

**State of Rhode Island and Providence Plantations  
Public Finance Management Board  
Debt Affordability Study**



**April 17, 2017**

## Acknowledgments

It is no exaggeration to say that this is the most ambitious and comprehensive Debt Affordability Study ever to be undertaken by a state government.

While it is common for states to issue Debt Affordability Studies from time to time, this Study is different for two reasons:

- This is the first Debt Affordability Study to provide debt targets not only for a state but for, most governmental issuers within a state.
- This is the first Debt Affordability to formally incorporate pension liabilities into affordability targets.

The undertaking of this study has been a collaborative effort involving many smart, public-spirited individuals who believe in the importance of sound public finance.

This study would not have been possible without Governor Gina Raimondo, Speaker Nicholas Mattiello, former Senate President Teresa Paiva-Weed, current Senate President Dominick Ruggerio, House Finance Chair Marvin Abney, and former Senate Finance Chair Dan DaPonte, who saw fit to support the commissioning of this study in the FY 2017 state budget. Senator DaPonte previously sponsored several pieces of legislation aimed at helping Rhode Island policymakers better understand matters of public debt.

The Public Finance Management Board is a volunteer committee tasked with overseeing the preparation of this study. I want to thank Karl Landgraf, Patricia Anderson, Shawn Brown, Michael DiBiase, Doug Jacobs, Robert Mancini, Joe Reddish and Maribeth Williamson for their service to the state.

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Finally, none of the great achievements of the Rhode Island Treasury would be possible without the skill and commitment of our staff. Deputy Treasurer Kelly Rogers, Director of Debt Management Frank Quinn and Chief of Staff Patrick Marr worked diligently to create the best, most comprehensive Debt Affordability Study ever to be produced by a state government.



**Seth Magaziner**  
**General Treasurer**  
**Chairman of the Public Finance Management Board**

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## Executive Summary

### **Introduction**

There are more than 100 entities in Rhode Island with the authority to issue public debt. These issuing entities range from the State itself, to municipalities and school districts, water districts and fire districts, and quasi-public entities that manage important public infrastructure like TF Green airport and the Pell Bridge. Combined, these entities have accumulated approximately \$10.5 billion of debt outstanding in various forms.

Maintaining an ability to borrow, often called “debt capacity,” is critical for state and local governments. Without debt capacity the State may not be able to maintain aging infrastructure and invest in projects that support economic growth. Public capital investments attract private capital investments, which creates jobs and improves the quality of life for residents of the State.

While it is often useful and necessary for public entities to take on debt to spread the cost of large capital projects across multiple budget cycles, the power to issue public debt must be exercised with care. When a public entity issues long-term debt, it binds citizens to make debt service payments for many years in the future, through taxes, fees, tolls or utility rate charges. Sometimes even when public debt is not explicitly backed by taxpayer funds, taxpayers can find themselves liable for the cost of debt when the original revenue stream becomes insufficient to cover the cost of debt service. Therefore, it is important for each issuer of public debt to have a clear sense of how much debt it can prudently issue at any given time.

### **Scope of the Debt Affordability Study**

The Public Finance Management Board (PFMB) was created during the 1986 Session of the General Assembly for the purpose of providing advice and assistance to issuers of tax-exempt debt in the State of Rhode Island. In 2016, at the request of the Office of the General Treasurer, the General Assembly enacted a series of measures to strengthen debt management in Rhode Island, including the requirement that the PFMB produce a debt affordability study every two years to recommend limits of indebtedness to all issuers of public debt in the state.

This study examines the levels of indebtedness of the state, its quasi-public agencies, municipalities and districts, and recommends debt affordability limits for each issuer. The study is premised on the concept that resources, not only needs, should guide debt issuance.

For the purposes of this study, debt affordability is defined as the issuer’s ability to repay all of its obligations based on the strength of its revenue streams and the capacity of the underlying population to afford the cost of borrowing. Maintaining an appropriate level of debt affordability is crucial for ensuring long-term fiscal sustainability and economic competitiveness while investing in projects necessary to deliver essential public services.

Because of the diverse nature of Rhode Island’s population, the PFMB does not recommend a single overall limit for public debt across all issuers. The public debt burden that is affordable for the population of one community might be higher or lower than the affordable level for a community located elsewhere in the State. Instead, this report recommends separate affordability limits for the State, the Quasi-Public agencies and each municipality.

Debt is not the only type of long-term liability that states, municipalities and other public entities incur. Most notably, pension liabilities that have been contractually or statutorily promised to public employees represent long-term liabilities of the entities responsible for debt repayment. In embarking on this study, the PFMB felt that the level of debt that is affordable for a public entity to issue cannot be measured in isolation, but must be viewed in the context of the amount of pension liability that the issuing entity has taken on. Therefore, where possible, this report will utilize affordability targets that include both debt and pension liabilities together.

This is the first time that Rhode Island has integrated pension liabilities into debt affordability targets. While this has not been done in past affordability studies, the PFMB believes that pension liabilities are significant enough that they must be considered together with traditional debt. The ratings agencies have recently begun to adopt methodologies that combine pension and debt into the same affordability measurements, and while no other state has formally adopted a debt affordability target that integrates pension liabilities, several have indicated that they will consider doing so in the future.

The PFMB also considered whether to integrate other post-employment benefits (OPEB), which primarily include retiree health care benefits, into the report's affordability targets. Several challenges to integrating OPEB into affordability targets emerged, including the lack of uniformity in reporting, the difficulty of accurately forecasting OPEB cost inflation, and legal uncertainty around the ease with which states and other public entities can change OPEB policies. As a result, the PFMB is not including OPEB liabilities in the current debt affordability study, but will revisit the feasibility of integrating OPEB when the next study is performed in 2019.

### **Summary of Debt Currently Outstanding**

***State Tax-Supported Debt.*** The first part of the study considers all tax-supported debt of the State. The State of Rhode Island raises revenue from a variety of sources including an income tax, sales tax, revenues from lottery and gambling activities, State-level tax-supported debt includes three different types of issuance:

- (i) Direct debt or general obligation bonds – debt of the State for which the full faith and credit are pledged, usually through a referendum of the electorate
- (ii) Appropriation debt – debt secured by contractual agreements which, while not considered General Obligations of the State, are still subject to annual appropriation by the General Assembly
- (iii) Moral obligation debt – debt secured by a pledge that represents a promise by a government obligor to seek future appropriations for debt service payments, typically in order to make up deficits in a reserve fund should it fall below its required level.

As of June 30, 2016, the State had a total of \$1.87 billion of tax-supported debt outstanding. In addition, as of June 30, 2016, the State had approximately \$2.83 billion of unfunded actuarial accrued liability (UAAL) for its pensions.

***Quasi-Public Agencies.*** The second part of the study evaluates the debt of the State's quasi-public agencies. Quasi-Public agencies are governmental agencies with tax-exempt bonding authority that are managed with a degree of independence from the legislative and executive branches of state government.

Quasi-Public agency debt falls into two general categories: (i) debt secured by revenues of the agency (Direct Borrowers) and (ii) conduit debt which is borrowed on behalf of another underlying entity, be it another government agency, a private corporation or nonprofit organization, in order to help the underlying borrower achieve tax-exempt status or a lower cost of financing (Conduit Issuers)<sup>1</sup>.

The debt issued by the quasi-public agencies is usually in the form of revenue bonds, in which debt service is payable solely from the revenues derived (i) from a dedicated revenue source, (ii) from operating businesses or a facility (iii) under a loan or financing agreement with an underlying conduit borrower.

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<sup>1</sup> This study does not recommend targets for non-profit and private entities that borrow conduit debt through quasi-public agencies, secure the debt with their own revenue sources, and do not have a moral obligation or any other connection with the State, an agency of the State or a municipality. Responsibility for repayment of these debts lie solely with the non-profit and private entities, the taxpayers bear no liability, and it is unlikely that a state or local government would ever assume these liabilities should the underlying borrower be unable to make debt service payments.

**Table I – Quasi-Public Agency Issuers**

Direct Borrower	Type/Purpose of Bonds
Narragansett Bay Commission	Wastewater System Revenue Bonds
Rhode Island Turnpike and Bridge Authority	Toll Revenue Bonds
Tobacco Settlement Financing Corporation	Tobacco Master Settlement Agreement Bonds
Rhode Island Resource Recovery Corporation	Resource Recovery System Revenue Bonds
Conduit Issuer	Type/Purpose of Bonds
Rhode Island Commerce Corporation	GARVEEs, Airport Revenue Bonds, Economic Development, Moral Obligation Bonds
Rhode Island Health and Educational Building Corporation (RIHEBC)	Public School, Higher Education, Other Education, Health Care Revenue Bonds (Includes Pooled Bonds)
Rhode Island Housing and Mortgage Finance Corporation	Single-Family and Multi-Family Housing Revenue Bonds, Moral Obligation Bonds
Rhode Island Infrastructure Bank (RIIB)	Water Pollution Control, Safe Drinking Water, Water, Sewer Revenue Bonds, Energy Efficiency Loans (Includes Pooled Bonds)
Rhode Island Student Loan Authority	Student Loan Revenue Bonds

As of June 30, 2016, Quasi-Public Agencies in the State had a total of almost \$5.0 billion of debt outstanding, excluding debt held by non-profit and private conduit borrowers.

**Municipalities and Special Districts.** The third part of the study considers debt of the municipalities, fire districts, special districts and local authorities of the State. Rhode Island has 39 municipalities, 44 fire districts, and 17 special districts and local authorities that can issue debt. Most of the Rhode Island municipalities and local districts issue general obligation bonds directly and enter into capital leases supported by property tax revenue. Many also borrow through the Rhode Island Health and Educational Building Corporation (“RIHEBC”) Public Schools Revenue Bonds Financing Program, a conduit bond program. In some cases, municipal entities issue revenue bonds secured by the revenues of public utilities like water and sewer systems.

Most municipalities and districts also have pension liabilities, which are accounted for in this study. There are 150 pension plans for municipal employees across Rhode Island, 116 of which are managed centrally by the State through the Municipal Employees Retirement System (MERS), 34 of which are managed independently by municipalities. Regardless of the management structure, the municipalities and district are fully responsible for the liabilities of these plans. In addition, school districts participate in the statewide Employees Retirement System (ERS), in which the State is responsible for 40% of the liability and the school district is responsible for 60% of the liability.

Pension liabilities are calculated through a series of assumptions, and thus can be difficult to estimate with precision. For the purposes of this study, municipal pension liabilities are derived from the financial statements of the municipalities, under rule 68 of the Governmental Accounting Standards Board (GASB) framework.

As of June 30, 2015, municipalities and special districts in the State had a total of \$2.0 billion of debt and \$3.69 billion of pension liabilities outstanding<sup>2</sup>.

<sup>2</sup> At the time of publication of this study, debt and pension information for some special districts, particularly housing authorities, was not immediately available. The figures in this study represent only those districts whose financial information as available to the PFMB at the time of publication.

**Table II – Aggregate Debt and Pension Liabilities Outstanding**

Outstanding Debt (FY2016)	General Obligation	Lease/ Appropriation	Revenue (Public)	Revenue (Private/ Non-Profit)	Total Debt Outstanding
<b>State of Rhode Island</b>	\$1,051,810,000	\$821,164,296	\$ -	\$ -	\$1,872,974,296
<b>Quasi-Public Agencies</b>					
Narragansett Bay Commission			242,820,000		\$242,820,000
Rhode Island Turnpike and Bridge Authority			56,160,000		\$56,160,000
Tobacco Settlement Financing Corporation			604,785,000		\$604,785,000
Rhode Island Resource Recovery Corporation			29,142,861		\$29,142,861
Rhode Island Commerce Corporation					
GARVEEs			230,280,000		\$230,280,000
Airport Revenue Bonds			356,096,991		\$356,096,991
Other			-	92,764,023	\$92,764,023
Rhode Island Health and Educational Building Corp.					
Education			229,255,000	1,498,476,283	\$1,727,731,283
Healthcare			-	698,009,135	\$698,009,135
Rhode Island Housing and Mortgage Finance Corp.			1,211,845,486		\$1,211,845,486
Rhode Island Infrastructure Bank					
Water Pollution Control			522,700,000		\$522,700,000
Safe Drinking Water			264,742,000		\$264,742,000
Rhode Island Student Loan Authority			525,988,000		\$525,988,000
<b>Municipalities and Special Districts (FY 2015)</b>	\$1,322,423,557	\$390,571,530	\$334,271,474	\$ -	\$2,047,266,561
<b>GRAND TOTAL</b>	\$2,374,233,557	\$1,211,735,826	\$4,608,086,812	\$2,289,249,441	\$10,483,305,636

*Note: For this table, RIHEBC Public School Revenue Bonds and RIHEBC Providence Public Building Authority are not included in RIHEBC debt and are included in the General Obligation debt of Municipalities and Special Districts. RIIB Water Pollution Control and Safe Drinking Water debt shown as RIIB debt and not included in Revenue debt of Municipalities and Special Districts. Narragansett Bay Commission debt is shown as NBC debt and not included in Revenue debt of the participating municipalities. Information on the local housing authorities is not readily available at this time and will therefore, not be included in this iteration of the debt affordability study.*

### **PFMB Recommendations and Rationale**

The PFMB considered several factors in developing its debt affordability recommendations. For each issuer, the PFMB considered relevant peer comparisons, Ratings Agency guidance, and legal requirements contained in bond indentures. These affordability limits are purely advisory, and represent what the PFMB feels are prudent levels of indebtedness given the available information.

The PFMB recognizes that it may be appropriate for affordability targets to be temporarily exceeded if increased capital spending is needed to manage emergency situations or revenues are temporarily impaired by economic downturns, but issuers are recommended to endeavor to return to their target ratios in normal economic circumstances.

#### ***State Net Tax Supported Debt and Pension Liability.***

For the State, the PFMB recommends the following Debt and Pension Affordability Ratios. Generally speaking, the PFMB finds the level of State indebtedness to be manageable but recommends somewhat lower debt affordability targets than the State has used previously, reflecting the fact that Rhode Island's state-level debt and pension liabilities are at the high end relative to other states. At the same time, these new targets allow the state room to continue making important capital investments in projects to promote the economic health of the state and the well-being of its citizens.



**Table III – State Debt and Pension Affordability Ratios (PFMB Recommended Targets)**

<b>Ratio</b>	<b>Current Level (FY2017)</b>	<b>Recommended Target</b>
Debt Service on Tax-Supported Debt to General Revenues	6.1%	Not to exceed 7.5% within the next five years and 7.0% thereafter
Net Tax-Supported Debt as Percentage of Personal Income	3.4%	Not to exceed 4.0%
Rapidity of Repayment over 10 Years	76.1%	Amount of debt to be retired over the next ten years targeted at no less than 50%
Net Tax-Supported Debt Service + Pension ARC as a Percentage of General Revenues	13.07%	Not to exceed 16%
Net Tax-Supported Debt + Pension Liability (UAAL) as a Percentage of Personal Income	8.5%	Not to exceed 8% beginning in 2021
Pension ARC and OPEB ARC Funding Level	100%	100%

Based on these recommended debt affordability targets for State net tax-supported debt, the PFMB estimates that the State has available capacity to assume approximately \$221.8 million of new debt in 2019, the first year in which any authorization from a 2018 voter referendum could be issued, and remaining capacity of approximately \$1.25 billion over a ten-year period.

**Quasi-Public Agencies.** Each of the State’s Quasi-Public agencies is unique, with different revenue streams and functions. After considering the unique considerations of each Quasi-Public agency, relevant ratings agency guidance and peer comparisons, the PFMB recommends the following individualized affordability ratios for each agency.

The table on the following page shows the recommended affordability metrics for each quasi-public agency, with green shaded levels indicating the quasi-public agency is within the recommended target and yellow shaded levels indicating current levels are slightly above recommended targets. In no cases is a State Quasi-Public significantly above its recommended affordability level at a current time, though the PFMB notes that several Quasi-Public agencies are currently considering investing large capital projects in the coming years, and will need to carefully evaluate the affordability of those projects should they move forward.

**Table IV – Quasi-Public Agency Affordability Metrics (PFMB Recommended Targets)**

<b>Borrowers</b>	<b>Affordability Metric</b>	<b>Current Level</b>
Narragansett Bay Commission	1.3x debt service coverage for both Commission debt and RIIB loans	Debt Service Coverage 1.4x
Rhode Island Turnpike and Bridge Authority	1.7x debt service coverage	Debt Service Coverage 1.68x
Rhode Island Resource Recovery Corporation	PFMB recommends the Corporation refrain from any issuance of long-term debt until the future of the facility is more certain.	Debt Service Coverage 4.00x
Rhode Island Department of Transportation Grant Anticipation Revenue Bonds (GARVEEs)	4.5x debt service coverage	Debt Service Coverage 4.5x
Rhode Island Airport Corporation	1.5x debt service coverage when including the Coverage Account Ending Balance, and \$100 debt per enplaned passenger	Debt Service Coverage 1.76x
		\$137 per enplaned passenger
Rhode Island Health and Educational Building Corporation – University of Rhode Island	Total Debt to Cash Flow of less than 11.0x as a factor required for Additional Bonds.	7.0x Debt to Cash Flow
Rhode Island Housing and Mortgage Finance Corporation	Target minimum Program Asset to Debt Ratio (PADR) of 1.10x based on Moody’s rating criteria for Aaa rating.	PADR of 1.19x (Single Family) PADR of 1.12x (Multi-Family)
Rhode Island Infrastructure Bank (Clean Water and Drinking Water Programs)	Maintain a minimum of 1.2x debt service coverage and Maintain asset to liabilities ratios at a minimum of 1.3x.	Debt service coverages: 1.3x for Clean Water and 1.5x for Drinking Water Asset to liabilities ratios: 1.5x for Clean Water and 1.6x for Drinking Water.
Rhode Island Student Loan Authority	Target minimum Parity Ratio of 110%	Parity Ratio of 120.97%

Meets recommended target	Current level slightly above recommended target
Exceeds recommended target/Recommended no new debt	

**Municipal/Local Debt and Pension Liability.** Municipal governance in Rhode Island is comprised of a patchwork of overlapping authorities. In addition to the state’s 39 cities and towns, local government includes dozens of regional and local districts, some contained entirely within a municipality and others across multiple municipalities. Some of these governmental entities raise revenue through property taxes, and others through charges such as utility fees.

In determining how to set targets for this complex patchwork of municipal issuers, the PFMB ultimately determined that the most important consideration is the ability of the underlying population of a municipality to afford the aggregate levels of debt their governmental agencies have taken on. Therefore, three of the four recommended affordability targets for debt incorporate the debt of municipalities and overlapping districts into combined ratios.

**Table V – Local Debt and Pension Affordability Ratios (PFMB Recommended Targets)**

<b>Ratio</b>	<b>Ratio Components</b>	<b>Recommended Target</b>
<b>Net Direct Debt to Full Value</b>	<p><i>Net Direct Debt</i> is only the tax-supported debt of a municipality, and does not include the debt of overlapping districts or enterprise debt that is funded by non-tax revenue such as utility charges.</p> <p><i>Full value</i> represents the total assessed value of the municipality, including real property and tangible personal property less exemptions</p>	Less than 3%
<b>Overall Net Debt to Full Value</b>	<p><i>Overall Net Debt</i> is tax-supported debt of a municipality AND tax supported debt of overlapping districts, but does not include enterprise debt that is funded by non-tax revenue such as utility charges.</p> <p><i>Full value</i> represents the total assessed value of the municipality, including real property and tangible personal property less exemptions</p>	Less than 4%
<b>Overall Debt + Net Pension Liability to Full Value</b>	<p><i>Overall Debt</i> includes all debt of a municipality and its overlapping districts, including tax-supported debt and debt supported by other revenues such as utility charges.</p> <p><i>Full value</i> represents the total assessed value of the municipality, including real property and tangible personal property less exemptions</p>	Less than 4.50%
<b>Overall Debt + Net Pension Liability to Personal Income</b>	<p><i>Overall Debt</i> includes all debt of a municipality and its overlapping districts, including tax-supported debt and debt supported by other revenues such as utility charges.</p> <p><i>Personal Income</i> represent the average income of a resident of the municipality as calculated applying the ratio of money income to per capita money income for the county to the city/town's money income and multiplying by population.</p>	Less than 20%

The table below shows the current levels of these affordability ratios for each municipality with green shaded levels indicating the municipality is within the recommended limits, yellow shaded levels indicating current levels are slightly above the recommended limits and red shaded levels indicating the current levels significantly exceed the recommended limits.

**Table VI – Debt and Pension Affordability Ratios for Municipalities**

Obligor Name	Debt Ratios		Debt + Pension Ratios	
	Net Direct Debt to Assessed Value	Overall Net Debt to Assessed Value	Overall Debt + Net Pension Liability to Assessed Value	Overall Debt + Net Pension Liability to Personal Income
Barrington	0.5%	0.5%	2.5%	4.6%
Bristol	1.1%	1.6%	3.0%	6.8%
Burrillville	1.2%	1.3%	3.1%	5.3%
Central Falls	3.7%	3.7%	19.2%	17.3%
Charlestown	0.2%	0.5%	0.6%	3.1%
Coventry	1.3%	1.4%	6.3%	11.5%
Cranston	1.1%	1.1%	6.8%	11.9%
Cumberland	1.4%	1.5%	4.6%	7.7%
East Greenwich	2.3%	2.3%	4.8%	9.8%
East Providence	1.1%	1.1%	4.6%	8.1%
Exeter	0.1%	0.1%	0.1%	0.3%
Foster	0.0%	2.7%	3.6%	N/A
Glocester	0.3%	3.2%	4.0%	6.9%
Hopkinton	0.2%	1.3%	1.6%	3.0%
Jamestown	0.4%	0.4%	1.1%	5.5%
Johnston	1.1%	1.1%	13.0%	19.2%
Lincoln	1.5%	1.6%	6.3%	10.0%
Little Compton	0.6%	0.6%	1.0%	N/A
Middletown	1.0%	1.0%	2.6%	8.0%
Narragansett	0.5%	0.5%	2.0%	8.6%
New Shoreham	1.1%	1.1%	1.5%	N/A
Newport	0.8%	0.8%	4.9%	19.5%
North Kingstown	1.1%	1.1%	3.3%	7.3%
North Providence	0.7%	0.7%	5.1%	6.8%
North Smithfield	2.0%	2.0%	3.7%	7.4%
Pawtucket	1.8%	1.8%	14.9%	20.1%
Portsmouth	0.4%	0.5%	2.7%	7.2%
Providence	4.4%	4.4%	17.8%	30.3%
Richmond	0.4%	1.4%	1.7%	3.2%
Scituate	0.4%	0.4%	0.6%	1.4%
Smithfield	0.5%	0.5%	3.1%	7.1%
South Kingstown	0.3%	0.3%	1.6%	4.2%
Tiverton	1.9%	2.2%	3.3%	7.2%
Warren	1.2%	1.9%	2.8%	5.3%
Warwick	0.5%	0.5%	6.0%	12.0%
West Greenwich	0.7%	1.1%	1.4%	3.4%
West Warwick	1.1%	1.1%	9.7%	16.4%
Westerly	1.4%	1.4%	2.4%	11.0%
Woonsocket	10.0%	10.0%	20.3%	22.3%
	Meets recommended target		Exceeds recommended target slightly	
	Exceeds recommended target significantly			

(Note: above ratios include allocation of Narragansett Bay Commission debt to municipalities in its service area.)

## **Analysis and Conclusions**

This study represents the most comprehensive analysis of public debt in Rhode Island the state has ever undertaken. It reveals a complicated and nuanced picture, in which some arms of government in Rhode Island borrow well within their means and others struggle with significant liabilities that place great stress on government entities and the citizens they serve.

At the state level, the debt of Rhode Island and its quasi-public agencies is generally affordable and within acceptable levels as defined by ratings agencies. The debt and pension liabilities of the state of Rhode Island are somewhat higher than national medians, but have trended downward in recent decades and are currently manageable. Future decisions could alter the state's debt affordability considerably, for better or for worse, and debt affordability must remain a key consideration for state policymakers going forward.

At the municipal level, degrees of indebtedness vary greatly. Even when pension liabilities and overlapping debts from local districts are included, some municipalities enjoy very low liability burdens. The liabilities in some other municipalities are exceptionally high.

The purpose of this study is not to single out any particular public entity, and this report should not be read as a criticism of an entity that has a level of debt in excess of its recommended target. In most cases where an agency or municipality exceeds its target, it took on significant liabilities long before its current leadership was in place, and grappling with inherited legacy costs can be a tremendous challenge even for the most skilled management teams.

The authors of this study hope to provide a useful guide that policymakers in Rhode Island can refer to when making decisions in the future. Assuming new debt can be prudent and necessary to provide essential public services to citizens, but the decision to borrow with the public's dollars must always be made with care.

**Debt Affordability Study**  
**Part One: State tax-supported debt and long-term liabilities**

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## Part One – State Tax-Supported Debt and Long-Term Liabilities

Part One of the debt affordability study focuses on the debt and long-term liabilities of the State and the obligations supported by the State’s general operating budget. References to debt in this section refer to all tax-supported debt of the State. The study reviews various debt affordability measures to determine which would be appropriate measures to assess the State’s debt affordability, and under these metrics, what the State’s debt capacity is for future capital budget planning.

### Outstanding Tax-Supported Debt

The State has several categories of outstanding tax-supported debt: (i) direct debt or general obligation bonds, (ii) appropriation debt, and (iii) moral obligation debt.

#### *General Obligation Bonds*

Under the State Constitution, the General Assembly cannot incur State debt in excess of \$50,000 without the consent of the people, except in the case of war, insurrection or invasion. By judicial interpretation, this limitation has been judged to include all debts of the State for which the full faith and credit are pledged, including general obligation bonds and notes guaranteed by the State and debt or loans insured by agencies of the State. As of June 30, 2016, the State has a total of \$1.05 billion of outstanding general obligation bonds.

#### *Appropriation Debt and Moral Obligation Debt*

The State has entered into certain contractual agreements which, while not considered general obligations of the state, are still subject to annual appropriation by the General Assembly. Certain of these obligations are contractual agreements with State agencies or authorities, including the Rhode Island Commerce Corporation and the Rhode Island Convention Center Authority and the Rhode Island Turnpike and Bridge Authority. In addition, the Rhode Island Commerce Corporation has entered into performance-based obligations for which the State has made partial payments for debt service.

The State also has moral obligation debt. Moral obligation debt differs from other debt obligations in that there is no legal requirement to make debt service payments. A moral obligation pledge represents a promise by a government obligor to seek future appropriations for debt service payments, typically in order to make up deficits in a reserve fund should it fall below its required level. While there is no legal requirement to appropriate funds sufficient to make the payment, rating agencies will view failure to do so unfavorably and likely take negative action on the state’s rating. Certain agencies of the State have the ability to issue bonds which are also secured by a capital reserve fund. In accordance with enabling legislation, if at any time the capital reserve falls below its funding requirement, the agency is authorized to request the General Assembly to appropriate the amount of the agency. The following table summarizes the State’s current outstanding moral obligation debt.

Issuer	Description	Outstanding as of June 30, 2016
Commerce Corporation	Job Creation Guaranty (38 Studios Bonds)	\$53,965,000
Commerce Corporation	Fidelity Building Performance Agreement)	\$10,043,400
Commerce Corporation	Fidelity Building II Performance Agreement	\$7,150,896
Commerce Corporation	Fleet National Bank Performance Agreement	\$6,950,000
RI Housing and Mortgage Finance Corporation	Multi-family Housing Bonds and Rental Housing Bonds	\$65,669,132

Since the State has been meeting its obligation on the 38 Studios moral obligation bonds and the two Fidelity Management Resources projects and has been transferring sufficient funds to the Rhode Island Commerce

Corporation to satisfy the debt service obligations, this debt is included as tax-supported debt of the State. Other moral obligation bonds for the Fleet National Bank and Rhode Island Housing and Mortgage Finance Corporation, is not included as tax-supported debt for the purposes of this study since the State has never had to appropriate funds for debt service on these bonds.

Below is a summary of the debt subject to appropriation and moral obligation bonds and amounts outstanding as of June 30, 2016.

<b>Debt Subject to Annual Appropriation</b>	<b>Outstanding as of June 30, 2016</b>
Convention Center Authority	\$203,880,000
Rhode Island Turnpike & Bridge Authority (Motor Fuel)	117,590,000
Commerce Corporation - Transportation (Motor Fuel)	53,965,000
Commerce Corporation - URI Power Plant	4,585,000
Commerce Corporation - Job Creation Guaranty	51,315,000
Projected Economic Development Corporation - I-195 Land Sale	38,400,000
Certificates of Participation, Series 2007A	1,565,000
Certificates of Participation, Series 2007B	6,485,000
Certificates of Participation, Series 2007D	10,145,000
Certificates of Participation, Series 2007E	930,000
Certificates of Participation, Series 2007F	2,940,000
Certificates of Participation, Series 2009B	6,485,000
Certificates of Participation, Series 2009C	22,775,000
Certificates of Participation, Series 2011A	18,555,000
Certificates of Participation, Series 2013A	30,515,000
Certificates of Participation, Series 2013B	30,655,000
Certificates of Participation, Series 2013C	12,945,000
Certificates of Participation, Series 2013D	6,700,000
Certificates of Participation, Series 2013E	12,510,000
Certificates of Participation, Series 2014A	10,700,000
Certificates of Participation, Series 2014B	7,465,000
Certificates of Participation, Series 2014C	27,930,000
Loan Agreement - Historic Structures Tax Credit Fund	<u>106,995,000</u>
<b>Subtotal</b>	<b>\$786,030,000</b>
<b>Performance Based Agreements</b>	
Commerce Corporation- Fidelity Building	\$10,043,400
Commerce Corporation- Fidelity Building II	7,150,896
Commerce Corporation- Providence Place Mall	<u>17,940,000</u>
<b>Subtotal</b>	<b><u>\$35,134,296</u></b>
<b>Total COPs + Other Tax-Supported Debt</b>	<b>\$821,164,296</b>

The table below summarizes the State's total outstanding tax-supported debt as of June 30, 2016 by type of debt.



**Total Outstanding State Tax-Supported Debt**  
(as of June 30, 2016)

Outstanding General Obligation Bonds			Outstanding Lease Participation Certificates			Convention Center Authority + Commerce Corporation + RITBA Motor Fuel Tax Bonds + Other Tax-Supported Debt			Outstanding Tax-Supported Debt Service (as of June 30, 2016)			
Fiscal Year	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Principal	Interest	Debt Service
2017	47,930,000	47,746,734	95,676,734	27,035,000	9,263,056	36,298,056	58,825,034	33,280,396	92,105,430	133,790,034	90,290,186	224,080,220
2018	79,995,000	45,916,491	125,911,491	22,975,000	8,145,125	31,120,125	62,090,675	29,168,585	91,259,260	165,060,675	83,230,201	248,290,876
2019	81,155,000	42,285,620	123,440,620	24,055,000	7,177,206	31,232,206	45,375,806	25,635,965	71,011,771	150,585,806	75,098,791	225,684,597
2020	85,865,000	38,411,227	124,276,227	25,250,000	6,102,594	31,352,594	47,835,838	23,121,004	70,956,842	158,950,838	67,634,825	226,585,663
2021	82,470,000	34,586,994	117,056,994	24,165,000	4,939,375	29,104,375	50,739,658	20,419,789	71,159,447	157,374,658	59,946,158	217,320,816
2022	81,520,000	30,724,126	112,244,126	19,795,000	3,813,413	23,608,413	38,283,928	18,049,900	56,333,828	139,598,928	52,587,439	192,186,367
2023	77,880,000	26,836,108	104,716,108	20,885,000	2,820,225	23,705,225	64,370,655	16,319,888	80,690,543	163,135,655	45,976,221	209,111,876
2024	78,185,000	23,116,083	101,301,083	17,865,000	1,814,913	19,679,913	35,810,827	22,559,282	58,370,109	131,860,827	47,490,278	179,351,105
2025	73,785,000	19,544,813	93,329,813	14,085,000	1,050,463	15,135,463	27,464,697	11,698,825	39,163,522	115,334,697	32,294,100	147,628,797
2026	76,740,000	15,887,573	92,627,573	3,395,000	621,819	4,016,819	28,937,537	10,275,064	39,212,601	109,072,537	26,784,455	135,856,992
2027	64,790,000	12,406,865	77,196,865	2,815,000	454,000	3,269,000	27,239,641	8,736,939	35,976,580	94,844,641	21,597,804	116,442,445
2028	50,890,000	9,532,571	60,422,571	2,980,000	315,925	3,295,925	8,590,000	6,342,327	14,932,327	62,460,000	16,190,823	78,650,823
2029	36,060,000	7,414,218	43,474,218	3,150,000	172,313	3,322,313	9,045,000	5,884,882	14,929,882	48,255,000	13,471,412	61,726,412
2030	37,685,000	5,523,162	43,208,162	850,000	13,813	863,813	9,550,000	5,378,387	14,928,387	48,085,000	10,915,362	59,000,362
2031	26,840,000	3,561,981	30,401,981				10,085,000	4,843,477	14,928,477	36,925,000	8,405,458	45,330,458
2032	28,105,000	2,302,037	30,407,037				10,605,000	4,331,015	14,936,015	38,710,000	6,633,052	45,343,052
2033	17,230,000	1,332,761	18,562,761				11,145,000	3,789,089	14,934,089	28,375,000	5,121,850	33,496,850
2034	11,770,000	753,466	12,523,466				11,770,000	3,163,590	14,933,590	23,540,000	3,917,056	27,457,056
2035	8,110,000	366,678	8,476,678				12,395,000	2,533,056	14,928,056	20,505,000	2,899,734	23,404,734
2036	4,805,000	144,150	4,949,150				6,160,000	1,866,850	8,026,850	10,965,000	2,011,000	12,976,000
2037							6,440,000	1,584,050	8,024,050	6,440,000	1,584,050	8,024,050
2038							6,740,000	1,286,750	8,026,750	6,740,000	1,286,750	8,026,750
2039							7,085,000	941,125	8,026,125	7,085,000	941,125	8,026,125
2040							7,450,000	577,750	8,027,750	7,450,000	577,750	8,027,750
2041							7,830,000	195,750	8,025,750	7,830,000	195,750	8,025,750
	<u>1,051,810,000</u>	<u>368,393,657</u>	<u>1,420,203,657</u>	<u>209,300,000</u>	<u>46,704,238</u>	<u>256,004,238</u>	<u>611,864,296</u>	<u>261,983,733</u>	<u>873,848,029</u>	<u>1,872,974,296</u>	<u>677,081,628</u>	<u>2,550,055,924</u>

## Other Long-Term Liabilities

### *Pension liabilities*

The Employees Retirement System of Rhode Island is a pooled defined benefit pension system that provides retirement income to nearly 60,000 public employees. The State is required by law to make budget appropriations to help fund the pension benefits of state employees, state police, and judges, while also splitting the cost of the pension system for teachers with the State's school districts.

The table below summarizes the projections of the unfunded actuarial accrued liability (UAAL) for State employees, the State share for teachers, State police and judges.

Projections for UAAL (State Employees, State Share for Teachers, State Police, Judges) (\$ millions)					
	State Employees	Teachers (State Share)	State Police	Judges	Total
FY2016	\$1,722.10	\$1,093.51	\$11.72	\$0.89	\$2,828.22
FY2017	\$1,772.32	\$1,129.73	\$14.81	\$2.01	\$2,918.87
FY2018	\$1,819.67	\$1,163.28	\$18.12	\$3.24	\$3,004.31
FY2019	\$1,855.18	\$1,192.29	\$19.97	\$4.20	\$3,071.64
FY2020	\$1,871.72	\$1,210.11	\$21.76	\$5.15	\$3,108.74
FY2021	\$1,832.81	\$1,189.46	\$21.62	\$5.08	\$3,048.96
FY2022	\$1,798.08	\$1,172.13	\$21.39	\$4.98	\$2,996.58
FY2023	\$1,751.94	\$1,148.32	\$21.08	\$4.87	\$2,926.21
FY2024	\$1,696.40	\$1,120.48	\$20.68	\$4.72	\$2,842.28
FY2025	\$1,631.84	\$1,088.99	\$20.17	\$4.55	\$2,745.55
FY2026	\$1,553.35	\$1,049.77	\$19.54	\$4.35	\$2,627.01
FY2027	\$1,417.19	\$975.99	\$18.79	\$4.12	\$2,416.08
FY2028	\$1,264.15	\$893.28	\$17.90	\$3.84	\$2,179.18
FY2029	\$1,141.34	\$830.75	\$16.85	\$3.53	\$1,992.47
FY2030	\$957.29	\$732.57	\$15.64	\$3.17	\$1,708.67
FY2031	\$755.63	\$626.05	\$14.24	\$2.76	\$1,398.68
FY2032	\$580.00	\$507.80	\$12.64	\$2.30	\$1,102.74
FY2033	\$388.52	\$408.97	\$10.82	\$1.78	\$810.10
FY2034	\$178.24	\$301.38	\$8.77	\$1.20	\$489.60
FY2035	\$0.00	\$184.60	\$6.45	\$0.55	\$191.59
FY2036	\$0.00	\$115.20	\$5.28	\$0.77	\$121.25

Projections assume all assumptions exactly met, including an annual 7.50% return on the current actuarial value of assets.

Source: Employees Retirement System of Rhode Island

The State has made its full Pension Annual Required Contribution (Pension ARC) for the last 19 years. In FY 2016, the state's Pension ARC totaled \$256.32 million. The table below summarizes the actuarial projections for the Pension ARC for State employees, the State share for teachers, State police and judges.

Projections for Pension Contributions (State Employees, State Share for Teachers, State Police, Judges) (\$ millions)					
	State Employees	Teachers (State Share)	State Police	Judges	Total
FY2016	\$156.27	\$94.82	\$3.21	\$2.02	\$256.32
FY2017	\$158.36	\$97.66	\$3.10	\$2.01	\$261.13
FY2018	\$169.32	\$102.22	\$3.90	\$1.98	\$277.43
FY2019	\$176.28	\$107.58	\$4.16	\$2.01	\$290.03
FY2020	\$182.86	\$112.66	\$4.42	\$2.04	\$301.98
FY2021	\$190.05	\$117.66	\$4.69	\$2.16	\$314.56
FY2022	\$198.40	\$122.48	\$4.99	\$2.31	\$328.17
FY2023	\$204.21	\$124.65	\$5.30	\$2.46	\$336.62
FY2024	\$211.79	\$127.87	\$5.42	\$2.59	\$347.67
FY2025	\$217.81	\$131.12	\$5.57	\$2.73	\$357.23
FY2026	\$224.29	\$134.25	\$5.75	\$2.74	\$367.03
FY2027	\$231.21	\$137.75	\$5.93	\$2.70	\$377.59
FY2028	\$238.28	\$141.25	\$6.12	\$2.68	\$388.32
FY2029	\$241.78	\$142.39	\$6.30	\$2.65	\$393.13
FY2030	\$246.02	\$143.62	\$6.47	\$2.54	\$398.65
FY2031	\$253.62	\$147.48	\$6.67	\$2.48	\$410.25
FY2032	\$257.00	\$148.72	\$6.89	\$2.40	\$415.02
FY2033	\$262.30	\$150.12	\$7.14	\$2.27	\$421.82
FY2034	\$270.59	\$151.53	\$7.39	\$2.34	\$431.86
FY2035	\$28.71	\$97.69	\$6.27	\$1.56	\$134.23
FY2036	\$29.37	\$100.43	\$7.50	\$2.11	\$139.41

Source: The Pension ARC is based on projections provided by the Employee Retirement System of Rhode Island. Projections assume all assumptions exactly met, including an annual 7.50% return on the current actuarial value of assets.

### *OPEB*

Pursuant to legislation enacted by the General Assembly, the State established a trust in fiscal year 2011 to accumulate assets and pay benefits and costs associated with OPEB plans, and effective in fiscal year 2011, all participating employers were required by law to fully fund the actuarially determined OPEB annual required contribution (OPEB ARC). The most recent actuarial study completed as of June 30, 2015 estimates the OPEB unfunded liability at approximately \$593 million for State employees, teachers, state police, legislators and board of education. The total OPEB ARC for the fiscal year beginning July 1, 2017 will be \$60.7 million. Rhode Island is one of only a handful of states to consistently fund 100% of the OPEB ARC in recent years.

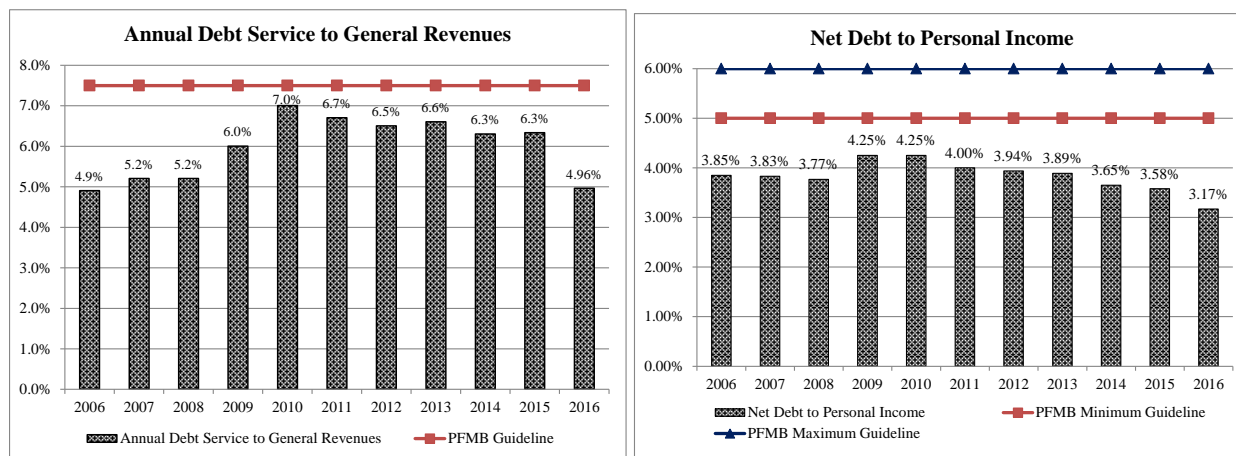
### **Common Debt Affordability Measures**

#### *Prior PFMB Credit Guidelines*

In 1999, the PFMB adopted guidelines for State tax-supported debt intended to be restrictive enough to maintain affordable debt levels, with enough flexibility to facilitate the funding of critical infrastructure needs. The 1999 guidelines were as follows:

- Tax-Supported Debt to not exceed the target range of 5.0% to 6.0% of personal income
- Debt Service on Tax-Supported Debt to not exceed 7.5% of General Revenues

Rhode Island has successfully remained within these targets in recent years.



### Debt Ratios Used By Other States

There are a number of different ratios used by other issuers, state governments, and rating agencies to measure debt affordability, such as:

Debt Service as Percent of State Revenues =	$\frac{\text{Annual Debt Service Requirement}}{\text{General Revenues of the State}}$
Debt per Capita =	$\frac{\text{Net Tax-Supported Debt}}{\text{State's Population}}$
Debt as Percent of Personal Income =	$\frac{\text{Net Tax Supported Debt}}{\text{Total Personal Income of State's Population}}$
Debt as Percent of State Revenues =	$\frac{\text{Net Tax Supported Debt}}{\text{General Revenues of the State}}$
Debt as % of Full Valuation of Taxable Property =	$\frac{\text{Net Tax Supported Debt}}{\text{Full Valuation of All Taxable Property}}$
Debt as % of Gross State Product =	$\frac{\text{Net Tax Supported Debt}}{\text{Gross State Product}}$
Rapidity of Repayment =	$\frac{\text{Total Net-Tax Supported Debt Retired in 10 Years}}{\text{Total Net-Tax Supported Debt}}$

The table below summarizes debt ratios used by states identified in previous PFMB reports as peer states to Rhode Island based on size and region. For additional comparisons, Appendix A provides debt capacity measures used by other states. While analyzing which ratios other states use is informative, Rhode Island must consider its own set of circumstances to determine which debt affordability measures are most suitable.

## Debt Affordability Ratios Used by Peer States

State	Debt Service to Revenues	Debt to Personal Income	Debt to Revenues	Debt per Capita	Other
Rhode Island (Aa2/AA/AA)	7.5% of General Revenues	5.0% - 6.0%			
Delaware (Aaa/AAA/AAA)	MADS < 15% of General + Transportation Trust Fund Revenues		New debt ≤ 5% of Net Budgetary General Fund Revenue for Fiscal Year		G.O. MADS < Estimated Cash Balance for following fiscal year
Connecticut (Aa3/AA-/AA-)			Outstanding and Authorized but Unissued Debt ≤ 160% of General Fund Tax Receipts		
Maine (Aa2/AA/AA)	5.0% of General Revenues				
Massachusetts (Aa1/AA+/AA+)	8.0% of Annual Budgeted Revenues				
New Hampshire (Aa1/AA/AA+)	10% of Unrestricted General Fund Revenues in Prior Fiscal Year				
Vermont (Aaa/AA+/AAA)	6.0% of Annual Aggregate of General + Transportation Trust Fund Revenues	≤ 5-Year Average of the mean and median of a peer group of triple-A rated states		≤ 5-Year Average of the mean and median of a peer group of triple-A rated states	

*MADS = maximum annual debt service.*

### *Pension and OPEB Considerations*

The municipal debt market has seen increasing attention on pension liabilities and OPEB liabilities over the years. Pension ARCs are long-term fixed costs, similar to debt service, both of which can impact expenditures and create structural imbalance if not managed prudently, and therefore, should be taken into consideration in assessing a government's long-term liability burden. While rating agencies have always taken pension funding into consideration, updated rating agency state ratings methodologies released in recent years have included increasing quantification of pension liabilities. Rating agencies have not viewed OPEB liabilities similar to debt since states generally have the legal flexibility to adjust OPEB liabilities. However, severely underfunded OPEB liabilities can influence the assessment of the long-term liability burden. Similar to the debt ratios above, the following ratios have been used to measure the burden of pension and OPEB liabilities, but with the pension liability or OPEB liability used in the numerator rather than debt and these ratios can also be calculated with just the pension or OPEB liability or added together with debt:

- Unfunded Liability per Capita
- Unfunded Liability as Percent of Personal Income
- Unfunded Liability as Percent of State Revenues
- Unfunded Liability as Percent of Gross State Product
- Pension/OPEB ARC as Percent of State Revenues

### *Debt Ratios Used by Rating Agencies*

Debt and other long-term liabilities is one factor that the rating agencies consider in the assessment of a state's overall financial health. The rating agencies evaluate debt burden and debt affordability and also consider the state's capacity to meet its other long-term obligations, such as unfunded pension liabilities. Described below are the approaches of the three major rating agencies in assessing measuring debt and long-term liabilities.

**Fitch Ratings:** In Fitch's "U.S. Tax-Supported Rating Criteria" released April 18, 2016, one of the key rating drivers is long-term liability burden. Fitch uses the following metric to measure long-term liability burden:

Direct Debt + Fitch's Adjusted Direct Unfunded Pension Liability  
Personal Income

The Fitch pension adjustment inflates the reported pension liability by 11% for every 1% by which the assumed investment return exceeds 7%. No adjustment is made if the pension's assumed return is already at or below 7.0%. As measured by Fitch, Rhode Island's long-term liability burden is 10.6% of personal income, which is above the state median of 5.8% (as reported in Fitch's 2015 pension update). The following table summarizes how Fitch views the long-term liability burden:

Liability Burden	Low	Moderate	Elevated but Still in Moderate Range	High	Very High
Rating Assessment	AAA	AA	A	BBB	BB
Ratio Level	Liabilities Less than 10% of Personal Income	Liabilities Less than 20% of Personal Income (RI = 10.6%)	Liabilities Less than 40% of Personal Income	Liabilities Less than 60% of Personal Income	Liabilities 60% or More of Personal Income

*Rhode Island ratio as calculated by Fitch.*

While Fitch does not include OPEB as part of the calculation of long-term liability burden, Fitch states that the liability assessment burden could be negatively affected by "exceptionally large" OPEB liability without the ability or willingness to make changes to the benefits.

Moody's Investors Service. In Moody's updated "US States Rating Methodology" published on April 13, 2013, Moody's introduced a new state methodology scorecard, which was intended to provide guidance for the factors that generally are the most important in determining the ratings for states. In this scorecard, debt is given a 20% weight with bonded debt comprising 10% and adjusted net pension liabilities providing the remaining 10%. The table below summarizes the debt factors used by Moody's and how the ratios are assessed by rating category. Moody's calculations of the ratios are also shown in the table.

Measurement	Aaa	Aa1	Aa2	Aa3	A	Baa and below
NTSD/Total Governmental Fund Revenues	Less than 15%	15% - 30%	30% - 50% (RI = 31.7%)	50% - 90%	90% - 130%	Greater than 130%
3-Yr Average ANPL/ Total Governmental Fund Revenues	Less than 25%	25% - 40%	40% - 80% (RI = 80%)	80% - 120%	120% - 180%	Greater than 180%

*Rhode Island ratios as calculated by Moody's.*

*NTSD = Net Tax-Supported Debt. ANPL = Adjusted Net Pension Liability.*

To calculate Moody's Adjusted Net Pension Liability (ANPL), Moody's adjusts the reported unfunded actuarial accrued liabilities to reflect their preference for a market discount rate and also assigns liabilities to other participating governments. Moody's then takes a three-year average to reduce year-to-year volatility.

While not part of the scorecard but reported in the annual State Debt Medians report, Moody's also considers debt to personal income, debt per capita, debt to gross state product and debt service as a percentage of revenue. Additionally, Moody's does not include OPEB liabilities in its scorecard, but in the case of severely underfunded OPEB liabilities the scoring for the debt factor could be adjusted lower.

Standard & Poor's. Standard & Poor's published its new rating methodology for states, "U.S. State Ratings Methodology," on October 17, 2016. Standard & Poor's states that its new methodology "better aligns our criteria with revised governmental pension reporting and disclosure standards." The five main factors in Standard & Poor's analytic framework are the same factors it has always reviewed: government framework, financial management, economy, budgetary performance and debt and liability profile. Under the debt and

liability profile, Standard & Poor's evaluates three key metrics, which are scored individually and carry equal weight: debt burden, pension liabilities and OPEB. For each metric, there may be multiple indicators that are scored from 1 (strongest) to 4 (weakest) and then averaged to develop the overall score for the metric. These indicators are provided in the table below. Rhode Island has not been reviewed yet under this new methodology, but Standard & Poor's calculations of these ratios under the previous methodology are indicated in the table below. Standard & Poor's assigned a 2.3 score to Rhode Island's debt and liability profile in its April 2016 report, based on its previous criteria.

Indicator	Score:1	Score: 2	Score: 3	Score: 4
<b>Debt Burden</b>				
Debt per Capita	Below \$500	\$500 - \$2,000 (RI = \$1,672)	\$2,000 - \$3,500	Above \$3,500
Debt to Personal Income	Below 2%	2% - 4% (RI = 3.3%)	4% - 7%	Above 7%
Debt Service to General Government Spending	Below 2%	2% - 6%	6% - 10% (RI = 7.2%)	Above 10%
Debt to Gross State Product	Below 2%	2% - 4% (RI = 3.2%)	4% - 7%	Above 7%
Debt Amortization (10 Years)	80% - 100%	60% - 80% (RI = 79%)	40% - 60%	Less than 40%
<b>Pension Liabilities</b>				
3-Year Avg Pension Funded Ratio	90% or above	80% - 90%	60% - 80%	60% or below (RI = 58.8%)
Pension Funding Discipline	Pension contribution is actuarially based and full funding of ARC. Total plan contributions > service cost + interest + amortization component (RI funding actuarial ARC for last 19 years)	Pension contribution is not actuarially based and ARC is not fully funded. Total plan contributions > service cost + interest + amortization component	Pension contribution is actuarially based and full funding of ARC. Total plan contributions <= service cost + interest + amortization component	Pension contribution is not actuarially based and ARC is not fully funded. Total plan contributions <= service cost + interest + amortization component
Unfunded Pension Liabilities per Capita	Positive Adjustment: At or Below \$500 Negative Adjustment: At or Above \$3,500 (RI = \$2,623 – No adjustment to initial pension score)			
Unfunded Pension Liabilities to Personal Income	Positive Adjustment: At or Below 2% Negative Adjustment: At or Above 7% (RI = 5.2% - No adjustment to initial pension score)			
<b>OPEB Risk Assessment</b>				
OPEB Risk Assessment	Limited benefits, high level of discretion to change benefits, pay-go costs not significantly different from ARC	Average liability relative to other states, proactive management of liability, some flexibility to change benefit levels, contributions in excess of annual pay-go amount (RI = Moderate)	Above average liability relative to other states, options to address liability are being considered but plans not well-developed, limited flexibility to change benefits	High liability relative to other states, high level of benefits and inflexible to change, lack of action to address liability leading to accelerating pay-go amount

Rhode Island ratios and assessment as derived by Standard & Poor's.



**Summary of Rating Agency Ratios.** The table below summarizes the debt and pension ratios used by the three major rating agencies, including those used in the respective scoring and those that the rating agencies also take into consideration but not used in scoring.

<b>Debt Ratio</b>	<b>Fitch</b>	<b>Moody's</b>	<b>S&amp;P</b>
Debt to Personal Income	✓	✓	✓
Debt to Revenues		✓	
Debt Service to Revenues		✓	
Debt Service to Expenditures			✓
Debt Per Capita		✓	✓
Debt to Gross State Product		✓	✓
Rapidity of Repayment	✓		✓
<b>Pension Ratio</b>			
3-Year Average Pension Funded Ratio			✓
Pension Funding Levels	✓		✓
Unfunded Pension Liabilities Per Capita			✓
Pension Liabilities to Personal Income			✓
3-Year Average Pension Liability to Revenues		✓	
Debt + Unfunded Pension Liability to Personal Income	✓		

A full list of Rating Agency Debt and Liability Ratios and Medians, including a summary of each state's liability burden under the various Rating Agency criteria, can be found in the appendix.

### **Peer Comparisons**

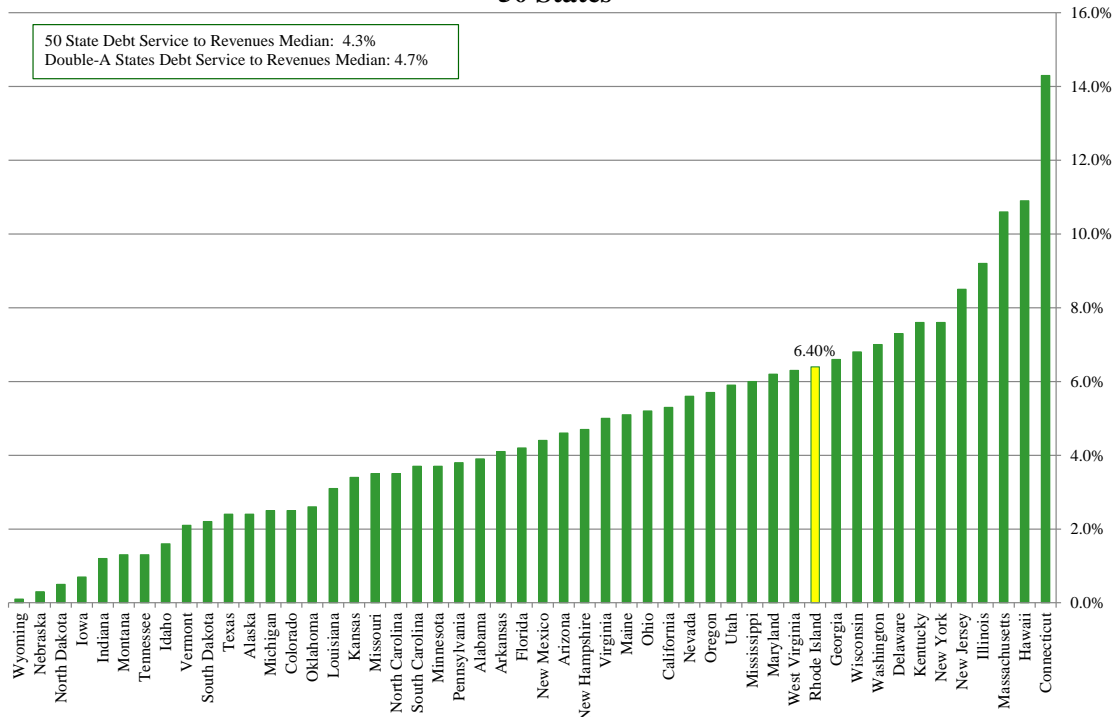
In addition to Rating Agency guidance, the PFMB found it useful to consider how Rhode Island's debt and pension liability burdens compare to peer states. While "following the herd" may not always yield the correct results, it can be helpful to understand the national context and the decision that other state-level policy makers have made.

The following graphs show how the states compare on two commonly used debt affordability ratios, Debt Service to Revenues, and Debt to Personal Income.



## Debt Service to Revenues 50 States

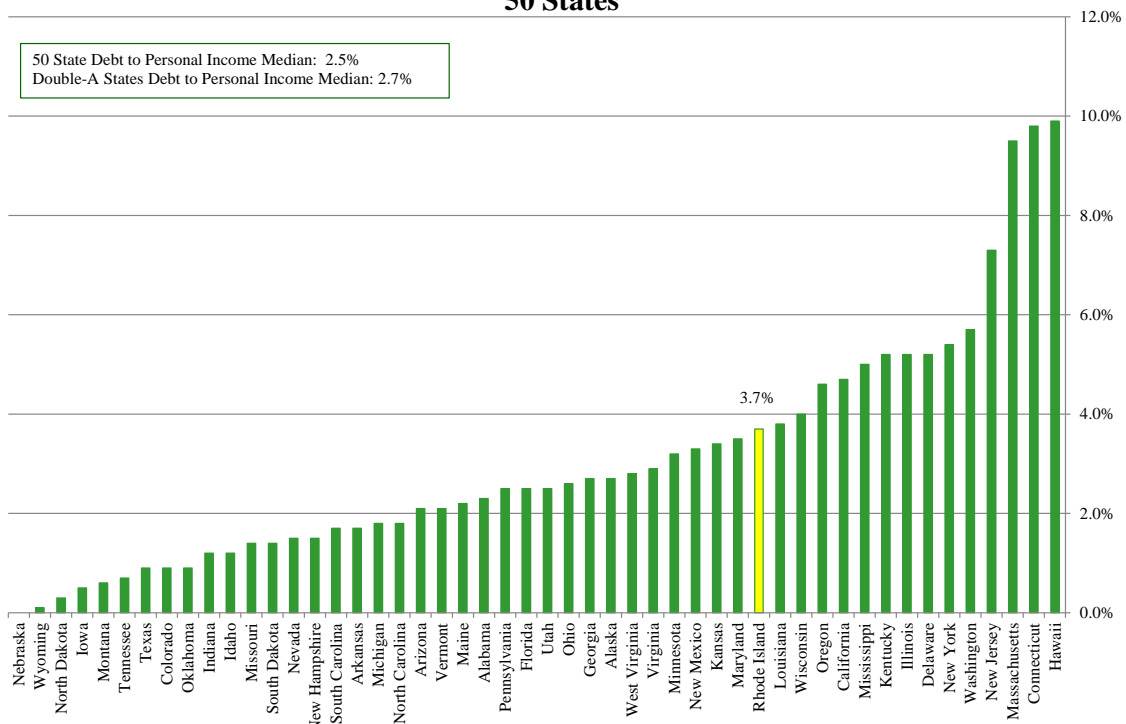
50 State Debt Service to Revenues Median: 4.3%  
Double-A States Debt Service to Revenues Median: 4.7%



Source: Moody's State Debt Medians 2016, May 6, 2016.

## Debt to Personal Income 50 States

50 State Debt to Personal Income Median: 2.5%  
Double-A States Debt to Personal Income Median: 2.7%

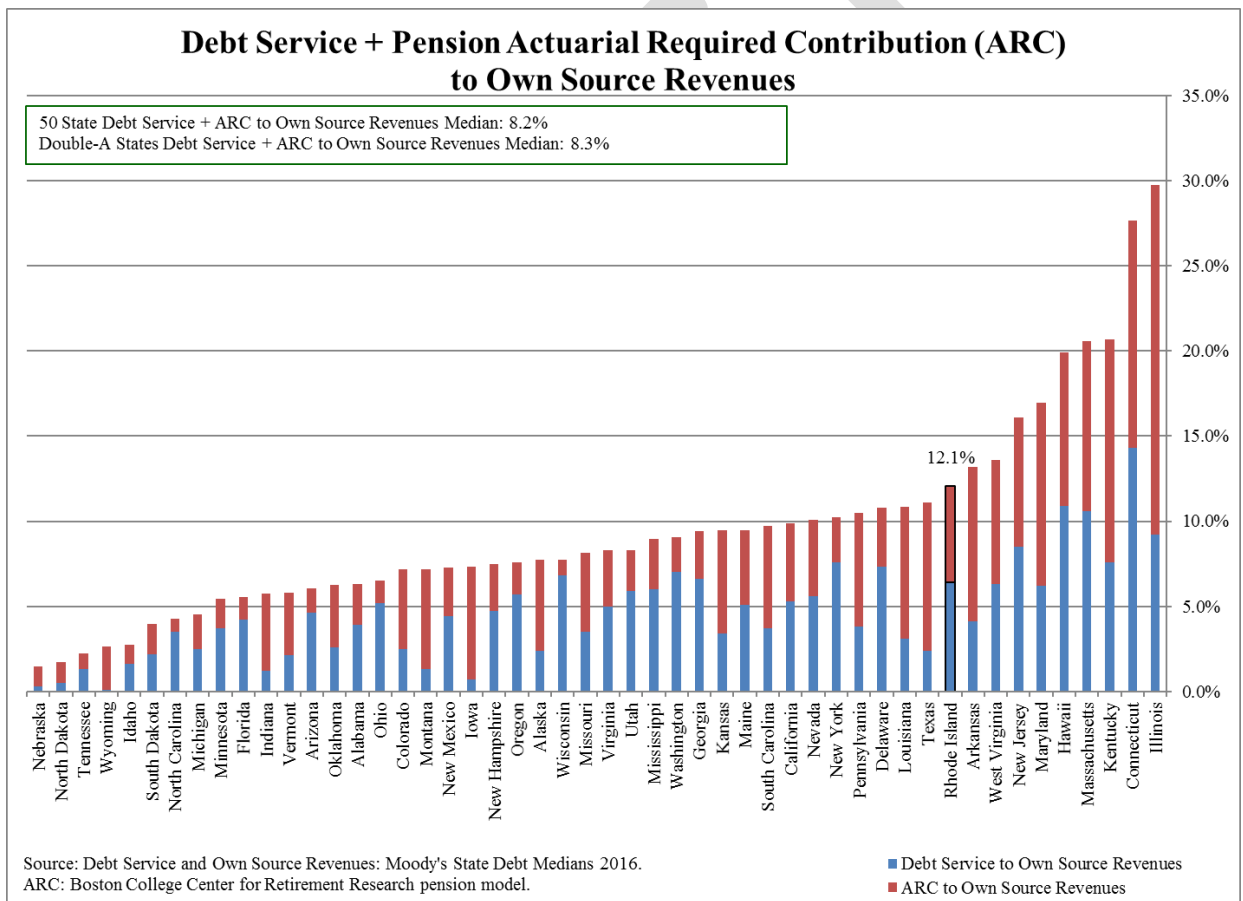


Source: Moody's State Debt Medians 2016, May 6, 2016

Comparing pension liabilities across states can be challenging, as the pension liabilities and annual costs that states report can vary considerably based on the assumptions and policies that states use to govern their pension systems. For example, all else equal, a pension system that assumes an 8% assumed investment rate of return in calculating its liability will report a lower liability than a state assuming a 7% rate of return. A state that amortizes its pension payments over 25 years will have lower up-front costs than a state that amortized over 20 years. In order to draw a true comparison of pension liabilities across states, an attempt must be made to normalize the state pension liabilities across a common set of assumptions.

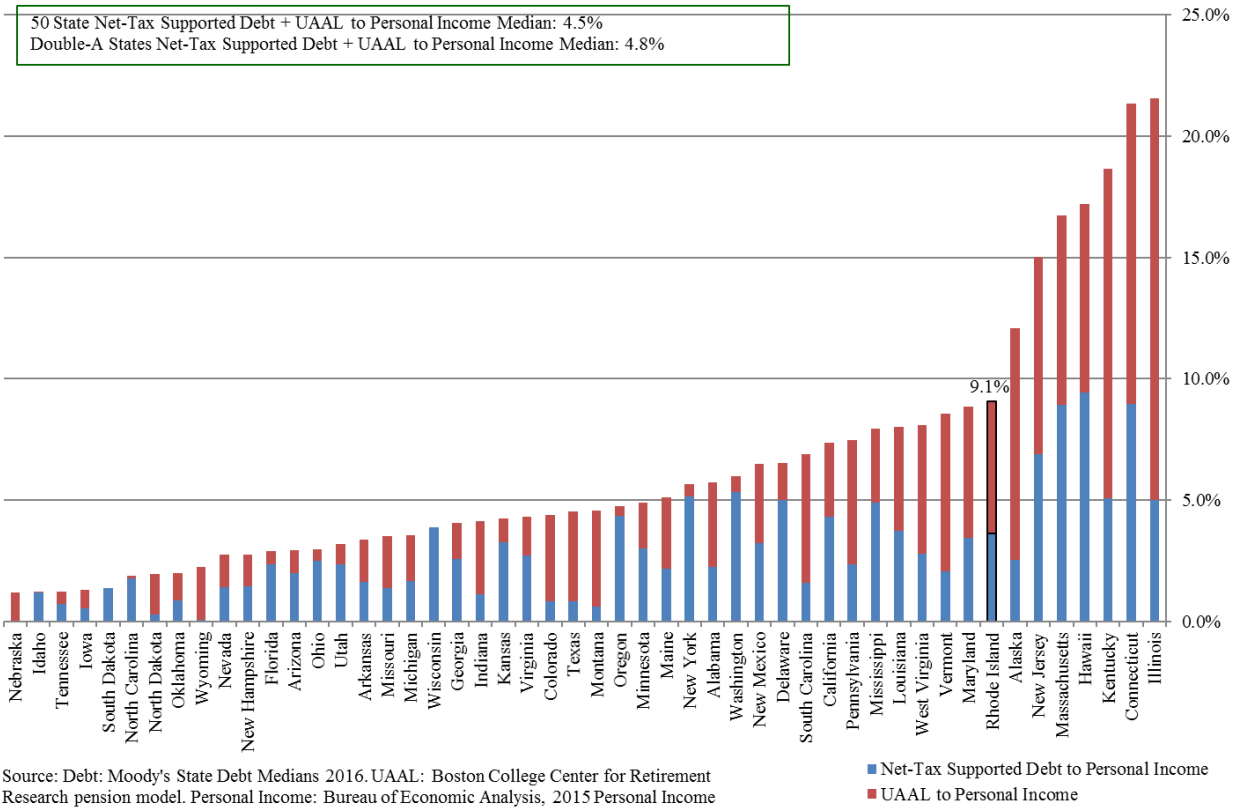
The PFMB partnered with the Center for Retirement Research at Boston College (CRR) to develop a model in which the pension liabilities of all 50 states were adjusted to conform to the assumptions that Rhode Island uses for its pension system. This normalization helps to provide a better “apples to apples” comparison of the relative pension liabilities of each state. More information on the CRR methodology can be found in the appendix.

The following graphs show the combined debt and pension liabilities of each state, utilizing the normalized pension liabilities produced by the CRR model.



## Net-Tax Supported Debt + Pension Unfunded Actuarial Accrued Liability (UAAL) to Personal Income

50 State Net-Tax Supported Debt + UAAL to Personal Income Median: 4.5%  
Double-A States Net-Tax Supported Debt + UAAL to Personal Income Median: 4.8%



### Recommended Long-Term Liability Affordability Measures

Rhode Island can measure state debt affordability with a variety of ratios. No single gauge of debt affordability is perfect and the State should employ multiple debt and liability ratios that compare the State's debt burden with the resources available for meeting these obligations. The use of multiple debt and liability ratios will ensure both near-term affordability and long-term capacity to maintain financial health and flexibility. Additionally, with increasing focus on pension liabilities and the recognition that these are fixed costs similar to debt, the PFMB integrates pension liabilities in the assessment of affordability of long-term obligations.

After a review of the debt burden metrics, the PFMB has determined the ratios that best measure debt burden for the State and will establish a policy target to be used for planning purposes. In the event of an economic downturn or if increased capital spending is needed to manage emergency situations, the policy targets may be exceeded temporarily, but the expectation is to return to the level of the established targets. Each measure is discussed in more detail below.

- Debt Service on Net Tax-Supported Debt as a percentage of General Revenues;
- Net Tax-Supported Debt as percentage of Personal Income;
- Rapidity of Repayment or the amount of debt to be retired over the next ten years;
- Net Tax-Supported Debt Service + Pension ARC as a percentage of General Revenues;
- Net Tax-Supported Debt + Pension Liability (UAAL) as a percentage of Personal Income; and
- Pension ARC and OPEB ARC should be funded at 100%.

### Debt Service to General Revenues.

The metric most frequently used by states to assess debt affordability is debt service as a percent of State revenues, comparing annual debt service to annual State revenues and providing an indicator of near-term affordability. This is a good measure because it provides a direct comparison of the state's debt obligations to the currently available resources to pay them. The target level for the debt service to revenues ratio should be set to ensure that annual debt service payments do not consume so much of the State's annual operating budget as to hinder the State's ability to provide core government services and provide flexibility to respond to economic downturns. This ratio is also appropriate because both components are within the control of the State.

The 1999 PFMB guidelines included a target debt service to revenues ratio of 7.5% and in review of other states that use this ratio for debt affordability, the target levels generally range from 5% to 10%. The median is 4.3% for all 50 states with a range of 0.5% (North Dakota) to 14.3% (Connecticut). Since 2000, the State has been below 7% in all years except in 2010 when the debt service to revenues ratio was at 7%.

***The PFMB recommends that Debt Service to General Revenue not exceed 7.5% within the next 5 years and 7.0% thereafter.***

### Debt to Personal Income.

Debt to personal income represents a broader measure of a state's ability to pay its debts is needed. State personal income represents income received by residents of the state and is not directly dependent on policy choices, and it represents the base from which state revenues will be generated. All three rating agencies review debt to personal income ratio as part of the rating process, and the ratio is a good measure for long-term debt affordability.

The 1999 PFMB guidelines include the target range of tax-supported debt to personal income of 5.0% to 6.0%. In 2000, this ratio was 5.02%, but since then has been below 5.0% and since 2011 has been below 4.0%.

***The PFMB recommends that State Tax-Supported Debt to Income not exceed 4.0%.***

### Rapidity of Debt Repayment.

The rapidity of debt repayment ratio measures how much of the State's total long-term debt is retired after 10 years. Credit analysts view rapid repayment more favorably than slower amortization with 50% retired in 10 years as average. The State typically structures its general obligation bonds with 20-year amortization to achieve level debt service, which on its own will permit the State to retire 50% or more of its debt within 10 years. This will ensure retirement of debt sufficiently fast enough to allow for additional capacity in future years. PFMB notes that the State's current debt structure results in rapidity of repayment of tax-supported debt in 10 years of over 70% which resulted from past general obligation debt restructuring.

***The PFMB recommends that expected Rapidity of Debt Repayment equal at least 50% in 10 years.***

### *Ratios with Pension Liabilities*

States have begun to review their debt affordability criteria while also considering whether to include additional metrics to account for unfunded pension liabilities and OPEB liabilities. To date, no state has added a metric accounting for pension or OPEB liabilities in their debt affordability analysis. However, since rating agencies have incorporated pension ratios in the updated rating methodology for states, states will likely eventually incorporate a metric accounting for pension liabilities.

The funding of the pension annual required contribution (ARC) is a gauge of the effort states are making to fund their pension plans. A state that has paid the ARC in full has met its obligation to cover the pension

benefits accrued that year and to pay down a portion of any liabilities that were not pre-funded in previous years. Assuming projections of actuarial experience hold true, a payment less than the full ARC means the unfunded liability will grow and require greater contributions in future years. The unfunded accrued actuarial liability (UAAL) is the appropriate pension liability measure since it the basis for determining a portion of the ARC.

- *The PFMB recommends that Debt Service + Pension ARC to General Revenues not exceed 16%*
- *The PFMB recommends that Debt + Pension Liability (UAAL) to Personal Income not exceed 8%, beginning in 2021.*
- *PFMB recommends the state continue to fund 100% of its Pension ARC and OPEB ARC.*

### Current Debt and Pension Projections

Based on currently outstanding State tax-supported debt and pension liabilities as of June 30, 2016, the table on the next page summarizes the maximum level of each target ratio.<sup>3</sup> While these numbers do don't include new debt that may be added in the future, it is still useful to consider the projected cost of the states existing liabilities relative to the recommended targets.

#### Debt and Pension Ratios Based on Current Outstanding Net Tax-Supported Debt

Ratio	Maximum Level
Debt Service on Tax-Supported Debt to General Revenues	6.64% (FY2018)
Net Tax-Supported Debt as Percentage of Personal Income	3.40% (FY2017)
Rapidity of Repayment over 10 Years	76% (FY2017)
Net Tax-Supported Debt Service + Pension ARC as a Percentage of General Revenues	13.83% (FY2023)
Net Tax-Supported Debt + Pension Liability (UAAL) as a Percentage of Personal Income	8.52% (FY2017)
Pension ARC and OPEB ARC Funding Level	100%

### Current and Authorized Debt and Pension Projections

Further, the State currently has authorized but unissued debt of \$319.575 million for general obligation bonds and \$219.210 million for debt subject to appropriation. An additional \$227.5 million of debt was approved by referendum in November. With the passage of the referendum, the State has a total of approximately \$766.285 million in authorized but unissued debt, as summarized below.

Current Authorized but Unissued GO Debt	\$319,575,000*
November 2016 Referenda GO Debt	<u>227,500,000</u>
<b>Total GO Authorized but Unissued Debt</b>	<b>\$547,075,000</b>
Current Authorized but Unissued Appropriation Debt	<u>219,210,000**</u>
<b>Total Authorized but Unissued Debt</b>	<b>\$766,285,000</b>

\* \$60.5 million is not planned to be issued under the current 5-year capital plan.

\*\* \$81.7 million is not planned to be issued under the current 5-year capital plan.

<sup>3</sup> The pension liability is the State's projected UAAL as provided by the Employees Retirement System of Rhode Island. The General Revenues are based on the projected revenues for FY2017 through FY2021 that was incorporated into the FY2017 enacted budget, and after FY2021, annual growth in General Revenues is assumed to be 0.50%, based on guidance from the State Budget Office. The projected personal income for FY2017 through FY2021 is based on the forecast in the November 2016 Revenue Estimating Conference report, and after FY2022, annual growth is assumed to be 3.00%, based on guidance from the State Budget Office.

The table below shows the projected debt burden ratios with all currently outstanding State tax supported debt and the full issuance of the \$766.285 million authorized but unissued debt in equal annual amounts over the period FY2017 through FY2021 at 5.00% interest and amortized over 20 years, structured as level debt service.

With the assumed issuance of all authorized but unissued debt over the next five years, the following summarizes the maximum of each ratio:

**Debt and Pension Ratios**  
**Based on Current Outstanding Net Tax-Supported Debt + Authorized and Unissued Debt**

Ratio	Maximum Level (Year of Occurrence)
Debt Service on Tax-Supported Debt to General Revenues	6.97% (FY2018 and FY2023)
Net Tax-Supported Debt as Percentage of Personal Income	3.40% (FY2017)
Rapidity of Repayment over 10 Years	76% (FY2017)
Net Tax-Supported Debt Service + Pension ARC as a Percentage of General Revenues	15.42% (FY2023)
Net Tax-Supported Debt + Pension Liability (UAAL) as a Percentage of Personal Income	8.52% (FY2017)
Pension ARC and OPEB ARC Funding Level	100%

**Outstanding Tax- Supported Debt and Pension Liabilities  
Debt and Pension Ratios**

Outstanding Tax-Supported Debt Service (as of June 30, 2016)				Target PFMB Guidelines: Debt Service to General Revenues: Less Than 7.5% Within Next 5 Years and 7.0% Thereafter Tax-Supported Debt to Personal Income: 4.0%				Debt + Pension Ratios			
Fiscal Year	Principal	Interest	Debt Service	General Revenues	Outstanding Tax-Supported DS to Revenues	Personal Income	Tax-Supported Debt to Personal Income	Pension ARC	Tax-Supported DS + Pension ARC to Revenues	Projected UAAL	Tax-Supported Debt + UAAL to Personal Income
2017	133,790,034	90,290,186	224,080,220	3,674,742,668	6.10%	55,167,600,000	3.40%	256,320,447	13.07%	2,828,215,805	8.52%
2018	165,060,675	83,230,201	248,290,876	3,737,237,978	6.64%	57,389,900,000	3.03%	261,126,905	13.63%	2,918,866,146	8.12%
2019	150,585,806	75,098,791	225,684,597	3,745,894,748	6.02%	59,859,200,000	2.63%	277,426,348	13.43%	3,004,305,781	7.65%
2020	158,950,838	67,634,825	226,585,663	3,794,833,717	5.97%	62,416,700,000	2.28%	290,025,315	13.61%	3,071,643,695	7.20%
2021	157,374,658	59,946,158	217,320,816	3,847,663,594	5.65%	64,965,900,000	1.95%	301,981,514	13.50%	3,108,735,096	6.73%
2022	139,598,928	52,587,439	192,186,367	3,866,901,912	4.97%	67,634,200,000	1.64%	314,563,239	13.10%	3,048,958,469	6.15%
2023	163,135,655	45,976,221	209,111,876	3,886,236,422	5.38%	69,663,000,000	1.39%	328,173,642	13.83%	2,996,583,946	5.69%
2024	131,860,827	47,490,278	179,351,105	3,905,667,604	4.59%	71,752,000,000	1.12%	336,619,084	13.21%	2,926,205,254	5.20%
2025	115,334,697	32,294,100	147,628,797	3,925,195,942	3.76%	73,904,000,000	0.91%	347,668,886	12.62%	2,842,280,241	4.76%
2026	109,072,537	26,784,455	135,856,992	3,944,821,921	3.44%	76,121,000,000	0.73%	357,229,504	12.50%	2,745,552,992	4.34%
2027	94,844,641	21,597,804	116,442,445	3,964,546,031	2.94%	78,404,000,000	0.57%	367,034,977	12.20%	2,627,011,783	3.92%
2028	62,460,000	16,190,823	78,650,823	3,984,368,761	1.97%	80,756,000,000	0.44%	377,587,891	11.45%	2,416,083,834	3.43%
2029	48,255,000	13,471,412	61,726,412	4,004,290,605	1.54%	83,178,000,000	0.35%	388,321,482	11.24%	2,179,178,470	2.97%
2030	48,085,000	10,915,362	59,000,362	4,024,312,058	1.47%	85,673,000,000	0.28%	393,125,091	11.23%	1,992,471,964	2.61%
2031	36,925,000	8,405,458	45,330,458	4,044,433,618	1.12%	88,243,000,000	0.22%	398,648,318	10.98%	1,708,668,534	2.16%
2032	38,710,000	6,633,052	45,343,052	4,064,655,786	1.12%	90,890,000,000	0.17%	410,250,226	11.21%	1,398,683,392	1.71%
2033	28,375,000	5,121,850	33,496,850	4,084,979,065	0.82%	93,616,000,000	0.13%	415,020,461	10.98%	1,102,739,500	1.30%
2034	23,540,000	3,917,056	27,457,056	4,105,403,961	0.67%	96,424,000,000	0.09%	421,819,279	10.94%	810,101,503	0.93%
2035	20,505,000	2,899,734	23,404,734	4,125,930,980	0.57%	99,316,000,000	0.07%	431,856,018	11.03%	489,595,532	0.56%
2036	10,965,000	2,011,000	12,976,000	4,146,560,635	0.31%	102,295,000,000	0.045%	134,231,144	3.55%	191,592,647	0.23%
2037	6,440,000	1,584,050	8,024,050								
2038	6,740,000	1,286,750	8,026,750								
2039	7,085,000	941,125	8,026,125								
2040	7,450,000	577,750	8,027,750								
2041	7,830,000	195,750	8,025,750								
	1,872,974,296	677,081,628	2,550,055,924								
				Revenue Growth After 2021			0.50%				
				Personal Income Growth After 2023			3.00%				
				Population (2015)			1,056,298				
				Gross State Product (2016-1st Quarter) (000s)			58,295,000				
								<b>Rapidity of Repayment</b>			
								5 Years			40.88%
								10 Years			76.07%
								20 Years			98.10%

*Note: The UAAL and the Pension ARC are based on projections provided by the Employee Retirement System of Rhode Island. The General Revenues are based on the projected revenues for FY2017 through FY2021 and 0.50% annual growth thereafter. The projected personal income for FY2017 through FY2022 is based on the forecast in the November 2016 Revenue Estimating Conference report, and after FY2022, annual growth is assumed to be 3.00%.*

**Outstanding Tax- Supported Debt  
With Estimated Authorized But Unissued Debt  
Debt and Pension Ratios**

Outstanding Tax-Supported Debt Service (as of June 30, 2016)			Estimated Authorized but Unissued @ 5.00% Interest (\$766.285M Issued In Equal Amounts Over Next 5 Years)				Outstanding+Authorized but Unissued (Current Revenue Projections)		Debt + Pension Ratios		
Fiscal Year	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Total Outstanding + Projected Debt Service	Total Debt Service to Revenues	Total Debt to Personal Income	Tax-Supported DS + Pension ARC to Revenues	Tax-Supported Debt + UAAL to Personal Income
2017	133,790,034	90,290,186	224,080,220	0	0	0	224,080,220	6.10%	3.40%	13.07%	8.52%
2018	165,060,675	83,230,201	248,290,876	4,600,240	7,772,455	12,372,695	260,663,571	6.97%	3.30%	13.96%	8.38%
2019	150,585,806	75,098,791	225,684,597	9,433,719	15,311,670	24,745,389	250,429,986	6.69%	3.13%	14.09%	8.15%
2020	158,950,838	67,634,825	226,585,663	14,512,271	22,605,813	37,118,084	263,703,747	6.95%	2.99%	14.59%	7.92%
2021	157,374,658	59,946,158	217,320,816	19,848,326	29,642,453	49,490,779	266,811,595	6.93%	2.85%	14.78%	7.63%
2022	139,598,928	52,587,439	192,186,367	25,454,947	36,408,526	61,863,473	254,049,840	6.57%	2.70%	14.70%	7.21%
2023	163,135,655	45,976,221	209,111,876	26,745,621	35,117,852	61,863,473	270,975,349	6.97%	2.38%	15.42%	6.68%
2024	131,860,827	47,490,278	179,351,105	28,101,770	33,761,703	61,863,473	241,214,578	6.18%	2.05%	14.79%	6.13%
2025	115,334,697	32,294,100	147,628,797	29,526,717	32,336,757	61,863,473	209,492,270	5.34%	1.77%	14.19%	5.62%
2026	109,072,537	26,784,455	135,856,992	31,023,954	30,839,520	61,863,473	197,720,465	5.01%	1.53%	14.07%	5.14%
2027	94,844,641	21,597,804	116,442,445	32,597,150	29,266,324	61,863,473	178,305,918	4.50%	1.31%	13.76%	4.66%
2028	62,460,000	16,190,823	78,650,823	34,250,160	27,613,313	61,863,473	140,514,296	3.53%	1.11%	13.00%	4.10%
2029	48,255,000	13,471,412	61,726,412	35,987,037	25,876,436	61,863,473	123,589,886	3.09%	0.96%	12.78%	3.58%
2030	48,085,000	10,915,362	59,000,362	37,812,037	24,051,436	61,863,473	120,863,835	3.00%	0.84%	12.77%	3.16%
2031	36,925,000	8,405,458	45,330,458	39,729,633	22,133,840	61,863,473	107,193,932	2.65%	0.72%	12.51%	2.65%
2032	38,710,000	6,633,052	45,343,052	41,744,527	20,118,947	61,863,473	107,206,525	2.64%	0.61%	12.73%	2.15%
2033	28,375,000	5,121,850	33,496,850	43,861,657	18,001,817	61,863,473	95,360,324	2.33%	0.51%	12.49%	1.68%
2034	23,540,000	3,917,056	27,457,056	46,086,213	15,777,261	61,863,473	89,320,529	2.18%	0.42%	12.45%	1.26%
2035	20,505,000	2,899,734	23,404,734	48,423,649	13,439,824	61,863,473	85,268,207	2.07%	0.33%	12.53%	0.83%
2036	10,965,000	2,011,000	12,976,000	50,879,696	10,983,777	61,863,473	74,839,473	1.80%	0.26%	5.04%	0.44%
2037	6,440,000	1,584,050	8,024,050	53,460,376	8,403,097	61,863,473	69,887,523				
2038	6,740,000	1,286,750	8,026,750	43,799,322	5,691,456	49,490,779	57,517,529				
2039	7,085,000	941,125	8,026,125	33,648,261	3,469,823	37,118,084	45,144,209				
2040	7,450,000	577,750	8,027,750	22,982,326	1,763,063	24,745,389	32,773,139				
2041	7,830,000	195,750	8,025,750	11,775,391	597,304	12,372,695	20,398,445				
	1,872,974,296	677,081,628	2,550,055,924	766,285,000	470,984,468	1,237,269,468	3,787,325,392				

*Note: Assumes the full \$766.285 million of authorized but unissued debt is issued over the next five years. The UAAL and the Pension ARC are based on projections provided by the Employee Retirement System of Rhode Island. The General Revenues are based on the projected revenues for FY2017 through FY2021 and 0.50% annual growth thereafter. The projected personal income for FY2017 through FY2022 is based on the forecast in the November 2016 Revenue Estimating Conference report, and after FY2022, annual growth is assumed to be 3.00%.*



## Debt Capacity Based on Target Debt Affordability Ratios

### *Assumptions for Determining Debt Capacity*

The following assumptions were applied to the issuance of the authorized but unissued debt and applied in determining the additional debt capacity that the State has for new State tax-supported debt over the next ten-year period.

1. All debt will be issued as 20-year debt.
2. Interest (coupon) rate is assumed to be 5.00%.
3. There are no refunding savings during the period.
4. Authorized but unissued debt (including the \$227.5 million in the November 2016 referendum) is issued from FY2017 through FY2021 in equal amounts.
5. General revenue projections through 2021 are from the enacted 2017 budget and growth after 2021 is assumed to be 0.50%.
6. Personal income projections through 2022 are from the November 2016 Revenue Estimating Conference and growth after 2023 is assumed to be 3.00%.

### *Debt Capacity for Next Voter Referendum and Future Capacity*

The PFMB, based on peer comparisons, rating agency methodologies, and capital needs, is recommending a set of debt affordability targets. Given the State's current debt profile, the Debt Service to General Revenues ratio is the most constraining target. If the 7.0% target is to be strictly enforced right away, the State would not have the capacity to add new debt in the 2018 referendum. However, the PFMB notes that the heightened debt service costs in the next several years are in part due to a one-time event - the 2015 general obligation bond restructuring - which allowed policymakers to raise funding for economic development incentives to help boost the State's sluggish economic recovery. Therefore, due to the one-time nature of the 2015 restructuring, the PFMB feels comfortable recommending that \$221.8 million be included in the next referendum, and that the Debt Service to General Revenues target be set at 7.5% for the next five to six years before reverting to a long-term 7.0% target level.

The table on the following page, shows available capacity of approximately \$221.8 million in 2019, the first year in which any authorization from the 2018 referendum could be issued, and remaining capacity of approximately \$1.25 billion over the ten-year period. Based on these assumptions, the Debt Service to General Revenues ratio peaks at 7.46% in FY 2023 (below the 7.50% first five-year target). The Debt Service + Pension ARC to General Revenues is the other constraining ratio with a target of 16.0% during the ten-year measurement period; the Debt Service + Pension ARC to General Revenues ratio peaks at 15.91%. Based on current assumptions, the additional debt capacity is estimated such that all the debt affordability ratios stay within the PFMB recommended ratios. The table below summarizes the debt affordability ratios with the additional capacity estimated to stay within the PFMB recommended ratios.

### **Debt and Pension Ratios With Additional Debt Capacity Constrained to Target Ratios**

Ratio	Ratio Level (Year of Occurrence)
Debt Service on Tax-Supported Debt to General Revenues	7.46% Maximum (FY2023)
Net Tax-Supported Debt as Percentage of Personal Income	3.40% Maximum (FY2017) 2.46% (FY2027)
Rapidity of Repayment over 10 Years	76% (FY2017) 65% (FY2027)
Net Tax-Supported Debt Service + Pension ARC as a Percentage of General Revenues	15.91% (FY2023) 15.76% (FY2027)
Net Tax-Supported Debt + Pension Liability (UAAL) as a Percentage of Personal Income	8.52% Maximum (FY2017) 5.81% (FY2027)

### Net Tax-Supported Debt Capacity with Debt Service to Revenues Assumed Target of 7.5% Within Next 5 Years and Constrained to Target Ratios

Outstanding Tax-Supported Debt Service (as of June 30, 2016)				Estimated Authorized but Unissued @ 5.00% Interest (\$766.285M Issued In Equal Amounts Over Next 5 Years)				Additional Debt Capacity @ 5.00% Interest Debt and Pension Ratios						
Fiscal Year	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Total Outstanding + Projected Debt Service	Additional Debt Over Next 10 Years	Additional Debt Service	Total Debt Service to Revenues	Total Debt to Personal Income	10-Year Payout	Tax-Supported DS + Pension ARC to Revenues	Tax-Supported Debt + UAAL to Personal Income
2017	133,790,034	90,290,186	224,080,220	0	0	0	224,080,220	0	0	6.10%	3.40%	76%	13.07%	8.52%
2018	165,060,675	83,230,201	248,290,876	4,600,240	7,772,455	12,372,695	260,663,571	0	0	6.97%	3.30%	76%	13.96%	8.38%
2019	150,585,806	75,098,791	225,684,597	9,433,719	15,311,670	24,745,389	250,429,986	221,840,000	0	6.69%	3.13%	75%	14.09%	8.15%
2020	158,950,838	67,634,825	226,585,663	14,512,271	22,605,813	37,118,084	263,703,747	0	17,801,016	7.42%	3.35%	69%	15.06%	8.27%
2021	157,374,658	59,946,158	217,320,816	19,848,326	29,642,453	49,490,779	266,811,595	15,470,000	17,801,016	7.40%	3.18%	68%	15.25%	7.96%
2022	139,598,928	52,587,439	192,186,367	25,454,947	36,408,526	61,863,473	254,049,840	0	19,042,368	7.06%	3.03%	67%	15.20%	7.54%
2023	163,135,655	45,976,221	209,111,876	26,745,621	35,117,852	61,863,473	270,975,349	0	19,042,368	7.46%	2.69%	69%	15.91%	6.99%
2024	131,860,827	47,490,278	179,351,105	28,101,770	33,761,703	61,863,473	241,214,578	331,535,000	19,042,368	6.66%	2.34%	70%	15.28%	6.42%
2025	115,334,697	32,294,100	147,628,797	29,526,717	32,336,757	61,863,473	209,492,270	162,600,000	45,645,595	6.50%	2.49%	66%	15.36%	6.34%
2026	109,072,537	26,784,455	135,856,992	31,023,954	30,839,520	61,863,473	197,720,465	257,925,000	58,693,039	6.50%	2.42%	66%	15.56%	6.02%
2027	94,844,641	21,597,804	116,442,445	32,597,150	29,266,324	61,863,473	178,305,918	487,025,000	79,389,608	6.50%	2.46%	65%	15.76%	5.81%
2028	62,460,000	16,190,823	78,650,823	34,250,160	27,613,313	61,863,473	140,514,296		118,469,755	6.50%	2.80%		15.98%	5.79%
2029	48,255,000	13,471,412	61,726,412	35,987,037	25,876,436	61,863,473	123,589,886		118,469,755	6.05%	2.54%		15.74%	5.16%
2030	48,085,000	10,915,362	59,000,362	37,812,037	24,051,436	61,863,473	120,863,835		118,469,755	5.95%	2.30%		15.72%	4.63%
2031	36,925,000	8,405,458	45,330,458	39,729,633	22,133,840	61,863,473	107,193,932		118,469,755	5.58%	2.08%		15.44%	4.01%
2032	38,710,000	6,633,052	45,343,052	41,744,527	20,118,947	61,863,473	107,206,525		118,469,755	5.55%	1.87%		15.65%	3.41%
2033	28,375,000	5,121,850	33,496,850	43,861,657	18,001,817	61,863,473	95,360,324		118,469,755	5.23%	1.66%		15.39%	2.84%
2034	23,540,000	3,917,056	27,457,056	46,086,213	15,777,261	61,863,473	89,320,529		118,469,755	5.06%	1.47%		15.34%	2.31%
2035	20,505,000	2,899,734	23,404,734	48,423,649	13,439,824	61,863,473	85,268,207		118,469,755	4.94%	1.29%		15.40%	1.78%
2036	10,965,000	2,011,000	12,976,000	50,879,696	10,983,777	61,863,473	74,839,473		118,469,755	4.66%	1.12%		7.90%	1.30%
2037	6,440,000	1,584,050	8,024,050	53,460,376	8,403,097	61,863,473	69,887,523	1,476,395,000	1,342,685,169					
2038	6,740,000	1,286,750	8,026,750	43,799,322	5,691,456	49,490,779	57,517,529							
2039	7,085,000	941,125	8,026,125	33,648,261	3,469,823	37,118,084	45,144,209							
2040	7,450,000	577,750	8,027,750	22,982,326	1,763,063	24,745,389	32,773,139							
2041	7,830,000	195,750	8,025,750	11,775,391	597,304	12,372,695	20,398,445							
	1,872,974,296	677,081,628	2,550,055,924	766,285,000	470,984,468	1,237,269,468	3,787,325,392							
Total through 2022											237,310,000			
Total through 2023-2027											1,239,085,000			

*Note: Assumes the full \$766.285 million of authorized but unissued debt is issued over the next five years. The UAAL and the Pension ARC through 2025 is based on projections provided by the Employee Retirement System of Rhode Island and after 2025 reflects an annual increase based on the growth rate in 2025 of 2.59%. The General Revenues are based on the projected revenues for FY2017 through FY2021 and 0.50% annual growth thereafter. The projected personal income for FY2017 through FY2022 is based on the forecast in the November 2016 Revenue Estimating Conference report, and after FY2022, annual growth is assumed to be 3.00%.*

## Sensitivity Cases for Debt Capacity

### Revenue Sensitivity

If revenue projections are different, there will be different levels of additional capacity – all other factors staying constant. The effect on debt capacity resulting from projected revenue changes is summarized in the table below. With revenues at 90% of projections, the Debt Service + Pension ARC to General Revenues ratio will exceed the 16% target with the current outstanding tax-supported debt and assuming all the authorized but unissued debt is issued over the next five years, and there is no additional capacity until FY2025 if the 16% target is maintained.

### Additional Debt Capacity Under Different Revenue Assumptions\*

Fiscal Year	General Revenues @ 90% of Projections	General Revenues @ 95% of Projections	General Revenues @ 100% of Projections
2017	\$ 0	\$ 0	\$ 0
2018	0	0	0
2019	0	44,495,000	221,840,000
2020	0	0	0
2021	0	12,100,000	15,470,000
2022	0	0	0
2023	0	0	0
2024	0	237,090,000	331,535,000
2025	57,935,000	161,225,000	162,600,000
2026	254,560,000	256,545,000	257,925,000
2027	483,640,000	485,635,000	487,025,000
<b>Total Additional Capacity</b>	<b>\$796,135,000</b>	<b>\$1,197,090,000</b>	<b>\$1,476,395,000</b>

\* Assumed 5.00% interest rate.

### Interest Rate Sensitivity

For the debt capacity analysis, a 5.00% interest rate was assumed for the issuance of all future debt. The table below summarizes the debt capacity based on 4.00% and 6.00% interest rates.

### Additional Debt Capacity Under Different Interest Rates

(Assuming Debt Service to Revenues Ratio Capped at 7.5% for Next 5 Years and Constrained Targets Thereafter)

Fiscal Year	Interest Rate at 4.00%	Interest Rate at 5.00%	Interest Rate at 6.00%
2017	\$ 0	\$ 0	\$ 0
2018	0	0	0
2019	297,585,000	221,840,000	155,225,000
2020	11,175,000	0	0
2021	19,610,000	15,470,000	2,005,000
2022	0	0	0
2023	0	0	0
2024	361,545,000	331,535,000	305,135,000
2025	177,320,000	162,600,000	149,655,000
2026	281,275,000	257,925,000	237,385,000
2027	531,110,000	487,025,000	448,245,000
<b>Total Additional Capacity</b>	<b>\$1,679,620,000</b>	<b>\$1,476,395,000</b>	<b>\$1,297,650,000</b>

## **Debt Affordability Study**

### **Part Two: State-level agencies, public and quasi-public corporations debt and long-term liabilities**

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## Part Two – State of Rhode Island Quasi-Public Agencies

The second part of the debt affordability study focuses on the long-term liabilities of the quasi-public corporations and agencies in the State. These liabilities do not include any quasi-public agency debt that is included as tax-supported debt of the State, which is accounted for in Part One of the study. There is a wide variety of issuers in this category with different bonding programs, as listed below. Appendix B provides a list of quasi-public agencies with debt outstanding and the bonding programs under each with a description of the security and the current additional bonds test legally required under each bonding program.

None of the debt issued by the quasi-public agencies is a direct obligation of the State, and the State does not provide any backstop or guarantee for the repayment of the debt, except for certain debt issued by the Rhode Island Commerce Corporation and the Rhode Island Housing and Mortgage Finance Corporation. However, the quasi-public bond issuing agencies perform important functions for the State, and thus, the State maintains a strong interest in the viability and sustainability of the quasi-public agencies' finances.

### Overview of Quasi-Public Agencies

The quasi-public agencies in this part of the debt affordability study fall into two general categories: (i) those that issue debt secured by their own revenues and (ii) those that act as a conduit for debt secured by the revenues of separate underlying borrower(s) through loan or financing agreements. In addition, some quasi-public conduit issuers may have bonding programs that pool a group of underlying borrowers into a single debt issue. The table below summarizes the quasi-public agencies in these two categories.

<b>Direct Borrower</b>	<b>Type/Purpose of Bonds</b>
Narragansett Bay Commission	Wastewater System Revenue Bonds
Rhode Island Turnpike and Bridge Authority	Toll Revenue Bonds
Tobacco Settlement Financing Corporation	Tobacco Master Settlement Agreement Bonds
Rhode Island Resource Recovery Corporation	Resource Recovery System Revenue Bonds
<b>Conduit Issuer</b>	<b>Type/Purpose of Bonds</b>
Rhode Island Commerce Corporation	GARVEEs, Airport Revenue Bonds, Economic Development, Moral Obligation Bonds
Rhode Island Health and Educational Building Corporation	Public School, Higher Education, Other Education, Health Care Revenue Bonds (Includes Pooled Bonds)
Rhode Island Housing and Mortgage Finance Corporation	Single-Family and Multi-Family Housing Revenue Bonds, Moral Obligation Bonds
Rhode Island Infrastructure Bank	Water Pollution Control, Safe Drinking Water, Water, Sewer Revenue Bonds, Energy Efficiency Loans (Includes Pooled Bonds)
Rhode Island Student Loan Authority	Student Loan Revenue Bonds

In addition to the quasi-public agencies above, the State also has other quasi-public agencies that do not have any bonds currently outstanding, including the Rhode Island Public Transit Authority and the Rhode Island Water Resources Board.

Further, as covered in Part One of this debt affordability study, the Rhode Island Convention Center Authority bonds and the Rhode Island Turnpike and Bridge Authority's Motor Fuel Tax Revenue Bonds are included in Part One of this study as tax-supported debt of the State. The Rhode Island Commerce Corporation also has a portion of its debt that is treated as the tax-supported debt of the State, including the Transportation Motor Fuel Tax Bonds, URI Power Plant, Job Creation Guaranty, I-195 Land Sale, Historic Structures Tax Credit and various Performance Based Agreements. This debt is included in the debt analysis of Part One of the study, and will generally not be included in this section of the study, to avoid double-counting.

## **Framework for Considering Debt Affordability Guidelines for Quasi-Public Agencies of the State**

The debt issued by the quasi-public agencies are usually revenue bonds, in which debt service is payable solely from the revenues derived (i) from a dedicated revenue source, (ii) from operating businesses or the facilities acquired or constructed with proceeds of the bonds or (iii) under a loan or financing agreement.

Among the quasi-public agencies in Rhode Island, there are a variety of revenue bonds, including utilities, toll revenue, GARVEEs, airport, housing, student loan, healthcare, higher education, secondary education and other not-for-profits. The appropriate debt affordability measure for each must be considered. Since revenues are the source of repayment for the debt, the PFMB believes the focus of debt affordability should generally be based on some type of debt service coverage ratio, which may come in the form of an additional bonds test and/or an annual rate covenant requiring a minimum debt service coverage level.

Revenue bonds are issued pursuant to a trust indenture or a bond resolution, which are types of legal documents describing in specific detail the terms and conditions of a bond offering, the rights of the bondholder to receive revenue repayment, and the obligations of the issuer to the bondholder. These documents describe the revenues that are pledged for the repayment of debt and may incorporate a rate covenant and provisions for the issuance of additional debt, as described further below.

A rate covenant is a legal commitment by a revenue bond borrower to maintain rates, fees, charges, etc. at levels necessary to generate sufficient revenues to provide specified debt service coverage. With revenue bonds, the most frequently used measure of financial health is debt service coverage or the margin of safety for payment of debt service on a revenue bond which reflects the number of times the net revenues (generally total revenues less operation and maintenance expenses) exceed the debt service that is payable for a 12-month period of time. The trust indentures may also include an additional bonds test (ABT), which specifies a certain debt service coverage level must be met, including the proposed new debt, before new (additional) bonds can be issued. The legal requirements established in the indenture are reviewed by the rating agencies and are key factors in determining the rating. In addition, while the rate covenant provides the minimum acceptable debt service coverage, credit analysts will generally want to see higher levels of debt service coverage than what is legally required for highly rated entities.

Because an issuer's ability to meet the rate covenant and/or ABT specified in a trust indenture is a legal commitment, any debt affordability target cannot be weaker than the ABT in the covenant.

There are different considerations in the application of debt affordability guidelines to the two categories – direct borrowers and conduit issuers of quasi-public agencies in Rhode Island. The discussion below describes the debt programs for each of the quasi-public agencies and a proposed debt affordability measure for each quasi-public agency.

### ***Direct Borrowers***

This category includes the Narragansett Bay Commission, the Rhode Island Turnpike and Bridge Authority, the Tobacco Settlement Financing Corporation and the Rhode Island Resource Recovery Corporation. With these borrowers, debt is secured by the entity's own revenues and the State does not provide any backstop or guarantee for the repayment of the debt. Debt is issued pursuant to the respective trust indentures. For the Tobacco Settlement Financing Corporation, under its master indenture only refunding bonds can be issued; no new debt can be issued. This analysis will focus on the Narragansett Bay Commission, the Rhode Island Turnpike and Bridge Authority and the Rhode Island Resource Recovery Corporation.

The debt service coverage ratio provides a measure by which we can assess the quasi-public agencies' ability to repay their debt and is a key statistic used by rating agencies in their review of the credit of revenue bonds. In cases where the quasi-public agencies' debt is secured by loans, asset-liability ratio provides a useful measure to assess the quasi-public agencies' ability to repay their debt and is a key statistic used by rating agencies in their review of certain types of revenue bonds.

*Narragansett Bay Commission*

The Narragansett Bay Commission (NBC) issues debt on its own and also borrows through the Rhode Island Infrastructure Bank (RIIB). As of June 30, 2016, NBC had approximately \$242.82 million of NBC issued bonded debt outstanding under the trust indenture and approximately \$385.09 million in subsidized loans from the Rhode Island Infrastructure Bank’s clean water state revolving loan fund. For NBC’s bonded debt, the trust indenture requires an ABT of 1.25x and 1.35x for its RIIB loans. In its criteria for utilities, Standard & Poor’s assesses coverage in the 1.25x to 1.40x range as “strong”; NBC’s ABT of 1.25x/1.35x is in this range. Standard & Poor’s confirmed its ‘AA-’ rating with a stable outlook for the NBC in July 2016. Based on the Standard & Poor’s report, for 2009 through 2015, net revenues covered debt service by at least 1.25x with debt service coverage for 2015 at 1.4x. NBC has been able to maintain its high “AA-” rating and maintain debt service coverage at or above the required level. The following is an excerpt from the July 2016 S&P report:

“The strong financial risk score reflects DSC being no less than about 1.25x and unrestricted liquidity ranging between about 130-150 days' cash equivalent. The commission's financial performance remains strong, in our opinion. For audited years 2009-2015, net revenues covered debt service by at least 1.25x; for the fiscal year ended June 30, 2015, coverage was 1.4x. Also, unrestricted cash has not dropped below a level representing 134 days' operating expenses since 2009, and it was at 157 days in 2015 (equivalent to \$16.0 million). For fiscal 2016, management does not anticipate major deviations from these trends. Also, supporting the financial risk profile is the "strong" financial management assessment, indicating that, in our view, financial practices are strong, well embedded, and likely sustainable. Examples include the existence of long-term capital planning, formal investment and debt policies, and monthly review of budget performance by the commission.”

At this time, the PFMB recommends NBC target debt service coverage of at least 1.3x for both debt issued directly by NBC and debt issued through RIIB. Based on S&P criteria, the 1.3x is in the mid-range of what S&P considers ‘strong’ and consistent with NBC’s AA- rating. Additionally, the 1.3x guideline is within the range of coverage levels (1.3x-3.3x) of NBC’s peer group. NBC’s current debt service coverage of 1.4x meets the recommended target.

<b>Quasi-Public Agency</b>	<b>Indenture Required Additional Bonds Test</b>	<b>Recommendations for Debt Affordability Measure</b>	<b>Current Debt Level</b>
<b>Narragansett Bay Commission</b> (--/AA/--)	Requires estimated net revenues (gross revenues less operating and maintenance expenses) for the three years following the issuance of bonds to be at least 1.25x the debt service requirement for revenue bonds and 1.35x <sup>1</sup> the debt service requirement for RIIB loans	1.3x debt service coverage for both Commission debt and RIIB loans  Provide notice to PFMB of any rating action	1.4x

(1) Higher coverage on the Commission’s RIIB Loans relate to the subsidized nature of the obligation.

The following table summarizes S&P rating considerations for debt service coverage for water and sewer utility systems and a comparison of the ABT and rate covenant and debt service coverage levels of peer utility systems.



Rating Agency Criteria for Utilities					
Standard & Poor's	As part of the Financial Risk Profile, S&P reviews and scores the following factors:				
		Debt Service			Debt to
	<u>Score</u>	<u>Coverage</u>	<u>Days' Cash</u>	<u>Actual Cash</u>	<u>Capitalization<sup>1</sup></u>
	1	1.60x or Above	> than 150	> than \$75 MM	Up to 20%
	2	1.40x to 1.60x	90 to 150	\$20 MM to \$75 MM	20% to 35%
	3	1.20x to 1.40x	60 to 90	\$5 MM to \$20 MM	35% to 50%
	4	1.10x to 1.20x	30 to 60	\$1 MM to \$5 MM	50% to 65%
5	1.00x to 1.10x	15 to 30	\$500,000 to \$1 MM	65% to 80%	
6	Below 1.00x	< than 15	< than \$500,000	Greater than 80%	
Issuer	Ratings (M/S/F)	ABT/Rate Covenant	Debt Service Coverage (2015)	Cash on Hand (2015)	Debt to Capitalization
<b>Narragansett Bay Commission</b>	--/AA/--	NBC: 1.25x RIIB: 1.35x <sup>2</sup>	1.4x	157 days	59%
Massachusetts Water Resources Authority	Aa1/AA+/AA+	Senior: 1.20x Sub.: 1.10x	Senior: 2.10x Sub.: 1.20x	138 days	25.4%
Boston Water and Sewer Commission	Aa1/AA+/AA+	1.25x	1.76x	161 days	57.9%
City of Philadelphia Water and Sewer Bonds	A1/A+/A+	Senior: 1.20x Sub.: 1.00x (includes RSF)	1.33x	292 days	73.9%
St. Louis Metropolitan Sewer District	Aa1/AAA/AA+	Senior: 1.25x Sub.: 1.15x	Senior: 3.30x Sub.: 2.10x	297 days	31.7%
City of Baltimore Water and Wastewater Bonds	Sen: Aa2/AA/-- Sub: Aa3/AA/-	Senior: 1.15x Sub.: 1.10x	1.30x	205 days	40.3%

Source: Rating reports and annual reports for each issuer.

(1) Standard and Poor's uses the Debt to Capitalization metric to measure the relative leverage of the utility by comparing the total of all long and short term debt outstanding (numerator) to the utility's Net Position (denominator).

(2) Higher coverage on the Commission's RIIB Loans relate to the subsidized nature of the obligation.

The Narragansett Bay Commission's debt and other financial statistics presented above represent the recent, point-in-time numbers. Both the fiscal year 2016 and budgeted fiscal year 2017 results reflect a slight improvement in Net Position, resulting in coverage levels at or above 1.40x.

While the NBC's current level of indebtedness is currently within the recommended limit, the PFMB notes that the NBC is in the evaluation stages of a large capital program (over \$700 million), to construct Phase III of the Combined Sewer Overflow Control Facilities program (CSO III). The final scope and specific financing sources of CSO III are still to be determined, and the PFMB intends to study the plan closely before the NBC goes to market for financing in order to ascertain the affordability of the CSO III proposal.

#### *Rhode Island Turnpike and Bridge Authority*

The Rhode Island Turnpike and Bridge Authority (RITBA) issues toll revenue bonds with an ABT and rate covenant that, once the outstanding 2003 bonds are retired on December 1, 2017, requires net revenues (after payment of operating and maintenance expenses) plus Dedicated Payments (which are described in the bond indenture as *without limitation, any gifts, grants, or other payments to the Authority from the United States government, the State or any public or private instrumentality*) pledged to the bonds to be at least 1.20x<sup>1</sup>. As of June 30, 2016, RITBA had \$53.2 million of toll revenue bonds outstanding. As specified in Standard & Poor's toll road criteria, the most common ratio used in a toll covenant is 1.25x. Based on the Standard & Poor's RITBA report dated April 1, 2016, annual debt service coverage has ranged from 1.6x to 2.1x from fiscal years 2011 through 2015, with debt service coverage at its low point of 1.6x in fiscal year 2015, which Standard & Poor's still considered strong. RITBA's 1.20x covenant requirement is on the low side; however, actual debt service coverage has been healthy. In 2016, S&P and Fitch revised the RITBA rating outlook from Negative to Stable.



At this time, the PFMB recommends RITBA target debt service coverage of at least 1.7x for its toll revenue bonds. Based on Fitch criteria for small networks and stand-alone toll facilities, average debt service coverage of 1.7x and above is consistent with an ‘A’ rating category, and the 1.7x guidance is in the middle of the range for debt service coverage for existing toll facilities based on S&P methodology. RITBA’s 10-year average debt service coverage of 1.78x meets the recommended target and the debt service coverage of maximum annual debt service is just below 1.7x.

Quasi-Public Agency	Indenture Required Additional Bonds Test	Recommendation for Debt Affordability Measure	Current Debt Level
<b>Rhode Island Turnpike and Bridge Authority</b> (--/A-/A)	After retirement of 2003A Bonds, Net Revenues (gross revenues less operating and maintenance expenses) plus Dedicated Payments in most recent fiscal year or projected for each of the next 5 fiscal years must be at least 1.20x <sup>1</sup> Maximum Annual Debt Service.	1.7x Debt Service Coverage	1.68x Debt Service Coverage

(1) On April 1, 2010, the Authority amended and restated its Master Trust Indenture which included a revised ABT (from 1.25x to 1.20x). The 1.2x ABT referenced will take effect upon the maturity of the outstanding Series 2003 Bonds (December 1, 2017).

The table of the following page summarizes Fitch and S&P rating considerations for debt service coverage for toll revenue bonds and a comparison of the ABT and rate covenant and debt service coverage levels of peer toll facilities (small expressway or stand-alone toll facilities).

Rating Agency Criteria for Toll Revenue Bonds				
<b>Fitch Ratings</b>	For small networks and stand-alone toll road: “A” Rating Category: Average debt service coverage of 1.7x and above “BBB” Rating Category: Average debt service coverage of 1.4x and above AA rating category is unlikely based on asset size/geographical concentration.			
<b>Standard &amp; Poor’s</b>	Rating for toll revenue bonds above ‘A’ category is unlikely. Typical rate covenant is 1.25x. Does not provide indicative rating levels for different debt service coverage levels. Typical coverage for existing toll facilities is in the 1.5x-2.0x range.			
Issuer	Ratings (M/S/F)	ABT/ Rate Covenant	Debt Service Coverage of Maximum Annual Debt Service	10-Year Average Debt Service Coverage (Senior Debt)*
<b>RITBA</b>	<b>--/A-/A</b>	<b>1.20x</b>	<b>1.68x</b>	<b>1.78x</b>
Richmond Metropolitan Authority (VA)	A2/--/A	1.25x (1.0x on all obligations)	1.77x	2.00x
Buffalo & Fort Erie Public Bridge Authority (NY)	--/A+/A	1.25x (1.0x on all obligations)	4.16x	2.05x
Lee County (FL) Toll Bridges	A3/A/--	1.20x (1.0x on all obligations)	2.25x	N.A.
Greater New Orleans Expressway Commission	--A/--	1.20x (1.0x on all obligations)	2.18x	N.A.
Niagara Falls Bridge Commission (NY)	--A+/--	1.30x	1.74x	N.A.

\* Ten-year Average Coverage levels from Fitch Ratings, “Peer Review of U.S. Toll Roads,” December 2016.

The RITBA’s debt and other financial statistics presented above represent the recent, point-in-time numbers. Net Revenues for fiscal year 2016 represent a 28% increase over fiscal year 2015 thereby generating coverage in excess of 2.00x.

### Rhode Island Resource Recovery Corporation

The Rhode Island Resource Recovery Corporation (RIRRC) is responsible for managing Rhode Island's solid waste and recyclables. RIRRC is a landfill management and recycling organization, committed to providing economically sound and environmentally safe solid waste management services to all communities in Rhode Island. RIRRC provides several distinct onsite processing and disposal services to its customers: sanitary landfilling, commercial composting, recyclables sorting and processing and small vehicle waste sorting. RIRRC's central landfill, located in Johnston, is currently projected to reach the end of its useful life in 2038, however, because of recent high usage, it is likely that the end of its actual useful life may occur several years earlier. PFMB recommends the RIRRC refrains from the issuance of additional long-term debt until the future of the facility is more certain.

The Rhode Island Resource Recovery Corporation issued revenue bonds through a private placement with an ABT and rate covenant that requires net revenues (after payment of operating and maintenance expenses) plus State Subsidy, and Assets Held in Trust to be at least 1.25x debt service. As of June 30, 2016, the Rhode Island Resource Recovery Corporation had \$29.1 million of debt outstanding. Generally, for utilities, Standard & Poor's assesses coverage in the 1.25x to 1.40x range as "strong".

Quasi-Public Agency	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Level
<b>Rhode Island Resource Recovery Corporation (Not Rated)</b>	For any 12-month period out of the last 18 months, Net Revenues (gross revenues less operating and maintenance expenses) plus State Subsidy plus Assets Held in Trust must be at least 1.25x Maximum Annual Debt Service	PFMB recommends the Corporation refrain from any issuance of long-term debt until the future of the facility is more certain.	4.00x Debt Service Coverage

The Rhode Island Resource Recovery Corporation's debt is not rated, however general rating agency criteria for utilities can be reviewed and the peer comparison for the Rhode Island Resource Recovery Corporation, as summarized above can be used as a reference.

Rating Agency Criteria for Utilities					
<b>Standard &amp; Poor's</b>	As part of the Financial Risk Profile, S&P reviews and scores the following factors:				
	Debt Service				Debt to
	<u>Score</u>	<u>Coverage</u>	<u>Days' Cash</u>	<u>Actual Cash</u>	<u>Capitalization</u>
	1	1.60x or Above	> than 150	> than \$75 MM	Up to 20%
	2	1.40x to 1.60x	90 to 150	\$20 MM to \$75 MM	20% to 35%
	3	1.20x to 1.40x	60 to 90	\$5 MM to \$20 MM	35% to 50%
	4	1.10x to 1.20x	30 to 60	\$1 MM to \$5 MM	50% to 65%
	5	1.00x to 1.10x	15 to 30	\$500,000 to \$1 MM	65% to 80%
	6	Below 1.00x	< than 15	< than \$500,000	Greater than 80%
Issuer	Ratings (M/S/F)	ABT/Rate Covenant	Debt Service Coverage (2015)	Cash on Hand (2015)	Debt Ratio
<b>Rhode Island Resource Recovery Corporation</b>	<b>Not Rated</b>	<b>1.25x</b>	<b>4.00x</b>	<b>330 Days</b>	<b>32%</b>
Delaware Solid Waste Authority	Aa3/AA+/-	1.10x	2.08x	658 days	33%

The Rhode Island Resource Recovery Corporation's debt and other financial statistics presented above represent the recent, point-in-time numbers. Preliminary results show an improved Net Position in fiscal year 2016. This is the direct result of a 7.4% increase in revenues over those generated in fiscal year 2015 and a nearly 15% decrease in expenses over those incurred in fiscal year 2015.

**Conduit Issuers**

Most state quasi-public agencies issue conduit debt on behalf of other underlying borrowers. In these issues the key to affordability is the credit worthiness of the underlying borrower(s). There are two categories of underlying borrowers: (i) single entity and (ii) multiple entities under a pooled bond program.

1. Conduit Issuers -- Single Entity Borrowers

With the single-entity underlying borrower, the PFMB considered debt affordability targets for each underlying entity. For example, the Rhode Island Health and Educational Building Corporation, based on its FY2015 annual report, had 50 different single-entities as underlying borrowers; the Rhode Island Commerce Corporation has seven single-entity underlying borrowers; and the Rhode Island Industrial Facilities Corporation has six single-entity underlying borrowers.

The underlying borrowers can be categorized into different groups:

- (i) State agency<sup>4</sup> (e.g. Rhode Island Department of Transportation, University of Rhode Island);
- (ii) Political subdivision of the State (e.g. City of Pawtucket, City of Providence);
- (iii) Non-profit entity (e.g. Lifespan Obligated Group, Brown University, Providence College); or
- (iv) Private for-profit entity (e.g. CAPCO Steel, Bullard Abrasives).

For the non-profit and private entities that secure the debt with their own revenue sources and those revenues are not subject to a moral obligation or any other connection with the State, an agency of the State or a municipality, PFMB does not recommend any debt targets. Responsibility for repayment of these debts lie solely with the non-profit and private entities, the taxpayers bear no liability, and it is unlikely that a state or local government would ever assume these liabilities should the underlying borrower be unable to make debt service payments.

*Rhode Island Department of Transportation*

The Rhode Island Department of Transportation (RIDOT) issues Grant Anticipation Revenue Vehicles (GARVEEs) through the Rhode Island Commerce Corporation. GARVEEs are bonds secured by future Federal-aid highway funds received by the State and provide a mechanism for accelerating construction projects that would otherwise be funded on a pay-go basis. GARVEEs enable the State to fund essential transportation projects without impacting the State’s borrowing capacity and reduce use of tax supported debt. GARVEEs do not include any federal guarantee of repayment however the market views these credits favorably as they are structured with short maturities, high ABTs and high debt service coverage.

With debt service coverage currently at 4.5x, Rhode Island’s level of coverage is among the lowest of GARVEE programs of other states, but still well within coverage levels viewed favorably by the ratings agencies. PFMB recommends using the current coverage level of 4.5x as a debt limit going forward.

Underlying Borrower	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Level
<b>Rhode Island Department of Transportation Grant Anticipation Revenue Bonds (GARVEEs) (A3/AA/--)</b>	Federal Transportation Funds must be 3.00x maximum bond payments in any federal fiscal year	Coverage Level of 4.5x.  Provide notice to PFMB of any rating action	4.5x Coverage

<sup>4</sup> State agencies includes State Boards and State Chartered Institutions, such as the University of Rhode Island.

The table below summarizes Moody's and Standard & Poor's rating considerations for the additional bonds test and debt service coverage for GARVEEs and a comparison of the ABT and debt service coverage levels of GARVEE programs of other states, which, like Rhode Island GARVEEs, are secured solely by Federal highway reimbursements and have no back-up security.

Rating Agency Criteria for GARVEEs			
<b>Moody's</b>	Rating methodology for GARVEEs is based on Moody's Special Tax Methodology. ABT of 3.00x and higher are scored 'Aaa'. Moody's assessment of the revenue outlook and trend limit the rating from reaching the 'Aaa' or 'Aa' levels. Furthermore, a below the line adjustment attributable to Federal reauthorization risk results in primarily 'A' rating level.		
<b>Standard &amp; Poor's</b>	AA Rating Category: Additional bonds test of at least 2.0x, coverage levels of at least 3.0x A Rating Category: Additional bonds test of at least 1.5x, coverage levels of at least 1.5x		
Issuer	Ratings (M/S/F)	Additional Bonds Test	MADS Debt Service Coverage*
<b>Rhode Island</b>	<b>A2/AA/--</b>	<b>3.0x</b>	<b>4.5x</b>
Delaware	A1/AA/--	3.0x	13.3x
District of Columbia	A2/AA/--	3.0x	12.8x
Georgia	A2/AA/A+	3.0x	6.6x
Idaho	A2/--/A+	3.33x	4.5x
Kentucky	A2/AA/A+	4.0x	6.5x
Maine	A2/--/A+	3.0x	8.5x
Michigan	A2/AA/--	3.0x	7.7x
Mississippi	Aa3/AA/--	\$375mm**	6.6x
Montana	A2/AA/--	3.0x	24.6x
New Hampshire	A2/AA/--	3.0x	8.2x
North Carolina	A2/AA/A+	3.0x	9.9x
Ohio	Aa2/AA/--	5.0x	7.9x
Oklahoma	A2/--/A+	3.0x	21.6x
Washington	A2/AA/--	3.5x	6.3x
West Virginia	A2/AA/--	3.0x	41.4x

\* Coverage levels based on Federal-Aid Highway Program Obligation Limitation for FY2016. Pro Forma Coverage calculated by dividing Obligation Limitation by MADS as displayed in latest Official Statement; note that mismatch may occur between FFY and individual state FY. Source for FFY 2016 OA:

[https://www.fhwa.dot.gov/legisregs/directives/notices/n4520240/n4520240\\_t1.cfm](https://www.fhwa.dot.gov/legisregs/directives/notices/n4520240/n4520240_t1.cfm)

\*\*The State of Mississippi's GARVEE bond program has an aggregate debt limitation rather than one based on coverage.

### Rhode Island Airport Corporation

The Rhode Island Airport Corporation (RIAC) is a semi-autonomous subsidiary of the Rhode Island Commerce Corporation. RIAC is responsible for the operation of six state-owned airports, the largest of which is T. F. Green Airport. T.F. Green airport is located 8 miles south of Providence in Warwick and is the third largest airport in New England. Green is currently served by five U.S. flag carriers and two international airlines. In February 2017, RIAC announced that Norwegian Airlines, a low-cost, long-haul carrier, will begin service this summer from T. F. Green to six European destinations.

At this time, the PFMB recommends RIAC target debt service coverage of 1.5x for its general airport revenue bonds, which is the middle range for an A rating category based on Moody’s methodology and in the middle of the range of debt service coverage levels (1.42x-1.96x) of peer airports. RIAC’s current coverage of 1.76x when including the rolling coverage account, is well within this target. Further, the PFMB recommends RIAC target debt per enplaned passenger of \$100. This target is at the bottom of the ‘Baa’ rating category based on Moody’s methodology and on the higher end when compared to most of its peers. Although RIAC is currently above the recommended target for debt per enplaned passenger (\$137) an increase in the number of passengers could help RIAC meet its target of \$100 per enplaned passenger. The above noted announcement regarding Norwegian Airlines launch of discounted international fares may enhance the enplaned passenger counts for the airport.

Underlying Borrower	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Levels
<b>Rhode Island Airport Corporation</b>	<p><u>Airport Revenues Bonds</u>: RIAC’s net revenues (include rentals, fees, and other charges) and certain Passenger Facility Charge revenues must be 1.25x debt service (Baa1/BBB+/BBB+)</p> <p><u>Special Facility Revenue Bonds</u>: Revenues generated by the operation of the Intermodal Facility, including Customer Facility Charges, Rental Car Companies fees and Parking Revenues must be 1.25x debt service (Baa1/BBB+/-)</p>	1.5x coverage when including the Coverage Account Ending Balance and debt per enplaned passenger to \$100.	1.76x coverage and \$137 per enplaned passenger

The following table summarizes Fitch, Moody’s and S&P rating considerations for debt ratios for airport revenue bonds and a comparison of the ABT and rate covenant and debt ratios of peer airport facilities (regional origination and destination airports).

Rating Agency Criteria for Airports					
<b>Fitch Ratings</b>	<p>Fitch considers metrics for liquidity, debt service coverage and leverage in the context of the overall risk profile of the airport. Fitch assesses RIAC’s resiliency of the passenger volume as weaker and the strength and competitiveness of RIAC’s contractual framework with its airline partners and other commercial operators (price) as mid-range. Given this risk profile (weaker volume risk and midrange price risk), Fitch’s rating guidance has RIAC ratings capped at the BBB level with ultimate rating factoring in liquidity, coverage and leverage:</p> <p>BBB: Net Debt to Cash Flow Available for Debt Service (CFADS)): <math>\leq 4x</math></p> <p>BB: Net Debt to Cash Flow Available for Debt Service (CFADS)): <math>\geq 4x</math></p>				
<b>Moody’s Investors Service</b>	<p>Moody’s employs a scoring methodology with two factors, market position and service offering, having a combined weight of 85%. The remaining 15% of the scoring is based on leverage and coverage using the following subfactors:</p>				
	<b>Rating Category</b>	<b>Aaa</b>	<b>Aa</b>	<b>A</b>	<b>Baa</b>
	Debt Service Coverage	$\geq 2.5x$	1.75x – 2.5x	1.3x – 1.75x	1.1x – 1.3x
	Debt per O&D Enplaned Passenger	$< \$25$	\$25 - \$50	\$50 - \$75	\$75 - \$100
<b>Standard &amp; Poor’s</b>	<p>S&amp;P does not use scoring in its methodology and does not have a percentage score for debt. In reviewing the credit, S&amp;P’s analysis begins with the service area characteristics and air traffic demand and then factors in the legal provisions:</p> <p><u>Rate covenant</u>: S&amp;P states that most senior lien airport revenue bonds have a 1.25x rate covenant. S&amp;P views meeting the rate covenant from operating cash flow with no addition to revenues from other sources is stronger.</p> <p><u>Additional bonds test</u>: S&amp;P states that most ABTs in the airport sector allow for the use of projected revenues in meeting the typical 1.25x existing and future debt service obligations.</p>				

Issuer	Ratings (M/S/F)	ABT/ Rate Covenant	Debt Service Coverage (2015)	Cash on Hand (2015)	Net Debt to Cash Flow Available for D/S	Debt per Enplaned Passenger
Rhode Island Airport Corporation	<u>Airport Revenue</u> Baa1/BBB+/BBB+ <u>Special Facility</u> Baa1/BBB+/-	1.25x	1.76x (including rolling coverage account) 1.47x (without coverage account)	397 days	6.10x	\$137
Hartford-Springfield (Bradley Airport)	--/A/A	N.A.	1.76x (including rolling coverage account) 1.29x (without coverage account)	489 days	2.38x	\$43
Manchester, NH	Baa1/BBB+/-	1.25x	1.96x (including rolling coverage account) 1.02x (without coverage account)	567 days	N.A.	\$143
Dayton, OH	--/AA/BBB+	1.25x	1.42x (including subsidies) 1.30x (projected)	421 days	2.42x	\$74
Long Beach, CA	A3/--/A-	1.25x	1.42x (without transfers)	603 days	4.53x	\$86

Source: Rating reports and annual reports for each issuer.

The RIAC's debt and other financial statistics presented above represent the recent, point-in-time numbers. RIAC's fiscal year 2016 results are generally consistent with, to slightly weaker than, fiscal year 2015 results. Despite an improvement in operating revenues, expenses increased by a greater amount putting pressure on Net Revenues.

## 2. Conduit Issuers – Pooled Bond Programs

The Rhode Island Health and Educational Building Corporation (RIHEBC), the Rhode Island Infrastructure Bank (RIIB), the Rhode Island Housing and Mortgage Finance Corporation (RI Housing) and the Rhode Island Student Loan Authority (RISLA) are conduit issuers that issue pooled bonds for various purposes.

For conduit bond issues with municipalities as the underlying borrower, the general obligation of the municipality or specified revenues secures the debt and debt affordability measures for these municipalities is considered in Part Three of this debt affordability, as debt of the municipalities.

Given the uniqueness of each of these quasi-public agencies, there are some different considerations for determining appropriate debt affordability measures. To assist in determining appropriate debt affordability measures, rating agency criteria have been compiled along with a review of peer agencies and current procedures and policies of the quasi-public agencies and debt management practices of selected New England states. Appendix C contains:

- Rating agency criteria for pooled loan programs and state revolving funds, which can be applied to the RIHEBC pooled programs and the RIIB pooled programs.
- Debt management practices of selected New England states with respect to quasi-public agencies.



## *Rhode Island Health and Educational Building Corporation*

The Rhode Island Health and Educational Building Corporation (RIHEBC) runs financing programs designed to aid educational and health care institutions gain access to tax-exempt capital through conduit debt or lease structures and a community loan program. RIHEBC is the designated issuer of tax-exempt bonds for school projects for cities and towns eligible for state school construction aid. It also issues taxable and tax exempt bonds to provide conduit financing for public, non-profit, and private hospitals, universities, and other community education and health facilities. The debt RIHEBC issues on behalf of municipalities for the school construction projects will be reflected in Part Three of this study, while the debt RIHEBC issues on behalf of the state's higher education institutions is reflected herein. Given the stand-alone non-recourse nature of the debt of the conduit debt RIHEBC issues on behalf of non-profit or private institutions, this study does not include any analysis or consideration of those entities. Only RIHEBC conduit debt issued on behalf of municipalities (Part Three) and public higher education institutions (Part Two) is being evaluated for affordability by PFMB.

There is one active pooled bond program under RIHEBC for public schools and two RIHEBC programs for higher education with the Board of Education, Counsel of Post-Secondary Education as the borrower.

With the RIHEBC Public Schools Revenue Bond Financing Program, the underlying borrowers are Rhode Island municipalities, and these participating borrowers are ultimately responsible for the payment of the debt service. Prior to submitting an application to RIHEBC, these municipalities have received city or town council authorization and/or voter approval for the issuance of the debt. Public School revenue bond debt are addressed in Part Three of this study.

Through the two higher education programs, RIHEBC also issues bonds for the benefit of University of Rhode Island ("URI"), Rhode Island College ("RIC") and the Community College of Rhode Island ("CCRI", and collectively the "State Colleges") RIHEBC's Higher Education Facility Revenue Bond programs consist of (i) the Educational and General Revenue Bond program and (ii) the Auxiliary Enterprise Revenue Bond program. For the Educational and General Revenue Bond pool program debt service is paid from revenues of the Rhode Island Board of Education and from educational and general revenues derived from, or appropriated by the State for, the State Colleges. RIHEBC also issues Educational and General Revenue Bonds on a stand-alone basis for the University of Rhode Island.

For the Auxiliary Enterprise Revenue Bond pool program debt service is paid from Auxiliary Enterprise Revenues derived from the State Colleges. RIHEBC also issues Auxiliary Enterprise Revenue Bonds on a stand-alone basis for the University of Rhode Island.

### *RIHEBC Issuance for Public Higher Education Debt*

As noted above, RIHEBC issues debt for public universities either in a pooled program or on a stand-alone basis for the University of Rhode Island. In both categories, RIHEBC separately secures its Educational and General Revenue Bonds and its Auxiliary Enterprise Revenue Bonds. Educational and General Revenue Bonds are paid for through the collection of tuition and student fees, together with other available moneys (which could include State appropriations). To service the Auxiliary Enterprise Revenue Bonds, requires the Rhode Island Council for Postsecondary Education collects fees and charges for housing and dining.

As of June 30, 2016, RIHEBC reported the following amounts outstanding:

- \$51.8 million of URI Educational and General Revenue Bonds
- \$25 million of State Colleges Educational and General Revenue Bonds
- \$136.9 million of URI Auxiliary Enterprise Revenue Bonds
- \$6.1 million of State Colleges Auxiliary Enterprise Revenue Bonds

Both Moody's and Standard & Poor's use scorecards for rating higher education pool programs and specific institutions. Both agencies focus on fundamentals that drive financial performance including Market Position, Management, Operating Performance and Debt Affordability. While historically, annual maintenance targets (rate covenant) and ABT have driven ratings, higher education issuers have moved away from including those covenants in their security packages. As such, the rating agencies now use more holistic statistics to capture all leverage, (using maximum annual debt service (MADS) and total debt as measurement tools. RIHEBC's Educational and General Revenue Bonds ABT of 1.00x and Auxiliary Enterprise Revenue Bond ABT of 1.20x are on the low side compared to peer states.

The following table summarizes Moody's and S&P's key statistics for Higher Education bonds, and a comparison of the current debt service coverage ratio, operating margin, MADS burden and Total Debt to Cash Flow of peer large State Flagship Universities in the New England States.

Rating Agency Criteria for Higher Education Issuers						
<b>Moody's Investors Service</b>	Scorecard includes four broad factors: Market Profile, Operating Performance, Wealth and Liquidity and Leverage Several of the factors measure how the University and System are positioned as it relates to size, attendance and revenue diversity. Operating Margin and Total Debt to Cash Flow serve as two primary statistics for measuring annual performance and debt affordability.					
	Rating Category	<b>Aaa</b>	<b>Aa</b>	<b>A</b>	<b>Baa</b>	
	Operating Margin (%)	≥ 20	11 – 20	4.5 – 11	1 – 4.5	
	Total Debt to Cash Flow	0 < 4	> 4 - 10	>10 - 16	>16 - 22	
<b>Standard &amp; Poor's</b>	Considers the Enterprise (Market Position and Governance) Profile and Financial Profile of the institution equally. MADS Burden is one primary factor in assessing debt affordability:					
	<u>Score</u>	<u>Burden</u>				
	1	2% or less				
	2	2% to 4%				
	3	4% to 6%				
	4	6% to 8%				
	5	8% to 10%				
	6	Greater than 10%				
	<b>Ratings (M/S/F)</b>	<b>ABT/ Rate Covenant</b>	<b>Debt Service Coverage (FY 2015)</b>	<b>Operating Margin (FY 2015)</b>	<b>MADS Burden</b>	<b>Total Debt to Cash Flow (FY 2015)</b>
<b>University of Rhode Island – Educational and General Revenue Bonds<sup>5</sup></b>	<b>Aa3/A+/-</b>	<b>1.00x</b>	<b>N/A</b>	<b>7.5%</b>	<b>3.9%</b>	<b>7.0x</b>
<b>University of Rhode Island – Auxiliary Enterprise Revenue Bonds</b>	<b>A1/A+/-</b>	<b>1.20x</b>	<b>1.5x</b>	<b>7.5%</b>	<b>3.9%</b>	<b>7.0x</b>
University of Connecticut	Aa2/AA-/-	1.25x	7.3x	14.9%	12.54%	7.2x
University System of New Hampshire	Aa3/AA-/-	N/A	3.5x	12.7%	8.66%	4.5x
University of Massachusetts	Aa2/AA- /AA	N/A	1.7x	11.0%	7.23%	9.4x
University of Vermont & State Agricultural College	Aa3/A+/-	N/A	2.8x	12.7%	5.10%	5.5x

\* Statistics provided from recent rating reports published.

<sup>5</sup> State College and University of Rhode Island credit statistics reflect all debt obligations which may include portions of certain general obligation and certificate of participations issued by the State.



URI's debt and other financial statistics presented above represent the recent, point-in-time numbers. Fiscal year 2016 results are not yet publicly available. URI is reportedly considering a new student housing projects that may include future borrowing. PFMB will continue to monitor URI's borrowing plans.

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Level of Debt
University of Rhode Island	Total Debt to Cash Flow of less than 11.0x as a factor required for Additional Bonds.  Provide notice to PFMB of any rating action	7.0x Debt to Cash Flow

#### *Rhode Island Infrastructure Bank*

The Rhode Island Infrastructure Bank currently administers four core pooled loan programs and a number of smaller programs. The four core programs include: (i) clean water state revolving loan fund, (ii) drinking water state revolving loan fund, (iii) municipal road and bridge revolving loan fund and (iv) the efficient buildings fund.

Loan Programs	Debt Outstanding (FY 2016)
Water Pollution Control Revenue Bonds	\$522,700,000
Safe Drinking Water	\$264,742,000
Municipal Road and Bridge Revolving Loan Fund	Newly Established
Efficient Buildings Fund	Newly Established

The focus for this study will be on the Water Pollution Control Revenue Bonds and Safe Drinking Water bond programs, which provide subsidized financing to governmental entities and water suppliers throughout the State for eligible wastewater and drinking water projects, respectively. Bond proceeds are combined with other sources of funding to provide subsidized loans to underlying borrowers, primarily municipalities, sewer and water utilities. The Municipal Road and Bridge Fund and the Efficient Buildings Fund are new programs that are in early stages of development and have not issued a significant amount of debt. The PFMB will not provide targets for these programs until they are more fully developed, and the recommended targets for the Water Pollution Control and Safe Drinking Water programs should not be considered applicable to the Municipal Road and Bridge Fund or Efficient Buildings Fund.

Fitch and Standard & Poor's calculate the program's asset strength ratio or asset liability ratio, which includes the sum of the total scheduled pledged loan repayments, account interest earnings and reserves divided by total scheduled bond debt service. Rating agency criteria provides a limit on the number of borrowers at certain rating levels that can be included and the overall weighted pool rating. RIIB has an agreement with the Narragansett Bay Commission, its largest borrower, to reserve 50% of its annual Clean Water SRF funding capacity for the Narragansett Bay Commission through 2021 to help meet the capital needs of the Narragansett Bay Commission. Both Fitch and S&P conduct cash flow modeling analyses to demonstrate that the programs can continue to pay debt service even with loan defaults in excess of the agencies' "AAA" rating stress default levels.

The following table summarizes Fitch and S&P rating key statistics for State Revolving Loan Fund bonds and other leveraged municipal pools revenue bonds, and a comparison of the asset/liability ratio, projected debt service coverage levels, largest borrower percentage and the rating of the largest borrower of peer State revolving loan fund borrowers. See Exhibit B for a more detailed summary of the rating agencies' criteria for evaluating state revolving pooled loan programs and other municipal pool programs.

Rating Agency Criteria for State Revolving Loan Bonds and Similar Municipal Loan Pools					
<b>Fitch Ratings</b>	Fitch's key rating drivers include: Portfolio Credit Risk, Strength of Financial Structure, Legal Risk, Adequacy of Program Management and Counterparty Risk.				
<b>Standard &amp; Poor's</b>	Indicative rating is determined from a combination of the Financial Risk Score and Enterprise Risk Scores. Financial Risk Score includes a Primary Loss Coverage Score (calculated by S&P), with an adjustment for a Least Favorable Largest Obligor Test result, and an Adjusted Loss Coverage Score with an adjustment for Financial Policies and Operating Performance Scores. Enterprise Score is calculated based on a Market Position Score and an Industry Risk Score. S&P considers the Market Position Score and an Industry Risk Score for municipal utility borrower to be in the low risk category.				
Issuer	Ratings (M/S/F)	Asset / Liability Ratio	Projected Minimum Debt Service Coverage	Largest Borrower (%)	Rating of Largest Borrower
<b>RIIB</b>	<b>- /AAA/AAA</b>	<b>1.5(CW)/ 1.6(DW)</b>	<b>1.3x(CW)/ 1.5x(DW)</b>	<b>47.0%(CW)/ 30.6%(DW)</b>	<b>AA-/AA-</b>
Connecticut SRF	Aaa/AAA/AAA	1.3	1.0	21.5%	AA+
Florida Water Pollution Control Corporation	Aaa/AAA/AAA	2.0	1.7	51.9%	A
Maryland Water Quality Financing Administration	Aaa/AAA/AAA	9.4	5.3	12.9%	AAA
Maine Bond Bank (SRF Program)	Aaa/ AAA /-	20.1	N.A.	8.0%	AA
Arizona Water Infrastructure Finance Authority	Aaa/AAA/AAA	46.6	3.7	18.1%	AA

Source: Fitch State Revolving Fund and Municipal Loan Pool Peer Review: 2016, October 31, 2016

The RIIB's debt and other financial statistics presented above represent the recent, point-in-time numbers. The RIIB's fiscal year 2016 results are stronger when compared with fiscal year 2015 results. The Bank's operating revenues increased by nearly 15% while expenses remained flat to slightly lower. The strong fiscal year 2016 results provide ample cushion for the Bank's various loan programs.

At this time, the PFMB recommends RIIB target debt service coverage of at least 1.2x and a minimum asset to liability ratio of 1.3x for the Water Pollution Control and Safe Drinking Water bond programs, which would be on the low end of the levels required to maintain RIIB's triple-A ratings based on rating agency criteria and in comparison to its peers. While RIIB's current debt service coverage levels and asset to liabilities ratios for these two programs are well within the recommended ratios and RIIB maintains triple-A ratings from Fitch and Standard & Poor's, the PFMB recognizes that these levels may not be able to be maintained if there are critical infrastructure needs for the State. However, the triple-A ratings are a significant strength, and any decision that could lead to the ratings for these programs to be lowered should be made with careful consideration of the pros and cons.

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Debt Levels
<b>Rhode Island Infrastructure Bank</b>	Maintain a minimum of 1.2x debt service coverage and maintain RIIB's asset to liabilities ratios at a minimum of 1.3x.  Provide notice to PFMB of any rating action	Debt service coverage of 1.3x for Clean Water and 1.5x for Safe Drinking Water  Asset to liabilities ratio of 1.5x for Clean Water and 1.6x for Safe Drinking Water.

*Rhode Island Housing and Mortgage Finance Corporation*

Rhode Island Housing and Mortgage Finance Corporation (“Rhode Island Housing”) provides loans, grants, education, advocacy, and counseling to customers to rent, buy and retain homes. The agency also provides builders and developers loans, tax credits, and other forms of assistance to attract development. This study focuses on debt issued by the agency to fund its single, multi-family, and rental assistance lending—namely its Homeownership Opportunity Bonds and Multi-Family Development Bonds.<sup>6</sup> Like many Housing Finance Agencies (HFAs), Rhode Island Housing uses these tax-exempt bonds to finance low-interest mortgages for low- and moderate-income home buyers, and in the case of multi-family homebuyers, the properties financed with these proceeds are then rented to low-income renters. The underlying mortgage loans and revenues in Rhode Island Housing’s portfolio serve as the security for these bonds, which are often securitized and purchased by Freddie Mac or Ginnie Mae.

<b>Rhode Island Housing’s Financing Programs</b>	<b>Debt Outstanding (FY 2016)</b>
Homeownership Opportunity Bonds	\$611,704,448
Home Funding Bonds and Notes	\$130,262,468
Multi-Family Housing Bonds	\$630,000
Rental Housing Bonds	\$65,039,132
Multi-Family Funding Bonds	\$88,760,000
Multi-Family Development Bonds	\$214,758,428
Multi-Family Mortgage Rev Bonds	\$100,691,010

There are several pooled loan programs under the Rhode Island Housing and Mortgage Finance Corporation for single-family and multi-family housing. Two of the programs, Multi-family Housing Bonds and the Rental Housing Bonds have the moral obligation of the State, in which the State agrees to make up any shortfalls in the Capital Reserve Fund. RI Housing indicated that they do not plan to issue any additional bonds under these two programs and anticipate all of the outstanding moral obligation debt to be retired in four to five years. If this plan changes, it may be prudent to limit the issuance of additional debt under these two programs, applying any new issuance to the state’s tax-supported debt affordability limits reflected in Part One.

A key ratio that is assessed by rating agencies is the program asset-to-debt ratio (PADR) with 1.00 required for investment grade ratings. Moody’s rates most of the State’s housing bonds at the Aa2 level and based on its criteria, requires a 1.04 to 1.02 level to be maintained for both single and multi-family housing. Moody’s reports a PADR of 1.19x as of June 30, 2015 for RI Housing’s single-family Homeownership Opportunity Bonds, and a PADR of 1.12x as of June 30, 2015 for the Multi-Family Development Bonds. PFMB recommends the RI Housing allow for a minimum PADR level to ensure debt affordability measures. Additionally, PFMB requires notice of any rating agency action, including confirmation of ratings, outlook changes, or any upgrade/downgrade of the rating.

The following table summarizes the key rating considerations for assessing financial position of housing revenue bonds by Moody’s, which rates the RI Housing’s currently active housing bonds, and a comparison of the key financial ratios of peer state housing agencies.

<sup>6</sup> The agency has also previously issued Home Funding Bonds and Notes, Multi-Family Housing Bonds, Rental Housing Bonds, and Multi-Family Mortgage Revenue Bonds, all of which are outlined in greater detail on page B-4 of the Appendix.

Rating Agency Criteria for Single Family and Multi-Family Housing Bonds	
<b>Moody's Investors Service</b>	<b>Program Asset to Debt Ratio (Program Assets to Total Bonds Outstanding Plus Accrued Interest):</b> Aaa: 1.10x Aa1: 1.04x Aa2: 1.02x Aa3: 1.00x
	<b>Cash Flow Projections:</b> Aaa: Meets cash flow stress tests under all scenarios. Robust ability to absorb future financial stress. Aa: Meets cash flow stress tests under all scenarios. Strong ability to absorb future financial stress. A: Meets cash flow stress tests under all scenarios except for most stressful scenarios. Moderate ability to absorb future financial stress.
	<b>Historical Financial Performance:</b> Aaa: Fund balance % of bonds outstanding on average over 3 years above 15%; profitability (net operating revenue as % of total operating revenue) above 15% on average. Aa: Fund balance % of bonds outstanding on average 8% - 15%; profitability above 10% - 15% on average. A: Fund balance % of bonds outstanding on average 3% - 8%; profitability above 3% - 8% on average.

Issuer	Single-Family			Multi-Family		
	Ratings (M/S/F)	PADR (2015)	Profitability (2015)	Ratings (M/S/F)	PADR (2015)	Profitability (2015)
Rhode Island Housing	Aa2/AA+/- (Homeownership Opportunity Bonds)	1.19x	17.7%	Aa2/--/-- (Multi-Family Development Bonds)	1.12x	42.1%
Connecticut	Aaa/AAA/-- (Housing Mortgage Finance Program)	1.28x	5.86%	Aaa/AAA	1.29x (2014)	11.5% (2014)
Maine	Aa1/AA+/-	1.22x	7.20%	Aa1/AA+/-	1.22x	7.2%
Massachusetts	Aa1/AA/-- (Single Family Housing)	1.15x	6.03%	Aa2/AA/-- (Housing Bonds)	1.14x	18.7%
New Hampshire	Aa2/--/-- (Single Family Mtg Acq)	1.04x	6%	Aa2/--/-- (2000-2013 Indenture)	1.13x	18.3%
Vermont	Aa3/--/AA (Multi-Purpose Bonds)	1.22x	15.39%	Aa3/A+/- (Multi-Family Mortgage)	1.22x	38.3%

\*Source: Moody's rating reports for each issuer. Moody's Multi-Family Medians, April 2016.

The RI Housing's debt and other financial statistics presented above represent the recent, point-in-time numbers. The RI Housing's fiscal year 2016 operating income is up approximately 55% year over year. Further, RI Housing reports increases in assets and decreases in bonds and note payable thereby enhancing the overall program asset-to-debt ratio. At this time, the PFMB recommends RI Housing target a PADR of not less than 1.10x based on Moody's rating criteria for Aaa rating.

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Debt Level
Rhode Island Housing	Target minimum PADR of 1.10x Provide notice to PFMB of any rating action	PADR of 1.19x (Single-Family) and PADR of 1.12x (Multi-Family)

## Rhode Island Student Loan Authority

The Rhode Island Student Loan Authority (“RISLA”) uses its tax-exempt bonding authority to offer low cost student loans to underlying borrowers. There are two distinct pooled loan programs administered by RISLA: (i) a Federal Family Educational Loan Program (FFELP), and (ii) a state-based Supplemental Loan Program. Since July of 2010, FFELP can no longer be originated, and therefore, since no new bonds, except refunding bonds can be issued, the PFMB guidance debt affordability for RISLA debt will focus on the Supplemental Loan Program.

The Parity Ratio is the percentage of total assets, including loans and funds in the loan acquisition account and the reserve account, to the total outstanding bonds. With the issuance of the 2016 bonds in April, the RISLA’s parity ratio was calculated as 119.46% at closing.

Rating Agency Criteria for Student Loan Bonds	
<b>Fitch Ratings</b>	Fitch does not have a scoring methodology for defined metrics. Reviews collateral to determine expected loss frequency and loss severity, reviews historical performance and runs stress tests on expected cash flows. Performs quarterly monitoring. <ul style="list-style-type: none"> <li>Reviews Parity Ratio: Percentage of total assets, including loans and funds in the loan acquisition account and the reserve account, to the total outstanding bonds.</li> <li>Reviews Overcollateralization: Difference between asset balance and outstanding bonds.</li> <li>Reviews Credit Enhancement: Includes Overcollateralization and excess spread (difference between interest collections on the assets and the sum of debt interest costs, servicing fees and other trust expenses).</li> </ul>
<b>Standard &amp; Poor’s</b>	S&P reviews loan attributes, performs stress cases with various default and recovery scenarios, taking into account historical performance. Does not have specific financial metrics in its rating criteria but cites the parity ratio and credit enhancement.

Issuer	Ratings (M/S/F)	ABT	Parity Ratio	Credit Enhancement (% to Total Assets)
<b>Rhode Island Student Loan Authority</b>	--/AA(sf)/AAsf	<b>Ratings Affirmation</b>	<b>120.97%</b>	<b>16.29%</b>
Massachusetts Educational Financing Authority (MEFA)	--/AA(sf)/A (sf)	Ratings Affirmation	109.32%	9.16%
Connecticut (CHESLA)	Aa3/--/A+	Credit based on State Special Capital Reserve Fund Make-Up		
Vermont(VSAC)	--/A (sf)/Asf	None	135%	26.03%
New Jersey (HESAA)	Sen: Aa2/AA (sf)/-- Sub: A2/A(sf)/--	Parity Percentage at least 103%	108%	Sen: 17.3% Sub: 12.8%
Iowa Student Loan Liquidity Corporation	--/A (sf)/Asf	Ratings Affirmation	150.1% (Initial)	32% (Initial)

\* Source: Most recent Fitch pre-sale rating reports for each issuer and Quarterly disclosures published by each agency.

RISLA’s debt and other financial statistics presented above represent the recent, point-in-time numbers. RISLA’s fiscal year 2016 results are generally with fiscal year 2015 results. The Authority reduced expenses in Fiscal Year 2016, however operating revenues were lower creating a flat to slightly lower operating income.

At this time, the PFMB recommends RISLA’s target a Parity Ratio of 110% based on the lower range of Parity Ratios of its peer group. Additionally, PFMB requests notice of any rating agency action, including confirmation of ratings, outlook changes, or any upgrade/downgrade of the rating.

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Debt Levels
<b>Rhode Island Student Loan Authority</b>	Target minimum Parity Ratio of 110% Provide notice to PFMB of any rating action	Parity ratio of 120.97%

## **Debt Affordability Study**

### **Part Three: Municipalities, regional authorities, fire districts and other special district debt and long-term liabilities**

DRAFT

### Part Three – Municipalities, Fire Districts, Special Districts and Local Authorities

The third part of the debt affordability study focuses on the debt of the municipalities, fire districts, special districts and local authorities of the State. While the primary focus of this first debt affordability study for municipalities, fire districts, special districts and local authorities will be on debt, the PFMB recognizes that pensions represent additional long-term liabilities, and therefore, will include pension liability for the municipalities in determining appropriate measures of debt and liability affordability ratios. This debt affordability study will use the net pension liability as reported in the annual financial statements of the municipalities. It should be noted that the municipalities do not have consistent measures and assumptions in determining pension liabilities to make them comparable on these measures, but the PFMB believes recognition of pension liabilities is critical in assessing long-term debt affordability. This study does not include pensions for fire districts, special districts and local authorities, but the PFMB will endeavor to include this information in future iterations of the study. In addition, similar to Part One, OPEB liabilities will also not be considered in this first debt affordability study. Future debt affordability studies will endeavor to capture these additional long-term liabilities into the analysis.

#### Rhode Island Municipalities

Rhode Island has 39 municipalities. The table below summarizes the current general obligation ratings of the municipalities.

Obligor Name	Moody's	S&P	Fitch	Obligor Name	Moody's	S&P	Fitch
Barrington	Aa1	AAA	NR	New Shoreham	NR	AA	NR
Bristol	Aa2	AA+	NR	Newport	NR	AA+	NR
Burrillville	Aa2	NR	AAA	North Kingstown	Aa2	AA+	NR
Central Falls	Ba2	BBB	NR	North Providence	A2	AA-	NR
Charlestown	Aa2	NR	NR	North Smithfield	Aa2	NR	NR
Coventry	A1	AA	NR	Pawtucket	A3	A	A+
Cranston	A1	AA-	AA+	Portsmouth	Aa2	AAA	NR
Cumberland	Aa3	AA	NR	Providence	Baa1	BBB	A-
East Greenwich	Aa1	AA+	NR	Richmond	Aa3	NR	NR
East Providence	A2	AA	NR	Scituate	NR	AA	NR
Exeter	NR	NR	NR	Smithfield	Aa2	AA	NR
Foster	NR	NR	NR	South Kingstown	Aa1	NR	NR
Glocester	NR	AA+	NR	Tiverton	A1	AA	NR
Hopkinton	Aa3	NR	NR	Warren	Aa3	NR	NR
Jamestown	Aa1	NR	NR	Warwick	A1	AA-	NR
Johnston	A3	AA-	NR	West Greenwich	NR	AA+	NR
Lincoln	Aa2	NR	AA	West Warwick	Baa2	NR	BBB
Little Compton	NR	NR	NR	Westerly	Aa3	AA	NR
Middletown	Aa1	NR	NR	Woonsocket	Ba3	NR	BB+
Narragansett	Aa2	AA+	NR				

Appendix C provides a summary of the outstanding debt for each municipality for FY2015, including types of debt and associated FY2015 debt service. The 39 municipalities have tax-supported debt that includes the following: (i) general obligation bonds (ii) loans payable, (iii) capital leases and (iv) enterprise debt. In addition, the as reported net pension liability is included in Appendix C.

#### Fire Districts



Based on FY2015 information from the Division of Municipal Finance, there are 44 fire districts in Rhode Island as summarized in the table below with the corresponding town or towns that each serves.

Fire District	Town	Fire District	Town
Oakland-Mapleville	Burillville	Lime Rock	Lincoln
Pascoag	Burillville	Lonsdale	Lincoln
Harrisville	Burrillville	Manville	Lincoln
Nasonville	Burrillville	Quinnville	Lincoln
Charlestown	Charlestown	Saylesville	Lincoln
Quonochontaug Central	Charlestown	Bonnet Shores	Narragansett
Shady Harbor	Charlestown	Pojac Point	North Kingstown
Central Coventry	Coventry	Portsmouth Water and Fire	Portsmouth
Coventry	Coventry	Richmond Carolina	Richmond
Hopkins Hill	Coventry	Indian Lake	South Kingstown
Western Coventry	Coventry	Kingston	South Kingstown
Cumberland	Cumberland	Union	South Kingstown
Cumberland Hill	Cumberland	North Tiverton	Tiverton
North Cumberland	Cumberland	Stone Bridge	Tiverton
Valley Falls	Cumberland	Buttonwoods	Warwick
Exeter	Exeter	Bradford	Westerly
Chepachet	Glocester	Misquamicut	Westerly
Harmony	Glocester	Shelter Harbor	Westerly
West Glocester	Glocester	Watch Hill	Westerly
Ashaway	Hopkinton	Weekapaug	Westerly
Hope Valley-Wyoming	Hopkinton-Richmond	Westerly	Westerly
Albion	Lincoln	Dunn's Corners	Westerly-Charlestown

Exhibit B summarizes the debt outstanding for 2015, as compiled by the Division of Municipal Finance (the "Division") from the data self-reported by the fire districts in the Division's FY15 Fire District Adopted Budget Survey (based on self-reported data). Based on the Division's *Report on Rhode Island Fire Districts Based on Annual Fire District Survey 2013*, all fire districts have the authority to borrow money, and most fire district charters include a debt limit, which varies from district to district.

Fire districts in Rhode Island have the authority to tax real property, automobiles and tangible property located within the district. The taxes assessed and collected are an additional tax to the district population, separate from annual property taxes billed by the municipality. The tax revenues generated within the districts are used for operation, capital needs and debt service (if debt has been issued) of the individual fire district. For most of the districts, property tax revenue is the primary source of revenue. However, other fees from other services such as rescue, fire hydrant rentals, inspections, fire prevention/plan review, hazardous material and hall rentals provide additional revenues to the districts.

### Other Special Districts and Local Authorities

There are 17 special districts and local authorities in Rhode Island that have been rated by the three national rating agencies, as summarized with the ratings in the following table. Exhibit C provides a summary of the debt outstanding and debt service for FY2015 (if available). Information on the local housing authorities



is not readily available at this time and will therefore, not be included in this iteration of the debt affordability study.

Special Districts/Local Authorities	Moody's	S&P	Fitch
Bristol-Warren Regional School District	Aa3	NR	NR
Bristol County Water Authority <sup>1</sup>	NR	NR	NR
Burrillville Housing Authority	NR	A+	NR
Chariho Regional School District <sup>2</sup>	Aa3	NR	NR
Coventry Housing Authority	NR	AA-	NR
Cumberland Housing Authority	NR	AA-	NR
Exeter-West Greenwich Regional School District	A1	NR	NR
Foster-Glocester Regional School District	Aa3	NR	NR
Kent County Water Authority <sup>3</sup>	Aa3	AA-	NR
North Providence Housing Authority	NR	AA-	NR
Pascoag Utility District <sup>4</sup>	NR	A-	NR
Pawtucket Housing Authority	NR	A+	NR
Providence Housing Development Corp.	NR	AA-	NR
Providence Public Building Authority	NR	BBB-	NR
Providence Redevelopment Agency	NR	BBB-	NR
Providence Water Supply Board	NR	AA-	NR
Woonsocket Housing Authority	NR	A+	NR

1. Previously rated by Moody's and Standard & Poor's. Ratings no longer outstanding.

2. Regional school district for the towns of Charlestown, Hopkinton and Richmond.

3. Provides water supply services in the communities of Coventry, Warwick, West Warwick, East Greenwich, West Greenwich, and in smaller sections of Cranston, Scituate and North Kingstown.

4. Provides electric services to Villages of Pascoag and Harrisville, both in the Town of Burrillville, and provides water services to Village of Pascoag.

## Municipal Debt Classifications

In assessing the debt burden of a municipality, various levels of debt need to be considered. Rating agencies will measure the burden of Gross Direct Debt, Net Direct Debt, Overall Debt and Overall Net Debt.

- *Gross Direct Debt.*
  - Definition: The sum of the total bonded debt and any short-term debt of the issuer. This debt includes: (i) general obligation bonds; (ii) other obligations such as loan agreements secured by taxes; (iii) capital lease obligations that are secured by lease rental or contract payments subject to appropriation; (iv) special assessment obligations; and (v) any enterprise debt.
  - Examples: City of Providence General Obligation Debt, and Providence Water Supply debt.
- *Net Direct Debt.*
  - Definition: Gross direct debt less all self-supporting debt. Net Direct Debt excludes enterprise bonds (water, sewer, solid waste and electric revenue bonds), where enterprise fund revenues cover debt service by at least 1.0x for at least the last three fiscal years.
  - Examples: City of Providence General Obligation Debt, but not Providence Water Supply Debt.

- *Overlapping Debt.*
  - *Definition:* The issuer's proportionate share of the debt of other local governmental units that either overlap it (the issuer is located either wholly or partly within the geographic limits of the other units) or underlie it (the other units are located within the geographic limits of the issuer). The debt is apportioned based upon some measure such as relative assessed values or student enrollment in the case of school districts.
  - *Examples:* Bristol-Warren School System, Albion Fire District, Narragansett Bay Commission, Kent County Water Authority.
  
- *Overall Debt.*
  - *Definition:* Gross direct debt plus the issuer's applicable share of the total debt of all overlapping jurisdictions.
  - *Examples:* Includes all examples listed for the above categories.
  
- *Overall Net Debt.*
  - *Definition:* Net direct debt plus the issuer's applicable share of the net direct debt of all overlapping jurisdictions. Excludes enterprise bonds (water, sewer, solid waste and electric revenue bonds), where enterprise fund revenues cover debt service by at least 1.0x for at least the last three fiscal years.
  - *Examples:* Includes City Providence General Obligation debt, Albion Fire District, but not Providence Water Supply or Narragansett Bay Commission.

Most of the Rhode Island municipalities issue general obligation bonds directly and enter into capital leases. Many also issue bonds through the Rhode Island Health and Educational Building Corporation Public Schools Revenue Bonds Financing Program (RIHEBC Bonds), which are secured by financing agreements between the municipality and RIHEBC in which the municipality pledges its general obligation. To calculate gross direct debt, all general obligations bonds, capital leases and the municipality's share of RIHEBC Bonds would be included. For the City of Providence, debt of both the Providence Public Buildings Authority and the Providence Redevelopment Agency, which are subject to City of Providence appropriation, and debt of the Providence Water Supply Board, are included in Providence's gross direct debt.

Under Rhode Island law, the State provides aid to municipalities for the cost of school building construction or renovation. The most typical type of aid the State provides to municipalities is a reimbursement for a portion of the debt service of these projects, with the amount of reimbursement determined by a formula tied to the economic conditions of the municipality. It is important to note that in some cases, municipalities would not issue as much general obligation debt for school projects were it not for the fact that the state had promised a partial reimbursement of the debt service costs. Nevertheless, for the purpose of this study, all general obligation debt for school building projects is counted as debt of the municipality regardless of whether the municipality expects to receive state aid, because state aid is subject to annual appropriation and if the state were to fail to make an appropriation for the full amount of expected housing aid, the responsibility for those debt service payments would rest with the municipality. Appendix C provides a summary of the reimbursements the State is expected to provide to each school district from FY2017 through FY2030.

In addition, many municipalities issue water and sewer bonds directly, through the Rhode Island Infrastructure Bank (RIIB) or through a special utility district, and the City of Providence issues bonds through the Providence Water Supply Board. This enterprise debt is also included in gross direct debt calculation and to the extent enterprise revenue funds have historically covered debt service, the debt is subtracted out to calculate net direct debt for the municipality.

Rhode Island also has four regional school districts that cover multiple cities and towns and the Kent County Water Authority provides water services to eight different communities. The debt issued by these issuers is overlapping debt and the proportionate share of the debt needs to be allocated to determine the overall debt of the affected communities. Further, the Kent County Water Authority debt is self-supporting and thus, subtracted from the overall debt of the communities to derive overall net debt.

Some of the fire districts also have debt outstanding secured primarily by taxes on real property, automobiles and tangible property located within the district. Since the tax base is within a town or city or in some cases multiple towns/cities, this debt would be considered overlapping debt and would need to be included in the overall debt of the municipality.

The Narragansett Bay Commission (NBC) provides wastewater collection and treatment services to its service area, which includes Providence, North Providence, Johnston, Pawtucket, Central Falls, Cumberland, Lincoln, the northern portion of East Providence and small sections of Cranston and Smithfield. As of June 30, 2016, NBC had approximately \$242.82 million of NBC issued bonded debt outstanding under the trust indenture and approximately \$385.09 million in subsidized loans from the Rhode Island Infrastructure Bank's clean water state revolving loan fund. The debt is secured by revenues of the system derived from the fees paid by the NBC customers. Since this debt is paid by the taxpayers of communities in the service area and to encompass the overall burden on the taxpayer, for purposes of this debt affordability study, the NBC debt is allocated to the municipalities in its service area based on the municipality's percentage of 2016 revenues, as shown in Appendix C.

## **Debt Affordability Measures**

### *Statutory Debt Limitation for Municipalities*

Under Rhode Island state law, municipalities are limited to a level of indebtedness at or below 3% of the full assessed value of the city or town. There are, however, avenues for municipalities to receive permission to take on levels of debt outside of the 3% cap, including through special legislation of the General Assembly authorizing a voter referendum, or ministerial approval by the state Auditor General or Director of Revenue if the community satisfies certain requirements.

### *Rating Agency Debt Ratios for Local Governments*

Rating agencies have developed criteria for rating debt of local governments. Below is a summary of the debt and liability measures used by Fitch, Moody's and Standard & Poor's, how they score these ratios and other considerations they take into account with respect to debt and other liabilities.

Fitch Ratings. Fitch uses the following metric to measure long-term liability burden for local governments:

$$\frac{\text{Overall Local Government Debt} + \text{Fitch's Adjusted Direct Unfunded Pension Liability}}{\text{Personal Income}}$$

The Fitch pension adjustment inflates the reported pension liability by 11% for every 1% by which the assumed investment return exceeds 7%. No adjustment is made if the pension's assumed return is already at or below 7.0%. To calculate a personal income for local governments, Fitch takes the U.S. Bureau of Economic Analysis (BEA) per capita personal income number that is available for counties but no other levels of local government and uses that county-level data to develop a proxy for lower levels of government. Specifically, Fitch takes the U.S. Census Bureau per capita money income statistic, which is a narrower measure of income but one available for all units of local government, calculates the ratio of money income to per capita personal income for the county in which the rated issuer is located, and then applies that ratio to the issuer's money income. This per capita information is then multiplied by population to generate the denominator for the liability metric.

The following table summarizes how Fitch scores the long-term liability burden:

Liability Burden	Low	Moderate	Elevated but Still in Moderate Range	High	Very High
Rating Assessment	AAA	AA	A	BBB	BB
Ratio Level	Liabilities Less than 10% of Personal Income	Liabilities Less than 20% of Personal Income	Liabilities Less than 40% of Personal Income	Liabilities Less than 60% of Personal Income	Liabilities 60% or More of Personal Income

In addition, for local governments, Fitch also considers the liability burden as a percentage of property value. Further, while Fitch does not include OPEB as part of the calculation of long-term liability burden, Fitch states that the liability assessment burden could be negatively affected by “exceptionally large” OPEB liability without the ability or willingness to make changes to the benefits.

Moody’s Investors Service. For Moody’s, debt and pensions comprise 20% of a municipality’s overall rating score. The table below summarizes the debt factors used by Moody’s.

Rating Factor / Weight	Aaa	Aa	A	Baa
Net Direct Debt/ Full Value (5%)	< 0.75%	0.75% - 1.75%	1.75% - 4%	4% - 10%
Net Direct Debt/ Operating Revenues (5%)	< 0.33x	0.33x – 0.67x	0.67x – 3x	3x – 5x
3-Year Avg of Moody’s Net Pension Liability/ Full Value (5%)	< 0.9%	0.9% - 2.1%	2.1% - 4.8%	4.8% - 12%
3-Year Avg of Moody’s Net Pension Liability/ Operating Revenues (5%)	< 0.4x	0.4x – 0.8x	0.8x – 3.6x	3.6x – 6x

To arrive at net direct debt, Moody’s takes the local government’s gross debt burden, including general obligation bonds, notes, loans, capital leases, any third-party debt backed by a local government’s general obligation guarantee, lease and other appropriation debt, special tax debt if these obligations represent future claims on operating resources. Debt for essential service utilities (such as water and sewer systems) that is self-supporting from user fees for the previous three years is subtracted out to arrive at net direct debt.

Moody’s will also look at other factors and potentially make adjustments (up or down) to its debt/liability scoring. These other factors include:

- Very high or low debt service relative to budget
- Very high or low overall debt burden (including overlapping debt)
- Heavy capital needs implying future debt increases
- Rapidity of debt repayment within 10 years
- High OPEB liability

Standard & Poor’s. In assessing a municipality’s debt and contingent liability Standard & Poor’s looks at the combination of two measures:

- (i) Total governmental funds debt service as a percentage of total governmental funds expenditures, and
- (ii) Net direct debt as a percentage of total governmental funds revenue

The following table summarizes how the two measures are combined to determine a score for the debt and contingent liabilities.

Total Governmental Funds Debt Service as % of Total Governmental Funds Expenditures	Net Direct Debt As % of Total Governmental Funds Revenue				
	< 30%	30% to 60%	60% to 120%	120% to 180%	≥ 180%
< 8%	1	2	3	4	5
8% to 15%	2	3	4	4	5
15% to 25%	3	4	5	5	5
25% to 35%	4	4	5	5	5
≥ 35%	4	5	5	5	5

1 = very strong, 2 = strong, 3 = adequate, 4 = weak, 5 = very weak

In addition, Standard & Poor's looks at the following qualitative factors with a positive impact on the initial score (each can increase initial debt score by 1 point):

- Overall net debt as a percentage of market value below 3%
- Overall rapid annual debt amortization with more than 65% coming due in 10 years

While the following factors would have a negative impact (each can decrease initial debt score by 1 point (or up to 2 for pension and OPEB):

- Significant medium-term debt plans produce a higher initial score when included
- Exposure to interest rate risk or instrument provisions that could increase annual payment requirements by at least 20%
- Overall net debt as a percentage of market value exceeding 10%
- Unaddressed exposure to unfunded pension or OPEB obligations leading to accelerating payment obligations over the medium term that represent significant budget pressure

Speculative contingent liabilities or those likely to be funded on an ongoing basis by the government and representing more than 10% of total governmental revenues

### Debt Affordability Measures to Apply to Municipalities

Considering the patchwork nature of municipal governance in Rhode Island, with dozens of overlapping districts and authorities issuing different types of debt, the PFMB ultimately determined that the most important factor in judging municipal debt affordability is the ability of each municipality's underlying population to afford the liabilities of the various governmental agencies that serve them. For the purposes of this study, affordability is measured in two ways: the average income of the population in a town or city, and the assessed property value in a municipality, because property tax revenues are the primary source of income for most governmental units.

The PFMB recognizes that despite applying a unified set of affordability targets to all overlapping local governmental entities in a municipality, these entities do not always act in a coordinated fashion when making financing decisions, and municipal governments often have limited ability to influence the actions of special districts in their communities. Nevertheless, the purpose of this report is to provide a greater level of transparency on public debt, and to recommend some guidelines for how much total public debt municipal residents can afford.

As with state-level debt, the PFMB believes that municipal debt must be looked at in the context of other long-term liabilities, particularly pension liabilities. There are 150 pension plans for municipal employees across Rhode Island, 116 of which are managed centrally by the State through the Municipal Employees

Retirement System (MERS), 34 of which are managed independently by municipalities. Regardless of the management structure, the municipalities and districts are fully responsible for the liabilities of these plans. In addition, school districts participate in the statewide Employees Retirement System (ERS), in which the State is responsible for 40% of the liability and the school district is responsible for 60% of the liability.

Pension liabilities are calculated through a series of assumptions, and thus can be difficult to estimate with precision. For the purposes of this study, municipal pension liabilities are derived from the financial statements of the municipalities, under rule 68 of the Governmental Accounting Standards Board (GASB) framework.

In setting these recommended targets, the PFMB relied heavily on Ratings Agency guidance, selecting ratios similar to those used by ratings agencies, and generally recommending a level equivalent to an A rating for each ratio.

#### *Recommended Debt and Liability Ratios and Targets*

- ***Net Direct Debt to Full Value:*** Less than 3% (includes tax-supported debt of a municipality)
- ***Overall Net Debt to Full Value:*** Less than 4% (includes tax-supported debt of a municipality and any overlapping districts)
- ***Overall Debt + Net Pension Liability to Full Value:*** Less than 4.50% (includes all tax-supported debt, enterprise debt, and pension liabilities of a municipality and overlapping districts)
- ***Overall Debt + Net Pension Liability to Personal Income:*** Less than 20% (includes all tax-supported debt, enterprise debt, and pension liabilities of a municipality and overlapping districts)

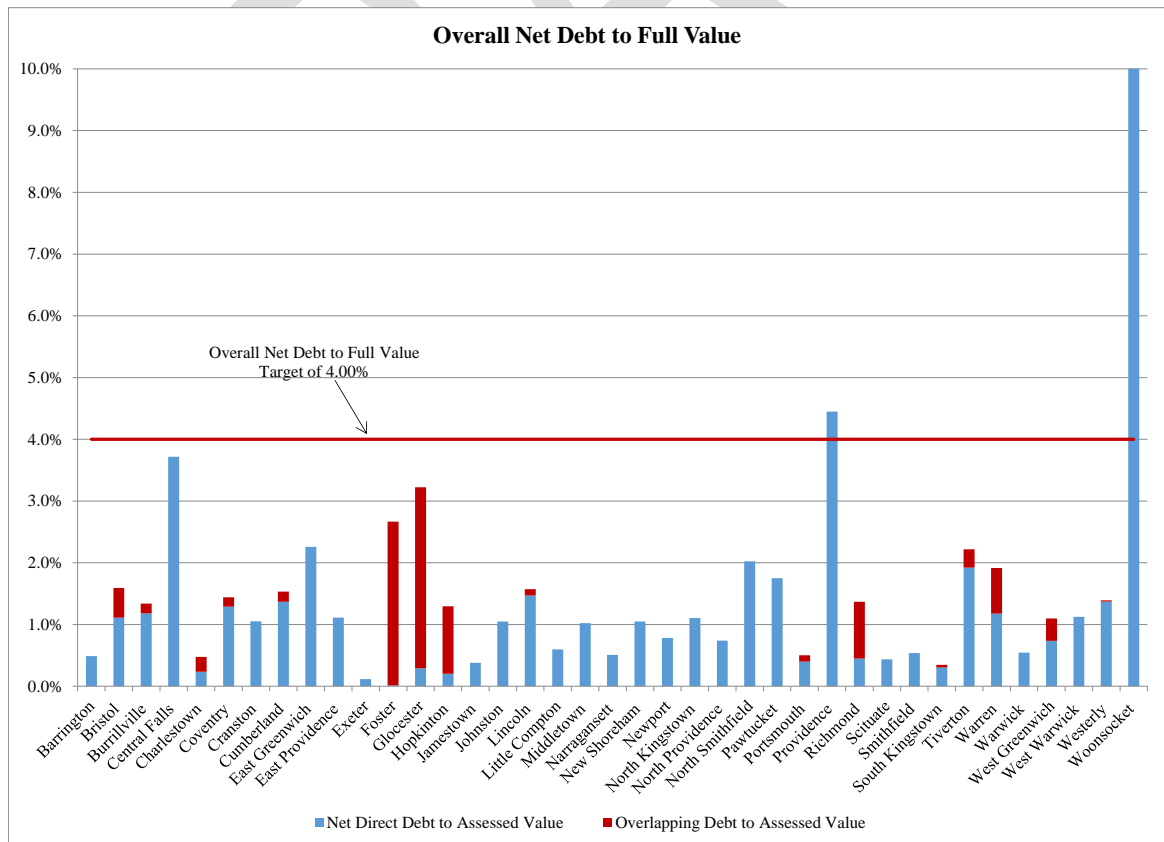
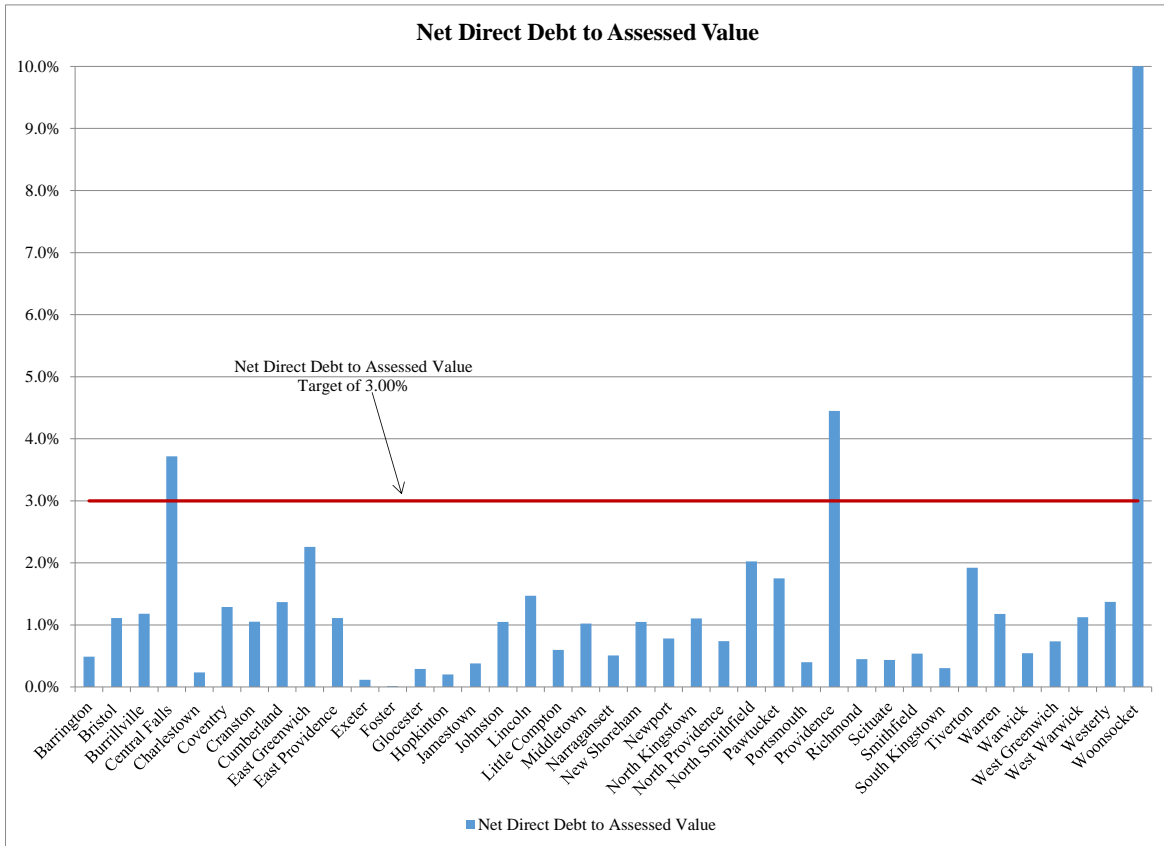
The income measurement is the total personal income of the municipality using Fitch's methodology for calculating personal income for localities. The full value measurement is the gross assessed value less exemptions, which is consistent with the rating agency methodologies. Communities that choose to have large homestead exemptions might be artificially inflating their debt ratios with a lower taxable base. The PFMB considered using the gross assessed value because communities could potentially end exemptions if needed, but since all three rating agencies use assessed value net of exemptions, the PFMB decided to be consistent with the rating agency approach.

The table below shows the current levels of these affordability ratios for each municipality with green shaded levels indicating the municipality is within the recommended limits, yellow shaded levels indicating current levels are slightly above the recommended limits and red shaded levels indicating the current levels significantly exceed the recommended limits.

Obligor Name	Debt Ratios		Debt + Pension Ratios	
	Net Direct Debt to Assessed Value	Overall Net Debt to Assessed Value	Overall Debt + Net Pension Liability to Assessed Value	Overall Debt + Net Pension Liability to Personal Income
Barrington	0.5%	0.5%	2.5%	4.6%
Bristol	1.1%	1.6%	3.0%	6.8%
Burrillville	1.2%	1.3%	3.1%	5.3%
Central Falls	3.7%	3.7%	19.2%	17.3%
Charlestown	0.2%	0.5%	0.6%	3.1%
Coventry	1.3%	1.4%	6.3%	11.5%
Cranston	1.1%	1.1%	6.8%	11.9%
Cumberland	1.4%	1.5%	4.6%	7.7%
East Greenwich	2.3%	2.3%	4.8%	9.8%
East Providence	1.1%	1.1%	4.6%	8.1%
Exeter	0.1%	0.1%	0.1%	0.3%
Foster	0.0%	2.7%	3.6%	N/A
Glocester	0.3%	3.2%	4.0%	6.9%
Hopkinton	0.2%	1.3%	1.6%	3.0%
Jamestown	0.4%	0.4%	1.1%	5.5%
Johnston	1.1%	1.1%	13.0%	19.2%
Lincoln	1.5%	1.6%	6.3%	10.0%
Little Compton	0.6%	0.6%	1.0%	N/A
Middletown	1.0%	1.0%	2.6%	8.0%
Narragansett	0.5%	0.5%	2.0%	8.6%
New Shoreham	1.1%	1.1%	1.5%	N/A
Newport	0.8%	0.8%	4.9%	19.5%
North Kingstown	1.1%	1.1%	3.3%	7.3%
North Providence	0.7%	0.7%	5.1%	6.8%
North Smithfield	2.0%	2.0%	3.7%	7.4%
Pawtucket	1.8%	1.8%	14.9%	20.1%
Portsmouth	0.4%	0.5%	2.7%	7.2%
Providence	4.4%	4.4%	17.8%	30.3%
Richmond	0.4%	1.4%	1.7%	3.2%
Scituate	0.4%	0.4%	0.6%	1.4%
Smithfield	0.5%	0.5%	3.1%	7.1%
South Kingstown	0.3%	0.3%	1.6%	4.2%
Tiverton	1.9%	2.2%	3.3%	7.2%
Warren	1.2%	1.9%	2.8%	5.3%
Warwick	0.5%	0.5%	6.0%	12.0%
West Greenwich	0.7%	1.1%	1.4%	3.4%
West Warwick	1.1%	1.1%	9.7%	16.4%
Westerly	1.4%	1.4%	2.4%	11.0%
Woonsocket	10.0%	10.0%	20.3%	22.3%
	Meets recommended target		Exceeds recommended target slightly	
	Exceeds recommended target significantly			

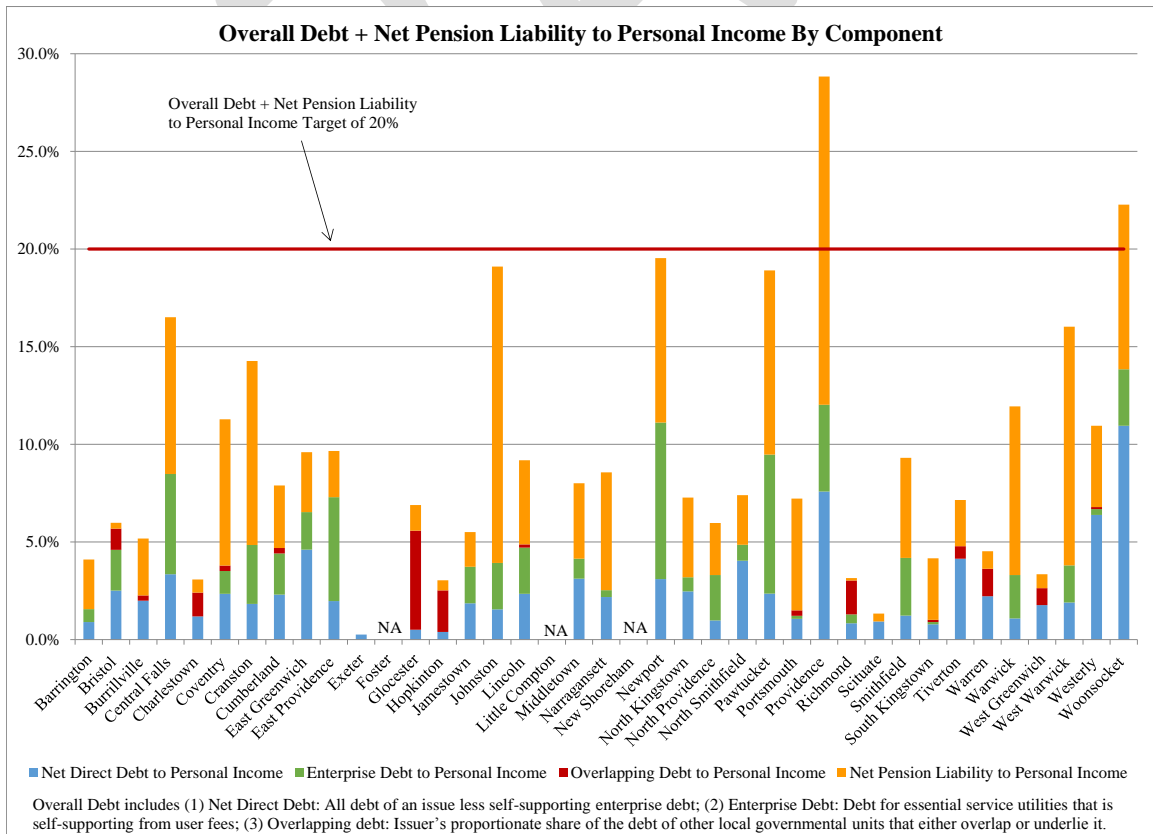
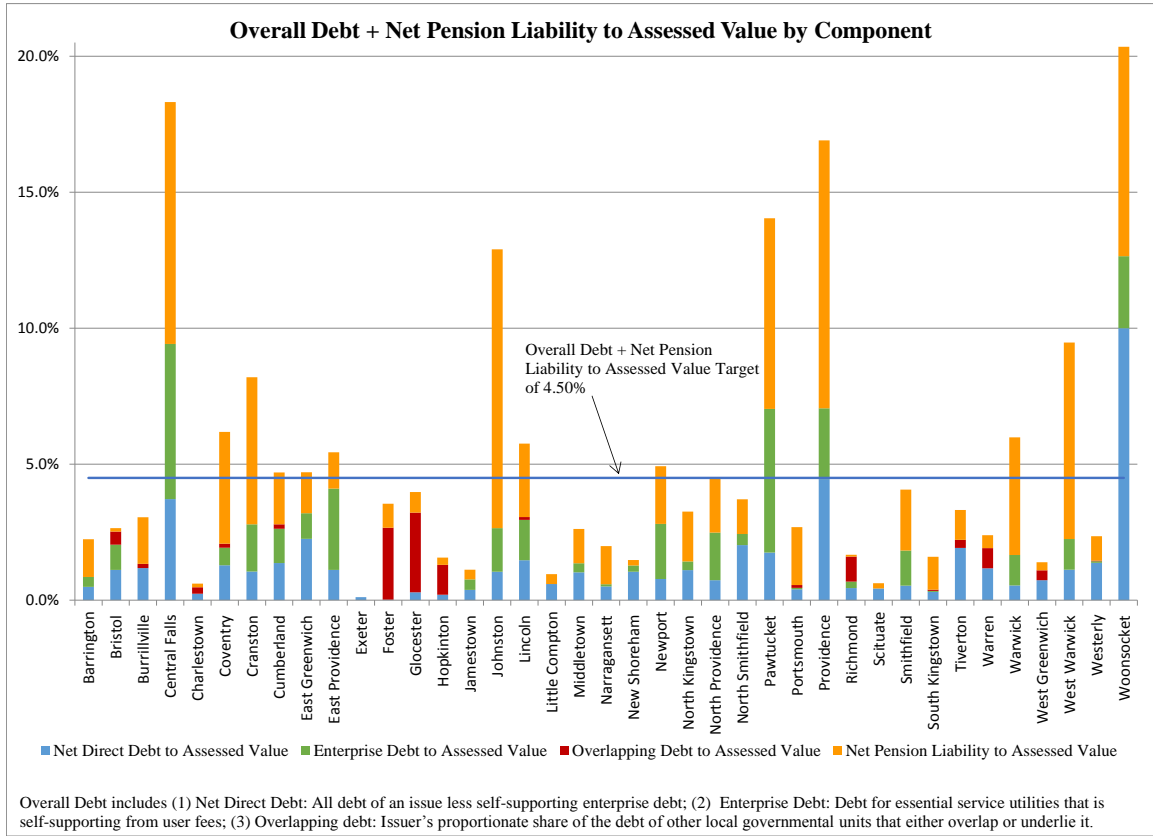
(Note: above ratios include allocation of Narragansett Bay Commission debt to municipalities in its service area.)  
Net Direct Debt: All debt of an issuer less self-supporting enterprise debt. Enterprise Debt: Debt for essential service utilities that is self-supporting from user fees. Overlapping Debt: Issuer's proportionate share of the debt of other local governmental units that either overlap or underlie it. Overall Debt: Net debt + Enterprise Debt + Overlapping Debt.

The charts below show the debt only ratios for the municipalities.





The charts below show the combined debt and pension ratios for the municipalities.



**Debt Affordability Study**  
**Part Four - Guidelines for Debt Management Best Practices**  
**for**  
**State Level Debt**  
**and**  
**Quasi-Public Entities and Local Governments**

## **Part Four- Guidelines for Debt Management Best Practices**

### **Guidelines for State-Level Debt Management**

In maximizing debt affordability, the State should maintain certain guidelines on how best to issue and structure its tax-supported debt in order to minimize borrowing costs and to maintain, and if possible, eventually improve, its credit rating. The following provides debt structuring, issuance and post issuance compliance guidelines for State tax-supported debt.

#### *Purpose*

These guidelines are intended to aid the Department of Administration, Office of the General Treasurer, State agencies, commissions, boards and authorities in structuring their financing arrangements in a manner consistent with the best interests of the State. These are guidelines only, and consideration of a structure outside of these guidelines may be warranted under certain circumstances.

#### *Applicability*

These guidelines apply to all State agencies, corporations, boards and authorities where the debt service payments are expected to be made, in whole or in part, directly or indirectly, from tax revenues, including appropriations of the State and moral obligation debt.

#### *Types of Debt*

Debt financing may include State general obligation bonds, revenue bonds, certificates of participation, and lease/purchase debt. The primary debt type used has been State general obligation bonds. However, other outstanding tax supported debt has been issued by the Convention Center Authority and the Commerce Corporation. In addition, the State has issued Certificates of Participation and performance based obligations. The State has identified different categories of net tax-supported debt:

- Direct debt
- Guaranteed debt
- Contingent debt
- Other obligations subject to appropriation

#### *Debt Structuring Practices*

The following guidelines, which may be modified by an issuer to meet the particulars of the financial markets at the time of the issuance of a debt obligation, describe the basic debt issuance and debt structuring components and the terms and parameters are intended to provide general guidance to the issuer.

**Method of Sale:** Municipal bonds are typically sold by negotiated sale or competitive sale. With a negotiated sale, the issuer selects an underwriter, or more likely a group of underwriters, called a syndicate, to sell the bonds in a public offering. The book-running senior manager acts as the lead representative of the syndicate. The issuer, with advice from its financial advisor, will negotiate with the senior manager to determine the optimal structure, price, underwriter's discount and institutional and retail placement of the bonds. Negotiation may provide more flexibility as to timing, structure and pricing of the transaction. With a competitive sale, the issuer prepares a Notice of Sale, which is published with the preliminary offering document and describes all the parameters for bids on the bonds. On the day and time set for the sale, as established in the Notice of Sale, bidders submit bids and the bid with the lowest true interest cost wins. The winning bidder sells the bonds to investors at the prices that were bid. A third method of sale that is used much less frequently is a private placement, where bonds are not publicly offered, rather they are sold directly to qualified investors. Private placements, including bank loans, bank funding agreements, and

master lease programs can be cost effective for certain types of financings including: variable rate, short-term and smaller size issuances due to lower costs of issuance compared to publicly marketed securities.

Issuers should sell their debt using the method of sale that is most likely to achieve the lowest cost of borrowing. Under certain circumstances, a competitive sale will generally result in the lowest cost of borrowing and should be the preferred method of sale if certain factors are present. In determining the method of sale, the issuer should consider the following factors:

<b>Factor</b>	<b>Competitive Sale</b>	<b>Negotiated Sale</b>
<b>Credit</b>	General obligation credits High ratings No negative outlook on the ratings	New credit Complex credit with a “story” Low credit ratings (Baa/BBB)
<b>Size of the Issue</b>	Bond issue under \$500 million for Rhode Island	Large debt issue that raises concerns about market saturation. Threshold level varies from issuer to issuer.
<b>Financing Structure</b>	Fixed rate, current interest bonds with serial maturities or term bonds	Structure is complex and is difficult to sell through a competitive sale. Complex refunding structure.
<b>Market Volatility</b>	Capital markets are functioning normally with no extreme volatility in interest rates and/or investor demand	Capital markets are experiencing wide shifts in interest rates and investor demand (e.g., financial crisis in late 2008/early 2009)
<b>Retail Investor Demand</b>	Retail investors are not the target buyers	Structure of the bonds is conducive to retail investor demand, with the expectation that many of the bonds would be placed with retail investors

The State’s general obligation bonds are good candidates for a competitive sale. With ratings of Aa2/AA/AA and a stable outlook from all three major rating agencies and typical fixed rate, amortizing structure and manageable size, the State can sell its general obligation bonds on a competitive basis and achieve the lowest cost of borrowing. The State successfully sold its General Obligation Bonds, Series 2016A and General Obligation Refunding Bonds, Series 2016B competitively in April 2016. Strong demand for the state’s first competitive bond sale since 2007 was reflected in the number of bidders and the pricing levels bid. The state received highly competitive bids from six underwriters for its sale of tax-exempt bonds, securing a true interest cost of 2.39 percent for the twenty year borrowing.

In certain circumstances, the State may want to consider issuing a private placement, a direct sale/purchase of securities or entered into a bank loan transaction as an alternative to issuing publicly offered municipal bonds. Private placements, direct sales and bank loans are often competitive with a public sale of securities in cases when the transaction size is small, when the term of debt is short and when the interest rate mode is variable. With a private placement, the State would typically issue a solicitation, based on the advice of its financing advisor, for offers from qualified lending institutions. The solicitation responses are then reviewed and compared with careful consideration being given to any non-standard or onerous covenants and a winning offer is selected and the terms are locked in. In evaluating the use of these alternatives, the State and its Financial Advisor should compare the costs of the private debt vs. a public sale of securities, taking into account the interest cost and upfront financing costs.

**Term of the Debt:** The Term (final maturity) of a financing must not exceed a conservative estimate of the useful life of the assets to be financed (or the remaining useful life of assets associated with refunding bonds). A term of twenty-years (20) years has been used for State general obligation bonds. Longer Terms are appropriate for project finance issues and financings where debt service is paid from a specific revenue stream. Shorter Terms are appropriate for financings which rely on non-State or limited revenue sources to pay debt service such as GARVEE financings and other special obligation financings.

**Amortization Structure of Debt:** An amortization that produces level-annual debt service should be used unless otherwise dictated by considerations provided below. However, in all circumstances, the weighted average maturity must not be greater than useful life of the assets to be financed. Amortization structures that produce an increasing level of debt service (ascending debt service) are generally only appropriate for non-contingent debt. Level principal amortization or an amortization schedule producing descending debt service could be used to reduce interest cost and shorten the weighted average maturity of the bonds being issued. Principal repayment should begin within eighteen months of the issuance unless debt repayment is solely dependent on revenues derived from the project being financed or there is an overwhelming business rationale. Structures utilizing term bonds or other “balloon” payments should require annual sinking fund payments that achieve the required amortizations discussed above. Issuers may combine two or more series of bonds issued under a common plan of finance to achieve the required amortization structures. If one of the series includes a taxable component, it is generally advisable to amortize the taxable series with a shorter weighted average maturity. Issues with a fully funded debt service reserve fund should use any balance remaining at maturity to make the final payment.

**Sizing the Issue:** For bonds other than State General Obligation bonds approved by the voters, the project draw (spending) schedule should be used as the basis for sizing the issue. If possible, net funding, which takes into account the projected earnings on the bond proceeds as a source of funds for project costs using anticipated spending schedules and an assumed rate of investment earnings, should be used to size the issue, as this results in a smaller overall issue size.

**Capitalized Interest:** When interest is capitalized, a portion of the proceeds of an issue is set aside to pay interest on the bonds for a specified period of time. Capitalized interest should only be used when necessary (typically for revenue-producing projects) and should be limited to six months beyond the projected completion date of the project.

**Call Provisions:** Bonds issued without call provisions generally carry lower interest costs. However, issuing non-callable debt may inhibit a government’s ability to effectively restructure future debt payments, if needed, and take advantage of refunding opportunities, thus reducing the debt service interest payments. It is standard for most bonds to be issued with a ten year call at a redemption price of 100% of the principal amount of the bonds to be redeemed, plus accrued interest to the redemption date. Issuers and their Financial Advisors should evaluate non-standard call provisions using an option analysis to estimate the value or cost of call option alternatives to determine the most beneficial structure. For competitive sales, the issuer’s Financial Advisor should determine the option value and the necessary spreads to the municipal benchmark index needed to achieve the estimated benefit from a non-standard call provision.

**Premium or Discount:** Unless otherwise prohibited, the issuer should use the net original issuance premium (original issuance premium, less original issuance discount less underwriters’ discount) for project costs for a new money financing and escrow costs for refunding bonds. Using net original issuance premium for the next interest or principal payment to bondholders is considered capitalized interest, which may be appropriate in the case of project financings or for tax-law considerations.

**Credit Enhancement:** The use of credit enhancement through the purchase of a municipal bond insurance policy to improve the credit ratings on a financing may be considered on transactions where the improved bond rating and corresponding reduction in interest rates paid by the issuer more than offsets the cost of the enhancement due at issuance. A cost-benefit analysis should be performed to determine if insurance or another type of enhancement is warranted. It is encouraged that the cost-benefit analysis be done to both the maturity of the bonds and to the bond’s first call-date.

**Election to Issue Variable Rate:** Issuing Variable Rate Debt gives an issuer access to rates on the very short end of the yield curve. The difference between short versus long-term rates varies with the shape of the yield curve and has recently ranged from 100-300 basis points (or 1.0% to 3.0%). By issuing Variable Rate Debt, the issuer is subject to interest rate risk. However, Variable Rate Debt has historically been at lower

interest rate levels than recognized fixed rate indices, and may enable an issuer to create a natural hedge against changes in its short-term investment portfolio. Variable Rate Debt may be used for two purposes: (1) as an interim financing device (during construction periods) and (2) subject to limitations, as a strategy to lower the issuer's overall effective cost of capital. Under either circumstance, when the cycle of long-term rates moves down to or near historic lows, consideration should be given to fixing (converting to a fixed rate) a portion of the then outstanding Variable Rate Debt to take advantage of the attractive long-term fixed rates. *Generally no more than 20% of an issuer's aggregate outstanding debt should be in a variable rate mode.* Before using variable rate debt, the issuer should understand the risks and compare the cost to a long term fixed rate borrowing to determine if the benefit outweighs the risks.

Interest Rate Swaps and Other Synthetic Products: To the extent permitted by State law, the use of contracts on interest rates, currency, cash flows, etc., including (but not limited to) interest rate swaps, interest rate caps and floors and guaranteed investment contracts (GICs) should not be used unless the issuer has adopted a separate policy regarding the use of such products and compared the risks and potential benefits against non-synthetic alternatives. Prior to entering into any Interest Rate Swaps and Other Synthetic Products associated with any Net Tax Supported Debt, the issuer should review the proposed product and transaction with the Office of the General Treasurer.

#### *Refunding of Outstanding Debt*

A refunding should only be done if there is a resulting economic benefit regardless of whether there is an accounting gain or loss, or a subsequent reduction or increase in cash flows. The issuer and its Financial Advisor will monitor the municipal bond market for opportunities to obtain interest savings by refunding outstanding debt. Refunding Bonds should be issued only when the issuance is of benefit to the issuer and/or the State. Tax-exempt bonds issued after 1986 can only be Advance Refunded one time; therefore, the one opportunity should be reserved for situations where the refunding is prudent and warranted. Refundings are generally undertaken for three reasons: (i) to provide present value debt service savings to the issuer; (ii) to escape burdensome or restrictive covenants imposed by the terms of the bonds being refinanced; (iii) to restructure debt for an appropriate purpose for the State. Refunding issues should be amortized to achieve level annual debt service savings or proportional savings based on the principal amount of the bonds being refunded. "Up-front" or "deferred" debt service savings structures should be employed only as necessary to meet specific objectives and dissavings in any year should be avoided, if possible. In addition, the final maturity on the Refunding Bonds should be no longer than the final maturity on the Refunded Bonds unless a debt restructuring is undertaken for an appropriate purpose for the State.

Advanced Refundings: For refundings for savings, the following parameters are suggested to ensure that the single advanced refunding opportunity is warranted:

- For bonds with call dates within two years of the delivery date of the refunding bonds, at least 3% present value savings on a maturity by maturity basis. For bonds with call dates two or more years past the delivery date of the refunding bonds, at least 5% present value savings on a maturity by maturity basis.
- The level of negative arbitrage, on a maturity by maturity basis, should not be greater than present value savings, and if relatively large, a higher level of present value savings should be required. Generally, negative arbitrage should be 50% or less than the net present value savings.
- On a bond series basis, the breakeven increase in interest rates should be calculated. The breakeven increase in interest rates is a calculation of how much rates have to increase between an advance refunding of the bonds today and a current refunding at the time the bonds are callable to result in the same amount of present value savings. The breakeven increase in interest rates should not exceed the forward interest rate forecast or a pre-established target based on past market volatility. Generally, a breakeven increase in interest rates of 75 basis points to 100 basis points has been targeted by some issuers, but length of



time to the call date, market conditions, shape of the yield curve and interest rate expectations are factors to be considered in determining the target.

- Lower maturity by maturity net present value savings targets may be appropriate for shorter term or smaller fixed rate refunding issues or series, including maturities outstanding less than two years from the call date.

Current Refundings. Current refundings are a diminishing asset. Current refundings should be completed as long as the net present value savings is meaningful and the market for tax-exempt bonds is not extraordinary volatile.

Forward Refunding. A refunding in which bonds are sold with the intent to close or deliver at some future point in time, generally more than 30 days after pricing, and often to coincide with a date 90 days prior to the call date on the refunded bonds, thereby qualifying the issue as a current refunding. In general, the issuer should evaluate the breakeven savings rate (described above) to consider the likelihood of achieving higher savings than a current refunding, while minimizing other risks associated with a Forward Refunding.

### *Debt Issuance Practices*

Sale Process: A competitive bond offering involves bid solicitation from potential purchasers, principally underwriters. It is a public bid where the bonds are sold to the underwriter or other purchaser that offers the lowest “true interest cost” or TIC. TIC is defined as the rate necessary, when compounded semi-annually, to discount the amounts payable on the respective principal and interest payment dates back to the delivery date where the total equals the purchase price received for the new issue securities.

A negotiated offering differs from a competitive offering in the method used for selecting the underwriter, the role of the underwriter in the bond marketing process, and the procedures used for determining interest rates and underwriter compensation. In a negotiated offering, the underwriter is selected first, generally through the solicitation of competitive requests for proposals. The underwriter or senior underwriter will engage in pre-sale marketing and will negotiate interest rates. The State should conduct financings on a competitive basis; however, negotiated financings may be used due to market volatility or the use of an unusual or complex financing or security structure. Retail only issues or sales are sold through a negotiated process. Also, bond refundings are often conducted through a negotiated process, due to complexities associated with refunding economics and escrow structuring. However, a straightforward refunding can be done on a competitive basis. In either case, there should still be a competitive process, in the first case, by virtue of the bid of the bonds and in the latter case by an RFP process to select an underwriting firm or firms. The negotiated offering is structured to require the solicitation of multiple underwriting proposals and permits the issuers to solicit the advice of several underwriters about how to structure and price a proposed bond issue. To provide the broadest distribution of bonds, the use of co-managers and selling groups are encouraged in negotiated transactions. The size of the transaction, anticipated retail/institutional demand, experience, etc., will determine the number of participants.

Competitive Sale: After disclosure documents are completed and structuring issues have been decided, the competitive sale process may begin. A Summary Notice of Sale can be published in the Bond Buyer alerting potential bidders to the date and time of the sale, approximately one or two weeks in advance of the sale date. Simultaneously, the State posts and electronically distributes its Preliminary Official Statement that contains a detailed Notice of Sale containing the relevant aspects of the sale including precise bidding rules and the date and times bidders must submit their bids. The most common on-line bidding platform used by the municipal market is Parity IPREO. Bids are promptly “opened” and disclosed. As a condition of submitting a bid, bidders may have to provide a good faith pledge, typically 1% of the value of the bonds being offered. On a date specified, after all legal documentation has been completed, the sale closes. The final purchase price of the bonds is wired to the State and the bonds are released.

Negotiated Sale: A sale date is chosen by the issuer with input from the underwriter and the Financial Advisor. Prior to any pre-marketing of the bonds, the Book-running senior underwriter should submit proposed pricing to the Financial Advisor and the issuer which will include proposed coupons, yields and

take downs for each maturity to be sold. The scale should reflect input from the other members of the underwriting groups (co-managers and so-senior managers if any), known as price views, and a consensus scale. The proposal should also include all fees and costs associated with the underwriting. The issuer and the Financial Advisor should consider the proposal and negotiate any recommended changes. Following the pre-marketing, this process should be repeated with information gained from the pre-marketing activity and investor interest. Prior to the official pricing date, a retail order period may be held to solicit orders from retail investors. On the day of the institutional pricing an interest rate scale is released to potential investors through a pricing wire. The issuer and the Financial Advisor should review the pricing wire and confirm that it is consistent with agreed upon terms. An order period is conducted lasting several hours. During the order period, orders are placed by investors through the senior manager, the co-managers and selling group. The issuer and the Financial Advisor may view the orders as they are placed and entered into the senior manager's order management system, using the IPREO system. After the order period closes, the senior manager, issuer and Financial Advisor review the "book of orders." Based on the amount and distribution of orders, the senior manager and the issuer determine whether any adjustments to the pricing of the bonds are necessary. After the bonds are repriced, the management group checks to see whether additional orders can be obtained and/or whether initial orders are withdrawn. Several iterations of this process may take place. When the senior manager (on behalf of the entire underwriting group), the issuer and Financial Advisor agree on a price, a verbal award is made. Subsequent to pricing, an official Bond Purchase Agreement is signed between the underwriting group and the issuer. A good faith deposit is obtained, similar to the competitive process. On a date specified, after all legal documentation has been completed, the sale closes. The final purchase price of the bonds is wired to the State and the bonds are released, as with the competitive process.

Professional Services: The State or the issuer will employ financial specialists to assist it in developing a bond issuance strategy, preparing bond documents, and marketing bonds to investors. The key Financing Team members include the issuer's financial advisor, bond counsel, underwriter (in a negotiated sale) and in some instances, a disclosure counsel. The use of an independent Municipal Advisor is encouraged. Bond Counsel and Underwriters' Counsel should not be the same firm. Other outside firms, such as those providing paying agent, trustee, and/or printing services, are retained as required. For refunding bonds, the issuer will likely need to retain a verification agent (that verifies the refunding cash flows) and an escrow agent (hold the refunding moneys in trust until the bonds are redeemed). Depending on the statutory authority, the costs for these services and fees can be paid through the proceeds of the bonds or through budgeted appropriations.

Credit Ratings and Rating Agencies. Obtaining a minimum of two ratings is encouraged as the use of two or more ratings broaden the pool of investors. Obtaining one rating can be appropriate for smaller or unique transactions. The cost of ratings can be the highest single cost other than the underwriters' discount, especially for larger transactions. Other states have had success reducing its transactional State and State agency rating costs by annually negotiating with each of the agencies and receiving a price for all state and state-agency expected transactions.

Underwriters' Discount: The underwriters' discount or spread is the difference between the price the underwriter pays the issuer for the bonds and the price the underwriter receives from the resale of those bonds to investors. Underwriter's compensation consists of takedown, management fee, underwriting risk, and expenses, although currently spreads reflect the amounts of only takedown and expenses. The expense component is made up of costs incurred by the underwriter on behalf of the issuer, including underwriters' counsel. The costs for these services need to be managed, through the competitive bid process used to select underwriters and subsequent negotiation and monitoring of fees.

Pricing/Sale Date: The Sale date should be driven by the need for proceeds and an appropriate time that the State is able to generate a thorough disclosure document, either due to the availability of financials or the ability to dedicate necessary State resources. The issuer should not attempt to "time the market"; however, issuers should avoid market competition with other state issues and/or comparable credits.



Closing Date: Sufficient time should be allowed between the sale (or pricing) date and the closing date to permit adequate review and execution of all closing documents. Issues requiring the execution of any document by the Governor (e.g., Consent of the Governor, Governor's Certificate, etc.) may require additional time to allow for review and execution by the Governor. Closing documents requiring the approval of and/or execution by the General Treasurer must be provided as soon as possible after pricing in order to allow adequate time for review and approval. Where appropriate, draft documents may be provided prior to pricing in order to speed the process.

Rating Agency Relations: Full disclosure of operations and open lines of communication shall be made to the rating agencies. Large and frequent issuers, such as the State, should meet with the rating agencies no less than annually to provide relevant updates on financial, economic and operational performance.

Disclosure: The State of Rhode Island is committed to continuing disclosure of financial and pertinent credit information relevant to the State's outstanding securities and will abide by the provisions of Securities and Exchange Commission (SEC) Rule 15c2-12 concerning primary and secondary market disclosure. See below.

Investment of Bond Proceeds: All general obligation and revenue bond proceeds shall be invested in separate bond accounts by issuance to aid in calculating arbitrage. Investments will be consistent with those authorized by existing statute and by the State's investment policies. If invested in a portfolio of securities, the portfolio should be structured to meet expected spending requirements. Accordingly, draw schedules should be reviewed and updated periodically and provided to the investment manager. The investment of a refunding escrow portfolio should include an analysis of the use of State and Local Government Securities (SLGs) and open market securities. The State's or the issuer's municipal advisor should estimate any potential benefit of the use of an open market escrow and the State or the issuer should determine if the potential savings will be worth the time and the risk of the bid.

Pre-Issuance Review of Projects: Prior to the issuance of the bonds, the State should conduct a review of the projects to be financed, in coordination with bond counsel in order to confirm that the projects are eligible to be financed on a tax-exempt basis.

#### *Disclosure and Post Issuance Debt Management*

Municipal securities are exempt from the disclosure regulations generally applied to corporations in both the Securities Act of 1933 and the Securities Exchange Act of 1934. Municipal securities, however, are subject to the anti-fraud provisions of the acts and related rules, specifically, section 17(a) of the 1933 Act, Section 10(b) of 1934 Act, and SEC Rule 10b-5 states that it is unlawful "to make an untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading." As the issuer of the bonds, the State has the responsibility to assure the accuracy and completeness of information provided to the potential investors. Issuers such as the State must also comply with SEC Rule 15c2-12. It is an SEC rule under the 1934 Act setting forth certain obligations of underwriters to receive, review and disseminate official statements prepared by issuers of most primary offerings of municipal securities.

The State issues a preliminary and final Official Statement (OS) in connection with its bonds. The Official Statement is one of the most critical documents produced by the bond financing team. The OS document discloses material information on a new issue including the purposes of the issue, how the securities will be repaid, and the financial, economic and demographic characteristics of the State. Investors, analysts and rating agencies may use this information to evaluate the credit quality of the securities. Federal securities laws generally require that if an official statement is used to market an issue, it must fully disclose all facts that would be of interest to potential investors evaluating the bonds. The OS also includes a statement that there have been no material misstatements or omissions by the issuer with respect to the issue, and that no facts have become known which would render false or misleading any statement which was made. While

the State employs consultants and bond counsel to assist in this task, the ultimate responsibility for the document rests with the State.

In addition to paying principal and interest on the bonds, after the bonds are issued the State has continuing obligations to bondholders including:

- Compliance with IRS code relative to arbitrage earnings, private use, useful life and the tax-exempt status of the bonds; and
- Secondary Market Disclosure requirements for the issuer or the State to provide:
  - (i) ongoing information on State's or the issuer's financial condition and
  - (ii) disclosure to bondholders about material events that affect the status of the bonds including arbitrage and tax compliance, and
  - (iii) for the benefit of individuals purchasing and/or holding the securities subsequent to their initial issuance.

Issuers must commit in the bond documents to provide secondary market disclosure.

Compliance with IRS Code: The primary IRS code applicable to tax-exempt bonds are the Federal Tax Reform Act of 1986 as incorporated in the U.S. Treasury Internal Revenue Code (IRC) sections 103 and 141 through 150. While there are many criteria, the most common issues relate to private use, arbitrage, and useful life. Section 103 of the Code indicates that an "arbitrage bond" under Section 148 will not be tax-exempt. "The basic arbitrage rule is that a municipality may not invest the proceeds of a tax-exempt note or bond in such a manner so that the yield on the invested funds exceeds the interest rate being paid on its borrowing by more than .125%. This should be distinguished from an unintentional generation of arbitrage earnings. Intent factors into the determination of "arbitrage." If projects fall behind schedule, there may be an arbitrage "rebate" to the IRS but not necessarily a determination that an arbitrage bond exists. In these cases, there are safe harbors such as spend down exemptions and there are certain requirements for tracking the arbitrage rebate. Intentional arbitrage would, however, affect the tax status of the bonds. In addition to arbitrage, another requirement is that tax-exempt bonds issued must be for a public, not private use, which generally includes bridges, schools, infrastructure used by the general public. There are, however, private uses that have a public benefit; pollution related clean-up, affordable housing, etc. Private use and private debt service of the bond cannot exceed 10% of the issue (5% on certain loans). Another issue is continued private use. For instance, a building constructed using bond funds for a public use may not generally be resold for private use, although the "change in use" provisions do provide for certain remedies. In addition, bonds may not exceed certain useful life criteria for the underlying capital assets. For any matters relating to the use of proceeds or investments, the State should always consult with bond counsel to ensure compliance with IRS Code and other governing provisions.

Continuing/Secondary Market Disclosure: At the time of issuance, disclosure of material facts is made. Issuers such as the State have a continuing obligation for disclosure. This is required by SEC Rule 15c2-12 as stated by the MSRB:

"Under Rule 15c2-12(b)(5), an underwriter for a primary offering of municipal securities subject to the rule currently is prohibited from underwriting the offering unless the underwriter has determined that the issuer or an obligated person for whom financial information or operating data is presented in the final official statement has undertaken in writing to provide certain items of information to the marketplace. Rule 15c2-12(b)(5) provides that such items include: (A) annual financial information concerning obligated persons; (B) audited financial statements for obligated persons if available and if not included in the annual financial information; (C) notices of certain events, if material; and (D) notices of failures to provide annual financial information on or before the date specified in the written undertaking."

The SEC further defines "obligated person" as:

"... any person, including an issuer of municipal securities, who is either generally or through an enterprise, fund, or account of such person committed by contract or other arrangement to support

payment of all or part of the obligations on the municipal securities sold in a primary offering (other than providers of bond insurance, letters of credit, or other liquidity facilities).”

The SEC further requires that broker-dealers can only buy securities for which the issuer has agreed to provide written assurance of their continuing disclosure. As noted above, the SEC does not have authority over disclosure requirements in the municipal bond market. Through these rules, however, the SEC has placed restrictions on underwriters, broker-dealers and other business partners, creating effective compliance.

SEC Rule 15c2-12 mandates continuing disclosure unless the bonds qualify for an exemption, which is generally not the case given the size of State issues. The State is responsible for providing ongoing disclosure information to established national information repositories and for maintaining compliance with disclosure standards. The State works with Bond Counsel or Disclosure Counsel to assure that this is completed annually and in the event of the occurrence of a disclosure event. Notice would be required for the following events:

- Principal and interest payment delinquencies
- Non-payment related defaults
- Unscheduled draws on the debt service reserves reflecting financial difficulties
- Unscheduled draws on the credit enhancements reflecting financial difficulties
- Substitution of the credit or liquidity providers or their failure to perform
- Adverse tax opinions or events affecting the tax-exempt status of the bonds
- Modifications to rights of bondholders
- Optional, contingent or unscheduled calls of bonds
- Defeasances
- Release, substitution or sale of property securing repayment of the bonds
- Rating changes
- Bankruptcy, insolvency, receivership or similar event of the obligated person
- Consummation of a merger, consolidation, or acquisition involving an obligated person
- Appointment of a successor or additional trustee

Annual filings are to be sent to and posted on the MSRB’s Electronic Municipal Market Access database (“EMMA”). In addition, if the State determines that the occurrence of an above listed event is material under applicable federal securities laws, the State has a duty to promptly file a notice of such occurrence and have it posted on EMMA. <http://www.emma.msrb.org/>

It is also a best practice that issuers also disclose any private placements, direct sales and bank loans to the public market on the EMMA system. The SEC is currently considering including the disclosure private placements, direct sales and bank loan as required disclosure for issuers of municipal securities.

## **Guidelines for Debt Management - Rhode Island Quasi-Public Entities and Local Governments**

In maximizing debt affordability, Rhode Island Quasi-Public Entities, Local Governments, Local Authorities and Special Districts (the “Issuers”) should consider the guidelines outlined below regarding how best to issue and structure its tax-supported debt in order to minimize borrowing costs and to maintain, and if possible, eventually improve, its credit rating. The following section provides debt structuring, issuance and post issuance compliance guidelines for Issuer debt.

### *Purpose*

These guidelines are intended to aid Issuer finance professionals and policy makers in structuring their financing arrangements in a manner consistent with the best interests of the Issuer. These are guidelines only, and consideration of a structure outside of these guidelines may be warranted in certain circumstances. In addition, these guidelines should be considered in conjunction with the specific state law and governing provisions to which the Issuer is required to comply. Specifically, certain state law provisions, local resolutions or charters may include limitations on issuance practices or structure that are more stringent than the recommendations provided herein.

### *Applicability*

These guidelines apply to Issuers where the debt service payments are expected to be made, in whole or in part, directly or indirectly, from Rhode Island Quasi-Public Entities, Local Government, Local Agency and Special District revenues.

### *Types of Debt*

Debt financing may include Issuer general obligation bonds, revenue bonds, certificates of participation, and lease/purchase debt. The primary debt type used by Rhode Island Quasi-Public Entities has been revenue bonds. The primary debt type used by Local Governments and Special Districts has been general obligation bonds. However, other outstanding debt has been issued by Local Governments and Special Districts in the form of revenue bonds, certificates of participation, and lease/purchase debt. PFMB has identified different categories of local government debt:

- Gross Debt
- Net Direct Debt
- Overlapping Debt
- Overall Debt
- Overall Net Debt
- Other long-term obligations subject to appropriation

### *Debt Structuring Practices*

The following guidelines, which may be modified by an issuer to meet the particulars of the financial markets at the time of the issuance of a debt obligation, describe the basic debt issuance and debt structuring components and the terms and parameters are intended to provide general guidance to the Issuer.

Method of Sale: Municipal bonds are typically sold by negotiated sale or competitive sale. With a negotiated sale, the issuer selects an underwriter, or more likely a group of underwriters, called a syndicate, to sell the bonds in a public offering. The book-running senior manager acts as the lead representative of the syndicate. The issuer, with advice from its financial advisor, will negotiate with the senior manager to determine the optimal structure, price, underwriter’s discount and institutional and retail placement of the bonds. Negotiation may provide more flexibility as to timing, structure and pricing of the transaction. With a competitive sale, the issuer prepares a Notice of Sale, which is published with the preliminary offering document and describes all the parameters for bids on the bonds. On the day and time set for the sale, as established in the Notice of Sale, bidders submit bids and the bid with the lowest true interest cost wins. The winning bidder sells the bonds to investors at the prices that were bid. A third method of sale that is used much less frequently is a private placement, where bonds are not publicly offered and sold directly to qualified

investors. Private placements, including bank loans, bank funding agreements, and master lease programs can be cost effective for certain type of financings including: variable rate, short-term and smaller size issuances due to lower costs of issuance compared to publicly marketed securities.

Issuers should sell their debt using the method of sale that is most likely to achieve the lowest cost of borrowing. In stable markets and for a straightforward issuance, a competitive sale will generally result in the lowest cost of borrowing and should be the preferred method of sale if certain factors are present. In determining the method of sale, the issuer should consider the following factors:

Factor	Competitive Sale	Negotiated Sale
<b>Credit</b>	General obligation credits High ratings No negative outlook on the ratings	New credit Complex credit with a “story” Low credit ratings (Baa/BBB)
<b>Size of the Issue</b>	Bond issue over \$5 to \$10 million	Small debt issues for issuers with limited resources may be appropriate.
<b>Financing Structure</b>	Fixed rate, current interest bonds with serial maturities or term bonds	Variable rate bonds. Structure is complex and is difficult to sell through a competitive sale. Complex refunding structure.
<b>Market Volatility</b>	Capital markets are functioning normally with no extreme volatility in interest rates and investor demand	Capital markets are experiencing wide shifts in interest rates and investor demand (e.g., financial crisis in late 2008/early 2009)
<b>Retail Investor Demand</b>	Retail investors are not the target buyers	Structure of the bonds is conducive to retail investor demand, with the expectation that many of the bonds would be placed with retail investors

In certain circumstances, Issuers may want to consider issuing a private placement, a direct sale/purchase of securities or entered into a bank loan transaction as an alternative to issuing publicly offered municipal bonds. Private placements, direct sales and bank loans are often competitive with a public sale of securities in cases when the transaction size is small, when the term of debt is short and when the interest rate mode is variable. With a private placement, the issuer typically issues a solicitation, based on the advice of its financing advisor, for offers from qualified lending institutions. The solicitation responses are then reviewed and compared with careful consideration being given to any non-standard or onerous covenants and a winning offer is selected and the terms are locked in. In evaluating the use of these alternatives, the Issuers and their Financial Advisor should compare the costs of the private debt vs. a public sale of securities, taking into account the interest cost and upfront financing costs.

**Term of the Debt:** The Term (final maturity) of a financing must not exceed a conservative estimate of the useful life of the assets to be financed (or the remaining useful life of assets associated with refunding bonds). Longer Terms are appropriate for project finance issues and financings where debt service is paid from a specific revenue stream. Shorter Terms are appropriate for financings with limited revenue sources to pay debt service.

**Amortization Structure of Debt:** For self-supporting proprietary operations, the primary strategy is to use an amortization structure that produces level annual debt service. To the extent that shorter maturities or alternative amortization strategies are utilized in an effort to reduce the effective borrowing costs, any comparative advantages must be considered in relationship to the potential negative impacts on user fees, rates and charges. For other categories of debt, an amortization that produces level-annual debt service should be used unless otherwise dictated by considerations provided below. However, in all circumstances, the weighted average maturity must not be greater than useful life of the assets to be financed. Amortization structures that produce an increasing level of debt service (ascending debt service) are generally only appropriate for non-contingent debt. Level principal amortization or an amortization schedule producing



declining annual debt service could be used to reduce interest cost and shorten the weighted average maturity of the bonds being issued. Some revenue or asset backed bonds which rely on the repayment of loans will require accelerated prepayment and redemption based on loan repayments. Principal repayment should begin within eighteen months of the issuance unless debt repayment is solely dependent on revenues derived from the project being financed or there is an overwhelming business rationale. Structures utilizing term bonds or other “balloon” payments should require annual sinking fund payments that achieve the required amortizations discussed above. Issuers may combine two or more series of bonds issued under a common plan of finance to achieve the required amortization structures. If one of the series includes a taxable component, it is generally advisable to amortize the taxable series with a shorter weighted average maturity. Issues with a fully funded debt service reserve fund should use any balance remaining at maturity to make the final payment.

Sizing the Issue: Generally, the project draw (spending) schedule should be used as the basis for sizing the issue. If possible, net funding, which takes into account the projected earnings on the bond proceeds as a source of funds for project costs using anticipated spending schedules and an assumed rate of investment earnings, should be used to size the issue, as this results in a smaller overall issue size.

Capitalized Interest: When interest is capitalized, a portion of the proceeds of an issue is set aside to pay interest on the bonds for a specified period of time. Capitalized interest should only be used when necessary (typically for revenue-producing projects) and should be limited to six months beyond the projected completion date of the project.

Call Provisions: Bonds issued without call provisions generally carry lower interest costs. However, issuing non-callable debt may inhibit a government’s ability to effectively restructure future debt payments, if needed, and take advantage of refunding opportunities, thus reducing the debt service interest payments. It is standard for most tax-exempt bonds to be issued with a ten-year call at a redemption price of 100% of the principal amount of the bonds to be redeemed, plus accrued interest to the redemption date. Issuers and their Financial Advisors should evaluate non-standard call provisions using an option analysis to estimate the value or cost of call option alternatives to determine the most beneficial structure. For competitive sales, the issuer’s Financial Advisor should determine the option value and the necessary spreads to the municipal benchmark index needed to achieve the estimated benefit from a non-standard call provision.

Premium or Discount: Unless otherwise prohibited, the issuer should use the net original issuance premium (original issuance premium, less original issuance discount less underwriters’ discount) for project costs for a new money financing and escrow costs for refunding bonds (effectively reducing the bond issue size). Using net original issuance premium for the next interest or principal payment to bondholders is considered capitalized interest, which may be appropriate in the case of project financings or for tax-law considerations.

Credit Enhancement: The use of credit enhancement through the purchase of a municipal bond insurance policy to improve the credit ratings on a financing may be considered on transactions where the improved bond rating and corresponding reduction in interest rates paid by the issuer more than offsets the cost of the enhancement due at issuance. A cost-benefit analysis should be performed to determine if insurance or another type of enhancement is warranted. It is encouraged that the cost-benefit analysis be done to both the maturity of the bonds and to the bond’s first call-date.

Election to Issue Variable Rate: Issuing Variable Rate Debt gives an issuer access to rates on the very short end of the yield curve. The difference between short versus long-term rates varies with the shape of the yield curve and has recently ranged from 100-300 basis points (or 1.0% to 3.0%). By issuing Variable Rate Debt, the issuer is subject to interest rate risk. However, Variable Rate Debt has historically been at lower interest rate levels than recognized fixed rate indices, and may enable an issuer to create a natural hedge against changes in its short-term investment portfolio. Variable Rate Debt may be used for two purposes: (1) as an interim financing device (during construction periods) and (2) subject to limitations, as a strategy to lower the issuer’s overall effective cost of capital. Under either circumstance, when the cycle of long-term rates moves down to or near historic lows, consideration should be given to fixing (converting to a

fixed rate) a portion of the then outstanding Variable Rate Debt to take advantage of the attractive long-term fixed rates. *Generally, no more than 20% of an issuer's aggregate outstanding debt should be in a variable rate mode.* Before using variable rate debt, the Issuers should understand the risks and administrative burden and compare the cost to a long term fixed rate borrowing to determine if the benefit outweighs the risks.

Interest Rate Swaps and Other Synthetic Products: To the extent permitted by Rhode Island state law, the use of contracts on interest rates, currency, cash flows, etc., including (but not limited to) interest rate swaps, interest rate caps and floors and guaranteed investment contracts (GICs) should not be used unless the issuer has adopted a separate policy regarding the use of such products and compared the risks and potential benefits against non-synthetic alternatives. Prior to entering into any Interest Rate Swaps and Other Synthetic Products, the Issuers should review the proposed product and transaction with the Office of the General Treasurer.

#### *Refunding of Outstanding Debt*

A refunding should only be done if there is a resulting economic benefit regardless of whether there is an accounting gain or loss, or a subsequent reduction or increase in cash flows. The Issuer and its Financial Advisor should monitor the municipal bond market for opportunities to obtain interest savings by refunding outstanding debt. Refunding Bonds should be issued only when the issuance is of benefit to the issuer and/or the Issuer. Tax-exempt bonds issued after 1986 can only be Advance Refunded one time; therefore, the one opportunity should be reserved for situations where the refunding is prudent and warranted. Refundings are generally undertaken for three reasons: (i) to provide present value debt service savings to the Issuer; (ii) to escape burdensome or restrictive covenants imposed by the terms of the bonds being refinanced; (iii) to restructure debt for an appropriate purpose for the Issuer. Refunding issues should be amortized to achieve level annual debt service savings or proportional savings based on the principal amount of the bonds being refunded. "Up-front" or "deferred" debt service savings structures should be employed only as necessary to meet specific objectives and dis-savings in any year should be avoided, if possible. In addition, the final maturity on the Refunding Bonds should be no longer than the final maturity on the Refunded Bonds unless a debt restructuring is undertaken for an appropriate purpose for the Issuer.

Advanced Refundings: For refundings for savings, the following parameters are suggested to ensure that the single advanced refunding opportunity is warranted:

- For bonds with call dates within two years of the delivery date of the refunding bonds, at least 3% present value savings on a maturity by maturity basis. For bonds with call dates two or more years past the delivery date of the refunding bonds, at least 5% present value savings on a maturity by maturity basis. However, lower maturity by maturity net present value savings targets may be appropriate for shorter term or smaller fixed rate refunding issues or series, including maturities outstanding less than two years from the call date.
- The level of negative arbitrage, on a maturity by maturity basis, should not be greater than present value savings, and if relatively large, a higher level of present value savings should be required. Negative arbitrage should be less than the net present value savings. Issuers may want to adopt a more stringent standard.
- On a bond series basis, the breakeven increase in interest rates should be calculated. The breakeven increase in interest rates is a calculation of how much rates have to increase between an advance refunding of the bonds today and a current refunding at the time the bonds are callable to result in the same amount of present value savings. The breakeven increase in interest rates should not exceed the forward interest rate forecast or a pre-established target based on past market volatility.

Current Refundings. Current refundings are a diminishing asset. Current refundings should be completed as long as the net present value savings is meaningful and the market for tax-exempt bonds is not extraordinary volatile.

Forward Refunding. A refunding in which bonds are sold with the intent to close or deliver at some future point in time, generally more than 30 days after pricing, and often to coincide with a date 90 days prior to the call date on the refunded bonds, thereby qualifying the issue as a current refunding. In general, the Issuer should evaluate the breakeven savings rate (described above) to consider the likelihood of achieving higher savings than a current refunding, while minimizing other risks and future administrative burdens associated with a Forward Refunding.

### *Debt Issuance Practices*

Sale Process: A competitive bond offering involves bid solicitation from potential purchasers, principally underwriters. It is a public bid where the bonds are sold to the underwriter or other purchaser that offers the lowest “true interest cost” or TIC. TIC is defined as the rate necessary, when compounded semi-annually, to discount the amounts payable on the respective principal and interest payment dates back to the delivery date where the total equals the purchase price received for the new issue securities.

A negotiated offering differs from a competitive offering in the method used for selecting the underwriter, the role of the underwriter in the bond marketing process, and the procedures used for determining interest rates and underwriter compensation. In a negotiated offering, the underwriter is selected first, generally through the solicitation of competitive requests for proposals. The underwriter or senior underwriter will engage in pre-sale marketing and will negotiate interest rates. Issuers should consider conducting fixed rate financings on a competitive basis if they meet the criteria described above; however, negotiated financings may be used due to market volatility or the use of an unusual or complex financing or security structure. Retail only issues or sales are sold through a negotiated process. Private placements, direct purchase and bank loans should be considered for small, shorter-term and variable rate financing and should be compared to the cost (taking into account upfront fees and interest rates) and administrative burden associated with a public sale of securities. Also, bond refundings are often conducted through a negotiated process, due to complexities associated with refunding economics and escrow structuring. However, a straightforward refunding can be done on a competitive basis. In either case, there should still be a competitive process, in the first case, by virtue of the bid of the bonds and in the latter case by an RFP process to select an underwriting firm or firms. The negotiated offering is structured to require the solicitation of multiple underwriting proposals and permits the state to solicit the advice of several underwriters about how to structure and price a proposed bond issue. To provide the broadest distribution of bonds, the use of co-managers and selling groups are encouraged for larger negotiated transactions. The size of the transaction, anticipated retail/institutional demand, experience, etc., should be considered in determining the number of participants.

Competitive Sale: After disclosure documents are completed and structuring issues have been decided, the competitive sale process may begin. A Summary Notice of Sale can be published in the Bond Buyer alerting potential bidders to the date and time of the sale, approximately one or two weeks in advance of the sale date. Simultaneously, the issuer posts and electronically distributes its Preliminary Official Statement that contains a detailed Notice of Sale containing the relevant aspects of the sale including precise bidding rules and the date and times bidders must submit their bids. The most common on-line bidding platform used by the municipal market is Parity IPREO. Muniauction can also be considered. Bids are promptly “opened” and disclosed. As a condition of submitting a bid, bidders may have to provide a good faith pledge, typically 1% of the value of the bonds being offered. On a date specified, after all legal documentation has been completed, the sale closes. The final purchase price of the bonds is wired to the Issuer and the bonds are released.

Negotiated Sale: A sale date is chosen by the issuer with input from the underwriter and the Financial Advisor. Prior to any pre-marketing of the bonds, the Book-running senior underwriter should submit proposed pricing to the Financial Advisor and the Issuer which will include proposed coupons, yields and take downs for each maturity to be sold. The scale should reflect input from the other members of the underwriting groups (co-managers and so-senior managers if any), known as price views, and a consensus scale. The proposal should also include all fees and costs associated with the underwriting. The Issuer and the Financial Advisor should consider the proposal and negotiate any recommended changes. Following the pre-marketing, this process should be repeated with information gained from the pre-marketing activity



and investor interest. Smaller negotiated sale offering may not include a pre-marketing process. Prior to the official pricing date, a retail order period may be held to solicit orders from retail investors, if a retail order period is recommended by the senior manager and the Financial Advisor agrees. On the day of the institutional pricing an interest rate scale is released to potential investors through a pricing wire. The Issuer and the Financial Advisor should review the pricing wire and confirm that it is consistent with agreed upon terms. An order period is conducted lasting several hours. During the order period, orders are placed by investors through the senior manager, the co-managers and selling group (if a selling group is used). The Issuer and the Financial Advisor may view the orders as they are placed and entered into the senior manager's order management system, using the IPREO system. After the order period closes, the senior manager, Issuer and Financial Advisor review the "book of orders." The Issuer should request the Financial Advisor's input and recommendation. Based on the amount and distribution of orders, the senior manager and the Issuer determine whether any adjustments to the pricing of the bonds are necessary. After the bonds are repriced, the management group checks to see whether additional orders can be obtained and/or whether initial orders are withdrawn. Several iterations of this process may take place for a larger sales in certain circumstances. When the senior manager (on behalf of the entire underwriting group), the Issuer and Financial Advisor agree on a price, a verbal award is made. Subsequent to pricing, an official Bond Purchase Agreement is signed between the underwriting group and the Issuer. A good faith deposit is obtained, similar to the competitive process. On a date specified, after all legal documentation has been completed, the sale closes. The final purchase price of the bonds is wired to the Issuer and the bonds are released, as with the competitive process.

Professional Services: The Issuer will employ financial specialists to assist it in developing a bond issuance strategy, preparing bond documents, and marketing bonds to investors. The key Financing Team members include the Issuer's financial advisor, bond counsel, underwriter (in a negotiated sale) and in some instances, a disclosure counsel. The use of an independent Municipal Advisor is encouraged. Bond Counsel and Underwriters' Counsel should not be the same firm. Other outside firms, such as those providing paying agent, trustee, and/or printing services, are retained as required. For refunding bonds, the Issuer will likely need to retain a verification agent (that verifies the refunding cash flows) and an escrow agent (hold the refunding moneys in trust until the bonds are redeemed). Depending on the statutory authority, the costs for these services and fees can be paid through the proceeds of the bonds or through budgeted appropriations.

Credit Ratings and Rating Agencies. Obtaining a minimum of two ratings is encouraged as the use of two or more ratings broaden the pool of investors. Obtaining one rating can be appropriate for smaller or unique transactions. The cost of ratings can be the highest single cost other than the underwriters' discount, especially for larger transactions. Issuers and Financial Advisors on behalf of their issuer clients have had success reducing its transactional rating costs by annually negotiating with each of the agencies and receiving a price for all issuer's expected transactions.

Underwriters' Discount: The underwriters' discount or spread is the difference between the price the underwriter pays the issuer for the bonds and the price the underwriter receives from the resale of those bonds to investors. Underwriter's compensation consists of takedown, management fee, underwriting risk, and expenses, although currently spreads reflect the amounts of only takedown and expenses. The expense component is made up of costs incurred by the underwriter on behalf of the issuer, including underwriters' counsel. The costs for these services need to be managed, through the competitive bid process used to select underwriters and subsequent negotiation and monitoring of fees.

Pricing/Sale Date: The Sale date should be driven by the need for proceeds and an appropriate time that the Issuer is able to generate a thorough disclosure document, either due to the availability of financials or the ability to dedicate necessary Issuer resources. The Issuer should not attempt to "time the market"; however, issuers should avoid, if possible, market competition with other Rhode Island issues and/or comparable credits.

Closing Date: Sufficient time should be allowed between the sale (or pricing) date and the closing date to

permit adequate review and execution of all closing documents. Where appropriate, draft documents may be provided prior to pricing in order to speed the process.

Rating Agency Relations: Full disclosure of operations and open lines of communication shall be made to the rating agencies. Larger and frequent issuers, should communicate with the rating agencies no less than annually to provide relevant updates on financial, economic and operational performance. Communication at times not related to a rating of a particular bond issue is encouraged for more frequent issuers.

Disclosure: Issuers should take their disclosure obligations seriously by providing disclosure of financial and pertinent credit information relevant to the Issuer's outstanding securities and abide by the provisions of Securities and Exchange Commission (SEC) Rule 15c2-12 concerning primary and secondary market disclosure. See below.

Investment of Bond Proceeds: Proceeds of tax-exempt bonds may be invested in separate bond accounts by issuance to aid in calculating arbitrage. Investments will be consistent with those authorized by existing statute, bond documents and by the Issuer's investment policies. If invested in a portfolio of securities, the portfolio should be structured to meet expected spending requirements. Accordingly, draw schedules should be reviewed and updated periodically and provided to the Issuer's investment manager. The investment of a refunding escrow portfolio should include an analysis of the use of State and Local Government Securities (SLGs) and open market securities. The Issuer's Municipal Advisor should estimate any potential benefit of the use of an open market escrow and the Issuer should determine if the potential savings will be worth the time and the additional risk of the bid.

Pre-Issuance Review of Projects: Prior to the issuance of the bonds, the Issuer should conduct a review of the projects to be financed, in coordination with bond counsel in order to confirm that the projects are eligibility to be financed on a tax-exempt basis.

#### *Disclosure and Post Issuance Debt Management*

Municipal securities are exempt from the disclosure regulations generally applied to corporations in both the Securities Act of 1933 and the Securities Exchange Act of 1934. Municipal securities, however, are subject to the anti-fraud provisions of the acts and related rules, specifically, section 17(a) of the 1933 Act, Section 10(b) of 1934 Act, and SEC Rule 10b-5 states that it is unlawful "to make an untrue statement of a material fact or to omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading." As the issuer of the bonds, the Issuer has the responsibility to assure the accuracy and completeness of information provided to the potential investors. Issuers must also comply with SEC Rule 15c2-12. It is an SEC rule under the 1934 Act setting forth certain obligations of underwriters to receive, review and disseminate official statements prepared by issuers of most primary offerings of municipal securities.

The Issuer issues a preliminary and final Official Statement (OS) in connection with its public sale of bonds. The Official Statement is one of the most critical documents produced by the bond financing team. The OS document discloses material information on a new issue including the purposes of the issue, how the securities will be repaid, and the financial, economic and demographic characteristics of the Issuer. Investors, analysts and rating agencies may use this information to evaluate the credit quality of the securities. Federal securities laws generally require that if an official statement is used to market an issue, it must fully disclose all facts that would be of interest to potential investors evaluating the bonds. The OS also includes a statement that there have been no material misstatements or omissions by the issuer with respect to the issue, and that no facts have become known which would render false or misleading any statement which was made. While the Issuer may employ consultants and bond counsel to assist in this task, the ultimate responsibility for the document rests with the Issuer.

In addition to paying principal and interest on the bonds, after the bonds are issued the Issuer has continuing obligations to bondholders including:

- Compliance with IRS code relative to arbitrage earnings, private use, useful life and the tax-exempt status of the bonds; and
- For the benefit of individuals purchasing and/or holding the securities subsequent to their initial issuance, Secondary Market Disclosure requirements for the Issuer or Obligated Party to provide:
  - (iv) ongoing information on Issuer's and/or Obligated Party's financial condition, and
  - (v) disclosure to bondholders about material events that affect the status of the bonds including arbitrage and tax compliance.

Issuers must commit in the bond documents to provide secondary market disclosure for most publicly issued municipal securities (see below).

Compliance with IRS Code: The primary IRS code applicable to tax-exempt bonds are the Federal Tax Reform Act of 1986 as incorporated in the U.S. Treasury Internal Revenue Code (IRC) sections 103 and 141 through 150. While there are many criteria, the most common issues relate to private use, arbitrage, and useful life. Section 103 of the Code indicates that an “arbitrage bond” under Section 148 will not be tax-exempt. “The basic arbitrage rule is that a municipality may not invest the proceeds of a tax-exempt note or bond in such a manner so that the yield on the invested funds exceeds the interest rate being paid on its borrowing by more than .125%. This should be distinguished from an unintentional generation of arbitrage earnings. Intent factors into the determination of “arbitrage.” If projects fall behind schedule, there may be an arbitrage “rebate” to the IRS but not necessarily a determination that an arbitrage bond exists. In these cases, there are safe harbors such as spend down exemptions and there are certain requirements for tracking the arbitrage rebate. Intentional arbitrage would, however, affect the tax status of the bonds. In addition to arbitrage, another requirement is that tax-exempt bonds issued must be for a public, not private use, which generally includes bridges, schools, infrastructure used by the general public. There are, however, private uses that have a public benefit; pollution related clean-up, affordable housing, etc. Private use and private debt service of the bond cannot exceed 10% of the issue (5% on certain loans). Another issue is continued private use. For instance, a building constructed using bond funds for a public use may not generally be resold for private use, although the “change in use” provisions do provide for certain remedies. In addition, bonds may not exceed certain useful life criteria for the underlying capital assets. For any matters relating to the use of proceeds or investments, issuers should always consult with their bond counsel to ensure compliance with IRS Code and other governing provisions.

Continuing/Secondary Market Disclosure: At the time of issuance, disclosure of material facts is made. Issuers have a continuing obligation for disclosure. This is required by SEC Rule 15c2-12 as stated by the MSRB:

“Under Rule 15c2-12(b)(5), an underwriter for a primary offering of municipal securities subject to the rule currently is prohibited from underwriting the offering unless the underwriter has determined that the issuer or an obligated person for whom financial information or operating data is presented in the final official statement has undertaken in writing to provide certain items of information to the marketplace. Rule 15c2-12(b)(5) provides that such items include: (A) annual financial information concerning obligated persons; (B) audited financial statements for obligated persons if available and if not included in the annual financial information; (C) notices of certain events, if material; and (D) notices of failures to provide annual financial information on or before the date specified in the written undertaking.”

The SEC further defines “obligated person” as:

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- Optional, contingent or unscheduled calls of bonds
- Defeasances
- Release, substitution or sale of property securing repayment of the bonds
- Rating changes
- Bankruptcy, insolvency, receivership or similar event of the obligated person
- Consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of its assets, other than in the ordinary course of business
- Appointment of a successor or additional trustee or the change of name of a trustee, if material.

Annual filings are to be sent to and posted on the MSRB's Electronic Municipal Market Access database ("EMMA"). In addition, if the Issuer determines that the occurrence of an above listed event is material under applicable federal securities laws, the Issuer has a duty to promptly file a notice of such occurrence and have it posted on EMMA. <http://www.emma.msrb.org/>

It is also a best practice that issuers also disclose any private placements, direct sales and bank loans to the public market on the EMMA system, if the Issuer has outstanding publicly offered securities. The SEC is considering including the disclosure private placements, direct sales and bank loan as required disclosure for issuers of municipal securities.

**APPENDIX A – PART ONE  
STATE DEBT AND PENSION RATIOS**

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**APPENDIX A  
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Moody's State Debt Medians				
State	Debt Service to Revenues	Debt to Personal Income	Debt Per Capita	Debt to Gross State Product
<b>50 State Median</b>	<b>4.3%</b>	<b>2.5%</b>	<b>\$1,025</b>	<b>2.21%</b>
<b>Double-A Median</b>	<b>4.7%</b>	<b>2.7%</b>	<b>\$1,132</b>	<b>2.28%</b>
Rhode Island (Aa2/AA/AA)	<b>6.4%</b>	<b>3.7%</b>	<b>\$1,813</b>	<b>3.51%</b>
Alabama (Aa1/AA/AA+)	3.9%	2.3%	\$849	2.06%
Alaska (Aa2/AA+/AA+)	2.4%	2.7%	\$1,422	1.85%
Arizona (Aa2/AA/--)	4.6%	2.1%	\$776	1.85%
Arkansas (Aa1/AA/--)	4.1%	1.7%	\$628	1.56%
California (Aa3/AA-/AA-)	5.3%	4.7%	\$2,323	3.94%
Colorado (Aa1/AA/--)	2.5%	0.9%	\$424	0.76%
Connecticut (Aa3/AA-/AA-)	14.3%	9.8%	\$6,155	8.82%
Delaware (Aaa/AAA/AAA)	7.3%	5.2%	\$2,385	3.56%
Florida (Aa1/AAA/AAA)	4.2%	2.5%	\$1,038	2.51%
Georgia (Aaa/AAA/AAA)	6.6%	2.7%	\$1,029	2.21%
Hawaii (Aa1/AA+/AA)	10.9%	9.9%	\$4,557	8.56%
Idaho (Aa1/AA+/AA+)	1.6%	1.2%	\$455	1.19%
Illinois (Baa2/BBB/BBB+)	9.2%	5.2%	\$2,522	4.41%
Indiana (Aaa/AAA/AAA)	1.2%	1.2%	\$463	0.96%
Iowa (Aaa/AAA/AAA)	0.7%	0.5%	\$239	0.44%
Kansas (Aa2/AA/--)	3.4%	3.4%	\$1,534	3.09%
Kentucky (Aa2/A+/AA-)	7.6%	5.2%	\$1,954	4.60%
Louisiana (Aa3/AA/AA-)	3.1%	3.8%	\$1,609	2.99%
Maine (Aa2/AA/AA)	5.1%	2.2%	\$928	2.27%
Maryland (Aaa/AAA/AAA)	6.2%	3.5%	\$1,928	3.34%
Massachusetts (Aa1/AA+/AA+)	10.6%	9.5%	\$5,592	8.34%
Michigan (Aa1/AA-/AA)	2.5%	1.8%	\$719	1.59%
Minnesota (Aa1/AA+/AAA)	3.7%	3.2%	\$1,527	2.64%
Mississippi (Aa2/AA/AA)	6.0%	5.0%	\$1,707	4.88%
Missouri (Aaa/AAA/AAA)	3.5%	1.4%	\$574	1.25%

Moody's State Debt Medians				
State	Debt Service to Revenues	Debt to Personal Income	Debt Per Capita	Debt to Gross State Product
Montana (Aa1/AA/AA+)	1.3%	0.6%	\$247	0.58%
Nebraska (--/AAA/--)	0.3%	0.0%	\$8	0.01%
Nevada (Aa2/AA/AA+)	5.6%	1.5%	\$591	1.26%
New Hampshire (Aa1/AA/AA+)	4.7%	1.5%	\$808	1.53%
New Jersey (A2/A-/A)	8.5%	7.3%	\$4,141	6.72%
New Mexico (Aa1/AA/--)	4.4%	3.3%	\$1,230	2.79%
New York (Aa1/AA+/AA+)	7.6%	5.4%	\$3,021	4.29%
North Carolina (Aaa/AAA/AAA)	3.5%	1.8%	\$721	1.50%
North Dakota (Aa1/AA+/--)	0.5%	0.3%	\$166	0.22%
Ohio (Aa1/AA+/AA+)	5.2%	2.6%	\$1,091	2.20%
Oklahoma (Aa2/AA+/AA+)	2.6%	0.9%	\$397	0.85%
Oregon (Aa1/AA+/AA+)	5.7%	4.6%	\$1,907	3.61%
Pennsylvania (Aa3/AA-/AA-)	3.8%	2.5%	\$1,172	2.28%
South Carolina (Aaa/AA+/AAA)	3.7%	1.7%	\$603	1.56%
South Dakota (Aaa/AAA/AAA)	2.2%	1.4%	\$652	1.21%
Tennessee (Aaa/AAA/AAA)	1.3%	0.7%	\$298	0.66%
Texas (Aaa/AAA/AAA)	2.4%	0.9%	\$383	0.64%
Utah (Aaa/AAA/AAA)	5.9%	2.5%	\$921	1.97%
Vermont (Aaa/AA+/AAA)	2.1%	2.1%	\$1,002	2.14%
Virginia (Aaa/AAA/AAA)	5.0%	2.9%	\$1,418	2.57%
Washington (Aa1/AA+/AA+)	7.0%	5.7%	\$2,761	4.68%
West Virginia (Aa1/AA-/AA)	6.3%	2.8%	\$1,020	2.53%
Wisconsin (Aa2/AA/AA)	6.8%	4.0%	\$1,780	3.55%
Wyoming (--/AAA/--)	0.1%	0.1%	\$45	0.06%

Source: Moody's State Debt Medians 2016, May 6, 2016. Alabama, Arizona, Massachusetts, New Mexico, West Virginia & Wyoming debt service to revenues based on fiscal 2014 revenues; fiscal 2015 audited financial statements not available at time of publication.



Moody's State Pension Medians						
State	2015 ANPL as % of Own-Source Revenues	3-Yr Avg ANPL as % of Own-Source Revenues	3-Yr Avg ANPL as % of Total Governmental Revenues	ANPL as % of Personal Income	ANPL as % of Gross State Product	ANPL Per Capita
<b>50 State Median</b>	<b>85%</b>	<b>88%</b>	<b>53%</b>	<b>5.8%</b>	<b>5.0%</b>	<b>\$2,393</b>
<b>Double-A Median</b>	<b>95%</b>	<b>107%</b>	<b>57%</b>	<b>5.8%</b>	<b>5.0%</b>	<b>\$2,394</b>
Rhode Island (Aa2/AA/AA)	121%	134%	80%	9.7%	9.0%	\$4,843
Alabama (Aa1/AA/AA+)	57%	61%	35%	3.5%	3.2%	\$1,344
Alaska (Aa2/AA+/AA+)	241%	261%	179%	32.4%	25.3%	\$18,112
Arizona (Aa2/AA/--)	61%	66%	35%	3.5%	3.2%	\$1,369
Arkansas (Aa1/AA/--)	59%	70%	39%	4.7%	4.5%	\$1,858
California (Aa3/AA-/AA-)	115%	114%	74%	9.1%	7.6%	\$4,775
Colorado (Aa1/AA/--)	143%	144%	90%	7.1%	6.2%	\$3,601
Connecticut (Aa3/AA-/AA-)	288%	298%	209%	22.0%	20.5%	\$14,738
Delaware (Aaa/AAA/AAA)	68%	75%	59%	8.5%	5.7%	\$4,078
Florida (Aa1/AAA/AAA)	33%	37%	23%	1.7%	1.7%	\$751
Georgia (Aaa/AAA/AAA)	86%	88%	50%	4.6%	3.9%	\$1,879
Hawaii (Aa1/AA+/AA)	118%	156%	111%	12.0%	10.3%	\$5,728
Idaho (Aa1/AA+/AA+)	31%	33%	24%	2.7%	2.6%	\$1,010
Illinois (Baa2/BBB/BBB+)	437%	419%	280%	30.3%	24.9%	\$14,996
Indiana (Aaa/AAA/AAA)	91%	100%	61%	6.2%	5.0%	\$2,543
Iowa (Aaa/AAA/AAA)	37%	38%	24%	2.7%	2.1%	\$1,197
Kansas (Aa2/AA/--)	168%	181%	126%	11.0%	9.9%	\$5,049
Kentucky (Aa2/A+/AA-)	261%	283%	162%	20.7%	18.4%	\$8,092
Louisiana (Aa3/AA/AA-)	92%	225%	119%	5.8%	4.8%	\$2,497
Maine (Aa2/AA/AA)	168%	175%	108%	13.5%	13.4%	\$5,717
Maryland (Aaa/AAA/AAA)	200%	197%	133%	13.6%	12.6%	\$7,624
Massachusetts (Aa1/AA+/AA+)	182%	201%	125%	13.8%	12.0%	\$8,419
Michigan (Aa1/AA-/AA)	107%	85%	51%	7.9%	7.1%	\$3,357
Minnesota (Aa1/AA+/AAA)	43%	40%	28%	4.0%	3.3%	\$2,000
Mississippi (Aa2/AA/AA)	70%	113%	61%	5.8%	5.7%	\$2,052
Missouri (Aaa/AAA/AAA)	80%	71%	39%	4.0%	3.5%	\$1,706

Moody's State Pension Medians						
State	2015 ANPL as % of Own-Source Revenues	3-Yr Avg ANPL as % of Own-Source Revenues	3-Yr Avg ANPL as % of Total Governmental Revenues	ANPL as % of Personal Income	ANPL as % of Gross State Product	ANPL Per Capita
Montana (Aa1/AA/AA+)	147%	138%	81%	11.2%	10.3%	\$4,599
Nebraska (--/AAA/--)	33%	21%	14%	2.1%	1.6%	\$988
Nevada (Aa2/AA/AA+)	122%	100%	52%	4.9%	4.2%	\$2,076
New Hampshire (Aa1/AA/AA+)	50%	51%	33%	2.3%	2.3%	\$1,267
New Jersey (A2/A-/A)	227%	220%	157%	16.8%	15.9%	\$10,070
New Mexico (Aa1/AA/--)	66%	68%	40%	7.4%	6.4%	\$2,843
New York (Aa1/AA+/AA+)	30%	35%	22%	2.4%	1.9%	\$1,402
North Carolina (Aaa/AAA/AAA)	22%	37%	23%	1.4%	1.2%	\$589
North Dakota (Aa1/AA+/-)	20%	48%	38%	3.1%	2.3%	\$1,658
Ohio (Aa1/AA+/AA+)	43%	48%	27%	2.7%	2.2%	\$1,173
Oklahoma (Aa2/AA+/AA+)	83%	114%	71%	5.2%	5.0%	\$2,290
Oregon (Aa1/AA+/AA+)	38%	56%	31%	2.8%	2.2%	\$1,187
Pennsylvania (Aa3/AA-/AA-)	160%	172%	108%	10.4%	9.5%	\$5,100
South Carolina (Aaa/AA+/AAA)	177%	132%	79%	12.1%	11.4%	\$4,615
South Dakota (Aaa/AAA/AAA)	75%	69%	40%	4.1%	3.4%	\$1,842
Tennessee (Aaa/AAA/AAA)	39%	39%	23%	2.4%	2.1%	\$1,016
Texas (Aaa/AAA/AAA)	189%	179%	109%	9.6%	7.8%	\$4,509
Utah (Aaa/AAA/AAA)	53%	51%	35%	3.7%	2.9%	\$1,439
Vermont (Aaa/AA+/AAA)	106%	105%	65%	12.3%	12.1%	\$5,873
Virginia (Aaa/AAA/AAA)	62%	67%	48%	3.6%	3.2%	\$1,859
Washington (Aa1/AA+/AA+)	98%	88%	48%	6.1%	5.0%	\$3,106
West Virginia (Aa1/AA-/AA)	134%	151%	91%	13.2%	12.2%	\$4,887
Wisconsin (Aa2/AA/AA)	22%	23%	15%	1.6%	1.4%	\$722
Wyoming (--/AAA/--)	43%	80%	55%	4.0%	3.4%	\$2,220

Source: Moody's Medians – Low Returns, Weak Contributions Drive Growth of State Pension Liabilities, October 6, 2016. ANPL is adjusted net pension liability.

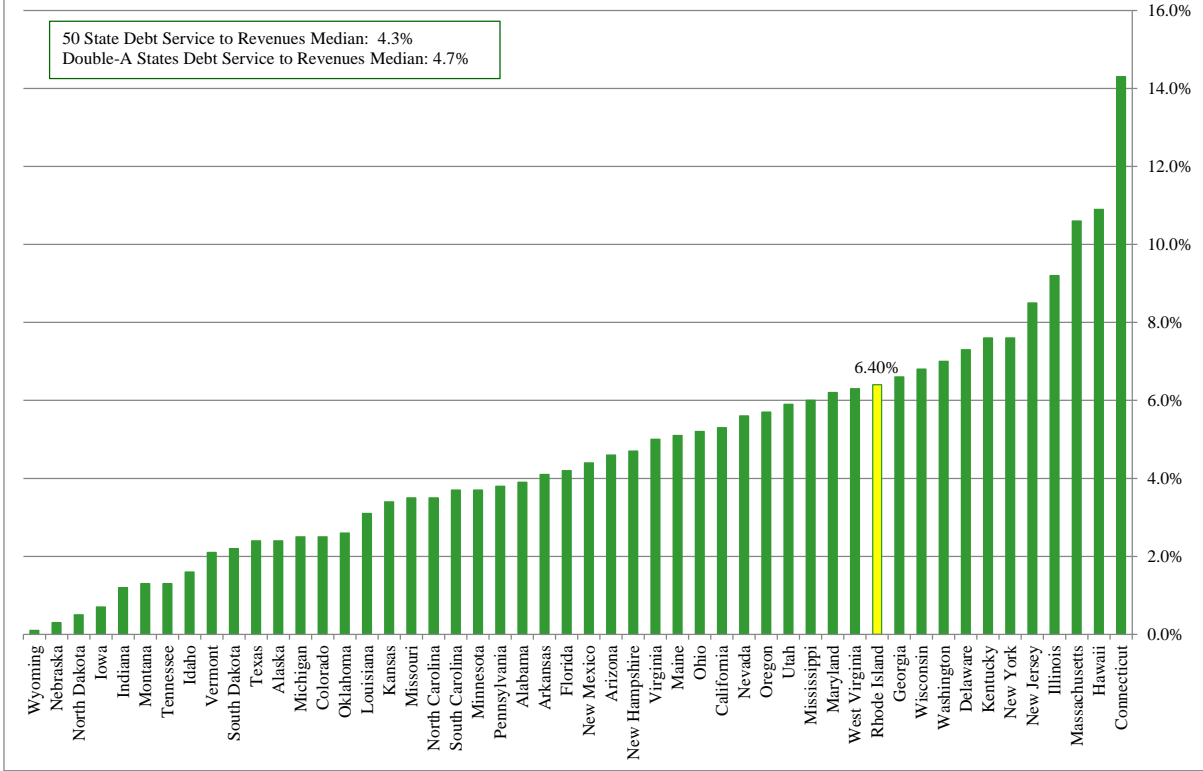
**Moody's Fixed Costs as Percent of Own Source Revenues**

<b>State</b>	<b>2015 Debt Service</b>	<b>2015 Pension Contribution</b>	<b>2015 Debt Service + Pension Contribution</b>	<b>2015 OPEB Contribution</b>	<b>FY 2015 Total Fixed Costs</b>
<b>50 State Median</b>	<b>4.2%</b>	<b>3.4%</b>	<b>7.6%</b>	<b>0.9%</b>	<b>8.5%</b>
<b>Double-A Median</b>	<b>4.6%</b>	<b>3.0%</b>	<b>8.3%</b>	<b>0.7%</b>	<b>9.7%</b>
<b>Rhode Island (Aa2/AA/AA)</b>	<b>6.4%</b>	<b>6.0%</b>	<b>12.4%</b>	<b>1.4%</b>	<b>13.7%</b>
Alabama (Aa1/AA/AA+)	3.9%	2.0%	5.9%	1.3%	7.2%
Alaska (Aa2/AA+/AA+)	2.4%	2.5%	4.9%	2.2%	7.2%
Arizona (Aa2/AA/--)	4.4%	2.0%	6.4%	0.2%	6.6%
Arkansas (Aa1/AA/--)	4.1%	2.5%	6.6%	0.6%	7.2%
California (Aa3/AA-/AA-)	5.3%	3.8%	9.1%	1.3%	10.3%
Colorado (Aa1/AA/--)	2.5%	3.4%	5.9%	0.4%	6.3%
Connecticut (Aa3/AA-/AA-)	14.3%	12.2%	26.5%	3.1%	29.5%
Delaware (Aaa/AAA/AAA)	6.6%	3.5%	10.1%	4.1%	14.2%
Florida (Aa1/AAA/AAA)	4.2%	1.0%	5.2%	0.2%	5.4%
Georgia (Aaa/AAA/AAA)	6.6%	3.3%	9.9%	1.3%	11.2%
Hawaii (Aa1/AA+/AA)	10.9%	5.1%	16.0%	5.7%	21.6%
Idaho (Aa1/AA+/AA+)	1.6%	1.6%	3.2%	0.2%	3.3%
Illinois (Baa2/BBB/BBB+)	9.2%	15.4%	24.6%	2.1%	26.7%
Indiana (Aaa/AAA/AAA)	1.2%	5.5%	6.7%	0.2%	6.9%
Iowa (Aaa/AAA/AAA)	0.7%	1.5%	2.2%	0.3%	2.5%
Kansas (Aa2/AA-/--)	3.4%	6.0%	9.4%	0.2%	9.6%
Kentucky (Aa2/A+/AA-)	7.6%	5.9%	13.5%	2.6%	16.1%
Louisiana (Aa3/AA/AA-)	3.1%	5.8%	8.9%	1.5%	10.4%
Maine (Aa2/AA/AA)	5.1%	6.8%	11.9%	2.2%	14.1%
Maryland (Aaa/AAA/AAA)	6.2%	7.7%	13.9%	2.0%	16.0%
Massachusetts (Aa1/AA+/AA+)	11.7%	5.6%	17.3%	2.0%	19.3%
Michigan (Aa1/AA-/AA)	2.5%	4.8%	7.3%	2.6%	9.9%
Minnesota (Aa1/AA+/AAA)	3.7%	1.0%	4.7%	0.3%	5.0%
Mississippi (Aa2/AA/AA)	6.0%	2.2%	8.2%	0.4%	8.6%
Missouri (Aaa/AAA/AAA)	3.5%	3.7%	7.2%	0.9%	8.1%

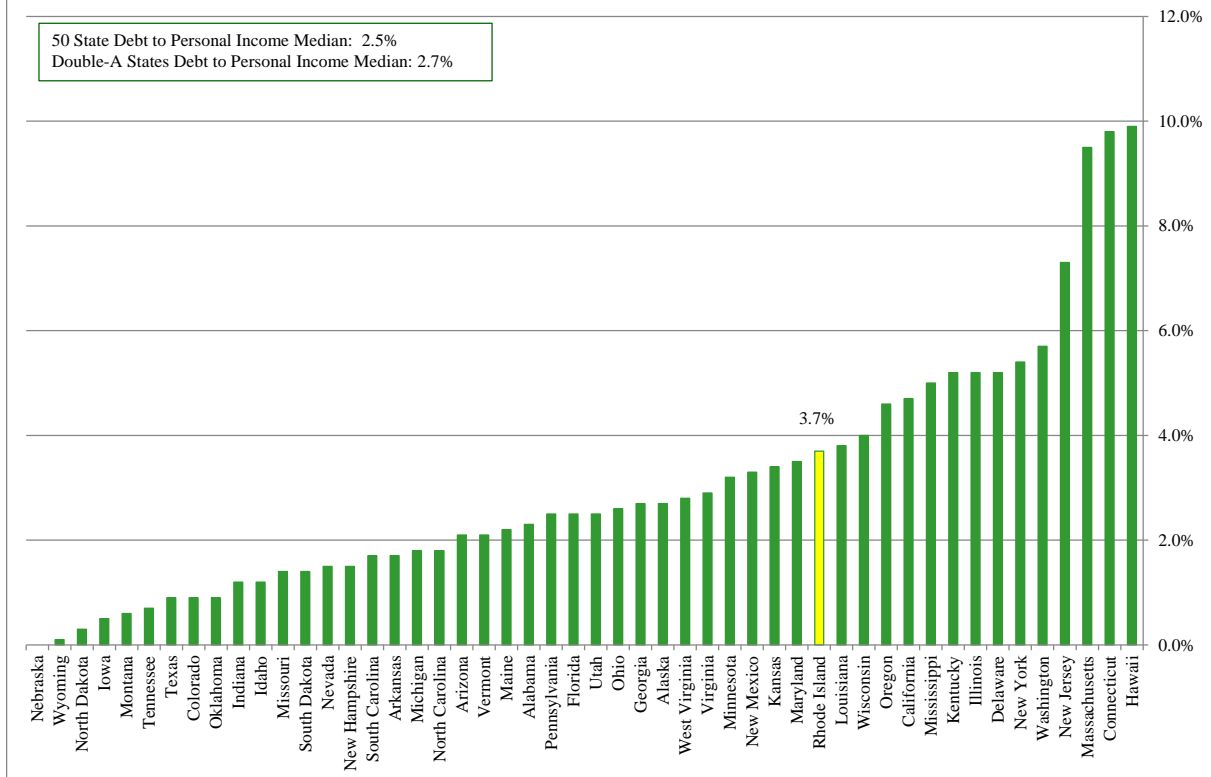
Moody's Fixed Costs as Percent of Own Source Revenues					
State	2015 Debt Service	2015 Pension Contribution	2015 Debt Service + Pension Contribution	2015 OPEB Contribution	FY 2015 Total Fixed Costs
Montana (Aa1/AA/AA+)	1.3%	5.9%	7.2%	0.4%	7.6%
Nebraska (--/AAA/--)	0.3%	1.6%	1.9%	0.0%	1.8%
Nevada (Aa2/AA/AA+)	5.6%	3.7%	9.3%	0.8%	10.0%
New Hampshire (Aa1/AA/AA+)	4.7%	2.1%	6.8%	3.0%	9.7%
New Jersey (A2/A-/A)	8.5%	2.2%	10.7%	4.1%	14.8%
New Mexico (Aa1/AA/--)	4.3%	2.0%	N/A	0.0%	6.3%
New York (Aa1/AA+/AA+)	7.6%	1.7%	9.3%	1.7%	11.0%
North Carolina (Aaa/AAA/AAA)	3.5%	1.3%	4.8%	1.7%	6.5%
North Dakota (Aa1/AA+/-)	0.5%	0.6%	1.1%	0.2%	1.3%
Ohio (Aa1/AA+/AA+)	5.2%	1.3%	6.5%	0.3%	6.7%
Oklahoma (Aa2/AA+/AA+)	2.6%	6.8%	9.4%	0.5%	9.9%
Oregon (Aa1/AA+/AA+)	5.7%	1.2%	6.9%	0.2%	7.1%
Pennsylvania (Aa3/AA-/AA-)	3.8%	7.1%	10.9%	2.5%	13.4%
South Carolina (Aaa/AA+/AAA)	3.7%	5.3%	9.0%	4.5%	13.5%
South Dakota (Aaa/AAA/AAA)	2.2%	2.0%	4.2%	0.0%	4.2%
Tennessee (Aaa/AAA/AAA)	1.3%	2.3%	3.6%	0.7%	4.3%
Texas (Aaa/AAA/AAA)	2.4%	3.9%	6.3%	1.6%	8.0%
Utah (Aaa/AAA/AAA)	5.9%	8.7%	14.6%	0.4%	14.9%
Vermont (Aaa/AA+/AAA)	2.1%	3.7%	5.8%	1.3%	7.0%
Virginia (Aaa/AAA/AAA)	5.0%	2.4%	7.4%	0.8%	8.1%
Washington (Aa1/AA+/AA+)	8.3%	1.9%	10.2%	0.3%	10.5%
West Virginia (Aa1/AA-/AA)	6.2%	8.5%	14.7%	1.9%	16.6%
Wisconsin (Aa2/AA/AA)	6.8%	1.5%	8.3%	0.2%	8.5%
Wyoming (--/AAA/--)	0.1%	2.0%	N/A	0.3%	2.5%

Source: Moody's Medians – Low Returns, Weak Contributions Drive Growth of State Pension Liabilities, October 6, 2016. ANPL is adjusted net pension liability.

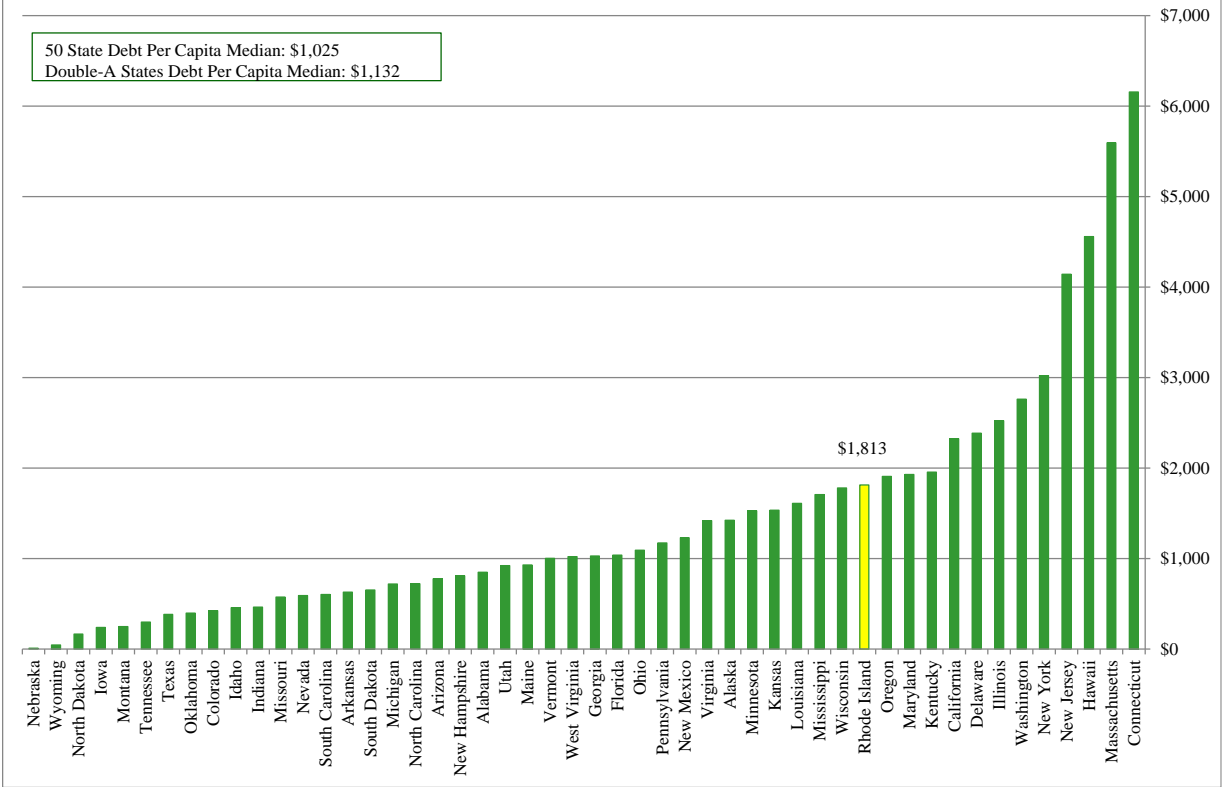
## Moody's Debt Service to Revenues 50 States



## Moody's Debt to Personal Income 50 States

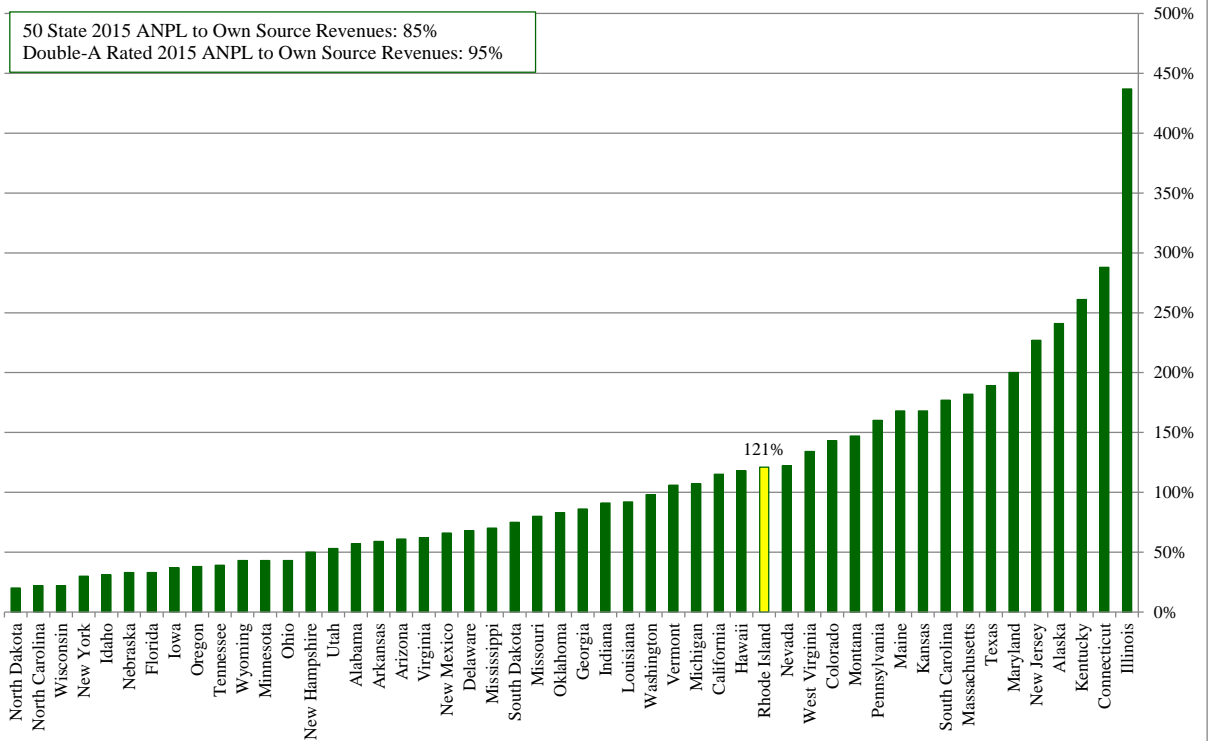


## Moody's Debt Per Capita 50 States



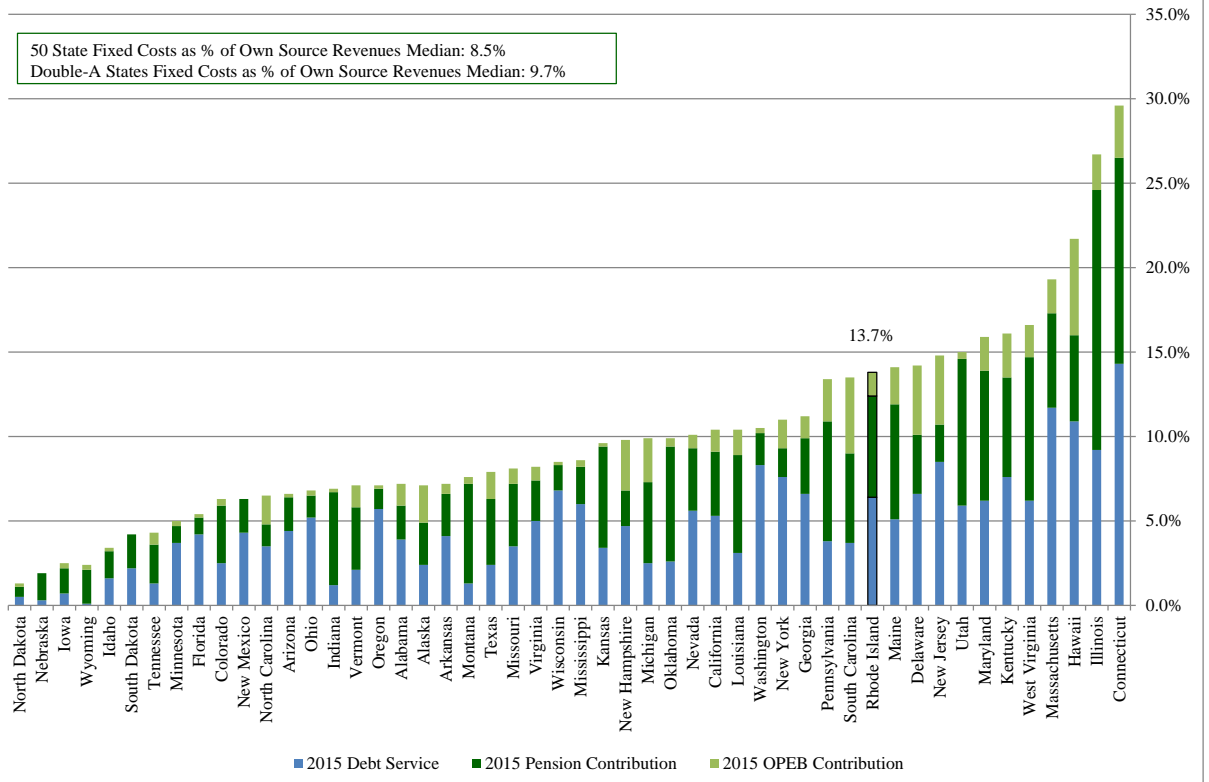
### Moody's State 2015 Adjusted Net Pension Liability as % of Own Source Revenues 50 States

50 State 2015 ANPL to Own Source Revenues: 85%  
Double-A Rated 2015 ANPL to Own Source Revenues: 95%



### Moody's Fixed Costs As Percent of Own Source Revenues 50 States

50 State Fixed Costs as % of Own Source Revenues Median: 8.5%  
Double-A States Fixed Costs as % of Own Source Revenues Median: 9.7%



**Fitch Estimated State Net Tax-Supported Debt and Unfunded Pension Obligations**

<b>State</b>	<b>Debt as % of Personal Income</b>	<b>Adjusted Pension Allocation as % of Personal Income</b>	<b>Debt &amp; Adjusted Pension Allocation as % of Personal Income</b>	<b>2015 Funded Ratio</b>	<b>2015 % of ADEC Paid</b>
<b>50-State Median</b>	<b>2.4%</b>	<b>2.1%</b>	<b>5.1%</b>	<b>NA</b>	<b>NA</b>
<b>Double-A Median</b>	<b>2.4%</b>	<b>2.1%</b>	<b>5.1%</b>	<b>NA</b>	<b>NA</b>
Rhode Island (Aa2/AA/AA)	4.1%	6.2%	10.3%	State: 56.6% Teachers: 58.8%	100.0%
Alabama (Aa1/AA/AA+)	2.2%	6.6%	8.7%	State: 67.3% Teachers: 68.3%	100.0%
Alaska (Aa2/AA+/AA+)	2.6%	19.4%	22.0%	State: 67.0% Teachers: 76.9%	State: 231.7% Teachers: 527.7%
Arizona (Aa2/AA/--)	2.2%	2.3%	4.4%	Public Safety: 49% State: 77.1%	Public Safety: 96.5% State: 100.0%
Arkansas (Aa1/AA/--)	1.6%	1.7%	3.3%	State: 79.1% Teachers: 79.6%	State: 100.0% Teachers: 86.0%
California (Aa3/AA-/AA-)	4.0%	3.9%	7.9%	State: 76.3% (2014) Teachers: 68.5%	State: 100% Teachers: 53.1%
Colorado (Aa1/AA/--)	0.5%	3.8%	4.3%	57.6%	80.4%
Connecticut (Aa3/AA-/AA-)	8.9%	12.5%	21.4%	State: 43.3% Teachers: 59.0%	State:99.5% Teachers: 100.0%
Delaware (Aaa/AAA/AAA)	5.4%	2.0%	7.4%	91.6%	100.0%
Florida (Aa1/AAA/AAA)	2.4%	0.4%	2.8%	86.5%	100.0%
Georgia (Aaa/AAA/AAA)	2.6%	1.8%	4.4%	State: 74.1% Teachers: 79.1%	100.0%
Hawaii (Aa1/AA+/AA)	10.0%	7.2%	17.2%	62.2%	102.2%
Idaho (Aa1/AA+/AA+)	1.2%	0.4%	1.6%	90.4%	98.2%
Illinois (Baa2/BBB/BBB+)	5.0%	17.9%	22.9%	State: 36.2% Teachers: 42.0%	State: 88.2% Teachers: 82.0%
Indiana (Aaa/AAA/AAA)	0.9%	4.2%	5.1%	State: 78.6% Teachers: 30.4% (Pre-96)/92.5% (1996)	State: 103.6% Teachers: 100% (Pre-96)/115.4% (1996)
Iowa (Aaa/AAA/AAA)	0.6%	0.8%	1.5%	83.7%	101.9%
Kansas (Aa2/AA/--)	3.3%	1.9%	5.2%	67.1%	74.5%
Kentucky (Aa2/A+/AA-)	5.1%	16.5%	21.7%	State: 19.0% Teachers: 55.3%	State: 100.1% Teachers: 61.2%
Louisiana (Aa3/AA/AA-)	3.6%	3.4%	7.0%	State: 62.1% Teachers: 60.9%	State: 103.6% Teachers: 107.5%
Maine (Aa2/AA/AA)	2.1%	4.1%	6.1%	82.2%	100.0%
Maryland (Aaa/AAA/AAA)	3.8%	6.3%	10.1%	State: 66.7% Teachers: 71.9%	State: 83.9% Teachers: 89.4%



**Fitch Estimated State Net Tax-Supported Debt and Unfunded Pension Obligations**

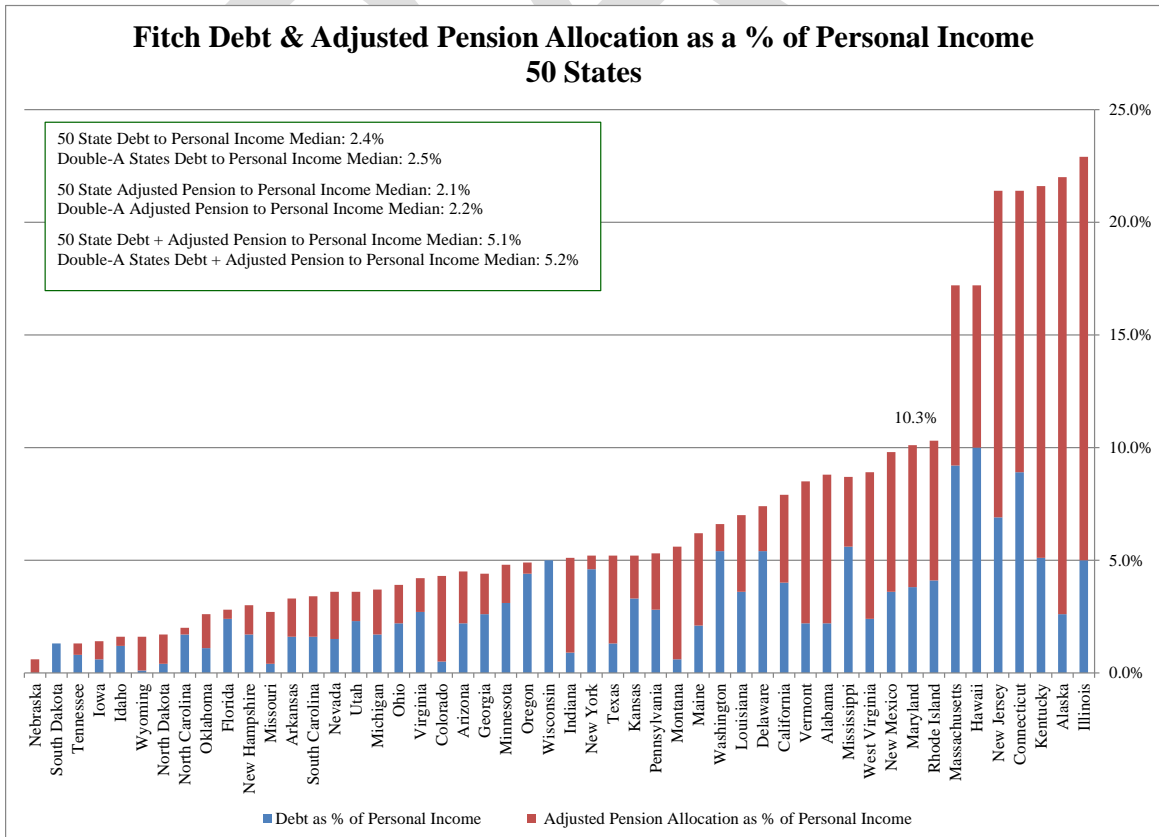
State	Debt as % of Personal Income	Adjusted Pension Allocation as % of Personal Income	Debt & Adjusted Pension Allocation as % of Personal Income	2015 Funded Ratio	2015 % of ADEC Paid
Massachusetts (Aa1/AA+/AA+)	9.2%	8.0%	17.1%	State: 63.5% Teachers: 52.8%	75.0%
Michigan (Aa1/AA-/AA)	1.7%	2.0%	3.7%	State: 64.2% Schools: 60.6%	State: 114.5% Schools: 90.1%
Minnesota (Aa1/AA+/AAA)	3.1%	1.7%	4.8%	State: 76.3% Teachers: 77.1%	State: 83.2% Teachers: 76.9%
Mississippi (Aa2/AA/AA)	5.6%	3.1%	8.7%	60.4%	107.1%
Missouri (Aaa/AAA/AAA)	0.4%	2.3%	3.1%	State: 75.0% DOT & Hwy: 52.9%	100.0%
Montana (Aa1/AA/AA+)	0.6%	5.0%	5.6%	State: 76.1% Teachers: 67.5%	State: 102.4% Teachers: 100.0%
Nebraska (--/AAA/--)	0.0%	0.6%	0.6%	State: 102.5% Teachers: 88.0%	100.0%
Nevada (Aa2/AA/AA+)	1.5%	2.1%	3.6%	73.2%	95.8%
New Hampshire (Aa1/AA/AA+)	1.7%	1.3%	3.0%	63.4%	100.0%
New Jersey (A2/A-/A)	6.9%	14.5%	21.3%	State (Local/State): 73.0%/41.0% Teachers: 51.1% Police/Fire (Local/State): 76.7%/44.4%	State (Local/State): NA Teachers: 23.4% Police/Fire (Local/State): 100%/33.6%
New Mexico (Aa1/AA/--)	3.6%	6.2%	9.8%	State: 74.9% Teachers: 63.7%	100.0%
New York (Aa1/AA+/AA+)	4.6%	0.6%	5.1%	State: 93.8% Police/Fire: 93.2%	100.0%
North Carolina (Aaa/AAA/AAA)	1.7%	0.3%	2.1%	95.6% (2014)	100.0%
North Dakota (Aa1/AA+/--)	0.4%	1.3%	1.7%	State: 68.6% Teachers: 61.6%	State: 65.9% Teachers: 110.2%
Ohio (Aa1/AA+/AA+)	2.2%	1.7%	3.9%	State: 85.0% Teachers: 69.3%	State: 100.0 Teachers: 105.9%
Oklahoma (Aa2/AA+/AA+)	1.1%	1.5%	2.6%	State: 93.6% Teachers: 66.6%	State: 145.5% Teachers: 132.3%
Oregon (Aa1/AA+/AA+)	4.4%	0.5%	4.8%	78.7%	100.0%
Pennsylvania (Aa3/AA-/AA-)	2.8%	2.5%	5.3%	State: 58.0% Teachers: 60.6%	State: 92.5% Teachers: 78.5%
South Carolina (Aaa/AA+/AAA)	1.6%	1.8%	3.4%	State: 62.0% Police: 69.2%	100.0%
South Dakota (Aaa/AAA/AAA)	1.3%	0.0%	1.3%	100.0%	115.1%
Tennessee (Aaa/AAA/AAA)	0.8%	0.5%	1.3%	95.2%	100.0%

### Fitch Estimated State Net Tax-Supported Debt and Unfunded Pension Obligations

State	Debt as % of Personal Income	Adjusted Pension Allocation as % of Personal Income	Debt & Adjusted Pension Allocation as % of Personal Income	2015 Funded Ratio	2015 % of ADEC Paid
Texas (Aaa/AAA/AAA)	1.3%	3.9%	5.2%	State: 80.2% Teachers: 76.3%	State: 67.9% Teachers: 93.6%
Utah (Aaa/AAA/AAA)	2.3%	1.3%	3.6%	State: 86.5% Public Safety: 85.1%	100.0%
Vermont (Aaa/AA+/AAA)	2.2%	6.3%	8.5%	State: 75.1% Teachers: 58.6%	State: 125.1% Teachers: 100.1%
Virginia (Aaa/AAA/AAA)	2.7%	1.5%	4.2%	73.3%	83.5%
Washington (Aa1/AA+/AA+)	5.4%	1.2%	6.6%	State Plan 1 & 2/3: 58.3/88.4% Teachers 1 & 2/3: 64.5/91.9%	State Plan 1 & 2/3: 101.8/96.5% Teachers 1 & 2/3: 102.4%/99.2%
West Virginia (Aa1/AA-/AA)	2.4%	6.5%	9.0%	State: 86.8% Teachers: 66.0%	State: 103.4% Teachers: 107.9%
Wisconsin (Aa2/AA/AA)	5.0%	0.0%	5.0%	100.0%	100.0%
Wyoming (--/AAA/--)	0.1%	1.5%	1.6%	State: 78.2% Law Enforcement: 98.8%	State: 85.9% Law Enforcement: 108.5%

Source: Fitch 2016 State Pension Update, November 15, 2016. ADEC: Actuarially determined employer contribution.

### Fitch Debt & Adjusted Pension Allocation as a % of Personal Income 50 States



Standard & Poor's Debt Ratios				
State	Debt Per Capita	Debt as % Personal income	Debt as % GSP	Debt Service as % General Spending
<b>50 State Median</b>	<b>\$1,018</b>	<b>2.5%</b>	<b>2.4%</b>	<b>3.9%</b>
<b>Double-A States Median</b>	<b>\$1,068</b>	<b>2.6%</b>	<b>2.5%</b>	<b>4.0%</b>
<b>Rhode Island (Aa2/AA/AA)</b>	\$1,708	3.5%	3.6%	7.2%
Alabama (Aa1/AA/AA+)	\$982	2.6%	2.6%	4.0%
Alaska (Aa2/AA+/AA+)	\$1,396	2.6%	1.8%	0.8%
Arizona (Aa2/AA/--)	\$652	1.7%	1.7%	3.7%
Arkansas (Aa1/AA/--)	\$607	1.6%	1.6%	4.0%
California (Aa3/AA-/AA-)	\$2,254	4.6%	3.8%	7.5%
Colorado (Aa1/AA/--)	\$436	0.9%	0.8%	3.0%
Connecticut (Aa3/AA-/AA-)	\$5,707	8.8%	9.0%	12.3%
Delaware (Aaa/AAA/AAA)	\$2,348	5.1%	3.5%	5.5%
Florida (Aa1/AAA/AAA)	\$1,064	2.5%	2.5%	7.2%
Georgia (Aaa/AAA/AAA)	\$930	2.4%	2.2%	6.8%
Hawaii (Aa1/AA+/AA)	\$4,520	9.9%	8.4%	12.0%
Idaho (Aa1/AA+/AA+)	\$134	0.4%	0.4%	0.9%
Illinois (Baa2/BBB/BBB+)	\$2,672	5.6%	5.1%	9.1%
Indiana (Aaa/AAA/AAA)	\$227	0.6%	0.5%	1.0%
Iowa (Aaa/AAA/AAA)	\$286	0.6%	0.5%	1.5%
Kansas (Aa2/AA/--)	\$1,085	2.4%	2.4%	2.9%
Kentucky (Aa2/A+/AA-)	\$1,757	4.7%	4.1%	5.2%
Louisiana (Aa3/AA/AA-)	\$1,602	3.8%	3.0%	5.1%
Maine (Aa2/AA/AA)	\$691	1.7%	1.8%	3.5%
Maryland (Aaa/AAA/AAA)	\$1,934	3.6%	3.6%	5.9%
Massachusetts (Aa1/AA+/AA+)	\$5,122	8.7%	8.2%	7.0%
Michigan (Aa1/AA-/AA)	\$838	2.1%	1.8%	2.7%
Minnesota (Aa1/AA+/AAA)	\$1,585	3.2%	3.0%	3.9%
Mississippi (Aa2/AA/AA)	\$1,751	5.1%	5.5%	6.5%

Standard & Poor's Debt Ratios				
State	Debt Per Capita	Debt as % Personal income	Debt as % GSP	Debt Service as % General Spending
Missouri (Aaa/AAA/AAA)	\$583	1.4%	1.3%	3.5%
Montana (Aa1/AA/AA+)	\$175	0.4%	0.5%	1.4%
Nebraska (--/AAA/--)	\$8	0.0%	0.0%	0.2%
Nevada (Aa2/AA/AA+)	\$635	1.6%	1.5%	4.2%
New Hampshire (Aa1/AA/AA+)	\$725	1.4%	1.5%	4.0%
New Jersey (A2/A-/A)	\$4,008	7.1%	6.5%	9.6%
New Mexico (Aa1/AA/--)	\$1,230	3.3%	3.1%	3.5%
New York (Aa1/AA+/AA+)	\$2,538	4.6%	4.0%	6.0%
North Carolina (Aaa/AAA/AAA)	\$656	1.7%	1.4%	3.2%
North Dakota (Aa1/AA+/-)	\$107	0.2%	0.2%	1.0%
Ohio (Aa1/AA+/AA+)	\$975	2.3%	2.2%	3.8%
Oklahoma (Aa2/AA+/AA+)	\$542	1.2%	1.3%	4.4%
Oregon (Aa1/AA+/AA+)	\$1,966	4.8%	3.7%	5.8%
Pennsylvania (Aa3/AA-/AA-)	\$1,483	3.1%	3.1%	3.0%
South Carolina (Aaa/AA+/AAA)	\$425	1.2%	1.1%	3.6%
South Dakota (Aaa/AAA/AAA)	\$520	1.1%	1.1%	1.3%
Tennessee (Aaa/AAA/AAA)	\$304	0.8%	0.7%	2.0%
Texas (Aaa/AAA/AAA)	\$413	0.9%	0.7%	2.4%
Utah (Aaa/AAA/AAA)	\$1,192	3.2%	2.5%	4.9%
Vermont (Aaa/AA+/AAA)	\$986	2.1%	2.3%	2.0%
Virginia (Aaa/AAA/AAA)	\$1,314	2.6%	2.6%	3.4%
Washington (Aa1/AA+/AA+)	\$2,552	5.1%	4.3%	5.7%
West Virginia (Aa1/AA-/AA)	\$1,050	2.9%	2.9%	3.5%
Wisconsin (Aa2/AA/AA)	\$2,207	5.0%	4.4%	7.0%
Wyoming (--/AAA/--)	\$46	0.1%	0.1%	0.1%

Source: Standard & Poor's Debt Levels Flatline As U.S. States Prioritize Management Over Investment, June 14, 2016

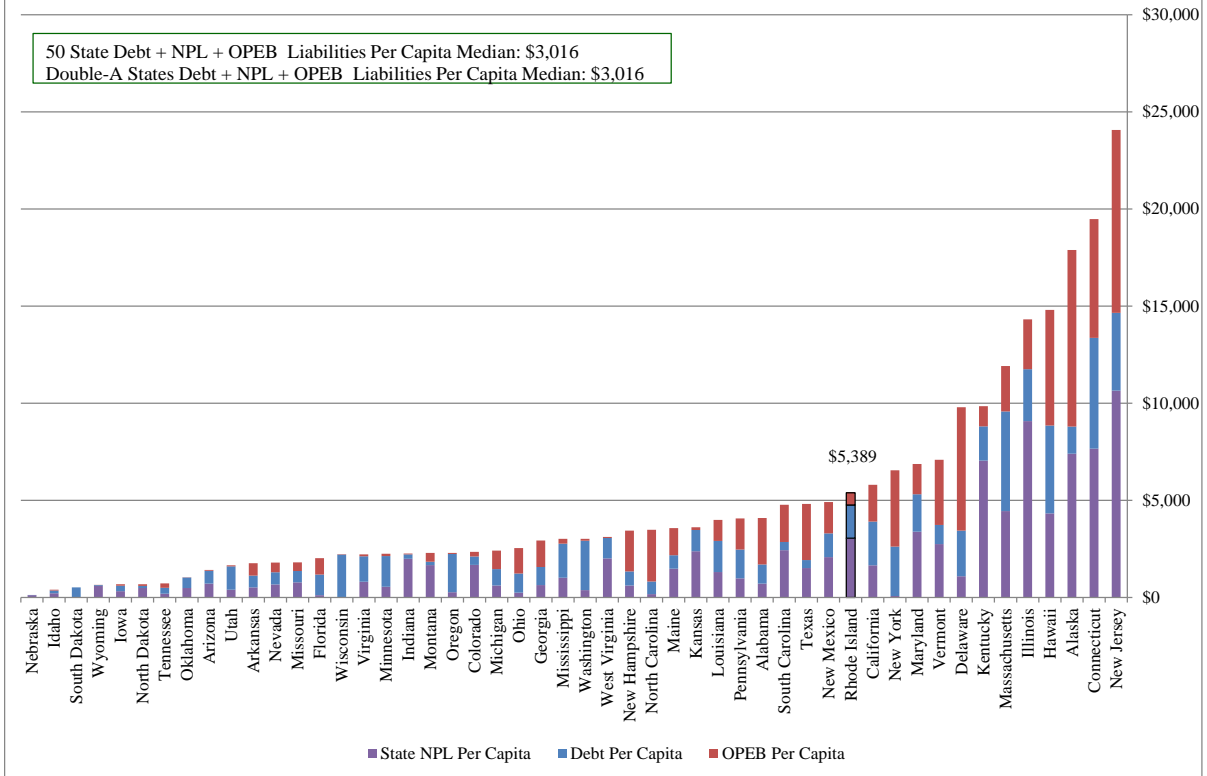
Standard & Poor's Pension Ratio & Total State Debt + Liabilities Per Capita					
State	Funded Ratio	State NPL Per Capita	Debt Per Capita	OPEB Per Capita	Debt, Pension & OPEB Per Capita
<b>50 State Median</b>	<b>74.6%</b>	<b>\$894</b>	<b>\$1,018</b>	<b>\$896</b>	<b>\$3,016</b>
<b>Double-A States Median</b>	<b>69.0%</b>	<b>\$716</b>	<b>\$1,068</b>	<b>\$562</b>	<b>\$3,016</b>
<b>Rhode Island (Aa2/AA/AA)</b>	55.5%	\$3,051	\$1,708	\$630	\$5,389
Alabama (Aa1/AA/AA+)	67.0%	\$711	\$982	\$2,395	\$4,088
Alaska (Aa2/AA+/AA+)	67.5%	\$7,405	\$1,396	\$9,086	\$17,887
Arizona (Aa2/AA/--)	63.2%	\$716	\$652	\$52	\$1,420
Arkansas (Aa1/AA/--)	82.4%	\$515	\$607	\$637	\$1,758
California (Aa3/AA-/AA-)	75.0%	\$1,651	\$2,254	\$1,893	\$5,798
Colorado (Aa1/AA/--)	60.0%	\$1,676	\$436	\$233	\$2,344
Connecticut (Aa3/AA-/AA-)	49.4%	\$7,660	\$5,707	\$6,116	\$19,484
Delaware (Aaa/AAA/AAA)	89.1%	\$1,090	\$2,348	\$6,351	\$9,789
Florida (Aa1/AAA/AAA)	92.0%	\$113	\$1,064	\$840	\$2,017
Georgia (Aaa/AAA/AAA)	80.7%	\$632	\$930	\$1,365	\$2,927
Hawaii (Aa1/AA+/AA)	62.4%	\$4,328	\$4,520	\$5,958	\$14,806
Idaho (Aa1/AA+/AA+)	91.3%	\$215	\$134	\$52	\$402
Illinois (Baa2/BBB/BBB+)	40.2%	\$9,078	\$2,672	\$2,570	\$14,320
Indiana (Aaa/AAA/AAA)	60.3%	\$1,984	\$227	\$50	\$2,261
Iowa (Aaa/AAA/AAA)	85.1%	\$321	\$286	\$70	\$677
Kansas (Aa2/AA/--)	65.2%	\$2,383	\$1,085	\$148	\$3,616
Kentucky (Aa2/A+/AA-)	37.4%	\$7,046	\$1,757	\$1,042	\$9,845
Louisiana (Aa3/AA/AA-)	63.8%	\$1,302	\$1,602	\$1,090	\$3,994
Maine (Aa2/AA/AA)	81.3%	\$1,481	\$691	\$1,402	\$3,574
Maryland (Aaa/AAA/AAA)	68.8%	\$3,382	\$1,934	\$1,559	\$6,876
Massachusetts (Aa1/AA+/AA+)	61.5%	\$4,451	\$5,122	\$2,339	\$11,912
Michigan (Aa1/AA-/AA)	66.5%	\$618	\$838	\$952	\$2,408
Minnesota (Aa1/AA+/AAA)	78.8%	\$546	\$1,585	\$121	\$2,252
Mississippi (Aa2/AA/AA)	61.8%	\$1,018	\$1,751	\$245	\$3,013

Standard & Poor's Pension Ratio & Total State Debt + Liabilities Per Capita					
State	Funded Ratio	State NPL Per Capita	Debt Per Capita	OPEB Per Capita	Debt, Pension & OPEB Per Capita
Missouri (Aaa/AAA/AAA)	66.9%	\$773	\$583	\$449	\$1,805
Montana (Aa1/AA/AA+)	74.5%	\$1,665	\$175	\$452	\$2,292
Nebraska (--/AAA/--)	88.8%	\$121	\$8	N/A	\$130
Nevada (Aa2/AA/AA+)	75.2%	\$664	\$635	\$494	\$1,793
New Hampshire (Aa1/AA/AA+)	65.4%	\$611	\$725	\$2,100	\$3,436
New Jersey (A2/A-/A)	37.8%	\$10,648	\$4,008	\$9,409	\$24,065
New Mexico (Aa1/AA/--)	70.6%	\$2,073	\$1,230	\$1,613	\$4,916
New York (Aa1/AA+/AA+)	98.1%	\$74	\$2,538	\$3,932	\$6,544
North Carolina (Aaa/AAA/AAA)	94.6%	\$169	\$656	\$2,655	\$3,480
North Dakota (Aa1/AA+/--)	70.4%	\$481	\$107	\$91	\$679
Ohio (Aa1/AA+/AA+)	78.8%	\$251	\$975	\$1,310	\$2,536
Oklahoma (Aa2/AA+/AA+)	80.3%	\$483	\$542	\$1	\$1,025
Oregon (Aa1/AA+/AA+)	91.9%	\$271	\$1,966	\$60	\$2,296
Pennsylvania (Aa3/AA-/AA-)	57.6%	\$981	\$1,483	\$1,608	\$4,072
South Carolina (Aaa/AA+/AAA)	57.9%	\$2,434	\$425	\$1,906	\$4,765
South Dakota (Aaa/AAA/AAA)	104.1%	(109)	\$520	N/A	\$411
Tennessee (Aaa/AAA/AAA)	91.3%	\$195	\$304	\$218	\$717
Texas (Aaa/AAA/AAA)	75.6%	\$1,515	\$413	\$2,884	\$4,812
Utah (Aaa/AAA/AAA)	88.5%	\$402	\$1,192	\$62	\$1,655
Vermont (Aaa/AA+/AAA)	65.4%	\$2,750	\$986	\$3,348	\$7,084
Virginia (Aaa/AAA/AAA)	74.6%	\$806	\$1,314	\$96	\$2,216
Washington (Aa1/AA+/AA+)	86.8%	\$372	\$2,552	\$95	\$3,019
West Virginia (Aa1/AA-/AA)	76.9%	\$2,012	\$1,050	\$52	\$3,114
Wisconsin (Aa2/AA/AA)	102.7%	(119)	\$2,207	\$16	\$2,104
Wyoming (--/AAA/--)	80.1%	\$592	\$46	\$4	\$642

Source: Standard & Poor's U.S. State Pensions: Weak Market Returns Will Contribute to Rise in Expense, September 12, 2016

## Standard & Poor's Total State Debt and Liabilities Per Capita 50 States

50 State Debt + NPL + OPEB Liabilities Per Capita Median: \$3,016  
Double-A States Debt + NPL + OPEB Liabilities Per Capita Median: \$3,016



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	Boston College - Center for Retirement Research Pension Statistics		Debt + Pension Ratios with Boston College - Center for Retirement Research Pension Statistics	
State	Annual Required Contribution (ARC) (\$ million)	Unfunded Actuarial Accrued Liability (UAAL) (\$million)	Debt Service + ARC to Own Source Revenues	Net-Tax Supported Debt + UAAL to Personal Income
<b>50 State Median</b>	465.0	3,026.6	8.2%	4.5%
<b>Double-A Median</b>	419.2	2,728.1	8.3%	4.8%
Rhode Island (Aa2/AA/AA)	240.1	2,882.0	12.1%	9.1%
Alabama (Aa1/AA/AA+)	286.8	6,483.5	6.3%	5.7%
Alaska (Aa2/AA+/AA+)	301.8	3,963.3	7.8%	12.1%
Arizona (Aa2/AA/--)	213.1	2,574.2	6.1%	2.9%
Arkansas (Aa1/AA/--)	841.0	1,950.6	13.2%	3.4%
California (Aa3/AA-/AA-)	7,454.2	64,034.1	9.9%	7.4%
Colorado (Aa1/AA/--)	646.3	9,884.8	7.2%	4.4%
Connecticut (Aa3/AA-/AA-)	2,448.2	30,564.3	27.7%	21.3%
Delaware (Aaa/AAA/AAA)	178.1	692.5	10.8%	6.5%
Florida (Aa1/AAA/AAA)	558.2	5,062.2	5.5%	2.9%
Georgia (Aaa/AAA/AAA)	615.3	6,175.9	9.4%	4.1%
Hawaii (Aa1/AA+/AA)	625.0	5,360.5	19.9%	17.2%
Idaho (Aa1/AA+/AA+)	60.1	15.2	2.7%	1.2%
Illinois (Baa2/BBB/BBB+)	9,072.3	107,100.0	29.7%	21.6%
Indiana (Aaa/AAA/AAA)	864.4	8,397.1	5.8%	4.1%
Iowa (Aaa/AAA/AAA)	696.4	1,129.6	7.3%	1.3%
Kansas (Aa2/AA/--)	530.8	1,373.1	9.5%	4.3%
Kentucky (Aa2/A+/AA-)	1,794.7	23,230.2	20.7%	18.7%
Louisiana (Aa3/AA/AA-)	1,000.6	8,594.8	10.9%	8.0%
Maine (Aa2/AA/AA)	197.2	1,678.8	9.5%	5.1%
Maryland (Aaa/AAA/AAA)	2,468.1	18,162.9	16.9%	8.8%

	Boston College - Center for Retirement Research Pension Statistics		Debt + Pension Ratios with Boston College - Center for Retirement Research Pension Statistics	
State	Annual Required Contribution (ARC) (\$ million)	Unfunded Actuarial Accrued Liability (UAAL) (\$million)	Debt Service + ARC to Own Source Revenues	Net-Tax Supported Debt + UAAL to Personal Income
Massachusetts (Aa1/AA+/AA+)	3,452.6	33,141.2	20.6%	16.7%
Michigan (Aa1/AA-/AA)	626.4	7,951.7	4.5%	3.6%
Minnesota (Aa1/AA+/AAA)	448.1	5,258.7	5.5%	4.9%
Mississippi (Aa2/AA/AA)	257.5	3,171.2	8.9%	8.0%
Missouri (Aaa/AAA/AAA)	598.4	5,520.8	8.1%	3.5%
Montana (Aa1/AA/AA+)	184.4	1,709.7	7.2%	4.5%
Nebraska (--/AAA/--)	59.0	1,077.6	1.4%	1.2%
Nevada (Aa2/AA/AA+)	217.9	1,623.1	10.1%	2.8%
New Hampshire (Aa1/AA/AA+)	94.3	974.9	7.5%	2.8%
New Jersey (A2/A-/A)	3,012.5	43,651.4	16.1%	15.0%
New Mexico (Aa1/AA/--)	270.6	2,565.8	7.3%	6.5%
New York (Aa1/AA+/AA+)	2,476.1	5,806.1	10.2%	5.6%
North Carolina (Aaa/AAA/AAA)	208.3	442.9	4.3%	1.9%
North Dakota (Aa1/AA+/--)	74.0	707.8	1.7%	2.0%
Ohio (Aa1/AA+/AA+)	442.7	2,273.8	6.5%	3.0%
Oklahoma (Aa2/AA+/AA+)	395.7	1,996.0	6.3%	2.0%
Oregon (Aa1/AA+/AA+)	243.7	683.1	7.6%	4.7%
Pennsylvania (Aa3/AA-/AA-)	2,747.1	32,627.2	10.5%	7.5%
South Carolina (Aaa/AA+/AAA)	763.9	9,941.5	9.7%	6.9%
South Dakota (Aaa/AAA/AAA)	36.7	0.0	4.0%	1.4%
Tennessee (Aaa/AAA/AAA)	163.3	1,465.7	2.2%	1.2%
Texas (Aaa/AAA/AAA)	5,726.8	47,784.3	11.1%	4.5%
Utah (Aaa/AAA/AAA)	192.8	975.7	8.3%	3.2%

	Boston College - Center for Retirement Research Pension Statistics		Debt + Pension Ratios with Boston College - Center for Retirement Research Pension Statistics	
State	Annual Required Contribution (ARC) (\$ million)	Unfunded Actuarial Accrued Liability (UAAL) (\$million)	Debt Service + ARC to Own Source Revenues	Net-Tax Supported Debt + UAAL to Personal Income
Vermont (Aaa/AA+/AAA)	125.6	1,976.2	5.8%	8.6%
Virginia (Aaa/AAA/AAA)	821.7	6,882.0	8.3%	4.3%
Washington (Aa1/AA+/AA+)	555.3	2,498.3	9.1%	6.0%
West Virginia (Aa1/AA-/AA)	481.9	3,592.2	13.6%	8.1%
Wisconsin (Aa2/AA/AA)	178.6	0.0	7.8%	3.9%
Wyoming (-/AAA/-)	86.9	708.7	2.7%	2.2%

Source: Debt: Moody's State Debt Medians 2016. UAAL: Boston College Center for Retirement Research pension model. Personal Income: Bureau of Economic Analysis, 2015 Personal Income

The Boston College Center for Retirement Studies pension model produces a standardized annual required contribution (ARC) and unfunded accrued actuarial liability (UAAL) for each of the 50 states and relies on data from fiscal year 2014 state Comprehensive Annual Financial Reports (CAFRs) and actuarial valuations and CAFRs for pension plans. For each state, the analysis includes only pension plans to which the state has a funding obligation. The model adjusts the reported ARC and liabilities based on differences between each plan's own assumptions and methods and a selected discount rate, amortization period, amortization level, and payroll growth assumptions. For its larger plans (State Employees and Teachers), Rhode Island assumes a 7.5% discount rate, 21 year amortization period, level percent amortization method and 3.00% payroll growth, and these are the assumptions used in the CRR model to normalize the pension liabilities across the 50 states.

To standardize the reported ARC for a plan CRR first separates the reported ARC into its normal cost and amortization components because the standardization process is different for each component. The normal cost represents the cost of benefits accrued in the current year, while the amortization component represents the schedule of payments required to pay off the unfunded liability. For many of the large plans, the two components are presented separately in plan financial reports. When plan data are not available, the plan's funded ratio and discount rate are used to estimate the proportion of the ARC that is normal cost and the proportion that is the amortization payment.

Once the ARC has been separated into its components, each component is standardized independently. The normal cost is adjusted using an actuarial rule-of-thumb that assumes a 22.5% change in the normal cost for each 1% change in the discount rate. The adjustment for the amortization payment involves three steps: 1) re-discounting the accrued liability using an actuarial rule-of-thumb that assumes a 12.5% change for each 1% change in the selected discount rate; 2) calculating a standardized UAAL using the actuarial assets and the re-discounted liability; and 3) calculating an amortization payment for the new UAAL using the selected discount rate and amortization period. When selecting a level-dollar amortization method, the amortization payment is calculated as constant annual dollar amounts. When selecting a level-percent amortization method, the amortization payment is calculated using a fixed percentage of future payroll growth based on the selected payroll growth assumptions. The adjusted normal cost and amortization payments are then re-combined to get the standardized ARC.

**Appendix B - Part Two**  
**Quasi-Public Agencies Debt Information**

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**APPENDIX B  
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## Quasi-Public Agencies with Debt Outstanding

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2016
<b>Narragansett Bay Commission</b>				
Wastewater System Revenue Bonds <i>(Also issues debt through the Rhode Island Infrastructure Bank)</i>	--/AA/--	Revenues derived from operation of the wastewater system	Requires estimated net revenues for the three years following the issuance of bonds to be at least 1.25x the debt service requirement for revenue bonds and 1.35x the debt service requirement for RIIB loans Rate Covenant: 1.25x the debt service	\$242,820,000 (2016)
<b>Rhode Island Turnpike and Bridge Authority</b>				
Toll Revenue Bonds	--/A-/A	Net revenues derived from the operation of the System (currently tolls from Newport Bridge)	After retirement of 2003A Bonds, Net Revenues plus Dedicated Payments (gifts, grants or other payments to the Authority from US government, State or any public or private entity) in most recent fiscal year or projected for each of the next 5 fiscal years must be at least 1.20x Maximum Annual Debt Service	\$56,160,000 (2016)
<b>Tobacco Settlement Financing Corporation</b>				
Tobacco Settlement Asset-Backed Bonds	S: A, BBB+, BBB F: BBB+sf	Pledged Tobacco Settlement Revenues	Additional bonds may be issued only for the purpose of refunding outstanding bonds	\$604,785,000 (2016)
<b>Rhode Island Resource Recovery Corporation</b>				
Resource Recovery System Revenue Bonds	Not Rated (Private Placement)	Net revenues of the Corporation	For any 12 month period out of the last 18 months, Net Revenues plus State Subsidy plus Assets Held in Trust must be at least 1.25x Maximum Annual Debt Service	\$29,142,861 (2016)
<b>Rhode Island Commerce Corporation</b>				
Rhode Island Department of Transportation Grant Anticipation Revenue Bonds (GARVEEs)	A3/AA/--	Federal reimbursements for eligible projects	Additional bonds test – Federal Transportation Funds must be 3.00 maximum bond payments in any federal fiscal year	\$230,280,000 (2016)
Rhode Island Airport Corporation Airport Revenue Special Facility Revenue Bonds Subordinate TIFIA Loan	Baa1/BBB+/BBB+ Baa1/BBB+/-	Airport Revenues: Pledge of RIAC's net revenues (include rentals, fees, and other charges) and certain Passenger Facility Charge revenues Special Facility: Revenues generated by the operation of the Intermodal Facility, including Customer Facility Charges, Rental Car Companies fees, Parking Revenues	Rate covenant: 1.25x rate covenant (including pledged passenger facility charges). Additional bonds test - 1.25x	Airport Revenue: \$265,973,591 (2016) Special Facility + TIFIA: \$90,123,400 (2016)
YMCA of Pawtucket	S: AA-/A-1+	Secured by Borrower's pledge and grant, assignment effected by the Agreement, all other monies and securities held from time to time by the Trustee and letter of credit.	Additional bonds may be issued that are equally and ratably secured with the Bonds and secured with a letter of credit.	\$10,404,400

## Quasi-Public Agencies with Debt Outstanding

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2016
RI Philharmonic Orchestra	S: AA-/A-1+	Secured by assignment effected by the Agreement, all other monies and securities held from time to time by the Trustee, pledge of Borrower's Gross Receipts and letter of credit.	Additional bonds may be issued that are equally and ratably secured with the Bonds and secured with a letter of credit.	\$5,285,000
<b>Rhode Island Health and Educational Building Corporation -Education</b>				
Public Schools Revenue Bond Financing Program	Various. Range of A1 to Aa3	Loan repayments reflecting general obligation pledge of the participating borrowers. Failure to pay would result in intercept of the State Housing Aid and Basic Education Aid of a borrower	Additional bonds may be issued and separately secured by applicable revenues. Intercept of State Housing Aid and Basic Education Aid is available	\$461,709,000
Higher Education Facility Revenue Bonds	Various: A+ Range of A1 to Aa3	Rent payments, Educational and General Revenues of specific university/state colleges	Additional bonds test: 1.0x MADs	\$39,505,000
Board of Governors for Higher Education	Aa3/--/--	Rent payments, Educational and General Revenues, including tuition and state appropriations, except Auxiliary Enterprise Revenues	Additional bonds test: 1.0x MADs	\$189,750,000
Brown University	Aa1/AA+/--	General obligation of Brown University	No additional bonds test	\$639,850,000
Bryant University	A2/A/--	General obligation of Bryant University	If rated below investment grade, additional bonds must be secured by a letter or credit.	\$116,570,000
Catholic School Pool Program	S: A-/A-2	Each Borrower has a general obligation for their share	No additional bonds test	\$5,705,000
CVS-Highlander Charter School	S: AA-/A-1+	General obligation pledge of Borrower's Gross Receipts and letter of credit.	Additional bonds must have a letter of credit and ratings confirmation.	\$3,520,000
Johnson & Wales University	A2/A/---	Secured by pledge of tuition fees similar to other Johnson & Wales debt	Additional bonds permitted	\$37,380,614
Meeting Street School	M: A2/VMIG-1	Secured by pledge of School's Gross Receipts and letter of credit.	Additional bonds must have a letter of credit and ratings confirmation.	\$7,465,000
Moses Brown School	S: A+/A-1	Secured by the loan, all moneys and securities held by the Trustee, mortgage and letter of credit.	Unless Institution maintains an Investment Grade Rating, any additional bonds shall be secured by a letter of credit.	\$27,000,000
New England Institute of Technology	--/A-/A+	General obligation of New England Institute of Technology and a mortgage.	Additional bonds permitted with DSRF	\$107,275,000
Providence College	A2/A/--	General obligation secured by a pledge of certain Tuition Fees up to 1.1x MADs	Additional bonds test: 1.1x MADs	\$116,775,000
Providence Public Buildings Authority	Baa2 Insured: A1/A1	Secured by payments under the financing agreements and an intercept of the State Housing Aid and Basic Education Aid and a mortgage.	No additional bond test	\$245,680,000
Rhode Island School of Design	A1/--/A+	Pledge of Unrestricted College Revenues.	Additional bonds must have a letter of credit and ratings confirmation.	\$153,510,000
Roger Williams University	S: AA+/A-1+	Pledge of Tuition Fees and Rentals up to 1.1x MADs	Additional bonds must have a letter of credit and ratings confirmation.	\$109,848,630



## Quasi-Public Agencies with Debt Outstanding

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2016
Salve Regina University	--/BB/--	Secured by Tuition Fees and Mortgage	Additional bonds may be issued pursuant to a supplemental loan and trust agreement	\$46,490,059
St. George's School	M: Aa3/VMIG-1	Secured by assignment effected by the Agreement and all other monies and securities held from time to time by the Trustee.	Additional bonds may be issued that are equally and ratably secured with the Bonds.	\$44,251,077
The Groden Center	--/AA/--	Secured by revenues of the Institution.	Additional bonds may be issued that are equally and ratably secured with the Bonds with rating confirmation.	\$3,050,000
<b>Rhode Island Health and Educational Building Corporation – Health Care</b>				
Care New England Health System	--/BB/BBB-	General obligation of the Borrower. Secured by Gross Receipts of the Obligated Group.	Additional bonds test at 1.10x of historical debt service	\$152,706,644
Child and Family Services of Newport County	S: AA-/A-1+	Secured by Borrower's pledge and grant, assignment effected by the Agreement, all other monies and securities held from time to time by the Trustee and letter of credit.	Additional bonds may be issued that are equally and ratably secured with the Bonds and secured with a letter of credit.	\$9,256,190
Home & Hospice Care of RI	S: AA-/A-1+	General obligation secured by pledge of Borrower's Gross Receipts and letter of credit.	Additional bonds permitted with a letter of credit and ratings confirmation.	\$8,814,500
Lifespan Obligated Group	--/BBB+/BBB+	Gross receipts from the hospitals, including contributions, donations, pledges and revenues derived from the operation of all the facilities of the members of the obligated group. Also secured by mortgages on portions of certain hospital campuses.	Additional indebtedness with 1.25x coverage with additional tests.	\$322,897,776
Newport Hospital	S: AA+/A-1+	Secured by Borrower's Gross Receipts, letter of credit and Guaranty.	Additional bonds permitted with a letter of credit and ratings confirmation.	\$19,098,000
NRI Community Services, Inc.	S:AA-/A-1+	Secured by assignment effected by the Agreement, all other monies and securities held from time to time by the Trustee and letter of credit.	Additional bonds may be issued that are equally and ratably secured with the Bonds and secured with a letter of credit.	\$2,710,000
Seven Hills Rhode Island Inc.	Baa3/BBB/--	Unlimited obligation of the Hospital and pledge of Gross Receipts and a mortgage.	Additional bonds test with 1.30x coverage historical and 1.40x coverage projected.	\$4,842,499
South County Hospital	Baa3/BBB/--	Unlimited obligation of the Hospital and pledge of Gross Receipts and a mortgage.	Additional bonds test with 1.30x coverage historical and 1.40x coverage projected.	\$43,620,000
St. Antoine Residence	M: Aa2/VMIG-1	Secured by Revenues of Borrower and letter of credit	Additional bonds may be issued so long as loan agreement is in effect, no event of default shall exist and written consent of the letter of credit bank.	\$10,085,000

## Quasi-Public Agencies with Debt Outstanding

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2016
Steere House	--/--/BBB-	Secured by pledge of Gross Receipts of Institution, monies in the Debt Service Fund, monies in the Debt Service Reserve Fund and Mortgage.	Additional bonds may be issued that are equally and ratably secured with the Bonds and pursuant to a supplemental loan and trust agreement.	\$4,802,000
Tockwotton Home	--/--/--	Secured by mortgages on current facility of Borrower and on project facility of the Borrower and security interest in the unrestricted Borrower revenues.	Additional bonds require majority holder consent above \$1 million.	\$40,300,000
<b>Rhode Island Infrastructure Bank</b>				
Water Pollution Control Revenue Bonds	--/AAA/AAA	Pledged loan payments from underlying borrowers and Local Interest Subsidy Trust (LIST) fund reserves	Additional senior bonds can be issued if projected loan revenues and LIST earnings are at least 1x maximum annual debt service (MADS) on existing and proposed senior bonds. When incorporating planned LIST de-allocations and direct loan principal, these revenues need to represent at least 1.15x MADS on senior bonds. To issue subordinate bonds, all available revenues must represent at least 1x pro forma MADS.	\$522,700,000 (2016)
Safe Drinking Water	--/AAA/AAA	Pledged loan payments from underlying borrowers and Local Interest Subsidy Trust (LIST) fund reserves	Additional senior bonds can be issued if projected loan revenues and LIST earnings are at least 1x MADS on existing and proposed senior bonds. When incorporating planned LIST de-allocations and direct loan principal, these revenues need to represent at least 1.15x MADS on senior bonds. To issue subordinate bonds, all available revenues must represent at least 1x pro forma MADS.	\$186,475,000 (2016)
Other Safe Drinking Water (non-SRF) & Water Utility Revenue Bonds City of Pawtucket	A3/A/--	Pawtucket Water Supply Board's (PWSB) net revenue pledge secures the bonds	Revenue Sufficiency Certificate, stating that revenues are sufficient to pay debt service.	\$78,267,000 (2016)
<b>Rhode Island Housing and Mortgage Finance Corporation</b>				
Homeownership Opportunity Bonds	Aa2/AA+/--	Secured by bond proceeds, mortgage revenues and non-mortgage receipts, accounts under the resolution and all program obligations financed by the resolution	Certificate stating revenues are sufficient to provide for the payment of bonds	\$611,704,448 (2016)
Home Funding Bonds and Notes	Aa2/--/--	Secured by all proceeds of bonds deposited to the Loan Account and revenues derived from program obligations	Certificate stating revenues are sufficient to provide for the payment of bonds	\$130,262,468 (2016)

## Quasi-Public Agencies with Debt Outstanding

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2016
Multi-Family Housing Bonds	Aa2/--/--	Includes moral obligation to fill-up capital reserve fund	Certificate stating revenues are sufficient to provide for the payment of bonds	\$630,000 (2016)
Rental Housing Bonds	S: A/A-1+	Mortgage loans financed from bond proceeds and Revenues, including Pledged Receipts or payments required by any Mortgage Loan. Includes moral obligation to fill-up capital reserve fund	Certificate stating revenues are sufficient to provide for the payment of bonds	\$65,039,132 (2016)
Multi-Family Funding Bonds	Aaa/--/--	Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	\$88,760,000 (2016)
Multi-Family Development Bonds	Aa2/--/--	Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	\$214,758,428 (2016)
Multi-Family Mortgage Rev Bonds	S: AAA/A-1+	Freddie Mac credit enhancement. Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	\$100,691,010 (2016)
<b>Rhode Island Student Loan Authority</b>				
Student Loan Program Revenue Bonds	--/AA(sf)/AAsf	Secured by non-federal loans, various accounts established under the indenture, payments of principal and interest on Non-Federal Loans financed pursuant to the Indenture and investment earnings.	Requires rating affirmations from rating agencies rating the bonds.	\$239,755,000 (as of February 29, 2016)
FFELP Loan Program Revenue Bonds	--/AA+(sf)/AAAsf	Secured by FFELP Loans, all amounts held under the indenture, and the rights to the servicing agreements and guarantee agreements related to the loans.	The FFELP Loan program is not available. Any additional bonds would likely be only for refinancing outstanding bonds.	\$286,233,000 as of February 29, 2016

## Comparison of Rating Agency Methodologies for Pooled Programs and State Revolving Funds

	Fitch Ratings	Moody's Investors Service	Standard & Poor's
Portfolio Analysis	<p>Assess Weighted Average Default Rate (WADR) and calculates a Portfolio Stress Calculator (PSC) based on long-term default rates of corporate entities.</p> <p>Assess credit quality of underlying borrowers:</p> <ul style="list-style-type: none"> <li>• AAA Median investment grade borrowers: 70%</li> </ul> <p>Calculate Pool Concentration:</p> <ul style="list-style-type: none"> <li>• AAA Median single-borrower concentration: 18%</li> <li>• AAA Median for top 10 borrowers: 55%</li> </ul> <p>Liability Rating Stress Hurdle Portfolio Stress Calculator</p>	<p>Pool financings: Debt obligations secured by loan repayments from a small group of obligors</p> <p>Evaluate underlying credit quality of pool participants and nature of obligation.</p> <p>Employ Weighted Average Probability of Default or Weak Link Plus approach.</p> <p>Determine weighted average credit quality of pool participants.</p> <hr/> <p>State Revolving Funds: Evaluate Portfolio Credit Quality and Default Tolerance Score:</p> <ul style="list-style-type: none"> <li>• Portfolio size and diversity (size, percentage of borrowers with less than 1% of the portfolio, percentage of loans to the top five borrowers)</li> </ul>	<p>Calculate <b>Enterprise Risk Score</b></p> <ul style="list-style-type: none"> <li>• Industry risk for government and not-for-profit municipal pool programs equates to low risk</li> <li>• Market position reflects level of government support received, existence of legislative authorization and presence of any significant challenges that could affect demand.</li> <li>• Geographic concentration – programs that target only one metropolitan area receive a one-notch negative adjustment</li> </ul> <p>Calculate Financial Risk Score</p> <ul style="list-style-type: none"> <li>• Determine relative default rates given credit quality of underlying loan portfolio</li> <li>• Review operating performance</li> <li>• Review financial policies and practices</li> </ul>
Program Management	Evaluate management's processes and procedures, including underwriting criteria, loan monitoring procedures, technology, program goals and requirements, historical loan delinquencies and defaults	Review program and portfolio management: loan underwriting standards, portfolio monitoring	Review Loan Origination Policies, Loan Monitoring Policies, Default and Delinquencies Policies, Long-term Planning, Investment Policies
Legal Review	<p>State aid intercept mechanisms</p> <p>Required program-level reserves</p> <p>Moral obligation to fund debt service</p> <p>reserve funds may benefit from one to three notch rating improvement</p> <p>Surplus Reserve Fund release requirements (cash flow coverage test must be met before surplus is released or de-allocated)</p> <p>Review Additional Bonds Test</p> <p>Review other credit enhancements (debt service fund, additional local reserve requirements, higher interest rate on a delinquent loan)</p> <p>Review any provisions for cross-collateralization.</p>	<p>Requirement for debt service reserve fund.</p> <p>Provision for obligating pool participants to make up any funding shortfall or refill a DSRF.</p> <p>Restrictions on removing surplus funds from the program.</p> <hr/> <p>SRF: Review rate covenants, pledged reserves at borrower level; presence of state aid intercept or moral obligation; presence of step-provisions.</p> <p>Review assets pledged, cross-collateralization.</p> <p>Surplus Reserve Fund release requirements (cash flow coverage test must be met before surplus is released or de-allocated)</p> <p>Review additional bonds test, reserve requirements.</p>	<p>Examine state sponsored programs for power to influence local borrower behavior:</p> <ul style="list-style-type: none"> <li>• Regulatory or oversight authority</li> <li>• State intercept provisions</li> <li>• Reserve balances</li> </ul>

## Comparison of Rating Agency Methodologies for Pooled Programs and State Revolving Funds

	<b>Fitch Ratings</b>	<b>Moody's Investors Service</b>	<b>Standard &amp; Poor's</b>
Cash Flow Sufficiency	Review cash sources (loan repayments, subsidies, reserves and surplus fund balances) Coverage requirements of at least 1.25x viewed as strong; 1.1x or less viewed as weaker Program Asset Strength Ratio: Aggregate Pledged Assets (loan repayments plus reserve funds, account earnings) divided by aggregate outstanding debt service. 2016 Median of 1.9x	Review cash flow structure and over-collateralization of loans to bonds.	Loss Coverage: Leverage Test for AAA rated programs : Review leverage level - Total loan revenue receivable plus pledged reserves divided by total bond debt service payable Operating Performance: Number of non-performing loans as a percent of total loans and percent of payments more than five days late in the past 12 months
Stress Tests	Use internal Cash Flow Model to test stress scenarios and find the 4 year default tolerance rate.	Assess cash flow under different interest rates and loan performance scenarios	Largest obligor test – assess possibility of default if largest obligor defaults
Clean Water and Drinking Water SRF	Many have significant enhancement from federal capitalization grants and required state matching grants (typically state appropriations, state revenues, or state bond proceeds), which are usually invested in reserve funds and used to provide overcollateralization.		
	<i>State Revolving Fund and Leveraged Municipal Loan Pool Criteria, October 20, 2016</i>	<i>Public Sector Financings, July 18, 2012</i> <i>U.S. State Revolving Fund Debt, March 20, 2013</i>	<i>U.S. Public Finance Long-Term Municipal Pools: Methodology and Assumptions, March 19, 2012</i>

## Debt Management Practices of Selected New England States with Quasi Public Agencies

### Connecticut

- Connecticut does not have debt policies for quasi-public agencies.
- There is no formal oversight of quasi-public agencies.
- State Treasurer sits on the board of quasi-public agencies.
- Certain agencies are able to use the Special Capital Reserve Fund (SCRF)
  - A SCRF is a debt service reserve fund set up at the time the bonds are issued, in an amount equal to the lesser of either one year's principal and interest on the bonds or ten percent of the issue.
  - If the borrower makes the scheduled debt service payments, the interest earnings on the reserve fund will pay the interest on the bonds that created it and the principal will go to retire the final maturity of the bond issue.
  - If the borrower is unable to pay all or part of the scheduled debt service payments, the reserve may be drawn upon to pay debt service.
  - The reserve provides up to a year's adjustment time to deal with a revenue shortfall.
  - When the SCRF has been drawn down in part or completely, a draw on the General Fund is authorized and the reserve is fully restored. The draw on the General Fund is deemed to be appropriated and is not subject to the constitutional or statutory appropriations cap. All that is required is a certification by the issuing authority of the amount required. If draws on a SCRF continue, the annual draws on the General Fund required to refill it also continue.
  - State Treasurer conducts a full review and analysis for cash flow sufficiency to ensure that the State will not be making any debt service payments. There are no defined debt affordability measures.
  - Currently, only the South Central Regional Water Authority has debt with SCRF.

### Massachusetts

- Massachusetts does not have procedures to control debt by quasi-public agencies.
- Treasurer sits on the board of quasi-public agencies.
- Massachusetts does not allow any moral obligation debt.
- Massachusetts has a debt management policy for the state's six bond programs: General Obligation Bonds, Special Obligation Revenue Bonds (motor fuel excise), Special Obligation Dedicated Tax Revenue Bonds (Convention Center), Senior Federal Highway Grant Anticipation Notes (or GANs), Commonwealth Transportation Fund Bonds (CTF for the Accelerated Bridge Program), and Federal Highway Grant Anticipation Notes (Accelerated Bridge Program)

### New Hampshire

- New Hampshire does not have procedures to control debt by quasi-public agencies.
- Treasurer sits on the board of several quasi-public agencies.
- New Hampshire has various guarantee programs
  - The statutes authorizing the guarantee programs require approval by the Governor and Council of any award of a State guarantee
  - Statutory limitations may be either on the total amount guaranteed or on the total amount guaranteed that remains outstanding at any time (a revolving limit)

## Debt Management Practices of Selected New England States with Quasi Public Agencies

- The statutory dollar limit may represent either the total amount of principal and interest or only the total amount of principal
- The State has the following guarantee programs: Local Water Pollution Control Bonds; Local School Bonds; Local Superfund Site Bonds; Local Landfill and Waste Site Bonds; Business Finance Authority Bonds, Loans; Pease Development Authority; and Housing Finance Authority Child Care Loans

### Vermont

- The Vermont Treasurer is responsible for managing all tax-supported debt, which is all State of Vermont issued debt
- Vermont does not have specific procedures to control debt by quasi-public agencies.
- The Vermont Treasurer sits on boards of debt issuing quasi-public agencies and all quasi-public agencies that have moral obligation authority.
- The Vermont Treasurer chairs the Capital Debt Affordability Advisory Committee which has established a target of total moral obligation debt as a percentage of total State tax supported debt as way to have a high-level management of quasi-public agency moral obligation debt.

**Appendix C – Part Three**

**Municipality Debt, Demographic and Economic Statistics,  
Debt and Pension Liability Ratios and State Reimbursements for  
School Projects**



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## Outstanding Municipality Debt

Obligor Name	Moody's	Fitch	S&P	Governmental Activities - Tax-Supported (FY2015)								Business Activities (FY2015)		Gross Direct Debt (FY2015)	Overlapping Debt	Overall Debt
				General Obligation Bonds (FY2015)	Loans Payable (FY2015)	Capital Leases (FY2015)	Net Direct Debt	GO Debt Service (2016)	Loans Debt Service (2016)	Lease Payments (2016)	Total Debt Service (2016)	Enterprise Debt	Debt Service (FY2016)			
Barrington	Aa1	NR	AAA	11,250,000	2,981,156	87,911	14,319,067	1,698,280	303,936	28,332	2,030,548	17,964,084	1,052,335	32,283,151	0	32,283,151
Bristol	Aa2	NR	AA+	29,078,334	1,400,933	463,418	30,942,685	2,818,721	na	na	3,157,654	36,041,885	2,318,363	66,984,570	13,333,440	80,318,010
Burrillville	Aa2	AAA	NR	16,992,655	0	0	16,992,655	2,547,729	0	0	2,547,729	1,033,000	0	18,025,655	2,290,714	20,316,369
Central Falls	Ba2	NR	BBB	6,665,000	8,195,000	21,244	14,881,244	2,483,035	na	na	2,483,035	26,372,183	0	41,253,427	0	41,253,427
Charlestown	Aa2	NR	NR	5,220,000	0	229,820	5,449,820	271,915	0	na	271,915	0	0	5,449,820	5,564,909	11,014,729
Coventry	A1	NR	AA	41,425,000	28,531	0	41,453,531	5,243,847	na	0	5,243,847	25,052,412	1,739,738	66,505,943	4,873,009	71,378,952
Cranston	A1	AA+	AA-	71,060,000	0	365,000	71,425,000	9,727,260	0	370,475	10,097,735	24,873,477	2,225,218	96,298,477	0	96,298,477
Cumberland	Aa3	NR	AA	22,155,000	23,576,715	1,631,769	47,363,484	3,547,041	1,723,215	562,173	5,832,429	40,151,784	421,276	87,515,268	5,679,230	93,194,498
East Greenwich	Aa1	NR	AA+	51,711,667	0	83,055	51,794,722	6,062,830	0	38,376	6,101,206	23,732,443	2,484,186	75,527,165	0	75,527,165
East Providence	A2	NR	AA	15,545,800	2,254,509	24,725,418	42,525,727	na	na	na	5,260,080	81,672,266	4,857,690	124,197,993	0	124,197,993
Exeter	NR	NR	NR	757,454	0	192,971	950,425	123,089	0	64,424	187,513	0	0	950,425	0	950,425
Foster	NR	NR	NR	0	0	80,421	80,421	0	0	43,864	43,864	0	0	80,421	14,473,985	14,554,406
Glocester	NR	NR	AA+	2,495,000	195,731	20,210	2,710,941	568,539	na	15,408	583,947	0	0	2,710,941	27,158,053	29,868,994
Hopkinton	Aa3	NR	NR	1,103,000	467,178	156,894	1,727,072	156,727	na	110,622	267,349	0	0	1,727,072	9,333,553	11,060,625
Jamestown	Aa1	NR	NR	8,305,591	0	0	8,305,591	1,054,663	0	0	1,054,663	8,318,818	955,310	16,624,409	0	16,624,409
Johnston	A3	NR	AA-	23,787,250	20,321	1,567,750	25,375,321	2,825,679	na	na	3,334,621	36,523,459	271,169	61,898,780	0	61,898,780
Lincoln	Aa2	AA	NR	29,900,000	0	229,049	30,129,049	4,145,906	0	109,390	4,255,296	41,264,678	449,616	71,393,727	2,116,242	73,509,969
Little Compton	NR	NR	NR	11,195,000	0	86,124	11,281,124	913,275	0	66,842	913,275	0	0	11,281,124	0	11,281,124
Middletown	Aa1	NR	NR	24,776,114	450,000	1,311,314	26,537,428	2,940,019	na	664,206	3,604,225	8,648,900	1,066,610	35,186,328	0	35,186,328
Narragansett	Aa2	NR	AA+	20,690,000	1,614,640	561,213	22,865,853	2,265,900	177,421	212,856	2,656,177	3,660,869	659,363	26,526,722	0	26,526,722
New Shoreham	NR	NR	AA	17,370,847	0	227,003	17,597,850	2,042,562	0	na	2,042,562	3,817,040	214,836	21,414,890	0	21,414,890
Newport	NR	NR	AA+	44,678,536	1,500,000	675,422	46,853,958	7,072,284	na	124,970	7,197,254	120,960,036	10,079,413	167,813,994	0	167,813,994
North Kingstown	Aa2	NR	AA+	41,985,660	0	0	41,985,660	5,651,208	0	0	5,651,208	12,204,625	1,137,289	54,190,285	0	54,190,285
North Providence	A2	NR	AA-	15,055,000	0	897,668	15,952,668	na	0	na	4,257,613	51,362,965	0	67,315,633	0	67,315,633
North Smithfield	Aa2	NR	NR	29,855,000	0	693,252	30,548,252	3,197,649	0	226,131	3,423,780	6,213,964	919,496	36,762,216	0	36,762,216
Pawtucket	A3	A+	A	51,158,658	230,000	8,987,680	60,376,338	5,234,705	na	na	5,234,705	211,674,146	8,454,366	272,050,484	0	272,050,484
Portsmouth	Aa2	NR	AAA	12,278,655	0	0	12,278,655	2,659,709	0	0	2,659,709	1,692,439	254,230	13,971,094	3,179,000	17,150,094
Providence	Baa1	A-	BBB	149,207,000	2,382,000	340,155,000	491,744,000	58,337,000	92,000	3,850,000	62,279,000	384,154,110	6,449,000	875,898,110	0	875,898,110
Richmond	Aa3	NR	NR	3,890,000	0	69,220	3,959,220	547,338	0	36,642	583,980	2,090,161	91,431	6,049,381	8,135,996	14,185,377
Scituate	NR	NR	AA	3,075,000	3,275,000	353,500	6,703,500	830,956	308,562	101,000	1,240,518	241,738	0	6,945,238	0	6,945,238
Smithfield	Aa2	NR	AA	13,390,000	0	461,110	13,851,110	2,159,751	0	na	2,159,751	8,505,769	590,521	22,356,879	0	22,356,879
South Kingstown	Aa1	NR	NR	12,511,000	0	0	12,511,000	2,377,933	0	0	2,377,933	1,744,978	210,474	14,255,978	1,759,744	16,015,722
Tiverton	A1	AA	NR	36,410,000	0	999,757	37,409,757	4,012,388	0	230,341	4,242,729	0	0	37,409,757	5,712,861	43,122,618
Warren	Aa3	NR	NR	13,628,560	0	0	13,628,560	1,563,794	0	0	1,563,794	4,746,594	0	18,375,154	8,544,282	26,919,436
Warwick	A1	NR	AA-	46,286,654	0	2,570,079	48,856,733	6,300,740	0	1,146,676	7,447,416	102,213,290	13,091,434	151,070,023	0	151,070,023
West Greenwich	NR	NR	AA+	5,915,000	96,593	0	6,011,593	na	na	0	560,304	192,737	0	6,204,330	2,955,925	9,160,255
West Warwick	Baa2	BBB	NR	23,118,000	0	62,483	23,180,483	na	na	na	2,519,923	27,638,479	2,423,742	50,818,962	0	50,818,962
Westerly	Aa3	NR	AA	55,225,000	24,373,250	2,516,178	82,114,428	6,004,737	na	na	6,004,737	3,944,877	728,245	86,059,305	1,317,314	87,376,619
Woonsocket	Ba3	BB+	NR	163,802,308	0	89,597	163,891,905	18,823,512	na	na	18,823,512	43,391,000	3,224,839	207,282,905	0	207,282,905

Net Direct Debt: All debt of an issuer less self-supporting enterprise debt. Enterprise Debt: Debt for essential service utilities that is self-supporting from user fees. Overlapping Debt: Issuer's proportionate share of the debt of other local governmental units that either overlap or underlie it. Overall Debt: Net debt + Enterprise Debt + Overlapping Debt.

Municipality – Net Pension Liability and Demographic/Economic Statistics

Obligor Name	Moody's	Fitch	S&P	Pensions		Demographics/Economic Statistics				
				Net Pension Liability	Overall Debt + Pensions	Governmental Fund Revenues	Governmental Fund Expenditures	Population	Personal Income	Taxable Assessed Value
Barrington	Aa1	NR	AAA	40,447,827	72,730,978	71,228,849	71,690,844	16,310	1,592,991,872	2,920,827,036
Bristol	Aa2	NR	AA+	3,632,408	83,950,418	45,519,910	47,401,067	22,954	1,231,393,654	2,779,444,157
Burrillville	Aa2	AAA	NR	24,684,338	45,000,707	50,051,487	50,298,617	15,955	849,713,781	1,440,926,137
Central Falls	Ba2	NR	BBB	35,623,954	76,877,381	19,828,801	20,159,569	19,376	444,231,555	400,392,007
Charlestown	Aa2	NR	NR	3,040,325	14,055,054	27,184,408	26,442,304	7,827	456,444,781	2,310,582,454
Coventry	A1	NR	AA	132,096,776	203,475,728	101,410,120	106,151,962	35,014	1,763,149,138	3,217,528,723
Cranston	A1	AA+	AA-	367,469,373	463,767,850	282,386,525	284,617,071	80,387	3,902,202,870	6,789,734,897
Cumberland	Aa3	NR	AA	65,874,675	159,069,173	94,596,729	94,549,715	33,506	2,055,367,324	3,457,627,615
East Greenwich	Aa1	NR	AA+	34,570,652	110,097,817	64,553,685	64,937,979	13,146	1,123,664,826	2,295,007,887
East Providence	A2	NR	AA	50,975,676	175,173,669	157,126,101	146,532,869	47,037	2,152,826,793	3,824,830,967
Exeter	NR	NR	NR	0	950,425	14,038,504	14,058,101	6,425	356,681,047	823,936,514
Foster	NR	NR	NR	4,832,125	19,386,531	13,981,245	13,574,061	4,606	N/A	545,985,397
Glocester	NR	NR	AA+	6,993,427	36,862,421	27,828,156	27,039,766	9,746	535,020,314	926,453,714
Hopkinton	Aa3	NR	NR	2,289,184	13,349,809	24,480,856	24,796,789	8,188	438,445,878	852,674,706
Jamestown	Aa1	NR	NR	7,893,162	24,517,571	23,149,427	22,862,143	5,405	445,108,958	2,179,117,027
Johnston	A3	NR	AA-	231,992,614	293,891,394	108,058,725	106,861,374	28,769	1,528,855,845	2,264,511,642
Lincoln	Aa2	AA	NR	55,350,589	128,860,558	81,454,779	79,542,213	21,105	1,283,713,598	2,050,427,747
Little Compton	NR	NR	NR	6,783,195	18,064,319	13,393,025	13,011,605	3,492	N/A	1,888,036,899
Middletown	Aa1	NR	NR	32,717,042	67,903,370	66,802,466	72,544,660	16,150	848,199,618	2,593,097,228
Narragansett	Aa2	NR	AA+	63,213,103	89,739,825	59,530,281	59,599,076	15,868	1,047,294,863	4,506,548,896
New Shoreham	NR	NR	AA	3,307,716	24,722,606	13,387,920	13,152,337	1,051	N/A	1,674,915,396
Newport	NR	NR	AA+	127,118,734	294,932,728	109,699,083	108,675,918	24,672	1,509,461,963	5,985,006,479
North Kingstown	Aa2	NR	AA+	69,322,717	123,513,002	99,590,564	101,819,016	26,486	1,697,953,026	3,794,759,142
North Providence	A2	NR	AA-	43,342,895	110,658,528	99,464,236	100,348,443	32,078	1,623,692,693	2,160,222,000
North Smithfield	Aa2	NR	NR	19,204,973	55,967,189	42,777,128	41,609,120	11,967	756,081,663	1,508,659,420
Pawtucket	A3	A+	A	241,600,615	513,651,099	217,171,660	226,480,543	71,148	2,560,427,934	3,448,728,766
Portsmouth	Aa2	NR	AAA	65,573,431	82,723,525	63,776,594	65,480,830	17,389	1,144,515,477	3,076,103,172
Providence	Baa1	A-	BBB	1,089,055,000	1,964,953,110	763,899,000	787,313,000	178,042	6,481,180,624	11,053,091,000
Richmond	Aa3	NR	NR	596,326	14,781,703	23,991,508	23,811,951	7,708	468,276,119	883,964,542
Scituate	NR	NR	AA	2,914,006	9,859,244	35,059,352	34,885,091	10,329	720,397,186	1,541,787,480
Smithfield	Aa2	NR	AA	57,697,715	80,054,594	67,839,386	68,523,703	21,430	1,124,411,083	2,574,912,619
South Kingstown	Aa1	NR	NR	49,749,074	65,764,796	90,541,487	90,384,158	30,639	1,579,105,515	4,123,048,580
Tiverton	A1	AA	NR	21,366,529	64,489,147	50,415,815	55,322,367	15,780	901,435,148	1,945,050,139
Warren	Aa3	NR	NR	5,520,228	32,439,664	26,668,079	27,955,343	10,611	611,158,608	1,157,254,861
Warwick	A1	NR	AA-	387,338,603	538,408,626	303,190,264	313,493,806	82,672	4,488,281,568	8,954,268,641
West Greenwich	NR	NR	AA+	2,417,241	11,577,496	18,724,059	18,959,922	6,135	339,560,093	815,581,301
West Warwick	Baa2	BBB	NR	148,895,806	199,714,768	92,742,926	92,472,273	29,191	1,218,351,842	2,061,023,813 (a)
Westerly	Aa3	NR	AA	53,544,094	140,920,713	94,567,589	100,430,302	22,787	1,286,198,278	5,989,385,500
Woonsocket	Ba3	BB+	NR	126,087,184	333,370,089	147,453,145	142,137,086	41,186	1,496,918,627	1,638,383,940

Municipality – Other Debt and Pension Ratios

Obligor Name	Moody's	Fitch	S&P	Other Debt Ratios							Other Pensions Ratios	
				Overall Debt to Assessed Value	Net Direct Debt to Revenues	Moody's Score	Debt to Personal Income	Net Direct Debt to Revenues	Governmental Funds DS to Expenses	S&P Score	Net Pension Liability to Assessed Value	Moody's Score
Barrington	Aa1	NR	AAA	1.11%	0.20x	Aaa	2.0%	20.1%	2.8%	1	1.4%	Aa
Bristol	Aa2	NR	AA+	2.89%	0.68x	A	6.5%	68.0%	6.7%	3	0.1%	Aaa
Burrillville	Aa2	AAA	NR	1.41%	0.34x	Aa	2.4%	34.0%	5.1%	2	1.7%	Aa
Central Falls	Ba2	NR	BBB	10.30%	0.75x	A	9.3%	75.0%	12.3%	4	8.9%	Baa
Charlestown	Aa2	NR	NR	0.48%	0.20x	Aaa	2.4%	20.0%	1.0%	1	0.1%	Aaa
Coventry	A1	NR	AA	2.22%	0.41x	Aa	4.0%	40.9%	4.9%	2	4.1%	A
Cranston	A1	AA+	AA-	1.42%	0.25x	Aaa	2.5%	25.3%	3.5%	1	5.4%	Baa
Cumberland	Aa3	NR	AA	2.70%	0.50x	Aa	4.5%	50.1%	6.2%	2	1.9%	Aa
East Greenwich	Aa1	NR	AA+	3.29%	0.80x	A	6.7%	80.2%	9.4%	4	1.5%	Aa
East Providence	A2	NR	AA	3.25%	0.27x	Aaa	5.8%	27.1%	3.6%	1	1.3%	Aa
Exeter	NR	NR	NR	0.12%	0.07x	Aaa	0.3%	6.8%	1.3%	1	0.0%	Aaa
Foster	NR	NR	NR	2.67%	0.01x	Aaa	NA	0.6%	0.3%	1	0.9%	Aaa
Glocester	NR	NR	AA+	3.22%	0.10x	Aaa	5.6%	9.7%	2.2%	1	0.8%	Aaa
Hopkinton	Aa3	NR	NR	1.30%	0.07x	Aaa	2.5%	7.1%	1.1%	1	0.3%	Aaa
Jamestown	Aa1	NR	NR	0.76%	0.36x	Aa	3.7%	35.9%	4.6%	2	0.4%	Aaa
Johnston	A3	NR	AA-	2.73%	0.23x	Aaa	4.0%	23.5%	3.1%	1	10.2%	Baa
Lincoln	Aa2	AA	NR	3.59%	0.37x	Aa	5.7%	37.0%	5.3%	2	2.7%	A
Little Compton	NR	NR	NR	0.60%	0.84x	A	NA	84.2%	7.0%	3	0.4%	Aaa
Middletown	Aa1	NR	NR	1.36%	0.40x	Aa	4.1%	39.7%	5.0%	2	1.3%	Aa
Narragansett	Aa2	NR	AA+	0.59%	0.38x	Aa	2.5%	38.4%	4.5%	2	1.4%	Aa
New Shoreham	NR	NR	AA	1.28%	1.31x	A	NA	131.4%	15.5%	5	0.2%	Aaa
Newport	NR	NR	AA+	2.80%	0.43x	Aa	11.1%	42.7%	6.6%	2	2.1%	Aa
North Kingstown	Aa2	NR	AA+	1.43%	0.42x	Aa	3.2%	42.2%	5.6%	2	1.8%	Aa
North Providence	A2	NR	AA-	3.12%	0.16x	Aaa	4.1%	16.0%	4.2%	1	2.0%	Aa
North Smithfield	Aa2	NR	NR	2.44%	0.71x	A	4.9%	71.4%	8.2%	4	1.3%	Aa
Pawtucket	A3	A+	A	7.89%	0.28x	Aaa	10.6%	27.8%	2.3%	1	7.0%	Baa
Portsmouth	Aa2	NR	AAA	0.56%	0.19x	Aaa	1.5%	19.3%	4.1%	1	2.1%	Aa
Providence	Baa1	A-	BBB	7.92%	0.64x	Aa	13.5%	64.4%	7.9%	3	9.9%	Baa
Richmond	Aa3	NR	NR	1.60%	0.17x	Aaa	3.0%	16.5%	2.5%	1	0.1%	Aaa
Scituate	NR	NR	AA	0.45%	0.19x	Aaa	1.0%	19.1%	3.6%	1	0.2%	Aaa
Smithfield	Aa2	NR	AA	0.87%	0.20x	Aaa	2.0%	20.4%	3.2%	1	2.2%	A
South Kingstown	Aa1	NR	NR	0.39%	0.14x	Aaa	1.0%	13.8%	2.6%	1	1.2%	Aa
Tiverton	A1	AA	NR	2.22%	0.74x	A	4.8%	74.2%	7.7%	3	1.1%	Aa
Warren	Aa3	NR	NR	2.33%	0.51x	Aa	4.4%	51.1%	5.6%	2	0.5%	Aaa
Warwick	A1	NR	AA-	1.69%	0.16x	Aaa	3.4%	16.1%	2.4%	1	4.3%	A
West Greenwich	NR	NR	AA+	1.12%	0.32x	Aaa	2.7%	32.1%	3.0%	2	0.3%	Aaa
West Warwick	Baa2	BBB	NR	2.47%	0.25x	Aaa	4.2%	25.0%	2.7%	1	7.2%	Baa
Westerly	Aa3	NR	AA	1.46%	0.87x	A	6.8%	86.8%	6.0%	3	0.9%	Aaa
Woonsocket	Ba3	BB+	NR	12.65%	1.11x	A	13.8%	111.1%	13.2%	4	7.7%	Baa

**SUMMARY OF FIRE DISTRICTS**

Fire District	Debt Limit	FY15 Debt Service Payment**			Long-Term Debt FY15***	FY15 Approved Budget	Long-Term Debt as % of FY15 Budget*
		Principal	Interest	Total			
Albion	\$50,000	N/A	N/A	\$138,530	1,437,904	1,060,074	135.64%
Ashaway	3% of assessed	30,740	109,610	140,350	2,518,859	477,200	527.84%
Bonnet Shores	None	-	-	-	N/A	275,486	N/A
Bradford	<9% of assessed	19,992	7,608	27,600	67,972	119,656	56.81%
Buttonwoods	20,000	-	-	-	N/A	105,179	N/A
Central Coventry	1/2 of annual budget	106,775	25,590	132,365	3,119,178	5,810,549	53.68%
Charlestown	5,000,000	N/A	N/A	224,672	NR	753,471	UNK
Chepachet	None	27,955	4,045	32,000	86,518	570,069	15.18%
Coventry	500,000	NR	NR	169,000	464,896	2,810,800	16.54%
Cumberland	250,000	NR	NR	NR	1,389,457	1,610,950	86.25%
Cumberland Hill	25% of budget	NR	NR	NR	2,137,739	2,015,700	106.05%
Dunn's Corners	None	N/A	N/A	106,667	1,081,662	896,347	120.67%
Exeter	200,000	-	-	-	N/A	1,231,196	N/A
Harmony	3% of assessed	NR	NR	19,874	158,993	616,552	25.79%
Harrisville	None	NR	NR	87,448	2,160,817	1,440,341	150.02%
Hope Valley-Wyoming	None	NR	NR	135,111	783,174	740,938	105.70%
Hopkins Hill	1,000,000	-	-	-	N/A	1,115,650	N/A
Indian Lake Shores	Value of taxed property	-	-	-	N/A	38,245	N/A
Kingston	970,000	NR	NR	207,876	1,348,482	683,358	197.33%
Lime Rock	1,000,000	-	-	-	N/A	2,332,147	N/A
Lonsdale	100,000	UNK	UNK	UNK	UNK	617,260	UNK
Manville	None	-	-	-	N/A	330,078	N/A
Misquamicut	100,000	-	-	-	N/A	674,667	N/A
Nasonville	3% of assessed	-	-	-	N/A	499,730	N/A
North Cumberland	None	50,305	8,516	58,821	1,118,168	1,784,143	62.67%
North Tiverton	None	96,825	142,304	239,129	4,542,881	4,198,880	108.19%
Oakland-Mapleville	3% of assessed	10,976	25,718	36,694	512,533	458,089	111.89%
Pascoag	2,500,000	66,580	52,420	119,000	1,286,574	1,280,993	100.44%
Pojac Point	1,500	-	-	-	N/A	75,000	N/A
Portsmouth Water & Fire	None	269,634	113,042	382,676	2,789,000	4,063,224	68.64%
Quinnville	125,000	-	-	-	N/A	87,365	N/A
Quonochontaug Central	1.5% of assessed	7,916	6,484	14,400	117,544	262,560	44.77%
Ricmond Carolina	1% of assessed	105,143	63,100	168,243	1,286,263	495,092	259.80%
Saylesville	2,000,000	71,181	41,152	112,333	678,338	731,033	92.79%
Shady Harbor	3% of assessed	4,750	6,252	11,002	123,500	156,705	78.81%
Shelter Harbor	None	-	-	-	N/A	214,363	N/A
Stone Bridge	2,274,167	20,635	7,676	28,311	1,169,980	968,009	120.86%
Union	10,000,000	177,618	47,172	224,790	411,262	3,157,207	13.03%
Valley Falls	50% of previous year budget	NR	NR	NR	1,033,866	1,793,239	57.65%
Watch Hill	TAN limit of \$100,000	31,496	50,464	81,960	948,224	1,032,644	91.82%
Weekapaug	75,000	-	-	-	N/A	393,400	N/A
West Glocester	630,000	-	-	-	N/A	409,436	N/A
Westerly	1% of assessed	-	-	-	N/A	1,296,720	N/A
Western Coventry	2,000,000	36,806	58,461	95,267	1,288,935	577,167	223.32%

\* From Division of Municipal Finance: For "Tier" Classification purposes, Outstanding debt/FY15 annual budget ratio is used to determine if the outstanding debt is greater than 3x the amount of the FY15 budget.

\*\* Source: RI Division of Municipal Finance, based on FY15 RI Fire District Adopted Budget Survey (based on self-reported data)

\*\*\* Source: RI Division of Municipal Finance, FD-4 report; audit report

Cumberland, Cumberland Hill, North Cumberland and Valley Falls fire districts have since merged into a single Cumberland Fire District as of 7/1/2016  
 Central Coventry's long term liabilities include receivership claims of \$2,806,014

Other Special Districts

				Governmental Activities								
	Moody's	Fitch	S&P	GO Bonds / Bonds	Loans Payable	Capital Leases	Total Outstanding	GO Debt Service / Bond Debt Service(2016)	Loans Debt Service (2016)	Lease Payments (2016)	Total Debt Service (2016)	
<b>Special Districts</b>												
Bristol-Warren Regional SD	Aa3	NR	NR	20,400,000	0	0	20,400,000	3,176,216	0	0	3,176,216	
Bristol Cnty Wtr Auth	NR	NR	NR	15,188,776	7,121,692	0	22,310,468	2,876,757	606,113	0	3,482,870	
Burrillville Hsg Auth	NR	NR	A+									
Chariho Regional School District	Aa3	NR	NR	17,904,000	1,009,160	27,467	18,940,627	na	na	na	1,298,445	
Coventry Hsg Auth	NR	NR	AA-									
Cumberland Hsg Auth	NR	NR	AA-									
Exeter-West Greenwich Regional S.D.	A1	NR	NR	700,000	4,340,000	398,685	5,438,685	205,231	528,550	198,179	931,960	
Foster-Glocester School District	Aa3	NR	NR	0	41,725,000	0	41,725,000	0	5,083,298	0	5,083,298	
Kent County Water Authority	Aa3	NR	AA-	14,495,000	0	0	14,495,000	2,149,800	0	0	2,149,800	
North Providence Hsg Auth	NR	NR	AA-									
Pascoag Util Dist	NR	NR	A-	1,033,000	0	0	1,033,000	76,555	0	0	76,555	
Pawtucket Hsg Auth	NR	NR	A+	4,610,000	0	2,053,179	6,663,179	253,550	0	N/A	253,550	
Providence Hsg Dev Corp	NR	NR	AA-	9,635,000	0	10,322,040	19,957,040	1,138,844	0	1,046,565	2,185,409	
Providence Pub Bldg Auth	NR	NR	BBB-	306,682,004	0	463,644,081	770,326,085	36,147,448	0	23,755,846	59,903,294	
Providence Redev Agy	NR	NR	BBB-	Included in City of Providence tax-supported debt.								
Providence Wtr Supply Brd	NR	NR	AA-	78,174,019	0	0	78,174,019	6,448,718	0	0	6,448,718	
Woonsocket Hsg Auth	NR	NR	A+	6,130,000	0	0	6,130,000	775,850	0	0	775,850	

**Other Special Districts**

**Allocation of Narragansett Bay Commission Debt**

NBC Debt Outstanding 6/30/16	NBC RIIB Debt Outstanding 6/30/16	Total NBC Debt Outstanding
242,820,000	385,089,111	627,909,111

Municipality	% of Revenues FY2016*	NBC Debt	NBC RIIB Debt	Total
Central Falls	4.20%	10,198,440	16,173,743	26,372,183
Cranston	0.19%	461,358	731,669	1,193,027
Cumberland	5.76%	13,986,432	22,181,133	36,167,565
East Providence	3.60%	8,741,520	13,863,208	22,604,728
Johnston	5.44%	13,209,408	20,948,848	34,158,256
Lincoln	5.69%	13,816,458	21,911,570	35,728,028
North Providence	8.18%	19,862,676	31,500,289	51,362,965
Pawtucket	18.04%	43,804,728	69,470,076	113,274,804
Providence	48.73%	118,326,186	187,653,924	305,980,110
Smithfield	0.09%	218,538	346,580	565,118
Other	0.08%	194,256	308,071	502,327
<b>Total</b>	<b>100.00%</b>	<b>242,820,000</b>	<b>385,089,111</b>	<b>627,909,111</b>

\* From Narragansett Bay Commission



## State Reimbursements for School Building Projects (FY2017-FY2030)

**State Housing Aid - Final Entitlements (Construction Entitlement + Interest Entitlement + Adjustments)**

District	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Barrington	\$769,427	\$437,589	\$274,871	\$184,089	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bristol Warren	\$1,849,418	\$2,771,695	\$1,798,349	\$1,671,471	\$1,321,378	\$1,213,466	\$1,045,532	\$1,045,244	\$550,234	\$550,843	\$512,752	\$304,499	\$0	\$0
Burrillville	\$1,147,803	\$819,274	\$487,405	\$276,869	\$263,526	\$253,367	\$240,175	\$230,168	\$220,161	\$210,153	\$0	\$0	\$0	\$0
Central Falls	\$1,456,220	\$1,400,018	\$1,456,088	\$598,695	\$95,288	\$96,400	\$97,286	\$97,953	\$98,398	\$103,062	\$107,282	\$0	\$0	\$0
Charlton	\$1,253,869	\$1,369,807	\$1,011,279	\$876,493	\$878,079	\$878,079	\$877,316	\$878,841	\$502,853	\$502,766	\$503,903	\$297,937	\$297,937	\$299,075
Coventry	\$1,472,583	\$1,365,535	\$1,303,858	\$1,275,730	\$1,247,741	\$1,285,244	\$627,473	\$308,344	\$304,476	\$296,720	\$288,963	\$281,207	\$273,450	\$265,177
Cranston	\$1,981,594	\$2,444,765	\$1,822,478	\$1,665,915	\$1,534,181	\$1,504,873	\$1,208,456	\$1,200,754	\$1,141,909	\$900,497	\$528,610	\$533,577	\$533,498	\$276,890
Cumberland	\$2,631,835	\$1,757,886	\$1,462,344	\$1,444,791	\$1,431,631	\$1,406,009	\$1,406,577	\$1,355,902	\$1,269,339	\$1,258,441	\$904,157	\$865,866	\$0	\$0
East Greenwich	\$1,766,751	\$1,550,267	\$1,418,560	\$1,396,605	\$1,367,767	\$1,334,128	\$1,330,652	\$1,327,895	\$1,248,566	\$1,248,078	\$1,248,565	\$1,222,525	\$1,207,337	\$964,463
East Providence	\$1,949,162	\$1,971,327	\$1,711,025	\$1,614,596	\$1,361,697	\$1,239,827	\$1,335,494	\$1,336,191	\$1,107,419	\$484,009	\$484,595	\$484,728	\$485,625	\$485,957
Exeter-West Greenwich	\$610,137	\$921,937	\$283,259	\$275,482	\$267,248	\$256,270	\$247,578	\$238,658	\$136,271	\$130,839	\$125,407	\$119,975	\$114,407	\$0
Foster	\$0	\$28,673	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Foster-Glocester	\$3,304,866	\$3,559,855	\$3,429,962	\$3,392,109	\$2,597,664	\$2,253,048	\$2,136,812	\$2,135,722	\$1,643,093	\$1,642,733	\$1,643,432	\$797,485	\$796,707	\$0
Glocester	\$24,903	\$97,999	\$21,217	\$20,471	\$19,725	\$18,979	\$18,383	\$17,637	\$16,891	\$16,220	\$15,549	\$0	\$0	\$0
Jamestown	\$80,938	\$104,308	\$57,297	\$67,792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Johnston	\$355,058	\$486,175	\$343,729	\$307,708	\$243,323	\$124,667	\$161,469	\$160,043	\$89,555	\$0	\$0	\$0	\$0	\$0
Lincoln	\$1,264,262	\$970,475	\$809,689	\$747,240	\$747,023	\$746,985	\$746,985	\$745,485	\$746,074	\$746,081	\$745,688	\$0	\$0	\$0
Little Compton	\$349,009	\$332,801	\$330,472	\$330,432	\$330,495	\$330,495	\$332,029	\$331,719	\$331,098	\$330,166	\$330,554	\$330,359	\$330,127	\$331,447
Middletown	\$318,188	\$278,714	\$210,978	\$134,414	\$82,529	\$78,779	\$74,954	\$27,508	\$0	\$0	\$0	\$0	\$0	\$0
Narragansett	\$495,835	\$685,421	\$485,745	\$485,745	\$485,445	\$485,895	\$485,895	\$486,855	\$486,300	\$486,750	\$486,225	\$486,225	\$486,675	\$0
New Shoreham	\$200,426	\$200,600	\$195,688	\$195,892	\$194,363	\$194,246	\$195,462	\$191,931	\$194,124	\$34,182	\$15,750	\$15,750	\$15,750	\$15,750
Newport	\$1,456,244	\$1,849,322	\$1,486,588	\$1,449,413	\$1,402,461	\$1,357,948	\$1,021,808	\$967,716	\$939,225	\$913,969	\$888,713	\$863,457	\$831,887	\$800,317
North Kingstown	\$1,165,823	\$1,115,383	\$1,020,136	\$949,518	\$909,493	\$885,715	\$855,728	\$828,137	\$806,477	\$783,179	\$767,271	\$206,910	\$200,640	\$193,952
North Providence	\$997,175	\$693,431	\$565,142	\$545,077	\$521,496	\$495,312	\$512,064	\$198,066	\$0	\$0	\$0	\$0	\$0	\$0
North Smithfield	\$1,058,258	\$1,109,730	\$1,114,699	\$1,076,170	\$1,079,769	\$1,105,076	\$1,022,555	\$1,029,910	\$1,033,679	\$1,056,892	\$856,713	\$860,787	\$0	\$0
Pawtucket	\$2,185,121	\$2,791,445	\$2,928,525	\$2,828,919	\$2,681,187	\$2,612,352	\$2,557,171	\$2,124,876	\$2,061,667	\$2,001,656	\$1,795,333	\$1,773,374	\$1,524,037	\$1,159,779
Portsmouth	\$775,970	\$866,515	\$516,501	\$365,089	\$259,091	\$192,244	\$146,979	\$141,101	\$119,796	\$114,669	\$16,542	\$16,065	\$0	\$0
Providence	\$24,871,033	\$24,858,077	\$23,248,070	\$22,419,009	\$20,591,393	\$20,382,225	\$20,065,795	\$19,778,664	\$17,411,499	\$16,171,752	\$16,180,917	\$12,064,541	\$1,906,977	\$487,173
Scituate	\$140,872	\$139,790	\$136,979	\$92,876	\$92,951	\$92,876	\$93,296	\$93,596	\$93,600	\$92,925	\$92,100	\$92,625	\$92,925	\$0
Smithfield	\$517,710	\$825,738	\$339,288	\$291,749	\$286,825	\$281,620	\$276,238	\$253,344	\$158,240	\$154,179	\$150,119	\$146,058	\$143,622	\$141,084
South Kingstown	\$808,748	\$850,643	\$538,943	\$524,836	\$297,523	\$144,350	\$139,514	\$122,036	\$74,141	\$64,295	\$52,364	\$35,478	\$34,637	\$33,797
Tiverton	\$822,208	\$1,064,755	\$904,893	\$818,430	\$815,234	\$811,155	\$808,400	\$803,159	\$800,944	\$796,000	\$738,013	\$501,699	\$264,146	\$0
Warwick	\$1,250,607	\$1,763,069	\$1,344,323	\$1,185,838	\$1,136,321	\$1,052,359	\$867,729	\$694,809	\$610,614	\$534,612	\$512,856	\$297,646	\$294,577	\$291,361
West Warwick	\$1,060,330	\$1,218,514	\$660,694	\$646,770	\$637,243	\$582,479	\$458,804	\$93,047	\$92,416	\$93,019	\$85,273	\$85,928	\$84,979	\$85,316
Westerly	\$1,864,927	\$1,845,053	\$1,759,614	\$1,734,074	\$1,707,162	\$1,683,775	\$1,663,661	\$1,643,919	\$1,624,490	\$936,199	\$707,704	\$518,140	\$497,823	\$476,962
Woonsocket	\$5,362,181	\$5,145,070	\$5,031,110	\$5,014,887	\$5,001,334	\$4,945,310	\$4,896,239	\$4,570,001	\$4,310,645	\$4,310,646	\$4,309,327	\$4,310,102	\$4,312,274	\$4,311,266

Source: RI Department of Elementary and Secondary Education



**GLOSSARY OF TERMS**

DRAFT

## Glossary of Terms

1. Additional bonds test (ABT) – A provision typically included in a bond resolution or indenture that established the terms under which any proposed new bonds can be issued. The terms specified are usually in the form of meeting a pre-established debt service coverage level and compliance with other security features of the transaction.
2. Amortization – The repayment schedule (in regular installments) over a period of time used to retire the applicable debt.
3. Appropriation debt (pledge) - Debt secured by contractual agreements which, while not considered General Obligations of the Issuer, are still subject to annual appropriation by the Issuer or an Obligated Party.
4. Arbitrage - Simultaneous purchase and sale of an asset to profit from a difference in the price. It is a trade that profits by exploiting the price differences of identical or similar financial instruments on different markets or in different forms. For tax-exempt bonds, Issuers using tax-exempt proceeds are generally not able to keep investment earnings in amount higher than the yield on the tax-exempt bonds. Negative arbitrage is the term related to the difference between a lower investment yield on a refunding escrow compared to the yield on tax-exempt refunding bonds. Higher negative arbitrage indicates a less efficient escrow.
5. Bond resolution – A legal document approved by the issuer that allows bonds to be issued and sold for a specific purpose and defines the rights and responsibilities of each party to a bond contract -- the issuer and the bondholder.
6. Call provisions - Allows the issuer to redeem and retire the bonds in advance of their stated maturity; typically comes with a time window within which the bond can be called, with a specific price to be paid to bondholders, and any accrued interest defined within the provision.
7. Capital lease - Contract entitling a renter to temporary use of an asset, and such a lease has economic characteristics of asset ownership.
8. Conduit debt – Debt issued by a state or local governmental entity for the purpose of providing capital financing for a specific third party that is not a part of the issuer's financial reporting entity; the government issuer has no obligation for such debt beyond the resources provided by a lease or loan with the third party on whose behalf they are issued.
9. Contingent debt or Contingency liability - Debt or liability that can become an obligation of the Issuer or Obligated party, which is dependent on uncertain future developments.
10. Debt affordability - The willingness and ability of the Issuer to pay the debt service when due, taking into account existing revenue and future resources and other issuer needs and constraints, as well as and the capacity of the underlying population to afford the cost of borrowing
11. Debt capacity - Maintaining an ability to access the capital markets and borrow money within the requirements set forth in an issuer's bond resolution or indenture.
12. Debt service - The amount of money required to make principal and interest payments on outstanding debt and loans.
13. Debt structure - The duration and timing of principal and interest payments; typically refers to characteristics such as the maturity dates, the principal repayment terms and the call provisions.
14. Defeasance – When a borrower sets aside cash to pay off the bonds so that the outstanding debt and cash offset each other on the balance sheet and do not need to be recorded.
15. Draw schedules - Detailed payment plan (often monthly) for funding a project.

16. Enterprise debt - Municipal debt that is secured by fees charged in the exchange for goods services provided, usually associated with public utilities, revenue generating recreation, transportation and other business activities.
17. GARVEE - Grant Anticipation Revenue Vehicle; a security structure most often used in transportation finance for which the revenue source is future expected Federal-aid reimbursements.
18. General obligation - Municipal bonds backed by the full faith and credit of the issuing jurisdiction rather than the revenue from a given project; for government entities that have taxing power.
19. Gross Direct Debt - The sum of the total bonded debt and any short-term debt of the issuer. This debt includes: (i) general obligation bonds; (ii) other obligations such as loan agreements secured by taxes; (iii) capital lease obligations that are secured by lease rental or contract payments subject to appropriation; (iv) special assessment obligations; and (v) any enterprise debt
20. Guaranteed debt - Debt which was guaranteed by an entity, to be paid if the issuer and/or obligated party defaults due to insolvency or bankruptcy.
21. Guaranteed investment contracts (GICs) - Financial service company contracts that guarantee the owner principal repayment and a fixed or floating interest rate for a predetermined period of time.
22. Interest rate swaps - An agreement between two counterparties in which one stream of future interest payments is exchanged for another based on a specified principal or notional amount; usually involve the exchange of a fixed interest rate for a floating rate, or vice versa.
23. Moral obligation debt - Represents a promise by a government obligor to seek future appropriations for debt service payments, typically in order to make up deficits in a reserve fund should it fall below its required level. There is no legal requirement to appropriate funds to make the payment.
24. Net tax supported debt - Long-term and short-term indebtedness payable from tax revenues less self-supporting debt.
25. Net Direct debt - Gross direct debt less all self-supporting debt. Net Direct Debt excludes enterprise bonds (water, sewer, solid waste and electric revenue bonds), where enterprise fund revenues cover debt service by at least 1.0x for at least the last three fiscal years.
26. Obligated party - An entity that is responsible for the repayment of the bonds.
27. Official Statement - Discloses material information on a new issue including the purposes of the issue, how the securities will be repaid, and the financial, economic and demographic characteristics of the State. It must fully disclose all facts that would be of interest to potential investors evaluating the bonds; the ultimate responsibility for the document rests with the Issuer or the Obligated party.
28. Original issue discount - Discount from par value at the time a bond is issued; it is the difference between the stated redemption price at maturity and the actual issue price.
29. Original issue premium - Premium from par value at the time a bond is issued; amount a bond is priced higher than its par value at the time a bond is issued.
30. Other post-employment benefits (OPEB) - Retirement benefits other than pension; can include healthcare benefits, insurance premiums, and deferred-compensation arrangements.
31. Overall Debt - Gross direct debt plus the issuer's applicable share of the total debt of all overlapping jurisdictions.
32. Overall Net Debt - Net direct debt plus the issuer's applicable share of the net direct debt of all overlapping jurisdictions. Excludes enterprise bonds (water, sewer, solid waste and electric revenue bonds), where enterprise fund revenues cover debt service by at least 1.0x for at least the last three fiscal years.

33. Overlapping debt - The issuer's proportionate share of the debt of other local governmental units that either overlap it (the issuer is located either wholly or partly within the geographic limits of the other units) or underlie it (the other units are located within the geographic limits of the issuer).
34. Pooled bond program - Municipal bond offering in which a sponsor sells an issue of bonds with proceeds used by two or more parties, usually municipalities or other tax-exempt organizations.
35. Private placements - Bonds that are not publicly offered and sold directly to qualified investors; i.e. bank loans, bank funding agreements, direct investor purchase securities and master lease programs.
36. Quasi-public entities - Corporation in the public sector that is established by a higher-level unit of government that has a public mandate to provide a given service.
37. Rate covenant - Legal commitment by a revenue bond issuer to maintain rates, fees, charges, etc. at levels necessary to generate sufficient revenues to exceed projected debt service in order to provide "debt service coverage".
38. Ratings agency - Moody's Investors Service, Standard & Poor's (S&P) and Fitch Ratings are the three most prominent national agencies that provide credit ratings for municipal bonds.
39. Refunding - Process of retiring or redeeming an outstanding bond issue at maturity by using the proceeds from a new debt issue with the objective of ensuring significant reduction in interest expense for the issuer.
40. Revenue bonds - Debt service is payable solely from the revenues derived from; a dedicated revenue source, operating businesses or the facilities acquired or constructed with proceeds of the bonds, or under a loan or financing agreement.
41. Self-supporting debt - Bonds that have dedicated non-tax revenues sufficient to fully repay the required debt service amounts.
42. Sinking fund - Fund formed by periodically setting aside money for the gradual repayment of a debt; a means of repaying funds borrowed through a bond issue through periodic payments to a bond trustee who retires part of the issue by redeeming the bonds.
43. Special district - A political subdivision established to provide a single public service (as water supply or fire services) within a specific geographic area.
44. State revolving loan fund - A fund administered by a state or state agency for the purpose of providing low-interest loans, usually for investments in water and sanitation infrastructure.
45. Takedown - The price at which underwriters obtain securities to be offered to the public usually calculated on a dollar per bond basis and fluctuates with the size of a transaction.
46. True interest cost (TIC) - The actual cost of issuing a bond, expressed as yield percentage, including underwriting fees and costs, as well as factors related to the time value of money.
47. Trust Indenture - An agreement in the bond contract made between a bond issuer and a trustee that represents the bondholder's interests by highlighting the rules and responsibilities that each party must adhere to.
48. Unfunded actuarial accrued liability (UAAL) - The amount of retirement that is owed to pension participants in future years that exceed current assets and their projected growth; the difference between the actuarial values of assets (AVA) and the actuarial accrued liabilities (AAL) of a plan.
49. Variable rate debt - Any type of debt instrument that does not have a fixed rate of interest over the life of the instrument.
50. Weighted average maturity - weighted average amount of time until the debt matures; a reflection of the rapidity with which the principal of an issue is expected to be paid.