow.

Arizona

1 Introduction

This report examines Arizona's transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. Arizona's transportation debt program was selected to represent a medium-sized debt program that has rigorous processes and procedures that may serve as a model for other states. The Arizona case study highlights effective practices for implementing complex debt management tasks in a consistent manner and managing complex data and documentation efficiently.

1.1 Background

This section provides an overview of the state of Arizona, including information about Arizona's demographics and credit ratings. This section also provides an overview of the Arizona Department of Transportation's (ADOT) highway network, budget, and role in managing Arizona's transportation debt program.

ADOT is the statewide transportation agency responsible for planning, building and operating the highway system, building and maintaining bridges and the Grand Canyon Airport, and operating the Motor Vehicle Division, which provides title, registration and driver-license services to the public.

Table 1. Overview: Arizona

Metric	Arizona
U.S. Region	Southwest
Population (2018)	7,171,646
Percent urban population (2010)	89.8
Land area	113,594.08 square miles
Median household income ($ 2017)	$53,510
State Credit Rating (Moody's, Fitch, S&P)	Aa2 / NA / AA[1]

Table 2. Overview: ADOT[2]

Metric	Arizona DOT
State-maintained highway system	6,775 miles (centerline)
Interstate highway system	1,168 miles (centerline)
Number of state-maintained bridges	4,855
Total bonded debt outstanding	$2,208.4 million[3]
2020-2024 Five-Year Transportation Facilities Construction Program Total	$4,592 million[4]
FY 2020 Operating Budget (Total)	$450.1 million[5]

2 Summary of Findings

2.1 Debt Issuance and Management Authority

The Arizona State Transportation Board (STB) is the primary entity authorized to issue transportation debt in Arizona. The issuance of transportation debt in Arizona does not require additional legislative, treasury, or voter approval.

Members of the STB are appointed by the Governor, confirmed by the Senate, and serve staggered six-year terms. The board consists of seven members representing Arizona's transportation districts, with two members appointed from Transportation District 1 (Maricopa County). When a member's term expires, a new member is appointed from the same district, with membership rotated among the counties within the district.

Since the Legislature has chosen to provide debt authority at the agency level as opposed to the State level, most of the roles and responsibilities for debt issuance and management are the purview of either STB or ADOT, as summarized in Table 3. There is a more limited role for the Arizona State Treasurer's office, primarily focused on the payment of debt service and investment of debt proceeds.

Table 3. Surface Transportation Debt Issuance RACI Chart[6]

Authority	STB	ADOT	State Treasurer
Develops funds available for Five-Year Construction Program, including bond issuance forecasts	A	R	I
Approves new Five-Year Construction Program and planned issuances	R	C	I
Determines timing, which credit and amount for specific issuances	I	R	I
Approves bond resolution for a specific issuance	R	C	I
Attends and monitors the pricing process; signs final bond pricing agreement	I	R	I
Executes certain closing documents	R	R	I
Wires debt service payments to paying agent	I	A	R

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

Within ADOT, the specific individuals responsible for debt management include:

- **Chief Financial Officer (CFO)**: Responsible for determining the need, timing, and size of bond issues, along with overseeing the debt and compliance functions.
- **Debt Management and Compliance Administrator (DMCA)**: This position was created to serve as the "quarterback" of the debt program, to coordinate the various activities across the various Financial Management Services (FMS) Division units, including resource administration, fiscal operations, and the financial planning and cash management (FPCM) team. The DMCA serves as the CFO's designee for debt financing programs and is responsible for debt issuance and administration, post issuance compliance, continuing disclosure, tracking, reporting, performance measurement and other relevant responsibilities.

2.2 Debt Strategy Definition

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. This section explores how Arizona approaches this phase of the debt management process. The section is organized as follows:

- Section 2.2.1 discusses the state debt policies that govern and restrict how debt is issued within Arizona.
- Section 2.2.2 discusses the types of debt that are issued for Arizona's surface transportation program.
- Section 2.2.3 discusses the annual process that Arizona follows to plan for future debt issuances.
- Section 2.2.4 discusses Arizona's approach to strategies for market analysis.

2.2.1 State Debt Policies

Arizona's STB policies include a section outlining the debt policy[7], which provides high-level statements on the following key areas:

- Judicious use of debt issuance policy to accelerate construction of critical transportation projects, which specifically includes:
    - Following debt-related statutory requirements
    - Measuring debt affordability against ADOT's fiscal capacity
    - Evaluating the benefits of accelerated construction versus "pay as you go" funding
    - Maximizing the efficiency of borrowing through the timing and structure of debt issuances
- Using both long and short-term debt instruments to maintain flexibility.
- Maintaining debt service coverage that provides for fiscal integrity, which allows for the Board to establish coverage guidelines that exceed those of the State.
- Maintaining the highest bond ratings possible.

ADOT has established a FMS division debt management policy (Policy) that supports the high-level guidance of the STB debt policy. The FMS policy includes more comprehensive details about:

- Scope and authority, including the specific characteristics of each authorized credit.
- Roles and responsibilities, including a description of each FMS unit.
- The policy on gifts and meals, which aligns with ADOT's conflict of interest policy.
- Credit objectives, which align with STB's policy for maintaining the highest bond ratings possible.

- Permissible types of debt, which indicates tax-exempt, fixed rate debt as the preferred type, with others to be considered after analysis and CFO approval.
- Debt structuring considerations, which provides high-level guidance for maximizing future borrowing capacity within available cash flow, while maintaining high bond ratings for each financing program.
- Allowable uses of bond proceeds, which indicates the permitted uses for each type of debt issuance and the priority of these uses.
- Ineligible uses of bond proceeds, which indicates the uses which may not be funded by each type of debt issuance.
- Bond accounts, which outlines the establishment of separate accounts for proceeds, cost of issuance, and debt service for each debt issuance purpose (new money or refunding).
- Investment of bond funds, which outlines specific investment instructions for the State Treasurer's office for each of the transportation debt credits.
- Allocation methodology, which indicates that the "specific tracing" method shall be used to allocate sales proceeds and investment earnings.
- Payment of debt service, which indicates that the funding of debt service accounts shall be handled pursuant to the resolution for each credit.
- Long term debt planning, which indicates an annual process for the CFO to prepare a fund analysis for both the five-year program and the six- to ten-year capital program, based on specified minimum coverage ratios.
- Selection of consultants, which outlines the procurement processes for each of the external expert categories.
- Method of sale of bonds and notes, which indicates the authorized method(s) for each type of debt issuance.
- Project selection, which outlines the specific criteria for identification of projects to include in the five-year program.
- Expenditure projections and tracking, which requires the preparation of a pro forma cash flow monthly spend down reports for every new money issue.
- Refunding procedures and practices, which outlines the rationale for potentially considering the refunding of outstanding debt.
- Cash reserve for grant anticipation notes federal aid subaccounts, which requires the CFO to be responsible for determining the amount of risk reserve for GANs.
- Arbitrage rebate, which requires annual calculation of arbitrage rebate, with payments made if necessary.
- Continuing disclosure, requires timely filings with the Electronic Municipal Market Access system (EMMA) and ADOT's investor information web page.
- Post-issuance compliance, requires annual compliance for each outstanding issues, and tracking of compliance in the ADOT debt management and compliance database.
- Investor relations, including the main ways in which investors relations are managed on a regular basis.

- Annual review of debt management policies and procedures, which specifies that policies and procedures should be updated annually, or sooner if necessary.

2.2.2 Types of Debt

- STB is authorized to issue three types of debt:
  - Highway user revenue fund (HURF) bonds, secured by gas tax and vehicle fees.
  - Maricopa County transportation excise tax revenue bonds, also known as regional area road funds (RARF) bonds, which are secured by a County-wide sales tax.
  - Grant anticipation notes (Arizona's grant anticipation revenue vehicle (GARVEE) program), secured by federal aid revenues.

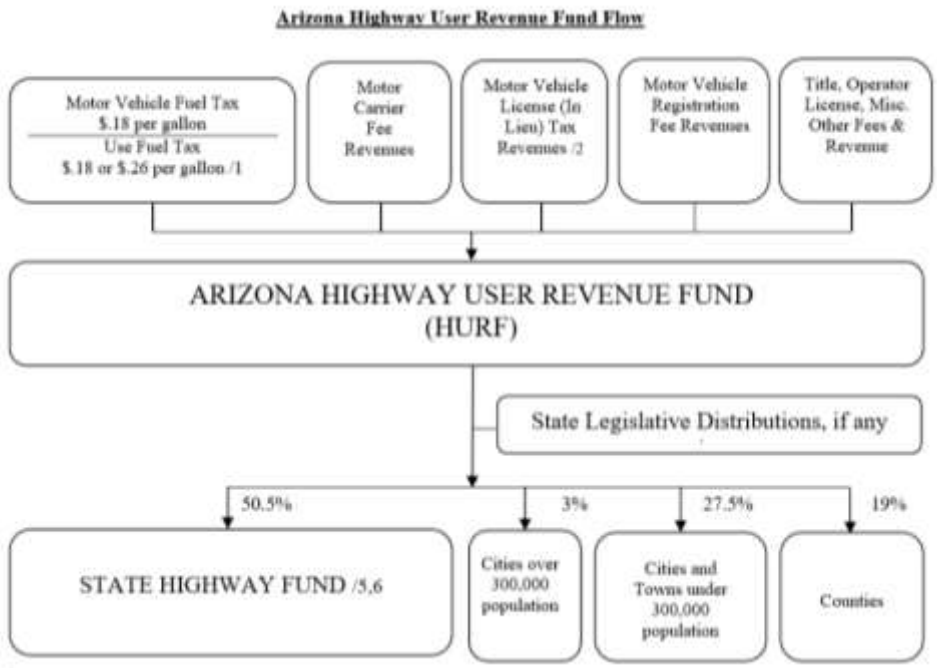
The creation of new credit programs is currently not anticipated. The creation of a new credit program would require legislative action, including the creation of a new dedicated revenue stream. This is not likely, given Arizona's general preference for pay-as-you-go solutions to infrastructure development.

Each of the existing types of debt has its own unique characteristics:

2.2.1.1 Highway User Revenue Fund (HURF) Bonds

HURF bonds are secured by a senior or subordinate lien on and a pledge of motor vehicle and related fuel fees and taxes in the state highway fund. A diagram of the highway user revenue fund flow is shown in Figure 1.

Figure 1. Arizona Highway User Revenue Fund Flow[8]



STB issues HURF bonds to fund the acquisition of right-of-way, design, and construction of federal and state highways in the STB's five-year transportation facilities construction program. The current Moody's

and S&P ratings for HURF bonds are Aa1 / AA+ (senior) and Aa2 / AA+ (subordinate). HURF bonds may be issued for a period up to 30 years.

2.2.2.1 Regional Area Road Fund (RARF) Bonds

RARF bonds are secured by a portion of excise taxes collected on behalf of Maricopa County. STB issues RARF bonds to finance the costs of design, right-of-way purchase, or construction of certain freeways and other routes within Maricopa County. The current Moody's and S&P ratings for RARF bonds are Aa1 / AA+. RARF bonds may be issued for a period up to 20 years, or until the expiration of the tax (2025).

2.2.2.2 Grant Anticipation Notes (GAN)

GANs are secured by revenues received from the Federal Highway Administration under certain grant agreements and by certain other federal aid revenue. STB issues GANs to pay the costs of design, right-of-way purchase, or construction of certain federal-aid highway projects. The current Fitch, Moody's, and S&P ratings for GANs are AA / Aa2 / AA+. There are no specific constraints on the term of GAN Bonds, other than the market's comfort levels with federal repayments.

2.2.3 Strategies for Planning Future Debt Issuances

Arizona has an annual programmatic process for planning future transportation debt issuances on a five-year rolling basis. Every fall, forecasts are developed for HURF and RARF revenues. These forecasts, along with estimates of federal aid, are used by ADOT's CFO to develop the annual funding that is available for the Department's capital program, including the planned debt issuances. Each February, ADOT presents an update to STB that includes the tentative five-year program of projects, including the planned bond issuances for this time period. This five-year program is informed by:

- Annual revenue forecasts and the amount available after debt service, transfers and applicable administrative/operating expenses are covered.
- The amount of additional debt service, the cash flow for each of the respective funding programs (HURF, RARF and GANs) can support based on the updated annual revenue forecasts and under their respective additional bonds tests (ABTs).

Each spring there are public hearings on the five-year program, followed by formal STB approval of the program every June.

2.2.4 Strategies for Market Analysis

ADOT's strategies for market analysis vary depending on the type of debt. For instance, the perception of the financial markets can be more important for a GAN issuance, since it may be more expensive if the federal aid highway program is closer to the end of its long-term program authorization.

Programmatic market analysis is also important for determining whether refundings should be considered for any of the outstanding debt. Refundings are required to achieve interest rate savings on a present value basis, net of all costs incurred in issuing the debt, that the CFO determines are sufficient to justify the FMS staff time and resources committed to the refunding issue. This requires a careful analysis of current and potential future market conditions.

2.3 Individual Transaction Preparation & Development

This section explores how Arizona prepares a bond offering for sale after determining the strategy behind making the issuance. As provided in greater detail below, ADOT has established a clear set of processes and procedures for bond issuance which are very well documented and organized. These processes and procedures directly support the decision-making that is required for ADOT to implement the appropriate debt strategies.

This section is organized as follows:

- Section 2.3.1 discusses the processes and procedures that ADOT has established for bond issuances.
- Section 2.3.2 discusses the process for selection of bond funded projects for an issuance.
- Section 2.3.3 discusses how ADOT determines the type of debt vehicle and type of sale for a specific issuance.
- Section 2.3.4 discusses how ADOT evaluates the debt structure for a specific issuance.
- Section 2.3.5 discusses how ADOT procures outside professionals to support specific issuances.
- Section 2.3.6 discusses ADOT's relationship with credit rating agencies (CRAs), particularly for specific issuances.

2.3.1 Established Processes and Procedures for Specific Bond Issuances

ADOT maintains a debt management and compliance database, which provides a framework for organizing the various tasks and elements related to each issuance. These include debt management tasks (new issue setup, pre- and post-closing tasks, issue-specific compliance requirements, and data management) along with key reports and other documentation (bond calendar, pre- and post-compliance checklist, and tax deadlines). The commencement of every issuance requires the establishment of key information in the database.

ADOT has also established a detailed set of procedures for each element of specific bond issuances, which are all documented in ADOT's internal database. In addition to providing a step-by-step approach to bond issuance, ADOT's "Procedures for bond issuance and closing" also reference other, more specific procedures for each of the sub-tasks, including procedures for the following:

- Preparing the ADOT rate report, which tracks several key interest rates relevant to ADOT, including taxable and tax-exempts rates
- Selecting bond funded projects
- Pro forma and spend down report
- Declaration of intent instructions
- Assembling a ratings call packet
- New issue meeting template
- Responding to public or investor inquiries
- Permitted investments letter
- Review and update the investor information section of the ADOT website

These documents provide step-by-step guides for specific aspects of each debt issuance, providing procedures that may be followed in a consistent manner. Using these documents, new members of the ADOT team can be easily instructed in the complex processes needed for debt issuance.

2.3.2 Selecting Bond Funded Projects

One of ADOT's procedures focuses on a major decision-point for individual issuance preparation: the selection of specific bond-funded projects. ADOT begins by reviewing programmed construction projects with budgets of $25 million or more. This is followed by meetings with the project scheduling and management groups to discuss start dates, duration, useful asset life and budget for these projects to develop a final list for the issue. Those projects ultimately selected meet the following criteria:

- Useful life of each project is at least as long as the anticipated term of the bond;
- Each project must begin prior to or within 90 days of the date of closing;
- In the aggregate, the mix of selected projects must meet each of the IRS spending exception deadlines for the 24-month spending exception, and the temporary period deadlines; and
- Winning bidders for delivery of the projects are required to provide draw down schedules prior to receiving notice to proceed.

In addition, bonds are used to fund only 50% to 75% of a project's hard costs. As a result, the remaining percentage of hard costs, construction engineering, contingency and indirect cost allocations must all be funded by another source. This prevents unexpended bond proceeds late in the 24-month spending exception period. This approach and the collaboration with the technical functions have significantly improved the accuracy of ADOT's pro forma cash flows.

2.3.3 Determining the Type of Debt Vehicle and Type of Sale

As described in previous sections, ADOT currently has the option of using three main types of debt: HURF, RARF, and GANs. The determination of the specific type of debt for a particular issuance is based on several factors:

- The amount of funding needed to meet the needs identified in the five-year program.
- The current coverage, ABTs and available capacity under each of the three credits.
- The geographic location of the projects, since the RARF credit can only be used in Maricopa County.
- The perception of the financial markets. For instance, as noted earlier, a GANs issuance may be more expensive if the federal aid highway program is closer to the end of its long-term program authorization.
- Desired term of the debt. Both the HURF and the RARF credits have varying terms in statute, whereas the term for a GANs issuance is generally dictated by the appetite of the financial markets.

Generally, ADOT uses negotiated sales for most of its debt issuances, particularly for those under the HURF and RARF credits. Competitive issues are occasionally done when the specific size and structure of the bond issue, and market conditions, are likely to produce a better overall result for the Department.

2.3.4 Evaluation of Debt Structures, Including Potential Alternative Debt Structures

For all of ADOT's issuances in each of the existing credits, there is a general preference for structures that produce overall level debt service for all outstanding bonds, as this maximizes the allowable capacity. This may mean that the new principal amortization is "wrapped" around the existing debt service.

Whereas STB's debt policy allows for both variable and fixed rate debt, ADOT's FMS policy indicates a strong preference for more traditional fixed rate, tax-exempt debt structures for three primary reasons.

First, fixed rate debt is easier to plan and will not force cuts to the five-year program as might occur with variable rate debt in a rising interest rate environment. Second, Arizona does not yet have toll roads and therefore has not encountered a need for more complex project finance structures. Third, Arizona has not yet identified an alternative financing structure, such as a public-private partnership (P3), that can be delivered, from a financing standpoint, more cost effectively than through the issuance of governmental tax-exempt debt. Certain key elements of a potential P3 program, such as availability payments, are authorized, although none have yet been implemented.

Alternative types of debt may only be used after both a specific analysis is undertaken which supports the use and the alternative strategy receives CFO approval. The alternative types of debt requiring such

analysis and approval may include, but are not limited to: taxable, zero coupon and capital appreciation bonds, variable rate debt, derivative or hedging products, Transportation Infrastructure Finance and Innovation Act (TIFIA) loans, private activity bonds (PABs), private financing, bank loans, and commercial paper.

2.3.5 Soliciting & Securing Outside Professionals

ADOT relies on a wide range of outside professionals for each debt issuance. Arbitrage calculation providers, underwriters, bond counsel and financial advisors (FAs) are typically selected from a state-level procurement and resulting contract. ADOT has long-term relationships with its bond counsel and FA firms. The CFO is responsible for selection of both bond counsel and FA.

ADOT selects underwriters for each issue based on responses specific to the issue. Proposals are typically solicited by ADOT's FA from the firms on state contract for underwriting services. The CFO is also responsible for selection of one or more underwriting firms for each issuance.

There is no contract for registrar or paying agent or escrow trustees, so these services are also selected for each issue. The FA usually solicits the quotes for registrar/paying agents and escrow trustees, as applicable, on ADOT's behalf. The DMCA is responsible for selection of entities to provide these services, either on a best value or low bid basis.

2.3.6 Working with Credit Rating Agencies

ADOT's rating agency strategy aims to maintain ratings for each of the senior lien credits in one of the top two rating categories. ADOT has determined, with support from its FA team, that ratings from two of the major rating agencies is sufficient for meeting the needs of investors. Historically, ADOT has worked with Moody's and S&P for the HURF and RARF issuances. In most cases, ADOT has found that ratings from more than two agencies is not worth the cost of the additional rating. However, when the first GANs issuance occurred in 2000, ADOT also sought ratings from Fitch, in addition to Moody's and S&P, to provide the financial markets greater comfort with the new credit.

With each of the rating agencies, ADOT has a strong policy of transparency, particularly with respect to financial performance and results. ADOT has regular calls with each of the rating agencies to provide ongoing communication regarding the status financial, operational and capital programs.

As noted earlier, ADOT has developed specific written procedures for assembling a ratings call package for each new issuance. These procedures support an update package for ratings agencies that provides a standardized and comprehensive view of ADOT's credits. This task is the responsibility of the DCMA.

2.4 Marketing & Placement of Individual Transactions

This section describes how Arizona approaches transportation debt pricing strategy, marketing strategy, and closing process. The section is organized as follows:

- Section 2.4.1 discusses how ADOT staff develop and implement a bond pricing strategy.
- Section 2.4.2 discusses how ADOT staff and outside advisors work to market bond offerings.
- Section 2.4.3 discusses the bond closing process.

2.4.1 Debt Pricing Strategy

In advance of a pricing, the FA is responsible for preparing pre-pricing information and market analyses. The underwriters are responsible for developing the deal structure and pricing, based on current market and economic factors.

During pricings, ADOT conducts a 30-minute webinar for FMS staff in which the FA discusses the market conditions, explains the order monitor and answers questions. After the pricing, ADOT arranges

another 30-minute webinar to show staff the results of the pricing. This provides ADOT staff with visibility into the pricing process and it contributes to knowledge transfer and allows staff to see how their own work contributes to ADOT's debt program.

2.4.2 Marketing Strategy

ADOT maintains and regularly updates an investor information website: https://azdot.gov/about/FinancialManagementServices/investor-information. This website includes a disclaimer page, a library of official statements, an overview of outstanding debt and long-term obligations, secondary market continuing disclosure documents, ratings, and the independent registered municipal advisor (IRMA) representation notice. ADOT's written procedures include a specific step-by-step approach to updating the investor information page, to provide a consistent approach to external communications. Updates are required to occur at least annually, or more frequently if there are significant changes in the program. This includes, but is not limited to, new issuances. These updates are the responsibility of the DCMA.

2.4.3 Closing Requirements & Guidelines

An important part of ADOT's bond closing processes and procedures is the new issue meeting with the FMS staff, which is scheduled about two weeks prior to closing to review the projects that will be funded and the closing tasks which must be completed. During this meeting, the tasks required for closing are assigned and deadlines established. The meeting is helpful in educating staff and making certain that tasks are completed in a timely manner. Key pre-closing tasks include:

- Confirmation of official statement availability and accuracy of issue data on EMMA.
- Preparation of an update report on the results of the pricing for the STB.
- Determination of final reimbursement amounts for the tax compliance certificate.
- Establishment of the issue in the accounting and Treasurer's systems.

2.5 Post-Issuance Requirements Compliance

ADOT's post-issuance compliance approach is supported by technology such as the debt management and compliance database, as well as more traditional tools, including both meetings and calendars. The following sections are organized as follows:

- Section 2.5.1 discusses ADOT's debt management compliance tools.
- Section 2.5.2 discusses key compliance strategies for specific compliance requirements.

2.5.1 Tools: Debt Management Compliance Tools: Database and FMS Calendar

The debt management and compliance database was developed specifically for ADOT and contains data on all ADOT issues and credits, starting with the first issue in 1980. This is a proprietary system that ADOT developed in-house over a period of two years. It has significantly improved the state's ability to schedule, track, manage and report on the debt programs. The information contained in the database includes:

- Sources and uses of funds
- Information for each maturity, including the Committee on Uniform Securities Identification Procedure (CUSIP) number, coupon, due date, interest rate, call status, price and date, and interest by due date, identify refunded maturities by refunding issue and ability to identify CUSIPs by refunding issue(s)
- Interest by due date, with functionality to reflect impacts of refundings
- Credits, lien types, issue and transaction types, tax status, issue participants, projects

- Transaction information such as various interest costs, arbitrage yield/negative arbitrage, net present value savings, average life, weighted average maturity, and coupon information
- Monthly investment earnings and yield data
- State Fund, Sub-fund, and Treasury accounts, investment earnings and pool yields.

The database also features a pre- and post-issuance and annual compliance task management and tracking tool which:

- Establishes compliance period by issue
- Calculates spending exceptions, temporary period and final allocation deadlines
- Enables selection and scheduling of a wide variety of pre- and post-issuance tasks by issue or by credit type for each compliance year, with both "internal" and hard deadlines
- Allows data entry of compliance task results by issue or credit type, including date(s) completed, notes, file names/paths on ADOT's system of documents related to each task, links to documents on ADOT's investor relation site or EMMA (as applicable)
- Allows the addition of new tasks (and archiving of old/unused tasks), including identification of responsible parties, risk profile, deadlines, explanation, source documentation and applicable policies and procedures.

The database can also generate on-demand reports with the ability to designate beginning and end dates or specific issue as applicable, including:

- Bond task calendar with due dates
- Record retention requirement time frames by issue incorporating impacts of refunding issue(s)
- Tax deadlines
- Issues requiring compliance by year
- Annual post issuance continuing disclosure compliance reports by issue
- Private business use limit amounts
- Performance measurement data
- Policies and procedures review status
- Refunded CUSIPs report by refunding issue
- Initial issue debt service and revised debt service reflecting the impacts of refundings
- Various history reports by credit or issue, including underwriter compensation and costs of issuance, deal participants, total interest costs, outstanding debt service for all issues or a specific time frame, investment earnings and yields
- Data for the annual Arizona bonded indebtedness report
- Monthly investment data.

ADOT's FMS calendar includes critical debt deadlines and produces an on-demand report for the CFO to view all statutory and regulatory deadlines across the division. This calendar includes debt-related deadlines for tasks including continuing disclosure filings, private business use analysis, debt service payments, and arbitrage rebate calculations.

2.5.2 Strategies for Post-Issuance Compliance Requirements

ADOT has developed specific procedures for preparing a 24-month pro forma cash flow model and spend down report. The pro forma cash flow model documents the "reasonable expectations" for the issue with regard to amount and timing of expenditures. This helps make certain the 24-month spending exception and temporary period deadlines are met. The pro forma also helps make certain the aggregate expenditures of the projects will achieve the spending exception and temporary period deadlines. In addition, the procedures outline the steps for generating a spend down report after an issue has closed, which is updated monthly as long as proceeds remain unspent. This spend down report is compared to the pro forma to determine if the pace of expenditures is on track. If the pace of expenditures slows, ADOT may add additional authorized projects for expenditure from the bond proceeds or substitute out slower projects to make certain the deadlines are met.

On all financings, ADOT, carefully reviews the intended use of proceeds to identify any potential non-governmental use, or payments that may be received. ADOT also reviews this information and any analyses with the tax department of their bond counsel, as well as generally with the FA. ADOT uses the database to track the use of proceeds from a private business use standpoint to make certain that no issues come up subsequent to the issuance of the debt.

ADOT has established a cash flow team, which includes the FPCM team, project finance and debt management teams. The team meets monthly to discuss challenges, learn from each other and develop informed solutions. Over the last two years, the collaboration and interaction of the team members has greatly contributed to cross-functional learning, led to the maturing of the cash flows and improved the efficiency and effectiveness of ADOT's debt program.

The payment of ADOT debt service is an ongoing post-issuance requirement and there are numerous entities involved in this process, both inside and outside the agency. These include project finance, accounts receivable and payable, general ledger and FPCM within ADOT, as well as the State's General Accounting Office, the State Treasurer's Office and FHWA. This coordination helps prevent missteps during any of the multiple hand-offs throughout the month-long debt service payment process. To support all responsible parties in completing each step correctly**,** a debt service team meets six weeks prior to any debt service payment date to review the standard procedures, adjust as needed, assign each task to a primary and backup responsible party and set deadlines. The procedures are emailed to everyone, and then a calendar meeting notice is sent for each individual procedure to the primary and backup responsible parties, along with their supervisors. Each procedure and its completion date are tracked and reported weekly until the week of the payment, when reporting becomes daily. This process has been very successful in keeping the complicated debt service process on track.

3 Lessons Learned

This case study offers examples of several effective practices:

- **Investor relation strategies**: ADOT maintains a comprehensive and easy to navigate investor relations page. ADOT has clear procedures in place to make certain that this page is consistently updated with new information to provide investors the most relevant Arizona surface transportation debt program information.
- **Process Management Tools:** Arizona's approach to the development and maintenance of detailed procedures for every potential process step provides a strong framework for process management. The debt management and compliance database was developed specifically to modernize ADOT's approach to compliance management. This tool has significantly improved ADOT's ability to track, manage, and understand the debt program across multiple credits over time. The ability to track key tasks helps to complete the process on schedule.

- **Coordination responsibility assignment**: The creation of the full-time DMCA position has provided someone responsible for coordinating key activities for all stages of debt management. This role, as the CFO's designee, has helped ADOT to meet the challenges of a growing and increasingly complex debt program.

There are also some transportation debt challenges that Arizona is facing and may face in the future. These challenges may be useful for other practitioners:

- **Institutional knowledge transfer:** The term of ADOT's bonds, particularly those issued under the HURF credit, may have terms lasting up to 30 years. During this time, it is unlikely that key team members, both internal and external to ADOT, will still be in their original positions. It is important to devise strategies to provide the appropriate transfer of institutional knowledge between current and future CFOs, debt managers, FAs, and bond counsel. While ADOT has resilient systems in place, this is still a concern for them in the long-term.
- **Records management:** While the debt management and compliance database has served to provide much needed structure for ADOT's document management, records management is still an ongoing challenge. ADOT recognizes that bond-related records can be spread across a diffuse group of functions, ranging from finance and accounting to design, right of way, construction, maintenance, facilities and budget. Identifying and archiving the critical records across all of these functions is very challenging.

Colorado

1 Introduction

This report examines the debt issuance and management responsibilities and practices of the Colorado Department of Transportation (CDOT) and its divisions, the Colorado High-Performance Transportation Enterprise (HPTE) and the Colorado Bridge Enterprise (CBE). Both HPTE and the CBE are state-owned businesses situated within CDOT, which are designed to support CDOT's financial capacity. HPTE is responsible for financing large capital projects for surface transportation infrastructure, and CBE is responsible for financing the repair and maintenance of CDOT bridges.

CDOT and HPTE's debt issuance and management practices are examined through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. The state of Colorado was chosen as a case study because CDOT and HPTE—at times with the support of CBE—must navigate statewide debt issuance constraints imposed by the state constitution. CDOT and HPTE have found ways to meet the demands for transportation investments amidst the statewide debt issuance restriction, often through the use of innovative finance approaches such as public-private partnerships (P3). This case study offers insights into how states with debt issuance constraints— either as a result of state regulations or by nearing debt capacity limits—can strategically and innovatively manage debt to finance transportation projects.

1.1 Background

This section provides demographic information about the state of Colorado. This section also provides an overview of CDOT's highway network, budget, and role in managing the transportation debt program. CDOT is responsible for maintaining an effective and safe highway system for the state of Colorado by providing services such as maintenance and preservation and construction management.[9] CDOT is supported by two state transportation enterprises, HPTE and CBE. Both HPTE and CBE operate as government-owned businesses within CDOT.

While CBE is not the primary focus of this case study, as a state-owned business housed under CDOT, CBE is included with respect to state debt constraints, how CDOT and HPTE determine what type of debt to issue on a project-by-project basis, and how CBE procures outside professionals.

Table 4. Overview: Colorado[10]

Metric	Colorado
U.S. Region	West
Population (2017)	5,607,154
Percent urban population (2010)	86.2%
Land area	103,642 square miles
Median household income ($ 2017)	$57,652
State GO Credit Rating (Moody's, Fitch, S&P)	Aa1, Not Rated, AA

Table 5. Overview: CDOT[11]

Metric	CDOT
State-maintained highway system	8,148 centerline miles
Interstate highway system	952 centerline miles
Number of state-maintained bridges	3,400 bridges
Total outstanding principal Certificates of Participation (CDOT)	$137.65 million[1]
CDOT FY17 Budget	$1,554.4 million
Maintenance Funds	$747.2 million
Pass-Through Funds Multi-Modal Grants	$209.4 million
Debt Service	$132.9 million
Operational Improvements	$128.3 million
CBE	$112.2 million
Expand	$89.6 million
Project Delivery	$84.6 million
Emergencies	$36.2 million
HPTE	$14 million

[1] CDOT also maintains a debt service commitment of $28.5 million in 2018 for the State of Colorado's Series 2018 Certificates of Participation (COP) issuance and has an annual obligation of $10.1 million through 2037. In addition to CDOT COPs debt, CDOT has a debt service commitment associated with state issued Series 2018 COPs, and has pledged credit support for some of the HPTE issuances.

2 Summary of Findings

2.1 Debt Issuance and Management Authority

The Colorado Tax Payer Bill of Rights (TABOR), enacted in 1992, is central to how Colorado has structured and managed its transportation debt program. The TABOR is an amendment to the Colorado constitution that limits the amount of revenue the state can retain and spend and restricts the amount of debt Colorado state agencies may issue.[12] Any increase to these established limits require approval by Colorado voters by referendum, such as Referendum C in 2005, which increased the amount of allowable state revenue. TABOR also places specific restrictions on what types of debt are allowable. State issued general obligation (GO) bonds are not allowable, and there are restrictions on multi-year fiscal commitments.[13] Allowable debt includes:

- Tax revenue anticipation notes, so long as they are repaid within the same fiscal year,
- Multi-year tax revenue anticipation notes issued by an enterprise (government-run business); and
- Certificates of Participation (COPs), which are tax-exempt lease-financing agreements undertaken by a state or local government and the subsequent securities are sold to investors. The investors are entitled to a portion of revenue generated from the lease agreement.

TABOR has required policymakers and state agencies to identify innovative and creative ways to meet the state's transportation funding and financing needs. In response to TABOR, the Funding Advancement for Surface Transportation and Economic Recovery Act (FASTER) was passed in 2009 to 1) increase annual revenues dedicated to transportation and 2) establish a new authority structure to increase Colorado's financial capacity to meet transportation needs. FASTER increased vehicle registration fees, which generate roughly $200 million each year. This includes a bridge safety surcharge dedicated to transportation projects managed by CBE.[14]

FASTER also established both the CBE and HPTE. The CBE and the HPTE are government-owned businesses that are not restricted by the limits established by TABOR. These entities increase the state's highway and bridge funding and financing capacity and are eligible to issue multi-year tax revenue anticipation notes. Both the HPTE and the CBE are exempt from the restrictions set by TABOR so long as they maintain enterprise status, which requires that 90% of the entity's revenue must come from non-state sources, such as federal funds. The remaining 10% may come from state funding sources.

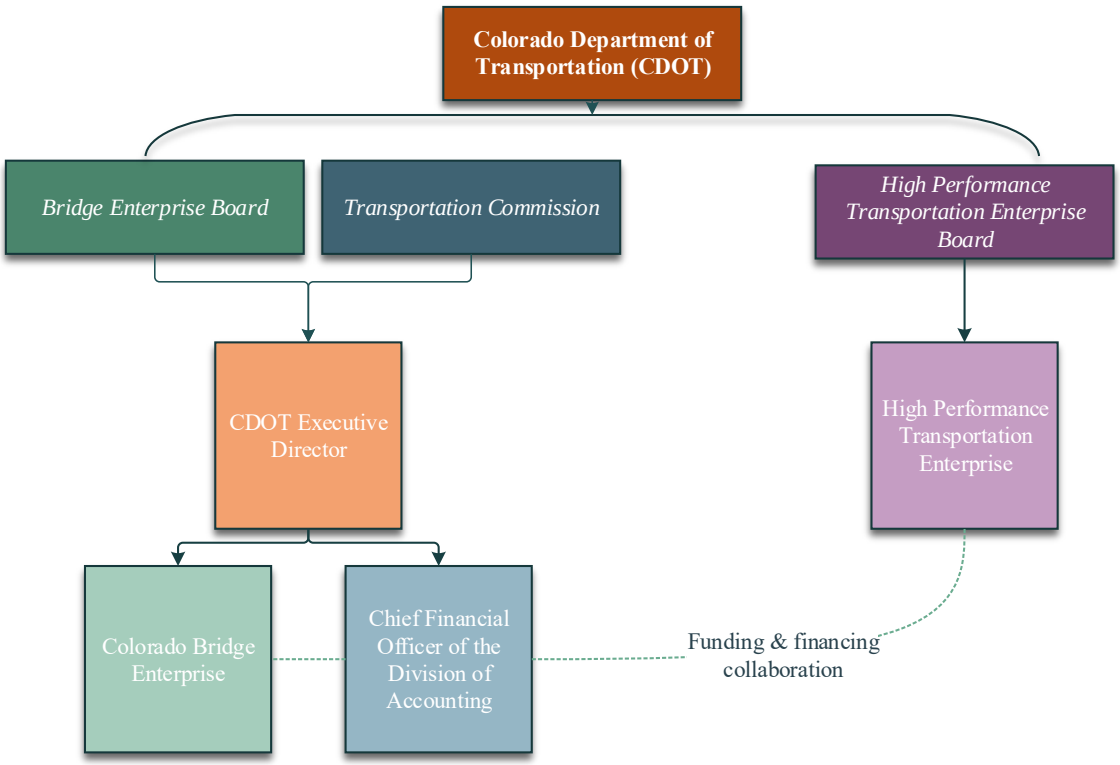
With respect to transportation debt management, there are several state entities that share responsibility to authorize, issue, and oversee debt issuance, including:

- **Department of Treasury**, responsible for overseeing post-issuance tax compliance
- **Colorado Department of Transportation (CDOT)**, which can issue debt with voter authorization and operates in a consultative role for HPTE and CBE debt issuances
- **HPTE**, which maintains the authority to issue debt and is responsible for the issuance and management of debt and public-private partnerships (P3s) to advance surface transportation needs
- **CBE**, which maintains the authority to issue debt and is responsible for the issuance and management of debt to effectively repair Colorado's bridges

The **Department of Treasury** is responsible for overseeing CDOT's compliance and tax regulation for debt issuances. In the past, CDOT and other state agencies faced challenges meeting compliance standards, which led to the passage of the Debt Consolidation Act of 2012.[15] This legislation placed the Department of Treasury in charge of managing post-issuance tax compliance.

CDOT is responsible for building and maintaining Colorado's highway system, including state highways, U.S. highways and Interstates.[16] Due to TABOR, CDOT does not have authority to issue debt unless directed by legislative authorization. If legislative authorization is passed, the authorization will indicate whether CDOT or Treasury is the entity responsible for issuing the debt. Had either Proposition 110 "Let's Go Colorado" or Proposition 109 "Fix Our Damn Roads" passed in November 2018, CDOT would have been authorized to issue roughly $6 billion or $3 billion in debt, respectively. Given the intermittency of CDOT debt issuance, the agency does not have a large debt management staff. Certain staff and accountants retain debt management responsibilities, but CDOT relies heavily on a financial advisor (FA) when issuing. Although CDOT does not frequently issue debt, it collaborates with HPTE to develop strategies to finance transportation projects.

Figure 1. CDOT Organizational Relationships



The **HPTE** is an enterprise within CDOT that is responsible for pursuing innovative and efficient means of finance for surface transportation infrastructure projects, is the lead for the state's transportation P3 program, and the state's Express Lane operator. The HPTE is responsible for day-to-day management of project-specific debt issuance, and works in consultation with CDOT's Chief Financial Officer and the CDOT Division of Accounting and Finance. Unlike CDOT, HPTE has the authority to issue debt and to facilitate public-private partnerships (P3s). However, HPTE works closely with CDOT staff to develop the funding and financing plans for projects. HPTE requires authorization from the HPTE Board of Directors for debt issuances. The HPTE Board of Directors serves in an advisory and oversight capacity to HPTE and is separate from the Transportation Commission, which is the CDOT board of directors. The director of HPTE does not directly report to the Executive Director of CDOT, but does communicate with and provide information to CDOT's Executive Director. The HPTE team is a small nine person staff, and the Head of Innovative Project Delivery is responsible for the debt issuance management and determining the finance needs for each project.

Like HPTE, the **CBE** is a government-owned business situated within CDOT which was created to finance the repair of the state's bridges. The Bridge Enterprise Board, which serves in an oversight role to

the CBE, is the same entity as the CDOT's board—the Colorado Transportation Commission. CBE has the authority to issue debt to finance projects. CBE has a dedicated revenue stream, a bridge safety surcharge fee assessed as a motor vehicle registration fee[17], enabling the state-owned business to have a larger debt capacity than HPTE and more ease in issuing debt. In certain instances, CBE works collaboratively with CDOT and HPTE to finance and deliver surface transportation projects in Colorado. For instance, CBE provided funding to the Central 70 P3 project, which entails redesigning ten miles of Colorado's I-70 East highway in Denver, adding Express Toll Lanes in both directions, and placing a park on top of part of the renovated interstate.

Table 6. Surface Transportation Debt Issuance RACI Chart[18]

Authority	Department of Treasury	CDOT	HPTE Board	HPTE Office of Innovative Finance	CBE[2]
Approve surface transportation debt issuance (example: HPTE debt)	I	I	R	A	I
Approve surface transportation debt issuance (example: CDOT debt)	I	A	R	A	I
Issue surface transportation debt with voter authorization	A / I	R	I	I	I
Issue surface transportation debt (without voter authorization)	I	C	A	R	R
Manage debt disclosure	R	R	I	R	R
Pay debt service	I	R	I	R	R

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

2.2 Debt Strategy Definition

The first phase of debt financing includes defining a sound debt strategy. This section explores how CDOT and HPTE—with financial support from CBE—approach this phase of the debt management

[2] CBE and HPTE do not always work together for issuances, but sometimes collaborate to meet the financing needs for projects.

process. Unlike other cases profiled for this research, Colorado currently has less of a focus on market analyses that are not tied to specific transactions. Therefore, programmatic market analysis and strategies are not covered in this case study. The section is organized as follows:

- The first section discusses the policies and procedures established in the P3 Management Manual, which CDOT and HPTE use as a framework to determine the financing structure for each project.
- The second section discusses the types of debt that CDOT, HPTE and CBE issue to finance surface transportation projects once CDOT and HPTE have identified the high-level financing structure.

2.2.1 State Debt Policies

Neither CDOT nor HPTE have formal debt management policies, although interviewees said that both CDOT and HPTE plan to develop a debt policy in the coming year. Neither CDOT nor HPTE produce debt affordability studies, although HPTE is considering developing a debt affordability study in the future per the HPTE board's recommendation.

Given the constraints established by the TABOR, CDOT and HPTE do not consistently have ample cash or debt capacity to finance projects without support from private partners. Thus, CDOT and HPTE often turn to innovative project finance approaches, such as P3s, as a means of financing the transportation needs of the state of Colorado. HPTE has developed a comprehensive P3 Management Manual, which governs how it works to identify, implement, and manage P3 projects.[19] With respect to identifying the necessary financing for a project, this manual serves as a decision-making framework for CDOT and HPTE to determine the financing structure and subsequently the appropriate type of debt to issue.

The P3 Management Manual establishes a set of criteria that HPTE uses to determine whether a project will be structured as a design-build, financed internally by CDOT, HPTE, and possibly with the support of CBE, as a P3 design-build-operate-maintain (DBFOM), financed with the support of a private partner, or by another financing structure alternative.[20] The criteria are listed below:

- **Size of the project**: Is the project larger than $100 million?
- **Challenging project funding:** Can CDOT fund the project without partners?
- **Project complexity or uniqueness**: Can the project be delivered more effectively through a life-cycle approach?
- **Project composition**: Is the project broken up into several smaller projects?
- **Environmental review**: Can the environmental review process be completed in a reasonable amount of time?
- **Project risks**: Could a P3 model help transfer project risks to the private sector?

If CDOT is able to fund the project independently, the agency might be able to move forward with financing the project through approved debt issuances or available funds. If CDOT is not able to fund the project without support, which is often the case, HPTE will be responsible to spearhead the process of identifying design-build financing measures with CDOT or seek private partners to support a DBFOM.

2.2.2 Types of Debt

Once the project finance and delivery structure has been determined, CDOT and HPTE will work to identify other potential sources of finance for each individual project, which may include financial

involvement from CBE. There is no overarching pattern that CDOT and HPTE follow to identify sources of finance, which is emphasized by the CDOT, HPTE, and CBE's historical debt issuances and the projects highlighted below. CDOT, HPTE, and CBE approach decision-making pertaining to debt issuances on a project-by-project basis. Further, CDOT, HPTE and CBE work collaboratively to identify the necessary financing.

CDOT. Given the restrictions to CDOT's ability to issue debt, CDOT does not rely on debt as a method to advance its core portfolio. When CDOT is authorized to issue debt, it is expected that the agency will use this money to fund specific large new capital projects.

CDOT also historically issued Transportation Revenue Anticipation Notes (TRANS), since TABOR does not restrict the use of federal funding. In November 1999, a ballot initiative authorized the issuance of up to $1.7 billion of TRANs, with a maximum repayment cost of $2.3 billion including principal and interest.[21] The TRANs were authorized to finance any of the state selected 24 transportation projects. CDOT issued the maximum possible amount of TRANs with a new money TRANs Series in 2004. After this debt issuance, CDOT's expected total debt service was approximately the authorized maximum of $2.3 billion. Following a series of refundings in 2011 and 2013, CDOT ultimately paid $1.4885 billion in principal of the $1.7 billion authorized, and paid $2.289 billion in total debt service of the $2.3 billion authorized. CDOT repaid the final TRANs in fiscal year 2017. CDOT would require a new legislative approval if the agency wanted to issue TRANs in the future.

In the 1990s and 2000s CDOT had several large issuances, but issuances have been much more limited in recent years. Most recently in September 2018, Senate Bill 267 authorized the issuance of four tranches of certificates of participation, totaling $500 million each, in FY 19-FY 22. CDOT received $380 million, excluding premium, of the first of the Treasury's $500 million certificates of participation (COPs) issuance.[22] Subsequent issuances are to be dedicated 100% to transportation, with issuance of the second tranche anticipated in March 2020. While not the issuer, CDOT is responsible for up to $50 million annually in debt service. In 2010, CDOT bonded $300 million against the CBE's vehicle registration revenue stream to advance the delivery on the replacement of poor bridges. For CDOT, debt has primarily been used as one component of financing on a handful of very large projects.

HPTE. HPTE's use of debt is closely linked to CDOT's strategy. In support of CDOT's mission, HPTE assumes the role of financing large capital projects, mainly express lanes, sometimes using P3 delivery structures. Their staff said that their enterprise works creatively to finance projects through a blend of debt and funding from state, local, and private entities.

Transportation Infrastructure Finance and Innovation Act (TIFIA) loans help to meet financing needs for projects sponsored by HPTE. HPTE is the holder of a $106.9 million TIFIA loan, which will be repaid by toll revenues.[23] HPTE also provides availability payments to a private partner which holds a $416 million TIFIA loan.[24] HPTE also relies on revenue bonds secured by the toll revenues generated from projects. In 2017, HPTE issued $161.8 million in revenue bonds for the C-470 project.[25] The bonds were issued at a BBB rating, partly because the bonds are backed by finite revenue streams and not the full-faith and credit of the state of Colorado.

CBE. CBE has more capacity to issue debt than CDOT and HPTE since the enterprise has a dedicated revenue stream. In 2010, the CBE issued $300 million in Build American Bonds against a dedicated revenue stream supplied by the bridge safety surcharge, which is a vehicle registration fee based on vehicle weight

instated by the FASTER legislation.[26] CBE's most recent issuance was in December of 2017 for $115 million in private activity revenue bonds with an A- rating.[27] These bonds were issued to contribute to financing for the Central 70 project.

Collaborative Project Finance. To summarize CDOT, CBE, and HPTE's collaborative approach to project finance, this sub-section highlights the funding composition for several surface transportation projects. As previously described, each project's finance structure is unique and the financing structures can vary greatly. Table 4 provides an overview of the project financing utilized for several Colorado surface transportation projects, and the paragraphs below provide additional detail about each project.

Table 7. Project Financing

Project	Funding Source	Amount ($)	% Total Funding
C-470 Express Lanes[28]	TIFIA loan	$106,900,000	32.8%
	Revenue bonds	$161,700,000	49.5%
	CDOT funds	$47,800,000	14.6%
	Local funds	$10,000,000	3.1%
	Total Project Cost	*$326,400,000*	*100%*
Central 70 P3[29]	TIFIA loan	$416,000,000	28.7%
	PABs	$121,000,000	8.3%
	CBE funds	$850,000,000	58.6%
	Private Equity	$64,000,000	4.4%
	Total Project Cost	*$1,451,000,000*	*100%*
U.S. 36 Phase I[30]	TIFIA loan	$54,000,000	20.7%
	CDOT federal/state grant	$38,000,000	14.6%
	Regional federal funds	$44,000,000	16.9%
	Regional Transportation District sales	$120,000,000	46.0%
	TIGER grant	$4,800,000	1.8%
	Total Project Cost	*$260,800,000*	*100%*
U.S. 36 Phase II[31]	TIFIA loan	$60,000,000	28.1%
	PABs	$20,000,000	9.4%
	HPTE capital payment	$49,700,000	23.3%
	Equity	$20,600,000	9.7%
	Subordinated debt	$20,600,000	9.7%
	CDOT	$8,400,000.00	3.9%
	Capitalized interest	$3,100,000	1.5%
	Misc. income	$400,000	0.2%
	Revenues during construction	$8,600,000	4.0%
	Denver Regional Council of Governments	$8,200,000	3.8%
	Other local, state, and federal funding	$13,600,000	6.4%
	Total Project Cost	*$213,200,000*	*100%*

The C-470 express lanes project is intended to increase capacity on a 26-mile stretch of highway that stretches east to west across the Denver metro area. The project is a design-build that utilizes two different types of debt, both held by HPTE, in addition to cash funding by state and local entities. HPTE is the holder of the TIFIA loan, which it has pledged to repay with toll revenues generated from the project.[32] The TIFIA loan is expected to mature in 2054, thirty-five years after the project is due to be completed.

The Central 70 project is a Design-Build-Finance-Operate-Maintain (DBFOM)[33] P3 financed by a mixture of private equity, federal loans, private activity bonds[34], and cash funding from the CBE. The $416

million TIFIA loan is held by the private partner on the project and is expected to mature in 2049, twenty-seven years after the project is due to be completed.[35] The TIFIA loan is backed by availability payments. HPTE maintains general authority to use availability payments, meaning that the entity does not need to seek approval to utilize them on a project-by-project basis.

The U.S. 36 project, which was completed in two phases, also helps to highlight the complexity of project-finance and the collaboration between CDOT, CBE, and HPTE to deliver projects. U.S. 36 managed lanes and bus rapid transit project began in 2012 with the intent to renovate the stretch of U.S. 36 between Boulder and Denver to incorporate express lanes, high occupancy toll lanes, and replace several bridges along the route. Phase I was a design-build Bus Rapid Transit (BRT) and managed lanes project that began in 2012.[36] The financing for this project consists of a TIFIA loan to HPTE and cash funding from federal, state, and regional sources. U.S. 36 Phase II began construction in 2014 and was delivered as P3 DBFOM.[37] The financing, summarized in Table 4, depicts the complexity and the multitude of financing for the project, including a TIFIA loan to HPTE, private equity, PABs, and cash funding from CDOT.

2.3 Individual Transaction Preparation & Development

This section explores how CDOT and HPTE approach this phase of the debt issuance and management process. This section is organized as follows:

- The first section discusses what type of debt vehicle and what type of bond sale CDOT and HPTE utilize.
- The second section discusses the debt structure CDOT and HPTE typically use and the reasoning behind this decision.
- The third section discusses how CDOT, HPTE and CBE procure outside professionals to support their work.
- The fourth section discusses CDOT's and HPTE's relationship with Credit Rating Agencies (CRAs).

2.3.1 Determining the Type of Debt Vehicle & Method of Sale

Given that CDOT and HPTE often rely on innovative finance mechanisms, like P3s, this phase of the debt management process is different from states with more traditional debt programs. On a transactional level, when utilizing a P3 approach HPTE and CDOT must first determine what type of debt vehicle is most advantageous and which party will be responsible for that debt. Afterwards CDOT and HPTE must determine how to sell the bond offerings.

Determining the Type of Debt Vehicle. With respect to P3s, HPTE has established guidelines and procedures in the P3 Management Manual for how to proceed with TIFIA loans and PABs when HPTE is acting as a conduit bond issuer, meaning that HPTE is responsible for issuing the debt and a third party uses the funds generated from the issuance and is responsible for debt service. For PABs, it is the responsibility of the private partner to provide a financial model for HPTE to evaluate that the bond issue will be at the best value for the residents of Colorado.[38] For TIFIA loans held by private partners, the HPTE team works closely with the United States Department of Transportation (US DOT) TIFIA Joint Program Office (JPO) staff to evaluate the eligibility of the project. The HPTE staff will also facilitate discussions between the Build America Bureau TIFIA credit program staff to answer questions about the loans, acting as an intermediary between the Build American Bureau TIFIA credit program staff and the private partner.

Determining the Type of Bond Sale. CDOT and HPTE typically adopt a negotiated sale approach for bond sales because there is so much variability between the structure and approach for each debt issuance.

Evaluation of Alternative Debt Structures

Due to the TABOR, this phase of debt financing involves two stages for CDOT and HPTE. CDOT and HPTE evaluate alternative debt structures at both a programmatic and transactional level.

Programmatic Approach. Given that Colorado has unique requirements with respect to debt issuance and management because of the TABOR, CDOT and HPTE almost exclusively use alternative debt structures. Outside of revenue-backed bonds, CDOT and HPTE utilize non-traditional debt structures to meet the needs of the state's transportation program. CDOT most recently has utilized COPs. In 2017, CDOT issued $58.7 million in COPs, while most recently the Colorado Treasury issued $500 million in COPs on behalf of CDOT.[39] With the prevalence of P3 projects, HPTE projects have used TIFIA loans, PABs, and loans from private banks.

Rate Structure. HPTE primarily issues fixed rate debt. In interviews, HPTE staff said that there is not currently a policy governing this aspect of debt issuance, but they anticipate that there will be an enterprise policy regarding the use of fixed and variable rates in the future.

2.3.2 Soliciting and Securing Professional Support

Both CDOT and HPTE secure outside professionals through competitive processes. As needed, both CDOT and HPTE will issue requests for proposal (RFP) for outside advisors, including financial advisors (FAs), technical advisors, legal advisors, and traffic & revenue (T&R) advisory consultants. For legal advisors and T&R advisory consultants, HPTE solicits a bench of firms and then procures singular firms on a one-off contract basis depending on their needs through a separate task order.

With respect to FAs, CDOT manages a single contract lasting for a five-year timeframe, because state fiscal rules prohibit terms longer than five years for personal service contracts. Usually, general FA services are secured, but CDOT sometimes issues targeted task orders to focus on specific area of expertise. CDOT staff said that they rely heavily on their FA, since they have limited staff to support debt management. For example, the CDOT FA is responsible for monitoring for the refunding and refinancing opportunities. HPTE and CBE manage specific task orders for the FA held on the contract maintained by CDOT.

Currently, CDOT, HPTE, and CBE all maintain the same FA (under separate contracts). Given that CDOT and HPTE—and at times CBE—work together to identify the necessary financing for transportation projects, it has been helpful for them to have the same FA to facilitate continuity and understanding.

2.3.3 Working with Credit Rating Agencies

HPTE, given that it is a more frequent issuer than CDOT, engages with credit rating agencies (CRAs) more often. While CDOT does need to engage with CRAs when they are the direct issuer, CDOT staff did not express having a CRA engagement strategy since CDOT does not issue debt often. HPTE staff said that their office engages with CRAs on a project-by-project basis, largely because the assigned credit rating is sensitive to the specifics of each project with each project issuance receiving a different credit rating.

When a new project-specific debt issuance is being prepared the HPTE's FA will develop a slide deck that explains the project to try and receive the minimum investment grade rating. HPTE speaks with the rating agencies about the project and how investors might perceive it. In interviews, HPTE staff said that they must engage with CRAs even more in advance of project roll outs than in previous years since there has been a lot of staff turnover at the rating agencies. This means that HPTE must spend more time educating the CRA staff about HPTE generally, the project more specifically, and how the project fits within HPTE's wider portfolio.

2.4 Marketing & Placement of Individual Transactions

This section describes how HPTE approaches bond pricing, marketing individual transactions, and closing on individual transactions. The section is organized as follows:

- The first section discusses how HPTE staff develop a debt pricing strategy and HPTE's bond pricing strategy.
- The second section discusses how CDOT and HPTE market P3 projects to solicit the best project finance arrangement.
- The third section discusses the closing process for P3 projects, as established in the P3 Management Manual.

2.4.1 Debt Pricing Strategy

Given that HPTE issues more often than CDOT, HPTE is the focus in this section. HPTE's approach to debt pricing includes 1) assessing private sector financing options and 2) pricing individual bond offerings.

Private Sector Pricing. In interviews, HPTE staff offered further insights as to how HPTE evaluates private sector finance. Recently, HPTE utilized two different private loans from Bank of America to fill gaps in financing. To solicit the private loan, HPTE released an RFP outlining the parameters of the project, how much money they were looking to borrow, and what items HPTE would and would not accept in a loan agreement. From this process, HPTE short-listed a group of banks based on the rates they offered and how the bank said they would structure the agreement. Bank of America was ultimately selected for both loans. HPTE said that it is considering replicating a similar process to solicit private sector finance to meet future funding needs.

Pricing Bond Offerings. For more traditional municipal bond issuances, particularly those that are not part of a P3 transaction, CDOT and HPTE works closely with the FA to prepare for pricing. Since Colorado's surface transportation bonds are typically issued on a negotiated basis, the preparatory analyses and work on pricing day is also supported by the selected underwriter.

2.4.2 Marketing P3 Projects

The CDOT and HPTE marketing phase for debt issuance involves marketing P3 projects, rather than marketing specific bond offerings for sale on the municipal market. Given that CDOT and HPTE do not issue debt frequently, neither agency indicated having a strategy for marketing more traditional individual bond offerings that are not associated with a P3 transaction.

Marketing P3s. Given that P3s are a useful and frequently used tool for CDOT and HPTE to meet the state's transportation financing requirements specified by TABOR, marketing P3s is integral to CDOT and

HPTE securing the necessary financing and the most advantageous financing structure. Per legislation passed by the Colorado General Assembly, HPTE is required to comply with the Colorado Open Records Act (CORA).[40] HPTE has specifically established a CORA policy for its P3 management process. This policy is not only meant to communicate P3 projects to the public, but also to attract private investors. HPTE outlines in the P3 Management Manual that the enterprise will make the following documents public:

- Minutes and documents from the HPTE Board meetings
- Project value analyses
- Procurement documents
- Qualifications and proposals from bidders (the information that can be publicly displayed)
- Closing documents (commercial and financial)
- Monthly monitoring reports

HPTE also has an established policy to conduct industry outreach throughout the P3 project development process. Industry outreach can help to generate interest in the project. HPTE proposes conducting industry outreach through one or several of the following methods:

- General sessions
- One-on-one sessions
- Follow-up evaluations

2.4.3 Closing Requirements & Guidelines

For P3 projects there is both a commercial and financial close. For the commercial close, HPTE and the selected industry partner work together to finalize the project agreement.[41] For the financial close, the private partner's financial team is responsible for finalizing the financial agreement. HPTE is informed of the progress on this task, and the financial team can ask questions of HPTE to clarify the agreement. Once completed, the financial team must submit the completed financial agreement to HPTE.

2.5 Post-Issuance Requirements Compliance

CDOT and other state agencies have experienced challenges with tax compliance in the past. In fiscal year 2012-2013 CDOT was found to be out of compliance with respect to disclosure of TRANs issuances.[42] Following this, Colorado passed the Debt Consolidation Act[43], which assigned the Office of the Treasury with the responsibility of managing tax compliance. While the Treasury is the primary authority responsible for ensuring that tax compliance requirements are met, CDOT staff work closely with Treasury to meet these regulations. After passing the 2012 Debt Consolidation Act, the Treasurer retained Digital Assurance Certification, LLC (DAC)[44], a tax-compliance consulting service and repository, to assist with record keeping.[45]

HPTE has not faced any challenges with meeting disclosure requirements. HPTE mostly handles compliance requirements internally. On a project level, HPTE staff develop construction reports and the accounting team provides audited financial statements and an annual plan for finance updates. HPTE also holds a contract with DAC to appropriately file all forms on the Electronic Municipal Market Access (EMMA).

With respect to managing P3 project compliance, HPTE and CDOT work together to develop an operations and management plan to ensure compliance across all the different stakeholders and financial sources.[46] This plan may include holding stakeholder workshops to keep up with financial monitoring and reporting requirements efficiently.

3 Lessons Learned

This case study offers a unique perspective on debt issuance and management practices that greatly differs from traditional surface transportation debt programs. This case study offers examples of several effective practices:

- **Navigating regulatory constraints**: CDOT, HPTE, and at times CBE, have adopted innovative and creative ways to meet transportation financing needs amidst the fiscal constraints established by TABOR. TABOR provides a framework that CDOT, HPTE, and CBE must work within. By embracing P3s, CDOT and HPTE has been able to continue to finance large capital projects without compromising their core transportation program.
- **Approach to identifying project financing**: CDOT, HPTE, and CBE have leveraged specific revenue streams to meet project-finance needs. Each of the projects financed by CDOT, CBE, and HPTE are linked to dedicated revenue streams to cover debt service.
- **Growth and learning**: HPTE has developed and utilize a comprehensive P3 Management Manual that documents the procedures and policies for identifying, developing and managing a P3 project. HPTE staff said in interviews that HPTE is still working to revise and refine this process. HPTE has turned to other peer agencies, like the Virginia P3 office, Los Angeles Metro, and the Florida DOT P3 program to inform how to move their own program forward. Additionally, CDOT said that in accordance with actions taken by the Colorado Treasury, it has learned how to better manage and meet post issuance compliance requirements.

This case study also illuminates key challenges that Colorado is facing and may face in the future. These challenges may be useful for other practitioners:

- **Debt capacity**: CDOT and HPTE have not yet produced a debt capacity study, but HPTE has one planned for 2019. HPTE staff said that the board has encouraged the entity to assess its debt capacity and forecast this into the future. The debt capacity study will help inform how HPTE's debt program grows into the future and ensure that the program grows within its limits.

Florida

1 Introduction

This report examines the State of Florida transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. The Florida transportation debt program was selected to represent a surface transportation agency with a large debt portfolio and an agency that navigates a statewide centralized debt issuance process to meet the needs of the program. Florida, particularly the relationship between the Florida Department of Transportation (FDOT) and the Division of Bond Finance (DBF), offers insights into a programmatic approach to debt issuance and agency coordination.

1.1 Background

This section provides an overview of the State of Florida, including information about the state's demographics and credit ratings. This section also provides an overview of the FDOT highway network, budget, and role in managing the transportation debt program. FDOT maintains a multimodal transportation system for the State of Florida. An executive agency that reports to the governor, FDOT is responsible for maintaining, planning, and developing a safe and viable transportation system across all regions of the state.[47] FDOT oversees roads, bus transit, bicycle and pedestrian facilities, airport, rail systems, sea, and spaceports. The Florida Turnpike Enterprise system, which maintains the Florida's Turnpike Mainline, the Homestead Extension, the Sawgrass Expressway, and eight other expressway and parkway systems in the state, is a business unit of FDOT but is not included in this analysis.[48]

Table 8. Overview: Florida[49]

Metric	Florida
U.S. Region	Southeast
Population (2018)	21,299,325
Percent urban population (2010)	91.2
Land area (sq. miles)	53,625
Median household income ($ 2017)	$50,883
State Credit Rating (Moody's, Fitch, S&P)	Aaa, AAA, AAA

Table 9. Overview: Florida DOT

Metric	Florida DOT
State-maintained highway system (centerline miles)	122,848
State highway system (centerline miles)	12,107
Number of state-maintained bridges	12,358
Total bonded transportation debt outstanding	$2.58 billion[50]
FDOT Budget (2018-2019)[51]	
Florida Rail Enterprise	$361.7 million
Transportation system development program	$3.0 billion
Executive direction and support services	$94.8 million
Highway operations program	$5.24 billion
Information technology	$63.8 million
Total	$8.76 billion

2 Summary of Findings

2.1 Debt Issuance and Management Authority

The Division of Bond Finance (DBF) of the State Board of Administration and FDOT collaborate with one another to plan, authorize, issue, and manage transportation debt, for which the Florida State Legislature establishes limits. The responsibilities of the Florida State Legislature, the DBF and FDOT are described below:

- The **Florida State Legislature** is responsible for establishing and enforcing annual debt limits for the state of Florida and the subsequent state agencies that issue debt.
- The **Division of Bond Finance** is responsible for issuing debt for Florida government agencies.[52] The DBF governing board is responsible for approving proposed issuances.
- **FDOT** is responsible for determining the project finance needs, including debt needs, for the agency.

The **Florida State Legislature**, with approval of the governor, appropriates annual spending for the state, including the amount of debt that can be issued. The legislature is responsible for approving the amount of debt issuances allowable for each agency, which the DBF is responsible for issuing.

The **Division of Bond Finance (DBF)**—the centralized state debt issuing agency—is part of a nearly 100-year history of Florida maintaining a single coordinating body for agency debt issuances. The DBF is governed by a board comprised of the governor and the cabinet, which must approve each DBF issuance. The DBF's authority to issue debt is established through statute and authorizations approved by the state legislature. Annually the DBF produces a debt report, which is shared with state authorities, including the legislature, to help inform prudent decision-making regarding statewide debt issuance.[53] The debt report helps to inform the state legislature. The contents of the debt report are described further in section 2.2.1. "State Debt Policies."

In addition to issuing debt on behalf of the Department of Transportation, the DBF issues debt for other state agencies including the departments of Education, Environmental Protection, and Management Services and the State University and College Systems. Other DBF responsibilities regarding debt issuance and management include providing pre-issuance support such as marketing, legal, and financial services. The DBF is also responsible for establishing the structure of bond sales, for managing and disseminating post-issuance compliance information, and for administering the Private Activity Bond Allocation Program.

Since the DBF is responsible for all debt issuances in the state of Florida, the office is well staffed with internal professional support and expertise. The director of the DBF is primarily responsible for day-to-day decision-making for the entity. The entire DBF staff consists of 13 individuals, who are divided into sections based on technical focus. The team is comprised of a financial team, a legal team and additional support staff. The legal team consists of in-house attorneys, who draft key issuance documents. The DBF does however hire outside bond counsel for each transaction to provide the necessary advice and opinions regarding tax-exemption. The financial team provides the financial analysis required to structure and sell bond issues as well as manages federal arbitrage rebate liability calculations, payments and reporting.

FDOT is responsible for determining the financing needs of the agency, including debt needs, and coordinates with DBF to execute the issuances. All projects (other than Turnpike) to be financed are assessed by FDOT . For each issuance, FDOT works closely with the DBF staff to secure the necessary approvals, establish the debt structure, and sell the bonds. On a weekly basis, FDOT staff —hold an internal team meeting to discuss upcoming finance needs for projects. In these meetings, FDOT staff determine what debt needs to be issued to meet the identified needs.

Table 10. Surface Transportation Debt Issuance RACI Chart[54]

Authority	FDOT	Division of Bond Finance Staff	Division of Bond Finance Governing Board	Florida General Assembly
Establish annual statewide debt limits	I	C	C	R
Establishes transportation debt issuance needs	R	A	A	I
Approve transportation debt issuance	C	A	A	R
Issue transportation debt	C	R	A	I
Manage transportation debt disclosure	A	R	I	I
Pay debt service	R	C	I	I

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

2.2 Debt Strategy Definition

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. This section describes how Florida approaches this phase of the debt management process. The section is organized as follows:

- Section 2.2.1 describes the state debt policies that govern and restrict how debt is issued within the Florida.
- Section 2.2.2 describes the types of debt that are issued for Florida's surface transportation program, including the type of financing mechanism, the security structure, and the maturity.
- Section 2.2.3 describes Florida's programmatic approach to bond sales.

2.2.1 State Debt Policies

The State of Florida adheres to an established 6% debt ratio target—computed as debt service as a percentage of the revenues available to pay debt service—and a 7% debt ratio limit.[55] The DBF monitors that state issuances adhere to this overall debt limit by producing an annual debt affordability study known

as the Debt Report, which is published in December each year. The Debt Report is meant to inform the state legislature and assist decision-makers in making prudent and pragmatic debt authorizations on an annual basis. The Debt Report comprehensively addresses the following areas: an overview of current outstanding debt, including any changes to outstanding state debt throughout the course of the prior year, projected debt issuances for the following year, projected debt service, long-run revenue forecasts, and a review of credit ratings. The Debt Report also compares Florida to peer states to indicate where Florida lies nationally amongst other states with respect to the debt ratio. The purpose of the Debt Report is to provide a synopsis of past, current and future debt issuances and whether they align with Florida's established parameters for debt service and the financial health of the state. In addition, FDOT has a debt level restriction of 20% of total projected available state and federal revenues from State Transportation Trust Fund

Florida has additional state level debt policies, which are also managed by the DBF. The DBF maintains a Debt Management Policy and an Arbitrage and Tax Policy. Last updated in 2013, the Debt Management Policy provides overarching guidance with respect to Florida's debt issuance and management procedures.[56] As a guidance document, the policy describes parameters and preferences for the following items:

- Allowable amount of debt
- Allowable purposes for debt issuance
- Allowable types of debt
- Preferred debt issuance structure
- Preferred sale method
- Process for selecting outside professionals
- Requirements for compliance related to disclosure, tax law, and arbitrage

The policy summarizes expectations for the majority of debt issuances, while maintaining flexibility for exceptions, particularly with respect to alternative financing options.

The DBF also maintains an Arbitrage and Tax Policy,[57] meant to provide standardization for meeting pre- and post-issuance requirements. The policy, which is managed by the DBF's Bureau of Arbitrage Compliance, details guidance and expectations with respect to pre-issuance procedures, post-sale procedures, rebate computation and payment procedures, procedures for monitoring use of bond financed facilities, and record retention expectations. The purpose of the policy is to ensure that all debt issuances made through the DBF are compliant with federal tax law and that arbitrage requirements are met.

FDOT also maintains a Bond Compliance Procedure, which is specific to the management of their transportation debt program. FDOT also maintains a Public-Private Partnership (P3) Handbook. The P3 Handbook provides FDOT staff with an overview of how to pursue a P3, including approval processes and how to assess the efficacy and value of a P3 delivery.[58]

2.2.2 Types of Debt

FDOT issues debt on an as-needed basis. . FDOT primarily issues debt for construction projects and to purchase right-of-way (ROW) through revenue-bonds and state-backed general obligation bonds, respectively. FDOT also issues bonds through the Florida Department of Transportation Financing

Corporation to fund specific projects included in their legislatively adopted work program.. Additionally, FDOT issues Toll Backed Bonds, State Infrastructure Bank bonds, Grant Anticipation Revenue Vehicles (GARVEEs), and other alternative financings such as Public Private Partnerships (P3) and TIFIA Loans.. Table 4 provides information about the most recent issuances DBF has made on behalf of FDOT.

Table 11. Recent FDOT New Money Issuances

Issuance Type	Date	Amount	Credit Ratings	Purpose	Security
Federal Highway Reimburse-ment Revenue Bonds, Series 2019A (Indirect GARVEEs)	November 2019	$123,225,000	Moody's: A1 S&P: AA Fitch: A+	Construction, reconstruction, and improvement of projects eligible to receive federal-aid highway funds	Pledged revenues or funds received by FDOT pursuant to federal-aid authorization
Sunshine Skyway Revenue Bonds, Series 2019A	May 2019	$86,640,000	Moody's: A1 S&P: A Fitch: A+	A portion of the cost of construction of various transportation projects located in Hillsborough, Pinellas, and Manatee counties	Net revenues of the Sunshine Skyway
Right-of-Way Acquisition and Bridge Construction Bonds, Series 2019B	July 2019	$184,500,000	Moody's: Aaa S&P: AAA Fitch: AAA	Finance the cost of acquiring real property or the rights to real property for state roads, or to finance the cost of state bridge construction	Pledged fuel taxes & full faith and credit of the State of Florida

2.2.3 Type of Sale

The DBF—per the Debt Management Policy—almost exclusively issues debt through a competitive sale process. The guidance established in the policy, encourages this programmatic approach. However, the guidance also suggests that DBF staff elect the most effective sale method for the issuance.

2.3 Individual Transaction Preparation & Development

This section describes how Florida prepares a bond offering for sale after determining the strategy behind the issuance. This section is organized as follows:

- Section 2.3.1 describes what type of debt vehicle utilizes.
- Section 2.3.2 describes the evaluation of alternative debt structures.
- Section 2.3.3 describes how the DBF selects and utilizes outside professionals.
- Section 2.3.4 describes how the DBF and FDOT maintain a relationship with Credit Rating Agencies (CRAs).

2.3.1 Determining the Type of Debt Vehicle

FDOT's Office of Comptroller staff work closely with the DBF to prepare an issuance and to determine the type of debt vehicle, the amount of debt, and the timing. For certain components of the issuance, including the debt structure, the DBF maintains a consistent programmatic approach. DBF issues all tax-exempt debt whenever feasible, and maturities range between 12 to 30 years for new money transactions. In order to determine the amount of the issuance, FDOT utilizes an Excel-based cash management tool managed by the Office of Work Program and Budget. Simultaneously, DBF also utilizes a combination of an Excel-based cash forecasting tool and a DBC Debt Structuring Solutions tool to inform decision-making regarding debt issuances. The DBF and the FDOT Office of Comptroller then come to a determination on the amount of debt that needs to be issued to meet the department's needs within the legislatively authorized amounts.

In order to issue debt, the DBF and the FDOT Office of Comptroller work together to prepare materials for the transaction. The DBF is responsible for drafting the Preliminary Official Statement (POS) and the FDOT Office of Comptroller is responsible for completing the draft with additional information. Developing the POS is an iterative process between the DBF and the FDOT Office of Comptroller. The succeeding steps in the process of preparing an individual transaction are described below:

1. **Fiscal sufficiency:** Fiscal sufficiency is prepared by the DBF based on information supplied by the FDOT Office of Comptroller, is submitted by the DBF to the governing board for approval. The submission includes the proposed bond issue and the debt service coverage.
2. **Bond resolution prepared**: DBF prepares a resolution for approval from the DBF governing board, , which outlines the specific details of the issuance, including how the interest and principal will be paid to bondholders.
3. **Official Statement and Notice of Bond Sale**: The DBF and FDOT prepare an official statement (OS) and Notice of Bond Sale.
4. **Validation hearing:** In certain circumstances, the bond offering must be validated in a hearing at the Circuit Court, which affirms that FDOT and the DBF have the authority to issue the bonds for the proposed purpose and the proposed amount.

After these steps have been completed, the DBF applies for and obtains credit ratings and then is able to issue on behalf of FDOT.

2.3.2 Evaluation of Alternative Debt Structures

FDOT utilizes alternative debt structures, including SIB, P3 and TIFIA Loans , to finance surface transportation projects. FDOT manages a SIB, which is a revolving loan program that offers loans for surface transportation infrastructure projects to FDOT districts, local governments, and other eligible public

agencies within each FDOT district. The repayment proceeds are placed into an escrow account to recycle and utilize for future projects.

Additionally, FDOT has authority to utilize public private partnerships (P3s), including various P3 structures such as design-build-finance-operate-maintain and design-build-finance, with oversight from the DBF.[59,60] FDOT previously maintained sole responsibility for managing P3s, however, following a legislative update—effective in 2018—the DBF now maintains a review and advisory role prior to publicizing proposals and soliciting partners for any P3 project. The purpose of the change was to monitor that alternative financing mechanisms provide the most cost effective tax-exempt financing. There are also established limits on P3 projects, including a 15% limit on revenues. FDOT manages availability payments for P3s.. All availability payments, utilized for Design-Build-Finance-Operate-Maintain P3s, are treated as state debt and factored into DBF's annual debt report. However, Design-Build-Finance and Build-Finance projects are not treated as state debt.[61]

2.3.3 Selecting & Utilizing Outside Professionals

All internal and external professionals are selected and retained by the DBF to prepare individual transactions. With respect to bond counsel, the DBF often relies on outside professionals, although the office has in-house expertise. The DBF manages and leads the selection of bond counsel to support FDOT debt issuances, which are procured through a competitive request for proposal (RFP) process. The DBF primarily utilizes internal resources for financial advice, rather than procuring external financial advisors (FAs). For internal FAs, the DBF makes certain that analysts have consistency in which programs and types of issuances they support. In certain instances, particularly if expertise is needed for a transaction, the DBF will utilize an outside FA selected from a pool procured by the DBF. For example, the DBF issued GARVEEs for the first time in November 2019 and utilized an external FA to advise that issuance. FDOT also procures external finance advisors to assist on various financing strategies and ongoing support for FDOT Design Build Finance Operate & Maintain (DBFOM) contracts.

2.3.4 Working with Credit Rating Agencies

DBF manages the relationship with credit rating agencies for all state agencies that issue debt, including FDOT. DBF utilizes the three main credit rating agencies—Moody's, Fitch, and Standard & Poor's— for all state issuances. DBF staff said that it has been a productive strategy for the agency to utilize all three credit rating agencies which enables them to maintain a strong relationship with each of them and obtain competitive frequent issuer ratings fees.

With respect to FDOT providing the Credit Rating Agencies (CRAs) with the necessary information to inform an issuance's rating, FDOT and the DBF prepare a package of materials to send to the CRAs. Afterward, FDOT, the DBF staff, and CRA staff generally hold a conference call to discuss the upcoming issuance. While DBF maintains a programmatic approach to engaging with CRAs, FDOT maintains an issuance-by-issuance relationship with CRA's with DBF in the lead role.

2.4 Marketing & Placement of Individual Transactions

This section describes how Florida approaches bond pricing strategy, transaction rating, and pricing of comparable transactions. The section is organized as follows:

- Section 2.4.1 discusses how the DBF staff develop a bond pricing strategy and how the pricing strategy gets approved.

- Section 2.4.2 discusses how the DBF staff market bond offerings.
- Section 2.4.3 discusses the closing process and which authorities are involved.

2.4.1 Debt Pricing Strategy

The DBF debt policy specify that all debt should be structured on a level debt basis, with deviations permissibly only in case of demonstrated compelling State interest.

2.4.2 Marketing

As the lead debt issuing management authority in the state of Florida, the DBF is responsible for pre-issuance preparation for transportation debt, including marketing individual transactions. Maintaining relationships with and attracting investors is a core function of the DBF. The entity dedicates resources and time on this aspect of the sale to keep bond costs as low as possible. The DBF maintains a dedicated investor relations website, a customized Electronic Municipal Market Access (EMMA) site, and also currently maintains a presence on BondLink to specifically market new bond sales to investors. FDOT does not maintain a simultaneous investor relations page, but relies on the DBF's established infrastructure. The primary goals of maintaining these sites is to provide information to investors on upcoming bond sales and to provide investors with annual and interim financial information regarding repayment sources for the debt programs managed by the DBF. For example, for the Florida Turnpike Enterprise, the DBF posts monthly data with respect to toll transactions and revenues.

DBF interviewees provided insight into the efficacy of these three different sites to attract investors to their sales. DBF staff said that EMMA has been a valuable platform to provide required and voluntary disclosure to investors, given that the platform has improved over time and now allows site customization to help investors locate information. In addition to the EMMA site and their dedicated DBF investor relation website, the DBF staff additionally maintains a BondLink issuer site, which presents information about the DBF team, upcoming and recent sales, roadshows, bond ratings, and financial reports.

2.4.3 Closing Requirements & Guidelines

The DBF does not need to meet any statutory requirements for closing. The DBF does, however, maintain reporting requirements that must be met once the division has completed the transaction. For example, the DBF is required to report the results of the sale to the division's governing board.

2.5 Post-Issuance Requirements Compliance

Compliance with post-issuance tax and disclosure requirements are jointly managed by FDOT and the DBF. Each office maintains distinct responsibilities to meet the filing and reporting expectations. FDOT is responsible for compiling and maintaining the necessary post-issuance compliance information and documentation. The DBF runs annual arbitrage calculations to assist with monitoring tax compliance. Further, FDOT keeps all records for the life of the bond plus an additional three years. With respect to post-issuance disclosure requirements, FDOT provides the required information to DBF on an annual basis and DBF files the necessary records with EMMA by the required deadline. The DBF also monitors the need for filing of material events of an on-going nature, for example, when bond ratings change or when bonds are redeemed.

To support post-issuance tax compliance, DBF occasionally seeks support from an outside arbitrage consultant who is contracted on a deal-by-deal basis. For example, the DBF utilizes an outside verification

consultant for pooled loan programs, since they are more complex to manage, and to verify any rebate or yield reduction liabilities prior to making payments to the federal government.

3 Lessons Learned

This case study offers examples of several effective practices:

- **Interagency collaboration**: FDOT and the DBF are required to work together to effectively issue debt for surface transportation. This requires that these entities collaborate to align the goals of FDOT and the established state expectations for debt issuances which are managed by DBF. This union of interests, and division of authority in Florida offers insights into effective collaboration in a centralized state debt issuance process.
- **Investor relations:** DBF maintains several robust investor relations websites. The transparency from DBF is valuable for investors to understand the portfolio of the various debt programs that DBF issues on behalf of and to be aware of future issuances.

This case study also illuminates key challenges that Florida is facing and may face in the future. These challenges may be useful for other practitioners:

- **Interagency coordination:** The centralized nature of debt issuance authority in Florida requires that FDOT and the DBF work together to issue debt for surface transportation. The DBF is the lead on all transactional items, while FDOT is responsible for initiating and determining the need for each transportation debt issuance. This coordination can pose challenges, particularly with respect to communicating the specific details of each issuance and reaching agreement on the terms of the issuance.
- **Growing infrastructure needs across the state:** FDOT faces the challenge of meeting growing demand for new infrastructure across the state. Providing sufficient financing and subsequent revenues into the future is key for FDOT to be able to meet these needs and meet them sustainably.

Massachusetts

1 Introduction

This report examines the surface transportation debt program of the Commonwealth of Massachusetts through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. The Massachusetts transportation debt program—managed by the Massachusetts Department of Transportation (MassDOT)—was selected since the agency does not issue new money bonds, but rather manages a large portfolio of complex debt products. The creation of MassDOT and the requirement that the agency only manage previously incurred debt represents a unique case of surface transportation debt management. MassDOT also represents a program that makes significant use of outside professionals and employs creative issuance methods to meet the agency's goals. Further, MassDOT is an example of a surface transportation debt program that defines many practices and procedures at the programmatic and commonwealth regulatory level, rather than issuance-by-issuance.

1.1 Background

This section provides an overview of the Commonwealth of Massachusetts, including information about Massachusetts demographics and credit ratings. This section also provides an overview of the MassDOT highway network, budget, and role in managing the transportation debt program. MassDOT, which was established in 2009 by the Massachusetts General Court (the state's legislature), operates as the single state agency created by merging the following Massachusetts transportation agencies: Massachusetts Turnpike Authority, the Executive Office of Transportation and Public Works, the Massachusetts Highway Department, the Registry of Motor Vehicles, the Massachusetts Aeronautics Commission, and the Tobin Bridge.[62] MassDOT, as a result, is responsible for constructing and maintaining the Commonwealth's highways, bridges, tunnels, rail and transit services, and aeronautics assets and managing the Commonwealth's transportation licensing and registration.[63] The Massachusetts Bay Transportation Authority (MBTA) is responsible for managing transit services as a sub-set of MassDOT. MBTA also issues debt independently of MassDOT to finance transit needs.

Table 12. Overview: Massachusetts[64]

Metric	Massachusetts
U.S. Region	Northeast
Population (2018)	6,902,149
Percent urban population (2010)	92%
Land area (sq. miles)	10,565
Median household income ($ 2017)	$74,167
State Credit Rating (Moody's, Fitch, S&P)	Aa1, AA+, AA

Table 13. Overview: Massachusetts DOT[65]

Metric	Massachusetts DOT
State-maintained highway system (centerline miles)	3,368
Interstate highway system (centerline miles)	512
Number of state-maintained bridges	3,491
Total bonded transportation debt outstanding[66]	$1.7 billion
MassDOT Budget (FY 2018)	
Highway	$1,700 million
Planning & Enterprise Services	$259 million
Registry of Motor Vehicles	$107 million
Rail & Transit	$501 million
Aeronautics	$12 million
Debt service-interest	$98 million
Special item-swap termination payment	$33 million
MBTA	$2,370 million
Total	$5,080 million

2 Summary of Findings

2.1 Debt Issuance and Management Authority

The Executive Office for Administration and Finance (ANF) of the Commonwealth Treasurer's Office and MassDOT collaborate with one another to plan, authorize, and issue surface transportation debt, for which the Massachusetts General Court has established limits. The relationship between MassDOT and ANF varies based on whether issuing new money bonds or refundings. Table 3 provides an overview of the division of responsibility among the three bodies. The responsibilities of the Massachusetts General Court, the ANF, and MassDOT are described below:

- The **Massachusetts General Court** has established limits for General Obligation (GO) debt and on MassDOT authority to issue debt.
- The **Executive Office for Administration and Finance** is responsible for issuing new money bonds to finance capital projects for transportation and provides oversight for refundings.
- **MassDOT** is responsible for refunding debt previously incurred by the Massachusetts Turnpike Authority (Mass Pike), and providing input into the development and issuance of new money bonds for capital needs.

The **Massachusetts General Court** passed the "Transportation Reform Act"[67] in 2009, which founded MassDOT by merging transportation agencies, including the Mass Pike, under one umbrella agency.[68] The law required that MassDOT assume outstanding Mass Pike debt, and established that MassDOT is not authorized to issue new money bonds, but can only refund the outstanding Mass Pike obligations. With respect to new money bond issuances, the legislature has established a cap on all commonwealth-backed GO debt, which is 1.05 times the limit established in the preceding year. The legislature must authorize all new commonwealth GO issuances by a two-thirds majority.

The **Executive Office of Administration and Finance** is situated within the Commonwealth's Governor's Office, and is responsible for overseeing fiscal planning and budgeting for the Commonwealth.[69] The ANF is managed by the Secretary of Administration and Finance, who is part of the governor's cabinet. The Debt Affordability Committee (DAC) is also situated within the ANF. On or before December 15th, the DAC provides an annual recommendation to the governor about the amount of total GO debt the Commonwealth can issue to adhere to the legislature's cap.[70]

With respect to transportation debt, the ANF assumes different responsibilities for new money issuances and refundings. For new money issuances, the ANF is responsible for issuing and managing all new money bonds utilized to finance capital projects. Recently, ANF has issued new money debt to finance the Commonwealth's transportation needs. EAOF issued special obligation bonds in June 2018 to finance the bridge program and rail enhancements, and also issued Federal Highway Grant Anticipation Notes (GANs).[71] The MassDOT highway division plays a large role in determining the Commonwealth's capital financing needs. For refundings, the State Finance and Governance Board—situated within the ANF— is responsible for approving refundings initiated by MassDOT.

MassDOT is responsible for refunding the debt incurred by the former Massachusetts Turnpike Authority. MassDOT is not authorized to issue new debt. To issue refundings, MassDOT must gain approval from the ANF's State Finance and Governance Board. MassDOT also coordinates with the ANF for contract assistance. The MassDOT debt management team consists of the Director of Revenue and Debt Management and three accountants. The team manages and carries out all debt refundings, management requirements, disclosure requirements and trust agreement requirements. The MassDOT debt management team reports to the MassDOT Chief Financial Officer (CFO), who reports to the Secretary of Transportation. The MassDOT Board of Directors must also approve the debt management team's work and issuances.

Table 14. Surface Transportation Debt Issuance RACI Chart[72]

Authority	Commonwealth of Massachusetts Legislature	Executive Office of Administration and Finance	MassDOT
Establish statewide debt limits (including limits to MassDOT)	R	I	I
Establish transportation debt refunding needs	A	A	R
Approve transportation debt refundings	I	R	C
Issue transportation debt refundings	I	A	R
Issue new money transportation bonds	A	R	C

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

2.2 Debt Strategy Definition

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. Massachusetts has established debt policies and procedures. Additionally, due to the restrictions on issuing new money bonds, many key elements of the debt strategy are pre-determined, meaning that MassDOT makes few decisions about the agency's debt strategy when preparing a new issuance. This section describes how Massachusetts approaches this phase of the debt management process. The section is organized as follows:

- Section 2.2.1 describes the state debt policies, including the Massachusetts Debt Affordability Analysis, and the policies that govern the MassDOT debt program.
- Section 2.2.2 describes the types of debt MassDOT manages and issues in refundings.
- Section 2.2.3 describes the Massachusetts approach to market analysis.

2.2.1 State Debt Policies

The ANF produces an annual Debt Affordability Analysis, which is a section of the annual Five-Year Capital Investment Plan. The Debt Affordability Analysis is utilized to assess whether the Commonwealth will meet or exceed the debt cap recommended by the Debt Affordability Committee (DAC). The Debt Affordability Analysis assesses debt service as a percent of budgeted revenues across all state agencies that issue new money bonds, including capital financing for transportation. The report influences the amount of new money bonds that can be issued.

To strategically manage refundings, MassDOT maintains a Debt Issuance and Management Policy and an Interest Rate Swap Management Policy. The purpose of the Debt Issuance and Management Policy is to provide guidance regarding the management of existing liabilities.[73] The policy summarizes general management of outstanding debt and outlines restrictions on issuing any new debt under the Metropolitan Highway System and the Western Turnpike Trust Agreements, which were established when Mass Pike was dissolved. Further, the policy considers various risks related to outstanding debt to determine potential future mitigation actions. Since new money issuances are not permitted, there is limited guidance for individual transaction preparation and development. The policy does indicate that re-issuance can be pursued on either a negotiated or competitive basis, depending on market conditions. The policy also addresses post-issuance compliance requirements, including the maintenance of an adequate system of internal controls to meet compliance requirements.

The MassDOT Interest Rate Swap Management Policy is unique given the agency's mandated focus on reissuing and refunding Mass Pike debt, which contains swap agreements.[74] The policy provides internal guidance on how to utilize and effectively manage interest rate swaps and other derivative products. The policy outlines when swaps are permitted in the context of refundings. Additionally, the policy outlines a procedure for how to amend, terminate, or enter into a new swap agreement and describes a risk mitigation procedure, which relies on expertise from outside professionals to help guide the management of swaps. The policy highlights the due diligence by MassDOT to responsibly refinance the agency's existing debt commitments.

2.2.2 Types of Debt

MassDOT inherited a variety of debt products in the merger, including swaps and variable rate debt. MassDOT has been steadily working to refund these liabilities, and capitalize on market opportunities. MassDOT has recently issued refundings in order to terminate swap agreements and the variable rate debt incurred by Mass Pike. The most recent MassDOT refundings are described in Table 4.

Table 15. Recent MassDOT Refundings[75]

Issuance Type	Date	Amount	Credit Ratings	Purpose	Security
Metropolitan Highway System Revenue Refunding Bonds (Subordinated), 2019 Series A	January 2019	$437,195,000	Moody's: Aa2 S&P: AA Fitch: AA+	Convert the bonds to a new interest rate period	Subordinated lien and charge on all funds and accounts created under the Trust agreement
Metropolitan Highway System Revenue Refunding Bonds (Subordinated), 2018 Series A	January 2018	$135,690,000	Moody's: Aa2 S&P: AA Fitch: AA+	Convert the bonds to a new interest rate period	Subordinated lien and charge on all funds and accounts created under the Trust agreement

2.2.3 Strategies for Market Analysis

Market conditions have significantly impacted the ability of MassDOT to realize refunding benefits. MassDOT staff work with outside professionals to closely monitor the market and monitor for upcoming regulatory changes that may impact the ability to refund the agency's existing liabilities.

2.3 Individual Transaction Preparation & Development

This section describes how Massachusetts prepares a bond offering, and is organized as follows:

- Section 2.3.1 describes how MassDOT determines the timing of issuance and the refunding structure.
- Section 2.3.2 describes how MassDOT evaluates alternative debt structures.
- Section 2.3.3 describes how MassDOT selects and utilizes outside professionals.
- Section 2.3.4 describes how MassDOT engages with credit rating agencies.

2.3.1 Determining the Timing of Issuance and Refunding Structure

MassDOT makes two key strategic decisions prior to issuing a refunding: the timing and structure. MassDOT staff strategically determine the best time to issue the refunding to ensure the greatest financial benefit to the agency and the commonwealth. MassDOT assesses the market—particularly trends in interest rates and federal policies— to determine the optimal time to issue the refunding. MassDOT had previously considered issuing an advance refunding, but was unable to capitalize on this opportunity prior to changes in federal tax laws that eliminated this option in 2018.

MassDOT also must consider how to structure the refundings to optimize the financial benefit of the issuance. To develop the structure of each refunding, MassDOT strategically leverages the expertise of its external FA to help evaluate existing debt and to develop a refunding structure that will allow the agency to reduce its overall obligation. For example, MassDOT recently utilized advice from its FA to structure a transaction of $140 million, which converted the debt to a fixed rate obligation and reduced the financial

burden to MassDOT and the commonwealth. There is no one way that MassDOT structures refundings, but rather the debt management team and its FA work collaboratively to effectively structure the issuance.

In order to issue the refunding, MassDOT is obligated to receive approval from the MassDOT board and the State Finance and Governance Board prior to issuing. To keep the relevant parties aware of upcoming refundings, the MassDOT debt management team establishes a transparent timeline for each refunding, holds regular group conference calls leading up to the issuance, and presents to the MassDOT board several times.

2.3.2 Evaluation of Alternative Debt Structures

MassDOT has assumed responsibility for a complex portfolio of debt, including swaps and variable rate debt. The MassDOT debt management team evaluates this debt and strategically issues refundings that eliminate the complex debt products. Since its founding MassDOT has been able to eliminate many of the swap agreements and variable rate debt through refunding.

With respect to alternative project delivery structures, MassDOT has not engaged in any public-private partnership (P3) agreements, but MassDOT debt management staff have been included in discussions about potential P3s in the commonwealth.

2.3.3 Selecting & Utilizing Outside Professionals

Since MassDOT has a small debt management team, MassDOT relies heavily on outside expertise. MassDOT debt management staff leverages outside professionals to define its strategy for when to issue and how to structure refundings. The process of selecting outside professionals is dictated by the commonwealth procurement rules, which require that MassDOT issue a request for response to solicit outside support, including for FAs and underwriters. MassDOT strategically solicits outside professionals who have relevant expertise with respect to upcoming issuances. MassDOT debt management staff internally determine what types of issuances are upcoming and solicit outside professionals who can support preparation and help MassDOT optimize the issuance.

2.3.4 Working with Credit Rating Agencies

Given that MassDOT does not issue new money bonds, the debt management team does not engage with credit rating agencies frequently. In advance of a new refunding, the MassDOT debt management team holds meetings with and delivers presentations to CRAs. MassDOT has consistently utilized all three rating agencies, and MassDOT plans to continue with this approach. By employing this approach, MassDOT maintains consistency in ratings between the ratings solicited when the bonds were initially issued and refundings. MassDOT staff said that they would prefer to solicit fewer credit ratings, if possible.

2.4 Marketing & Placement of Individual Transactions

This section describes how MassDOT approaches marketing and closing for individual transactions. This phase is more limited, since MassDOT does not issue new debt. The section is organized as follows:

- Section 2.4.1 discusses how MassDOT markets bond offerings.
- Section 2.4.2 discusses the closing process and which authorities are involved.

2.4.1 Marketing

MassDOT markets the refundings by delivering presentations to potential investors and holding luncheons in advance of each transaction. The purpose of these presentations is to provide detailed information about the structure of the refunding and the benefits the issuance will have to the agency and the commonwealth. However, this approach may vary depending on the deal. Since MassDOT is not frequently in the market, the debt management team does not engage with investors often. MassDOT also leverages BondLink to market its bonds.

2.4.2 Closing Requirements & Guidelines

Prior to issuing, the MassDOT debt management team must receive approval on the structure, timing, and amount of the refunding from the MassDOT Board and the State Finance and Governance Board of the ANF.

2.5 Post-Issuance Requirements Compliance

The MassDOT Debt Issuance and Management Policy provides high-level guidance to staff on how to adhere to post-issuance requirements compliance. MassDOT debt management staff adhere to a checklist produced by the MassDOT bond counsel when the agency was first created in 2009. The checklist outlines the requirements that MassDOT must meet in accordance with the trust agreement. The checklist includes filing timeframes, approvals, and requirements. MassDOT staff said this is an easy process for the team to follow to ensure it is meeting post-issuance requirements.

3 Lessons Learned

This case study offers examples of several effective practices:

- **Strategically utilizing outside professionals:** MassDOT is not frequently in the market, therefore, the agency's debt management team is relatively small. As a result, MassDOT relies heavily on expertise from outside advisors solicited to inform the structuring and timing of the refunding.
- **Learning:** The structure of Massachusetts transportation debt oversight, and the restrictions to the ability of MassDOT to issue new money bonds, exemplifies learning on behalf of the commonwealth with respect to fiscal health. In recent years, Massachusetts formed MassDOT, which by statute is not allowed to issue new money bonds, and established a requirement for an annual debt affordability analysis to be conducted, including an annual recommendation from the Debt Advisory Committee to the governor about the amount of debt that can be issued.
- **Optimizing market opportunities:** The MassDOT debt management team has been able to take advantage of market opportunities as they arise, particularly with respect to the structure and timing of the refunding.

This case study also illuminates key challenges that MassDOT is facing and may face in the future. These challenges may be useful for other practitioners:

- **Optimizing market opportunities:** While the MassDOT debt management team has been successful at capitalizing on market opportunities, the federal statutory changes in 2018 regarding advance refundings hindered the ability of MassDOT to take advantage of this opportunity. The MassDOT team said that the change in the law disrupted plans, but the agency was able to adjust and is now moving forward with the planned refunding. MassDOT will have to continue to monitor the regulatory environment to assess risks and capitalize on current or future conditions.

New York Metropolitan Transportation Authority

1 Introduction

This report examines the State of New York Metropolitan Transportation Authority (MTA) transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. MTA's transportation debt program was selected to represent an agency with a robust financial planning process, including: a five-year capital program; a four-year financial plan; and the issuance of quarterly unaudited financial statements. These practices may be of interest to transportation agencies that have an emerging or less mature debt program.

1.1 Background

This section provides an overview of the MTA. The Metropolitan Transportation Authority is North America's largest public transportation network, serving a population of 15.3 million people across a 5,000-square-mile travel area surrounding New York City through Long Island, southeastern New York State, and Connecticut. The MTA network comprises the nation's largest bus fleet, and more subway and commuter rail cars than all other U.S. transit systems combined. The MTA's operating agencies are MTA New York City Transit, MTA Bus, Long Island Rail Road, Metro-North Railroad, and MTA Bridges and Tunnels (referred to as Related Entities).[76] Additional affiliates of MTA are the Triborough Bridge and Tunnel Authority (TBTA) and the New York City Transit Authority, and its subsidiary, the Manhattan and Bronx Surface Transit Operating Authority. The MTA's outstanding debt on core credits was $39.4 billion as of February 2019.

Table 16. MTA Overview

Metric	MTA
2018 Operating Budget[77]	$16 billion
Annual Ridership	2.66 billion
Average Weekday Ridership	8.6 million
Rail and Subway Lines and Bus Routes	357
Rail and Subway Cars	8,863
Buses	5,725
Track Miles	2,080
Bus Route Miles	2,952
Rail and Subway Stations	736
Employees	74,087
Total bonded debt outstanding (FY19)	$41,500 million (as of June 2019)[78]
Adopted 2019 Budget[79]	
Operating Revenues	$8,810 million
Labor Expenses	$10,039 million
Non-Labor Expenses	$3,884 million
Other Expenses Adjustments	$323 million
Total Expenses Before Non-Cash Liability Adjustments	$14,246 million
Total Expenses After Non-Cash Liability Adjustments	$18,319 million
Less: Conversion to Cash Basis	($4,073 million)
Debt Service	$2,692 million
Total Expenses with Debt Service	$16,938 million
Net Surplus/(Deficit) After Subsidies and Debt Service	($890 million)
Cash Balance Before Prior-Year Carryover	($527 million)
Net Cash Balance (with Prior-Year Carryover)	$11 million

2 Summary of Findings

2.1 Debt Issuance and Management Authority

MTA is governed by a chairman and a board of 16 voting members, two non-voting members and four alternative non-voting members, all of whom are appointed by the Governor with the advice and consent of the State Senate. There are specific geographic mandates for a portion of the members that must come from specific counties and have limited voting power.

While MTA board members are responsible for providing oversight, the MTA chairman and chief executive officer (CEO) is responsible for carrying out MTA's policies and directions and day-to-day management. The CEO is supported by the chief financial officer (CFO), auditor general, managing director, chief development office, and more. Each of the Related Entities has its own management, and President who is responsible for day-to-day operations.

The debt management process for all Related Entities is led by the CFO, who manages a team of senior debt finance professionals. Through interviews with MTA it is understood that the CFO's management style is focused on a team approach and delegation. The director of finance (DOF) supports the CFO with achieving overall goals and priorities, and works closely with deputy directors in the department to develop and execute plans. Once a good plan is identified and solidified, it goes to the CFO for approval. The CFO briefs others in MTA of financial decisions as needed, especially with new or novel actions, including the president, managing director, and the chairman.

The finance team prepares a standing report to the board's Financial Committee each month to keep members updated on how MTA is preparing the offering. Debt issuance authorization goes to the board each year, which gives MTA a not-to-exceed amount for new money issued during that fiscal year, including authorization to issue bonds and bond anticipation notes (BANs). This omnibus authorization allows the MTA finance team to utilize multiple credits.

The MTA must seek approval from the New York State comptroller for authorized state transactions/negotiated sales involving transportation revenue bonds (transit and commuter) and dedicated tax fund bonds. However, the MTA does not need comptroller approval for competitive sales or sales by the TBTA. The New York State Department of Transportation has a minor role and is not an approving entity.

The distribution of authority is summarized in Table 2.

Table 17. Roles & Responsibilities RACI Chart[80]

Authority	MTA Executive Staff	MTA Board	NY State Comptroller	Capital Planning Review Board
Establish debt priorities	R	C	I	I
Manage debt planning processes	R	C	I	I
Authorize annual MTA debt issuances	I	R	I	I
Authorize state transactions and negotiated sales involving transportation revenue bonds and tax fund bonds	C	I	R	I
Pay debt service	R	I	I	I
Manage post-issuance requirements reporting	I	I	R	I
Approve capital plans for Transit System, MTA Staten Island Railway, and Commuter System	C	I	I	R

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

2.2 Debt Strategy Definition and Market Analysis

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. This section explores how MTA approaches this phase of the debt management process. The section is organized as follows:

- Section 2.2.1 discusses the types of debt that MTA issues including the type of financing mechanism, security, structure, and maturity.
- Section 2.2.2 discusses MTA's debt policies that govern and restrict how debt is issued by MTA.
- Section 2.2.3 discusses MTA's additional plans, mandates and forecasts.
- Section 2.2.4 discusses MTA's strategies for market analysis.

2.2.1 Types of Debt

MTA is a frequent issuer of debt, using a majority of fixed-rate debt negotiated deals. Additionally, MTA utilizes debt financing mechanisms for overall program funding, rather than project specific funding. MTA issues the following debt:

MTA Transportation Revenue Bonds: Transportation revenue bonds are payable from and secured by subway and bus system fares, commuter railroads and buses fares, certain concession revenues, and operating subsidies. The proceeds from the sale of these bonds are used to finance transit and commuter capital projects outlined in the MTA Capital Programs.

TBTA General Revenue Bonds: These general revenue bonds are payable from the net revenues collected on the MTA Bridges and Tunnels Facilities after the payment of operating expenses. Proceeds from these sales are used to finance capital projects relating to MTA Bridges and Tunnels Facilities and MTA Capital Programs.

TBTA Subordinate Revenue Bonds: These subordinate revenue bonds are payable from the net revenues collected on the MTA Bridges and Tunnels Facilities after the payment of operating expenses and debt service on general revenue bonds. Proceeds from these sales are used to finance capital projects relating to MTA Bridges and Tunnels Facilities and MTA Capital Programs.

MTA Dedicated Tax Fund Bonds: Dedicated tax fund bonds are secured by Mass Transportation Trust Fund (MTTF) and Metropolitan Mass Transportation Operating Assistance Account (MMTOA) receipts, and proceeds from the sale of these bonds are used to finance capital projects in the MTA Capital Programs. See the call-out box for more information on the MTTF and MMTOA.

State Special Tax Supporting Operating Subsidies

Since 1980, in response to anticipated operating deficits of the New York State mass transit systems, New York State enacted legislation dedicating specific portions of the statewide and regional taxes and fees to the MTA and Related Entities.

Mass Transportation Trust Funds Receipts (MTTF) come from taxes on petroleum businesses, a portion of the motor fuel tax on gas and diesel, and certain motor vehicle fees.

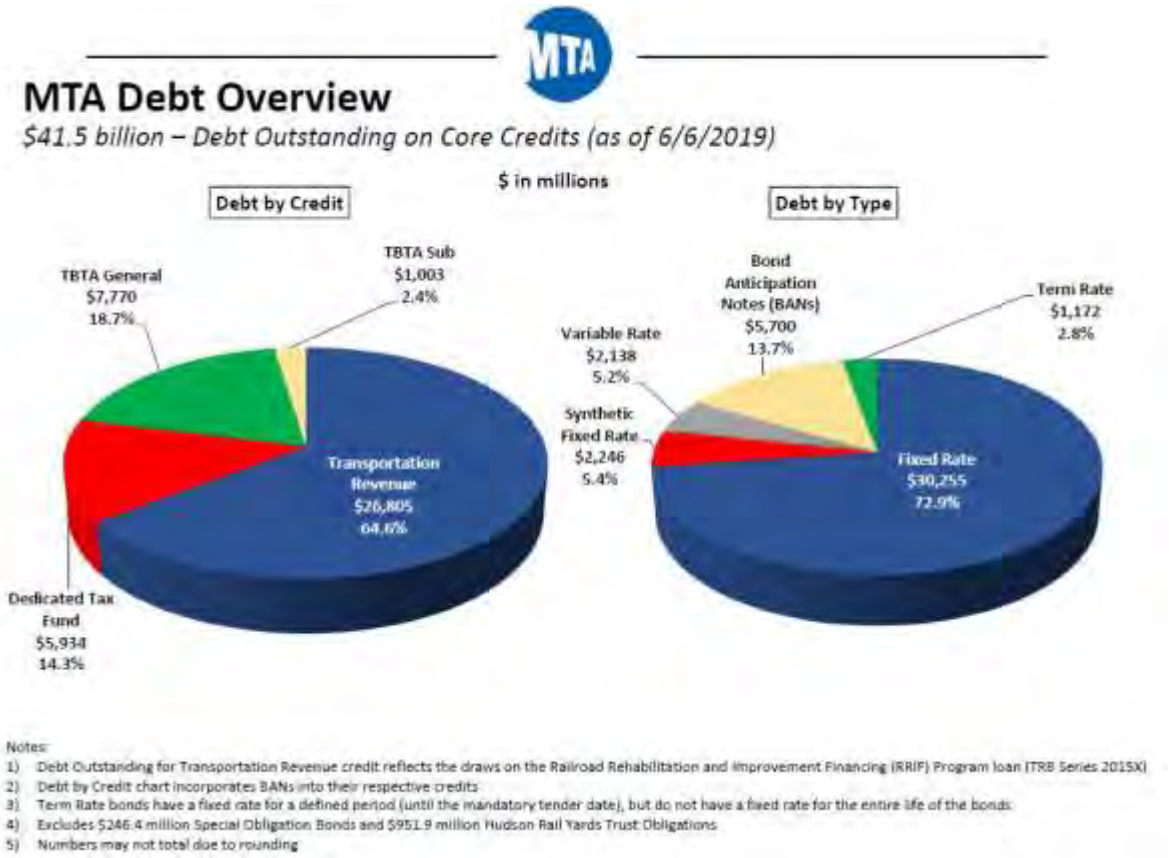
Metropolitan Mass Transportation Operating Assistance Account Receipts (MMTOA) come from a 3/8 of one percent regional sales tax, a regional franchise tax surcharge on certain businesses, taxes on certain transportation and transmission companies, and an additional portion of the tax imposed on petroleum businesses.

MTA Special Obligation Bonds: In 2014, MTA issued nearly $350 million in MTA special obligation taxable refunding bonds ("SOBs"). These special obligation bonds were issued to redeem certain MTA bonds that were issued to finance transit and commuter projects and to provide operation and maintenance funds to the MTA New York City Transit and the commuter railroads operated by MTA Long Island Rail Road and MTA Metro-North Railroad.

MTA Hudson Rail Yards Trust Obligations: In 2016, MTA monetized its interest in the ground leases and purchase options by issuing over $1 billion in Hudson Rail Yards trust obligations. The proceeds of these trust obligations were used to finance and refinance approved capital program transit and commuter projects for the Related Entities.[81]

Figure 1 details MTA's outstanding debt as of February 2019. Notes listed at the bottom of Figure 1 were created by MTA.

Figure 2. MTA Debt Overview[82]



Notes:
1) Debt Outstanding for Transportation Revenue credit reflects the draws on the Railroad Rehabilitation and Improvement Financing (RRIF) Program loan (TRB Series 2015X)
2) Debt by Credit chart incorporates BANs into their respective credits
3) Term Rate bonds have a fixed rate for a defined period (until the mandatory tender date), but do not have a fixed rate for the entire life of the bonds
4) Excludes $246.4 million Special Obligation Bonds and $951.9 million Hudson Rail Yards Trust Obligations
5) Numbers may not total due to rounding

MTA's revenues come from three major sources: farebox revenue, dedicated taxes, and toll revenue.[83] Detailed revenue sources for MTA and Related Entities is shown in Table 3.

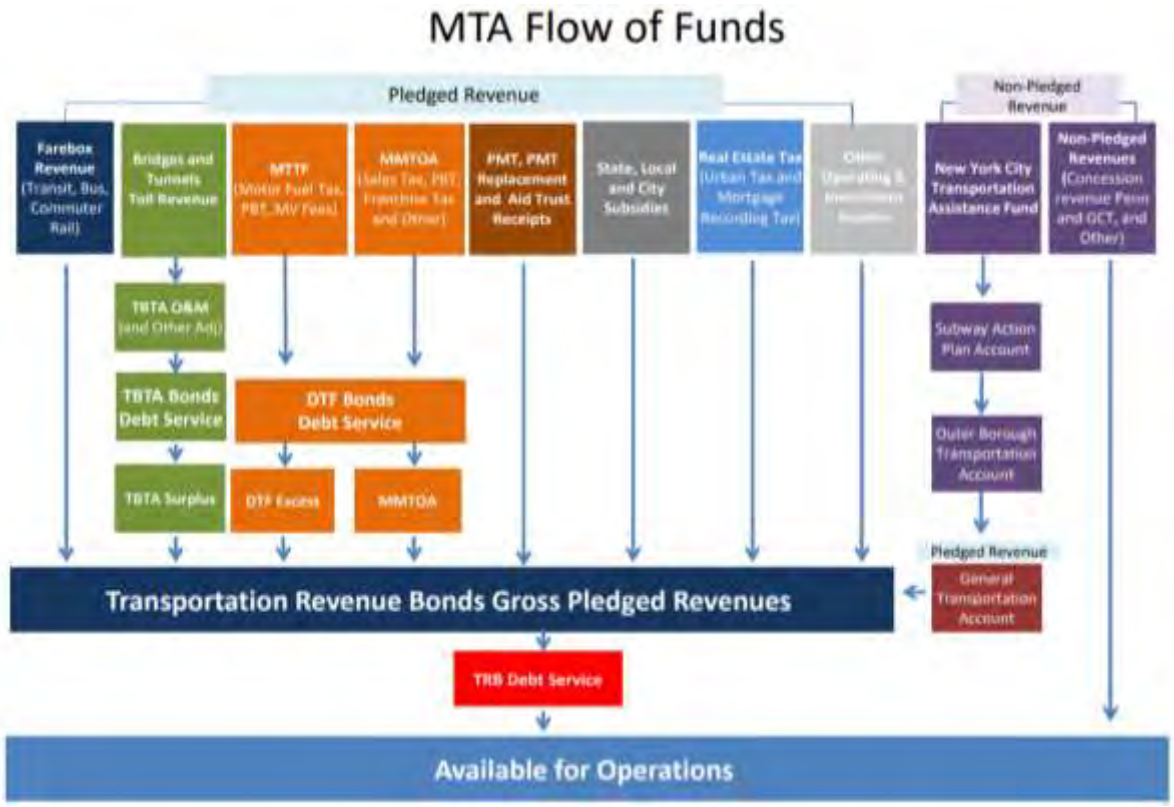
Table 18. MTA Revenues

Revenue Source	Percent of Revenue
Farebox revenue	38%
Dedicated Taxes • Mass Transportation Trust Fund (MTTF) • Metropolitan Mass Transportation Operating Assistance Account (MMTOA) • Real Estate Tax • Payroll Mobility Tax Replacement and Aid Trust Receipts	36%
Bridges and Tunnels Toll Revenue	12%
State and Local Subsidies	7%
Other Operating and Investment Income	7%

2019 has brought new revenue sources to MTA, including the Central Business District Tolling Program (CBD Tolling Program), the 2019 Real Estate Transfer Tax, and portions of the new New York City and New York State Sales Tax. The CBD Tolling Program is not authorized to begin operations prior to 12/31/2020. The 2019 Real Estate Transfer Tax will provide funds to MTA once collection of revenue begins.[84]

Figure 2 shows the flow of funds that MTA utilizes for operations.

Figure 3. MTA Flow of Funds[85]



The MTA has issued several series of debt authorizations in 2019, prior to and after the introduction of the three new funding streams noted above.[86] In interviews, key MTA staff noted that their issuances are tied to revenue and MTA is cautious when issuing debt – understanding that there must be revenue to back up the issuances. Any money taken out of operations and maintenance (O&M) funding stream to leverage represents money that would need to be replaced. MTA is currently tightly constrained on funding, even with the new funding streams noted above. Because of this constraint, MTA has been focused on developing the funding steams described above, as well as issuing new debt in 2019 and 2020.

2.2.2 MTA Debt Policies

MTA has established financial management policies that guide MTA's use of debt and derivatives to mitigate risk, and to provide for the maintenance of adequate fund balances and proper investment of available funds.

Table 19. MTA Debt Obligation Policies[87]

Policy	Summary of Policy
MTA and TBTA Municipal Financial Disclosure Policies and Procedures	Specific rules regarding the following: • General disclosure practices • Ongoing disclosure • Official statement review and disclosure processes • Annual disclosure statement (Rule 15c2-12)[2] • Role of disclosure counsel • Disclosure practices training • Disclosure related document retention practices • General principles relating to disclosure
TBTA Policy Additional Bonds Coverage	TBTA must maintain a ratio of net revenues to debt senior lien debt service of 1.75 times.
MTA and TBTA Variable Rate Debt Policy	MTA may issue Variable Rate Debt to provide funding for Capital Programs or to refund existing obligations. Specifically, the principal amount of unhedged Variable Rate Debt that is outstanding cannot exceed 25% of the aggregate principal amount of all outstanding obligations.
MTA and TBTA Swap Guidelines	This policy provides guidelines related to the use of Payment Agreements in connection with the issuance of synthetic fixed-rate debt.
MTA and TBTA Refunding Policy	This bond and other debt obligations refunding policy establishes conditions precedent to any issuance of fixed-rate bonds for the purposes of refunding fixed-rate bonds previously issued by the MTA or any of the Related Entities.
MTA Investment Guidelines	These guidelines cover several areas related to overall investment, including the following: • General guidelines • Custodian • Repurchase agreements • Security purchases and sales • Reporting requirements • Portfolio managers

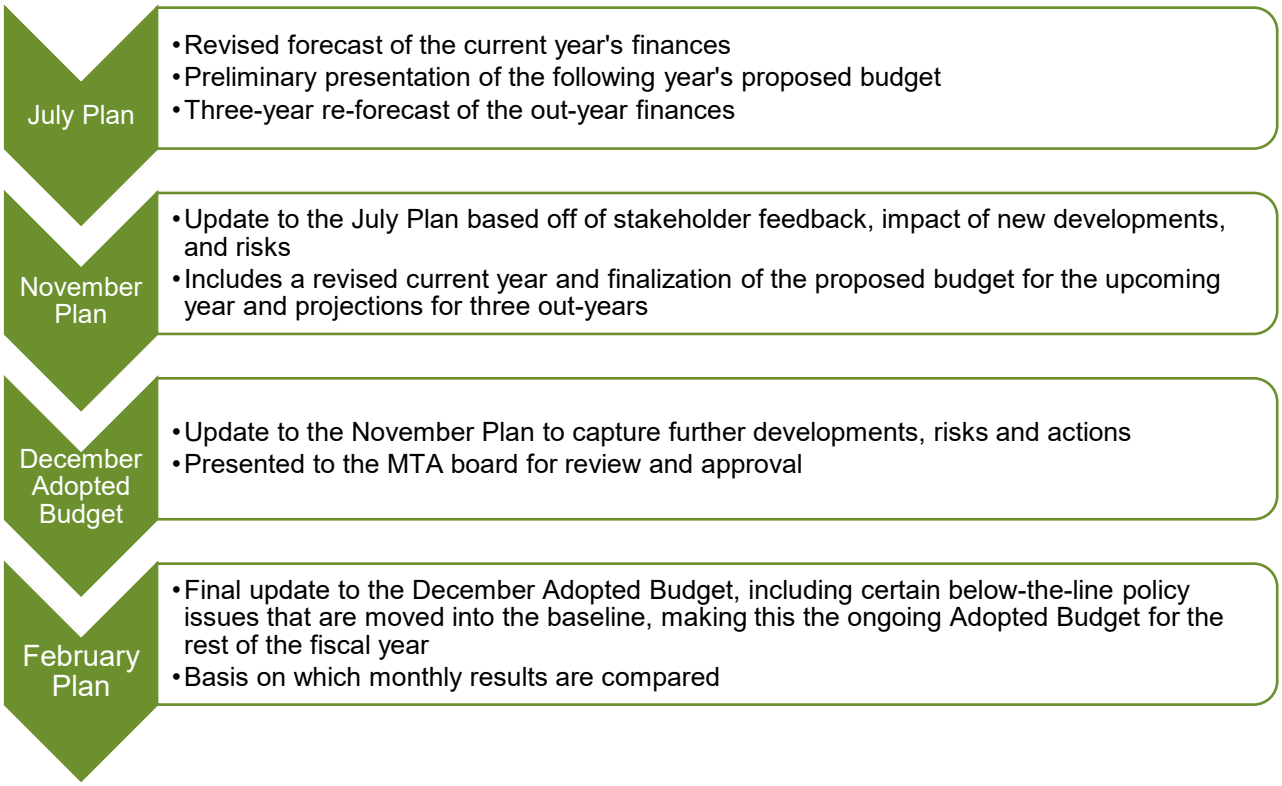
2.2.3 Additional Plans, Mandates and Forecasts

MTA has a robust financial planning process that can serve as a model for other agencies, even when these agencies may have smaller debt programs.[88] Below are examples of MTA's financial planning process that set it apart from other issuers.

The MTA budgeting process is ongoing throughout the year. The budget is passed in December with updates finalized in February. Throughout the year, MTA prepares a February, July, and November Financial Plan, and Adoption Materials in December. Figure 3 details MTA's yearly financial planning

process.[89] This financial planning process timeline will change in the future, once the MTA's fiscal year changes to be July-June.[90] It is currently January-December.

Figure 4. The MTA Budget Process



Other financial plans and budgeting practices include:

- Budget and financial plan documents are distributed to select elected officials and made public on MTA's website
- All Related Entities (other than MTA Bridges and Tunnels) are required to adopt an annual budget that is self-sustaining on a cash basis
- MTA is required to update and submit a five-year strategic operation plan to the Governor, including estimated operating and capital cost information, as well as long-range goals and objectives, planned service and performance standards, and strategies to improve productivity
- MTA prepares quarterly unaudited consolidated financial statements for all Related Entities. These are filed on EMMA and are posted on MTA's website.

State Capital Program Review Board

MTA must have its capital program approved by the state's Capital Program Review Board (CPRB) prior to adoption every five years. The debt limit on debt issued (rather than debt outstanding) is State law. It must be amended by the legislature and signed by the Governor.

The board's four voting members represent the governor, State Senate, State Assembly, and New York City mayor, and each has veto power over the capital program (in the case of the Mayor, veto power only extends to the New York City Transit program). The board provides a check on the MTA, but has no mandate to explain its decisions.

MTA's budgeting and financial planning process is closely related to private sector practices, which has been an effective strategy for a large issuer like MTA, as more communication is required with investors than for smaller municipal issuers.

Additionally, The MTA Act requires that there be five-year capital programs for the Transit System and the MTA Staten Island Railway, and the Commuter System approved by the Capital Plan Review Board (CPRB). MTA Bridges and Tunnels, prepares its own five-year capital program. Capital programs for MTA Bridges and Tunnels and MTA Bus are not required to be approved by the CPRB.

Additional plans, mandates, and reporting documents include:

- Interagency Loans – MTA's Related Entities are authorized to transfer their revenues, subsidies and other moneys to another Related Entity for their use, under the understanding that the loaning entity will be reimbursed by the end of the next calendar year.

2.2.4 Strategies for Market Analysis

As MTA reviews the state of the debt market prior to structuring its bonds, it undertakes a routine process compared to other issuers. Utilizing a financial advisor and underwriter, MTA reviews several metrics, including current benchmark rates, the recent transactions given the rating, the interest rate spread between the MTA or TBTA bonds and benchmark rates, as well as overall recent trading activity. These practices are common and effective when considering what should be done when developing a preliminary marketing strategy.

Before issuing new money, MTA focuses on keeping track of the authorized balance available, utilizing its debt issuance as a cash flow management tool for its capital program. For example, if balance drops down (the average expenditure rate is $300 million a month), it will take at least three to five weeks to finalize a deal, so the MTA looks ahead to plan for known expenses. The MTA plans for the current needs, expenditure rate, and any unusual spending that might be anticipated. This is an important aspect of MTA's internal process as it is required to have a balanced budget and cannot run a deficit. As described previously, MTA finances the bond-funded portion of its capital program on a cash flow basis, meaning that they do not know the exact mix of assets they are financing until after proceeds have been drawn and spent.

2.3 Individual Transaction Preparation and Development

This section explores how MTA readies an offering for sale after determining the strategy behind making the issuance. This section is organized as follows:

- Section 2.3.1 discusses what type of sale MTA utilizes and why.
- Section 2.3.2 discusses the debt structure MTA traditionally uses and the reasoning behind this decision.
- Section 2.3.3 discusses how MTA procures outside professionals to support their work.
- Section 2.3.4 discusses MTA's relationship with credit rating agencies (CRAs) and investors.

2.3.1 Determining the Type of Sale

MTA utilizes a mix of competitive and negotiated deals. These decisions are made on a deal-by-deal basis, following an overall internal framework for balancing the combination of competitive and negotiated sales, which considers costs of issuing, processing, etc.

New York State has directed its issuing agencies, including the MTA, to increase usage of competitive sales, as they can be cost effective for well established, straightforward credits. Negotiated sales are used

to try to broaden market participation and deal with more complex credits. While the MTA's credits are well established—lending them to competitive bond sales—the Authority's highly political nature and fiscal challenges can raise concerns among investors. Negotiated bond sale can be effective to deal with those concerns through direct communication with potential investors.

MTA typically solicits requests for proposals from underwriting syndicates every three years. When these are awarded by merit, MTA undertakes negotiated deals. Additionally, MTA uses negotiated deals for larger deals, utilizing the syndicate support in the marketplace. If issuing a new product to the market, MTA utilizes the strength of the syndicate and is negotiated. Currently, MTA is utilizing a MWBE designated syndicate for a negotiated deal, but this is the first negotiated deal in some time.

MTA generally chooses to limit the cost of issuance through utilizing competitive deals, and competitive deals are always used for bond anticipation notes and remarketing of floating rate notes. So far in 2019 MTA has done more competitive deals because they have not yet procured new underwriting syndicates.

2.3.2 Evaluation of Alternative Debt Structures

MTA issues level debt, typically with a 30-year term. While the MTA understands that the useful life of its portfolio of assets is well in excess of the 30-year term, and recently issued 35-year and 40-year debt to take advantage of market conditions, these extended term issuances have been the exception rather than the rule. Additionally, the New York State Comptroller prefers level debt.

2.3.3 Soliciting and Securing Professional Support

MTA solicits financial advisors through a competitive process. From interviews with MTA staff, the competitive process to solicit and secure professional support begins with issuing an RFP to select a pool of underwriters every three years. The MTA board then approves the overall pool of underwriters and uses their services through a rotational process, with the caveat that management has flexibility to award on a merit basis, focused on service and unique ideas. Through interviews with MTA, it is believed that this process shows strong flexibility from the board on method of sale and associated assignments.

Currently, MTA has four key advisory teams:

- Day-to-day operations
- Credit strategies/investor relations
- Public private partnerships/alternative strategies
- Swaps

Through a similar process, a pool of firms is approved for underwriter counsel. In the future, MTA is moving to allow underwriters to bring on their own legal firms. Additionally, the state has an active process for procuring the services of minority, women owned, and service-disabled veteran-owned businesses, with 15%, 15%, and 6% goals respectively. The financial team monitors these goals for negotiated transactions only.

2.3.4 Working with Credit Rating Agencies

MTA has a robust outreach strategy to credit rating agencies, including a specific role for this purpose, a deputy director for investor relations and CRA relationships.

MTA is in regular contact with rating agencies and holds several meetings with the rating agencies annually. Additionally, the MTA finance team is always available to rating agencies when questions come

up, and maintain an ongoing dialogue throughout the year. MTA ensures that they disclose up-to-date information to both CRAs and investors, as well as posting to EMMA.

Table 20. MTA Credit Ratings[91]

MTA Core Credits	Moody's	Standard & Poor's	Fitch	Kroll Bond Rating Agency
Transportation Revenue	A1*	A*	AA-	AA+*
Dedicated Tax Fund	NAF	AA	AA	NAF
TBTA — Senior Resolution	Aa3	AA-	AA-	AA
TBTA — Subordinate Resolution	A1	A+	A+	AA-

*Negative outlook

Other Obligations	Moody's	Standard & Poor's	Fitch	Kroll Bond Rating Agency
MTA Special Obligation Taxable Refunding Bonds	Aaa	NAF	NAF	NAF
MTA Hudson Rail Yard Trust Obligations	A2	NAF	NAF	A-

NAF = Not Applied For

As revenues have tightened for MTA, questions and interest from rating agencies have increased. Additionally, some ratings agencies have undergone changes in their methodology, specifically in regards to the transportation issuer credit rating methodology. MTA is dedicated to fostering close and "two-way" relationships with the rating agencies for the benefit of all.

2.4 Marketing and Placement of Individual Transactions

This section describes how MTA approaches bond pricing strategy, transaction rating, and pricing of comparable transactions. The section is organized as follows:

- Section 2.4.1 discusses MTA's bond pricing strategy.
- Section 2.4.2 discusses how MTA markets individual transactions.
- Section 2.4.3 discusses the closing process and which authorities are involved.

2.4.1 Bond Pricing Strategy

As described previously, MTA undertakes a mix of competitive and negotiated sales. In competitive sales, bonds are advertised for sale. The advertisement, by way of a notice of sale, includes both the terms of the sale and the terms of the bond issue. Any broker dealer or dealer bank may bid on the bonds at the designated date and time. The bonds are awarded to the bidder offering the highest price for the bonds, which results in the lowest interest cost to the issuer.

As is typical in negotiated sales, the underwriter will get consensus views of members of the syndicate to develop their own pricing views and interest rate spread from benchmark AAA rates across the maturity scale and different couponing strategies as appropriate. Consecutively, the FA develops its own pricing views and then a negotiation takes place.

2.4.2 Marketing Individual Transactions

MTA's website is comprehensive and includes ample information on the financial standing of MTA and is updated on an ongoing basis. Additionally, MTA undertakes significant outreach to investors, including the investor relations website, in person meetings, conferences (e.g. the JP Morgan Investor Conference), and social media outreach (Twitter). However, disclosure counsel has set strict guidelines for social media outreach. Typically, MTA does annual investor relations visits and is considering quarterly investor calls for additional transparency. In addition to the budgeting and financial planning practices that MTA undertakes, this robust outreach to investors is another example of the Authority's effectiveness at utilizing private-sector practices.

2.4.3 Closing Requirements and Guidelines

Per interviews, pre-issuance involves the efforts of MTA, counsel, underwriters and financial advisors (FA) to pull together supplemental resolutions, secure MTA approval, develop the preliminary official statement, conduct due diligence, and seek ratings. Closing activities also include underwriter and bond counsel efforts to secure the necessary closing certificates required under the indenture.

Specific actions that MTA undertakes in their closing requirements include:

- All signatures and documentation are prepared by bond counsel and ready for pre-closing the day before closing. If this is a negotiated deal, the underwriting syndicate, as represented by the senior manager, will be a part of this review. If anything needs attention, this review team will have a chance to catch it before the actual closing.
- MTA utilizes closing memos prepared by either the financial advisor for competitive deals or the underwriter for negotiated deals. These memos lay out the process for the day of closing and is helpful guidance for treasury, trustee, and all other parties.
- MTA's working groups for closing include bond counsel, underwriter counsel, trustees, treasury, and financial advisor reviewing these memos.

2.5 Post-Issuance Requirements Compliance

MTA has active post-issuance compliance policies and procedures that govern the required reporting of disclosable matters in accordance with its 17 CFR § 240.15c2-12 obligations. These policies and procedures cover debt issuance closing, debt proceeds use and accounting, arbitrage compliance, recordkeeping, annual review, remedial actions, and training. If specific, noteworthy actions occurred during the underwriting period, the MTA may include a supplement to the OS. Once the due diligence process questions are completed by a disclosure counsel, key internal MTA staff and underwriters are invited to discuss specific questions during the due diligence review call.

The MTA has adopted municipal finance disclosure policies and procedures that assist in maintaining its compliance with federal securities laws regarding the issuance of municipal securities, as well as ensuring continued transparency with investors. The continuing disclosure policy is comprehensive, and determines who in MTA is needed to give information to credit agencies, and is required to review specific items. Because MTA already follows these internal policies regarding disclosure, and voluntarily makes this information public, MTA does not anticipate concerns with GASB 88 requirements. GASB 88 includes directives focused on improving consistency of information disclosed in financial statement related to debt, including direct borrowings and direct placements, as well as adding essential information about debt to financial statements.

The bulk of activity related to monitoring and reporting compliance with tax regulation for issuance is handled by the US Department of Treasury. As needed, the MTA will retain an outside consultant for arbitrage rebate.

Unlike project-based issuers, the MTA has no issue with spend down requirements, as the MTA issues enough bonds to last several months of capital spending.

3 Lessons Learned

The MTA case study offers several examples of effective practices and innovative thinking that can benefit other agencies. MTA was chosen as a case study as a very large, sophisticated, frequent issuer, with a focus on transparency and strong relationships with partners, investors, and rating agencies.

Financial Planning Process. MTA has a very rigorous financial planning process, including a 4-year financial plan and quarterly, unaudited financial statements. Few other municipal agencies publish quarterly, unaudited financial statements and follows this corporate disclosure model.

MTA has a best-in-class financial planning process, including:

- A midyear plan (June),
- A final proposed budget and financial plan (November) and the budget, which is voted on in December,
- A following February plan which includes clean up and technical corrections.

MTA's use of quarterly statements is informative for rating analysts and investors, adding another level of transparency, and providing a good look at where the MTA's financial condition is at different points throughout the fiscal year. It may benefit some agencies to produce quarterly statements, following MTA's corporate model, to add more transparency.

Outreach to Investors and CRAs. Similar to the Pennsylvania Turnpike Commission, the MTA's investor relations website is comprehensive and updated on an ongoing basis, giving both credit rating agencies and investors a very strong understanding of the financial standing of the MTA at any given time. Additionally, the MTA undertakes significant outreach to both CRAs and investors, with the deputy director for government relations and CRA relationships leading these efforts. While agencies with smaller debt programs may not need to undertake the same amount of outreach as MTA, the investor relations website and updates provided to the site are an effective practice for any agency to follow, keeping their online records up-to-date and with significant information for both CRAs and investors to evaluate financial stability.

The MTA case study also raises potential challenges that the authority faces, including:

Interagency and Intra-Agency Coordination. MTA is composed of many Related Entities, as described throughout the case study. MTA must keep the Related Entities abreast of changes to the debt program and aware of the policies and procedures that govern issuing and managing debt. Strong financial management practices help to minimize this challenge. Additionally, MTA must coordinate with outside agencies, like the NY state comptroller, which may pose challenges to making sure that both agencies are operating under the same understanding of the process and goals of debt issuance.

Ohio

1 Introduction

This report examines the State of Ohio's transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. Ohio's transportation debt program was selected to represent a centralized and collaborative transportation debt issuance and management program, with several written procedures to guide practitioners. The Ohio case study highlights effective practices for debt policy development and management, information sharing among the state agencies involved in issuing surface transportation debt, and a centralized investor relations page.

1.1 Background

This section provides an overview of the State of Ohio, including information about Ohio's demographics and credit ratings. This section also provides an overview of the Ohio Department of Transportation's (ODOT) highway network, budget, and role in managing Ohio's transportation debt program. ODOT is the statewide transportation agency with a mission to provide easy movement of goods and people, and is responsible for maintaining the state of the highways, public transit services, freight rail, maritime transportation system, aviation facilities, bicycle and pedestrian infrastructure, and the Ohio Scenic Byways Program—cultural and historically designated routes.[92]

Table 21. Overview: Ohio[93]

Metric	Ohio
U.S. Region	Midwest
Population (2018)	11,689,442
Percent urban population (2010)	77.9%
Land area	40,861 square miles
Median household income ($ 2017)	$52,407
State Credit Rating (Moody's, Fitch, S&P)	Aa1, AA+, AA+

Table 22. Overview: ODOT[94]

Metric	Ohio DOT
State-maintained highway system (centerline miles)	18,150 centerline miles
Interstate highway system (centerline miles)	1,332
Number of state-maintained bridges	44,209
Total bonded debt outstanding	$925.7 million[95]
ODOT Budget (2019)[96]	
Operating	$1.00 billion
Capital Programs	$2.32 billion
Grant & Loan Programs	$0.06 billion
Funding to be Carried Forward *	$1.76 billion
Total	**$5.05 billion**

* This figure represents funding approved by the Ohio General Assembly intended to cover construction programs that span multiple funding years.

2 Summary of Findings

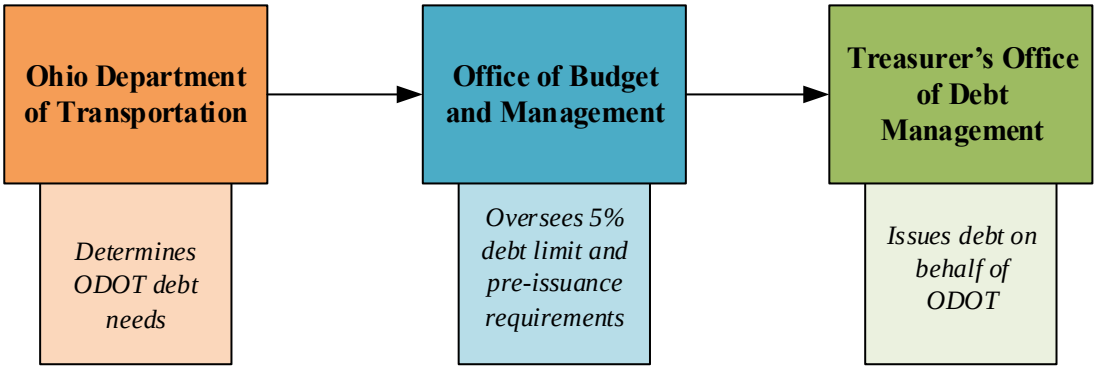
2.1 Debt Issuance and Management Authority

Several Ohio state agencies collaborate with one another to plan, authorize, issue, and manage transportation debt. The relationship between the three agencies is described in Figure 1. The authorities include:

- The **Treasurer's Office of Debt Management**, which is responsible for issuing debt for specified Ohio state agencies.
- The **Office of Budget and Management** (OBM), situated within the Governor's cabinet, is responsible for liaising between state agencies preparing and managing debt issuances.
- **ODOT** is responsible for identifying transportation debt needs and submitting requests to the Ohio Treasurer's Office to issue debt.

The **Treasurer's Office of Debt Management** is responsible for issuing Ohio's general obligation (GO) debt and special obligation direct debt, including GO highway debt and GARVEEs. 97,[98] The Office of Debt Management is responsible for structuring, document review, pricing and closing for debt issuances that fall within the office's jurisdiction. It is also responsible for reporting, debt certification, debt repayment, revenue/disbursement processing, and bond registrar services. The Treasurer's Office of Debt Management is also the issuer for Ohio's two state infrastructure banks (SIBs), which include the Ohio General Revenue Fund State Infrastructure Bank Program and the Federal Title XXIII State Infrastructure Bank Program.[99]

Figure 5. Collaboration for Debt Issuance



The **Office of Budget and Management**—directed by the Ohio Governor's Chief Financial Officer (CFO)—is responsible for providing statewide financial management oversight to provide for the responsible and pragmatic use of state funding and financing.[100] OBM serves as a central debt issuance and management entity for all of the state's issuers and plays an oversight role in pre-issuance and post-issuance requirements.[101] OBM's debt management functions include reviewing pre-sale information and documentation, including: the amount, source of payment, security, structure, maturity schedule, final resolution and official statement. OBM also produces and shares a monthly bond sale schedule, which includes the sale dates for all state issuing bodies. OBM, utilizes a professional services firm to post disclosure materials on the Electronic Municipal Market Access (EMMA).

ODOT is responsible for identifying the needs of three transportation bond programs—state transportation revenue bonds, GARVEEs, and facility lease appropriation bonds—and working with OBM and the Treasurer's Office of Debt Management to issue and manage the programs. The SIB bonds programs are also managed by ODOT. Due to the collaboration with OBM for each transaction, ODOT has a relatively small debt management team, which is led by a debt Manager. The debt manager works directly with the teams at OBM and the Treasurer's office, with decision-making oversight from the ODOT chief financial officer (CFO).

Table 23. Surface Transportation Debt Issuance RACI Chart[102]

Authority	Treasurer's Office of Debt Management	OBM	ODOT
Approve transportation debt issuance	A	R	C
Issue transportation debt	R	A	C
Manage transportation debt disclosure	I	R	A
Pay debt service	R	R	A

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

The centralized structure of responsibility of Ohio's debt management practices requires that the Treasurer's Office, OBM, and ODOT maintain a collaborative and transparent relationship. The Treasurer's Office and ODOT in particular collaborate during the preparation, issuance and management of debt. Both agencies are required to navigate within the overarching statewide debt issuance and management requirements, established by the Ohio Constitution.

2.2 Debt Strategy Definition

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. In Ohio, many of the key elements of a debt strategy are determined in the early programmatic stages of the debt issuance and management process, as opposed to being determined issuance-by-issuance. This section describes how Ohio approaches this phase of the debt management process. The section is organized as follows:

- Section 2.2.1 describes the state debt policies and legal framework that govern and restrict how debt is issued in Ohio.
- Section 2.2.2 describes the types of debt that are issued for Ohio's surface transportation program, including the type of financing mechanism, the security structure, and the maturity.
- Section 2.2.3 describes Ohio's approach to market analysis.

2.2.1 State Debt Policies and Legal Framework

Ohio's statewide debt management program relies on well-documented policies and procedures to codify and share information, and to provide a consistent approach across the various entities that issue debt at the state level. Ranging from documentation to make certain each debt issuance does not exceed state-level limits to guidance documents that provide practitioners with an overview of key considerations for each stage of the debt issuance process, this suite of policies is foundational to Ohio's successful debt management program, including the transportation debt management program. The state establishes a foundation for the agencies that issue debt to meet capital needs.

Article VIII of the Ohio Constitution, establishes allowable types of debt the State of Ohio can issue, which includes debt for parks and recreation, schools and higher education, and environmental revitalization and conservation.[103] With respect to surface transportation, the Ohio Constitution authorizes the issuance of debt for highways.[104] The Ohio Constitution also establishes a five percent debt service limitation or cap.[105] Established in 1999 by voter referendum, the State of Ohio's general obligation and special obligation debt service cannot exceed five percent of the combined sum of the state's general revenue fund and state lottery proceeds. The highway user receipts pledge, which is a source of revenues for highway bonds, is considered in the overall revenue backing debt service, and therefore subject to this five percent cap. The five percent cap may be waived if three-fifths of delegates in both houses of the Ohio General Assembly vote to approve the waiver. Additionally, the Ohio Constitution limits debt maturity timelines to a 30-year maximum.

OBM is responsible for monitoring debt issuances to make sure that issuances do not exceed the debt service cap. On an annual basis, the director of OBM is charged with making the 5% debt limitation cap determination, which OBM certifies with a report. Additionally, OBM is responsible for making "determinations and certifications" with respect to the five percent debt service limit. For each issuance, OBM produces a five percent certification, which certifies that the new debt issuance will not cause Ohio to exceed the limitation.[106] The certification walks through the obligations of the new issuance and what the overall statewide debt service will be throughout the life of the bond. The report then estimates the relevant state revenues to bond maturity, and identifies the highest expected debt service as a percentage of total estimated revenues. The issuance may be certified so long as the highest expected debt service—across all state obligations in addition to the proposed issuance—as a percentage of total estimated revenues does not exceed five percent. The certification is filed with the Director of OBM and the State Treasurer at the time of or in advance of the certified issuance.

In addition to managing the five percent debt service limit for the state, OBM manages a wealth of statewide debt policies, including a debt and interest rate risk management policy, a municipal securities disclosure policy and procedures, a post issuance compliance procedures and training, an arbitrage policy, and an allowable capital expenditures guidelines. The allowable capital expenditures guidelines document is not pertinent to surface transportation debt; therefore, it will not be discussed in detail in this report.

The debt and interest rate risk management policy is the central policy that applies to all state issuing bodies, including the Ohio Public Facilities Commission, the Treasurer of State, and OBM.[107] The policy, last updated in August 2019 and updated every fourth fiscal year, provides an overview of key considerations and expectations for Ohio state debt issuances to provide consistency across processes and management. The policy is comprehensive: it establishes what types of debt are allowable and that OBM is responsible for managing relations with credit rating agencies, and the policy provides guidance on what criteria and items to consider when making decisions regarding structuring the issuance, including credit enhancements, maturity, payment structure, and method of sale. The policy also provides guidance on refinancing and restructuring bonds, as well as considerations for interest rate swaps and derivatives.

The municipal securities disclosure policy and procedures is a statewide policy to make certain that Ohio's debt issuing authority complies with municipal security disclosure requirements established by the Securities and Exchange Commission (SEC).[108] The policy was jointly developed by OBM, the Treasurer of State, and the Ohio Public Facilities Commission to provide consistency across the agencies in adhering to federal requirements. The policy outlines the SEC requirements and establishes an OBM disclosure process, which addresses annual disclosure requirements, audited financial statements, material event disclosure, and voluntary disclosure. This policy is well aligned with OBM's post issuance compliance procedures and training, which will be discussed in depth in section on post-issuance requirements compliance.

2.2.2 Types of Debt

ODOT maintains two primary bond programs: the highway capital improvement program and the major new state infrastructure program, a type of grant anticipation revenue vehicle (GARVEE) program. ODOT said that it also issues facility lease appropriation bonds on an as-needed basis. The highway capital improvement program is used to finance the construction, reconstruction and improvements to Ohio's highways.[109] The program is comprised of GO bonds which are backed by both the highway user receipts pledge and the State of Ohio GO pledge. The highway user receipts pledge consists of funds raised by fees and excises from license registration, use of vehicles on public highways and fuels. Per the Ohio Constitution, the highway user receipts pledge funds can only be used to pay debt service on bonds issued for highway projects. Highway capital improvement program bonds totaling $187 million were most recently issued in December of 2018.[110]

The major new state infrastructure (GARVEE) program is used to finance federally eligible highway construction projects.[111] ODOT's GARVEE program has issued 17 series over the span of 20 years. In April 2018, ODOT prepared an issuance of $370 million in GARVEEs. The financing supported 24 capital road and bridge projects across 12 Ohio counties.

Table 24. Recent ODOT Issuances[112]

Issuance Type	Date	Amount	Credit Ratings	Purpose	Security
GO Highway Capital Improvement Program (HCAP)	December 2019	$187,125,000	Moody's: Aa1 S&P: AAA Fitch: AA+ Kroll: AAA	Capital highway improvements	Highway user receipts
GO Highway Capital Improvement Program (HCAP)	December 2018	$187,125,000	Moody's: Aa1 S&P: AAA Fitch: AA+ Kroll: AAA	Capital highway improvements	Highway user receipts
Major New State Infrastructure Project Revenue Bonds, Series 2018-01 (GARVEEs)	April 2018	$369,975,000	Moody's: Aa2 S&P: AA	Finance 24 capital road and bridge projects across 12 Ohio counties	Pledged federal highway receipts

The parameters of ODOT's debt program are established by the Ohio constitution and the biannual transportation appropriations from the General Assembly. Debt issuances made to finance surface transportation projects are subject to the statewide 5% debt service limitation. ODOT's highway bonds (HCAP) are also constitutionally limited to $1.2 billion in outstanding principal at any given time. This cap is monitored by the Treasurer's Office and OBM to ensure compliance. HCAP issuance authority is also limited constitutionally to $220 million per fiscal year plus unused carryforward of issuance authority, subject to issuance authority granted by the Ohio General Assembly in the Transportation Bill. Per the Ohio Constitution, debt to finance highway projects and grant anticipation revenue vehicles (GARVEEs) are authorized. Every two years, the General Assembly appropriates funding to ODOT, which the agency can use for pay-go needs or debt service commitments. The appropriations will include any new authorizations for debt issuances via the Treasurer's Office of Debt Management for ODOT, and ODOT is eligible to utilize remaining debt service authorizations from past appropriation cycles that have not been utilized.

ODOT has established a programmatic approach to debt issuance. ODOT utilizes a cash forecasting system to forecast project expenditures and estimate when bond issuances need to take place and how much to issue. The tool processes historical spending of projects that have been grouped together based on common criteria and forecasts the amount of debt that needs to be issued in the future to cover project costs. Based on this tool, ODOT has established an 18-month issuance horizon, meaning the ODOT staff may initiate issuances through the Treasurer's Office of Debt Management on a rolling basis to meet the needs of the 18-month project cycle. The 18-month issuance horizon has been selected in order to meet arbitrage spending requirements. The types of debt ODOT utilizes for proceeds is contingent on what type of debt is eligible to finance certain projects, as established by the Ohio Constitution and GARVEE eligibility requirements.

The Treasurer's Office of Debt Management, on behalf of ODOT, typically issues level debt for GARVEES and level principal for the highway capital improvement program bonds. ODOT also typically plans for and uses debt proceeds from issuances with 10 to 15 year maturities, in order to pay off principal

quickly to adhere to state constitution requirements. The Ohio Constitution limits maturities to 30 years, however, ODOT has made a policy decision to adhere to 10 to 15 year maturities to be fiscally responsible. Treasurer's Office staff said that as a result, ODOT's debt amortizations are relatively short compared to other state agencies that issue debt. Additionally, Treasurer staff said ODOT has the ability to extend the maturity timeline, but have consistently chosen not to do so in order to keep the cost of borrowing lower.

ODOT typically plans for and utilizes proceeds from tax-exempt bonds, although, ODOT staff said their office previously planned for the issuance of Build America Bonds twice. Additionally, ODOT manages one public private partnership (P3).

2.2.3 Strategies for Market Analysis

The Treasurer's Office typically issues bonds on a negotiated basis, however this is not required by policy. OBM's Debt and Interest Rate Management Policy provides guidance for determining the type of sale. The policy outlines what state issuers should include in the competitive sale bid specifications and what factors to consider when issuing bonds on a negotiated basis, such as underwriter compensation and priority of orders.

2.3 Individual Transaction Preparation & Development

This section describes how Ohio prepares a bond offering for sale after determining the strategy behind the issuance. This section is organized as follows:

- Section 2.3.1 describes how ODOT determines the type of debt vehicle.
- Section 2.3.2 describes how ODOT determines the timing and amount of the issuance.
- Section 2.3.3 describes how ODOT evaluates alternative debt structures.
- Section 2.3.4 describes how the Treasurer's office solicits and secures outside professionals.
- Section 2.3.5 describes Ohio's and ODOT's relationship with Credit Rating Agencies (CRAs).

2.3.1 Determining the Type of Debt Vehicle

ODOT is responsible for determining the type of debt vehicle to utilize when preparing an issuance. ODOT staff said the main factor considered whether to issue highway capital improvement program bonds or GARVEEs is whether the project expenses meant to be covered by the issuance are eligible to be financed by GARVEEs or state dollars. Each financing source has its own eligibility requirements, which steer ODOT toward issuing one type of debt versus another. Treasurer's Office staff said their office does not provide input on what types of debt vehicle ODOT should use for an issuance.

2.3.2 Determining the Timing and Amount of Debt to Issue

The ODOT Business Plan forecast establishes the planned need for debt in future years. The ODOT debt program communicates this information to the ODOT Division of Planning, which evaluates projects to which to apply the applicable bond funding. The Division of Planning programs these projects in the internal planning module accordingly.

ODOT's debt program staff use this information in the cash forecasting system to inform how much to issue. ODOT maintains a web-based cash forecasting tool, which was created internally by the ODOT information technology department. The tool is used to determine the timing and amount of debt issuances

for the GARVEE program and highway capital improvement program. The purpose of the tool is to forecast project expenditures and estimate when bond issuances need to take place and how much needs to be issued to meet the forecasted project needs. The tool categorizes historical spending data on similar projects based on a common set of criteria to forecast how much debt will need to be issued in the future. ODOT then requests the Treasurer's Office to prepare issuances based on the projected debt financing needs. Additionally, ODOT shares a summary of the outputs from the cash forecasting tool with the Treasurer's Office, typically in conjunction with spend-down requirements.

ODOT makes the decision regarding the amount of debt to issue, while the Treasurer's Office and OBM maintain a system to manage outstanding debt. Both offices use DBC debt manager and have access to additional debt management platforms. Additionally, the Treasurer maintains an Excel workbook for all outstanding debt and also a treasury management program.

2.3.3 Evaluation of Alternative Debt Structures

ODOT staff said ODOT does not typically consider alternative debt structures. ODOT typically utilizes level debt for GARVEEs and level principal for Highway Capital Improvement program bonds, to provide for quick repayment of the debt to stay within the Ohio Constitutional $1.2 billion cap on outstanding principal. ODOT has however issued Build America Bonds, and manages one P3. While the P3 debt is not considered bond debt, it is considered in the debt-to-revenue ratio per ODOT policy.

2.3.4 Soliciting and Securing Outside Professionals

The Treasurer's Office is responsible for securing outside professionals for debt issuance support, which is conducted on an issuance-by-issuance basis. Financial advisors (FAs) are solicited on an issuance-by-issuance basis from a pre-established pool of qualified firms. In preparation for each debt issuance, the Treasurer's office appoints an FA and syndicate based on their ability to lead the transaction. The Attorney General appoints the bond counsel firm to the transaction team.

2.3.5 Working with Credit Rating Agencies

OBM manages Ohio's relationship with credit rating agencies (CRAs), which takes the form of regular meetings to maintain Ohio's relationship with CRAs and to provide more general updates on Ohio's debt portfolio, not only transportation. OBM's debt management team presents an update to the CRAs each time a new state budget is released.. OBM's strategy does not require them to meet with CRAs when a new issuance is upcoming, given how frequently the state issues.

Historically, the State of Ohio—through OBM—has solicited ratings from Moody's, S&P and Fitch. Recently, however, OBM re-evaluated and decided that the highway capital improvement bond's double barrel pledge was not being sufficiently captured by the ratings agencies. In response, OBM chose to solicit an additional rating from Kroll to capture this aspect of the bonds and provide more accurate information to investors.

2.4 Marketing & Placement of Individual Transactions

This section describes how Ohio approaches bond pricing strategy, transaction rating, and pricing of comparable transactions. The section is organized as follows:

- Section 2.4.1 discusses how ODOT, OBM and Treasurer's Office staff develop a bond pricing strategy and how the pricing strategy gets approved.

- Section 2.4.2 discusses how the Treasurer's Office markets bond offerings.

2.4.1 Debt Pricing Strategy

OBM policies provide high-level requirements for developing a pricing strategy. OBM requires that sale preparers conduct a series of final checks on the issuance, including final cash flow calculations and compliance checks and specific guidance for negotiated issuances. The OBM policies require that the final cash flow calculations consider bond proceeds, issuance costs, and the original issue premium/discount of the bonds.[113] Additionally, OBM policies require that issuers conduct a check on the tax certificate, to make certain that bonds comply with the requirement that 85% of the bond proceeds will be spent on capital expenditures within three years. Further, for negotiated issuances, the issuer or FA is advised to utilize information from issuers of similar credit quality and structure to inform the pricing strategy.

2.4.2 Investor Relations

Ohio provides a wealth of resources to potential investors. The Treasurer's office maintains a Bond Link platform and OBM maintains a webpage that provides information for investors. The Treasurer's Office investor relations page includes information on the most recent bond ratings from each of the CRAs, a calendar of upcoming bond sales, key financial documents, and high-level resources about Ohio's bond program and municipal bonds more generally.[114] On this website is a page dedicated to the ODOT transportation debt programs. The OBM investor relations webpage provides similar information, including a bond sale calendar, the five percent debt service limitation certification, and state policy information regarding what debt issuances are authorized under the Ohio Constitution.[115]

2.5 Post-Issuance Requirements Compliance

Post-issuance requirements compliance is managed by OBM for all agencies. OBM maintains a proactive approach to post-issuance compliance. Prior to each issuance, OBM staff work to identify any potential for non-compliance, which includes assessing private business use. To identify potential for non-compliance, OBM utilizes a tax due diligence questionnaire which includes questions on spending expectations and private business use. Additionally, OBM holds regular compliance trainings for agency program managers and fiscal staff to ensure relevant staff are educated and aware of post-issuance requirements. The training includes information on state law and legal authority, federal law, which capital expenditures are qualified to be financed by bond proceeds per state law, and capital program managers' responsibilities.[116] The training is applicable to all state agencies that utilize debt to finance capital projects, not just transportation.

OBM has established policies and procedures that guide and standardize the work of ensuring Ohio debt issuances are meeting all post-issuance requirements. OBM's guidance "Post-Issuance Compliance Procedures for Tax-Exempt Bonds and Build America Bonds" is comprehensive and details compliance guidance from pre-issuance to arbitrage and record retention.[117] The policy is directed at Ohio issuing agencies and the agencies that utilize bond proceeds to finance projects, such as ODOT, and includes the following sections:

- **General matters** establishes which parties (issuer, OBM, Treasurer's Office, or Agency) are responsible for which procedures in the policy.
- **Structuring the bond issue – pre-issuance matters** establishes how guidelines for setting the par amount and setting the sale date.

- **Final cash flows, issue price/yield, premium/discount, costs of issuance** establishes guidance about how to consider the total cost of issuance, such as factoring issuance costs into final cash flow calculations.
- **IRS information return filings** outlines which IRS forms need to be completed.
- **Use of proceeds** establishes directives for monitoring and using bond proceeds.
- **Monitoring private activity** establishes directives for how to appropriately review for private use, including training staff on how to provide timely information on this compliance topic.
- **Arbitrage** establishes directives for how to appropriately monitor arbitrage, including consulting bond counsel when necessary.
- **Record retention** establishes guidance on how to appropriately manage records, including maintaining records until three years after the bonds have been retired.
- **Timely identification of violations of Federal tax law requirements** establishes how responsible parties must report tax law violations.

To guide the post-issuance requirements compliance process, OBM utilizes an internal checklist to confirm required approvals are obtained and necessary tasks are completed. OBM uses Excel to produce affordability models, DBC Finance to generate cash flows and structuring, and DBC Debt Manager for managing outstanding debt.

OBM continues to revise and update their post-issuance compliance policies. The office continually reviews guidance and initiatives impacting disclosure of state financial information and make adjustments as necessary.

3 Lessons Learned

This case study offers examples of several effective practices:

- **Strategically soliciting credit ratings:** The Ohio Treasurer's Office made a strategic decision to engage a different credit rating agency to capture the double-barrel pledge of state bonds. This decision exemplifies the importance of credit ratings to entice investors and an effective practice to revisit credit ratings regularly to ensure that bonds are being appropriately evaluated.
- **Determining amount to issue**: ODOT utilizes a strategic process based on a customized tool to determine the amount of debt to issue. The ODOT cash flow forecasting tool projects future expenditures and estimates when bond issuances need to take place and how much needs to be issued to meet the forecasted project needs. The tool categorizes historical spending data for similar projects based on a common set of criteria to inform the forecast.
- **Investor relation strategies:** The Ohio Treasurer's Office and OBM both maintain rich and transparent investor relations pages. These pages are constantly updated with new information to provide investors the most relevant material regarding the Ohio debt programs.
- **Knowledge transfer & policy development:** The Ohio OBM spearheads the development and management of centralized debt policies and procedures for relevant state agencies, which is a practice that can ensure knowledge transfer amongst staff when there is turnover and also consistency in approach between different state issuing authorities.

This case study also illuminates a key challenge that Ohio is facing and may face in the future. This challenge may be useful for other practitioners:

- **Revised advanced refunding regulations:** The Ohio Treasurer's Office is in the process of identifying alternative tools to evaluate advanced refunding opportunities amidst the recent regulatory change.

Pennsylvania Turnpike Commission

1 Introduction

This report examines the Pennsylvania Turnpike Commission's (PTC) transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition and market analysis, 2) individual transaction preparation and development, 3) marketing and placement of individual transactions, and 4) post-issuance requirements compliance. PTC's transportation debt program was selected to represent a state toll authority because PTC, which has more than $10 billion in outstanding debt, is considered a robust, frequent, and large issuer whose practices may be of interest to transportation agencies that have an emerging or less mature debt program. Moreover, added state legislative requirements required PTC to implement effective practices that could be useful for other issuers, even if they are not held to the same requirements.

1.1 Background

This section provides an overview of PTC, including information about the Commonwealth of Pennsylvania, PTC's overall program and credit ratings.

The combination of a stable travel market, periodic toll increases, stable capital reinvestment and a good record of financial management have allowed PTC to maintain a strong financial position. Since 2010, debt service coverage of its senior revenue bonds has been at least 3.22x, while combined senior, subordinate and subordinate special revenue debt service coverage has been at least 1.40x. After meeting all turnpike-related obligations, PTC had an ending general reserve fund balance in fiscal 2019 of $391.6 million which exceeded PTC's liquidity policy.[118]

Table 25. Overview: Commonwealth of Pennsylvania[119]

Metric	Commonwealth of Pennsylvania
U.S. Region	Mid-Atlantic
Population (2017)	12,805,500
Percent urban population (2010)	78.7%
Land area	44,742 square miles
Median household income ($ 2017)	$56,951
State GO Credit Rating (Moody's, Fitch, S&P)	Aaa, AA-, A+

Table 26. Overview: Pennsylvania Turnpike PTC[120]

Metric	Pennsylvania Turnpike Commission
PTC-maintained highway system	552 center-line miles
Interstate highway system	1,953 center-line miles
Other PTC-maintained assets	Mountain tunnels, bridges, toll plazas, maintenance buildings
Total toll supported bonded debt outstanding (FY 20)	$12,458 million
FY 2019-2020 Budget	
Projected Operating Revenues	$1,393 million
Operating Expenses	$261 million
Employee Benefits	$116 million
State Police	$55 million
Cost of Services – Operating Budget Request	$432 million
Operating Margin	$961 million
Net Margin before Debt Service	$868 million
Less: Senior Debt Service	$349 million
Less: Sub/Motor License Fund (MLF) Debt Service	$372 million
Net Margin	$148 million

2 Summary of Findings

2.1 Debt Issuance and Management Authority

PTC is governed by five members, including the Secretary of the Pennsylvania Department of Transportation (PennDOT). PTC members, excluding the PennDOT secretary, are appointed by the governor for four-year terms. While PTC members are responsible for establishing policy and providing oversight, the chief executive officer is responsible for carrying out PTC's policies and directions and day-to-day management. The chief executive officer is supported by the chief operating officer (COO), chief financial officer (CFO), chief engineer, chief counsel and chief compliance officer.[121]

The debt management process is led by the CFO, who manages a small team of senior debt professionals supported by consultants. Specifically, for debt issuance, the financial team must request that the commissioners pass a resolution authorizing debt issuance. PTC selects a bond counsel to prepare the resolution from a pool of firms; staff directs bond counsel regarding resolution content. Once approved, the CFO can structure, issue, and report on debt issuance of PTC.

For senior liens, PTC does not need external approvals from the Commonwealth, but subordinate liens must be coordinated with PennDOT to determine the mix of assets being financed to facilitate the structuring and term of the bonds. Oil company franchise and motor registration bonds are secured directly by the state. When debt is issued for these bonds, some information must be received by PennDOT prior to issuance, but PennDOT's overall involvement is limited.

2.2 Debt Strategy Definition and Market Analysis

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. This section explores how PTC approaches this phase of the debt management process. The section is organized as follows:

- The first section discusses the types of debt that PTC issues including the type of financing mechanism, the security structure, and the maturity.
- The section discusses PTC's debt policies that govern and restrict how debt is issued by PTC.

2.2.1 Types of Debt

PTC is a frequent issuer of debt, though has recently reduced the number of issuances to address market concern of oversaturation. For example, where PTC would have previously done two senior deals a year, PTC now does one, excluding refundings. PTC issues both fixed and variable rate debt, with special obligation bonds as one-off transactions. Typically, PTC issues tax-exempt debt in the form of traditional municipal securities, however, in 2009 and 2010 PTC issued taxable Build America Bonds.

PTC issues the following debt:

- **Senior debt** is issued to finance capital projects in PTC's Ten-Year capital plan and for refunding outstanding Mainline Senior Debt.
- **Subordinate debt** is issued to fund a portion of the payments to PennDOT in accordance with state legislative requirements, and for refunding outstanding Subordinate Debt.
- **Oil company franchise tax debt** and **motor license registration fee debt** are issued to finance the costs of capital expenditures related to two expansion projects (the Mon/Fayette and Southern

Beltway) and to refund outstanding oil company franchise tax debt and motor license registration fee debt.[122]

PTC's revenues come from three sources: tolls, oil franchise taxes, and registration fees.

Table 27. PTC Revenue Sources

Revenue Source	Description
Toll Revenues	• Largest part of the PTC's revenues is from the collection of rates, rents, fees, charges, fines and other income from vehicular usage of the system (tolls) • Tolls are pledged to secure the turnpike revenue bonds, other senior indenture parity obligations, and any subordinated indebtedness issued under the senior revenue indenture
Oil Franchise Tax Revenues	• Second principal stream of revenues includes a portion of the Commonwealth's oil company franchise tax revenues. • Oil franchise tax revenues are not pledged to secure any senior revenue indenture obligations, and subordinate revenue indenture obligation or any registration fee revenue bonds.
Registration Fee Revenues	• Third principal stream of revenues for PTC comes from a portion of the Commonwealth's vehicle registration fee revenues. • The registration fee revenues are not pledged to secure any senior revenue indenture obligations, and subordinate revenue indenture obligation or any oil franchise tax revenue bonds.

In addition to the financing debt tools listed above, PTC utilizes EB-5 Immigrant Investor Program funds, which is program meant to incentive investments made by immigrants,[3] as an alternate form of financing. PTC currently has $1 billion authorized under EB-5, and one active loan with a regional center partner for $800 million.

With respect to new types of debt or debt authorizations that PTC is considering, PTC has received multiple proposals to undertake additional swaps. PTC's current swap policy mandates that the CFO, the assistant chief financial officer for financial management, PTC's swap advisor and legal counsel evaluate the proposed transaction based on an assessment of potential benefits and risks. PTC will evaluate prevailing market practices and requirements, legal requirements and potential impacts on PTC's management of swaps. Swaps are required to include financial terms and conditions that are fair and reasonable, as detailed in a letter from a qualified independent swap advisor.

PTC actively monitors and continues to engage in derivative transactions as appropriate to hedge risk and lock in interest rates on a synthetic basis. Following the 2008 financial crisis, PTC needed to restructure or transfer swaps to other banks to address debt placed with firms that had been downgraded or went bankrupt. However, swaps are being reconsidered as viable financing options; by fall 2018, PTC was undertaking two swaps.

PTC closely monitors and plans for the future of their debt program, predominantly because of the specifics of Act 44 obligations (See Section III below on Act 44). PTC has continued to meet the financial obligations of Act 44 because revenues have been steady, including strong traffic revenue numbers, annual

[3] To learn more about the EB-5 program, visit this site: https://www.uscis.gov/eb-5

toll increases (6%) and low cost of borrowing. The current debt level carried by PTC is higher than prior to the 2008 recession, and so is continuously monitored and reviewed.

PTC closed its most recent senior debt issuance in January 2020, which is its first of 2020. PTC also completed a subordinate debt issuance in February 2020. As of March 26, 2020, PTC had about $1.2 billion of variable rate debt outstanding consisting predominately of floating rate notes on its senior and subordinate liens with a small amount of variable rate demand notes on its senior lien.

Debt maturity timelines are generally matched to the useful life of the assets being financed. Specifically, for Act 44, PTC goes through a detailed analysis with PennDOT to identify the mix of transit assets that will be financed with subordinate lien debt. Vehicle registration fee debt is set at a 40-year maturity timeline because PTC wanted to maximize proceeds in 2001 by issuing 40-year bonds and through other structuring factors. Other PTC debt types are set for 30 years. PTC does have the statutory authority to extend these maturity timelines to 40 years if desired.

2.2.2 PTC Debt Policies

PTC has established financial management policies that guide PTC's use of debt and derivatives to mitigate risk, and to provide for the maintenance of adequate fund balances and proper investment of available funds. While all issuers have specific debt management policies, PTC policies are particularly detailed. However, PTC's debt policies are not prescriptive, providing guidelines while still allowing for flexibility.

The legal requirements to prepare an Act 44 financial plan and the parameters for minimum debt service levels, general reserve fund balances, and projections for annual borrowings are unique to PTC. However, the policies and reporting requirements can still serve as best practices to other issuers.

Table 28. PTC Policy Overview

Policy	Summary of PTC Policy
Debt Policy	The purpose of PTC's debt policy is to: • Establish sound, prudent and appropriate parameters • Provide guidance governing the issuance, management, continuing evaluation of and reporting on all debt obligations issued by PTC • Take the steps necessary to assure compliance and conformity with this policy This policy is intended to ensure that all potential debt structures comply with all applicable laws and regulations, as well as sound financial principles.
Swap Policy	The Swap Policy establishes guidelines for the use and management of all interest rate management agreements, including interest rate swaps, swap options, caps, collars and floors incurred in connection with the issuance of debt.
Liquidity Standard Policy	The purpose of this policy is to ensure that PTC will maintain minimum annual year-end fund balances for the ongoing level of uncommitted reserves necessary for PTC to secure and protect its long-term debt.
Investment Policy and Guidelines	PTC's investment policy and guidelines govern PTC's investment of cash assets. Investment objectives are centered on the safety and preservation of invested funds, maintenance of adequate liquidity to meet PTC cash flow requirements, maximizing the total rate of return and providing preference to Pennsylvania investments when the return on investment is no less than a non-Pennsylvania investment. The policy defines eligible securities and requirements for diversification of investments to provide for safety and preservation of funds.

In addition to the financial management policies noted above, PTC's senior revenue bonds and subordinate revenue bond indentures include specific covenants to bondholders that preserve PTC's financial flexibility and provide investors with necessary security. These include specific rules regarding:

- Pledge of revenues,
- Flow of funds,
- Rate covenant,
- Reserve funds; and
- Operations, maintenance, and capital improvements.

All policies are detailed in the most recent Act 44 financial plan that PTC publishes on a yearly basis.[123]

2.2.3 Additional Plans, Mandates and Forecasts

Act 44. Act 44 was approved by the General Assembly of Pennsylvania in 2007 and was amended in 2013 with Act 89. Act 44 expanded the mandate of PTC from solely constructing, operating, and improving the Pennsylvania Turnpike to also provide annual funding for broader Commonwealth transportation needs. Since 2007, PTC has fully met its obligations by instituting regular toll increases and meeting financial management guidelines. PTC has primarily financed its Act 44 commitments through the issuance of subordinate revenue bonds and subordinate special revenue bonds at $450 million annually, totaling over $6.9 billion as of Spring 2020.

Act 89 updated PTC's funding obligations to PennDOT. While PTC's total payment to PennDOT remains at $450 million annually, beginning in 2014 all payments have gone to supporting transit capital, operating, multi-modal and other non-highway projects. PTC expects to finance most of this obligation with subordinate revenue bond proceeds with at least $30 million annually funded from current revenues. Since PTC's Act 44 payments are now dedicated to transit needs, PTC no longer issues subordinate special revenue bonds, however, PTC can issue refunding bonds on the Subordinate Special Revenue lien for debt service savings. Beginning in fiscal 2023 through 2057, PTC's annual obligation is reduced to $50 million, which will be funded by current revenues and dedicated to transit capital and operating needs.[124] Once Act 44 obligations are reduced in 2023, it is expected that the debt burden PTC currently manages will lesson.

10 Year Capital Plan. PTC's FY2020 planned ten-year, $5.9 billion capital improvement program features:

- Roadway resurfacing and total reconstruction programs,
- Rehabilitation or replacement of structurally deficient bridges,
- Stage 1 design and construction of the I-95 Interchange Project; and
- Implementation of Cashless Tolling at selected pilot locations.

Over the next 10 fiscal years (as of June 2019), PTC projects that senior bonds will fund 44% of the 10-year capital program, with PAYGO and federal reimbursements estimated at 56%. The current capital plan is about $5.9 billion from fiscal year 2020 through 2029, with capital expenditures averaging $590 million per year (before federal reimbursements).

Table 29. PTC's 10 Year Capital Plan ($ Millions)[125]

FUNDING SOURCE	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
% PAYGO/Federal	41%	43%	44%	48%	50%	55%	60%	65%	70%	80%
% Bonds	59%	57%	56%	52%	50%	45%	40%	35%	30%	20%

As Table 29 shows, it is expected that a greater proportion of PAYGO will fund later years in the current capital plan, due to lower subordinate lien issuance and reduced Act 44 requirements.

Pennsylvania Turnpike Traffic and Revenue Forecast Study. As part of its rigorous financial planning process, PTC contracts out and publishes a robust traffic and revenue forecast on an ongoing basis. The most recent study published in the spring of 2018 along with an update in the spring of 2019, as a replacement of the 2015 study, included long-term traffic and revenue forecasts through FY2047-48, including most recent assumptions in toll rate increases, future capital improvements, etc. This study provides transparency for investors and rating agencies as they consider and rate the potential financial strength of PTC.[126]

In addition to undertaking ongoing traffic and revenue forecast studies, PTC keeps up-to-date records of its month-to-month toll revenue and volumes on their website, with comparisons to the previous year.[127]

2.2.4 Strategies for Market Analysis

As PTC reviews the state of the debt market prior to structuring its bonds, it undertakes a routine process compared to other issuers. Utilizing a financial advisor and underwriter, PTC reviews several metrics, including current benchmark rates, the recent transactions given the rating, the interest rate spread between the turnpike bonds and benchmark rates, as well as overall recent trading activity. These pieces are common and best practices when considering what should be done when developing a preliminary marketing strategy.

2.3 Individual Transaction Preparation and Development

This section explores how PTC readies an offering for sale after determining the strategy behind making the issuance. This section is organized as follows:

- The first section discusses what type of sale PTC utilizes and why.
- The second section discusses the debt structure PTC traditionally uses and the reasoning behind this decision.
- The third section discusses how PTC procures outside professionals to support their work.
- The fourth section discusses PTC's relationship with credit rating agencies (CRAs) and investors.

2.3.1 Determining the Type of Sale

PTC has historically closed on several bond issues annually, some of which are more complicated than others in terms of structure, depending on whether they include new money or refunding. PTC believes that the negotiated deal approach generally offers a lower cost of funds than competitive bond issues. PTC relies on underwriters and their relationship with investors to bring orders to PTC that may be difficult to achieve due to market conditions, pricing, and other external factors. Additionally, the negotiated approach offers more opportunities for underwriters to bring ideas to PTC that may not be available for a competitive approach.

2.3.2 Evaluation of Alternative Debt Structures

PTC has traditionally relied on an escalating debt service structure, in which debt service payments increase in anticipation of future increases in toll revenues. However, PTC is currently moving towards a level debt service structure. This is due to the complexity of PTC's debt structure and the need to sell a significant amount of bonds to meet both capital and Act 44 needs.

2.3.3 Soliciting and Securing Professional Support

PTC solicits financial advisors through a competitive process. From interviews with PTC staff, the competitive process to solicit and secure professional support begins with issuing an RFQ to select a pool of underwriters and a separate pool to select counsel every three years. On a transaction by transaction basis, the commissioners approve the underwriter syndicate consisting of senior manager, co-senior managers and co-managers. Considerations for syndicate selection include: prior performance, proposed strategies, Pennsylvania presence, national and local distribution networks and minority firm representation. For each transaction, PTC selects bond counsel, underwriters counsel and disclosure counsel—and sometimes will select co-counsel. PTC utilizes one transaction team for municipal bonds and a different team for swap advisor.

2.3.4 Working with Credit Rating Agencies

From both interviews with PTC representatives and reviewing online documents, it is clear PTC has a robust outreach strategy to credit rating agencies. PTC is in regular contact with rating agencies, with a one-on-one meeting with agencies at least once per year to keep them apprised of debt issuance. PTC ensures that they disclose up-to-date information to both CRAs and investors, as well as posting to the Electronic Municipal Market Access (EMMA) platform. Additionally, PTC undergoes a road-show prior to transactions to share updated information with CRAs.

Table 30. Pennsylvania Turnpike Commission Credit Ratings[128]

PTC Credit	Moody's	Standard & Poor's	Fitch	Kroll Bond Rating Agency
Turnpike Senior Revenue	A1	A+	A+	AA-
Turnpike Subordinate Revenue	A3	A	A-	A+
Motor License Fund – Enhanced Subordinate Special Revenue	A2	NA	AA-	AA-
Oil Franchise Tax Senior Revenue	Aa3	AA-	AA	AA
Oil Franchise Tax Subordinate Revenue	A2	A	A+	AA-
Registration Fee Revenue	A2	A	A+	AA-

2.4 Marketing and Placement of Individual Transactions

2.4.1 Bond Pricing Strategy

The bond pricing exercise takes place about a week before the transaction and is concluded on the afternoon or evening or the pricing.

As mentioned previously, PTC undertakes negotiated sales. As is typical in negotiated sales, the underwriter will get consensus views of members of the syndicate to develop their own pricing views and interest rate spread from benchmark AAA rates across the maturity scale and different couponing strategies as appropriate. Consecutively, the financial advisor develops its own pricing rules and then a negotiation takes place. In this case, the FA acts as the issuer's representative. The underwriter and FA will reach consensus about the pricing that will be put out on the pre-pricing wire, prior to the bonds going out for sale. The bond pricing process also involves what maturities are open for retail customers, defining retail customers, how long is the retail order period.

2.4.2 Marketing Individual Transactions

PTC's website is comprehensive and includes ample information on the financial standing of PTC on an ongoing basis. Additionally, PTC undertakes significant outreach to investors, including the investor relations website, in person meetings, and conferences. For example, PTC has met with one large

institutional investor on-site two years in a row, as the single largest investor across all liens. When discussing PTC's strategy with investors, the feedback has sometimes been that PTC has been in the market too often. Generally, PTC staff meet with investors as needed, mostly in the New York City region. Since Act 44 has left some uncertainty for investors, PTC has spent considerable effort in outreach to quell this uncertainty and make financial planning as transparent as possible.

As part of the pre-pricing effort, PTC does webinar-based road shows for each transaction. In preparation for these road shows, the underwriter is responsible for identifying potential buyers, understanding their preferences for bond structure and price, and developing a pricing proposal and sales effort that balances the need to deliver the lowest possible cost to PTC, while still fulfilling market demands.

2.4.3 Closing Requirements and Guidelines

PTC has a co-bond counsel and underwriters counsel that oversees closing of transactions, however, they have no formal process for pre-issuance. According to interviews, pre-issuance involves the efforts of PTC, counsel, underwriters and FA to pull together supplemental resolutions, secure PTC approval, develop the preliminary official statement, conduct due diligence, and seek ratings. Closing activities also include underwriter and bond counsel efforts to secure the necessary closing certificates required under the indenture.

2.5 Post-Issuance Requirements Compliance

PTC has active post-issuance compliance policies and procedures that govern the monitoring and reporting of compliance with tax regulations for issuance. These policies and procedures cover closing of debt issuances, use of debt proceeds, accounting or debt proceeds, arbitrage, recordkeeping, annual review, remedial actions, and training. Additionally, PTC retains an outside consultant that runs a compliance check every year, a continual process that ensures they are following spend-down requirements.

In addition to the post-issuance compliance described above, PTC has adopted a continuing disclosure policy that assists in maintaining its compliance with federal securities laws regarding the issuance of municipal securities, as well as ensuring continued transparency with investors. The continuing disclosure policy is quite comprehensive and determines who in PTC is needed to give information to credit agencies, as well as includes signatures by chief counsel and CFO. Because PTC already follows these internal policies regarding disclosure, and voluntarily makes this information public, PTC does not anticipate concerns with GASB 88 requirements.

PTC's process for continuing disclosure is generally standard as compared to other agencies. PTC will enter into a "continuing disclosure agreement" with the registered owner at the time of the bond sale. As part of this agreement, PTC will provide the following information and notices to the Municipal Securities Rulemaking Board (MSRB) through EMMA:

- Annual financial information within 180 days of the end of each fiscal year.
- Notice of specific events regarding the bonds, including principal and interest payment delinquencies, non-payment related defaults, unscheduled draws on debt service reserves, and more.

3 Lessons Learned

PTC case study offers several examples of effective practices and innovative thinking that can benefit other agencies:

- **Act 44 Requirements and Financial Planning:** Act 44 has been PTC's most significant challenge because of the high debt burden required for funding Act 44 requirements. However, PTC has successfully met and managed these requirements through careful financial planning and execution, strong disclosure policies, regular contact with rating agencies and investors, and strong market intelligence. External factors have also assisted PTC in their meeting of requirements, including an overall strong economy, lower gas prices, and favorable interest rates. Though other agencies may not have the similar imposed requirements, the organizational alignment and rigor necessary for PTC to undertake its debt program because of Act 44 has made for a stronger overall program. Other agencies could find these same benefits by modeling PTC overall debt program, including robust debt policies, debt coverage to maintenance ratings, and more.
- **Alternative Debt Management Solutions**: Because of the strong financial planning process that PTC undertakes, it has laid a strong foundation for looking at alternative options for taking on debt, including the use of EB-5 debt financing and direct placements. Direct placements are used for lower cost financing, and PTC has relied on them where capital market transactions are not available. These are some of the options available to other agencies, if their financial planning process was as robust.
- **Alternative Financing Options**: Post 2008 financial crisis, most issuers stopped using derivatives (swaps), yet PTC has decided to return to them. PTC did renegotiate – switching from downgraded to upgraded swaps, showing that they are actively and prudently returning to swaps as a viable option. Many agencies simply do not undertake swaps, but by following PTC's policies, could utilize them at greater benefit.

Virginia

1 Introduction

This report examines the Commonwealth of Virginia's transportation debt program through the lens of the four major phases of debt issuance and management: 1) debt strategy definition & market analysis, 2) individual transaction preparation and development, 3) marketing & placement of individual transactions, and 4) post-issuance requirements compliance. The Commonwealth of Virginia transportation debt program was chosen as a case study because of the program's long and stable history. Some of the noteworthy features of the Virginia transportation debt program include effective and transparent communication between the entities that issue and manage transportation debt, the annual Virginia statewide debt affordability study, and the transportation debt program's project-driven approach to debt issuance. Given the program's history, the Virginia case study offers insights into long-standing and well-defined debt issuance and management policies, practices, and procedures.

1.1 Background

This section provides an overview of the Commonwealth of Virginia, including information about the Commonwealth's demographics and credit ratings. This section also provides an overview of the Virginia Department of Transportation's (VDOT) highway network, budget, and role in managing the Commonwealth Transportation Board's (CTB) debt program. VDOT is the statewide transportation agency responsible for maintaining and operating the Commonwealth of Virginia's highway system and for developing and managing state highway projects.[129] VDOT has sister state agencies, such as the Virginia Department of Rail and Public Transportation (DRPT). DRPT is responsible for providing funding and technical support to transit and rail programs and some commuter programs.[130]

Table 31. Overview: Commonwealth of Virginia[131]

Metric	Commonwealth of Virginia
Region	Mid-Atlantic
Population (2017)	8,470,020
Percent urban population (2010)	75.5%
Land area	39,490 square miles
Median household income ($ 2016)	$66,129
State GO Credit Rating (Moody's, Fitch, S&P)	Aaa, AAA, AAA
Transportation percentage share of statewide outstanding debt (excludes toll road debt) Percentage of statewide outstanding debt attributed to non-toll supported transportation debt (FY 18)	22%

Table 32. Overview: VDOT[132]

Metric	VDOT
State-maintained highway system	57,867 centerline miles
Interstate highway system	1,120 centerline miles
No. state-maintained bridges	11,900 bridges
Other state-maintained assets	Underwater tunnels, mountain tunnels, a toll road, a toll bridge, rest areas, commuter parking lots, certain express lanes, and three ferry services
Total bonded debt outstanding (FY 17)	$3,245.3 million
Transportation Trust Fund (FY19)	$1,468.7 million
FY 19 Budget	$5,358.6 million
Debt service (FY19)	$390.5 million
Other agencies & transfers (FY19)	$67.5 million
Maintenance & operations (FY19)	$2,196.5 million
Toll facility operations (FY19)	$80.8 million
Administration & other programs (FY19)	$389.2 million
Public transportation & rail (FY19)	$32.0 million
Construction program (FY19)	$1,730.6 million
Pass through revenues[4](FY19)	$471.5 million

4 Funding dedicated to Northern Virginia Transportation Authority Fund and Hampton Roads Transportation Fund

2 Summary of Findings

2.1 Debt Issuance and Management Authority

Several Virginia authorities collaborate with one another to plan, authorize, issue, and manage transportation debt, which are summarized in **Table 33**. These agencies rely on institutional knowledge of the state's transportation debt program to facilitate effective collaboration. The relevant agencies include:

- The **Treasury Board**, staffed by the Virginia Department of the Treasury, has primary oversight authority over all issued debt.
- The **Debt Capacity Advisory Committee** (DCAC) is responsible for conducting an annual review of the Commonwealth's tax-supported debt.
- The **Commonwealth Transportation Board** (CTB) maintains the authority to allocate funding, including bond proceeds and regulate transportation within Virginia and is responsible for following all guidance and policies set by the Treasury Board.
- **VDOT** manages debt on behalf of the CTB, and the CTB allocates funding to cover debt service payments in accordance with the specifics of each debt authorization.

The **Treasury Board** is charged with statewide debt management oversight and must approve the terms of transportation debt issuances. The Treasury Board members include the State Treasurer, the State Comptroller, the Tax Commissioner, the Senior Assistant Attorney General, and four gubernatorial appointees.[133] The Virginia Department of the Treasury has a debt management team, which helps facilitate issuance and management of statewide debt. The debt management team consists of eight people, with one manager and one analyst dedicated toward overseeing transportation debt. This team helps VDOT staff get approval from the Treasury Board for CTB debt issuances. The resolution establishing the Treasury's approval sets the final terms and structure of the issuance based on the legislative authorization for the debt. The debt management team also secures the Treasurer's signature for the day of debt pricing and the Governor's signature for closing.

The **DCAC** is charged by Executive Order 38 (1991) to produce an annual debt capacity study, which assesses Virginia's ability to issue additional tax-supported debt in the succeeding two years.[134] The Committee submits an annual recommendation to the Governor and the General Assembly for the maximum amount of additional tax-supported debt the state can responsibly issue.

The **CTB** is a policy board comprised of 17 gubernatorial appointees which set policy for the Commonwealth's transportation projects and programs as well as execute other statutory requirements.[135] The CTB establishes the Six-Year Improvement Plan, which sets individual project allocations for a six-year horizon, including SMART SCALE outputs. SMART SCALE is a data-driven process to determine prioritization of transportation project funding. CTB serves as the transportation debt oversight authority and is the entity that issues transportation-related debt. The CTB must get approval from the Treasury Board to issue any tax-supported debt. However, the CTB has authority to issue Federal Highway Reimbursement Anticipation Notes (FRANs) and Grant Anticipation Revenue Vehicles (GARVEEs), which are both debt vehicles that enable municipalities to issue securities when federal funding that will cover debt service is expected in the future, without approval from the Treasury Board. The CTB oversees the Commonwealth Transportation Fund (CTF), which includes the Transportation Trust Fund (TTF).[136] The TTF is the backstop for all tax-supported transportation debt.

VDOT is the agency responsible for constructing, operating, and maintaining the Commonwealth's bridges, tunnels, roads, and related infrastructure.[137] VDOT provides extensive technical and logistical support to the CTB by overseeing day-to-day debt management and the granular aspects of the Commonwealth's transportation debt program. VDOT's Chief Financial Officer and Financial Planning Division are responsible for managing the specifics of each debt issuance. VDOT's Financial Planning Division includes a three-person debt team, consisting of one manager and two analysts. This office is tasked with sizing the debt issuance, working closely with programming offices to forecast when to go to market based on project cash flow needs, communicating issuance dates and details with the Treasury Board, and managing compliance. VDOT is also responsible for paying debt service from toll revenues or with TTF funds allocated by the CTB.

Table 33. Surface Transportation Debt Issuance RACI Chart[138]

Authority	DCAC	Treasury Board	Treasury Debt Management Team	CTB	VDOT
Establish annual statewide debt limits	R	A	A	I	C
Approve transportation debt issuance	I	R	A	R	A
Issue transportation debt	I	C	A	R	A
Manage transportation debt disclosure	I	I	A	I	R
Pay debt service	I	I	A	A	R

Key:

R	Responsible	Leads and completes the task/assignment
A	Accountable	Accountable for the task/assignment being completed appropriately. Have authority to advance, delay or reject the responsible party's work.
C	Consulted	Consulted for the task/assignment, may be stakeholder or subject matter expert.
I	Informed	May stay informed about task progress or outputs.

This division of authority between the Treasury Board, CTB, and VDOT requires constant coordination and communication between the entities to ensure effective transportation debt issuance and management. Interviews with VDOT and Treasury staff found that the relationship between the Treasury Board and VDOT has been long-standing and collaborative. The two agencies have developed a working rapport with one another to facilitate the process—largely the collaborative processes are not written down, but rather engrained within institutional knowledge. Key to this successful relationship is frequent communication. Some exemplary touch points between VDOT and Treasury include:

- VDOT shares a projected calendar of bond sales with the Treasury each year.
- The Treasury debt management team often solicits additional information from VDOT to stay informed about the timing of issuances.
- The VDOT team also routinely meets with the Treasury debt management team and the Treasury Board when issuances are being prepared to agree upon the details of the issuance.
- Communication between VDOT staff and Treasury staff is often more frequent during the legislative session as statewide agendas are being set and relevant legislation is up for consideration.

Interviewees also stated that it is helpful that the Treasury debt management team and VDOT have the same financial advisor (FA). This has helped set a consistent tone and approach to debt management. However, the relationship between the two entities was strong and collaborative before each entity happened to retain the same FA, which has been the case for a long duration of time.

2.2 Debt Strategy Definition & Market Analysis

The first phase of debt financing includes defining a sound debt strategy and performing preliminary market analysis. This section explores how Virginia approaches this phase of the debt management process. The section is organized as follows:

- The first section discusses the types of debt that are issued for Virginia's surface transportation program, including the type of financing mechanism, the security structure, and the maturity.
- The second section discusses the state debt policies that govern and restrict how debt is issued within the Commonwealth.
- The third section discusses Virginia's programmatic approach to bond sales.

2.2.1 Types of Debt

Based on interviews with VDOT staff, the department has adopted a project-driven approach, as opposed to a program-driven approach, to selecting which types of debt to issue and which financing mechanisms to use. One of the main factors in the decision-making process for issuing debt is determining what project the debt will finance, and therefore determining which type of credit will be most suitable for the particular project characteristics and project lifespan, as opposed to generally issuing the same type of debt for all projects in a capital program. Which type of debt CTB issues, with support from VDOT, is also contingent on the restrictions placed on how CTB can use bond proceeds, which are established by the General Assembly debt authorization. For example, GARVEEs were originally only eligible to be used to finance a specific list of projects but later legislation lifted this restriction.[139]

Virginia typically issues debt that requires level debt service payments for transportation purposes, and has consistently used traditional debt financing mechanisms (such as bonds) with a 25-year maturity, although GARVEEs are an exception since they are required to mature in 15 years. Additionally, all of Virginia's transportation-related debt is backstopped by the entire TTF (not just one particular revenue source within the TTF). All governmental toll road debt has the full faith and credit of the Commonwealth (both general funds and transportation funds) as the backstop to the toll revenues. Per conversations with VDOT staff, the security structure of Virginia transportation debt is one of the factors that has contributed to the program's steady and consistent history of high-credit ratings and effective debt management.

Table 34 provides an overview of Virginia's most recent surface transportation debt issuances, including the amount outstanding, the purpose of the issuance, and the security structure. These issuances are the

newest in a longer history of Virginia transportation debt issuances. According to interviews with VDOT staff, Virginia's transportation debt program started with issuing General Obligation (GO bonds), then transitioned to issuing tax-supported debt and toll road debt, followed by issuing Section 9(d) debt, which is tax-exempt debt issued by a 63-20 nonprofit corporation on behalf of a private partner for a P3 project.[140] A 63-20 nonprofit corporation is an entity that can—per Internal Revenue Service Rule 63-20 and Revenue Proclamation 82-26—issue tax-exempt debt on behalf of a state or local body in order to finance government facilities. 63-20 nonprofit corporations are often used to finance alternative delivery projects, particularly since the low interest costs of borrowing can attract private investors. Section 9(d) debt is not backed by the full faith and credit of the Commonwealth. Most recently the VDOT debt program has issued GARVEEs. The CTB Continuing Disclosure Annual Report highlights that several past issuances still have outstanding debt or have been refunded in the 2000s.[141] For example, in the late 1980s and early 1990s CTB initiated several Transportation Revenue Bond programs, issuing debt for particular programs, including the Northern Virginia Transportation District Program, the Route 58 Corridor Improvement Program, and the Route 28 Transportation Improvement District projects. Each of these bond programs have less than $200 million in outstanding principle, highlighting the longevity and evolution of the Virginia transportation debt program.

Table 34. Type of Debt (Most Recent Issuances) [142]

Financing Mechanism	Security	Backstop	Purpose	Amount Outstanding (Principal)
Capital Projects Revenue Bonds (Tax-supported Section 9(d) debt)	Designated revenue streams (TTF)	TTF	Six-Year Improvement Program delivery including highway and transit projects	$2,112.6 million[143]
GARVEEs	Federal apportionments	TTF	Six-Year Improvement Program delivery including highway and transit projects	$942.985 million[144]

Innovative Finance Methods & Public Private Partnerships. VDOT's traditional debt programs discussed above were considered to be innovative financing strategies when they were authorized by the General Assembly. Today, Virginia's transportation debt strategies are focused on implementation of increased capacity with an associated revenue stream, whether it be high-occupancy toll (HOT) lanes or time-of-day pricing alternatives. Virginia uses Public-Private Partnerships (P3s) to implement some of this increased capacity such as the HOT Lanes network in Northern Virginia.

VDOT's leadership in P3s has allowed Virginia to implement transportation infrastructure with the private partner assuming the significant share of financing risk. VDOT's P3 projects range from design-build to design-build-finance-operate-maintain. Today, four Virginia toll roads are P3s operated by private partners who collect toll revenues. These four P3s have used a variety of innovative financing mechanisms with VDOT's support. For example, the Pocahontas Parkway – one of the early P3s – used a 63-20 corporation structure for its early financing. Each of these contracts include some type of financial risk protection from VDOT, such as shadow tolls. Shadow tolls involve paying the private partner concessionaire fee in lieu of tolls when use of High Occupancy Vehicle (HOV) lanes exceeds a certain threshold. By utilizing shadow tolls for some of the state's P3 projects, Virginia has balanced the need for the private partner to collect sufficient toll revenues to cover operating costs with its policy to encourage HOV lane use at no expense to riders.

An availability payment is a guaranteed payment by VDOT to the P3 private partner to pay debt service, other financing, operating and maintenance costs, as well as profit, in exchange for guaranteed performance

levels of the highway infrastructure (i.e., vehicle throughput, pavement condition). Neither Virginia's General Assembly nor its State Treasurer has endorsed the use of availability payments by VDOT for long-term P3 private partner payments. The State Treasurer's informal position has been that these Availability Payments would constitute state tax-supported debt and affect the State's debt capacity because of the source of the payment—state transportation appropriations as approved by the General Assembly and allocated by the CTB—thus infringing on the state's capacity to finance other state needs such as education, parks and correctional facilities. Additionally, availability payments must be made regardless of whether there is a decline in revenue or shifting state priorities.

VDOT staff approach each P3 with both policy and programmatic goals for the project and vet each project individually to determine whether it is in the best interest of the Commonwealth. VDOT has refined its approach to P3s over time, with a focus on achieving the best public benefit for the Commonwealth. The most recent iteration of Virginia's P3 project delivery process is outlined in the 2017 update of the PPTA Implementation Manual and Guidelines.[145] VDOT uses a cross functional team for every P3 and the VDOT Financial Planning Division is always a member of the team. In addition, the P3 Office also reports to the VDOT CFO. The VDOT CFO leads a team that supports the private sector partner in achieving its financing including US DOT financing programs such as TIFIA to such activities as joining marketing calls. The Appropriation Act (the Commonwealth's budget) gives the CTB and it staff specific authority to do so.

Per an interview with Treasury staff, the CTB could decide to use more complex financing structures if advantageous to the state and if the General Assembly approves. VDOT staff expressed that their Financial Planning Division often receives pitches for additional innovative financing mechanisms and practices, but that their staff generally opt to continue with their current practices for traditional VDOT/DRPT administered projects because existing mechanisms work well for their program.

2.2.2 State Debt Policies

Virginia's state debt management practices are governed by three primary policy documents: 1) the Commonwealth Transportation Board's resolutions captured in the CTB Policy Index; 2) the Commonwealth of Virginia's Debt Capacity Advisory Committee Report to the Governor and General Assembly; and 3) specific debt authorizations approved by the General Assembly. The Commonwealth Transportation Board Policy Index includes adopted CTB policies including the goal of minimizing outstanding debt, detailed policies for specific debt issuances, and outlines the authority and debt capacity model elements for FRANs. Table 35 provides an overview of the debt-related elements of the CTB Transportation Board Policy Index.

Table 35. CTB Policy Index Overview[146]

Debt financing and management phase	Summary of the CTB Policy Index
Debt Strategy Definition & Market Analysis	Broad Statement of policies focused on balancing the goal of minimizing outstanding debt with other program needs.
Individual Transaction Prep and Development	Detailed Policies regarding individual transaction preparation and development, including: • Authorization of specific debt issuances, which has included Capital Transportation Projects Revenue Bonds, Revenue Refunding Bonds, Grant Anticipation Notes (GANs), and GARVEEs • Description of authority and detailed debt capacity model elements for Federal Highway Reimbursement Anticipation Notes (FRANs).
Marketing & Placement of Individual Transactions	Other than the information provided in the individual authorizations of specific debt issuances, there is limited information related to marketing & placement of individual transactions.
Post-Issuance Requirements Compliance	Detailed Policies, including those that describe procedures and systems for Post-Issuance Compliance Policy for Tax-Exempt Qualified Obligations, including designation of responsible staff members, initial disclosure steps, compliance with arbitrage rules, monitoring & tracking of private uses, compliance with reissuance rules, and record retention.

The Commonwealth of Virginia's Debt Capacity Advisory Committee Report to the Governor and General Assembly is a debt capacity study that reviews tax-supported debt and offers an estimate to the Governor and General Assembly of the maximum amount of new tax-supported debt that may be responsibly authorized in the next two years. The Commonwealth of Virginia Debt Capacity Advisory Committee (DCAC), was established in 1991 to produce the DCAC report annually.[147] The DCAC is housed within the Virginia Department of the Treasury and is chaired by the Virginia Secretary of Finance and consists of the following members, who are either appointed to the role by the governor or legislature[148]:

- State Treasurer
- Direct of Department of Planning & Budget
- Auditor of Public Accounts
- State Comptroller
- Director of Joint Legislative Audit & Review Commission
- Interim Co-Director of the Senate Finance Committee
- Staff Director of the House Appropriations Committee
- Two (2) additional gubernatorial appointees

The DCAC annual report reviews all projections of outstanding statewide tax-supported debt and compares it against debt service, which is a combination of blended revenues. The 2017 report recommended that Virginia could issue up to $580 million in additional debt in fiscal years 2018 and 2019.

This would maintain projected debt service as a percentage of blended revenues at or under 5% over the next ten years. This annual analysis includes any debt secured by the Transportation Trust Fund (TTF), but does not consider FRANs, GARVEEs, or toll-supported debt. Based on the 2017 DCAC report, transportation tax-supported debt accounts for roughly 22% of overall outstanding statewide tax-supported debt as defined in the DCAC report.

In addition to considering the amount of projected outstanding debt compared to projected available debt service, the DCAC report addresses debt capacity by assessing market trends and considering future risks. The DCAC report reviews Virginia's state credit rating and compares Virginia's net tax-supported debt against other states with similar credit ratings. The 2017 report noted the possibility that federal tax cuts would reduce expected revenues and potentially make tax-exempt bonds less desirable for investors. Additionally, the DCAC report noted uncertainty regarding the federal budget, which could impact the amount of available federal funds for state initiatives.

The third policy area that impacts debt issuance in Virginia are legislative direction included in the State Revenue Bond Act and the Appropriation Act. The State Revenue Bond Act establishes the framework under which all transportation bonds are issued.[149] The Appropriation Act appropriates revenues for allocation by the CTB for all transportation debt service payments under a section of the act.[150] The General Assembly also passes specific debt authorizations or modifications to existing debt authorizations.

2.2.3 Strategies for Market Analysis

Overall, most of Virginia's surface transportation debt is issued on a competitive basis. A negotiated process is only used in certain cases. Based on interviews with VDOT staff, the issuance of debt competitively has been viewed as an effective and appropriate approach, particularly given the Commonwealth's strong credit rating. The GARVEE program has been an exception to Virginia's typical preference for competitive transactions. Since the establishment of the GARVEE program in 2012, a negotiated approach to debt issuance was used.

Virginia has consistently chosen to issue GARVEEs through a negotiated sale based on advice received when the state first decided to use this debt financing mechanism. VDOT was advised that GARVEEs are riskier for investors than state-backed debt, since there is uncertainty surrounding the federally-backed credit. Federal credit is subject to the issuer's performance under the federal surface transportation program and the program is subject to reauthorization. A negotiated sale allows an underwriter to adequately respond to investors' concerns and hopefully secure the most cost effective pricing for the bonds. However, as will be noted in the following section, the Commonwealth has recently reconsidered this programmatic approach and has opted to issue its November 2018 GARVEEs on a competitive basis.

Generally, in the past few years, Virginia issues surface transportation debt twice a year, with a GARVEE issuance in the fall and a Capital Revenue Bond issuance in the spring. VDOT is working with Treasury to align the timing of these major transportation debt issuances with the Commonwealth's overall calendar of issuances. Otherwise, certain times of the year may be saturated with too many Virginia transactions, inadvertently resulting in competition between different Commonwealth entities for market interest.

Overall, VDOT coordinates closely with the Treasury to ensure a consistent and effective approach to the debt market. Treasury staff serves on the working group for all surface transportation debt, and regular collaboration between the entities has become the established norm.

2.3 Individual Transaction Preparation & Development

This section explores how Virginia prepares a bond offering for sale after determining the strategy behind making the issuance. This section is organized as follows:

- The first section discusses what type of sale VDOT utilizes and why.
- The second section discusses the debt structure VDOT traditionally uses and the reasoning behind this decision.
- The third section discusses how VDOT and the Virginia Treasury procure outside professionals to support their work.
- The fourth section discusses the Commonwealth and VDOT's relationship with Credit Rating Agencies (CRAs).

2.3.1 Determining the Type of Sale

As noted in the previous section, Virginia typically issues debt through a competitive sale process, except for GARVEEs. Therefore, most of Virginia's surface transportation debt, the selection of the type of sale is not conducted for each specific transaction. In November of 2018, Virginia issued $100 million in GARVEEs using a competitive sale for the first time. Given the small amount being issued and the timing of the specific issuance, the VDOT debt management staff saw this as an opportunity to experiment with a competitive sale.

2.3.2 Evaluation of Alternative Debt Structures

VDOT traditionally uses a fixed rate structure. Virginia Treasury staff indicated in an interview that the Commonwealth does not consider variable rate or swaps for transportation debt. There have been only two variable rate issuances for non-transportation purposes in the Commonwealth, and one non-traditional transportation issuance where CTB issued Capital Appreciation Bonds (CABs). CABs are a type of debt that features a deferred interest feature—that is all interest payments to the investor are deferred until the maturity date of the CAB. CABs are used by issuers to finance projects with an escalating revenue curve and typically have a higher interest rate. However, this structure was not incredibly different than Virginia's traditional approach. In interviews, VDOT staff expressed that sticking to their best practices and traditional mechanisms has been a core pillar of the CTB's strong and longstanding debt program.

2.3.3 Soliciting and Securing Professional Support

VDOT on behalf of the CTB and the Virginia Treasury staff on behalf of the Treasury Board solicit financial advisors through separate competitive processes. By coincidence, both currently have the same financial advisor, and both VDOT and Treasury indicated that this has provided the benefit of consistency in debt strategy and management. A pool of bond counsel firms is selected by the Office of the Attorney General, which are available for use by any Commonwealth office or departments. VDOT staff expressed that their office issues a request for proposal to the bond counsel firms in the pool to identify the firm best suited to support their work.

2.3.4 Working with Credit Rating Agencies

The Commonwealth and CTB have had historically strong credit ratings. A Virginia Treasury staff member discussed the history of the Commonwealth's strong credit ratings in an interview. The Commonwealth's AAA rating dates to 1938 and has been maintained since then. At times of economic downturn, the rating agencies have suggested additional strategies to protect this rating. For example, the DCAC was established to formalize Virginia's keen protection of its debt capacity during the economic downturn in the early 1990s.

The Commonwealth was put on credit watch in the spring of 2017, however. The credit watch was prompted by a concern for the structural balance of the Commonwealth's budget. This concern was remedied by a decision by the General Assembly to create additional revenue cash reserves with diligent oversight on withdrawals. CTB debt ratings were not impacted by this credit watch. VDOT staff explained that CTB debt has consistently maintained high ratings at a notch below the Commonwealth. CTB's most recent issuance of Transportation Capital Project Revenue Bonds in May of 2018 received AA+, Aa1, and AA+ ratings from Fitch, Moody's, and Standard & Poor respectively.[151]

VDOT, on behalf of CTB, maintains a strong rapport with Credit Rating Agencies (CRAs). To maintain this relationship VDOT has an established practice of meeting with CRAs in person each time there is a change in the Secretary of Transportation (Chairperson of the CTB) or agency leadership. VDOT staff expressed that their relationship with CRAs was mildly impacted by the credit watch, since CRAs perceive the CTB to be an extension of the Commonwealth. Traditionally, VDOT on behalf of the CTB rely on the Commonwealth's high credit rating to make a case that their debt is credit-worthy. The Commonwealth and the CTB are closely-related in the credit evaluation process.

2.4 Marketing & Placement of Individual Transactions

This section describes how Virginia approaches bond pricing strategy, transaction rating, and pricing of comparable transactions. The section is organized as follows:

- The first section discusses how VDOT staff develop a bond pricing strategy and how the pricing strategy gets approved.
- The second section discusses how VDOT staff and outside advisors work with CRAs to market bond offerings.
- The third section discusses the closing process and which authorities are involved.

2.4.1 Bond Pricing Strategy

Based on interviews with staff, VDOT typically works with its FA in advance of a specific issuance to develop the appropriate parameters and pricing strategies for review and approval by the CTB. Debt authorizations by the General Assembly require that the CTB approve a resolution to further authorize the issuance of transportation debt,[152] then advance it to the Treasury Board for its approval. The Treasury Board adopts the resolution approving the terms and structure of the proposed issuance within certain parameters and delegates to the Treasurer the power to approve the final terms and structure, within those parameters. Included in these parameters are the statement that the true interest rate cannot exceed a certain amount. If these parameters are not met, CTB will not be able to issue the debt.

2.4.2 Marketing Individual Transactions

The CTB's consistently high credit ratings and overall reputation have helped to facilitate a streamlined marketing process for transactions. State debt practitioners stated that for each individual transaction, VDOT relies on an analyst at the CRAs to assess the creditworthiness of the bond. CRAs will assign different analysts to produce a credit rating recommendation depending on the issuance type. For instance, a transportation analyst may be assigned for a GARVEE transaction, while a state-focused analyst may be assigned for another type of transaction. Due to VDOT's strong reputation with the CRAs, VDOT staff expressed that they do not need to engage routinely with CRA analysts and generally only need more extensive engagement when there is a new analyst assigned to the program. The FA prepares materials for the CRAs to support their work during the credit rating process.

When VDOT goes to market the debt offering, the CFO and Financial Planning Division debt staff with support from their FA and bond counsel develops a presentation about the program and issuance to share with potential buyers. This presentation communicates the summary of the offering, which includes the projects, anticipated ratings, pricing date, the security, the structure, and the final maturity.[153] Also included in the presentation is an overview of past issuances for the bond program, and a comparison of VDOT's issuance against other similar issuances nationwide. When VDOT prepares to go to the market with the offering, VDOT staff make themselves available for bond marketing activities as necessary.

VDOT regularly engages investors to market specific offerings including "road shows," which involve posting informational internet presentations. Previously, when the GARVEE program was new, VDOT did more extensive marketing, including calls with investors and the underwriter. Now, VDOT's marketing outreach is less extensive since the agency benefits greatly from the Commonwealth and CTB's strong ratings. Additionally, the Virginia Treasury has launched an investor website.[154] The website has useful information for potential investors, including the Commonwealth's bond ratings, current bond offerings, and additional resources for investors to learn about the Commonwealth's credit-worthiness and finance team. VDOT has not launched a similar website, but based on an interview with Virginia Treasury staff, it seems plausible that VDOT may be able to use this initiative as a model to launch their own in the future.

2.4.3 Closing Requirements & Guidelines

For every debt issuance, the Treasurer sets the parameters for the sale and a Treasury representative is engaged on the sale date, confirming for the Treasurer that it meets the established stipulations. The Treasury representative, on behalf of the Treasurer, must provide approval of the pricing before it can be authorized or released. Additionally, the final closing documents must be approved with the Governor's signature. The Treasury Board is responsible for sending a package of materials to the Governor for final signature. This requires additional coordination between the various entities responsible for issuing surface transportation debt in Virginia.

2.5 Post-Issuance Requirements Compliance

The VDOT Financial Planning Division has primary responsibility for disclosure and paying debt service (through the bond trustee) while the Virginia Treasury staff play an oversight role throughout this process. VDOT staff discussed in an interview how their team manages all the debt programs through an Excel spreadsheet. The team has not been able to find one standard software to house all their programs, given how each has unique characteristics. This singular spreadsheet serves to inform timing and specifics of disclosure requirements and debt service.

In interviews, VDOT staff discussed how their disclosure process has evolved and improved over time, particularly in response to earlier incidences of human errors in reporting. The VDOT Financial Planning Division worked closely with an underwriter after the office ran into an issue where not all Committee on Uniform Securities Identification Procedures (CUSIP) numbers were tagged. The Division has gotten better at reducing these errors by developing an annual report for all programs and continuing to work with an underwriter and bond counsel. VDOT staff indicated that working with these professionals has been especially helpful due to the number of outstanding bond issuances and their individual nuances. Based on an interview with Virginia Treasury staff, the Treasury debt staff and VDOT staff coordinate on certain aspects of disclosure. However, VDOT is responsible for posting closing documents and all continuing disclosure for the CTB's debt issuances.

VDOT's Financial Planning Division works closely with their financial advisor and bond counsel to manage debt service and compliance. To manage debt service payments, VDOT's Financial Planning Office runs scenarios through a web-based version of DBC, a debt-structuring and reporting platform, and VDOT relies on an outside firm to assist with arbitrage calculations and scheduling. The CTB and the Treasury have a debt service payment agreement for all tax-supported debt. Virginia Treasury staff stated in an interview that Treasury instituted this agreement to maintain oversight authority of the Commonwealth's debt. VDOT debt management staff must make a request to the Treasury (and the designated trustee) for the debt service funds to be paid.

GARVEE debt service, however, is solely managed by VDOT debt management staff. VDOT debt management staff expressed that the GARVEE disclosure and debt management process is more complex than the agency's tax-supported debt. GARVEE compliance is tethered to Federal Highway Administration (FHWA) expectations and rules. VDOT staff have developed a good relationship with the Virginia FHWA division office to manage this process. VDOT shares a list of projects and the expected cost for GARVEE projects to the Virginia FHWA division office. Once FHWA agrees to the projects, VDOT shares an estimated debt service schedule to initiate an agreement that FHWA will cover the debt service. At the opening of each federal fiscal year (October 1) VDOT staff reach out to the Virginia FHWA division office to request the funds to pay the debt service for the year.

One of the key challenges for VDOT's disclosure process, and GARVEEs specifically, is that the debt program is structured around specific projects. VDOT debt management staff expressed in interviews that this requires the Financial Planning Office to continuously coordinate with project managers to understand the project needs and how the projects are progressing to estimate project cash flow needs and subsequently, debt service that is allocated to each project. Particularly for GARVEES this has been challenging due to FHWA oversight. Complexities with the GARVEE disclosure process arise when project financing changes or when a project financed by GARVEEs is cancelled. In these instances, VDOT staff must get approval from FHWA to reattribute the GARVEE bonds to different projects.

One challenge VDOT and CTB could face is the compromised flow of revenues to cover debt service. In such instances, CTB and VDOT are obligated to follow Virginia law, which establishes a hierarchy of funding priorities. The law requires that the CTB first prioritize maintenance needs. After this priority is funded, Virginia law respectively prioritizes the following items: existing debt obligations, administrative and general expenses, state of good repair (i.e., major maintenance and rehabilitation of pavements and bridges), high priority construction projects, and then highway construction grant programs around the state. Additionally, when revenues are compromised or when maintenance costs are higher than budgeted, VDOT and CTB may utilize revenues from the Transportation Trust Fund (TTF), which are typically

reserved for state of good repair and construction projects. However, during revenue slowdowns or when maintenance costs are higher than budgeted, the TTF is called upon to fund these costs.

3 Lessons Learned

The Commonwealth of Virginia case study offers examples of effective practices to highlight in the guidebook:

- **Collaboration & communication**: Virginia's approach to debt management facilitates collaboration between the multiple state entities involved with managing debt, including the DCAC, Treasury Board, Treasury Debt Management staff, CTB, and VDOT. These agencies have developed an iterative and transparent communication process that allows each to effectively perform their role. Additionally, the practice of effective collaboration and communication extends to the way the Treasury staff and the VDOT staff utilize their outside advisors throughout the various phases of debt management.
- **Consistency**: VDOT staff have opted for a consistent approach to managing debt issuance that works best for their program and projects. While the type of debt CTB issues has changed throughout the years, Virginia has continued to use traditional financing mechanisms. This approach has facilitated a long-standing and strong transportation debt program.
- **GARVEE management process**: VDOT has established an effective process for managing GARVEE debt that is designated to finance particular projects. While challenges may arise in terms of revising the application of GARVEE debt, VDOT has established a strong relationship with the Virginia FHWA office to make this process as efficient as it can be with federal constraints.
- **P3 management**: VDOT with one of the longest P3 programs in the U.S. have learned how to effectively manage P3s by establishing policies and processes and informing themselves and others about the program and vetting each P3 opportunity with scrutiny to determine whether it would be in the best interest of the Commonwealth.

The Virginia case study also illuminates key challenges that VDOT is facing and may face in the future. These challenges may be useful for other practitioners to learn from:

- **Managing project-specific debt**: VDOT faces the challenge of aligning its debt with project budgets, goals and timelines. To manage this, the VDOT staff are continuously engaging with project managers to anticipate changes that may impact the debt program. The ability to balance flexibility with debt constraints such as arbitrage is a key attribute.
- **Loss of institutional knowledge**: VDOT and the Virginia Treasury staff anticipate future institutional knowledge loss due to staff turnover. VDOT and Virginia Treasury staff anticipate that the current staff supporting debt management will not remain at these agencies throughout the life of the bonds. This will require VDOT and Virginia Treasury to document and formally institutionalize their current processes.
- **Identifying funding/financing to replace large-scale infrastructure**: VDOT expressed that their team anticipates needing to replace large-scale infrastructure in the future, due to infrastructure aging over time and needed increased capacity. VDOT expects that this will be a significant challenge in the future. For tax-supported debt, the use of statewide debt capacity must be balanced between transportation and other government priorities including higher education, K-12 schools and technology, and parks.

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