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Using Refinancing of Federal Loans to Support Transportation Infrastructure: Lessons from the Covid-19 Pandemic

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16. Abstract

The Covid-19 pandemic exposed vulnerabilities in transportation infrastructure projects, leading to delays, suspensions, or cancellations of several public-private partnership (P3) projects in the United States. The resulting decline in transportation-related revenues has strained state and local government finances. Consequently, the U.S. Department of Transportation (USDOT) has seen increased interest from existing borrowers seeking to refinance their loans to offset pandemic-related revenue losses and benefit from low interest rates. This has spurred significant refinancing activity at the Build America Bureau, the federal hub for coordinating transportation infrastructure financing.

Refinancing involves issuing a new bond or loan at a lower interest rate to replace an outstanding one, with proceeds typically invested in an escrow portfolio of Treasury securities. This generates immediate cash flow savings, as demonstrated by refinancing of a TIFIA loan to the Central Texas Regional Mobility Authority in March 2021, which saved over $80 million in interest.

This study documents the extent of pandemic-related refinancing activity carried out by the USDOT's Build America Bureau, examining the number of loans and estimated savings. It also compares the motivations and effects of refinancing across various projects from borrower and lender perspectives and offers theoretical and practical recommendations for using refinancing as a fiscal stimulus measure in transportation projects. The methodology includes a case-oriented research design, comprehensive analysis of USDOT's activity, and qualitative and quantitative evaluations, revealing a surge in refinancing, particularly in the third quarter of 2021, with TIFIA loans refinanced at an interest rate of 1.83%.

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CHAPTER 1

Introduction

Background

The onset of the Covid-19 pandemic laid bare the fragility of many transportation infrastructure projects. In the United States alone, several public-private partnership (P3) projects were delayed, put on hold, or cancelled altogether because of the pandemic while many others remain at risk (Baxter & Casady, 2020). Significant declines in transportation-related revenues have also left state and local governments fiscally constrained (American Association of State Highway and Transportation Officials, 2020; Casady & Baxter, 2020).

As a result, the U.S. Department of Transportation (USDOT) received growing "interest from existing borrowers to refinance their loans to help mitigate pandemic-related revenue loss and to take advantage of low interest rates" (U.S. Department of Transportation, 2021f). This led to a flurry of refinancing activity between 2020 and 2022 at the Build America Bureau—the U.S. federal government's single point of coordination for state and local governments, transit agencies, railroad companies, special authorities, special districts, joint ventures, public-private partnerships, and private entities looking to secure transportation infrastructure financing (U.S. Department of Transportation, 2021c, 2021a, 2021e, 2021d, 2021b, 2021f).

Refinancing involves issuing a new bond or loan at a lower interest rate to replace an outstanding bond or loan. The proceeds are typically invested in an escrow portfolio of Treasury securities whose cash flows pay off the outstanding issue until the call date (Kalotay & Raineri, 2016). This effectively results in immediate cashflow savings (Kalotay, 2013). For example, refinancing of a TIFIA loan from USDOT to the Central Texas Regional Mobility Authority in March 2021 will save the Authority more than $80 million in interest (U.S. Department of Transportation, 2021c). Unlike typical refinancings, however, TIFIA required borrowers to repay any proceeds already drawn from a loan before initiating the refinancing, imposing some short-term cashflow expense on the refinancing borrower but leaving intact the longer term cashflow savings.

Objectives

From an asset management perspective, this study is interested in studying the Build America Bureau's use of refinancing as a means of addressing pandemic-related budgetary problems in transportation projects. Using an exploratory, case-oriented approach, the proposed research specifically pursues the following objectives:

1) Documenting the extent of pandemic-related, refinancing activity undertaken by the USDOT's Build America Bureau (i.e., number of loans affected and estimated savings)

2) Comparing the motivations for and effects of these refinancings across different project cases from both the borrower's and lender's perspective

3) Developing theoretical as well as practical recommendations about use of refinancing as a fiscal stimulus measure in transportation projects

CHAPTER 2

Methodology

Introduction

Based on the outlined objectives, this research has used an exploratory, case-oriented research design. Case analysis was chosen because this research addresses descriptive questions about refinancing activity in response to the Covid-19 pandemic and attempts to offer an intensive, overall explanation of this activity where the purpose is discovery rather than proving causality (Yin, 2009) .

Additionally, cases are "particularly useful for evaluating programs when programs are unique, when an established program is implemented in a new setting, when a unique outcome warrants further investigation, or when a program occurs in an unpredictable environment" (Balbach, 1999) .

In this light, this research offers: 1) a comprehensive overview of the USDOT's refinancing activity in the response to the Covid-19 pandemic, and 2) an in-depth evaluation of the motivations and outcomes of this concerted stimulus effort. The research team first reviewed existing transportation projects that have engaged in refinancing activity through federally administered loan programs and then further examined the selected cases through interviews with key stakeholders in each project and a qualitative and quantitative comparative analysis. By using a theory-building, case-based approach, this research has documented the underlying motivations for pursuing refinancing as well as the effects of this activity, including but not limited to how the savings are being used by borrowers. In doing so, the research team have also attempted to develop theoretical constructs, propositions, and/or midrange theory from the case based, empirical evidence (Eisenhardt & Graebner, 2007).

Build America Bureau

Established in 2016 under the Obama administration, the Build America Bureau (BAB) emerged as a crucial sub-agency within the United States Department of Transportation. This initiative was conceived as part of a broader government-wide endeavor aimed at bolstering infrastructure investment and fostering economic growth. At its core, BAB was designed to actively engage private sector investors, fostering collaboration, and broadening the landscape for P3s through initiatives such as Transportation Infrastructure Finance and Innovation program.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

TIFIA is intended to serve as a strategic financial initiative designed to extend the impact of limited Federal resources and encourage significant capital market investment in transportation infrastructure. Since its inception in 1998, TIFIA has provided credit assistance through direct loans, loan guarantees, and standby lines of credit. The program prioritizes projects of national or regional significance, with the aim of enhancing and strengthening key transportation networks across the United States.

The operational framework of TIFIA includes the enforcement of several critical requirements to ensure the program's efficacy. These encompass the determination of minimum anticipated project costs based on project type, defining credit assistance limits, mandating the attainment of an investment-grade rating from recognized credit agencies, and requiring a dedicated repayment source for both TIFIA and senior debt financing. There is also the requirement of compliance with applicable Federal requirements, spanning Civil Rights, NEPA, Uniform Relocation, Buy America, and Titles 23, and 49 (U.S. Department of Transportation, 2023).

The TIFIA application process operates on a rolling basis, offering flexibility for project submissions. Eligible participants include State Governments, Transportation Improvement Districts, and other entities. The process begins with the submission of detailed letters of interest once a project meets statutory eligibility requirements. After an invitation from the TIFIA Joint Program Office, eligible entities must submit a formal application, which is a crucial step in seeking TIFIA assistance. TIFIA's scope covers a wide range of projects, including highways and bridges, intelligent transportation systems, intermodal connectors, transit facilities, intercity buses and facilities, freight transfer facilities, pedestrian and bicycle infrastructure networks, transit-oriented development, rural infrastructure projects, passenger rail vehicles and facilities, surface transportation elements of port projects, and airports.

To qualify for TIFIA assistance, projects are held to stringent eligibility requirements, ranging from demonstrating creditworthiness and obtaining investment-grade ratings on senior debt to fostering partnerships for public and private investment. A crucial criterion involves showcasing the capability to proceed promptly or at reduced lifecycle costs. Importantly, the reduction of the contribution of Federal grant assistance for the project is deemed essential, and the construction contracting process must commence within 90 days of executing a TIFIA credit instrument. BAB emphasizes that TIFIA's commitment to supporting projects that not only meet high standards but also contribute significantly to the nation's transportation infrastructure is ensured through this comprehensive eligibility framework.

Numerous modifications have been implemented within the program, notably through legislative actions such as the Moving Ahead for Progress in the 21st Century (MAP-21) in 2012, the Fixing America's Surface Transportation (FAST) Act in 2015, and most recently Infrastructure Investment and Jobs Act (IIJA) in 2021.

In 2012, MAP-21 brought about substantial expansions to TIFIA, significantly augmenting the program's credit authority by nearly tenfold for fiscal years (FY) 2013 and 2014. This extension continued into FY 2015. Additionally, MAP-21 introduced the concept of "master credit agreements" and instituted a procedural shift to a "first-come, first-served" application process, departing from the previous annual competition model.

Following MAP-21, the 2015 FAST Act marked a notable reduction, slashing the program's credit authority by over 70% for fiscal years 2016 through 2020. This reduction was likely a response to the program's underutilization of the expanded credit authority granted by MAP-21(U. S. Government Accountability Office, 2021). Despite the reduction in direct funding for the TIFIA program under the FAST Act, DOT has not been restricted in providing credit assistance. TIFIA program funds remain available for use until fully disbursed, with unused money carrying over from year to year.

As of the end of FY2018, DOT reported $1.65 billion in unobligated budget authority for TIFIA. This surplus has continued even after the MAP-21 claw back provision reduced TIFIA's budget authority by $640 million—a provision that was later repealed by the FAST Act, likely due to the overall reduction in TIFIA program authorization (Mallett, 2019).

Most notably the FAST Act made a critical clarification regarding the utilization of TIFIA credit assistance for refinancing existing project obligations. According to this clarification, TIFIA credit assistance can only be employed for refinancing if the maturity of the existing obligations does not extend beyond one year after the substantial completion of the project. This adds an additional condition to the existing requirement that any refinancing must occur within one year after substantial completion of the project (U.S. Department of Transportation, 2023).

The FAST Act also introduced a suite of additional policy adjustments, offering clarity on the authority for "master credit agreements," modifying requirements for the redistribution of unobligated funding, expanding support eligibility to include transit-oriented development (TOD), and prioritizing small and rural projects (Lee & Gifford, 2021).

The recently enacted IIJA brought forth significant enhancements to TIFIA loans, ushering in a series of updates to the federal program. Among the key changes introduced by the IIJA, the Act extends the period for contingent commitments under a TIFIA master credit agreement from three years to five, providing a more extended timeframe for project development. Additionally, the threshold requiring more than one credit rating for an eligible project's Federal credit instrument is raised from $75 million to $150 million, streamlining the rating process for projects within the specified range. The potential maturity of a TIFIA loan for a capital asset with an estimated useful life of more than 50 years is extended to the lesser of 75 years after substantial completion or 75% of the asset's estimated usable life. IIJA also further expanded the scope of eligible projects to include Transit-Oriented Transportation Projects, Airport-related projects, and those acquiring plant and wildlife habitats in accordance with an approved environmental mitigation plan. Importantly, the IIJA mandated that projects utilizing the TIFIA program must demonstrate appropriate payment and performance security, irrespective of the obligor's nature. A streamlined application process has also been introduced for projects with a reasonable expectation that the contracting process can commence within 90 days after a federal credit instrument is obligated (Marin et al., 2021).

Subsidy Cost

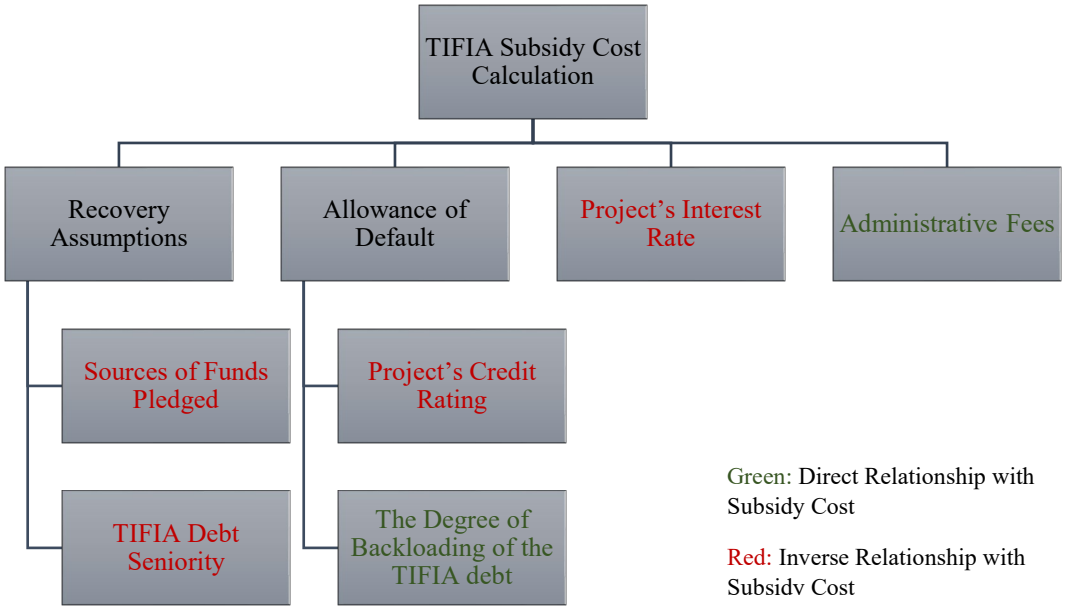

FIGURE 1 - FACTORS AFFECTING TIFIA SUBSIDY COST CALCULATION

(CREATED BY THE AUTHORS USING INFORMATION FROM WHITE & SALE (2009))

The subsidy cost of a TIFIA direct loan is determined by analyzing project cash flows, credit ratings, and repayment sources to estimate default and recovery rates. Historical data from Standard & Poors, including its Capital Adequacy Model, informs these estimates. The Office of Management and Budget (OMB) Credit Subsidy Calculator then computes the subsidy cost as a percentage of the loan amount. According to the Federal Credit Reform Act of 1990 and OMB guidelines, several factors influence the subsidy cost, such as recovery assumptions, default allowances, the borrower's interest rate, and fees. The primary determinants are recovery assumptions and default allowances. However, a higher project interest rate will also slightly reduce the subsidy cost (White & Sale, 2009). Therefore, theoretically, refinancing a TIFIA loan at a lower interest rate—while keeping everything else constant—should increase the subsidy cost. However, the research team was unable to determine the precise extent of the subsidy cost changes resulting from the refinancings during the pandemic.

Recovery assumptions are influenced by the repayment source—state appropriations generally lower the subsidy cost compared to new toll revenue—and whether the TIFIA loan is senior or subordinate. Senior loans typically have lower subsidy costs than subordinate ones. Finally, in terms of default allowances, the project's credit rating and debt structure play significant roles. A higher credit rating reduces default risk and the subsidy cost (White & Sale, 2009).

Evaluations of the TIFIA Credit Program

While evaluations of the Bureau's impact on national infrastructure efforts are limited due to its relatively recent establishment, the TIFIA program has facilitated easier evaluation over a longer timeframe. These evaluations utilize diverse methodologies, including qualitative interviews, descriptive analyses, and evaluative assessments, to assess program effectiveness and adherence to standards.

An examination of the outcome evaluations for the Build America Bureau's credit programs reveals a propensity for risk aversion in the Bureau's credit allocation decisions. Specifically, the TIFIA program has directed a substantial share of its credit support toward projects with an A- rating (Lee & Gifford, 2021).

Another prominent concern lies in the Bureau's conservative methodology for calculating the program's subsidy cost, potentially constraining its lending capacity (Mallett, 2019). While careful risk assessment is commendable, employing a more flexible calculation method could broaden lending opportunities without compromising the program's financial stability.

Finally, the absence of thorough performance evaluation stands out as a concern within the Bureau's internal and external procedures (DOT OIG, 2022; U. S. Government Accountability Office, 2021). The Bureau has a consolidated process for application evaluation, but the lack of an implementation plan and performance indicators poses a risk to sustaining progress and prioritizing efforts effectively.

Furthermore, there is a need for DOT to enhance program performance assessment, prompting the Secretary of Transportation to refine and delineate performance measures for monitoring and evaluating progress towards achieving the program's goals and objectives (DOT OIG, 2022).

Legal Framework for TIFIA Refinancing

The TIFIA statute, codified within Sections 601 through 609 of Title 23 of the United States Code (U.S.C.) and 49 Code of Federal Regulations Part 80, governs transportation infrastructure financing. Specifically, Title 23, United States Code Section 603, amended by the Fixing America's Surface Transportation Act of 2015, authorizes the Secretary to establish agreements for secured loans, including refinancing. This provision grants the Secretary authority to offer loans for interim construction financing, existing federal credit instruments for rural infrastructure projects, and increasing funding capacity for project completion, enhancement, or expansion (Section 603(a) (1,2,3)) (Moving Ahead for Progress in the 21st Century Act, 2012).

However, TIFIA refinancing is subject to limitations, particularly concerning interim construction financing. Additionally, before entering into any agreement, a risk assessment must be conducted, considering factors such as capital reserve subsidy amounts and rating letters provided by relevant agencies (U.S. Department of Transportation, 2023).

Case Studies and Interviews

The project team conducted 20 case studies to scrutinize the underlying motivations behind refinancings and document its outcomes. The selection of these 20 instances primarily relied on chronological criteria, focusing on cases that occurred during and after the COVID-19 pandemic. Identification of instances where refinancings took place was accomplished through a comprehensive review of the USDOT and Build America Bureau's websites. Additionally, the research team cross-referenced refinancing data by examining the TIFIA Credit Assistance Letters of Interest and Applications for Fiscal Years 2020, 2021, and 2022 report and the Electronic Municipal Market Access (EMMA) pages of the identified projects, where available. Additionally, the research team conducted seven interviews with subject matter experts from diverse backgrounds, including project owners, sponsors, and financial advisors. These experts validated the accuracy of the project data pertinent to their involvement and offered further insights into the refinancing process. Collectively, these interviews yielded invaluable perspectives and were meticulously analyzed, enabling the authors to interpret the database with greater nuance and formulate more impactful recommendations.

CHAPTER 3

Findings

Introduction

The research team conducted seven interviews, three case studies and developed a refinancing database for 20 American transportation projects using the methodology detailed in the previous chapter. This chapter presents the results of the most significant findings from the database and the case studies.

Database Findings

The in-depth analysis of the refinancing database reveals a significant increase in refinancing activities from 2020 to 2022, particularly concentrated in the third quarter of 2021. Notably, during this timeframe, federal borrowing rates plummeted to as low as 1.83% (Treasury Direct, 2021).

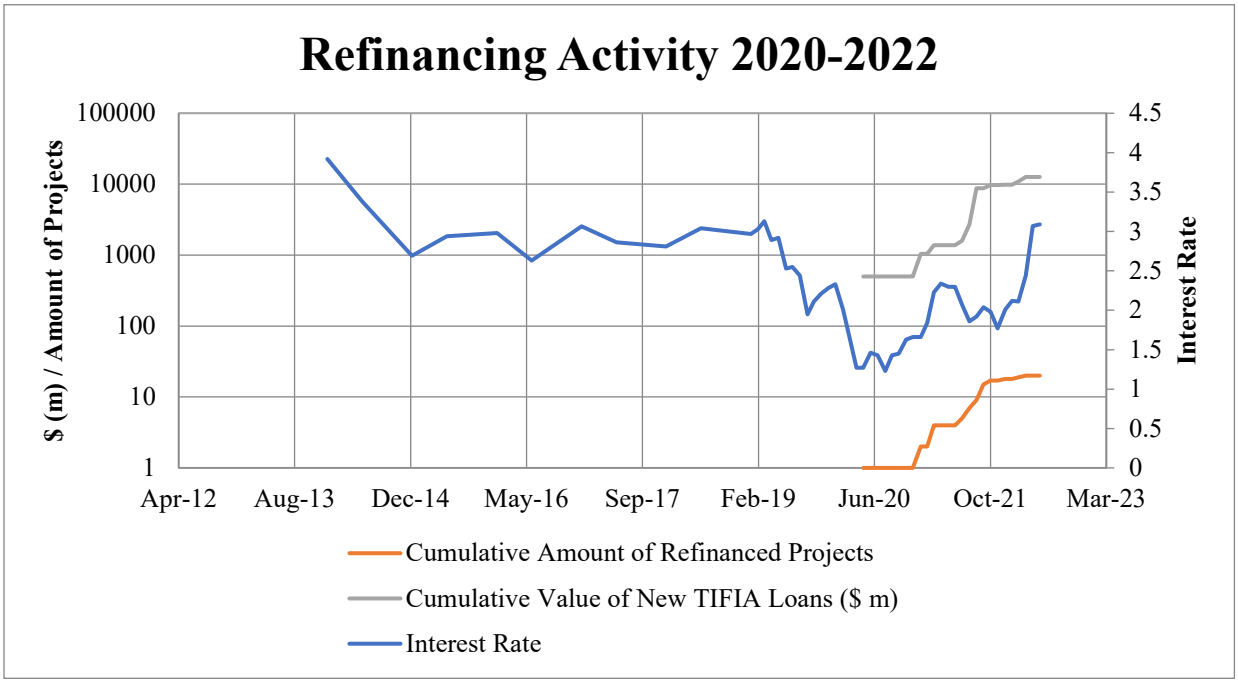

FIGURE 2 - REFINANCING ACTIVITY BETWEEN 2020 AND 2022

However, this might not be the only reason behind the increased refinancing activity during this period. A closer inspection of the dataset reveals that all projects which had their TIFIA loans refinanced, starting with the Gerold Desmond Bridge project in 2021 and ending with the Purple Line Project in 2022, were in the construction stage when their project sponsor sent out the letter of interest to the Build America Bureau. Being in the construction phase not only affects refinancing attractiveness but also increases a project's eligibility. It is easier to argue that savings from refinancing will enhance funding capacity for project completion, enhancement, or expansion, thereby fulfilling the statutory requirements set forth by Title 23 of the United States Code Section 603 (Moving Ahead for Progress in the 21st Century Act, 2012). TIFIA might have aimed to maximize the stimulative impact of its refinancing activities, and refinancing ongoing projects could better stimulate new construction and create additional jobs. However, with ongoing supply chain issues, this may not have been a primary policy priority, potentially influencing the focus and timing of refinancing decisions.

Project Name	Stage of project	LOI Received by the Bureau
Central 70 Project	Construction	10/26/2020
Hampton Roads Regional Priority Projects	Construction	4/9/2020
I-405 Improvement Project	Construction	8/31/2020
Grand Parkway Segments H & I	Construction	4/16/2021
Complete 540 Phase 1	Construction	10/22/2020
I-10 Corridor Express Lanes	Construction	11/4/2020
Mid-Coast Corridor Transit Project	Construction	9/4/2020
Parallel Thimble Shoal Tunnel project	Construction	2/3/2021
BelRed Street Network	Construction	2/3/2021
Capital Beltway Express Lanes	Construction	1/30/2020
Purple Line Project	Construction	5/4/2021
Gerald Desmond Bridge	Construction	4/10/2019
CTRMA 183-S	Construction	2/27/2020
CTRMA 290E Phase III	Construction	2/27/2020
Northgate Link Extension	Construction	11/6/2020
East Link Extension	Construction	11/6/2020
Lynnwood Link Extension	Construction	11/6/2020
Sound Transit Operations and Maintenance Facility East	Construction	11/6/2020
Federal Way Link Extension	Construction	11/6/2020
Moynihan Hall Project	Construction	2/19/2021

TABLE 1 - LOI DATES OF IDENTIFIED PROJECTS

Figure 2 outlines the cumulative value of refinanced TIFIA loans ($ m) between 2020 and 2022. In total Build America Bureau refinanced $12.641 billion dollars' worth TIFIA loans during this period. In 2022 the DOT stated that it has closed more than $36.8 billion in TIFIA financings (U.S. Department of Transportation, 2022) meaning that almost 34 percent of TIFIA loans were refinanced during this period, which is a quite significant number.

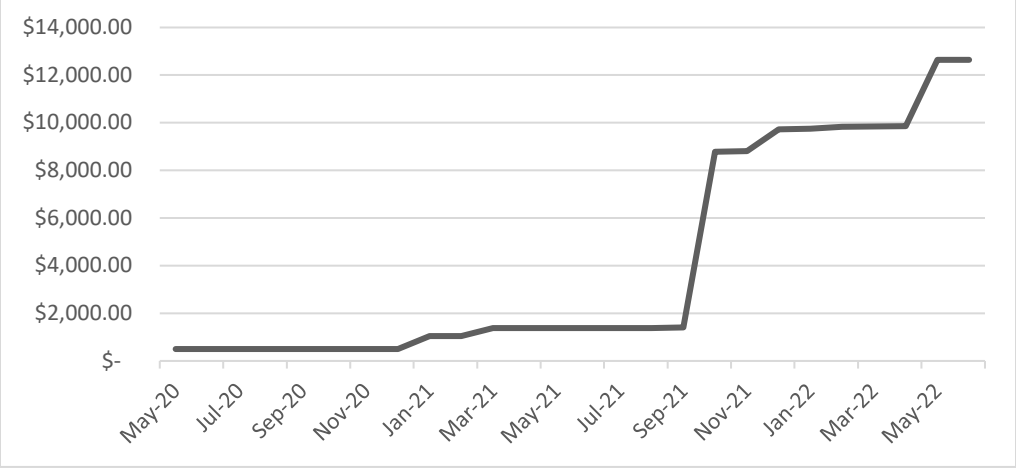

FIGURE 3 - CUMULATIVE DOLLAR VALUE OF REFINANCED TIFIA LOANS IN MILLIONS

Additional Funding Capacity Used for	Frequency	Project Name
Completion of the project	12/20	Central 70 Project, I-405 Improvement Project, Northgate Link Extension, East Link Extension, Lynnwood Link Extension, Sound Transit Operations and Maintenance Facility East, Federal Way Link Extension, I-10 Corridor Express Lanes, BelRed Street Network, CTRMA 183-S, CTRMA 290E Phase III, Moynihan Train Hall
Enhancement of the project	2/20	Gerald Desmond Bridge & BelRed Street Network
Expansion of the project	11/20	Northgate Link Extension, East Link Extension, Lynnwood Link Extension, Sound Transit Operations and Maintenance Facility East, Federal Way Link Extension, Complete 540 Phase 1, Mid-Coast Corridor Transit Project, Capital Beltway Express Lanes, CTRMA 183-S, CTRMA 290E Phase III, Hampton Roads Regional Priority Projects
Mitigation of Decreased Revenues	2/20	I-10 Corridor Express Lanes & Parallel Thimble Shoal Tunnel project
No savings	1/20	Purple Line Project
Unstated	1/20	Grand Parkway Segments H & I

TABLE 2 - FREQUENCY OF ADDITIONAL FUNDING CAPACITY UTILIZATION FROM TIFIA REFINANCINGS

Table 2 offers a comprehensive overview of the savings derived from TIFIA refinancing and sheds light on the diverse array of projects benefiting from the additional funding capacity. The primary focus of these projects aligns with the objectives outlined in Title 23, United States Code Section 603. Notably, a majority of the projects, comprising 12 out of 20, prioritize the completion of infrastructure developments. Examples include the Central 70 Project, I-405 Improvement Project, and Northgate Link Extension, where the funding bolsters efforts to finalize these initiatives. Conversely, enhancing existing projects is less prevalent, observed in only 2 out of 20 cases.

Moreover, expansion endeavors are evident in 11 out of 20 projects, exemplified by transit line extensions like the Northgate Link Extension and East Link Extension. Additionally, two projects utilize funding to mitigate decreased revenues resulting from the pandemic, namely the I-10 Corridor Express Lanes and the Parallel Thimble Shoal Tunnel project. However, the Purple Line Project fails to yield any savings, while the research team could not identify the information regarding the purposes of additional funding for Grand Parkway Segments H & I.

Project Name	State	Project Type	Delivery Model	Original Loan ($ m)	Original Loan Rate (%)	Original Loan Date	New Loan (millions)	New Loan Rate (%)	Refinance Date
Gerald Desmond Bridge Replacement	California	Highway Bridge	Design-Build	$325.00	3.42%	2014	$500.00	1.26%	May-20
Mid-Coast Corridor Transit Project	California	Light Rail Transit	Construction Manager/General Contractor (CM/GC)	$537.50	2.72%	2017	$537.50	1.75%	Jan-21
US 183 South	Texas	Highway / Express Toll Lanes	Design-Build	$282.20	3.08%	2015	$302.98	2.19%	Mar-21
Manor Expwy (290E) Phase III	Texas	Toll Highway	Design-Bid-Build	$46.94	2.96%	2019	$38.69	2.20%	Mar-21
I-10 Corridor Express Lanes (Contract 1)	California	Highway / Express Lanes	DBFOM - P3	$225.00	2.93%	2019	$225.00	2.17%	Jul-21
Grand Parkway Segments H & I	Texas	Toll Highway	Design-build with maintenance contract	$605.33	3.03%	2018	$605.33	1.88%	Aug-21
Complete 540 Phase 1	North Carolina	Toll Highway	Design-Build	$501.50	2.27%	2020	$499.50	1.83%	Aug-21
Central 70 Project	Colorado	Highway / Express Lanes	DBFOM - P3	$416.00	2.77%	2017	$464.96	1.93%	Sep-21
Hampton Roads Regional Priority Projects	Virginia	Highway	Design-Build	$501.00	2.25%	2019	$1,660.00	1.86%	Sep-21
I-405 Improvement Project	California	Highway / Express Lanes	Design-build	$628.93	2.91%	2017	$628.93	1.95%	Sep-21

Northgate Link Extension	Washington	Light Rail Transit	Design-build (tunnels), Design-bid-build (stations)	$615.27	3.13%	2016	$615.27	1.91%	Sep-21
East Link Extension	Washington	Light Rail Transit / Managed Lanes	Construction Manager/General Contractor (CM/GC) & Design-build	$1,330.00	2.38%	2015	$1,330.00	1.91%	Sep-21
Lynnwood Link Extension	Washington	Light Rail Transit	Multiple Contract Delivery methods	$657.86	3.06%	2018	$657.86	1.91%	Sep-21
Sound Transit Operations and Maintenance Facility East	Washington	Light Rail Transit	Design-build	$87.66	2.73%	2017	$87.66	1.91%	Sep-21
Federal Way Link Extension	Washington	Light Rail Transit	Design-build	$629.47	2.36%	2019	$629.47	1.91%	Sep-21
Parallel Thimble Shoal Tunnel	Virginia	Tunnel	Design-build	$338.60	2.88%	2016	$338.60	2.01%	Nov-21
Moynihan Train Hall	New York	Intermodal - Transit/Multimodal Development	99-year lease to a private developer who is constructing the facility through a design-build contract	$526.50	Unstated	2017	$606.70	Unstated	Nov-21
BelRed Street Network	Washington	Local Road	Design-bid-build	$99.60	2.86%	2017	$99.60	1.86%	Jan-22
Capital Beltway Express Lanes Northern Extension	Virginia	High Occupancy Toll (HOT) Road	DBFOM - P3	$589.00	4.45%	2007	$1,053.00	2.28%	Mar-22
Purple Line Project	Maryland	Light Rail Transit	DBFOM - P3	$874.60	2.41%	2016	$1,760.23	2.79%	Apr-22

TABLE 3 - DATABASE OF PROJECTS WITH TIFIA REFINANCING BETWEEN 2020 & 2022

Case Study: Hampton Roads Regional Priority Projects

Background

The Hampton Roads Regional Priority Projects encompass a series of roadway and bridge initiatives centered around the I-64 corridor in the Hampton Roads, Virginia region. These projects, spanning sections of I-64, the I-64/I-264 Interchange, and the I-64/High-Rise Bridge, are designed to mitigate traffic congestion, foster economic development, and enhance safety throughout the area.

Initiated by the Hampton Roads Transportation Accountability Commission (HRTAC), these projects prioritize the addition of travel and shoulder lanes, the reconstruction of existing roadways, and the construction of new collector-distributor roadways and a flyover ramp. These enhancements aim to bolster capacity with general purpose and HOV lanes while addressing long-term safety concerns along the corridor by modernizing sections of the interstate and enhancing vehicular service. Additionally, the projects entail the repair of 19 bridges, the replacement of two others, and the construction of one new bridge.

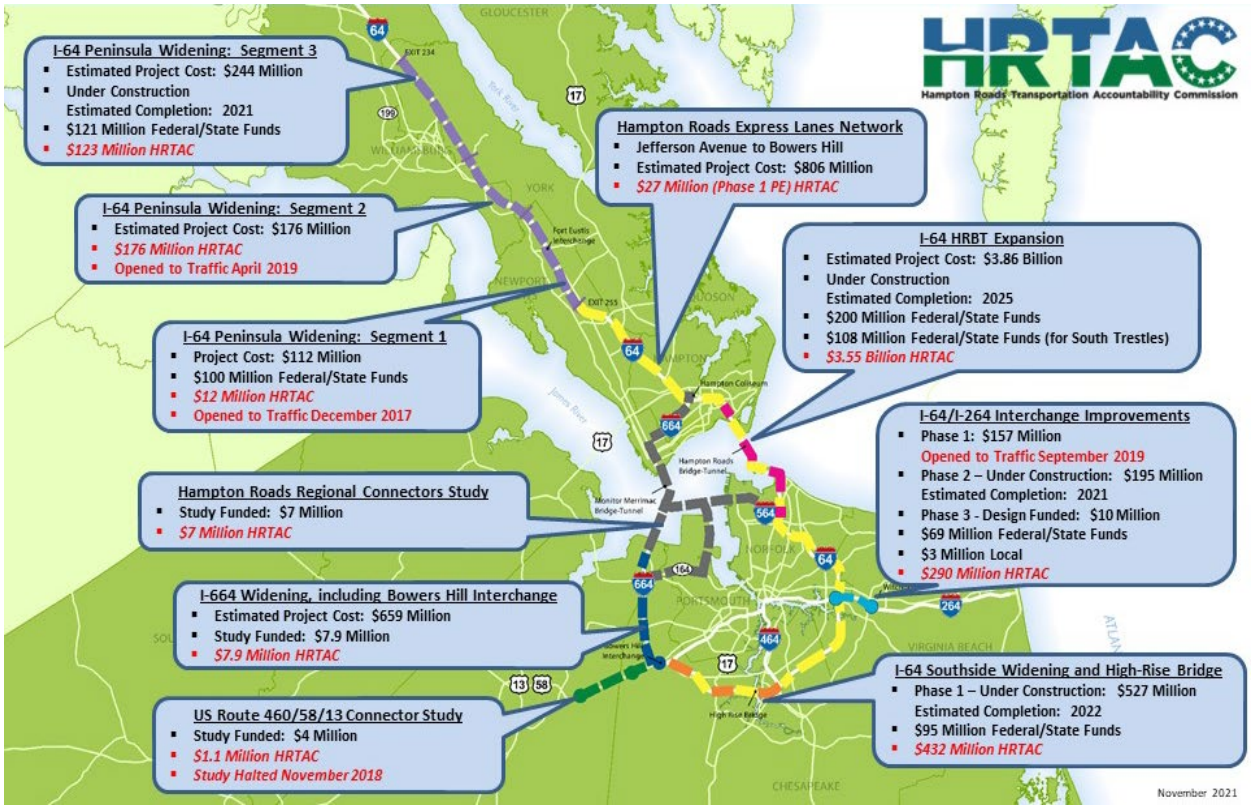

FIGURE 4 - MAP OF HAMPTON ROADS REGIONAL PRIORITY PROJECTS (SOURCE: HRTAC.ORG)

HRTAC collaborates closely with the Hampton Roads Transportation Planning Organization (HRTPO) to establish funding priorities based on regional consensus forged by HRTPO. Under the oversight of the Virginia Department of Transportation (VDOT) on behalf of HRTAC, the following projects are currently in various stages of development or construction: I-64 Peninsula Widening - Segments I & III, Hampton Roads Bridge Tunnel Widening, I-64/I-264 Interchange Improvements - Phase I, II, III, I-64 Southside and High-Rise Bridge Widening, Bowers Hill Interchange, Hampton Roads Crossing Study and Hampton Roads Bridge Tunnel Expansion (U.S. Department of Transportation, 2021a).

Funding Source	Amount ($ m)
Senior Debt	583
Federal Funds	168
State/Local	222
TIFIA loan	501
PayGo	118

TABLE 4 - ORIGINAL FUNDING STRUCTURE OF HAMPTON ROADS REGIONAL PRIORITY PROJECTS

As shown in Table 4, the projects were financed through various sources, including federal funds, user fees, and a TIFIA loan.

Refinancing Data

The Hampton Roads Bridge Tunnel Project project's original $501 million Direct TIFIA loan has been replaced by two new TIFIA loans at 1.86% interest rate compared to the 2.25% original interest rate. The replacement of the current HRTAC loan is expected to result in savings of about $50 million for HRTAC throughout the loan's duration. These savings will be used to implement additional improvements and upgrades in the HRTAC network.

Project Name	Hampton Roads Bridge Tunnel Project
State	Virginia
Project Type	Bridge
Delivery Model	Design-Build
Original Loan ($ m)	$501.00
Original Loan Rate (%)	2.25%
Original Loan Date	2019
New Loan (millions)	$1,660.00
New Loan Rate (%)	1.86%
Refinance Date	Sep-21
Savings (m)	$50
Amount of Loan drawn upon	$0
Stage of project	Construction

TABLE 5 - REFINANCING DATA OF HAMPTON ROADS PRIORITY REGIONAL PRIORITY PROJECTS

Discussion

The Hampton Roads Regional Priority Projects exemplify how potential capital programs can significantly impact the refinancing of TIFIA loans. By bundling a series of roadway and bridge projects along the I-64 corridor, this project presented a compelling case for using refinancing savings to expand the original scope.

Project Name	Original Loan ($ m)	New Loan ($ m)	New Loan / Original Loan
Hampton Roads Regional Priority Projects	$501.00	$1,660.00	3.31
Purple Line Project*	$874.60	$1,760.23	2.01
Capital Beltway Express Lanes Northern Extension	$589.00	$1,053.00	1.79
Gerald Desmond Bridge Replacement	$325.00	$500.00	1.54
Moynihan Train Hall	$526.50	$606.70	1.15
Central 70 Project	$416.00	$464.96	1.12
US 183 South	$282.20	$302.98	1.07
Mid-Coast Corridor Transit Project	$537.50	$537.50	1.00
I-10 Corridor Express Lanes (Contract 1)	$225.00	$225.00	1.00
Grand Parkway Segments H & I	$605.33	$605.33	1.00
Complete 540 Phase 1	$501.50	$499.50	1.00
I-405 Improvement Project	$628.93	$628.93	1.00
Northgate Link Extension	$615.27	$615.27	1.00
East Link Extension	$1,330.00	$1,330.00	1.00
Lynnwood Link Extension	$657.86	$657.86	1.00
Sound Transit Operations and Maintenance Facility East	$87.66	$87.66	1.00
Federal Way Link Extension	$629.47	$629.47	1.00
Parallel Thimble Shoal Tunnel	$338.60	$338.60	1.00
BelRed Street Network	$99.60	$99.60	1.00
Manor Expwy (290E) Phase III	$46.94	$38.69	0.82

TABLE 6 - RATIO OF NEW / ORIGINAL TIFIA LOANS (SOURCE: U.S. DEPARTMENT OF TRANSPORTATION, 2023)
*DID NOT RESULT IN ANY SAVINGS

As a result, this study reveals that the Hampton Roads Regional Priority Projects successfully secured a new TIFIA loan that was 3.3 times larger than the original loan, marking it as the most substantial increase among refinancing activities during the COVID-19 pandemic. Additional details on the ratios between new and original TIFIA loans for these projects are provided in Table 3.

Case Study: Sound Transit Projects

Background

Sound Transit, the regional transit authority serving the Puget Sound region in Washington State, has undertaken several transformative projects to enhance public transportation infrastructure and connectivity in the area. Among these, the Northgate Link Extension, East Link Extension, Lynnwood Link Extension, Sound Transit Operations and Maintenance Facility East, and Federal Way Link Extension stand out as key initiatives aimed at improving mobility, accessibility, and sustainability across the region (U.S. Department of Transportation, 2021g).

The Northgate Link Extension is a critical component of Sound Transit's expansion efforts, extending the light rail system from downtown Seattle to Northgate Mall in North Seattle. This 4.3-mile extension includes two new stations and provides a vital link to the University of Washington, Capitol Hill, and downtown Seattle. By expanding light rail service to Northgate, this project aims to alleviate traffic congestion, enhance transit access, and support economic development in the surrounding communities (U.S. Department of Transportation, 2021g).

The East Link Extension is a major transit expansion project that will connect downtown Seattle with the growing Eastside communities of Bellevue and Redmond. Spanning approximately 14 miles, this extension includes 10 new stations and extends light rail service across Lake Washington via a floating bridge. The project promises to improve regional mobility, reduce travel times, and provide commuters with a reliable alternative to driving in congested corridors (U.S. Department of Transportation, 2021g).

The Lynnwood Link Extension aims to extend light rail service from Northgate to Lynnwood, further expanding Sound Transit's reach into Snohomish County. With a length of approximately 8.5 miles, this extension includes four new stations and enhances transit connectivity for residents and commuters in the northern suburbs of Seattle. By providing fast, frequent, and reliable transit service, the project seeks to enhance access to jobs, education, and recreational opportunities across the region (U.S. Department of Transportation, 2021g).

The Sound Transit Operations and Maintenance Facility East serves as a crucial hub for the maintenance and servicing of Sound Transit's expanding light rail fleet. Located in Bellevue, this facility supports the operation of trains along the East Link Extension and provides essential maintenance services to ensure the safety and reliability of the transit system. With state-of-the-art facilities and equipment, the facility plays a key role in supporting Sound Transit's mission of delivering high-quality transit services to the community (U.S. Department of Transportation, 2021g).

The Federal Way Link Extension extends light rail service from Angle Lake Station in SeaTac to Federal Way, serving communities along the South King County corridor. This 7.8-mile extension includes three new stations and provides residents with convenient access to employment centers, educational institutions, and recreational destinations. By expanding transit options in the region, the project aims to improve mobility, reduce greenhouse gas emissions, and support equitable access to transportation for all residents (U.S. Department of Transportation, 2021g).

Collectively, these Sound Transit projects represent a significant investment in the region's transportation infrastructure, aiming to create a more connected, sustainable, and resilient transit network for generations to come.

Discussion

Sound Transit's refinancing demonstrates the effectiveness of this financial strategy, showcasing its ability to unlock funding for future infrastructure projects. With several projects in the construction phase and serving as the sponsor of a transit network poised for further expansion, Sound Transit capitalized on the savings from refinancing to finance a new extension line, the Downtown Redmond Link Extension. While the Build America Bureau identified the Downtown Redmond Link Extension as part of Sound Transit's TIFIA loan refinancing, the loan for this specific project was not refinanced. However, the closure of the loan was made possible by leveraging the savings generated from the refinancing of five other projects (U.S. Department of Transportation, 2021g).

Case Study: Purple Line Project

Background

The Purple Line Project encompasses a 16-mile light rail transit system linking Bethesda in Montgomery County to New Carrollton in Prince George's County, Maryland. Designed to improve regional transportation, it aims to connect diverse communities while addressing traffic congestion issues. Spanning along the Capital Beltway near Washington, D.C., the project corridor intersects with commercial, residential, and institutional developments, reflecting its strategic location within densely populated areas (Maryland Department of Transportation, 2024).

Comprising 21 stations, including major activity centers like Bethesda, Silver Spring, Takoma-Langley Park, College Park, and New Carrollton, the Purple Line intends to offer accessible transit options to residents and commuters. It will provide connections to existing transportation networks, including the Metrorail system, MARC commuter rail lines, and Amtrak's Northeast Corridor line. Facilitated through a P3 agreement between Maryland's Department of Transportation (MDOT), Maryland Transit Administration (MTA), and private entities, the project entails shared responsibilities and risk-sharing arrangements. With the primary goal of reducing travel times and relieving traffic congestion, the Purple Line seeks to eliminate a portion of daily auto trips. While offering an east-west transit alternative, it aims to enhance mobility without overstating its potential impact. Owned and managed by MDOT MTA, the Purple Line involves collaboration with local governments, transit authorities, and other stakeholders to ensure efficient project delivery and operational success (Maryland Department of Transportation, 2024).

Refinancing Data

Project Name	Purple Line Project
State	Maryland
Project Type	Light Rail Transit
Delivery Model	DBFOM - P3
Original Loan ($ m)	$874.60
Original Loan Rate (%)	2.41%
Original Loan Date	2016
New Loan (millions)	$1,760.23
New Loan Rate (%)	2.79%
Refinance Date	Apr-22

TABLE 7 - REFINANCING DATA OF THE PURPLE LINE PROJECT

Discussion

The refinancing of the Purple Line project presents a unique case wherein the interest rate of its new TIFIA loan surpasses that of the original loan. While this may appear counterintuitive initially, a closer examination of the project's legal hurdles sheds light on the rationale behind this decision. Under Title 23, United States Code Section 603, projects are permitted to refinance their TIFIA loans to ensure project completion. Given the challenges encountered by the Purple Line project, stakeholders advocated for refinancing to overcome these obstacles and secure additional funding.

CHAPTER 4

Conclusions

Undoubtedly, the TIFIA program plays a pivotal role in the nation's efforts to enhance its transportation infrastructure. By 2022, a total of 143 TIFIA loan disbursements had been made, including 28 that were issued following the Bureau's establishment in July 2016. As of December 31, 2019, the TIFIA program had supported projects across 22 states, the District of Columbia, and Puerto Rico, providing $33.3 billion in federal credit assistance and underpinning $120 billion in overall project costs (DOT OIG, 2022).

The Covid-19 pandemic exposed critical vulnerabilities in transportation infrastructure projects, causing delays, suspensions, and cancellations of many P3 initiatives throughout the United States. This decline in transportation revenue has placed substantial strain on state and local government finances. Consequently, USDOT saw a notable increase in requests from borrowers looking to refinance their TIFIA loans.

With an objective to understand these refinancing activities better, this research identified 20 TIFIA loans that were refinanced between May 2020 and April 2022, with only 20 out of 70 active loans in 2020 (U.S. Department of Transportation, 2023) taking advantage of the lower interest rate environment during the pandemic mainly due to the requirement from Title 23 of the U.S.C. Sec. 603. Initially, the increased refinancing activity was thought to be a result of pandemic-related interventions, as raised by the Build America Bureau (U.S. Department of Transportation, 2023). However, our analysis revealed that prevailing low-interest rates and potential for capital improvements also played important roles.

Previous literature also suggests that the Bureau's conservative approach to project selection may have led to unallocated budget resources and reduced program effectiveness. While this study did not directly study this issue, it highlighted the need for regulatory flexibility in refinancing regulations to enhance the budget allocation effectiveness of the Bureau's credit assistance programs.

Recommendations

Main recommendation arising from our investigation is a modification to the FAST ACT Sec. 603 to increase the eligibility of projects for refinancing. Our analysis showed that all projects that successfully refinanced their TIFIA loans used the additional capacity for construction completion, enhancement, or expansion. While this utilization is beneficial, allowing operational transportation projects to be eligible for refinancing could provide additional benefits. Therefore, in line with the objectives of filling market gaps and leveraging substantial private co-investment, this limitation on refinancing should be modified to increase the Bureau's flexibility in refinancing TIFIA loans for projects that may not be ready for additional capital improvements.

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Appendix

Refinancing Data

Project Name	Grand Parkway Segments H & I ?
State	Texas
Project Type	Tolled Managed Lanes
Delivery Model	Design-build with maintenance contract
Original Loan ($ m)	$605.33
Original Loan Rate (%)	3.03%
Original Loan Date	2018
New Loan (millions)	$605.33
New Loan Rate (%)	1.88%
Refinance Date	Aug-21
Type of Loan	Direct TIFIA
Replace?	Replace existing loan
Savings (m)	$194
Savings will be used	Unstated
Amount of Loan drawn upon	$0

Project Name	Complete 540 Phase 1
State	North Carolina
Project Type	Tolled Managed Lanes
Delivery Model	Design-Build
Original Loan ($ m)	$502.00
Original Loan Rate (%)	2.27%
Original Loan Date	2020
New Loan (millions)	$499.50
New Loan Rate (%)	1.83%
Refinance Date	Aug-21
Type of Loan	Direct TIFIA
Replace?	Replace existing loan
Savings (m)	Gross debt service savings – $58.7 million, P Savings - $40.7 million.
Savings will be used	to construct a 17.1-mile six-lane extension
Amount of Loan drawn upon	$0

Project Name	I-10 Corridor Express Lanes
State	California
Project Type	Tolled Managed Lanes
Delivery Model	DBFOM - P3
Original Loan ($ m)	$225.00
Original Loan Rate (%)	2.93%
Original Loan Date	2019
New Loan (millions)	$225.00
New Loan Rate (%)	2.17%
Refinance Date	Jul-21
Type of Loan	Direct TIFIA
Replace?	Replace existing loan
Savings (m)	$53 million in nominal dollars and over $30 million in present value
Savings will be used	to partially mitigate reduced agency revenue during the pandemic, as well as aid in accelerating additional planned network express lanes on the I-15 and the remainder of I-10 in San Bernardino County
Amount of Loan drawn upon	0

Project Name	Mid-Coast Corridor Transit Project
State	California
Project Type	Transit
Delivery Model	Construction Manager/General Contractor (CM/GC)
Original Loan ($ m)	$537.50
Original Loan Rate (%)	2.72%
Original Loan Date	2017
New Loan (millions)	$537.50
New Loan Rate (%)	1.75%
Refinance Date	Jan-21
Type of Loan	Direct TIFIA
Replace?	Replace but savings will be put into project
Savings (m)	$123
Savings will be used	to add 10.9 miles of additional double track light rail as well as nine new stations, five park and ride facilities, two upgraded traction power substations, and 36 new light transit vehicles that will be handicap accessible
Amount of Loan drawn upon	0

Project Name	Chesapeake Bay Bridge Parallel Thimble Shoal Tunnel project
State	Virginia
Project Type	Bridge
Delivery Model	Design-build
Original Loan ($ m)	$338.60
Original Loan Rate (%)	2.88%
Original Loan Date	2016
New Loan (millions)	$338.60
New Loan Rate (%)	2.01%
Refinance Date	Nov-21
Type of Loan	Direct TIFIA
Replace?	Replace but savings will be put into project
Savings (m)	$57
Savings will be used	to: 1) mitigate the reduction in toll revenues that occurred as result of the pandemic, and 2) reinstate a capital expenditure program and routine rehabilitation projects that were postponed in response to the downturn in revenues
Amount of Loan drawn upon	$9,547,850

Project Name	BelRed Street Network
State	Washington
Project Type	Streets?
Delivery Model	Design-bid-build
Original Loan ($ m)	$99.60
Original Loan Rate (%)	2.86%
Original Loan Date	2017
New Loan (millions)	$99.60
New Loan Rate (%)	1.86%
Refinance Date	Jan-22
Type of Loan	Direct TIFIA
Replace?	Replace
Savings (m)	$20+ million over the life of the TIFIA loan.The previous interest rate of 2.86 percent was adjusted down to 1.86 perfect for an annual debt service payment of approximately $4.2 million beginning in 2024
Savings will be used	to serve as a catalyst for the redevelopment of the BelRed neighborhood, and help to make it connected, multimodal, pedestrian-friendly, and transit-oriented
Amount of Loan drawn upon	$19,000,000

Project Name	Capital Beltway Express Lanes
State	Virginia
Project Type	Tolled Managed Lanes
Delivery Model	DBFOM - P3
Original Loan ($ m)	$589.00
Original Loan Rate (%)	4.45%
Original Loan Date	2007
New Loan (millions)	$1,050.00
New Loan Rate (%)	2.28%
Refinance Date	Mar-22
Type of Loan	Direct TIFIA
Replace?	Refinance
Savings (m)	Unstated
Savings will be used	for the construction of a northern extension called the 495 NEXT Project
Amount of Loan drawn upon	$589,000,000

Project Name	CTRMA 183-S
State	Texas
Project Type	Tolled Managed Lanes
Delivery Model	Design-Build
Original Loan ($ m)	$282.20
Original Loan Rate (%)	3.08%
Original Loan Date	2015
New Loan (millions)	$302.98
New Loan Rate (%)	2.19%
Refinance Date	Mar-21
Type of Loan	
Replace?	**Refinance**
Savings (m)	**The new loans, at a lower interest rate, will save CTRMA more than $80 million in interest costs, providing relief from the COVID-19 pandemic.**
Savings will be used	**CTRMA is using the money saved as a result of this refinancing to move forward with its capital development including obtaining new financing to begin the 183A Phase III project, a six-lane, 5.3-mile tollway project north of metro Austin, which will extend the existing 183A from Hero Way to SH 29, adding two tolled lanes in each direction.**
Amount of Loan drawn upon	**$282,200,88**

Project Name	CTRMA 290E Phase III
State	Texas
Project Type	Tolled Managed Lanes
Delivery Model	Design-Bid-Build
Original Loan ($ m)	$46.94
Original Loan Rate (%)	2.96%
Original Loan Date	2019
New Loan (millions)	$38.69
New Loan Rate (%)	2.20%
Refinance Date	Mar-21
Type of Loan	
Replace?	Refinance
Savings (m)	The new loans, at a lower interest rate, will save CTRMA more than $80 million in interest costs, providing relief from the COVID-19 pandemic.
Savings will be used	CTRMA is using the money saved as a result of this refinancing to move forward with its capital development including obtaining new financing to begin the 183A Phase III project, a six-lane, 5.3-mile tollway project north of metro Austin, which will extend the existing 183A from Hero Way to SH 29, adding two tolled lanes in each direction.
Amount of Loan drawn upon	$50,000

Project Name	Central 70 Project
State	Colorado
Project Type	Highway / Express Lanes
Delivery Model	DBFOM - P3
Original Loan ($ m)	$416.00
Original Loan Rate (%)	2.77%
Original Loan Date	2017
New Loan (millions)	$464.96
New Loan Rate (%)	1.93%
Refinance Date	September 2021
Type of Loan	Direct TIFIA
Type of Refinancing	Replace Existing Loan
Savings (m)	$50
Amount of Loan drawn upon	$416,000,000

Project Name	Gerald Desmond Bridge
State	California
Project Type	Bridge
Delivery Model	Design-Build
Original Loan ($ m)	$325.00
Original Loan Rate (%)	3.42%
Original Loan Date	2014
New Loan (millions)	$500.00
New Loan Rate (%)	1.26%
Refinance Date	May-20
Type of Loan	Direct TIFIA
Replace?	Replace existing loan
Savings (m)	Unstated
Savings will be used	The USDOT said this $500 million loan will replace a $325 million TIFIA loan which closed in 2014, but remains undrawn. The agency noted that it increased the principal amount of the loan to help the port pay for additional costs arising from the implementation of a more robust and longer-life bridge design.
Amount of Loan drawn upon	$0

Project Name	I-405 Improvement Project
State	California
Project Type	Tolled Managed Lanes
Delivery Model	Design-build
Original Loan ($ m)	$628.93
Original Loan Rate (%)	2.91%
Original Loan Date	2017
New Loan (millions)	$628.93
New Loan Rate (%)	1.95%
Refinance Date	Sep-21
Type of Loan	Direct TIFIA
Replace?	Replace existing loan
Savings (m)	$258
Savings will be used	to help OCTA continue to deliver its capital improvement plan
Amount of Loan drawn upon	$314,244,246