State of Rhode Island and Providence Plantations

Public Finance Management Board

Debt Affordability Study

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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 airports and bridges. Combined, these Rhode Island 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 create jobs and improve 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.

Since the 2017 Rhode Island Debt Affordability Study was published its findings about state and local debt capacity were used to inform a variety of decisions about appropriate levels of debt issuance. The 2017 study was referenced in numerous legislative hearings and was consulted during important policy discussions related to investing in economic development, education and transportation improvements at the state and local levels. This 2019 version refreshes and expands the 2017 analysis to provide an up-to-date, and even more complete picture of Rhode Island's long-term liabilities.

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 for all issuers of public debt in the state. This is the second debt affordability analysis conducted since the 2016 law was enacted.

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 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 and the diverse functions of the Quasi-Public agencies, 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, and the unique functions of Quasi-Public agencies result in yet a different basis of affordability. Accordingly, 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. Further, other post-employment benefit (OPEB) obligations, which primarily include retiree health care benefits, are long-term liabilities that are generating increased attention from policy makers and bond market participants.
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 and OPEB liabilities that the issuing entity has taken on. Therefore, where possible, this report recommends holistic affordability limits for public entities in Rhode Island that include debt, pension and OPEB liabilities together.

This is the first time that Rhode Island has integrated OPEB liabilities into debt affordability targets. While this has not been done in past affordability studies, the PFMB believes that OPEB liabilities are significant enough that they must be considered together with traditional debt and pension liabilities. The credit rating agencies have recently begun to adopt methodologies that combine debt, pension and OPEB liabilities into the same affordability measurements, and it is expected that these comprehensive liability metrics will only become more common over time.

Part 1: State Tax-Supported Debt.

The first part of the study considers all tax-supported debt of the State. As of June 30, 2018, the State had a total of $1.86 billion of tax-supported debt outstanding. In addition, as of June 30, 2018, the State had approximately $3.38 billion of unfunded actuarial accrued liability (UAAL) in connection with its four pension programs. The most recent actuarial study completed as of June 30, 2017 estimates the State's OPEB unfunded liability in FY 2018 at approximately $616 million.

Comparing pension and OPEB 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. The PFMB partnered with the Center for Retirement Research at Boston College (CRR) to develop a model in which the pension and OPEB liabilities of all 50 states were adjusted to conform to the discount rate and amortization that Rhode Island uses for its pension and OPEB systems in order to provide an "apples to apples" comparison of the liability burdens of all 50 states.

This analysis showed Rhode Island ranks 14th in the level of Total Liabilities relative to Personal Income and ranks 17th in the country in annual liability costs relative to Own Source Revenues.

Part 2: 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, to help the underlying borrower achieve tax-exempt status or a lower cost of financing (Conduit Issuers).

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, or (iii) under a loan or financing agreement with an underlying conduit borrower.

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 (including Rhode Island Industrial Facilities Corporation tax-exempt private activity bond debt)
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
Rhode Island Infrastructure Bank	Water Pollution Control, Safe Drinking Water, Sewer Revenue Bonds, Energy Efficiency Loans, Municipal Road and Bridge Loans
Rhode Island Student Loan Authority	Student Loan Revenue Bonds

As of June 30, 2018, Quasi-Public Agencies in the State had a total of almost $6.9 billion of debt outstanding, excluding debt held by non-profit and private conduit borrowers.

Part 3: Municipalities and Special Districts.

The third part of the study considers debt of the municipalities, fire districts, special districts and other local authorities of the State. Rhode Island has 39 municipalities, 41 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 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, 118 of which are managed centrally by the State through the Municipal Employees Retirement System (MERS), and 34 of which are managed independently by municipalities. Regardless of the management structure, the municipalities and districts are fully responsible for the cost of 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. Further, most municipalities offer retired public employees OPEB benefits, either on a pay-as-you-go basis, or in a pre-funded trust.

Overall municipal and local district tax-supported debt[1], excluding the debt of overlapping state quasi-public agencies, in FY 2017-18 was $1.7 billion[2], an increase of $17.5 million or 1% from FY 2015. Total unfunded pension liabilities in 2017-18 were almost $4.4 billion, and total OPEB liabilities were $2.4 billion.

Aggregate Debt Outstanding

Outstanding Debt (FY 2018)	General Obligation	Lease/ Appropriation	Revenue (Public)	Revenue (Private/ Non-Profit	Pension Liability	OPEB Liability	Total Outstanding Liabilities
State of Rhode Island	$ 1,159,995,000	$ 701,808,587			$ 3,379,840,000	$ 615,850,000	$ 5,857,493,587
Quasi Public Agencies							
Narragansett Bay Commission (Not including RIIB Debt)			$ 242,820,000		$ 19,376,984	$ 4,265,419	$ 242,820,000
Rhode Island Turnpike and Bridge Authority			$ 50,000,000				$ 50,000,000
Tobacco Settlement Financing Corporation			$ 739,500,000				$ 739,500,000
Rhode Island Resource Recovery Corporation			$ 21,384,740			$ 609,000	$ 21,993,740
Rhode Island Commerce Corporation							
GARVEEs			$ 476,205,000				$ 476,205,000
Airport Revenue Bonds			$ 316,319,000		$ 2,135,747	$ 437,010	$ 316,319,000
Other (based on June 30, 2017)				$ 87,270,759			
Rhode Island Health and Education Building Corp.							
Education			$ 280,695,000	$ 1,526,194,444			$ 1,806,889,444
Healthcare				$ 559,929,936			$ 559,929,936
Rhode Island Housing and Mortgage Finance Corp.			$ 1,290,817,095			$ 6,327,254	$ 1,297,144,349
Rhode Island Infrastructure Bank							
Water Pollution Control			$ 492,730,000				$ 492,730,000
Safe Drinking Water			$ 184,895,000				$ 184,895,000
Municipal Road and Bridge Revolving Loan Fund			$ 13,965,000				$ 13,965,000
Efficient Buildings Fund (Bonds issued in Nov. 2018)			$ 18,310,000				$ 18,310,000
Other			$ 73,729,000				$ 73,729,000
Rhode Island Student Loan Authority			$ 499,689,213				$ 499,689,213
Municipalities and Special Districts (FY 2017/2018)	$ 1,377,047,399	$ 353,453,138	$ 135,824,761		$ 4,397,775,662	$ 2,432,041,526	$ 8,696,142,486
GRAND TOTAL	**$ 2,537,042,399**	**$ 1,055,261,725**	**$ 4,836,883,809**	**$ 2,173,395,139**	**$ 7,777,615,662**	**$ 3,054,827,780**	**$ 21,347,755,755**

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, are not included in Revenue debt of Municipalities and Special Districts. Narragansett Bay Commission debt does not include RIIB debt and is shown as NBC debt and not included in Revenue debt of the participating municipalities. NBC and RIAC pension and OPEB liabilities are included in the State's total and therefore not calculated in total outstanding debt of Quasi-Public-agencies.

[1] Overall municipal debt is the sum of general obligation debt, loans payable, capital leases, and a portion of municipal enterprise debt (as described in the Note at the bottom of the table) and the debt of overlapping agencies

[2] Due to lack of FY 18 data availability, FY 17 data is used for a handful of communities.

PFMB Recommendations and Rationale

The PFMB considered several factors in developing its debt affordability recommendations. For each issuer, the PFMB considered relevant peer comparisons, Rating 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. It is recommended that issuers endeavor to return to their target ratios in a reasonable period of time.

The PFMB recommends that the state of Rhode Island seek to limit its liabilities to acceptable levels as measured by the following criteria:

Part 1: State Recommendations.

Recommended State Liability Limits

Recommended Limit	**Rationale for Measure**	**Rational for Level**	**Current Level (FY19)**
The PFMB recommends that Debt Service to General Revenue not exceed 7.0%	Metric most frequently used by states to assess debt affordability, comparing the annual cost of debt payments to the state's annual budget. Both components of this ratio (debt service and revenues) are largely within the control of the State.	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. In the 2017 study, this limit was 7.5%; however, considering recent experience and projections, the PFMB felt that achieving a 7.0% limit is now reasonable.	6.01%
The PFMB recommends that State Tax-Supported Debt to Personal Income not exceed 4.0%.	Represents a broader measure of a state's ability to pay its debts. State personal income is not directly dependent on tax policy choices and is the base from which state revenues can be generated. All three rating agencies review the debt to personal income ratio as part of the rating process, and the ratio is a good measure for long-term debt affordability	To stay within S&P's recommended range for an AA rating score, the State should maintain a ratio of less than 4%. Further, the PFMB believes that establishing a recommended limit of debt to personal income of 4% is realistic given that the State has only exceeded 4% twice since 2006.	3.96%

Net Tax Supported Debt Service + Pension ARC + OPEB ARC to General Revenues not exceed 18%.	Rating agencies and investors are increasingly assessing states' liabilities holistically, looking at debt, pension liabilities and OPEB liabilities in combination to determine the full picture of a state's liability burden. A state's ability to meet future annual liability payments with available revenues is a critical indicator of whether these liabilities are manageable.	Moody's and Fitch both use a version of a ratio that compares the annual servicing cost of a state's total liabilities to the annual budget of the state. When an 18% level of Net Tax Supported Debt Service + Pension ARC + OPEB ARC to General Revenues is adjusted to the Fitch and Moody's ratios, the 18% limit is roughly equivalent to an AA level in both agency methodologies. RI has historically been below 18%.	14.91%
The PFMB recommends that Debt + Pension UAAL+ OPEB UAAL to Personal Income not exceed 12%.	The measurement compares the total liabilities of the state to the ability of the underlying population to afford those liabilities, irrespective of tax policy decisions by the State.	Moody's and Fitch use a ratio comparing total liabilities to the ability of the underlying population to repay. When a 12% level of Debt and Pension Liability and OPEB Liability to Personal Income is adjusted to the Moody's and Fitch ratio, RI would fall into the AA range for both agencies. Rhode Island has been below the 12% limit for the past 5 years.	10.68%
The PFMB recommends the state continue to fund 100% of its Pension ARC and OPEB ARC.	When states fail to make their full actuarially required contributions to their pension and OPEB trusts, unfunded liabilities increase. Failure to make full anural required contributions has been one of the leading causes of the spike in unfunded liabilities across the United States. Rhode Island has not missed a pension ARC payment since 1995 and has made 100% of OPEB ARC payments consistently since FY 2011, when the OPEB trust began, and should continue these practices.		100% funded Pension ARC and OPEB ARC

The state is currently within all recommended affordability targets, and the PFMB estimates that the State has available capacity to authorize up to $176.4 million of new bonds in fiscal years 2020-2021 with total debt capacity of approximately $2.37 billion over the next 10 years.

Part 2: Quasi-Public Recommendations. 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 below 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 red shaded levels indicating current levels are slightly above recommended targets. In no case is a State Quasi-Public Agency significantly above its recommended affordability level at the current time, though the PFMB notes that several Quasi-Public agencies are currently considering investing in large capital projects in the coming years and will need to carefully evaluate the affordability of those projects should they move forward.

Quasi-Public Agency Affordability Metrics (PFMB Recommended Limits)

Borrowers	Affordability Metric	Current Level
Narragansett Bay Commission	1.3x debt service coverage for both Commission debt and RIIB loans. Recommend adoption of low-income customer affordability program.	Debt Service Coverage 1.32x
Rhode Island Turnpike and Bridge Authority	1.7x debt service coverage	Debt Service Coverage 1.59x
Rhode Island Resource Recovery Corporation	Despite strong financials, it is recommended that RIRRC refrain from any new issuance of long-term debt until there is a clear plan for what the Corporation will do when the landfill reaches capacity	Debt Service Coverage 4.00x
Rhode Island Department of Transportation Grant Anticipation Revenue Bonds (GARVEEs)	Maintain minimum coverage of 3.5x	Debt Service Coverage 4.0x
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 2.10x $110 debt 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 1.26x (Single Family) PADR of 1.18x (Multi-Family)
Rhode Island Infrastructure Bank (Clean Water and Drinking Water Programs)	Maintain a minimum of 1.25x debt service coverage and Maintain asset to liabilities ratios at a minimum of 1.3x for all programs	Debt service coverages: 1.3x for Clean Water and EBF; 1.5x for Drinking Water & 2.44x for MRBF Asset to liabilities ratios: 1.5x for Clean Water, 1.6x for Drinking Water; 1.8x for EBF & 3.03x for MRB
Rhode Island Student Loan Authority	Target minimum Parity Ratio of 110%	Parity Ratio of 120.6%

Meets recommended target | Exceeds recommended target/Recommended no new debt

Part 3: Municipal/Local Recommendations. 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.

Recommended Municipal Liability Limits

Recommended Limit	Definition	Rational for Level
Net Direct Debt to Full Assessed Property Values: Less than 3%	Debt of the municipality typically paid for through the municipal budget with taxpayer funds. (Does not include revenue bonds that are supported by ratepayers, such as water and sewer bonds).	Moody's provides suggested levels of net direct debt to full value for each rating category. A ratio of 3% is in Moody's mid-point range for 'A' rated communities. S&P also uses 3% net direct debt as a percent of market value as a benchmark in its methodology. If a community's ratio is below 3%, S&P can improve the community's debt score by one point.
Overall Net Debt to Full Value: Less than 4%	Net direct debt plus the direct debt of any overlapping taxing authority, but still not revenue bonds that are supported by ratepayer funds.	Consistent with the rationale for the 3% measure above; however instead of using Moody's mid-point range, the rationale was to reference the high-end of Moody's 'A' range, to account for the additional overlapping debt.
Overall Debt + Net Pension Liability + OPEB Liability to Full Value: Less than 9.2%	Total debt of the municipality and all overlapping jurisdictions, including revenue bonds, as well as total unfunded pension and OPEB liabilities.	The PFMB believes it is important to consider the total liability burdens of municipalities, including all debt, pension and OPEB, relative to the underlying population's ability to pay. Although each rating agency considered OPEB and pension liabilities differently, the PFMB estimates that a limit of Overall Debt + Net Pension Liability + OPEB Liability to Full Value of 9.2% would approximate the ratings agencies expectations for an 'A' rated community.
Governmental Debt Service + Pension ADC + OPEB Required Payment to Governmental Expenditures*: *Less than 22.5%	Total governmental debt service, pension ADC (actuarial determined contribution) and OPEB required contribution of the municipality to governmental expenditures	Compares the annual cost of liabilities to the annual municipal budget. Formula is based off Fitch's "Carrying Cost" metric, the only OPEB inclusive ratings methodology. This metric isolates fixed obligation spending. As for states, Fitch considers a carrying cost metric of: -less than 10% to be consistent with a 'aaa' assessment; less than 20%, 'aa'; less than 25%, 'a'; and less than 30%, 'bbb'. PFMB recommends 22.5% consistent with the mid-point of an 'a'" rating.

The table below shows the current liability levels for each municipality according to these four ratios with green shaded levels indicating the municipality is within the recommended limits, yellow shaded levels indicating current levels are within 75% of the recommended limits and red shaded levels indicating the current levels significantly exceed the recommended limits.

Debt and Pension Affordability Ratios for Municipalities

Municipality	Net Direct Debt to Assessed Value Target < 3.00%	Overall Net Debt to Assessed Value Target < 4.00%	Overall Debt + Net Pension Liability + OPEB Liability to Assessed Value Target < 9.2%	Governmental Debt Service + Pension ADC + OPEB Required Payment to Governmental Expenditures Target < 22.5%
Barrington	2.6%	2.6%	5.0%	11.2%
Bristol	1.0%	1.3%	3.6%	17.1%
Burrillville	0.6%	0.9%	3.2%	8.9%
Central Falls	2.3%	2.3%	13.8%	22.7%
Charlestown	0.2%	0.7%	1.0%	5.3%
Coventry	1.2%	1.3%	7.1%	14.7%
Cranston	1.2%	1.2%	7.9%	17.0%
Cumberland	1.3%	1.6%	5.3%	15.0%
East Greenwich	1.9%	1.9%	6.7%	19.4%
East Providence	1.1%	1.1%	9.1%	15.7%
Exeter	0.1%	0.3%	0.3%	1.3%
Foster	0.0%	2.0%	3.0%	3.9%
Glocester	0.2%	2.2%	3.4%	5.2%
Hopkinton	0.3%	1.3%	1.7%	3.2%
Jamestown	0.4%	0.4%	1.5%	12.4%
Johnston	1.3%	1.3%	19.9%	30.3%
Lincoln	0.8%	0.9%	5.0%	12.7%
Little Compton	0.5%	0.5%	0.9%	12.1%
Middletown	1.2%	1.2%	3.4%	15.2%
Narragansett	0.5%	0.5%	2.9%	22.0%
New Shoreham	0.9%	0.9%	1.5%	15.4%
Newport	0.5%	0.5%	5.5%	15.5%
North Kingstown	0.8%	0.8%	3.7%	15.2%
North Providence	0.5%	0.5%	8.3%	11.5%
North Smithfield	1.8%	1.8%	4.1%	15.6%
Pawtucket	2.6%	2.6%	25.6%	20.5%
Portsmouth	0.7%	0.8%	3.6%	15.6%
Providence	3.7%	3.7%	26.6%	26.4%
Richmond	0.4%	1.5%	1.8%	2.9%
Scituate	0.4%	0.4%	3.2%	12.6%
Smithfield	0.8%	0.8%	4.9%	11.9%
South Kingstown	0.3%	0.3%	2.0%	9.7%
Tiverton	2.1%	2.4%	5.3%	14.9%
Warren	1.2%	1.6%	2.8%	10.3%
Warwick	0.6%	0.6%	7.9%	25.3%
West Greenwich	0.6%	0.8%	1.2%	4.8%
West Warwick	2.1%	2.1%	14.1%	21.8%
Westerly	1.2%	1.2%	2.8%	14.6%
Woonsocket	7.3%	7.3%	26.6%	20.4%

Meets recommended limit	Exceeds recommended limit
75% of limit reached	

The liability levels of most of Rhode Island's municipalities remain within acceptable levels, though there are seven municipalities that are above at least one of the recommended limits. For most municipalities, traditional debt is within acceptable limits, while unfunded pension liabilities remain the largest and most costly liability.

It is also worth noting that some of the state's most highly indebted municipalities have seen their debt burdens become more affordable since the prior study two years ago. For example, Woonsocket's Overall Net Debt has fallen from 10% of Assessed Property Value in FY 2015, to 7.5% of Assessed Property Value in FY 2017. Similarly, Providence's Net Debt to Assessed Value has fallen from 4.4% to 3.7%.

Analysis and Conclusions

This study represents the most comprehensive analysis of public liabilities 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. 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. The state-level OPEB liability is lower than that of most other states. 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, OPEB and overlapping liabilities from local districts are included, some municipalities enjoy very low liability burdens. The liabilities in some other municipalities are very 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 PFMB hopes 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

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) certain 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, 2018, the State has a total of $1.16 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, 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 to the agency. The following table summarizes the State's current outstanding moral obligation debt.

Issuer	Description	Outstanding as of June 30, 2018
Commerce Corporation	Job Creation Guaranty	$33,000,000
Commerce Corporation	Fidelity Building Performance Agreement	$6,518,887
Commerce Corporation	Fidelity Building II Performance Agreement	$6,229,700
Commerce Corporation	Fleet National Bank Performance Agreement	$6,070,000
RI Housing and Mortgage Finance Corporation	Multi-family Housing Bonds and Rental Housing Bonds	$29,320,000

The State has been paying its obligations on the Job Creation Guaranty (38 Studios) moral obligation bonds and the two Fidelity Management Resources projects. Therefore, these bonds are counted as tax-supported debt of the State for the purposes of this study. Other moral obligation bonds for the Fleet National Bank and Rhode Island Housing and Mortgage Finance Corporation are not included as tax-supported debt for the purposes of this study because the State has never been required to appropriate funds for debt service on these bonds.

Below is a summary of the different types of tax supported debt and amounts outstanding as of June 30, 2018.

Tax Supported Debt	**Outstanding as of June 30, 2018**
General Obligation Debt	$1,159,995,000
Certificates of Participation	173,835,000
Convention Center Authority	231,595,000
Rhode Island Turnpike & Bridge Authority (Motor Fuel)	113,020,000
Commerce Corporation - Transportation (Motor Fuel)	35,020,000
Commerce Corporation - URI Power Plant	2,405,000
Commerce Corporation - Job Creation Guaranty	33,000,000
Economic Development Corporation - I-195 Land Sale	38,400,000
Loan Agreement - Historic Structures Tax Credit Fund	51,995,000
Subtotal	$1,839,265,000
Performance Based Agreements	
Commerce Corporation- Fidelity Building	$6,518,887
Commerce Corporation- Fidelity Building II	6,229,700
Commerce Corporation- Providence Place Mall	9,790,000
Subtotal	$22,538,587
Total GO + COPs + Other Tax-Supported Debt	$1,861,803,587

Other Long-Term Liabilities

Pension liabilities

The Employees Retirement System of Rhode Island is a pooled defined benefit pension system that provides retirement security 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 state is responsible for 60% of required contribution to the teachers plan, and the districts are responsible for 40%).

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 Pension UAAL (State Employees, State Share for Teachers, State Police, Judges) *^					
	State Employees	Teachers (State Share)	State Police	Judges	Total
FY2018	$1,997.19	$1,352.62	$27.50	$2.52	$3,379.84
FY2019	$1,996.66	$1,355.76	$29.24	$2.97	$3,384.62
FY2020	$1,987.55	$1,351.50	$30.17	$3.33	$3,372.55
FY2021	$1,965.35	$1,341.31	$29.87	$3.39	$3,339.92
FY2022	$1,930.80	$1,323.93	$29.94	$3.50	$3,288.16
FY2023	$1,882.12	$1,298.37	$29.65	$3.49	$3,213.63

*Amounts in millions

^ Projections assume all assumptions exactly met, including an annual 7.00% return on the current actuarial value of assets.

Source: Employees Retirement System of Rhode Island, January 2019

The State has made its full Pension Annual Required Contribution (Pension ARC) every year since 1995. In FY 2018, the state's Pension ARC totaled $276.03 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 Annual Required Contribution (ARC) (State Employees, State Share for Teachers, State Police, Judges) *^					
	State Employees	Teachers (State Share)	State Police	Judges	Total
FY2018	$163.46	$107.21	$3.38	$1.98	$276.03
FY2019	$172.54	$115.03	$4.37	$2.14	$294.09
FY2020	$185.44	$120.98	$4.83	$2.24	$313.49
FY2021	$195.59	$127.01	$5.23	$2.28	$330.11
FY2022	$206.79	$133.51	$5.63	$2.43	$348.37
FY2023	$219.05	$140.73	$5.99	$2.59	$368.37

*Amounts in millions

^ Projections assume all actuarial assumptions are met.

Source: Employees Retirement System of Rhode Island, January 2019

Other Post-Employment Benefit Liabilities (OPEB)

In addition to pension benefits, which provide cash payments of retirement income to retirees, the State also offers plans to eligible retirees for retiree medical benefits, a liability to the state known as OPEB. Rhode Island prefunds its OPEB obligations through a trust, established in fiscal year 2011, and unlike most states, Rhode Island has consistently met its annual Actuarially Determined Contribution (ADC) for the OPEB trust.

The most recent actuarial study completed as of June 30, 2017 estimates the State's OPEB unfunded liability in FY 2018 at approximately $615.85 million for State employees, teachers, state police, judges, legislators and the board of education. The total OPEB ADC for the fiscal year beginning July 1, 2019 will be $61.51 million.

The table below summarizes the Unfunded Actuarial Accrued Liability (UAAL) for the State's OPEB plans.

Projections for Unfunded Actuarial Accrued Liability (UAAL)
State Employees' and Electing Teachers OPEB
Based on the June 30, 2017 Actuarial Valuation*^

Actuarial Valuation Date	State Employees	Teachers	State Police	Judges	Board of Ed	Legislators	Total
6/30/2018	$522.14	$1.09	$44.28	($2.38)	$52.05	($1.33)	$615.85
6/30/2019	$517.98	($1.38)	$41.99	($2.54)	$50.50	($1.40)	$605.15
6/30/2020	$507.68	($1.58)	$40.75	($2.70)	$49.17	($1.45)	$591.87
6/30/2021	$497.90	($1.66)	$39.88	($2.82)	$48.01	($1.46)	$579.85
6/30/2022	$486.58	($1.75)	$38.88	($2.94)	$46.69	($1.47)	$565.99
6/30/2023	$473.60	($1.83)	$37.74	($3.07)	$45.18	($1.48)	$550.14

*Amounts in millions for the year ending on the actuarial valuation date.
^Projections assume all assumptions exactly met, including an annual 5.00% return on the current actuarial value of assets.
Source: Employees Retirement System of Rhode Island

The table below summarizes the ADC for the OPEB plans.

Projections for Actuarially Determined Contribution* State Employees' and Electing Teachers OPEB Projections based on the June 30, 2017 actuarial valuation^							
Actuarial Valuation Date	**State Employees**	**Teachers**	**State Police**	**Judges**	**Board of Ed**	**Legislators**	**Total**
6/30/2018	$44.17	$2.32	$7.67	$0.00	$5.61	$0.01	$59.79
6/30/2019	$45.50	$2.32	$7.90	$0.00	$5.78	$0.01	$61.51
6/30/2020	$51.98	$0.00	$6.91	$0.00	$5.57	$0.00	$64.46
6/30/2021	$53.54	$0.00	$7.12	$0.00	$5.74	$0.00	$66.39
6/30/2022	$55.14	$0.00	$7.33	$0.00	$5.91	$0.00	$68.39
6/30/2023	$56.80	$0.00	$7.55	$0.00	$6.09	$0.00	$70.44

*Amounts in millions for the year ending on the actuarial valuation date.
^Projections assume all assumptions exactly met, including an annual 5.00% return on the current actuarial value of assets.
Source: Employees Retirement System of Rhode Island

Common Debt Affordability Measures

Debt Ratios Used By Other States

There are many ways to measure the liability burden of a state, and no one ratio or metric can paint a comprehensive picture. Some of the most common ratios used by states, ratings agencies, and other bond market participants to measure debt affordability include:

Debt Service as Percent of State Revenues =	<u>Annual Debt Service Requirement</u> General Revenues of the State
Debt per Capita =	<u>Net Tax-Supported Debt</u> State's Population
Debt as Percent of Personal Income =	<u>Net Tax Supported Debt</u> Total Personal Income of State's Population
Debt as Percent of State Revenues =	<u>Net Tax Supported Debt</u> General Revenues of the State
Debt as % of Full Valuation of Taxable Property =	<u>Net Tax Supported Debt</u> Full Valuation of All Taxable Property
Debt as % of Gross State Product =	<u>Net Tax Supported Debt</u> Gross State Product
Rapidity of Repayment =	<u>Total Net-Tax Supported Debt Retired in 10 Years</u> Total Net-Tax Supported Debt

The table below summarizes debt ratios used by 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 relevant.

Debt Affordability Ratios Used by Peer States

(*MADS = maximum annual debt service)*

State (Ratings: M/S/F)	Debt Service to Revenues	Debt to Personal Income	Debt to Revenues	Debt per Capita	Other
Rhode Island (Aa2/AA/AA)	7.0% of General Revenues	4.0%			Rapidity of Debt Repayment ≥ 50% in 10 Years
Delaware (Aaa/AAA/AAA)	MADS <15% of General + Transportation Trust Fund Revenues		New debt ≤ 5% of Net Budgetary General Fund Revenue for FY		G.O. MADS < Estimated Cash Balance for following FY
Connecticut (A1/A/A+)			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 FY				
Vermont (Aa1/AA+/AAA)	6.0% of Annual General + Transportation Trust Fund Revenues	≤ 5-Year Adjusted 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	

Metrics for Pension and OPEB Liabilities

Policymakers and credit rating agencies are increasingly focusing on pension and OPEB liabilities, as in most states, including Rhode Island, combined pension and OPEB liabilities far exceed traditional debt.

Pension and OPEB ARCs are long-term fixed costs, similar to debt service, 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. Recently updated credit rating agency methodologies for state ratings released in recent years have increasingly incorporated quantification of pension liabilities.

Rating agencies have not historically viewed OPEB liabilities similar to debt since states generally have more legal flexibility to adjust OPEB liabilities, and the scale of OPEB liabilities can be difficult to estimate accurately. However, severely underfunded OPEB liabilities can influence the rating agencies' assessments of state liability burdens, and rating agencies have begun to give heightened scrutiny to OPEB in assigning ratings to states and municipalities. Additionally, governmental accounting standards are moving towards increased reporting and standardization of OPEB liabilities.

The following ratios have been used by rating agencies, policy makers and other bond market participants to measure the burden of pension and OPEB liabilities:

- 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
- Debt Service, Pension/OPEB ADC as Percent of State Revenues or State Expenditures

Liability Ratios Used by Rating Agencies

Debt and other long-term liabilities are 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. The approaches of the three major rating agencies in judging debt and long-term liabilities are described below.

Fitch Ratings: In Fitch's "U.S. Tax-Supported Rating Criteria" updated on April 3, 2018, one of the key rating drivers is long-term liability burden. Fitch uses the following metric to measure long-term liability burden:

$$\frac{\text{Direct Debt + Fitch's Adjusted Net Pension Liability}}{\text{Personal Income}}$$

Fitch's Adjusted Net Pension Liability standardizes pension liabilities across states by adjusting the discount rate to 6%. No liability adjustment is made if the pension's assumed return is already at or below 6.0%. In addition, using the adjusted net pension liability as a starting point, Fitch also calculates an annual benchmark contribution that would eliminate the liability over time assuming level dollar payments over a fixed, 20-year period. As measured by Fitch, Rhode Island's long-term liability burden is 13.8% of personal income, which is above the state median of 6.0% (as reported in Fitch's fiscal 2017 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 = 13.8%)*	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.

Fitch also considers the annual "Carrying Cost" of total Debt, Pension and OPEB liabilities:

$$\frac{\text{Debt Service + Pension ADC + OPEB Actual Payment}}{\text{Governmental Expenditures}}$$

The following table summarizes how Fitch views the Carrying Cost:

Carrying Cost Assessment	aaa	aa	a	bbb
Ratio Level	Carrying Cost Less than 10% (RI = 7.54%)	Carrying Cost Less than 20%	Carrying Cost Less than 25%	Carrying Cost Less than 30%

Moody's Investors Service: On April 12, 2018, Moody's revised its rating methodology for U.S. States. The four broad rating factors are the same – economy, finances, governance and debt and pensions. Debt and pensions represent 35% of the total score in the rating methodology.

In the new methodology, for the debt and pensions component, Moody's now judges states by a combined ratio for debt and pensions:

$$\frac{\text{(Adjusted Net Pension Liability + Net Tax-Supported Debt)}}{\text{State Gross Domestic Product}}$$

Adjusted Net Pension Liability (ANPL) is the difference between the fair market value of a pension plan's assets and its adjusted liabilities. Moody's adjusts the reported pension liabilities of U.S states to improve comparability and transparency based on a market-determined discount rate (the FTSE Pension Liability Index, which was 4.14% as of June 30, 2018) and the market value of assets.

Net Tax-Supported Debt (NTSD) is debt paid from statewide taxes and other general resources, net of obligations fully and reliably supported by pledged sources other than state taxes or operating resources, such as utility or local government revenue.

State Gross Domestic Product (State GDP) is used as a proxy for a state's capacity to carry liabilities, because the economy drives current and future tax revenue.

The table below summarizes how Moody's assesses the debt and pension ratio for the scorecard and its calculation of the ratio for Rhode Island using FY 2017 pension data.

Measurement	Aaa	Aa	A	Baa	Ba
(ANPL+NTSD)/ State GDP	Less than 10%	10% - 20% (RI = 15.2%)	20% - 30%	30% - 40%	40% - 50%

Under the new methodology, Moody's also has added a Fixed Cost Ratio in the Finances rating factor. The Fixed Cost Ratio is calculated as follows:

$$\frac{\text{(Debt Service + Moody's Tread Water Annual Pension Cost + Annual OPEB Payment)}}{\text{State Own Source Revenues}}$$

The table below summarizes how Moody's assesses the Fixed Cost Ratio for the scorecard and its calculation of the ratio for Rhode Island using FY 2017 pension data.

Measurement	Aaa	Aa	A	Baa	Ba
Fixed Costs / State Own-Source Revenue	Less than 5%	5% - 15% (RI = 12.5%)	15% - 20%	20% - 25%	25% - 35%

Standard & Poor's. Standard & Poor's published its current rating methodology for states, "U.S. State Ratings Methodology," on October 17, 2016. 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. Standard & Poor's assigned a 2.6 score to Rhode Island's debt and liability profile in its last full analysis, dated February 27, 2018.

Indicator	Score:1	Score: 2	Score: 3	Score: 4
Debt Burden				
Debt per Capita	Below $500	$500 - $2,000 (RI = $1,728)	$2,000 - $3,500	Above $3,500
Debt to Personal Income	Below 2%	2% - 4% (RI – 3.4%)	4% - 7%	Above 7%
Debt Service to General Government Spending	Below 2%	2% - 6% (RI = 5.5%)	6% - 10%	Above 10%
Debt to Gross State Product	Below 2%	2% - 4% (RI = 3.01%)	4% - 7%	Above 7%
Debt Amortization (10 Years)	80% - 100%	60% - 80% (RI = 75%)	40% - 60%	Less than 40%
Pension Liabilities				
3-Year Avg Pension Funded Ratio	90% or above	80% - 90%	60% - 80%	60% or below (RI = 55%)
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 since 1995)	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 = $3,143 – 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 = 6.2% - No adjustment to initial pension score)			
OPEB Risk Assessment				
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, except Debt to Gross State Product and Debt Amortization, which were calculated by PRAG.

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.

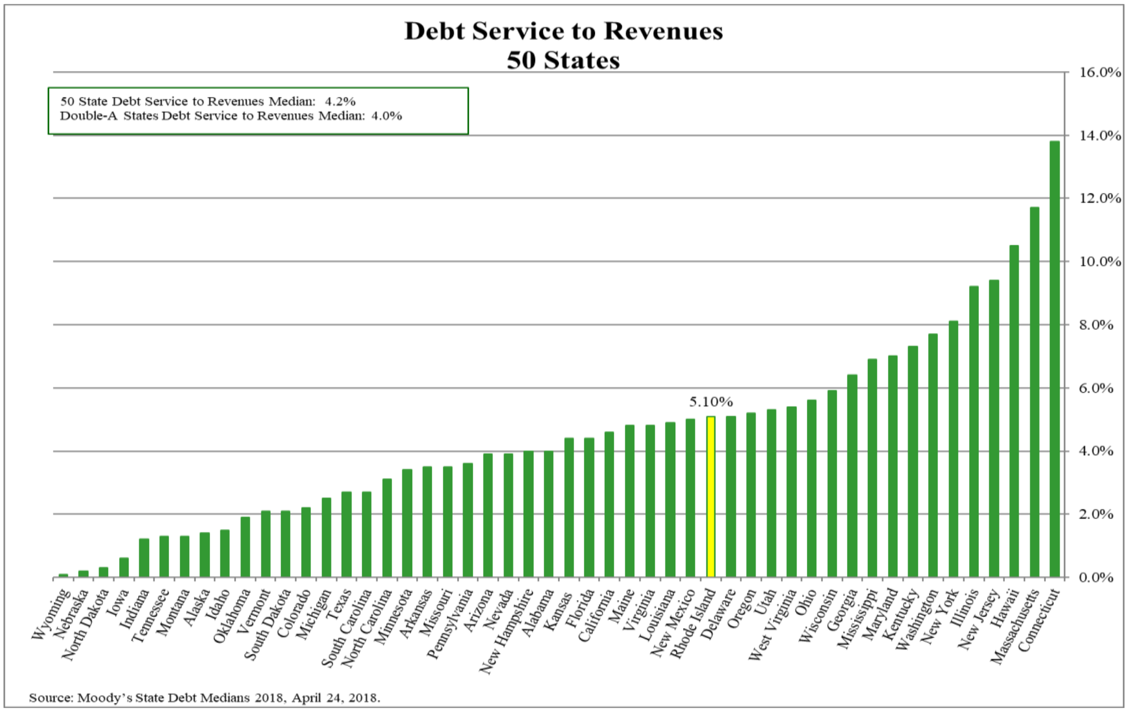
Debt Ratio	**Fitch**	**Moody's**	**S&P**
Debt to Personal Income	✓	✓	✓
Debt to Revenues		✓	
Debt Service to Revenues		✓	
Debt Service to Expenditures			✓
Debt Per Capita		✓	✓
Debt to Gross State Product		✓	✓
Rapidity of Repayment	✓		✓
Pension Ratio			
3-Year Average Pension Funded Ratio			✓
Pension Funding Levels	✓		✓
Unfunded Pension Liabilities Per Capita			✓
Pension Liabilities to Personal Income			✓
3-Year Average Pension Liability to Revenues		✓	
Debt + Pension + OPEB Ratios			
Debt + Unfunded Pension Liability to Personal Income	✓		
Debt + Adjusted Net Pension Liability to Gross State Product		✓	
Fixed Cost (Debt Service + Pension & OPEB Annual Cost) to Revenues or Expenditures	✓	✓	

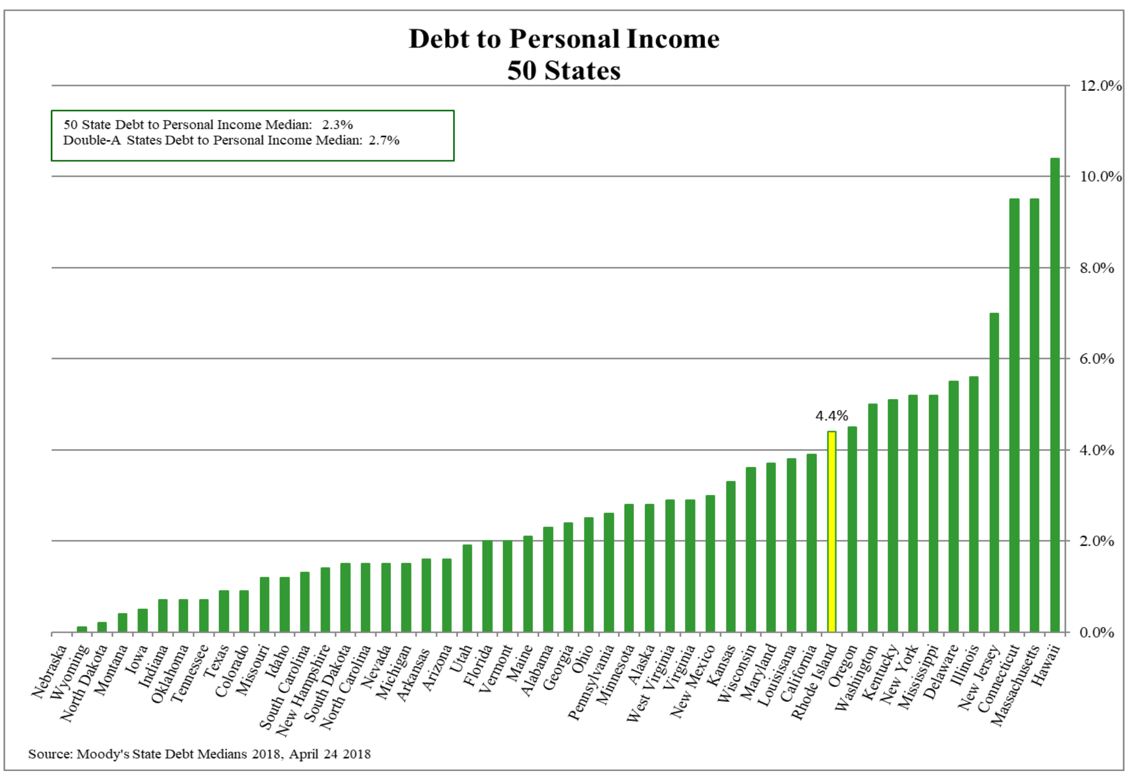
A full list of Rating Agency Debt and Liability Ratios and Medians, including a summary of each state's liability burden under the various Rating Agency criteria, can be found in the appendix.

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: 4.2%
Double-A States Debt Service to Revenues Median: 4.0%
5.10%
16.0%
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
Wyoming
Nebraska
North Dakota
Iowa
Indiana
Tennessee
Montana
Alaska
Idaho
Oklahoma
Vermont
South Dakota
Colorado
Michigan
Texas
South Carolina
North Carolina
Minnesota
Arkansas
Missouri
Pennsylvania
Arizona
Nevada
New Hampshire
Alabama
Kansas
Florida
California
Maine
Virginia
Louisiana
New Mexico
Rhode Island
Delaware
Oregon
Utah
West Virginia
Ohio
Wisconsin
Georgia
Mississippi
Maryland
Kentucky
Washington
New York
Illinois
New Jersey
Hawaii
Massachusetts
Connecticut
Source: Moody's State Debt Medians 2018, April 24, 2018.

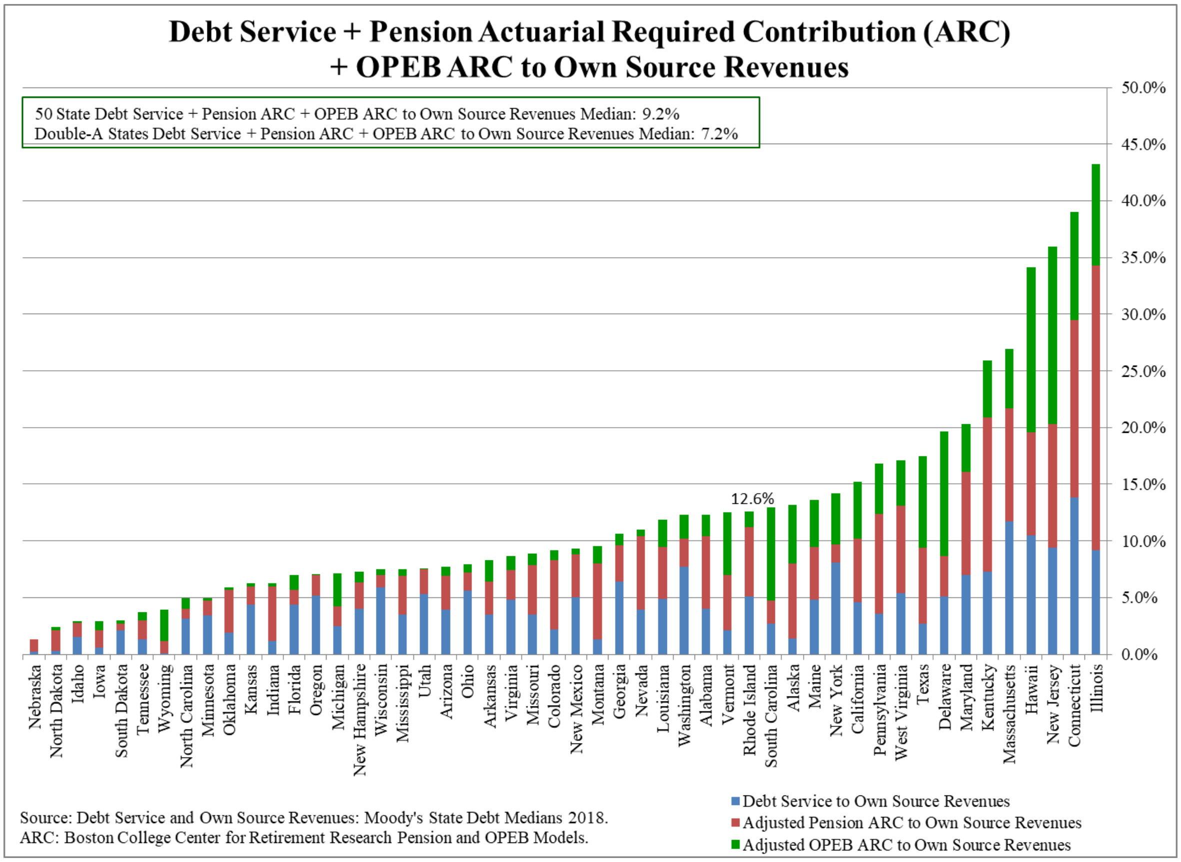

Debt to Personal Income
50 States
50 State Debt to Personal Income Median: 2.3%
Double-A States Debt to Personal Income Median: 2.7%
4.4%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
Nebraska
Wyoming
North Dakota
Montana
Iowa
Indiana
Oklahoma
Tennessee
Texas
Colorado
Missouri
Idaho
South Carolina
New Hampshire
South Dakota
North Carolina
Nevada
Michigan
Arkansas
Arizona
Utah
Florida
Vermont
Maine
Alabama
Georgia
Ohio
Pennsylvania
Minnesota
Alaska
West Virginia
Virginia
New Mexico
Kansas
Wisconsin
Maryland
Louisiana
California
Rhode Island
Oregon
Washington
Kentucky
New York
Mississippi
Delaware
Illinois
New Jersey
Connecticut
Massachusetts
Hawaii
Source: Moody's State Debt Medians 2018, April 24 2018

Comparing pension and OPEB liabilities across states can be challenging, as the liabilities and annual costs that states report can vary considerably based on the assumptions and policies that states use to govern their pension and OPEB 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 amortizes 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.

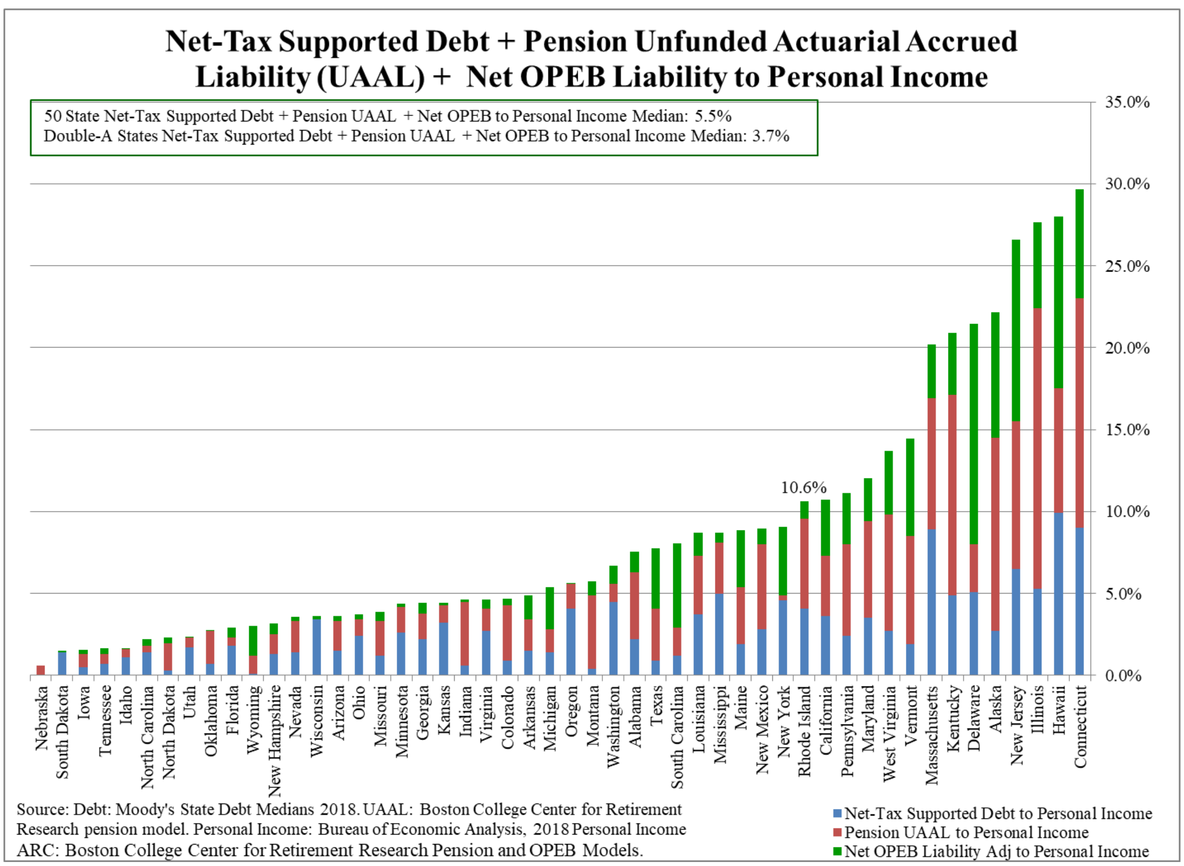
The PFMB partnered with the Center for Retirement Research at Boston College (CRR) to develop a model in which the pension and OPEB liabilities of all 50 states were adjusted to conform to the discount rate and amortization that Rhode Island uses for its pension and OPEB systems. This normalization helps 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 total liabilities of each state, with normalized discount rates and amortizations to produce an apples-to-apples comparison. This process reveals that Rhode Island's total liability burden is in the middle of the pack relative to other states, and slightly above the state median.

Rhode Island ranks 17th in the country in Debt Service + Pension ARC + OPEB ARC relative to Own Source Revenues. Rhode Island ranks 14th in the level of Total Liabilities relative to Personal Income.



Debt Service + Pension Actuarial Required Contribution (ARC) + OPEB ARC to Own Source Revenues
50 State Debt Service + Pension ARC + OPEB ARC to Own Source Revenues Median: 9.2%
Double-A States Debt Service + Pension ARC + OPEB ARC to Own Source Revenues Median: 7.2%
12.6%
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Nebraska
North Dakota
Idaho
Iowa
South Dakota
Tennessee
Wyoming
North Carolina
Minnesota
Oklahoma
Kansas
Indiana
Florida
Oregon
Michigan
New Hampshire
Wisconsin
Mississippi
Utah
Arizona
Ohio
Arkansas
Virginia
Missouri
Colorado
New Mexico
Montana
Georgia
Nevada
Louisiana
Washington
Alabama
Vermont
Rhode Island
South Carolina
Alaska
Maine
New York
California
Pennsylvania
West Virginia
Texas
Delaware
Maryland
Kentucky
Massachusetts
Hawaii
New Jersey
Connecticut
Illinois
Source: Debt Service and Own Source Revenues: Moody's State Debt Medians 2018.
ARC: Boston College Center for Retirement Research Pension and OPEB Models.
Debt Service to Own Source Revenues
Adjusted Pension ARC to Own Source Revenues
Adjusted OPEB ARC to Own Source Revenues



Net-Tax Supported Debt + Pension Unfunded Actuarial Accrued Liability (UAAL) + Net OPEB Liability to Personal Income
50 State Net-Tax Supported Debt + Pension UAAL + Net OPEB to Personal Income Median: 5.5%
Double-A States Net-Tax Supported Debt + Pension UAAL + Net OPEB to Personal Income Median: 3.7%
10.6%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Nebraska
South Dakota
Iowa
Tennessee
Idaho
North Carolina
North Dakota
Utah
Oklahoma
Florida
Wyoming
New Hampshire
Nevada
Wisconsin
Arizona
Ohio
Missouri
Minnesota
Georgia
Kansas
Indiana
Virginia
Colorado
Arkansas
Michigan
Oregon
Montana
Washington
Alabama
Texas
South Carolina
Louisiana
Mississippi
Maine
New Mexico
New York
Rhode Island
California
Pennsylvania
Maryland
West Virginia
Vermont
Massachusetts
Kentucky
Delaware
Alaska
New Jersey
Illinois
Hawaii
Connecticut
Source: Debt: Moody's State Debt Medians 2018. UAAL: Boston College Center for Retirement Research pension model. Personal Income: Bureau of Economic Analysis, 2018 Personal Income
ARC: Boston College Center for Retirement Research Pension and OPEB Models.
Net-Tax Supported Debt to Personal Income
Pension UAAL to Personal Income
Net OPEB Liability Adj to Personal Income

Recommended Long-Term Liability Affordability Measures

Rhode Island can measure and limit state liability with a variety of ratios. No single gauge of debt affordability is perfect, so the use of multiple debt and liability ratios helps ensure both near-term affordability and long-term capacity to maintain financial health and flexibility.

The PFMB recommends that Rhode Island seek to limit its liabilities to acceptable levels as measured by the following criteria:

- Debt Service on Net Tax-Supported Debt as a percentage of General Revenues;
- Net Tax-Supported Debt as percentage of Personal Income;
- Net Tax-Supported Debt Service + Pension ARC + OPEB ADC as a percentage of General Revenues;
- Net Tax-Supported Debt + Pension UAAL + OPEB UAAL as a percentage of Personal Income;
- Rapidity of Repayment or the amount of debt to be retired over the next ten years; and
- Pension ARC and OPEB ADC funding.

Debt Ratios

The PFMB recommends that Debt Service to General Revenue not exceed 7.0%.

Rationale for this metric: This is the metric most frequently used by states to assess debt affordability, comparing the annual cost of debt payments to the state's annual budget. Both of the components of this ratio (debt service and revenues) are largely within the control of the State.

Rationale for this recommended limit (7%): The recommended limit 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.

- Other states that use this ratio to assess debt affordability have recommended limits generally in the range from 5% to 10%.
- S&P examines a variety of ratios to measure debt burden, and debt service as a percent of general government spending, which is closely aligned with general revenues, is one of the ratios. S&P considers the range of 2% to 6% as "moderate" and the range of 6% to 10% as "moderately high".
- Rhode Island has been below 7% for the past eight years.

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

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

Rationale for this recommended limit (4%):

- While Moody's, Fitch & S&P provide high-level guidance on this recommended limit, S&P's guidance is the most explicit. To stay within S&P's recommended range for a AA rating score, the State should maintain a ratio of less than 4%.
- The PFMB believes that establishing a recommended limit of debt to personal income of 4% is realistic given that the State has only exceeded 4% twice since 2006.

<u>Debt, Pension & OPEB Liability Ratios</u>

Net Tax Supported Debt Service + Pension ARC + OPEB ARC to General Revenues not exceed 18%.

Rationale for the metrics: Rating agencies and investors are increasingly assessing states' liabilities holistically, looking at debt, pension liabilities and OPEB liabilities in combination to determine the full picture of a state's liability burden. A state's ability to meet future annual liability payments with available revenues is a critical indicator of whether these liabilities are manageable.

Rationale for this limit:

- In their rating methodologies, Moody's and Fitch both use a version of a ratio that compares the annual servicing cost of a state's total liabilities to the annual budget of the state.
- The Moody's and Fitch ratios vary from each other in a few ways. The two agencies use a slightly different method of calculating and normalizing pension costs and also differ in the type of revenue they compare annual costs to, with Fitch using total governmental expenditures and Moody's using own-source revenues
- The PFMB believes that the most appropriate ratio of this type to use for Rhode Island's capital planning is Net Tax Supported Debt Service + Pension ARC + OPEB ARC to General Revenues, as in Rhode Island only General Revenues are available to pay for for general obligation debt service.
- When an 18% level of Net Tax Supported Debt Service + Pension ARC + OPEB ARC to General Revenues is adjusted to the Fitch and Moody's ratios, the 18% limit is equivalent to a AA level in both agency methodologies. Specifically, staff estimates that an 18% level of Debt Service + Pension ARC + OPEB ADC to General Revenues would be equivalent to about a 15% level of the Moody's Fixed Cost Ratio, the high end of Moody's 'Aa' range. Staff estimates that an 18% level of Debt Service + Pension ARC + OPEB ADC to General Revenues would be equivalent to about a 9% level of the Fitch Carrying Cost ratio, which is slightly lower than their 'AA' range. Maintaining the state's AA rating is a key objective of the PFMB.
- Rhode Island has historically been below the 18% limit, and is currently at 14.9%.

Debt + Pension Unfunded Liability (UAAL)+ OPEB UAAL to Personal Income

The PFMB recommends that Debt + Pension UAAL+ OPEB UAAL to Personal Income not exceed 12%.

Rationale for this limit: The measurement compares the total liabilities of the state to the ability of the underlying population to afford those liabilities, irrespective of tax policy decisions by the State.

Rationale for this recommended limit (12%):

- In their methodologies, Moody's and Fitch both use versions of a ratio that compares total liabilities to the ability of the underlying population to repay. Moody's uses Debt and Adjusted Net Pension Liability relative to Gross Domestic Product, and Fitch uses Debt and Adjusted Net Pension Liability to Personal Income.
- When a 12% level of Debt and Pension Liability and OPEB Liability to Personal Income, is adjusted to the Moody's and Fitch ratio, Rhode Island would fall into the AA range for both agencies even though the Rhode Island ratio includes OPEB and the Fitch and Moody's ratios do not. Specifically, the recommended 12% limit for Liabilities to Personal Income would equate to about 15% under Fitch's, Direct Debt + Fitch's Adjusted Net Pension Liability to Personal Income, well within the Fitch 'AA' range. Moody's uses a measure of Liabilities to GDP instead of Liabilities to Personal Income. The recommended 12% limit for Liabilities to Personal Income would equate to about 16.6% under Moody's Liabilities to GDP, well within the Moody's 'Aa' range. Maintaining the state's AA rating is a key objective of the PFMB.
- Rhode Island has been below the 12% limit for the past 5 years, and is currently at 10.2%.

Fund 100% of its Pension ARC and OPEB ARC

The PFMB recommends the state continue to fund 100% of its Pension ARC and OPEB ARC.

Rationale: When states fail to make their full actuarially required contributions to their pension and OPEB trusts, unfunded liabilities increase. Failure to make full annual required contributions has been one of the leading causes of the spike in unfunded liabilities across the United States. Rhode Island has not missed a pension ARC payment since 1995, and has made 100% of OPEB ARC payments consistently since FY 2011, when the OPEB trust began. The state should continue these practices.

Rapidity of Debt Repayment

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

Rationale for this metric: Rapidity of repayment measures how much debt is retired over a defined period. This is a good metric to monitor, to ensure there is a level of equity across years in the way costs of servicing debt are allocated. Credit analysts view rapid repayment more favorably than slower.

Rationale for this recommended limit (at least 50% in 10 years): The benchmark of 50% of principal repaid in 10 years is considered best practice among states and municipalities.

The State typically structures its general obligation bonds with 20-year amortization to achieve level debt service, which permits the State to retire 50% or more of its debt within 10 years.

Note on Recommendations

The PFMB makes these recommendations with the aim of encouraging responsible budgeting and capital planning practices, but also notes that these recommendations, and particularly the recommended liability limits, may be exceeded from time to time due to unforeseen events such as recession, natural disaster or other emergency. In these events, policymakers should seek to return to recommended liability limits in a reasonable amount of time.

Current Debt and Pension Projections

The following two charts show existing levels of outstanding tax-supported debt (page 29) and the impact on debt capacity over the next ten years if future debt issuance levels are constrained by the recommended limits (page 30). Over the next decade, the State is estimated to have $2.37 billion in available bonding capacity (through 2029).

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. Previously authorized but unissued debt (including the $367.3 million in the November 2018 referendum) is issued from FY2019 through FY2023 in equal amounts.
5. General revenue projections through 2023 are from the enacted 2019 budget and growth after 2023 is assumed to be 1.50%.
6. Personal income projections through 2023 are from the November 2018 Revenue Estimating Conference and growth after 2023 is assumed to be 3.00%.

Future Debt Capacity

Debt, Pension and OPEB Ratios
With Additional Debt Capacity Constrained to Recommended Limits

Ratio	Maximum Level (Year of Occurrence)
Debt Service on Tax-Supported Debt to General Revenues	7.00% Maximum (FY2023 & FY2030)
Net Tax-Supported Debt as Percentage of Personal Income	3.96% Maximum (FY2019)
Rapidity of Repayment over 10 Years	59% (FY2025 - FY2027)
Net Tax-Supported Debt Service + Pension ARC + OPEB ADC as a Percentage of General Revenues	17.49% (FY2030)
Net Tax-Supported Debt + Pension Liability (UAAL) + OPEB Liability as a Percentage of Personal Income	10.68% (FY 2019)

Outstanding Tax- Supported Debt
Including Authorized But Unissued Debt

GO Authorized but Unissued*	674,000,000
Appropriation Authorized but Unissued	175,300,000
Total Authorized but Unissued	849,300,000
* Includes $367.3M from Nov. 2018 Ballot. *(Assumption: Issued Over Next 5 Years in Equal Amounts)*	

	Outstanding Tax-Supported Debt Service (as of June 30, 2018)			**Estimated Authorized but Unissued @ Interest Rate of 5.00% ($849.3M Issued In Equal Amounts Over 5 Years) *No Additional Authorization After November 2018 Ballot**				**Outstanding+Authorized but Unissued Debt Ratios**		**Outstanding+Authorized but Unissued Debt + Pension+OPEB 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 +OPEB ADC to Revenues	Tax-Supported Debt + Pension + OPEB UAAL to Personal Income
2019	154,980,806	84,946,439	239,927,245				239,927,245	6.01%	3.96%	14.91%	10.68%
2020	169,940,838	77,196,439	247,137,277	5,137,006	8,493,000	13,630,006	260,767,283	6.31%	3.79%	15.46%	10.19%
2021	168,764,658	69,103,148	237,867,806	10,530,862	16,729,150	27,260,012	265,127,818	6.33%	3.61%	15.80%	9.69%
2022	147,748,928	61,436,249	209,185,177	16,194,411	24,695,607	40,890,018	250,075,194	5.86%	3.19%	15.63%	8.94%
2023	175,250,655	54,424,254	229,674,909	22,141,137	32,378,886	54,520,023	284,194,932	6.51%	2.81%	16.57%	8.24%
2024	144,515,827	46,134,348	190,650,175	28,385,200	39,764,829	68,150,029	258,800,204	5.84%	2.44%	16.00%	7.54%
2025	127,864,697	39,874,650	167,739,347	29,804,460	38,345,569	68,150,029	235,889,376	5.25%	2.13%	15.50%	6.89%
2026	122,242,537	34,181,993	156,424,530	31,294,683	36,855,346	68,150,029	224,574,559	4.92%	1.86%	15.28%	6.27%
2027	108,439,641	28,814,078	137,253,719	32,859,417	35,290,612	68,150,029	205,403,749	4.44%	1.60%	14.90%	5.54%
2028	76,680,000	23,242,938	99,922,938	34,502,388	33,647,641	68,150,029	168,072,968	3.58%	1.37%	14.15%	4.83%
2029	63,115,000	19,889,791	83,004,791	36,227,508	31,922,522	68,150,029	151,154,821	3.17%	1.19%	13.70%	4.25%
2030	63,565,000	16,720,916	80,285,916	38,038,883	30,111,146	68,150,029	148,435,945	3.07%	1.03%	13.56%	3.59%
2031	52,865,000	13,746,919	66,611,919	39,940,827	28,209,202	68,150,029	134,761,948	2.74%	0.88%	13.35%	2.93%
2032	55,200,000	11,421,251	66,621,251	41,937,868	26,212,161	68,150,029	134,771,280	2.70%	0.74%	13.28%	2.34%
2033	44,775,000	9,285,184	54,060,184	44,034,762	24,115,267	68,150,029	122,210,213	2.41%	0.61%	12.96%	1.78%
2034	40,450,000	7,565,890	48,015,890	46,236,500	21,913,529	68,150,029	116,165,919	2.26%	0.49%	12.88%	1.23%
2035	38,040,000	5,926,487	43,966,487	48,548,325	19,601,704	68,150,029	112,116,516	2.15%	0.39%	7.02%	0.76%
2036	29,125,000	4,414,196	33,539,196	50,975,741	17,174,288	68,150,029	101,689,225	1.92%	0.28%	6.81%	0.51%
2037	25,330,000	3,256,574	28,586,574	53,524,528	14,625,501	68,150,029	96,736,603	1.80%	0.19%	6.52%	0.27%
2038	19,640,000	2,199,223	21,839,223	56,200,755	11,949,275	68,150,029	89,989,252	1.65%	0.12%	6.02%	0.11%
2039	9,645,000	1,408,840	11,053,840	59,010,792	9,139,237	68,150,029	79,203,869	1.43%	0.06%	2.93%	0.05%
2040	10,115,000	935,667	11,050,667	48,331,326	6,188,697	54,520,023	65,570,690				
2041	10,610,000	439,365	11,049,365	37,117,887	3,772,131	40,890,018	51,939,383				
2042	2,900,000	124,381	3,024,381	25,343,775	1,916,237	27,260,012	30,284,393				
	1,861,803,587	616,689,217	2,478,492,804	836,319,042	513,051,538	1,349,370,580	3,827,863,384				

Note: Assumes the full $849.3 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 FY2019 through FY2023 and 1.50% annual growth thereafter. The projected personal income for FY2019 through FY2023 is based on the forecast in the November 2018 Revenue Estimating Conference report, and after FY2023, annual growth is assumed to be 3.00%.

Net Tax-Supported Debt Capacity Over Next Ten Years

	Additional Debt Capacity Over Next 10 Years @ 5.00% Interest Debt, Pension and OPEB Ratios						
Fiscal Year	Additional Debt Over Next 10 Years	Additional Debt Service	Total Debt Service to Revenues Recommended Limit: 7.0%	Total Debt to Personal Income Recommended Limit: 4%	10-Year Payout Recommended Minimum: 50%	Tax-Supported DS + Pension ARC + OPEB ADC to Revenues Recommended Limit: 18%	Tax-Supported Debt + Pension + OPEB UAAL to Personal Income Recommended Limit: 12%
2019	0	0	6.01%	3.96%	68%	14.91%	10.68%
2020	88,200,000	0	6.31%	3.79%	67%	15.46%	10.19%
2021	88,200,000	7,077,396	6.50%	3.75%	64%	15.97%	9.83%
2022	88,200,000	14,154,792	6.19%	3.44%	62%	15.96%	9.20%
2023	301,420,000	21,232,189	**7.00%**	3.18%	62%	17.06%	8.60%
2024	301,420,000	45,418,909	6.87%	3.21%	60%	17.02%	8.31%
2025	301,420,000	69,605,630	6.80%	3.26%	59%	17.05%	8.02%
2026	301,420,000	93,792,350	6.98%	3.31%	59%	17.34%	7.73%
2027	301,420,000	117,979,071	6.98%	3.35%	59%	17.45%	7.29%
2028	301,420,000	142,165,792	6.60%	3.38%	60%	17.18%	6.84%
2029	301,420,000	166,352,512	6.65%	3.44%	61%	17.19%	6.50%
2030		190,539,233	**7.00%**	3.48%	63%	17.49%	6.04%
2031		190,539,233	6.62%	3.16%	67%	17.23%	5.21%
2032		190,539,233	6.52%	2.86%	72%	17.10%	4.46%
2033		190,539,233	6.18%	2.56%	76%	16.72%	3.73%
2034		190,539,233	5.97%	2.28%	81%	16.59%	3.02%
2035		190,539,233	5.80%	2.02%	85%	10.67%	2.39%
2036		190,539,233	5.52%	1.76%	89%	10.41%	1.99%
2037		190,539,233	5.35%	1.51%	92%	10.07%	1.60%
2038		190,539,233	5.14%	1.29%	96%	9.51%	1.28%
	2,374,540,000	2,392,631,739					

2020 Ballot	176,400,000	2026 Ballot	602,840,000
2022 Ballot	389,620,000	2028 Ballot	602,840,000
2024 Ballot	602,840,000		

Note: Assumes the full $849.3 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 FY2019 through FY2023 and 1.50% annual growth thereafter. The projected personal income for FY2019 through FY2023 is based on the forecast in the November 2018 Revenue Estimating Conference report, and after FY2023, annual growth is assumed to be 3.00%.

Debt Affordability Study

Part Two: State-level agencies, public and Quasi-Public corporations debt and long-term liabilities

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 also tax-supported debt of the State, as this is accounted for in Part I of the study. There is a wide variety of issuers in this category with different bonding programs, as listed below. Appendix B also provides a list of Quasi-Public agencies with debt outstanding and the bonding programs under each.

Most of the debt issued by the Quasi-Public agencies is not an 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. The table below summarizes the Quasi-Public agencies in these two categories.

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 (including Rhode Island Industrial Facilities Corporation tax-exempt private activity bond debt)
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
Rhode Island Infrastructure Bank	Water Pollution Control, Safe Drinking Water, Sewer Revenue Bonds, Energy Efficiency Loans, Municipal Road and Bridge Loans
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.

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 I 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 usually consists 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 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 those backed by 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 separately. 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 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, 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 amount by which 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 limit 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. For the Tobacco Settlement Financing Corporation, only refunding bonds can be issued; no new debt can be issued.

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, an 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, 2018, NBC had approximately $262.6 million of NBC issued bonded debt outstanding and approximately $303 million in subsidized loans from the Rhode Island Infrastructure Bank's clean water state revolving loan fund, for a total of $565.6 million of total debt outstanding.

Amount of Debt and Liabilities Outstanding

While the PFMB does not recommend pension and OPEB limits for the quasi-public agencies, the following chart provides background on Narragansett Bay Commission's overall liability burden:

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total Liabilities
Narragansett Bay Commission	$262,604,184 revenue bonds Net long-term RIIB loans payable: $302,974,434	$19,376,984, also counted in Part 1 of this report	$4,265,419, also counted in Part 1 of this report	Net other accrued expenses: $2,390,869	$591.6 million

Rating Agency Guidance and Peer Comparison

NBC's Trust Indenture requires an ABT of 1.25x for non-RIIB bonds 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 January 2019. Based on the Standard & Poor's report, for 2009 through 2018, net revenues covered debt service by at least 1.2x with debt service coverage for 2018 at 1.2x which includes an offset of $5 million to net revenues because of a transfer to the State of Rhode Island. NBC has been able to maintain its high "AA-" rating.

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:				
	Score	Debt Service Coverage	Days' Cash	Actual Cash	Debt to Capitalization[1]
	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 (2017 unless noted)	Cash on Hand (2017 unless noted)	Debt to Capitalization
Narragansett Bay Commission	**--/AA-/--**	**NBC: 1.25x RIIB: 1.35x[2]**	**1.32x (FY 2018)**	**200 (FY 2018)**	**55.3%**
Massachusetts Water Resources Authority	Aa1/AA+/AA+	Senior: 1.20x Sub.: 1.10x	Senior: 1.7x Sub.: 1.1x	168 days	75.5%
Boston Water and Sewer Commission	Aa1/AA+/AA+	1.25x	1.4x	150 days (Moody's) 246 days (Fitch)	55.4%
City of Philadelphia Water and Sewer Bonds	A1/A+/A+	1.20x	1.42x (Moody's) 1.2x (Fitch)	79 days (Moody's) 276 days (Fitch)	71.1%

St. Louis Metropolitan Sewer District	Aa1/AAA/AA+	Senior: 1.25x Sub.: 1.15x	Senior: 2.8x Sub.: 1.8x	623 days (Moody's) 726 days (Fitch)	36.1%
City of Baltimore Water and Wastewater Bonds	Aa3/AA-/--	Senior: 1.15x Sub.: 1.10x	0.8x (M FY16)	114 days (FY16)	70.9%

Source: Rating reports and annual reports for each issuer and NBC's Comprehensive Annual Financial Report, FY 2018

(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 total debt as calculated in the numerator plus 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 2017 and fiscal year 2018 results reflect an improvement in Net Position (a 6.3% increase in FY 2017 and a 4.4% increase in FY 2018).

Recommendation for Debt Limit and Rationale

NBC's Trust Indenture dated April 2004, and as supplemented, requires NBC to maintain debt service coverage of 1.25x for debt directly issued by NBC and 1.35x for debt issued through RIIB. S&P Global's rating guidance for wastewater programs stipulates that coverage between 1.25x and 1.40x is "strong". Historic coverage for NBC has been at least 1.25x since 2009 (currently 1.32x) and peer wastewater programs have coverages ranging from 0.8x (Baltimore) and 2.8x (St. Louis). **The PFMB recommends 1.30x coverage, because it is in the mid-point of a "strong" S&P rating and it is within the range of peer comparisons (0.8x-2.8x).**

Quasi-Public Agency	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Level (FY 2018)
Narragansett Bay Commission (--/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[1] the debt service requirement for RIIB loans	1.3x debt service coverage for Commission debt Provide notice to PFMB of any rating action Establish an affordability program for low-income ratepayers	1.32x

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

While NBC's current level of indebtedness is within the recommended limit, the PFMB notes that NBC is in the design stage of a large federally mandated capital program, which includes construction of Phase III of the Combined Sewer Overflow Control Facilities program (CSO Phase III).

According to NBC's 2017 reevaluation of the CSO III project, the total pre-design cost estimate for the CSO Phase III program was $760 million, with the cost expecting to rise in 2018 to $804 million, not including interest. NBC plans to complete the project in four phases, with the bulk of the expense occurring before year 2025 for the construction of a deep rock tunnel. In November 2018, the NBC learned that it was invited to apply for a federal Water Infrastructure Finance Innovation Act (WIFIA) loan, potentially making it eligible for a low interest loan of up to 49% or approximately $251 million (based on 2018 dollars) for design and construction of Phase A of the CSO III program.

While NBC has the authority to raise rates in order to meet debt service obligations, subject to Rhode Island Public Utility Commission approval, affordability for ratepayers is a concern. A majority of the ratepayers served by NBC are middle and upper income and can likely afford the higher rates necessary to fund the CSO Phase III program. However, about 1/3 of ratepayers are lower income, and the increased rates could pose a meaningful burden to those households.

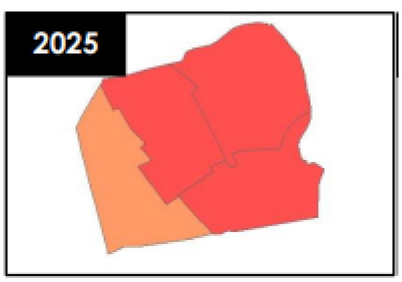
The table below lists the pre-design project schedule and cost estimates for the CSO Phase III program.[3]

CSO PHASE III, Projected Impact		
Projected Customer Rates 2017 Constant Dollars		
	2017	**2025 PhaseIIIA**
Central Falls	$ 463	$ 609
increase		*33%*
Pawtucket	$ 450	$ 609
increase		*33%*
Providence	$ 459	$ 621
increase		*35%*

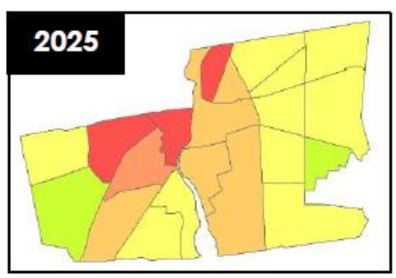
CSO Phase III Timeline and Costs			
Phase	**Timeline**		**Cost *(in millions)***
	Design	***Construction***	
A	2017 to 2021	2021 to 2025	$ 476.5
B	2017 to 2021	2028 to 2030	$ 31.2
C	2031 to 2034	2034 to 2037	$ 164.5
D	2036 to 2039	2039 to 2041	$ 83.4
		Total	***$ 755.6***

While the investment in wastewater infrastructure is critical, the PFMB remains concerned that the CSO Phase III program may be *unaffordable* for more than 40,000 households based on NBC's goals as set forth in NBC's CSO Amended Reevaluation Report.[4] These families have median incomes of about $27,000 per year and make up about 1/3 of NBC's ratepayers. Under the CSO Phase III program, rates may rise by 35-40% in the next seven years to around $620 dollars annually per household. Specifically, the table above highlights the increase in rates.

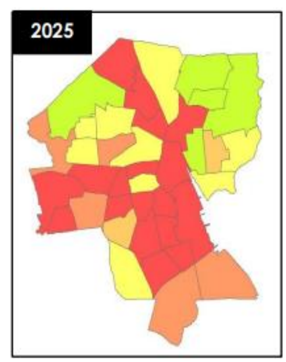
The maps below highlight in red census tracts in three communities that may have financial burdens of greater than 2% of the median household income based on the weighted average residential index.



Central Falls



Pawtucket



Providence

The successful completion of the CSO Phase III program will ensure compliance with federal law, improve the water quality of Narragansett Bay for all Rhode Islanders and is critical to preserving one of Rhode Island's most important ecological habitats. However, as the data above shows, the costs for many Rhode Island families under the current plan will be too high at best, and unaffordable at worst. **The PFMB recommends that NBC and state policymakers should develop a program to assist low income ratepayers with the cost of their bills, while moving ahead with the CSO III project.**

[3] NBC Phase III CSO Reevaluation – Revised CDRA Supplement Chapter 1 – Plan Overview, Financial Impact and Affordability Analysis

[4] NBC Phase III CSO Amended Reevaluation – Revised CDRA Supplement Chapter 12 – Phase III Amended Recommended Plan

Rhode Island Turnpike and Bridge Authority

The Rhode Island Turnpike and Bridge Authority (RITBA) was created in 1954 by the Rhode Island General Assembly to construct, acquire, maintain and operate bridge projects. RITBA operates and maintains four bridges, including the Newport Pell Bridge (the only toll bridge in Rhode Island), and the portion of State Route 138 in Jamestown.

RITBA issues toll revenue bonds with an ABT and rate covenant that require net revenues plus dedicated payments pledged to the bonds to be at least 1.20x annual debt service. As of June 30, 2018, RITBA had $50 million of toll revenue bonds outstanding.

In addition to toll revenue bonds, RITBA also issues motor fuel tax bonds, secured by state appropriations of the gas tax allocated by law to the RITBA. These bonds are considered tax supported debt of the State, and are covered in Part 1 of this report. As of June 30, 2018, RITBA had $113,020,000 of motor fuel bonds outstanding.

Amount of Debt and Liabilities Outstanding

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total
Rhode Island Turnpike and Bridge Authority	$163,020,000	N/A	N/A	N/A	$163,020,000

Rating Agency Guidance and Peer Comparison

RITBA's 1.20x rate covenant / additional bonds test coverage requirement is on the low side compared to its toll road peer organizations; however, actual debt service coverage has been healthy. According to RITBA, the flexibility afforded RITBA by the lower rate covenant is important to a one facility toll issuer. Annual debt service coverage has ranged from 1.6x to 2.1x from fiscal years 2012 through 2016, with debt service coverage at its low point of 1.6x in fiscal year 2016, which Standard & Poor's still considers strong. S&P's and Fitch's ratings outlooks for RITBA remain Stable. As specified in Standard & Poor's toll road criteria, the most common ratio used in a toll covenant is 1.25x.

The table below 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	
Fitch Ratings	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.*
Standard & Poor's	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)*
RITBA	**--/A-/A**	**1.20x**	**1.59x (2018)**	**1.81x (2018)**
Richmond Metropolitan Authority (VA)	A1/--/A	1.25x (1.0x on all obligations)	1.96x (2017)	2.00x (2017)
Buffalo & Fort Erie Public Bridge Authority (NY)	--/A+/A	1.25x (1.0 on all obligations)	2.31x (2017)	2.02x (2017)
Lee County (FL) Toll Bridges	A2/A/--	1.20x (1.0 on all obligations)	1.75x (2017)	N.A.
Greater New Orleans Expressway Commission	--A/--	Senior: 1.2x Sub: 1.35x (1.0x on all obligations)	2.05x (2017)	N.A.
Niagara Falls Bridge Commission (NY)	--A+/--	1.30x	2.02x (2017)	N.A.

Source: Ratings reports and Official Statements for each issuer. **Coverage levels from Fitch Ratings, "Peer Review of U.S. Toll Roads," October 2018,*

Recommendation for Debt Limit and Rationale

RITBA's current debt service coverage covenant is 1.20x, with historic levels ranging from 2.09x to 1.59x (2009-2018). Fitch Ratings criteria generally cites coverage of 1.7x for a single A rating, RITBA's rating tier. S&P does not provide indicative rating levels for different debt service coverage levels, but provides guidance that typical coverage is in the 1.5x-2.0x range. RITBA's peer coverage ranges from 1.75x to 2.31x. **The PFMB recommends RITBA seek to maintain minimum coverage of 1.7x, because this is at the low-end of Fitch criteria for an "A" rating, toward the low-end of S&P's indicative range, and is near RITBA's peer group (1.75x-2.31x).**

Quasi-Public Agency	Indenture Required Additional Bonds Test	Recommendation for Debt Affordability Measure	Current Debt Level
Rhode Island Turnpike and Bridge Authority (--/A-/A)	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[1] Maximum Annual Debt Service.	1.7x Debt Service Coverage Notify the PFMB of any rating change.	1.59x Debt Service Coverage (2018)

(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, effective December 1, 2017).

RITBA's debt service coverage has decreased from 1.97x in 2017 to 1.59x in 2018, putting the agency below the PFMB's recommended limit of 1.7x. RITBA's decline in year-over-year coverage is due largely to flat revenues and a $3.4 million increase in expenses. The largest expense increase was related to Personnel Services and Other Supplies and Expenses, driven by RITBA's continued effort to bring painting and maintenance of bridges in-house.

RITBA expects to issue motor fuel or toll or combined revenue bonds in calendar year 2019, though at time of publication, size and timing of 2019 issuance was unknown. The remaining amount of authorized but unissued bonds of RITBA under existing General Assembly authorizations is $15,500,000.

Rhode Island Resource Recovery Corporation

The Rhode Island Resource Recovery Corporation (RIRRC) is responsible for managing Rhode Island's solid waste and recyclables. 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 possible that the end of its actual useful life may occur several years earlier. As of June 30, 2018, the Rhode Island Resource Recovery Corporation had $21.4 million of debt outstanding, the final term of which is FY 2023.

Amount of Debt and Liabilities Outstanding

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total
Rhode Island Resource Recovery Corporation	$21,384,740	N/A	$609,000	Long term landfill post closure $91,099,055 and pollution remediation $17,467,329	$130.6 million

Rating Agency Guidance and Peer Comparison

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. Standard & Poor's assesses coverage in the 1.25x to 1.40x range as "strong".

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

Standard & Poor's — As part of the Financial Risk Profile, S&P reviews and scores the following factors:

Score	Debt Service Coverage	Days' Cash	Actual Cash	Debt to Capitalization[1]
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	Cash on Hand	Debt to Capitalization
Rhode Island Resource Recovery Corporation	**Not Rated**	**1.25x**	**10.09x (2018) 8.16x (2017)**	**337 days (2017)**	**24%**
Delaware Solid Waste Authority	Aa3/AA+/--	1.1x	3.80x (2017)	30 days (2017)	9.0%

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 total debt as calculated in the numerator plus the utility's Net Position (denominator). Debt does not include unfunded pension and OPEB liabilities.

Recommendation for Debt Limit and Rationale

Despite RIRRC's strong financials, the PFMB recommends that the Corporation refrain from any issuance of long-term debt, until there is a clear plan for what will be done when the landfill reaches capacity.

Quasi-Public Agency	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Level
Rhode Island Resource Recovery Corporation (Not Rated)	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 Corporation completes its capital improvement plan and the future of the facility is more certain.	10.09x (2018) Debt Service Coverage

The Resource Recovery Corporation does not intend to issue future debt. Over the next 24-36 months the organization intends to pursue a capital planning process, in which they will identify capital needs, options, and implementation steps.

Conduit Issuers

Many 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). Underlying borrowers can be single entities or multiple entities under a pooled bond program.

1. <u>Conduit Issuers -- Single Entity Borrowers</u>

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 FY2018 annual report, had 80 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[5] (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).

The PFMB does not set recommended debt limits for non-profit and private entities that secure debt with their own revenue sources and are not subject to a moral obligation. 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 the State or a local government would ever assume these liabilities should the underlying borrower be unable to make debt service payments.

Rhode Island Commerce Corporation

In addition to issuing bonds backed by state tax revenues, which are covered in Part I of this report, Rhode Island Commerce Corporation also issues conduit bonds for the Rhode Island Department of Transportation and Rhode Island Airport Corporation.

[5] State agencies includes State Boards and State Chartered Institutions, such as the University of Rhode Island.

Additionally, the Commerce Corporation issues tax exempt private activity bonds for the Rhode Island Industrial Facilities Corporation (RIIFC). RIIFC bonds fund the construction of manufacturing and industrial space for private projects deemed by the Commerce Corporation to be of significant importance to economic development in the state. The companies benefitting from the facilities are solely responsible for the bonds and there is no state obligation under any circumstance. There are currently $41,102,000 of RIIFC bonds outstanding, and as there is no taxpayer exposure to this debt the PFMB does not recommend any specific limitation on the amount of borrowing under this program

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 highway funds received by the State and provide a mechanism for accelerating construction projects that would otherwise be funded on a pay-go basis. With the outstanding GARVEEs, Rhode Island chose to pledge Motor Fuel Tax revenue bonds as the federally required state match to GARVEE bonds, and such Motor Fuel Tax revenue bonds are included in the State's tax-supported debt covered in Part I of this Debt Affordability Study. GARVEEs enable the State to fund essential transportation projects without impacting the State's General Obligation borrowing capacity, reducing the need for tax supported debt. GARVEEs do not include any federal guarantee of repayment and are subject to federal reauthorization risk, and to mitigate the risk GARVEEs are generally structured with short maturities, high ABTs and high debt service coverage.

Rating agencies assess the affordability of GARVEE bonds by comparing debt service coverage levels to the additional bonds test, which in Rhode Island is 3.0x. The chart below demonstrates projected debt service coverage levels of outstanding GARVEEs, assuming 2018 federal reimbursement levels remain constant into the future.

FY	Outstanding Debt Service	2018 Federal Reimbursement	Debt Service Coverage on Outstanding DS
2019	$57,535,250	$230,779,651	4.0x
2020	$57,536,500	$230,779,651	4.0x
2021	$57,540,250	$230,779,651	4.0x
2022	$57,540,000	$230,779,651	4.0x
2023	$57,536,500	$230,779,651	4.0x
2024	$57,535,250	$230,779,651	4.0x
2025	$42,501,250	$230,779,651	5.4x
2026	$42,501,000	$230,779,651	5.4x
2027	$42,500,250	$230,779,651	5.4x
2028	$42,500,250	$230,779,651	5.4x
2029	$42,502,000	$230,779,651	5.4x
2030	$42,501,250	$230,779,651	5.4x
2031	$42,498,750	$230,779,651	5.4x

Based on 2018 Federal highway reimbursements, Rhode Island's level of coverage (4.0x) was the lowest of any state GARVEE program secured solely by federal highway reimbursements. While the GARVEE program does not require any on-going legal rate covenant or minimum debt service coverage, a low level of coverage can be cause for concern, as federal reimbursement levels vary from year to year and face risks at the federal level that are beyond the control of Rhode Island.

The chart below details historic federal reimbursement amounts available to pay for GARVEE bond payments:

Federal Fiscal Year	Federal Reimbursement Available for Bond Payments	Year Over Year % Change
2007	$166,550,120	10.4
2008	$173,103,169	4%
2009	$171,698,008	-1%
2010	$207,839,190	21%
2011	$212,974,483	2%
2012	$205,573,994	-3%
2013	$189,313,545	-8%
2014	$210,272,184	11%
2015	$252,154,162	20%
2016	$214,685,748	-15%
2017	$217,764,218	1%
2018	$230,779,651	6%

Rating Agency Guidance and Peer Comparison

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.

Rating Agency Criteria for GARVEEs			
Moody's	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.		
Standard & Poor's	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**	**Debt Service Coverage* 2017**
Rhode Island	A2/AA-/--	3.0x	4.0x (2018)
Delaware	A1/AA/--	3.0x	14.1x
District of Columbia	A2/AA/--	3.0x	12.7x
Georgia	A2/AA/A+	3.0x	6.9x
Idaho	A2/--/A+	3.33x	4.6x
Kentucky	A2/AA/A+	4.0x	6.4x
Maine	A2/--/A+	3.0x	8.4x
Michigan	A2/AA/--	3.0x	7.6x
Mississippi**	Aa3/AA-/--	3.75x	6.2x
Montana	A2/AA/--	3.0x	24.4x
New Hampshire	A2/AA/--	3.0x	8.2x
North Carolina	A2/AA/A+	3.0x	10.2x
Ohio	Aa2/AA/--	5.0x	7.9x
Oklahoma	--/AA/--	5.0x	68.5x
Washington	A2/AA/--	3.5x	6.1x
West Virginia	A2/AA/--	3.0x	12.7x

Source: Rating reports for each issuer. Official Statements and Continuing Disclosure filings on EMMA.

** Coverage levels for other states based on Federal-Aid Highway Program Obligation Limitation for FY2017. 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 2017 OA: https://www.fhwa.dot.gov/legsregs/directives/notices/n4520240/n4520240_t1.cfm*

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

Recommendation for Debt Limit and Rationale

Underlying Borrower	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Level
Rhode Island Department of Transportation Grant Anticipation Revenue Bonds (GARVEEs) (A2/AA-/--)	Federal Transportation Funds must be 3.00x maximum bond payments in any federal fiscal year	3.5x Debt service coverage	4.0x Coverage

PFMB recommends minimum debt service coverage level of 3.5x as a limit, because this level will allow the state flexibility to make infrastructure investments while providing a more stringent requirement than the required ABT (of 3.0x), and staying within recommended rating agency levels of 3.0x coverage. For 'AA' rating level, S&P expects coverage levels of 3.0x. Moody's generally does not rate any stand-alone GARVEEs higher than the 'A' rating level and has indicated 3.0x as a threshold baseline level of coverage with above 2.0x coverage as a threshold under a stress-test scenario to achieve an A rating. The recommended limit of 3.5x will allow the state to maintain a coverage ratio of 3.0x in a scenario where federal reimbursements are cut by up to 25%.

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. As of June 30, 2018, Green was served by seven mainline carriers, 11 domestic affiliate carriers, four international carriers (including several new carriers) and six all cargo carriers.

Amount of Debt and Liabilities Outstanding

As of June 30, 2018, RIAC had $105.6 million in privately placed general airport revenue tax-exempt bonds in addition to $130.5 million general airport revenue bonds, $39.2 million First Lien Special Facility Interlink Bonds, and $41.1 million in a TIFIA loan.

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total Non-current Liabilities
Rhode Island Airport Corporation - **Airport Revenue** - **Special Facility Revenue Bonds** - **Subordinate TIFLA Loan**	Airport Revenue: $236,033,000 Special Facility + TIFIA: $80,286,000 Private Placement: $105,576,365 (included in	$2,135,747, also counted in Part 1 of this report	$437,010, also counted in Part 1 of this report	Due to other government units. $1,504,967	$320.4 million

- **Private Placements**	revenue total above)				

Rating Agency Guidance and Peer Comparison

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). In December 2018 S&P upgraded RIAC's general airport revenue bonds and special facility bonds to A from BBB+.

Rating Agency Criteria for Airports					
Fitch Ratings	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: BBB: Net Debt to Cash Flow Available for Debt Service (CFADS)): ≤ 4x BB: Net Debt to Cash Flow Available for Debt Service (CFADS)): ≥ 4x				
Moody's Investors Service	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:				
	Rating Category	**Aaa**	**Aa**	**A**	**Baa**
	Debt Service Coverage	≥ 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
Standard & Poor's	S&P does not use scoring in its methodology and does not have a percentage score for debt. In reviewing the credit, S&P's analysis begins with the service area characteristics and air traffic demand and then factors in the legal provisions: Rate covenant: S&P states that most senior lien airport revenue bonds have a 1.25x rate covenant. S&P views meeting the rate covenant from operating cash flow with no addition to revenues from other sources is stronger. Additional bonds test: S&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.				

Issuer	**Ratings (M/S/F)**	**ABT/ Rate Covenant**	**Debt Service Coverage (2018)**	**Cash on Hand (2018)**	**Net Debt to Cash Flow Available for D/S**	**Debt per Enplaned Passenger**
Rhode Island Airport Corporation	**Airport Revenue Baa1/A/BBB+**	**1.25x**	**2.1x (including rolling coverage account) 1.7x (without coverage account) FY 18**	**M: 467days (FY 18)**	**F: 5.2x (FY 16)**	**$110 (2018)**
Hartford-Springfield (Bradley Airport)	--/A+/A	1.10x	2.5x (including rolling coverage account) 2.2x (without coverage account	F: 628 days (FY 17)	F: 1.7x	S: $37.31

Manchester, NH	Baa1/BBB+/--	1.25x	1.6x (including rolling coverage account 1.2x (without coverage account) FY 16	M: 454 days (FY16)	N.A.	M: $132.44 FY16)
Dayton, OH	--/BBB+/BBB	1.25x Sub: 1.1x	1.9x (including subsides) 1.3x (projected, as subsides are phased out)	S: 288 days (FY17) F: 319 days (FY17)	N/A	N/A
Long Beach, CA	A3/--/A-	1.25x	1.8x (without transfers)	346 days (FY17)	N/A	$82.45

Source: Rating reports and annual reports for each issuer.

Recommendation for Debt Limit and Rationale

Underlying Borrower	Indenture Required Additional Bonds Test	Recommendations for Debt Affordability Measure	Current Debt Levels
Rhode Island Airport Corporation	Airport Revenues Bonds: RIAC's net revenues (include rentals, fees, and other charges) and certain Passenger Facility Charge revenues must be 1.25x debt service (Baa1/A/BBB+) Special Facility Revenue Bonds: 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/A/--)	1.5x coverage when including the Coverage Account Ending Balance and debt per enplaned passenger to $100.	2.10x coverage (2018) and $110 per enplaned passenger (2018)

At this time, the PFMB recommends RIAC maintain a minimum debt service coverage of 1.5x for its general airport revenue bonds, as this 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 2018 coverage level was 2.10x, placing it above the PFMB's recommended range.

The PFMB also recommends RIAC maintain its target debt per enplaned passenger of $100, because 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 currently exceeds the recommended limit for debt per enplaned passenger, it has improved its level of debt per enplaned passenger from $137 in 2015 to $110 in 2018. A continued increase in the number of passengers, and/or a decrease in outstanding debt could help RIAC meet its target of $100 per enplaned passenger.

2. <u>Conduit Issuers – Pooled Bond Programs</u>

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.

Pooled bonds are assessed differently by rating agencies. There are some conduit bonds for which rating agencies base their ratings solely on the credit of the underlying borrowers (i.e. municipalities' general obligation pledge). An example of this type of pooled bond is RIHEBC's school construction program. This type of conduit debt is included in Part III of this study.

Other pooled bonds, including the Water Pollution Control and Safe Drinking Water programs at the Rhode Island Infrastructure Bank, are assessed by rating agencies at the program level, meaning that the rating for each program is based on the combined credit of all participants. This type of conduit debt is included in this section.

To assist Quasi-Public agencies in determining appropriate debt affordability measures, this report includes relevant rating agency criteria, and reviews of peer agencies in other states.

Rhode Island Health and Educational Building Corporation

The Rhode Island Health and Educational Building Corporation (RIHEBC) manages financing programs that provide educational and health care institutions with access to tax-exempt capital. 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.

Only RIHEBC conduit debt issued on behalf of public higher education institutions is evaluated for affordability in this section of the report. Conduit debt issues on behalf of municipalities is counted in Part III of this report as debt of the municipalities. Conduit debt RIHEBC issues on behalf of non-profit or private institutions is not considered in this study, as there is no governmental or taxpayer liability for that debt.

RIHEBC Issuance for Public School Debt

RIHEBC's Public Schools Revenue Bond Financing Program issues bonds for the benefit of the state's 36 local educational authorities (LEAs) for the purpose of constructing, renovating, and improving public schools. Debt issued by RIHEBC for municipalities through this program is counted in Part III of this report as debt of the municipalities.

RIHEBC Issuance for Pubic Higher Education Debt

RIHEBC 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 credit and the Auxiliary Enterprise Revenue Bond credit of the collective State Colleges and (ii) the Educational and General Revenue Bond credit and the Auxiliary Enterprise Revenue Bond credit solely of URI.

The bonding for all of these programs is generally serviced by either Educational and General revenues generated by unrestricted general revenues including tuition and State appropriations or by Auxiliary Enterprise revenues including fees from housing, dining and other auxiliary services.

Rating Agency Guidance and Peer Comparison

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. Rating agencies use 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

Moody's Investors Service	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	**Aaa**	**Aa**	**A**	**Baa**
Operating Margin (%)	≥ 20	11 – 20	4.5 – 11	1 – 4.5
Total Debt to Cash Flow	0 < 4	> 4 - 10	>10 - 16	>16 - 22
Standard & Poor's	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: Score — Burden 1 — 2% or less 2 — 2% to 4% 3 — 4% to 6% 4 — 6% to 8% 5 — 8% to 10% 6 — Greater than 10%			

	Ratings (M/S/F)	ABT/Rate Covenant	Debt Service Coverage (FY 2017 unless noted)	Operating Margin (FY 2017 unless noted)	MADS Burden	Total Debt to Cash Flow (FY 2017 unless noted)
University of Rhode Island – Educational and General Revenue Bonds[6]	**Aa3/A+/--**	**1.00x**	**1.60x (FY 18)**	**8% (FY 18)**	**3.9%**	**7.0x (FY 18)**
University of Rhode Island – Auxiliary Enterprise Revenue Bonds	**A1/A+/--**	**1.2x**	**2.4x (FY 18)**	**8% (FY 18)**	**3.9%**	**7.0x (FY 18)**
University of Connecticut	Aa3/AA-/--	1.25x	1.4x	16.0%	12.54%	7.9x
University System of New Hampshire	Aa3/AA-/--	N/A	3.0x	12.7%	8.66%	4.4x
University of Massachusetts	Aa2/AA-/AA	N/A	2.2x	13.6 %	7.23%	6.8x
University of Vermont & State Agricultural College	Aa3/A+/--	N/A	3.7x (FY 16)	14.6% (FY16)	4.9%	5.8x (FY 16)

* *Statistics provided from recent rating reports published.*

Recommendation for Debt Limit and Rationale

[6] 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.

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Level of Debt
University of Rhode Island	Total Debt to Cash Flow of less than 10.0x as a factor required for Additional Bonds. Provide notice to PFMB of any rating action	7.0x Debt to Cash Flow

The PFMB recommends debt to cash flow of less than 10%, because this is at the high-end of "Aa" issuers and toward the lower-end of "A" ratings categories. Peers range between 4.4% (UNH) to 7.9x (UCONN).

URI plans to issue approximately $27 million through RIHEBC for renovations and improvements to the health and counseling center in Q4 2019 and is seeking approval to issue approximately $52 million for a new student union building in 2020.

Rhode Island Infrastructure Bank

Rhode Island Infrastructure Bank (the "Bank") issues pooled revenue bonds secured by revenues of its borrowers in four core lending programs along with several smaller programs. The four core programs include: (i) Clean Water State Revolving Loan Fund (Water Pollution Control Revenue Bonds), (ii) Drinking Water State Revolving Loan Fund (Safe Drinking Water Revenue Bonds), (iii) Municipal Road and Bridge Revolving loan fund and (iv) the Efficient Buildings Fund.

Loan Programs	Debt Outstanding (FY 2018)
Water Pollution Control Revenue Bonds	$492,730,000
Safe Drinking Water Revenue Bonds	$184,895,000
Municipal Road and Bridge Revolving Loan Fund	$13,965,000
Efficient Buildings Fund	$23,345,000
Other Water Pollution Control and Drinking Water (non-SRF conduit bonds)	$73,729,000

* The $23,345,000 in Efficient Buildings Fund debt outstanding at June 30, 2018 represents short-term Bond Anticipation Notes that were refunded subsequent to the end of fiscal year 2018 with an $18,310,000 long-term bond issue. Please see below.

The Water Pollution Control Revenue Bonds and Safe Drinking Water Revenue Bond programs provide below-market 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 below-market rate loans to underlying borrowers, primarily municipalities, sewer and water utilities. Ratepayer charges are typically used to pay for debt service on these bonds.

The Municipal Road and Bridge Revolving Fund provides below-market financing to municipalities for eligible road, bridge and related infrastructure projects. Bond proceeds are combined with funds appropriated and allocated by the State to make loans. Municipal general obligation pledges secure the program's underlying loans.

The Efficient Buildings Fund provides below-market financing to municipalities and quasi-public agencies to complete energy efficiency and renewable energy upgrades to public buildings.

Although the debt issued through these programs is included as debt of the municipalities in Part III of this report, the PFMB believes it is appropriate to provide high-level guidance regarding the Bank's management of these programs.

Amount of Debt and Liabilities Outstanding

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities (1)	Total Liabilities
Rhode Island Infrastructure Bank	$788,664,000 (par amount)	N/A	N/A	$1,089,449	$789,753,449

(1) Other Long-Term Liabilities include accrued arbitrage rebate for where the Bank has bonds outstanding which are subject to arbitrage limitations.

Rating Agency Guidance and Peer Comparison

When assessing traditional pooled loan programs like the Water Pollution Control Revenue Bonds and Safe Drinking Water Revenue Bond programs, 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 debt service. Rating agency criteria also recommend limits on the number of borrowers at certain rating levels that can be included in the overall weighted pool rating. 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 considerations 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.

<table>
<tr><th colspan="6">Rating Agency Criteria for State Revolving Loan Bonds and Similar Municipal Loan Pools</th></tr>
<tr><td>Fitch Ratings</td><td colspan="5">Fitch's key rating drivers include: Portfolio Credit Risk, Strength of Financial Structure, Legal Risk, Adequacy of Program Management and Counterparty Risk.</td></tr>
<tr><td>Standard & Poor's</td><td colspan="5">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 Polices 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.</td></tr>
<tr><th>Issuer</th><th>Ratings (M/S/F)</th><th>Asset / Liability Ratio</th><th>Projected Minimum Debt Service Coverage</th><th>Largest Borrower (%)</th><th>Rating of Largest Borrower</th></tr>
<tr><td>Infrastructure Bank</td><td>Aaa/AAA/AAA</td><td>1.5x(CW)/ 1.6x(DW)</td><td>1.3x(CW)/ 1.5x(DW)</td><td>41.4%(CW)/ 33.5%(DW)</td><td>-/AA-/-</td></tr>
<tr><td>Connecticut SRF</td><td>Aaa/AAA/</td><td>1.4x</td><td>1.3x</td><td>32.5%</td><td>Aa2/AA/--</td></tr>
<tr><td>Florida Water Pollution Control Corporation</td><td>--/--/AAA</td><td>2.0x</td><td>1.7x</td><td>12.6%</td><td>Aa3/A+/A+</td></tr>
<tr><td>Maryland Water Quality Financing Administration</td><td>Aaa/AAA/AAA</td><td>9.4x</td><td>5.3x</td><td>12.9%</td><td>Aaa/AAA/AAA</td></tr>
</table>

Rating Agency Criteria for State Revolving Loan Bonds and Similar Municipal Loan Pools					
Arizona Water Infrastructure Finance Authority	Aaa/AAA/AAA-	1.5x	1.3x	8.5%	Aa1/AA+/AA

Source: Fitch State Revolving Fund and Municipal Loan Pool Peer Review: 2017, October 31, 2017
Source: Rating reports for each issuer.

Rating Agency Commentary for Rhode Island Infrastructure Bank Efficient Buildings Fund Revenue Bonds					
Standard & Poor's	Rating reflects the EBF's very strong enterprise risk profile given that the pool was established by statute and has received funding from multiple sources. The financial risk profile of the program is extremely strong reflecting the combination of a loss coverage score, excellent operating performance and financial policies. EBF was Green Bond designated and received a formal Green Bond rating by S&P.				
Issuer	**Ratings (M/S/F)**	**Projected Minimum Debt Service Coverage**	**Additional Bonds Test**	**Largest Borrower (%)**	**Rating of Largest Borrower**
RIIB-EBF	**-/AA/-**	**1.30x**	**1.2x**	**43%**	**West Warwick: Baa2/A-/-**

Source: Rating reports for the EBF bond program.

Rating Agency Commentary for Rhode Island Infrastructure Bank Municipal Road and Bridges Fund Revenue Bonds					
Standard & Poor's	Rating reflects a very strong risk profile, given that the pool has ongoing support from the state and was established by stature, a loss coverage score, operating performance, and financial policies consistent with extremely strong financial profile. While the MRBRF has only one issue outstanding, the fund has been making loans since 2014 and receipts on $35 million of the $40 million in outstanding loans are pledged to bondholders. Significant potential for the rating to improve over time as the program natures.				
Issuer	**Ratings (M/S/F)**	**Projected Minimum Debt Service Coverage**	**Additional Bonds Test**	**Two Largest Borrower (%)**	**Rating of Largest Borrower**
RIIB-MRBF	**-/AA/-**	**2.44x**	**1.2x**	**Pawtucket (26%) Providence Pub. Bldg. Auth. (24%)**	**Pawtucket: A3/A/A+ Providence Pub. Bldg. Auth (1): Baa2/-/-**

Source: Rating reports for each issuer. The MRBF bond program.

(1) Providence Public Building Authority security includes a guarantee under a municipal bond insurance policy which is rated AA.

Recommendation for Debt Limit and Rationale

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Debt Levels
Clean Water Program	Maintain a minimum of 1.25x 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 Asset to liabilities ratio of 1.5x
Drinking Water Program	Maintain a minimum of 1.25x 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 1.5x Asset to liabilities ratio of 1.6x
Efficient Buildings Fund Program	Maintain a minimum of 1.25x 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 Asset to liabilities ratio of 1.80x
Municipal Road and Bridge Fund Program	Maintain a minimum of 1.25x 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 2.44x Asset to liabilities ratio of 3.03x

At this time, the PFMB recommends the Bank's lending programs target debt service coverage of at least 1.25x and a minimum asset to liability ratio of 1.3x for all bond programs, because these levels are on the low end of the levels required to maintain triple-A ratings for its Water Pollution and Safe Drinking Water programs, and because none of its referenced peers have coverage levels below 1.25x. As noted above, the Municipal Road Bridge and Efficient Buildings Fund programs are relatively new, and as such, both are rated AA by S&P—two notches below the rating of the Water Pollution Control Revenue Bonds and Safe Drinking Water Revenue Bond programs. As both the Municipal Road and Bridge and Efficient Buildings Fund programs mature, increased portfolio diversity and repayment history would support that these programs be candidates for a ratings upgrade.

The Bank anticipates issuing several, regular series of bonds for its various financing programs during 2019.

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.[7] Like many Housing Finance Agencies (HFAs), Rhode Island Housing uses these tax-exempt bonds to fund 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.

[7] 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 in the Appendix.

Amount of Debt and Liabilities Outstanding

Rhode Island Housing's Financing Programs	Debt Outstanding (FY 2018)
Homeownership Opportunity Bonds	$515,162,194
Home Funding Bonds and Notes	$91,464,966
Rental Housing Bonds	$29,232,589
Multi-Family Funding Bonds	$87,255,000
Multi-Family Development Bonds	$237,207,280
Multi-Family Mortgage Rev Bonds	$127,518,110

Source: Audited Financial Statements for year ended June 30, 2018.

There are several pooled loan programs under the Rhode Island Housing and Mortgage Finance Corporation for single-family and multi-family housing. One of the programs, 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 this program and anticipate all of the outstanding moral obligation debt to be retired in the coming years.

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total Liabilities
Rhode Island Housing	Bonds and notes payable: $1,297,944,124	N/A	OPEB liability: $6,329,254 (FY 18)	Escrow Deposits $419.6 million	$1,723.9 million of long-term liabilities

Rating Agency Guidance and Peer Comparison

A key ratio that is assessed by rating agencies is the program asset-to-debt ratio (PADR) with a ratio of 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.

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.

Rating Agency Criteria for Single Family and Multi-Family Housing Bonds	
Moody's Investor Service	Program Asset to Debt Ratio (Program Assets to Total Bonds Outstanding Plus Accrued Interest): Aaa: 1.10x Aa1: 1.04x Aa2: 1.02x Aa3: 1.00x
	Cash Flow Projections: 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.
	Historical Financial Performance:

	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.

	Single-Family			Multi-Family		
Issuer	**Ratings (M/S/F)**	**PADR (2017)**	**Profitability (2017)**	**Ratings (M/S/F)**	**PADR (2017)**	**Profitability (2017)**
Rhode Island Housing	**Aa1/AA+/--** (Homeownership Opportunity Bonds)	**1.26x**	**30%**	**Aa2/--/--** (Multi-Family Development Bonds)	**1.18x**	**44%**
Connecticut	Aaa/AAA/-- (Housing Mortgage Finance Program)	1.24x (2016)	9.7% (2016)	Aaa/AAA/--	1.24x (2016)	9.7% (2016)
Maine	Aa1/AA+/--	1.21x (FY 16)	6.91%	Aa1/AA+/--	1.21x	6.91%
Massachusetts	Aa1/AA+/-- (Single Family Housing)	1.18x	17.08%	Aa2/AA/-- (Housing Bonds)	1.19x	14.2%
New Hampshire	Aa2/--/-- (Single Family Mtg Acq)	1.12x	24.69%	Aa2/--/--	1.14x	16.4%
Vermont	Aa2/--/AA (Multi-Purpose Bonds)	1.23x	21.34% (2016)	Aa3/A+/-- (Multi-Family Mortgage)	1.25x	37.0%

**Source: Moody's rating reports for each issuer. Moody's Multi-Family Medians, April 2018.*

Recommendation for Debt Limit and Rationale

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 1.26x (Single-Family) and PADR of 1.18x (Multi-Family)

The PFMB recommends no change in RI Housing target a PADR of not less than 1.10x, which is the level that Moody's recommends for triple-A programs, and is in line with the agency's closest peers. PFMB notes that the agency's current PADR level of 1.26x for Single-Family and 1.18x for Multi-Family exceeds Moody's recommended levels for triple-A rated entities (RI Housing is currently rated Aa1 for Single-Family and Aa2 for Multi-Family properties). RI Housing's PADR has improved for both the Single-Family and Multi-Family programs from 1.19x and 1.12x, respectively in 2015, to 1.26x and 1.18x in 2018.

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.

Amount of Debt and Liabilities Outstanding

Quasi-Public Agency	Debt Outstanding as of 6/30/2018	Pension	OPEB	Other Long-Term Liabilities	Total Liabilities
Rhode Island Student Loan Authority	$301,485,000 outstanding in Student Loan Program Revenue Bonds; $176,947,000 outstanding in FFELP Loan Program Revenue Bonds; $9,413,182 outstanding in a Santander Bank line of credit; $11,844,031 outstanding in a Webster Bank line of credit	N/A	N/A	Arbitrage Rebate Liability $2.977 million	$502.7 million

Rating Agency Guidance and Peer Comparison

The Parity Ratio is the percentage of total assets, including loans and funds in the loan acquisition account and the reserve account, relative to the total outstanding bonds. RISLA's Parity Ratio in 2018 was 120.6%.

Rating Agency Criteria for Student Loan Bonds	
Fitch Ratings	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. • 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. • Reviews Overcollateralization: Difference between asset balance and outstanding bonds. • 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).
Standard & Poor's	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 (2018)	Credit Enhancement (% to Total Assets)
Rhode Island Student Loan Authority	**--/AA(sf)/AAsf**	**Ratings Affirmation**	**120.6%**	**17.1%**
Massachusetts Educational Financing Authority (MEFA)	--/AA(sf)/A (sf)	Ratings Affirmation	102.7% (S) 2018 111.6% (F) 2017	19.0% -- 21.3% (S) 22.95% (F)
Connecticut (CHESLA)	A1/--/A+	Credit based on State Special Capital Reserve Fund Make-Up		
Vermont(VSAC)	--/A (sf)/Asf	None	130.96% (S) 132% (F)	27.1% -- 28.2% (S) 23.64% (F)
New Jersey (HESAA)	Sen: Aaa Sub: A2	Parity Percentage at least 112% (S) 107% (M)	108.5%	Sen: 16.0%-17.0% Sub: 11.0%-12.0%
Iowa Student Loan Liquidity Corporation	--/--A(sf)	Ratings Affirmation	150.7%	33.65%

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

Recommendation for Debt Limit and Rationale

Quasi-Public Agency	Recommendations for Debt Affordability Measure	Current Debt Levels
Rhode Island Student Loan Authority	Target minimum Parity Ratio of 110% Provide notice to PFMB of any rating action	Parity ratio of 120.6%

Since ratings agencies do not provide specific guidance on target parity ratios, the PFMB recommends that RISLA should maintain a minimum target Parity Ratio of 110%, because this provides sufficient equity to insulate the agency from historic rates of borrower defaults, delinquencies and forbearance, during times of economic stress, and because all of RISLA's peers maintain parity ratios above 110%. Additionally, PFMB requests notice of any rating agency action, including confirmation of ratings, outlook changes, or any upgrade/downgrade of the rating.

Tobacco Settlement Financing Corporation

The Tobacco Settlement Financing Corporation was created to securitize payments from tobacco companies for the benefit of the State. In the mid-1990s, 46 states, five U.S. territories, and the District of Columbia sued a number of United States tobacco companies to recover the financial burden that smoking was placing on their respective public health systems. In 1998, a Master Settlement Agreement was entered into among the States and the tobacco manufacturers. As part of the agreement, the tobacco companies agreed to make annual payments to the States in perpetuity, paving the way for the issuance of bonds secured by those payments.

In 2002 the Rhode Island legislature authorized the State to issue bonds backed by the tobacco settlement payments, primarily to pay for certain indebtedness of the State and to fund expenses. $1.5 billion TSFC bonds were issued in three series, with $739.5 million outstanding as of June 30, 2018. No additional bonds with the exception of refunding bonds may be issued.

The credit risk of these bonds is born solely by bond holders. In light of the non-recourse nature of these bonds, and the fact that the Corporation is not able to issue any new bonds, the PFMB does not recommend any affordability targets for the Corporation.

Debt Affordability Study

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

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, municipal fire districts, special districts and other local authorities of the State. While the primary focus of this section is debt issued by these municipalities and local authorities, the PFMB recognizes that pensions and OPEB are additional long-term liabilities that should be taken into account in determining appropriate levels of debt for these entities to hold. Therefore, similar to Part 1 of this study, this section recommends limits on indebtedness and also on total liabilities for municipalities.[8]

Overall the long-term liability profiles of the state's local authorities has improved on many fronts, though there are still areas for concern. When comparing the data in this year's study to the data from the prior study published two years ago, the following trends and findings emerge:

- The liability levels of most of Rhode Island's municipalities remain within acceptable levels in FY17-18[9]. This study measures municipal liabilities according to 4 separate ratios, each with recommended limits. The liabilities of 32 of Rhode Island's 39 municipalities are below all 4 recommended limits.

- In FY17-18, the liabilities of seven communities still exceeded at least one of the 4 recommended affordability limits, with four communities exceeding multiple recommended limits (Central Falls, Johnston, Providence & Woonsocket).

- For most municipalities, unfunded pension liabilities are the largest and most costly liability, though OPEB liabilities are also significant for several municipalities.

- Overall municipal debt[10] increased by a modest $42.3 million, from $3.075 billion to $3.117 billion between FY15 and FY17-18. Total municipal debt service increased by approximately 7% between FY15 and FY17-18.

- Some of the state's most highly indebted municipalities have seen their debt burdens decline since the prior study two years ago.

    - For example, Woonsocket's Overall Net Debt has fallen from 10% of Assessed Property Value in FY 2015, to 7.3% of Assessed Property Value in FY18. Similarly, Providence's Net Debt to Assessed Value has fallen from 4.4% to 3.7%. Improvements in these communities were due to both decreasing net debt levels and increasing assessed property values.

- Net pension liability increased by $712.6 million, or 19.3% between FY15 and FY17-18. This increase was driven by large increases in Providence ($161.2 million, or a 14.8% increase), East Providence ($149.2 million, a 292.6% increase), and Warwick ($69.4 million, or a 17.9% increase). It is worth nothing however, that at least some of this increase was the result of communities adopting more realistic actuarial assumptions in calculating their pension liabilities, as opposed to negative plan experience.

- Most municipalities are meeting their full annual pension required payments; however, a few (East Providence, Jamestown, Johnston, North Providence and Smithfield) fell shy of annual required payments in their most recently reported fiscal years.

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[8] This study does not include pensions or OPEB for fire districts, special districts and local authorities.
[9] Due to lack of FY18 data availability, FY17 data was used for a handful of communities.
[10] Overall municipal debt is the sum of general obligation debt, loans payable, capital leases, enterprise debt and the debt of overlapping agencies.

- 15 of Rhode Island's 39 municipalities made their full OPEB required contributions in their most recently reported fiscal years. Of the $192.4 million in annual required municipal OPEB contributions across all communities, $120.5 million, or 62.6% of payments were made in FY17-FY18.

Rhode Island Municipalities

Rhode Island has 39 municipalities. The table below summarizes the current general obligation ratings of the municipalities as of Spring 2019

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	NR	North Kingstown	Aa2	AA+	NR
Central Falls	Ba1	BBB	NR	North Providence	A1	AA-	NR
Charlestown	Aa2	NR	NR	North Smithfield	Aa2	NR	NR
Coventry	A1	NR	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	AAA	West Warwick	Baa2	NR	NR
Little Compton	NR	AAA	NR	Westerly	Aa3	AA	NR
Middletown	Aa1	NR	NR	Woonsocket	Baa3	NR	A
Narragansett	Aa2	AA+	NR				

The charts below provide a summary (in dollars) of the outstanding debt, net pension liability and net OPEB liability for each municipality in the most recent fiscal years for which the municipalities have published financial statements. [11] At the time of this report's publication, most municipalities had published data for FY 2018, and the rest had published data as of FY 2017. This report includes the most recently reported data for each community.[12]

	Governmental Activities - Tax-Supported				Business Activities			
Municipality	General Obligation Bonds	Loans Payable	Capital Leases	Net Direct Debt	Enterprise Debt	Gross Direct Debt	Overlapping Debt	Overall Debt
Barrington (FY18)	8,230,000	68,444,636	926,028	77,600,664	12,874,814	90,475,478	0	90,475,478
Bristol (FY18)	28,469,528	0	535,957	29,005,485	34,927,005	63,932,490	8,134,540	72,067,030
Burrillville (FY18)	10,157,229	0	0	10,157,229	7,585,000	17,742,229	4,216,788	21,959,017
Central Falls (FY17)	5,895,000	5,215,000	0	11,110,000	23,960,670	35,070,670	0	35,070,670
Charlestown (FY18)	4,845,000	0	351,602	5,196,602	0	5,196,602	11,858,681	17,055,283
Coventry (FY 18)	41,550,000	1,015,576	0	42,565,576	24,484,226	67,049,802	1,089,457	68,139,259
Cranston (FY18)	70,526,000	10,840,000	2,780,000	84,146,000	22,159,152	106,305,152	0	106,305,152
Cumberland (FY18)	28,805,000	19,093,523	5,750,232	53,648,755	45,920,957	99,569,712	10,452,046	110,021,758
East Greenwich (FY17)	43,400,001	1,846,500	16,943	45,263,444	26,873,658	72,137,102	0	72,137,102
East Providence (FY17)	44,014,349	0	1,361,274	45,375,623	90,612,152	135,987,775	0	135,987,775
Exeter (FY 18)	451,391	0	114,258	565,649	0	565,649	1,847,774	2,413,423
Foster (FY17)	0	0	25,560	25,560	0	25,560	11,210,471	11,236,031
Glocester (FY18)	1,620,000	320,920	0	1,940,920	0	1,940,920	21,129,018	23,069,938
Hopkinton (FY18)	2,529,000	na	152,339	2,681,339	0	2,681,339	9,427,634	12,108,973
Jamestown (FY18)	8,350,000	0	457,187	8,807,187	6,680,000	15,487,187	0	15,487,187
Johnston (FY18)	28,730,275	19,365	0	28,749,640	35,458,911	64,208,551	0	64,208,551
Lincoln (FY18)	22,595,000	0	123,105	22,718,105	39,003,621	61,721,726	1,746,182	63,467,908
Little Compton (FY18)	9,780,000	0	290,905	10,070,905	0	10,070,905	0	10,070,905
Middletown (FY18)	33,550,000	300,000	415,646	34,265,646	6,465,289	40,730,935	0	40,730,935
Narragansett (FY18)	22,284,000	1,152,837	362,737	23,799,574	1,991,112	25,790,686	0	25,790,686
New Shoreham (FY18)	15,190,305	0	136,128	15,326,433	4,233,959	19,560,392	0	19,560,392
Newport (FY18)	36,211,000	0	353,018	36,564,018	134,798,226	171,362,244	0	171,362,244
North Kingstown (FY17)	32,696,890	0	0	32,696,890	17,706,822	50,403,712	0	50,403,712
North Providence (FY17&FY18)	10,429,000	0	0	10,429,000	49,415,291	59,844,291	0	59,844,291
North Smithfield (FY18)	28,174,416	0	63,906	28,238,322	3,861,537	32,099,859	0	32,099,859
Pawtucket (FY18)	87,225,293	na	7,667,932	94,893,225	192,257,229	287,150,454	0	287,150,454
Portsmouth (FY18)	23,744,440	0	1,177,420	24,921,860	693,044	25,614,904	2,313,000	27,927,904
Providence (FY18)	105,478,000	5,102,000	319,379,000	429,959,000	388,514,847	818,473,847	0	818,473,847
Richmond (FY17)	2,890,000	0	8,000	2,898,000	2,030,462	4,928,462	9,289,018	14,217,480
Scituate (FY18)	3,621,000	2,711,000	50,500	6,382,500	330,617	6,713,117	0	6,713,117
Smithfield (FY18)	22,028,273	0	0	22,028,273	7,433,196	29,461,469	0	29,461,469
South Kingstown (FY18)	12,495,000	0	0	12,495,000	1,200,000	13,695,000	1,241,804	14,936,804
Tiverton (FY18)	41,030,000	0	1,043,839	42,073,839	0	42,073,839	5,737,176	47,811,015
Warren (FY17)	13,887,329	0	0	13,887,329	3,007,373	16,894,702	4,730,461	21,625,162
Warwick (FY17)	46,554,440	0	5,905,962	52,460,402	102,343,493	154,803,895	14,000	154,817,895
West Greenwich (FY18)	4,675,000	46,593	0	4,721,593	283,171	5,004,764	2,031,660	7,036,423
West Warwick (FY18)	43,037,000	0	1,627,000	44,664,000	27,764,382	72,428,382	0	72,428,382
Westerly (FY18)	43,840,000	23,456,000	2,121,462	69,417,462	6,556,691	75,974,153	2,061,119	78,035,272
Woonsocket (FY18)	139,963,462	0	255,198	140,218,660	65,470,070	205,688,730	0	205,688,730
Total	1,128,952,621	139,563,950	353,453,138	1,621,969,709	1,386,896,975	3,008,866,684	108,530,828	3,117,397,512

[11] 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.

[12] Newport water and sewer utilities provide service to Middletown, Portsmouth Water and Fire District, Portsmouth and the U.S. Navy. Newport receives payments from these entities that are used to help pay the enterprise debt service.

Municipality Overall Debt + Pension + OPEB

Municipality	Overall Debt	Net Pension Liability	Net OPEB Liability	Total Liabilities: Overall Debt + Pension + OPEB
Barrington (FY18)	$90,475,477.86	$59,592,515.00	$0.00	$150,067,992.86
Bristol (FY18)	$72,067,029.89	$20,416,939.00	$9,367,345.00	$101,851,313.89
Burrillville (FY18)	$21,959,017.00	$31,364,063.00	$0.00	$53,323,080.00
Central Falls (FY17)	$35,070,670.17	$27,691,403.00	$3,267,708.00	$66,029,781.17
Charlestown (FY18)	$17,055,282.52	$5,383,936.00	$1,863,558.00	$24,302,776.52
Coventry (FY 18)	$68,139,258.50	$161,583,565.00	$17,107,002.00	$246,829,825.50
Cranston (FY18)	$106,305,151.79	$404,838,085.00	$50,756,692.00	$561,899,928.79
Cumberland (FY18)	$110,021,758.45	$82,518,148.00	$20,986,634.00	$213,526,540.45
East Greenwich (FY17)	$72,137,101.80	$46,489,295.00	$39,218,245.00	$157,844,641.80
East Providence (FY17)	$135,987,775.46	$200,150,063.00	$26,911,297.00	$363,049,135.46
Exeter (FY 18)	$2,413,423.41	$0.00	$0.00	$2,413,423.41
Foster (FY17)	$11,236,031.30	$5,000,506.00	$240,035.00	$16,476,572.30
Glocester (FY18)	$23,069,937.70	$10,781,359.00	$1,757,261.00	$35,608,557.70
Hopkinton (FY18)	$12,108,973.33	$3,671,074.00	$0.00	$15,780,047.33
Jamestown (FY18)	$15,487,187.00	$10,217,212.00	$9,568,941.00	$35,273,340.00
Johnston (FY18)	$64,208,551.09	$168,915,938.00	$199,723,677.00	$432,848,166.09
Lincoln (FY18)	$63,467,907.53	$61,101,947.00	$13,343,281.00	$137,913,135.53
Little Compton (FY18)	$10,070,905.00	$6,013,927.00	$2,414,372.00	$18,499,204.00
Middletown (FY18)	$40,730,935.00	$37,358,873.00	$18,496,899.00	$96,586,707.00
Narragansett (FY18)	$25,790,686.00	$72,130,905.00	$35,040,392.00	$132,961,983.00
New Shoreham (FY18)	$19,560,392.00	$5,750,355.00	$501,555.00	$25,812,302.00
Newport (FY18)	$171,362,244.00	$136,431,195.00	$71,855,080.00	$379,648,519.00
North Kingstown (FY17)	$50,403,711.68	$89,328,576.00	$13,900,756.00	$153,633,043.68
North Providence (FY17&FY18)	$59,844,291.00	$65,135,343.00	$57,236,838.00	$182,216,472.00
North Smithfield (FY18)	$32,099,859.00	$24,541,420.00	$8,875,324.00	$65,516,603.00
Pawtucket (FY18)	$287,150,453.71	$284,693,912.00	$348,618,912.00	$920,463,277.71
Portsmouth (FY18)	$27,927,904.00	$72,639,920.00	$21,878,757.00	$122,446,581.00
Providence (FY18)	$818,473,847.10	$1,250,276,000.00	$1,007,294,000.00	$3,076,043,847.10
Richmond (FY17)	$14,217,480.23	$729,680.00	$0.00	$14,947,160.23
Scituate (FY18)	$6,713,116.66	$34,061,717.00	$7,424,899.00	$48,199,732.66
Smithfield (FY18)	$29,461,468.61	$63,906,072.00	$41,138,385.00	$134,505,925.61
South Kingstown (FY18)	$14,936,804.00	$69,572,335.00	$6,572,335.00	$91,081,474.00
Tiverton (FY18)	$47,811,015.00	$32,637,591.00	$26,378,098.00	$106,826,704.00
Warren (FY17)	$21,625,162.26	$6,990,615.00	$4,104,306.00	$32,720,083.26
Warwick (FY17)	$154,817,894.65	$456,769,388.00	$125,493,413.00	$737,080,695.65
West Greenwich (FY18)	$7,036,423.12	$3,095,324.00	$0.00	$10,131,747.12
West Warwick (FY18)	$72,428,382.45	$166,779,219.00	$63,026,019.00	$302,233,620.45
Westerly (FY18)	$78,035,271.93	$59,845,170.00	$27,948,460.00	$165,828,901.93
Woonsocket (FY18)	$205,688,730.00	$159,372,077.00	$145,101,262.00	$510,162,069.00
Total	$3,117,397,512.19	$4,397,775,662.00	$2,427,411,738.00	$9,942,584,912.19

Fire Districts

Based on FY2017 information from the Division of Municipal Finance, there are 41 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	Quinnville	Lincoln
Pascoag	Burillville	Saylesville	Lincoln
Harrisville	Burrillville	Bonnet Shores	Narragansett
Nasonville	Burrillville	Pojac Point	North Kingstown
Charlestown	Charlestown	Portsmouth Water and Fire	Portsmouth
Quonochontaug Central	Charlestown	Richmond Carolina	Richmond
Shady Harbor	Charlestown	Indian Lake	South Kingstown
Central Coventry	Coventry	Kingston	South Kingstown
Coventry	Coventry	Union	South Kingstown
Hopkins Hill	Coventry	North Tiverton	Tiverton
Western Coventry	Coventry	Stone Bridge	Tiverton
Cumberland	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
Lime Rock	Lincoln		
Lonsdale	Lincoln		
Manville	Lincoln		

All fire districts have the authority to borrow money, and most fire district charters include a debt limit, which varies from district to district. Appendix C summarizes the debt outstanding for 2017, as compiled by the Division of Municipal Finance (the “Division”) from the data self-reported by the fire districts in the Division’s FY17 Fire District Adopted Budget Survey (based on self-reported data).

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 (however, some of these entities are no longer rated). Appendix C provides a summary of the debt outstanding and debt service for FY2018 (if available).

Special Districts/Local Authorities	Moody's	S&P	Fitch
Bristol-Warren Regional School District	NR	NR	NR
Bristol County Water Authority[1]	NR	NR	NR
Burrillville Housing Authority	NR	NR	NR
Chariho Regional School District[2]	Aa3	NR	NR
Coventry Housing Authority	NR	AA-	NR
Cumberland Housing Authority	NR	AA-	NR
Exeter-West Greenwich Regional School District	NR	NR	NR
Foster-Glocester Regional School District	Aa3	NR	NR
Kent County Water Authority[3]	Aa2	AA-	NR
North Providence Housing Authority	NR	AA-	NR
Pascoag Utility District[4]	NR	A	NR
Pawtucket Housing Authority	NR	A+	NR
Providence Housing Development Corp.	NR	NR	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	AA-	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 the Villages of Pascoag and Harrisville, both in the Town of Burrillville, and provides water services to the Village of Pascoag.

Municipal Debt Classifications

In assessing the debt burden of a municipality, various types of debt should be considered, including Gross Direct Debt, Net Direct Debt, Overlapping Debt, Overall Debt and Overall Net Debt.

- *Gross Direct Debt.*
  - Definition: The sum of the total debt of the municipality and its agencies. 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 minus all self-supporting debt. In effect, Net Direct Debt is debt paid for by general municipal funds, and does not include enterprise bonds (water, sewer, solid waste and electric revenue bonds) that are paid for by separate revenue streams like utility ratepayer charges.
  - Examples: City of Providence General Obligation Debt, but not Providence Water Supply Debt.

- *Overlapping Debt*.
    - *Definition*: The municipality's proportionate share of the debt of other local governmental units that overlap it (either wholly or partly). For measurement purposes in this Study, Overlapping Debt is apportioned across communities based upon some measure such as relative assessed values or student enrollment in the case of school districts.
    - *Examples*: 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. In short, Overall Net Debt includes all debt paid for by taxes, whether it be municipal debt or debt of an overlapping agency but does not include debt that is self-supporting through enterprise revenue.
    - *Examples*: Includes City of Providence General Obligation debt, Albion Fire District, but not Providence Water Supply or Narragansett Bay Commission.

Debt Affordability Measures

Statutory Debt Limitation for Municipalities

Under Rhode Island state law, municipalities are limited to a level of direct 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:

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

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.

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

Fitch is the only rating agency that includes an OPEB inclusive metric in its rating methodology. For local governments, Fitch's "Carrying Cost" is calculated as follows:

$$\frac{\text{Governmental Debt Service + Pension ADC + OPEB Actual Payment}}{\text{Governmental Expenditures}}$$

The carrying cost metric isolates spending that is more fixed obligation. As for states, Fitch considers a carrying cost metric of:

- Less than 10% to be consistent with a 'aaa' assessment;
- Less than 20%, 'aa'
- Less than 25%, 'a'; and
- Less than 30%, 'bbb'

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 measures 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 also looks at other factors and sometimes makes 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

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.

PFMB Recommended Debt and Liability Affordability Limits

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 by the assessed property value in a municipality, because property tax revenues are the primary source of income for most municipal 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, specifically pension and OPEB liabilities.

Pension and OPEB 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 Limits

- ***Net Direct Debt to Full Assessed Property Values:*** Less than 3%
    - This ratio compares debt of the municipality, typically paid for through the municipal budget with taxpayer funds, to assessed property values. (This ratio does not include revenue bonds that are supported by ratepayers, such as water and sewer bonds).
    - **Rationale:** Moody's provides suggested levels of net direct debt to full value for each rating category. A ratio of 3% is in Moody's mid-point range for 'A' rated communities.

      S&P also uses 3% net direct debt as a percent of market value as a benchmark in its methodology. If a community's ratio is below 3%, S&P can improve the community's debt score by one point.

- ***Overall Net Debt to Full Assessed Property Value:*** Less than 4%
    - This ratio compares net direct debt plus the direct debt of any overlapping taxing authority to assessed property values.
    - **Rationale:** Consistent with the rationale for the 3% measure above; however instead of using Moody's mid-point range, the rationale was to reference the high-end of Moody's 'A' range, to account for the additional overlapping debt.

- ***Overall Debt + Net Pension Liability + OPEB Liability to Full Assessed Property Value:*** Less than 9.2%
    - This ratio compares total debt of the municipality and all overlapping jurisdictions, including revenue bonds, as well as total unfunded pension and OPEB liabilities, to assessed property value.

- **Rationale:** The PFMB believes it is important to consider the total liability burdens of municipalities, including all debt, pension and OPEB, relative to the underlying population's ability to pay. Although each ratings agency considered OPEB and pension liabilities differently, the PFMB estimates that a limit of Overall Debt + Net Pension Liability + OPEB Liability to Full Value of 9.2% would approximate the ratings agencies expectations for an 'A' rated community.

- ***Governmental Debt Service + Pension ADC + OPEB Required Payment to Governmental Expenditures***: Less than 22.5%
    - This ratio compares total governmental debt service, pension ADC (actuarial determined contribution) and OPEB required contribution of the municipality to governmental expenditures
    - **Rationale**: This ratio compares the annual cost of total liabilities to the total annual municipal budget. The formula is based off Fitch's "Carrying Cost" metric, the only OPEB inclusive rating agency methodology. The carrying cost metric isolates spending that is a more fixed obligation. As for states, Fitch considers a carrying cost metric of:
        - Less than 10% to be consistent with a 'aaa' assessment;
        - less than 20%, 'aa'
        - less than 25%, 'a' and
        - less than 30%, 'bbb'
    - PFMB recommends 22.5% consistent with the mid-point of an 'a' and "aa" rating.

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 PFMB also adjusted Fitch's Carrying Cost for the last ratio measure by including OPEB *required* payments in lieu of actual payments, to avoid providing an advantage to municipalities that fail to make their full required contributions. The following table compares the actual pension and OPEB contributions to the required contributions and includes the percent of actual contributions met for each municipality.

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.

For the purpose of this study, all debt for school building projects is counted as debt of the municipality regardless of whether the municipality expects to receive state aid. Rating agencies and other market participants tend to view this debt as a municipal liability regardless of any expected state reimbursement, with the rationale being that 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 FY2019 through FY2032.

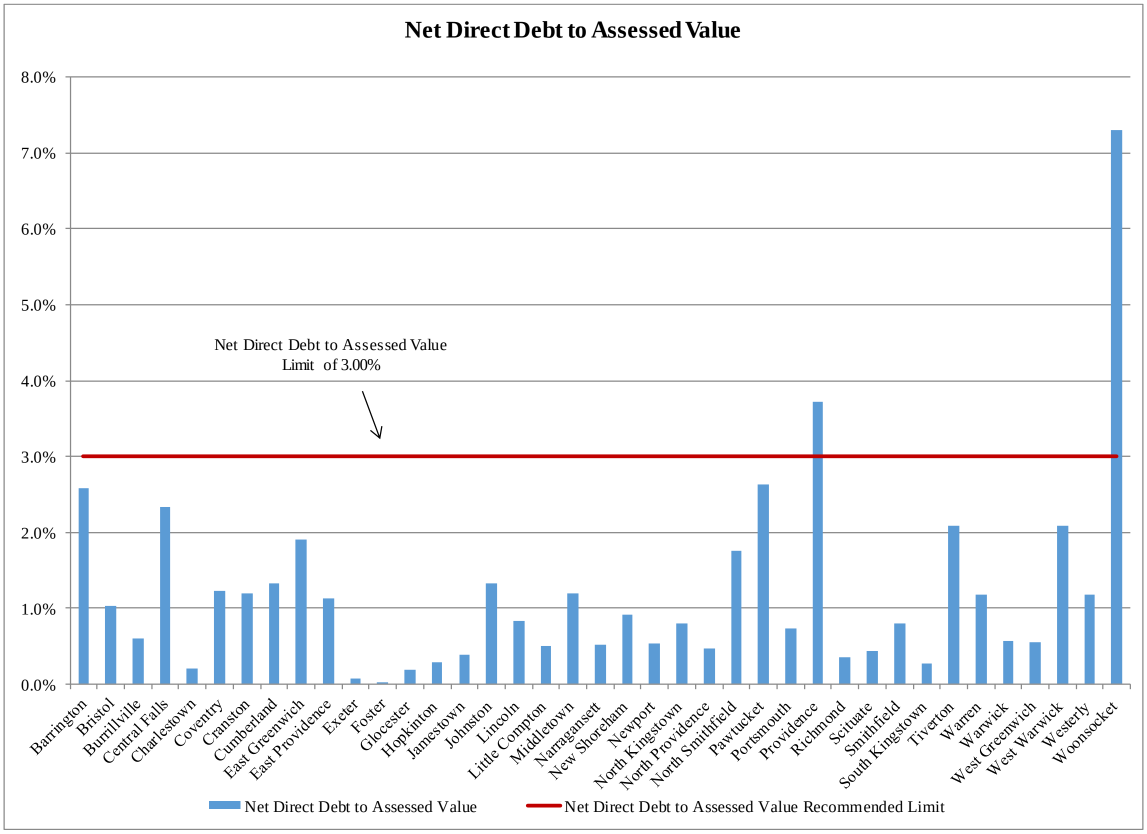
The table below shows the current levels of these affordability ratios for each municipality with green shaded levels indicating the municipality is within the recommended limits, yellow shaded levels indicating current levels are approaching the respective limit (75% of target) and red shaded levels indicating the current levels exceeds the recommended limits.[13]

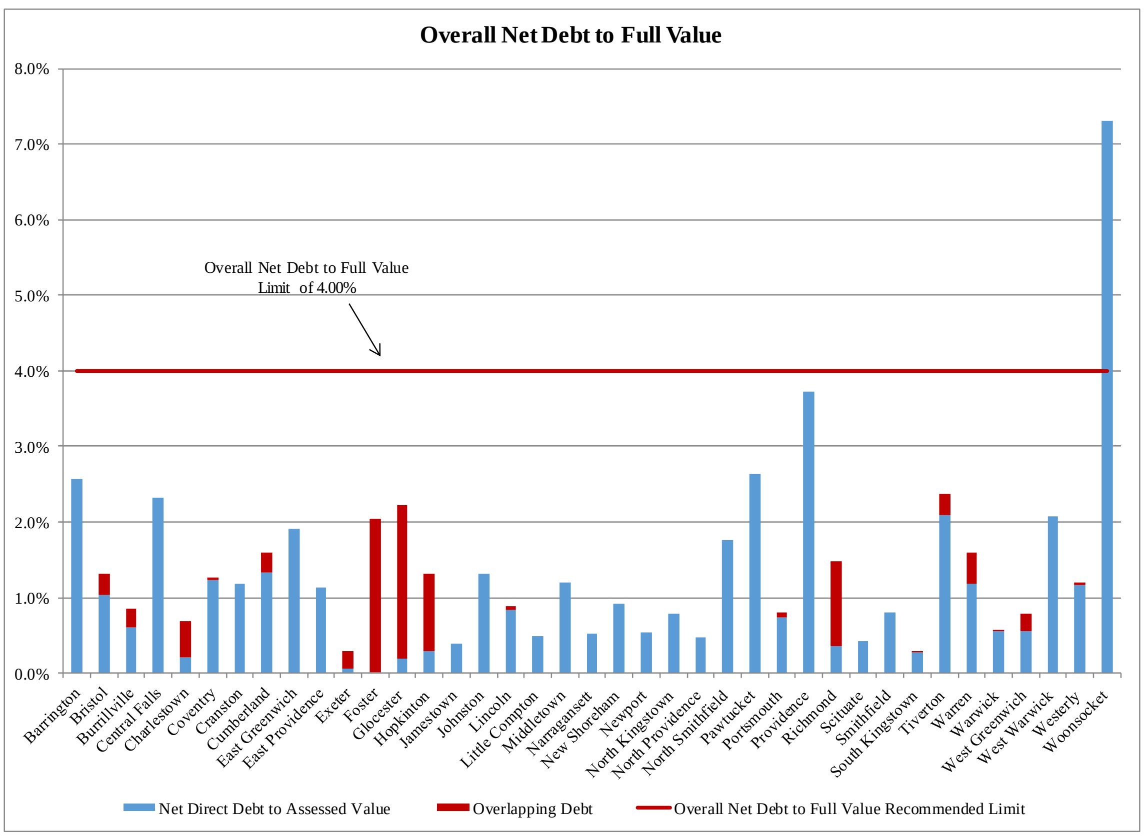
Municipality	Net Direct Debt to Assessed Value Target < 3.00%	Overall Net Debt to Assessed Value Target < 4.00%	Overall Debt + Net Pension Liability + OPEB Liability to Assessed Value Target < 9.2%	Governmental Debt Service + Pension ADC + OPEB Required Payment to Governmental Expenditures Target < 22.5%
Barrington	2.6%	2.6%	5.0%	11.2%
Bristol	1.0%	1.3%	3.6%	17.1%
Burrillville	0.6%	0.9%	3.2%	8.9%
Central Falls	2.3%	2.3%	13.8%	22.7%
Charlestown	0.2%	0.7%	1.0%	5.3%
Coventry	1.2%	1.3%	7.1%	14.7%
Cranston	1.2%	1.2%	7.9%	17.0%
Cumberland	1.3%	1.6%	5.3%	15.0%
East Greenwich	1.9%	1.9%	6.7%	19.4%
East Providence	1.1%	1.1%	9.1%	15.7%
Exeter	0.1%	0.3%	0.3%	1.3%
Foster	0.0%	2.0%	3.0%	3.9%
Glocester	0.2%	2.2%	3.4%	5.2%
Hopkinton	0.3%	1.3%	1.7%	3.2%
Jamestown	0.4%	0.4%	1.5%	12.4%
Johnston	1.3%	1.3%	19.9%	30.3%
Lincoln	0.8%	0.9%	5.0%	12.7%
Little Compton	0.5%	0.5%	0.9%	12.1%
Middletown	1.2%	1.2%	3.4%	15.2%
Narragansett	0.5%	0.5%	2.9%	22.0%
New Shoreham	0.9%	0.9%	1.5%	15.4%
Newport	0.5%	0.5%	5.5%	15.5%
North Kingstown	0.8%	0.8%	3.7%	15.2%
North Providence	0.5%	0.5%	8.3%	11.5%
North Smithfield	1.8%	1.8%	4.1%	15.6%
Pawtucket	2.6%	2.6%	25.6%	20.5%
Portsmouth	0.7%	0.8%	3.6%	15.6%
Providence	3.7%	3.7%	26.6%	26.4%
Richmond	0.4%	1.5%	1.8%	2.9%
Scituate	0.4%	0.4%	3.2%	12.6%
Smithfield	0.8%	0.8%	4.9%	11.9%
South Kingstown	0.3%	0.3%	2.0%	9.7%
Tiverton	2.1%	2.4%	5.3%	14.9%
Warren	1.2%	1.6%	2.8%	10.3%
Warwick	0.6%	0.6%	7.9%	25.3%
West Greenwich	0.6%	0.8%	1.2%	4.8%
West Warwick	2.1%	2.1%	14.1%	21.8%
Westerly	1.2%	1.2%	2.8%	14.6%
Woonsocket	7.3%	7.3%	26.6%	20.4%
	Meets recommended limit		Exceeds recommended limit	
	75% of limit reached			

(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. FY17 data used for Central Falls, East Greenwich, East Providence, Foster, North Kingstown, North Providence, Richmond, Warren and Warwick. FY17 OPEB data used for Burrillville, Coventry, Charlestown, Central Falls, and Cranston.

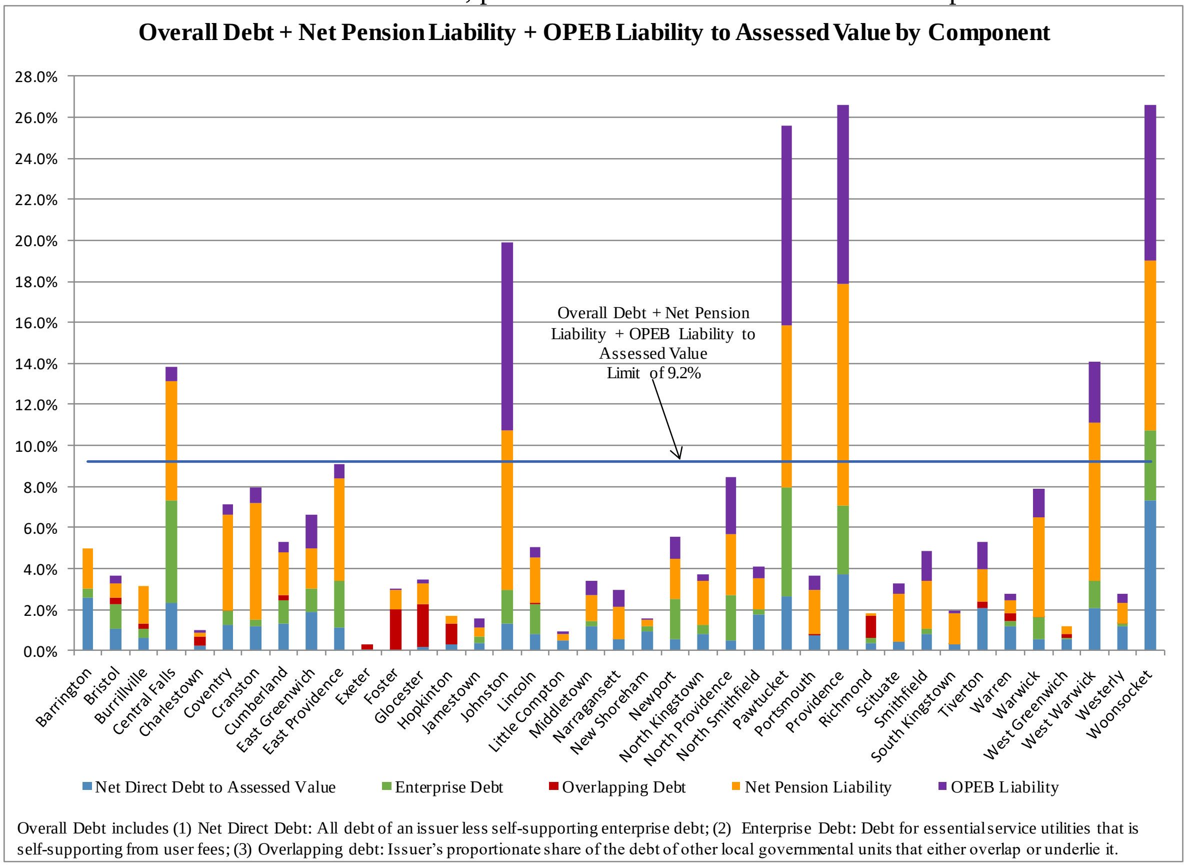
[13] A significant amount of outstanding debt is for the purpose of school construction, the costs of which will ultimately be reimbursed to municipalities by the state. The portion of municipal debt anticipated to be reimbursed is broken out on pages 126-128.

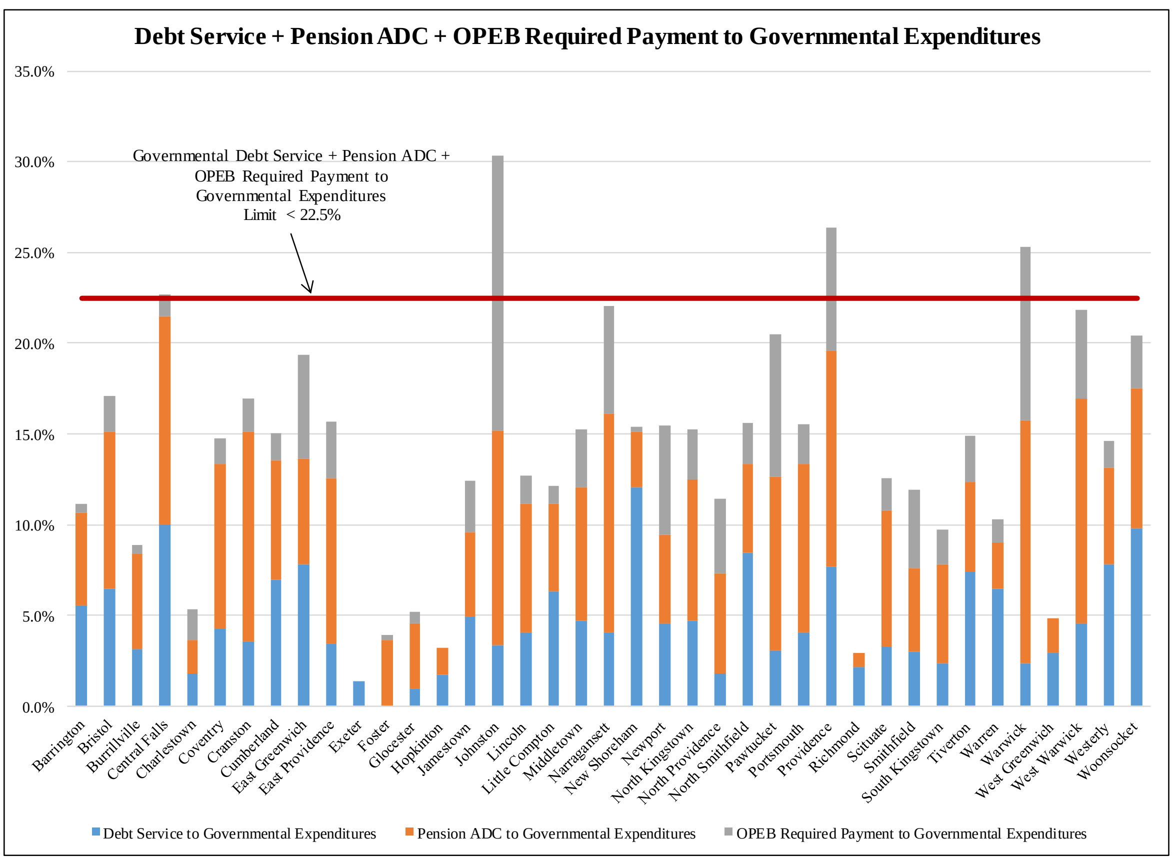
The charts below show the debt-only ratios for the municipalities.





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





The following table includes Pension and OPEB contributions by municipality, detailing both actual and required payments in dollars.

Municipality	Total Pension - Actual Payment	Total Pension - Required Payment	Percent of actual pension contributions met	OPEB Contribution (Actual)	OPEB- Actuarially Determined Contribution (Required)	Percent of actual OPEB contributions met
Barrington	5,013,722	4,744,617	105.67%	1,355,265	495,897	273.30%
Bristol	4,676,616	4,676,616	100.00%	1,350,016	1,066,000	126.64%
Burrillville	2,807,158	2,807,158	100.00%	237,959	261,152	91.12%
Central Falls*	2,692,408	2,710,764	99.32%	293,377	284,360	103.17%
Charlestown	505,426	505,426	100.00%	694,081	449,904	154.27%
Coventry	10,468,088	10,468,088	100.00%	952,546	1,605,868	59.32%
Cranston*	36,953,541	36,953,541	100.00%	5,923,914	5,923,914	100.00%
Cumberland	7,527,303	7,476,662	100.68%	1,503,461	1,677,202	89.64%
East Greenwich*	4,141,316	4,141,316	100.00%	1,194,912	4,095,673	29.17%
East Providence*	15,802,743	16,765,218	94.26%	7,374,080	5,451,057	135.28%
Exeter	-	-	-	-	-	-
Foster*	525,071	525,071	100.00%	67,394	36,594	184.17%
Glocester	1,029,674	1,029,674	100.00%	139,556	174,569	79.94%
Hopkinton	369,598	369,598	100.00%	-	-	-
Jamestown	1,164,916	1,183,623	98.42%	625,090	702,717	88.95%
Johnston	14,058,192	21,241,798	66.18%	9,367,130	18,051,553	51.89%
Lincoln	6,254,431	6,254,431	100.00%	1,804,537	1,333,965	135.28%
Little Compton	692,468	692,468	100.00%	144,114	144,114	100.00%
Middletown	5,597,087	4,325,407	129.40%	3,550,098	2,415,706	146.96%
Narragansett	7,885,538	7,745,975	101.80%	3,863,274	3,874,650	99.71%
New Shoreham	563,253	563,253	100.00%	72,587	58,123	124.89%
Newport	5,768,174	5,768,174	100.00%	6,614,215	7,162,648	92.34%
North Kingstown*	8,128,793	8,128,793	100.00%	1,263,315	2,915,354	43.33%
North Providence	5,878,379	6,176,259	95.18%	3,146,059	4,331,922	72.63%
North Smithfield	2,222,801	2,222,801	100.00%	839,988	1,053,212	79.75%
Pawtucket	25,528,179	25,528,179	100.00%	14,613,247	21,155,209	69.08%
Portsmouth	6,668,668	6,668,668	100.00%	1,069,210	1,629,782	65.60%
Providence	99,103,000	97,424,000	101.72%	26,854,000	56,757,000	47.31%
Richmond*	191,052	191,052	100.00%	-	-	-
Scituate	2,797,978	2,763,573	101.24%	273,226	649,403	42.07%
Smithfield	3,534,379	3,534,379	100.00%	1,280,410	3,391,137	37.76%
South Kingstown	5,115,032	5,115,032	100.00%	2,704,160	1,829,061	147.84%
Tiverton	3,071,323	2,946,786	104.23%	679,087	1,594,417	42.59%
Warren*	683,813	683,813	100.00%	212,194	341,832	62.08%
Warwick*	42,983,193	42,095,022	102.11%	9,522,392	30,737,358	30.98%
West Greenwich	378,894	378,894	100.00%	-	-	-
West Warwick	12,773,227	12,782,978	99.92%	4,270,977	4,956,467	86.17%
Westerly	5,505,689	5,265,889	104.55%	1,912,794	1,501,065	127.43%
Woonsocket	12,201,805	12,201,805	100.00%	4,638,340	4,638,340	100.00%
*2017 OPEB data used						

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.

<u>Method of Sale</u>: 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:

Factor	Competitive Sale	Negotiated Sale
Credit	General obligation credits High ratings No negative outlook on the ratings	New credit Complex credit with a "story" Low credit ratings (Baa/BBB)
Size of the Issue	Bond issue under $500 million for Rhode Island	Large debt issue that raises concerns about market saturation. Threshold level varies from issuer to issuer.
Financing Structure	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.
Market Volatility	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)
Retail Investor Demand	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. Since the Series 2016A and 2016B general obligation bonds sale, the State has also successfully competitively bid its $91 million tax-exempt General Obligation Bonds, Series 2017A, $66.92 million taxable General Obligation Bonds, Series 2017A, its $114.275 million tax-exempt General Obligation Bonds, Series 2018A, $35.1 million taxable General Obligation Bonds, Series 2018B, its $123 million tax-exempt General Obligation Bonds, Series 2019A, $25 million taxable General Obligation Bonds, Series 2019B and $10.095 million Lease Certificates of Participations, Series 2018A and $20.1 million Lease Certificates of Participations, Series 2018B.

In certain circumstances, the State may want to consider issuing a private placement, a direct sale/purchase of securities or enter 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 current 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. Prior to 2018, tax-exempt bonds issued after 1986 could only be Advance Refunded one time with tax-exempt proceeds. On December 23, 2017, the President signed the Tax Cuts and Jobs Act, which eliminated the tax exemption for interest on advance refunding bonds; therefore, all Advanced Refunding Bonds issued on or after December 31, 2017, must be issued on a taxable basis.

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.

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.

Taxable Advanced Refundings: For refundings for savings, the following analyses are suggested to ensure that a taxable advanced refunding is warranted:

- 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 a taxable Advance

Refunding of the bonds today and a tax-exempt current refunding at the time the bonds are callable to result in the same amount of present value savings. The breakeven increase in tax-exempt interest rates should not exceed the forward interest rate forecast or a pre-established target based on past market volatility. Generally, the length of time to the call date, market conditions, shape of the yield curve and interest rate expectations are factors to be considered. Additionally, if the taxable Advance Refunding Bonds are expected to have different call features than a tax-exempt current refunding, the issuer should take into account the estimated value of the issuer's call option on both the taxable Advance Refunding Bonds and the tax-exempt current refunding.

- Taxable Advanced Refunding initiated to escape burdensome or restrictive covenants or to restructure debt for an appropriate purpose for the issuer may be considered in certain cases even when the taxable Advance Refunding generates dissavings or may warrant a lower savings target, depending on the benefits expected to be achieved.

Forward Refunding. A refunding in which bonds are sold with the intent to close or deliver at some future point in time, generally within 90 days prior to the call date on the refunded bonds, thereby qualifying the issue as a current (tax-exempt) 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, complex bond refundings are often conducted through a negotiated process. 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 and 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.

On August 20, 2018, SEC approved amendments SEC Rule 15c2-12. These amendments, which became effective on February 27, 2019, added new events to the prior list of events and are related to an issuer or and obligated party's incurrence of a "financial obligation" as described below.

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
- Incurrence of a financial obligation, as defined in the Rule, which generally means (i) a debt

obligation and (ii) a derivative instrument entered into and associated with a current or planned debt obligation;

- A guarantee of financial obligation

- An agreement to covenants, events of default, remedies, priority rights of a financial obligation of the issuer or obligated person, which affect the bondholders, if material

- A default, event of acceleration, termination event, modification of terms, or other events under the terms of a financial obligation of the issuer or obligated person, which reflect financial difficulties

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 disclose any financial obligations entered into prior to February 27, 2019 to the public market on the EMMA system.

APPENDIX A – PART ONE

STATE DEBT AND PENSION RATIOS

APPENDIX A
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Moody's State Debt Medians				
State (M/S/F)	**Debt Service to Revenues**	**Debt to Personal Income**	**Debt Per Capita**	**Debt to Gross State Product**
50 State Median	**4.2%**	**2.3%**	**$1,477**	**2.57%**
Double-A Median	**4.0%**	**2.7%**	**$1,229**	**2.3%**
Rhode Island (Aa2/AA/AA)	**5.1%**	**4.4%**	**$2,188**	**4.03%**
Alabama (Aa1/AA/AA+)	4.0%	2.3%	$898	2.13%
Alaska (Aa3/AA/AA)	1.4%	2.8%	$1,574	2.31%
Arizona (Aa2/AA/--)	3.9%	1.6%	$651	1.49%
Arkansas (Aa1/AA/--)	3.5%	1.6%	$639	1.58%
California (Aa3/AA-/AA-)	4.6%	3.9%	$2,188	3.30%
Colorado (Aa1/AA/--)	2.2%	0.9%	$484	0.84%
Connecticut (A1/A/A+)	13.8%	9.5%	$6,544	9.03%
Delaware (Aaa/AAA/AAA)	5.1%	5.5%	$2,587	3.48%
Florida (Aaa/AAA/AAA)	4.4%	2.0%	$889	2.02%
Georgia (Aaa/AAA/AAA)	6.4%	2.4%	$986	1.94%
Hawaii (Aa1/AA+/AA)	10.5%	10.4%	$5,257	8.86%
Idaho (Aa1/AA+/AA+)	1.5%	1.2%	$482	1.21%
Illinois (Baa3/BBB-/BBB)	9.2%	5.6%	$2,919	4.70%
Indiana (Aaa/AAA/AAA)	1.2%	0.7%	$295	0.57%
Iowa (Aaa/AAA/AAA)	0.6%	0.5%	$219	0.37%
Kansas (Aa2/AA-/--)	4.4%	3.3%	$1,554	3.01%
Kentucky (Aa3/A/AA-)	7.3%	5.1%	$1,995	4.52%
Louisiana (Aa3/AA-/AA-)	4.9%	3.8%	$1,627	3.22%
Maine (Aa2/AA/AA)	4.8%	2.1%	$900	2.03%
Maryland (Aaa/AAA/AAA)	7.0%	3.7%	$2,164	3.42%
Massachusetts (Aa1/AA/AA+)	11.7%	9.5%	$6,085	8.25%
Michigan (Aa1/AA/AA)	2.5%	1.5%	$673	1.37%
Minnesota (Aa1/AAA/AAA)	3.4%	2.8%	$1,430	2.35%
Mississippi (Aa2/AA/AA)	3.5%	5.2%	$1,854	5.10%
Missouri (Aaa/AAA/AAA)	3.5%	1.2%	$532	1.09%
Montana (Aa1/AA/AA+)	1.3%	0.4%	$177	0.40%

Moody's State Debt Medians				
State (M/S/F)	**Debt Service to Revenues**	**Debt to Personal Income**	**Debt Per Capita**	**Debt to Gross State Product**
Nebraska (Aa1/AAA/--)	0.2%	0.0%	$20	0.03%
Nevada (Aa2/AA/AA+)	3.9%	1.5%	$637	1.31%
New Hampshire (Aa1/AA/AA+)	4.0%	1.4%	$773	1.34%
New Jersey (A3/A-/A)	9.4%	7.0%	$4,281	6.70%
New Mexico (Aa2/AA/--)	5.0%	3.0%	$1,139	2.54%
New York (Aa1/AA+/AA+)	8.1%	5.2%	$3,082	4.08%
North Carolina (Aaa/AAA/AAA)	3.1%	1.5%	$611	1.20%
North Dakota (Aa1/AA+/--)	0.3%	0.2%	$133	0.19%
Ohio (Aa1/AA+/AA+)	5.6%	2.5%	$1,118	2.08%
Oklahoma (Aa2/AA/AA)	1.9%	0.7%	$303	0.66%
Oregon (Aa1/AA+/AA+)	5.2%	4.5%	$2,017	3.65%
Pennsylvania (Aa3/A+/AA-)	3.6%	2.6%	$1,311	2.33%
South Carolina (Aaa/AA+/AAA)	2.7%	1.3%	$517	1.24%
South Dakota (Aaa/AAA/AAA)	2.1%	1.5%	$694	1.25%
Tennessee (Aaa/AAA/AAA)	1.3%	0.7%	$312	0.63%
Texas (Aaa/AAA/AAA)	2.7%	0.9%	$410	0.73%
Utah (Aaa/AAA/AAA)	5.3%	2.0%	$772	1.52%
Vermont (Aa1/AA+/AAA)	2.1%	2.0%	$987	1.98%
Virginia (Aaa/AAA/AAA)	4.8%	2.9%	$1,515	2.60%
Washington (Aa1/AA+/AA+)	7.7%	5.0%	$2,662	4.13%
West Virginia (Aa2/AA-/AA)	5.4%	2.9%	$1,056	2.63%
Wisconsin (Aa1/AA/AA)	5.9%	3.6%	$1,660	3.07%
Wyoming (--/AA+/--)	0.1%	0.1%	$38	0.06%

Source: Moody's State Debt Medians 2018, April 24, 2018. Figures use fiscal 2016 own-source revenues for Alabama and New Mexico. Own-source revenues are reported total governmental revenues less funds received from federal sources. Addition adjustments have been made to own-source revenues for Delaware, Massachusetts and Washington to reflect inclusion or exclusion of certain funds.

Moody's State Pension Medians					
State (M/S/F)	**2017 ANPL as % of Own-Source Revenues**	**3-Yr Avg ANPL as % of Own-Source Revenues**	**ANPL as % of Personal Income**	**ANPL as % of Gross State Product**	**ANPL Per Capita**
50 State Median	**107%**	**83%**	**6.9%**	**6.1%**	**$2,446**
Double-A Median	**107%**	**97%**	**7%**	**7%**	**$3,255**
Rhode Island (Aa2/AA/AA)	**154%**	**135%**	**12.4%**	**11.3%**	**$6,362**
Alabama (Aa1/AA/AA+)	74%	68%	4.8%	4.4%	$1,904
Alaska (Aa3/AA/AA)	173%	287%	28.9%	22.7%	$16,199
Arizona (Aa2/AA/--)	71%	66%	4.0%	3.7%	$1,666
Arkansas (Aa1/AA/--)	85%	69%	6.6%	6.5%	$2,691
California (Aa3/AA-/AA-)	136%	113%	10.2%	8.5%	$5,920
Colorado (Aa1/AA/--)	159%	147%	7.5%	6.6%	$4,038
Connecticut (A1/A/A+)	360%	311%	28.3%	27.3%	$19,849
Delaware (Aaa/AAA/AAA)	106%	78%	13.5%	8.7%	$6,629
Florida (Aaa/AAA/AAA)	52%	42%	2.6%	2.6%	$1,210
Georgia (Aaa/AAA/AAA)	104%	91%	5.8%	4.7%	$2,516
Hawaii (Aa1/AA+/AA)	189%	141%	19.4%	16.3%	$10,053
Idaho (Aa1/AA+/AA+)	54%	42%	4.0%	3.9%	$1,612
Illinois (Baa3/BBB-/BBB)	601%	507%	37.0%	30.5%	$19,539
Indiana (Aaa/AAA/AAA)	110%	100%	7.2%	5.9%	$3,188
Iowa (Aaa/AAA/AAA)	49%	42%	3.7%	2.8%	$1,691
Kansas (Aa2/AA-/--)	194%	181%	12.7%	11.2%	$6,061
Kentucky (Aa3/A/AA-)	332%	286%	27.3%	23.7%	$10,769
Louisiana (Aa3/AA-/AA-)	107%	98%	7.4%	6.1%	$3,219
Maine (Aa2/AA/AA)	189%	158%	14.9%	14.6%	$6,720
Maryland (Aaa/AAA/AAA)	263%	219%	17.4%	15.9%	$10,371
Massachusetts (Aa1/AA/AA+)	247%	210%	17.8%	15.3%	$11,728
Michigan (Aa1/AA/AA)	113%	112%	8.2%	7.4%	$3,728
Minnesota (Aa1/AAA/AAA)	68%	52%	6.2%	5.2%	$3,273
Mississippi (Aa2/AA/AA)	95%	80%	7.6%	7.3%	$2,747
Missouri (Aaa/AAA/AAA)	104%	89%	5.3%	4.7%	$2,334
Montana (Aa1/AA/AA+)	153%	165%	13.2%	12.7%	$5,798

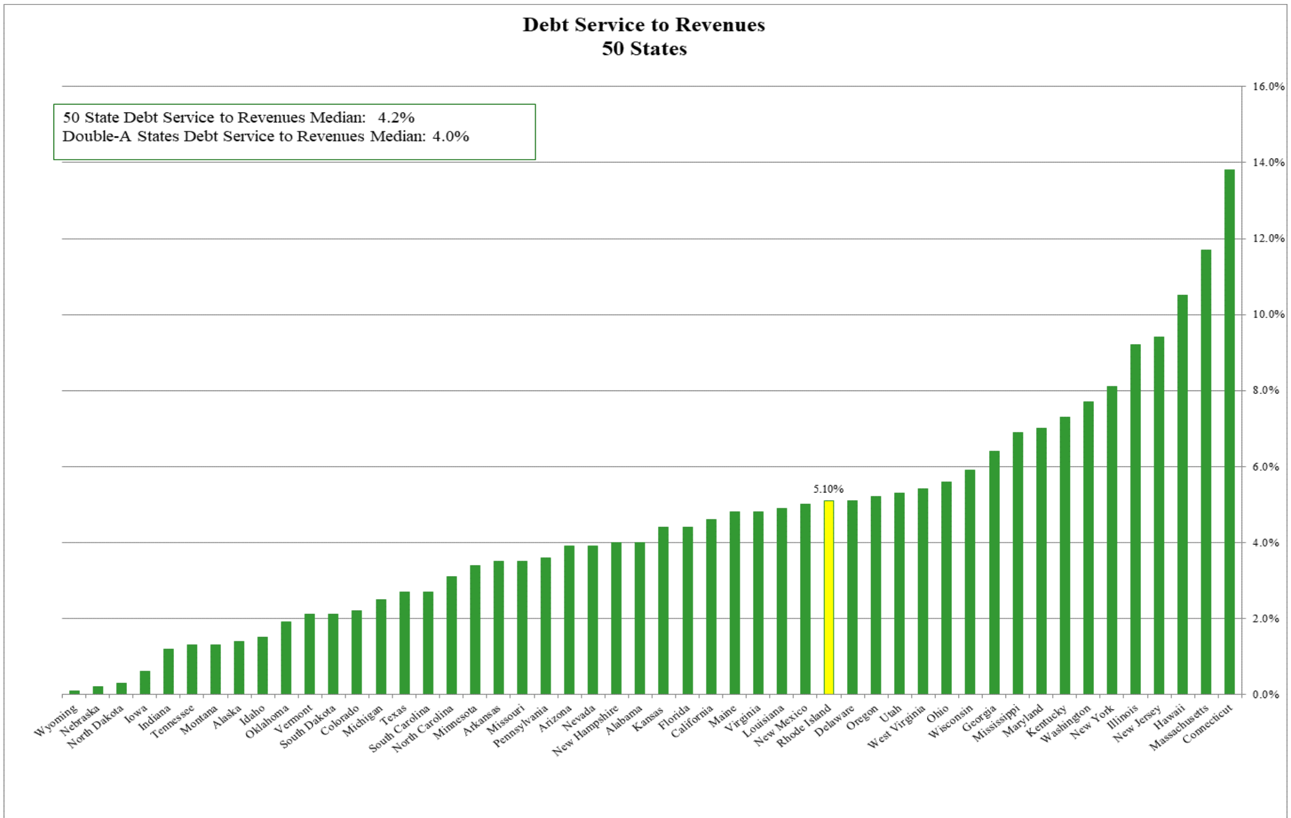
Moody’s State Pension Medians					
State (M/S/F)	**2017 ANPL as % of Own-Source Revenues**	**3-Yr Avg ANPL as % of Own-Source Revenues**	**ANPL as % of Personal Income**	**ANPL as % of Gross State Product**	**ANPL Per Capita**
Nebraska (Aa1/AAA/--)	50%	42%	3.0%	2.4%	$1,495
Nevada (Aa2/AA/AA+)	136%	123%	5.9%	5.1%	$2,636
New Hampshire (Aa1/AA/AA+)	66%	55%	3.1%	2.9%	$1,765
New Jersey (A3/A-/A)	290%	255%	20.6%	19.6%	$12,877
New Mexico (Aa2/AA/--)	87%	77%	10.9%	9.2%	$4,255
New York (Aa1/AA+/AA+)	48%	42%	3.6%	2.8%	$2,199
North Carolina (Aaa/AAA/AAA)	36%	27%	2.3%	1.9%	$1,007
North Dakota (Aa1/AA+/--)	39%	30%	4.4%	3.3%	$2,424
Ohio (Aa1/AA+/AA+)	49%	45%	2.9%	2.4%	$1,345
Oklahoma (Aa2/AA/AA)	107%	85%	6.6%	6.0%	$2,881
Oregon (Aa1/AA+/AA+)	82%	56%	6.2%	5.1%	$2,886
Pennsylvania (Aa3/A+/AA-)	185%	170%	12.1%	10.7%	$6,290
South Carolina (Aaa/AA+/AAA)	207%	186%	14.2%	13.2%	$5,747
South Dakota (Aaa/AAA/AAA)	116%	89%	6.6%	5.6%	$3,194
Tennessee (Aaa/AAA/AAA)	52%	44%	3.4%	2.9%	$1,484
Texas (Aaa/AAA/AAA)	196%	182%	10.6%	8.3%	$4,955
Utah (Aaa/AAA/AAA)	47%	50%	3.2%	2.5%	$1,350
Vermont (Aa1/AA+/AAA)	141%	120%	16.1%	15.9%	$8,215
Virginia (Aaa/AAA/AAA)	75%	66%	4.4%	4.0%	$2,378
Washington (Aa1/AA+/AA+)	91%	95%	5.8%	4.7%	$3,237
West Virginia (Aa2/AA-/AA)	185%	154%	17.5%	15.7%	$6,654
Wisconsin (Aa1/AA/AA)	50%	40%	3.5%	3.0%	$1,682
Wyoming (--/AA+/--)	45%	46%	4.4%	3.6%	$2,483

Source: Moody’s Medians – Adjusted net pension liabilities spike in advance of moderate declines, August 27, 2018. ANPL is adjusted net pension liability.

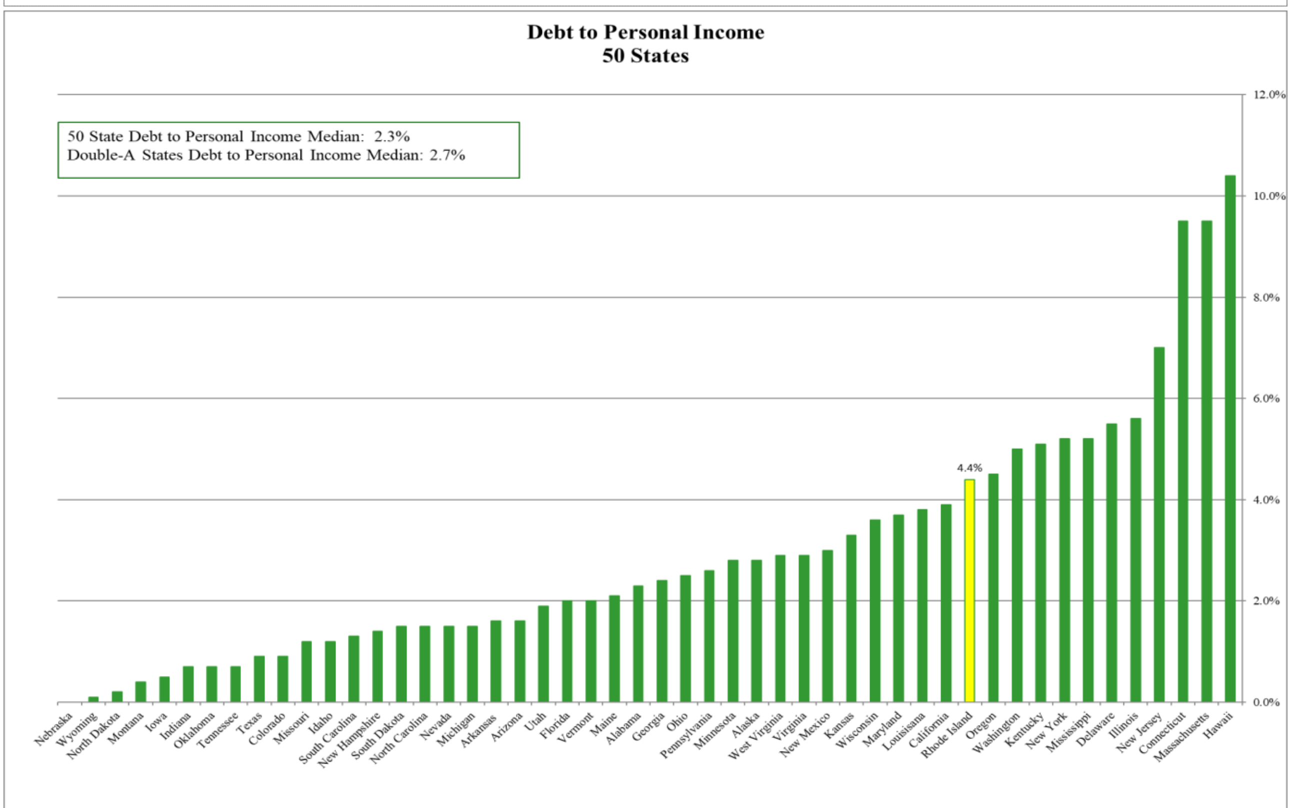
Moody's Fixed Costs as Percent of Own Source Revenues					
State (M/S/F)	**2017 Debt Service**	**2017 Pension Contribution**	**2017 Debt Service + Pension Contribution**	**2017 OPEB Contribution**	**FY 2017 Total Fixed Costs**
50 State Median	**4.0%**	**3.7%**	**7.6%**	**0.9%**	**8.6%**
Double-A Median	**4.0%**	**3.2%**	**7.3%**	**0.9%**	**8.8%**
Rhode Island (Aa2/AA/AA)	**5.1%**	**6.5%**	**11.6%**	**1.3%**	**12.9%**
Alabama (Aa1/AA/AA+)	3.9%	2.1%	6.0%	1.3%	7.3%
Alaska (Aa3/AA/AA)	2.0%	5.2%	7.2%	1.1%	8.3%
Arizona (Aa2/AA/--)	3.9%	2.2%	6.1%	0.3%	6.4%
Arkansas (Aa1/AA/--)	3.5%	2.5%	6.0%	0.7%	6.7%
California (Aa3/AA-/AA-)	4.6%	4.8%	9.4%	1.4%	10.8%
Colorado (Aa1/AA/--)	2.2%	3.7%	5.9%	0.4%	6.3%
Connecticut (A1/A/A+)	13.8%	13.0%	26.8%	3.5%	30.3%
Delaware (Aaa/AAA/AAA)	5.1%	3.5%	8.6%	3.8%	12.4%
Florida (Aaa/AAA/AAA)	4.4%	1.1%	5.5%	0.3%	5.8%
Georgia (Aaa/AAA/AAA)	6.4%	3.7%	10.1%	1.4%	11.5%
Hawaii (Aa1/AA+/AA)	10.5%	5.6%	16.1%	8.7%	24.8%
Idaho (Aa1/AA+/AA+)	1.5%	1.9%	3.4%	0.2%	3.6%
Illinois (Baa3/BBB-/BBB)	9.2%	18.1%	27.3%	1.1%	28.4%
Indiana (Aaa/AAA/AAA)	1.2%	5.5%	6.7%	0.2%	6.9%
Iowa (Aaa/AAA/AAA)	0.6%	1.4%	2.0%	0.2%	2.2%
Kansas (Aa2/AA-/--)	4.4%	6.7%	11.1%	0.1%	11.2%
Kentucky (Aa3/A/AA-)	7.3%	10.6%	17.9%	2.6%	20.5%
Louisiana (Aa3/AA-/AA-)	4.9%	4.5%	9.4%	1.5%	10.9%
Maine (Aa2/AA/AA)	4.8%	5.6%	10.4%	2.3%	12.7%
Maryland (Aaa/AAA/AAA)	7.0%	8.2%	15.2%	2.3%	17.5%
Massachusetts (Aa1/AA/AA+)	11.7%	6.4%	18.1%	1.7%	19.8%
Michigan (Aa1/AA/AA)	2.5%	5.1%	7.6%	2.4%	10.0%
Minnesota (Aa1/AAA/AAA)	3.4%	0.9%	4.3%	0.3%	4.6%
Mississippi (Aa2/AA/AA)	6.9%	2.2%	9.1%	0.4%	9.5%
Missouri (Aaa/AAA/AAA)	3.5%	3.8%	7.3%	0.9%	8.2%
Montana (Aa1/AA/AA+)	1.3%	6.0%	7.3%	0.4%	7.7%

Moody's Fixed Costs as Percent of Own Source Revenues					
State (M/S/F)	**2017 Debt Service**	**2017 Pension Contribution**	**2017 Debt Service + Pension Contribution**	**2017 OPEB Contribution**	**FY 2017 Total Fixed Costs**
Nebraska (Aa1/AAA/--)	0.2%	2.6%	2.8%	0.0%	2.8%
Nevada (Aa2/AA/AA+)	3.9%	2.7%	6.6%	0.7%	7.3%
New Hampshire (Aa1/AA/AA+)	4.0%	2.2%	6.2%	3.0%	9.2%
New Jersey (A3/A-/A)	9.4%	4.7%	14.1%	5.0%	19.1%
New Mexico (Aa2/AA/--)	3.9%	1.7%	5.6%	1.6%	7.2%
New York (Aa1/AA+/AA+)	8.1%	2.2%	10.3%	2.0%	12.3%
North Carolina (Aaa/AAA/AAA)	3.1%	1.3%	4.4%	0.7%	5.1%
North Dakota (Aa1/AA+/--)	0.3%	0.9%	1.2%	0.3%	1.5%
Ohio (Aa1/AA+/AA+)	5.6%	1.2%	6.8%	0.2%	7.0%
Oklahoma (Aa2/AA/AA)	1.9%	7.5%	9.4%	0.5%	9.9%
Oregon (Aa1/AA+/AA+)	5.2%	1.3%	6.5%	0.2%	6.7%
Pennsylvania (Aa3/A+/AA-)	3.6%	12.2%	15.8%	2.1%	17.9%
South Carolina (Aaa/AA+/AAA)	2.7%	5.4%	8.1%	3.6%	11.7%
South Dakota (Aaa/AAA/AAA)	2.1%	1.9%	4.0%	0.0%	4.0%
Tennessee (Aaa/AAA/AAA)	1.3%	2.0%	3.3%	0.6%	3.9%
Texas (Aaa/AAA/AAA)	2.7%	4.1%	6.8%	2.0%	8.8%
Utah (Aaa/AAA/AAA)	5.3%	8.6%	13.9%	0.4%	14.3%
Vermont (Aa1/AA+/AAA)	2.1%	3.8%	5.9%	1.6%	7.5%
Virginia (Aaa/AAA/AAA)	4.8%	2.5%	7.3%	0.9%	8.2%
Washington (Aa1/AA+/AA+)	7.7%	2.5%	10.2%	0.4%	10.6%
West Virginia (Aa2/AA-/AA)	5.4%	8.5%	13.9%	2.0%	15.9%
Wisconsin (Aa1/AA/AA)	5.9%	1.3%	7.2%	0.2%	7.4%
Wyoming (--/AA+/--)	0.1%	1.8%	1.9%	0.5%	2.4%

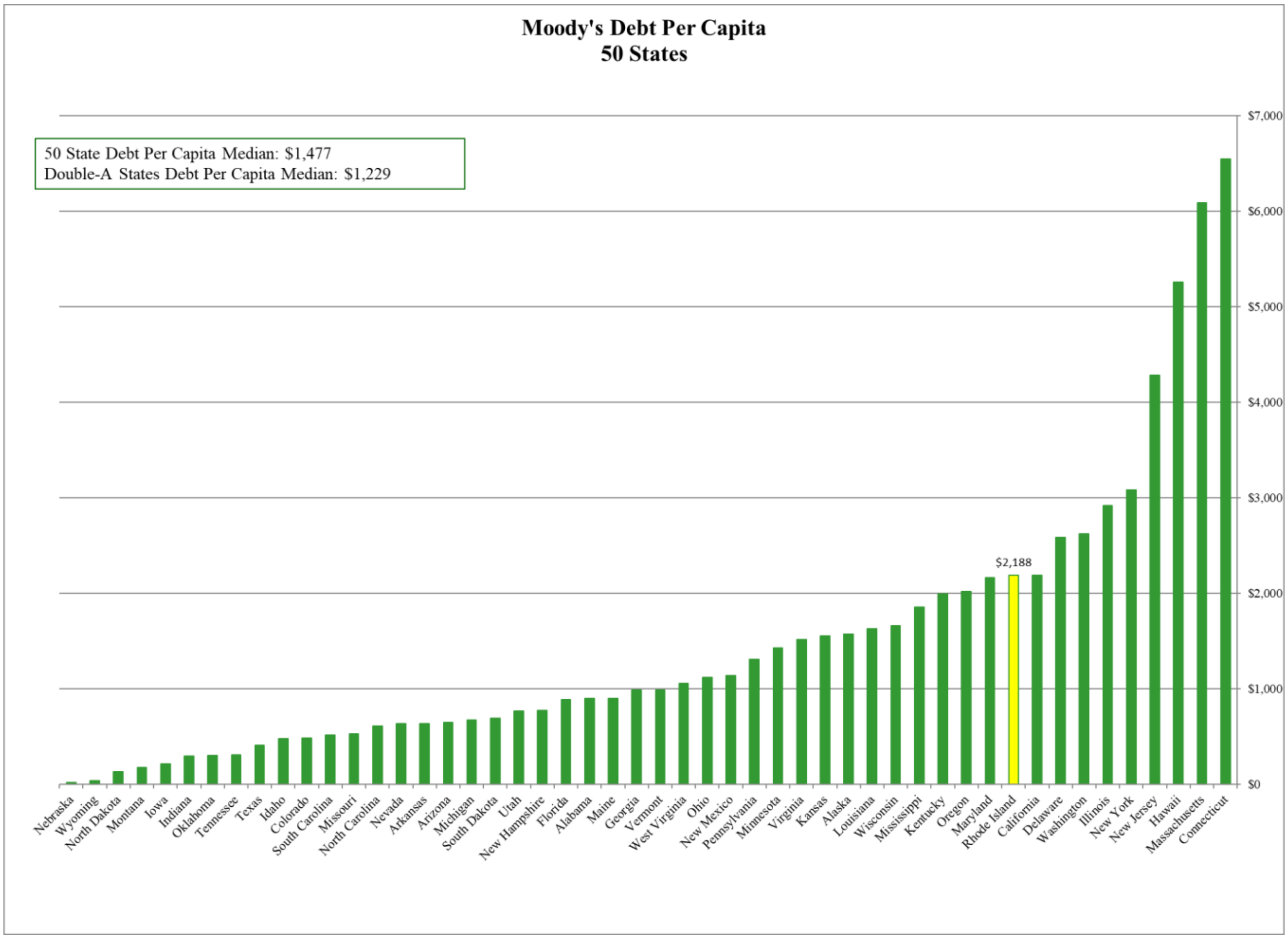
Source: Moody’s Investor Service; State financial statements 27 August 2018 Government - US: Medians - Adjusted net pension liabilities spike in advance of moderate declines



Source: Moody's State Debt Medians 2018, April 24, 2018.



Source: Moody's State Debt Medians 2018, April 24 2018.



Moody's Debt Per Capita
50 States
50 State Debt Per Capita Median: $1,477
Double-A States Debt Per Capita Median: $1,229
$2,188
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
Nebraska
Wyoming
North Dakota
Montana
Iowa
Indiana
Oklahoma
Tennessee
Texas
Idaho
Colorado
South Carolina
Missouri
North Carolina
Nevada
Arkansas
Arizona
Michigan
South Dakota
Utah
New Hampshire
Florida
Alabama
Maine
Georgia
Vermont
West Virginia
Ohio
New Mexico
Pennsylvania
Minnesota
Virginia
Kansas
Alaska
Louisiana
Wisconsin
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Oregon
Maryland
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Illinois
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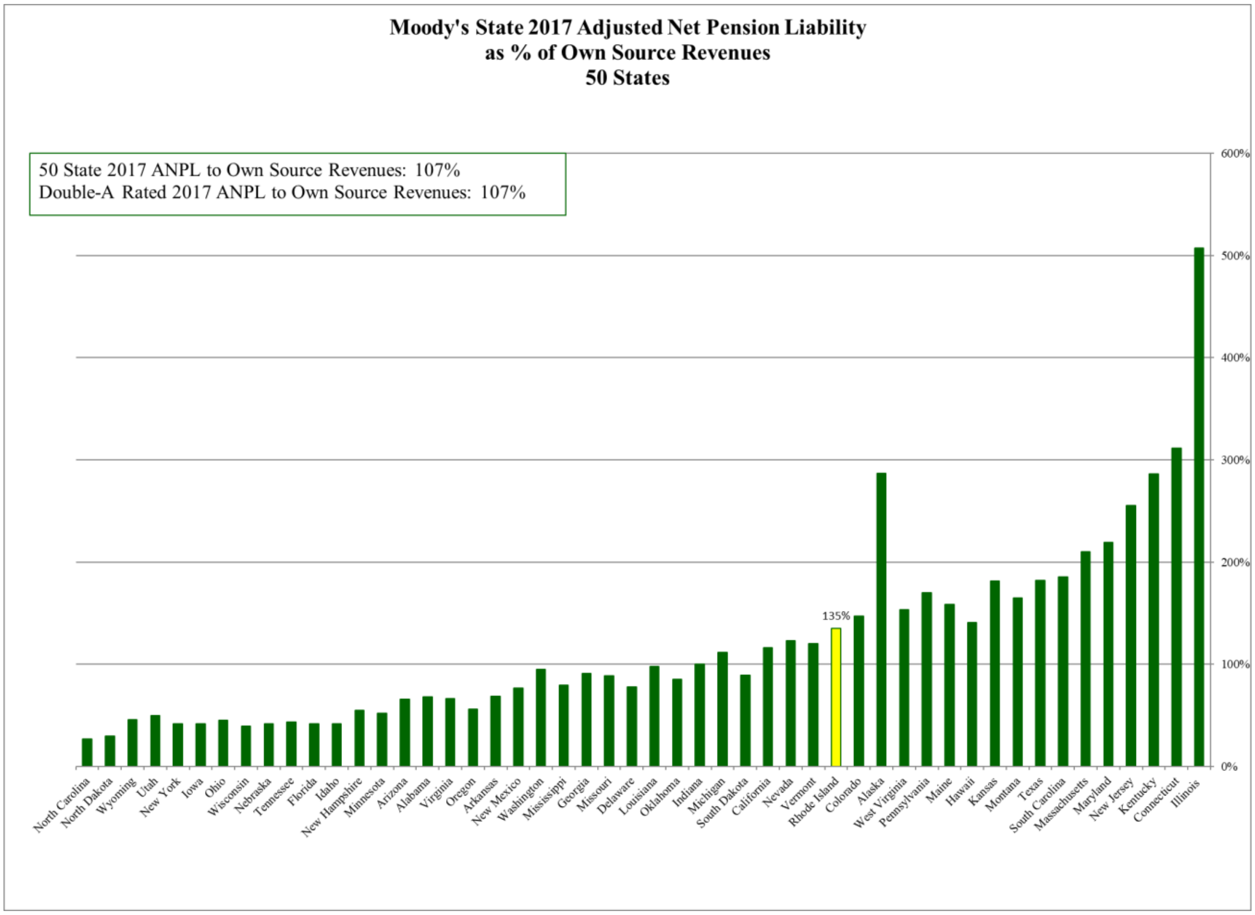
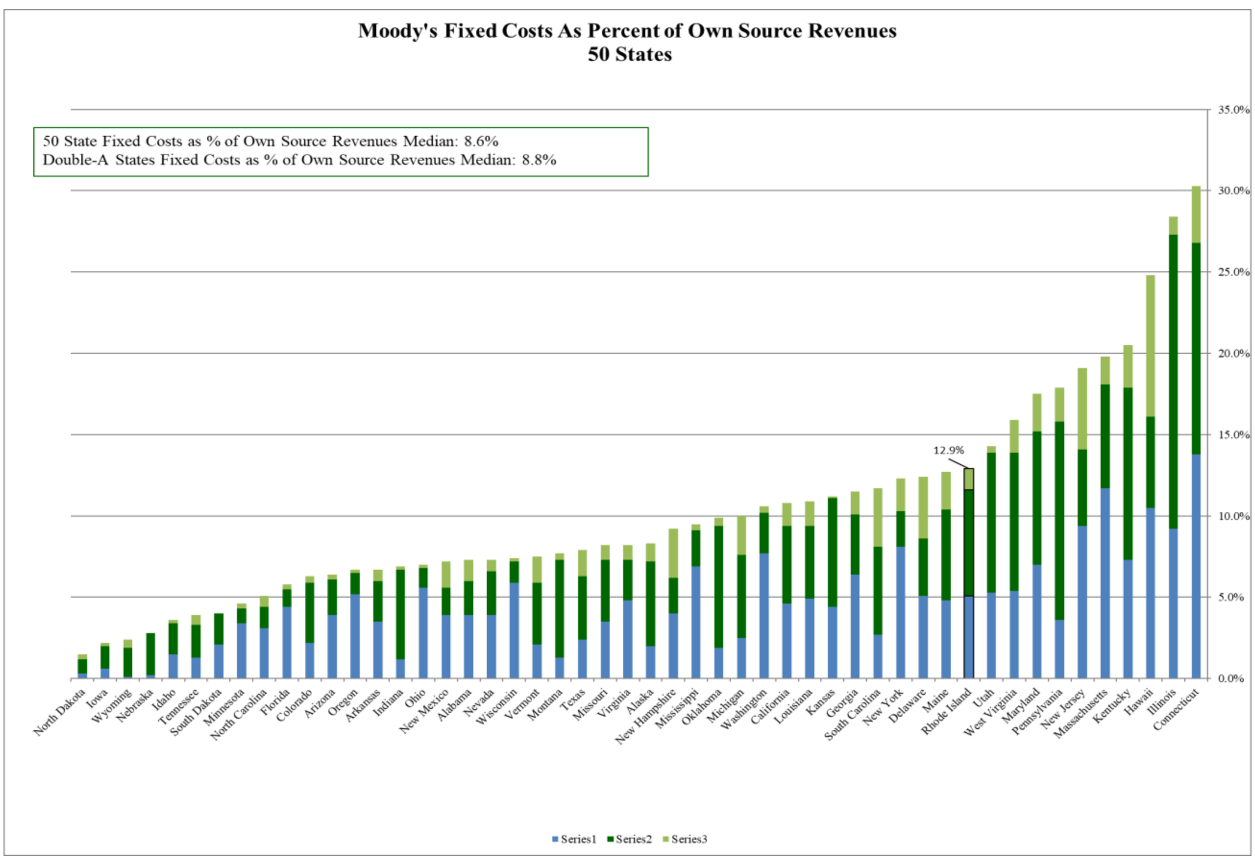
New Jersey
Hawaii
Massachusetts
Connecticut

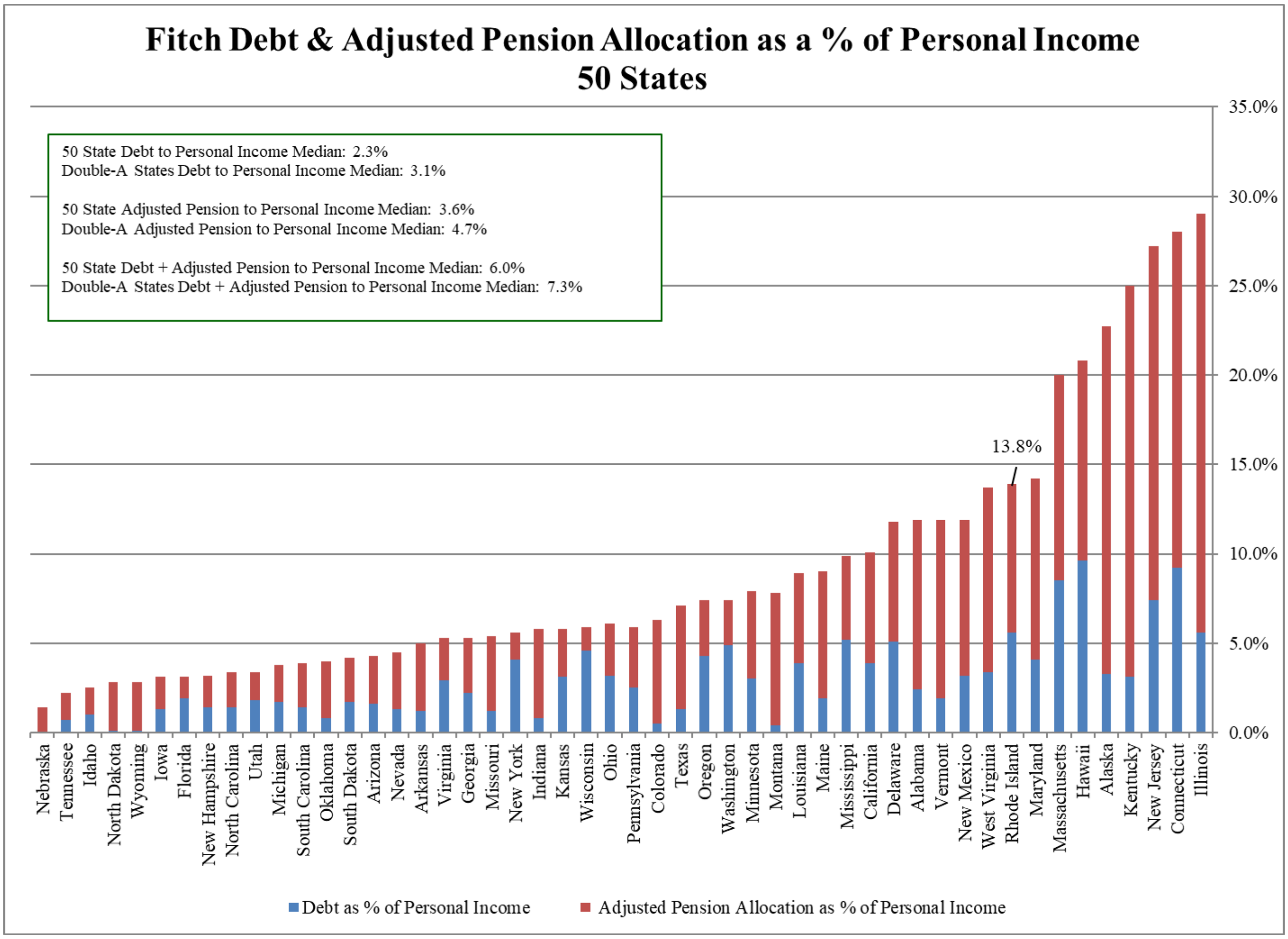

Moody's State 2017 Adjusted Net Pension Liability
as % of Own Source Revenues
50 States
50 State 2017 ANPL to Own Source Revenues: 107%
Double-A Rated 2017 ANPL to Own Source Revenues: 107%
135%


Moody's Fixed Costs As Percent of Own Source Revenues
50 States
50 State Fixed Costs as % of Own Source Revenues Median: 8.6%
Double-A States Fixed Costs as % of Own Source Revenues Median: 8.8%
12.9%
Series1 Series2 Series3

Fitch Estimated State Net Tax-Supported Debt and Unfunded Pension Obligations			
State (M/S/F)	**Debt as % of Personal Income**	**Adjusted Pension Allocation as % of Personal Income**	**Debt & Adjusted Pension Allocation as % of Personal Income**
50-State Median	**2.3%**	**3.6%**	**6.0%**
Double-A Median	**3.1%**	**4.7%**	**7.3%**
Rhode Island (Aa2/AA/AA)	5.6%	8.3%	13.8%
Alabama (Aa1/AA/AA+)	2.4%	9.5%	11.9%
Alaska (Aa3/AA/AA)	3.3%	19.4%	22.7%
Arizona (Aa2/AA/--)	1.6%	2.7%	4.3%
Arkansas (Aa1/AA/--)	1.2%	3.8%	5.0%
California (Aa3/AA-/AA-)	3.9%	6.2%	10.1%
Colorado (Aa1/AA/--)	0.5%	5.8%	6.3%
Connecticut (A1/A/A+)	9.2%	18.8%	28.0%
Delaware (Aaa/AAA/AAA)	5.1%	6.7%	11.8%
Florida (Aaa/AAA/AAA)	1.9%	1.2%	3.1%
Georgia (Aaa/AAA/AAA)	2.2%	3.1%	5.3%
Hawaii (Aa1/AA+/AA)	9.6%	11.2%	20.9%
Idaho (Aa1/AA+/AA+)	1.0%	1.5%	2.5%
Illinois (Baa3/BBB-/BBB)	5.6%	23.4%	29.0%
Indiana (Aaa/AAA/AAA)	0.8%	5.0%	5.8%
Iowa (Aaa/AAA/AAA)	1.3%	1.8%	3.1%
Kansas (Aa2/AA-/--)	3.1%	2.7%	5.8%
Kentucky (Aa3/A/AA-)	4.7%	21.9%	26.6%
Louisiana (Aa3/AA-/AA-)	3.9%	5.0%	8.8%
Maine (Aa2/AA/AA)	1.9%	7.1%	9.0%
Maryland (Aaa/AAA/AAA)	4.1%	10.1%	14.2%
Massachusetts (Aa1/AA/AA+)	8.5%	11.5%	20.1%
Michigan (Aa1/AA/AA)	1.7%	2.1%	3.8%
Minnesota (Aa1/AAA/AAA)	3.0%	4.9%	7.8%
Mississippi (Aa2/AA/AA)	5.2%	4.7%	10.0%
Missouri (Aaa/AAA/AAA)	1.2%	4.2%	5.4%
Montana (Aa1/AA/AA+)	0.4%	7.4%	7.8%
Nebraska (Aa1/AAA/--)	0.0%	1.4%	1.5%

Fitch Estimated State Net Tax-Supported Debt and Unfunded Pension Obligations			
State (M/S/F)	**Debt as % of Personal Income**	**Adjusted Pension Allocation as % of Personal Income**	**Debt & Adjusted Pension Allocation as % of Personal Income**
Nevada (Aa2/AA/AA+)	1.3%	3.2%	4.6%
New Hampshire (Aa1/AA/AA+)	1.4%	1.8%	3.3%
New Jersey (A3/A-/A)	7.4%	19.8%	27.1%
New Mexico (Aa2/AA/--)	3.2%	8.7%	11.9%
New York (Aa1/AA+/AA+)	4.1%	1.5%	5.6%
North Carolina (Aaa/AAA/AAA)	1.4%	2.0%	3.4%
North Dakota (Aa1/AA+/--)	0.1%	2.7%	2.8%
Ohio (Aa1/AA+/AA+)	3.2%	2.9%	6.0%
Oklahoma (Aa2/AA/AA)	0.8%	3.2%	4.0%
Oregon (Aa1/AA+/AA+)	4.3%	3.1%	7.3%
Pennsylvania (Aa3/A+/AA-)	2.5%	3.4%	6.0%
South Carolina (Aaa/AA+/AAA)	1.4%	2.5%	3.9%
South Dakota (Aaa/AAA/AAA)	1.7%	2.5%	4.2%
Tennessee (Aaa/AAA/AAA)	0.7%	1.5%	2.2%
Texas (Aaa/AAA/AAA)	1.3%	5.8%	7.1%
Utah (Aaa/AAA/AAA)	1.8%	1.6%	3.4%
Vermont (Aa1/AA+/AAA)	1.9%	10.0%	11.9%
Virginia (Aaa/AAA/AAA)	2.9%	2.4%	5.2%
Washington (Aa1/AA+/AA+)	4.9%	2.5%	7.3%
West Virginia (Aa2/AA-/AA)	3.4%	10.3%	13.7%
Wisconsin (Aa1/AA/AA)	4.6%	1.3%	5.9%
Wyoming (--/AA+/--)	0.1%	2.7%	2.8%

Source: Fitch 2018 State Pension Update, November 12, 2018


Fitch Debt & Adjusted Pension Allocation as a % of Personal Income
50 States
50 State Debt to Personal Income Median: 2.3%
Double-A States Debt to Personal Income Median: 3.1%
50 State Adjusted Pension to Personal Income Median: 3.6%
Double-A Adjusted Pension to Personal Income Median: 4.7%
50 State Debt + Adjusted Pension to Personal Income Median: 6.0%
Double-A States Debt + Adjusted Pension to Personal Income Median: 7.3%
13.8%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Nebraska
Tennessee
Idaho
North Dakota
Wyoming
Iowa
Florida
New Hampshire
North Carolina
Utah
Michigan
South Carolina
Oklahoma
South Dakota
Arizona
Nevada
Arkansas
Virginia
Georgia
Missouri
New York
Indiana
Kansas
Wisconsin
Ohio
Pennsylvania
Colorado
Texas
Oregon
Washington
Minnesota
Montana
Louisiana
Maine
Mississippi
California
Delaware
Alabama
Vermont
New Mexico
West Virginia
Rhode Island
Maryland
Massachusetts
Hawaii
Alaska
Kentucky
New Jersey
Connecticut
Illinois
Debt as % of Personal Income
Adjusted Pension Allocation as % of Personal Income

Standard & Poor's Debt Ratios				
State (M/S/F)	**Debt Per Capita**	**Debt as % Personal income**	**Debt as % GSP**	**Debt Service as % General Spending**
50 State Median	**$945**	**2.1%**	**1.9%**	**3.8%**
Double-A States Median	**$1,224**	**2.7%**	**2.3%**	**3.8%**
Rhode Island (Aa2/AA/AA)	$1,723	3.3%	3.1%	5.5%
Alabama (Aa1/AA/AA+)	$848	2.1%	2.0%	3.8%
Alaska (Aa3/AA/AA)	$2,483	4.4%	3.5%	1.4%
Arizona (Aa2/AA/--)	$572	1.4%	1.3%	2.0%
Arkansas (Aa1/AA/--)	$554	1.4%	1.3%	1.9%
California (Aa3/AA-/AA-)	$2,135	3.7%	3.1%	6.4%
Colorado (Aa1/AA/--)	$332	0.6%	0.5%	2.6%
Connecticut (A1/A/A+)	$6,591	9.4%	9.1%	14.1%
Delaware (Aaa/AAA/AAA)	$2,538	5.2%	3.3%	5.1%
Florida (Aaa/AAA/AAA)	$856	1.8%	1.9%	5.9%
Georgia (Aaa/AAA/AAA)	$904	2.1%	1.7%	6.1%
Hawaii (Aa1/AA+/AA)	$5,252	10.1%	8.5%	11.2%
Idaho (Aa1/AA+/AA+)	$87	0.2%	0.2%	0.2%
Illinois (Baa3/BBB-/BBB)	$2,447	4.6%	3.8%	9.2%
Indiana (Aaa/AAA/AAA)	$258	0.6%	0.5%	1.4%
Iowa (Aaa/AAA/AAA)	$257	0.6%	0.4%	1.3%
Kansas (Aa2/AA-/--)	$1,522	3.2%	2.8%	3.7%
Kentucky (Aa3/A/AA-)	$1,678	4.3%	3.7%	3.6%
Louisiana (Aa3/AA-/AA-)	$1,558	3.6%	3.0%	7.2%
Maine (Aa2/AA/AA)	$675	1.5%	1.5%	4.1%
Maryland (Aaa/AAA/AAA)	$2,295	3.9%	3.5%	5.9%
Massachusetts (Aa1/AA/AA+)	$5,411	8.2%	7.0%	7.2%
Michigan (Aa1/AA/AA)	$714	1.6%	1.4%	1.5%
Minnesota (Aa1/AAA/AAA)	$1,367	2.6%	2.2%	3.9%
Mississippi (Aa2/AA/AA)	$1,776	4.9%	4.7%	6.7%
Missouri (Aaa/AAA/AAA)	$523	1.2%	1.1%	3.3%
Montana (Aa1/AA/AA+)	$184	0.4%	0.4%	1.4%
Nebraska (Aa1/AAA/--)	$15	0.0%	0.0%	0.2%
Nevada (Aa2/AA/AA+)	$608	1.4%	1.2%	2.1%

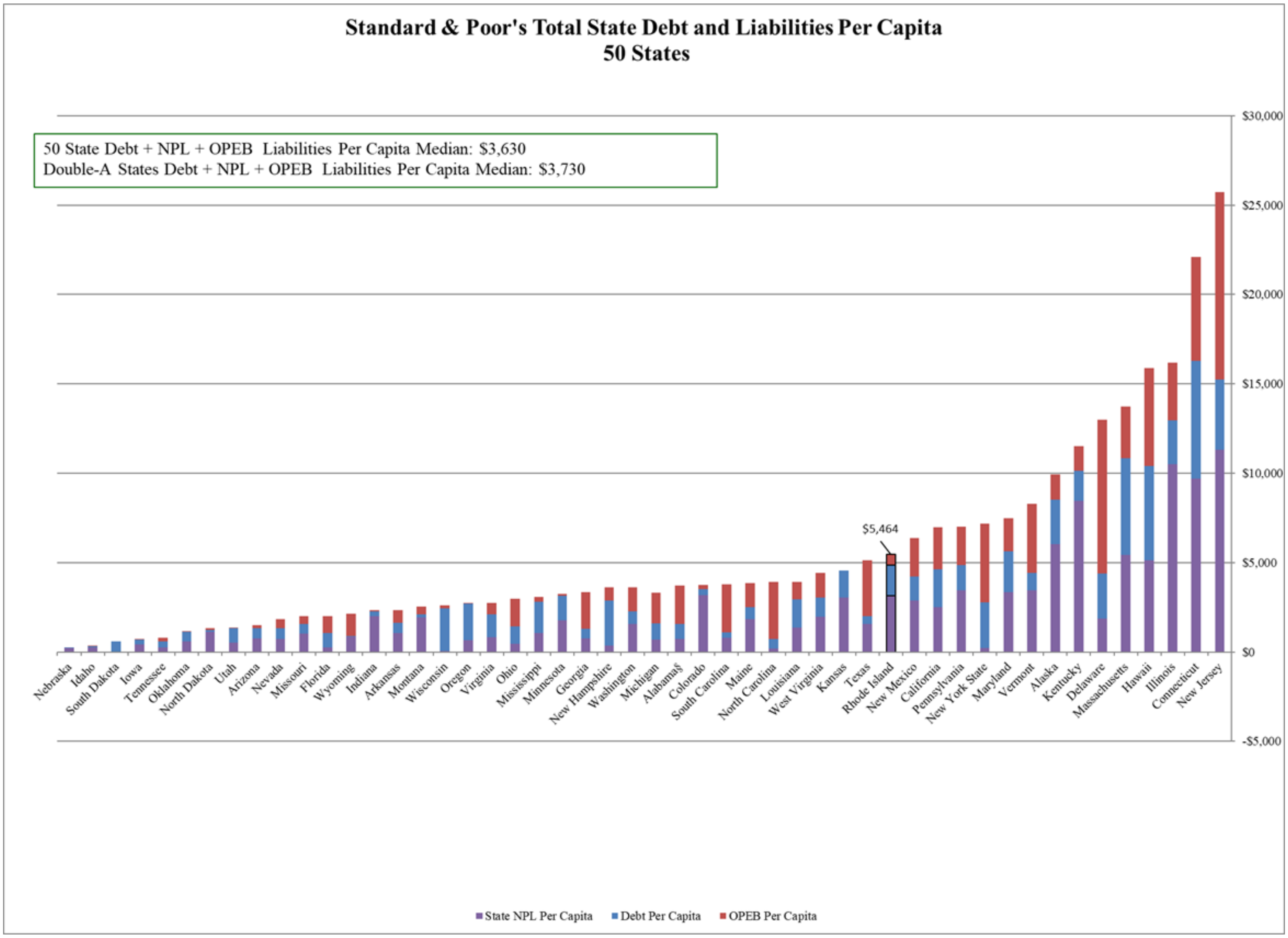
Standard & Poor's Debt Ratios				
State (M/S/F)	**Debt Per Capita**	**Debt as % Personal income**	**Debt as % GSP**	**Debt Service as % General Spending**
New Hampshire (Aa1/AA/AA+)	$545	0.9%	0.9%	3.8%
New Jersey (A3/A-/A)	$3,904	6.2%	5.9%	10.8%
New Mexico (Aa2/AA/--)	$1,345	3.4%	2.9%	4.1%
New York (Aa1/AA+/AA+)	$2,540	4.2%	3.3%	6.5%
North Carolina (Aaa/AAA/AAA)	$546	1.3%	1.0%	2.8%
North Dakota (Aa1/AA+/--)	$77	0.1%	0.1%	0.2%
Ohio (Aa1/AA+/AA+)	$993	2.2%	1.8%	4.5%
Oklahoma (Aa2/AA/AA)	$547	1.3%	1.1%	1.9%
Oregon (Aa1/AA+/AA+)	$2,036	4.4%	3.6%	5.4%
Pennsylvania (Aa3/A+/AA-)	$1,433	2.8%	2.4%	5.1%
South Carolina (Aaa/AA+/AAA)	$318	0.8%	0.7%	2.9%
South Dakota (Aaa/AAA/AAA)	$592	1.2%	1.0%	1.9%
Tennessee (Aaa/AAA/AAA)	$315	0.7%	0.6%	2.4%
Texas (Aaa/AAA/AAA)	$410	0.9%	0.7%	2.4%
Utah (Aaa/AAA/AAA)	$795	1.9%	1.5%	5.4%
Vermont (Aa1/AA+/AAA)	$987	1.9%	1.9%	2.1%
Virginia (Aaa/AAA/AAA)	$1,308	2.4%	2.2%	4.6%
Washington (Aa1/AA+/AA+)	$2,540	4.5%	3.7%	7.1%
West Virginia (Aa2/AA-/AA)	$1,103	2.9%	2.6%	3.0%
Wisconsin (Aa1/AA/AA)	$2,396	5.0%	4.3%	5.1%
Wyoming (--/AA+/--)	$38	0.1%	0.1%	0.1%

Standard & Poor's Level U.S State Debt Reflects Long-Term Management Strategies And Affordability Concerns May 14, 2018

Standard & Poor's Pension Ratio & Total State Debt + Liabilities Per Capita					
State (M/S/F)	**Funded Ratio**	**State NPL Per Capita**	**Debt Per Capita**	**OPEB Per Capita**	**Debt, Pension & OPEB Per Capita**
50 State Median	**69.5%**	**$1,111**	**$946**	**$1,254**	**$3,630**
Double-A States Median	**67.2%**	**$1,462**	**$1,224**	**$999**	**$3,730**
Rhode Island (Aa2/AA/AA)	**53.7%**	**$3,134**	**$1,723**	**$607**	**$5,464**
Alabama (Aa1/AA/AA+)	69.6%	$713	$848	$2,164	$3,724
Alaska (Aa3/AA/AA)	66.6%	$6,037	$2,483	$1,407	$9,927
Arizona (Aa2/AA/--)	67.3%	$753	$572	$158	$1,484
Arkansas (Aa1/AA/--)	76.3%	$1,077	$554	$720	$2,351
California (Aa3/AA-/AA-)	68.1%	$2,490	$2,135	$2,337	$6,962
Colorado (Aa1/AA/--)	42.8%	$3,171	$332	$232	$3,735
Connecticut (A1/A/A+)	45.7%	$9,702	$6,591	$5,814	$22,106
Delaware (Aaa/AAA/AAA)	82.8%	$1,858	$2,538	$8,582	$12,978
Florida (Aaa/AAA/AAA)	83.9%	$256	$813	$948	$2,017
Georgia (Aaa/AAA/AAA)	79.0%	$706	$545	$2,041	$3,311
Hawaii (Aa1/AA+/AA)	54.8%	$5,135	$5,252	$5,487	$15,874
Idaho (Aa1/AA+/AA+)	90.6%	$245	$87	$26	$358
Illinois (Baa3/BBB-/BBB)	38.4%	$10,496	$2,446	$3,228	$16,171
Indiana (Aaa/AAA/AAA)	60.7%	$1,998	$258	$75	$2,322
Iowa (Aaa/AAA/AAA)	82.1%	$420	$257	$61	$738
Kansas (Aa2/AA-/--)	67.1%	$3,031	$1,522	$0	$4,552
Kentucky (Aa3/A/AA-)	33.8%	$8,450	$1,678	$1,391	$11,518
Louisiana (Aa3/AA-/AA-)	65.4%	$1,370	$1,558	$999	$3,928
Maine (Aa2/AA/AA)	80.9%	$1,835	$675	$1,338	$3,848
Maryland (Aaa/AAA/AAA)	69.4%	$3,348	$2,295	$1,832	$7,475
Massachusetts (Aa1/AA/AA+)	59.5%	$5,438	$5,411	$2,883	$13,732
Michigan (Aa1/AA/AA)	65.1%	$1,554	$904	$1,701	$3,632
Minnesota (Aa1/AAA/AAA)	61.0%	$1,780	$1,367	$111	$3,257
Mississippi (Aa2/AA/AA)	61.6%	$1,048	$1,776	$263	$3,088
Missouri (Aaa/AAA/AAA)	58.5%	$1,037	$523	$449	$2,009
Montana (Aa1/AA/AA+)	72.9%	$1,936	$184	$436	$2,557
Nebraska (Aa1/AAA/--)	85.9%	$218	$15	N/A	$233
Nevada (Aa2/AA/AA+)	74.5%	$731	$608	$503	$1,842

Standard & Poor's Pension Ratio & Total State Debt + Liabilities Per Capita					
State (M/S/F)	**Funded Ratio**	**State NPL Per Capita**	**Debt Per Capita**	**OPEB Per Capita**	**Debt, Pension & OPEB Per Capita**
New Hampshire (Aa1/AA/AA+)	62.6%	$748	$2,540	$740	$3,334
New Jersey (A3/A-/A)	35.8%	$11,326	$3,904	$10,500	$25,730
New Mexico (Aa2/AA/--)	65.5%	$2,867	$1,345	$2,170	$6,383
New York (Aa1/AA+/AA+)	96.7%	$239	$2,540	$4,396	$7,175
North Carolina (Aaa/AAA/AAA)	90.7%	$188	$546	$3,185	$3,919
North Dakota (Aa1/AA+/--)	63.8%	$1,145	$77	$121	$1,343
Ohio (Aa1/AA+/AA+)	76.3%	$450	$993	$1,535	$2,979
Oklahoma (Aa2/AA/AA)	79.1%	$590	$547	$1	$1,139
Oregon (Aa1/AA+/AA+)	83.1%	$673	$2,036	$19	$2,728
Pennsylvania (Aa3/A+/AA-)	53.7%	$3,438	$1,433	$2,153	$7,024
South Carolina (Aaa/AA+/AAA)	54.3%	$781	$318	$2,696	$3,795
South Dakota (Aaa/AAA/AAA)	100.1%	(2)	$592	$0	$590
Tennessee (Aaa/AAA/AAA)	88.0%	$270	$315	$206	$791
Texas (Aaa/AAA/AAA)	76.1%	$1,582	$410	$3,133	$5,125
Utah (Aaa/AAA/AAA)	86.0%	$523	$795	$36	$1,354
Vermont (Aa1/AA+/AAA)	61.7%	$3,450	$988	$3,839	$7,126
Virginia (Aaa/AAA/AAA)	74.9%	$811	$1,308	$616	$2,906
Washington (Aa1/AA+/AA+)	89.5%	$348	$714	$1,363	$3,818
West Virginia (Aa2/AA-/AA)	78.9%	$1,957	$1,103	$1,354	$5,002
Wisconsin (Aa1/AA/AA)	99.1%	$40	$2,396	$163	$2,642
Wyoming (--/AA+/--)	74.2%	$848	$38	$1,254	$2,040

Source: Standard & Poor's U.S. State Pensions Struggle For Gains Amid Market Shifts and Demographic Headwinds October 30, 2018


Standard & Poor's Total State Debt and Liabilities Per Capita
50 States
50 State Debt + NPL + OPEB Liabilities Per Capita Median: $3,630
Double-A States Debt + NPL + OPEB Liabilities Per Capita Median: $3,730
$5,464
$30,000
$25,000
$20,000
$15,000
$10,000
$5,000
$0
-$5,000
Nebraska
Idaho
South Dakota
Iowa
Tennessee
Oklahoma
North Dakota
Utah
Arizona
Nevada
Missouri
Florida
Wyoming
Indiana
Arkansas
Montana
Wisconsin
Oregon
Virginia
Ohio
Mississippi
Minnesota
Georgia
New Hampshire
Washington
Michigan
Alabama§
Colorado
South Carolina
Maine
North Carolina
Louisiana
West Virginia
Kansas
Texas
Rhode Island
New Mexico
California
Pennsylvania
New York State
Maryland
Vermont
Alaska
Kentucky
Delaware
Massachusetts
Hawaii
Illinois
Connecticut
New Jersey
State NPL Per Capita
Debt Per Capita
OPEB Per Capita

	Boston College - Center for Retirement Research Pension Statistics		Debt + Pension Ratios with Boston College - Center for Retirement Research Pension Statistics	
State (M/S/F)	Annual Required Contribution (ARC) ($ milllion)	Unfunded Actuarial Accrued Liability (UAAL) ($million)	Debt Service + ARC to Own Source Revenues	Net-Tax Supported Debt + UAAL to Personal Income
50 State Median	426.5	4,638.7	7.7%	4.2%
Double-A Median	426.5	4,638.7	8.4%	4.9%
Rhode Island (Aa2/AA/AA)	268.0	3,109.3	11.2%	9.6%
Alabama (Aa1/AA/AA+)	805.6	8,192.0	10.3%	6.2%
Alaska (Aa3/AA/AA)	456.2	5,067.9	8.6%	14.6%
Arizona (Aa2/AA/--)	501.4	5,517.7	6.9%	3.3%
Arkansas (Aa1/AA/--)	271.0	2,359.7	6.4%	3.4%
California (Aa3/AA-/AA-)	9,697.3	88,200.0	10.2%	7.3%
Colorado (Aa1/AA/--)	870.4	10,500.0	8.3%	4.2%
Connecticut (A1/A/A+)	3,118.5	36,500.0	29.5%	23.0%
Delaware (Aaa/AAA/AAA)	216.4	1,404.2	8.7%	8.0%
Florida (Aaa/AAA/AAA)	642.6	4,918.9	5.7%	2.3%
Georgia (Aaa/AAA/AAA)	823.1	7,662.0	9.6%	3.8%
Hawaii (Aa1/AA+/AA)	689.1	5,780.3	19.6%	17.4%
Idaho (Aa1/AA+/AA+)	63.8	348.5	2.8%	1.6%
Illinois (Baa3/BBB-/BBB)	10,455.7	119,900.0	34.3%	22.4%
Indiana (Aaa/AAA/AAA)	934.2	11,939.1	6.0%	4.6%
Iowa (Aaa/AAA/AAA)	161.9	1,245.8	2.1%	1.3%
Kansas (Aa2/AA-/--)	148.8	1,515.6	6.0%	4.2%
Kentucky (Aa3/A/AA-)	1,970.7	22,280.0	20.9%	17.0%
Louisiana (Aa3/AA-/AA-)	649.5	7,383.5	9.5%	7.3%
Maine (Aa2/AA/AA)	220.8	2,207.7	9.5%	5.4%
Maryland (Aaa/AAA/AAA)	2,186.3	22,200.0	16.1%	9.5%
Massachusetts (Aa1/AA/AA+)	3,263.6	37,725.3	21.7%	16.9%
Michigan (Aa1/AA/AA)	565.8	6,685.2	4.2%	2.9%
Minnesota (Aa1/AAA/AAA)	340.8	4,887.7	4.7%	4.2%
Mississippi (Aa2/AA/AA)	295.1	3,388.1	10.3%	8.1%
Missouri (Aaa/AAA/AAA)	600.0	5,843.0	7.9%	3.3%

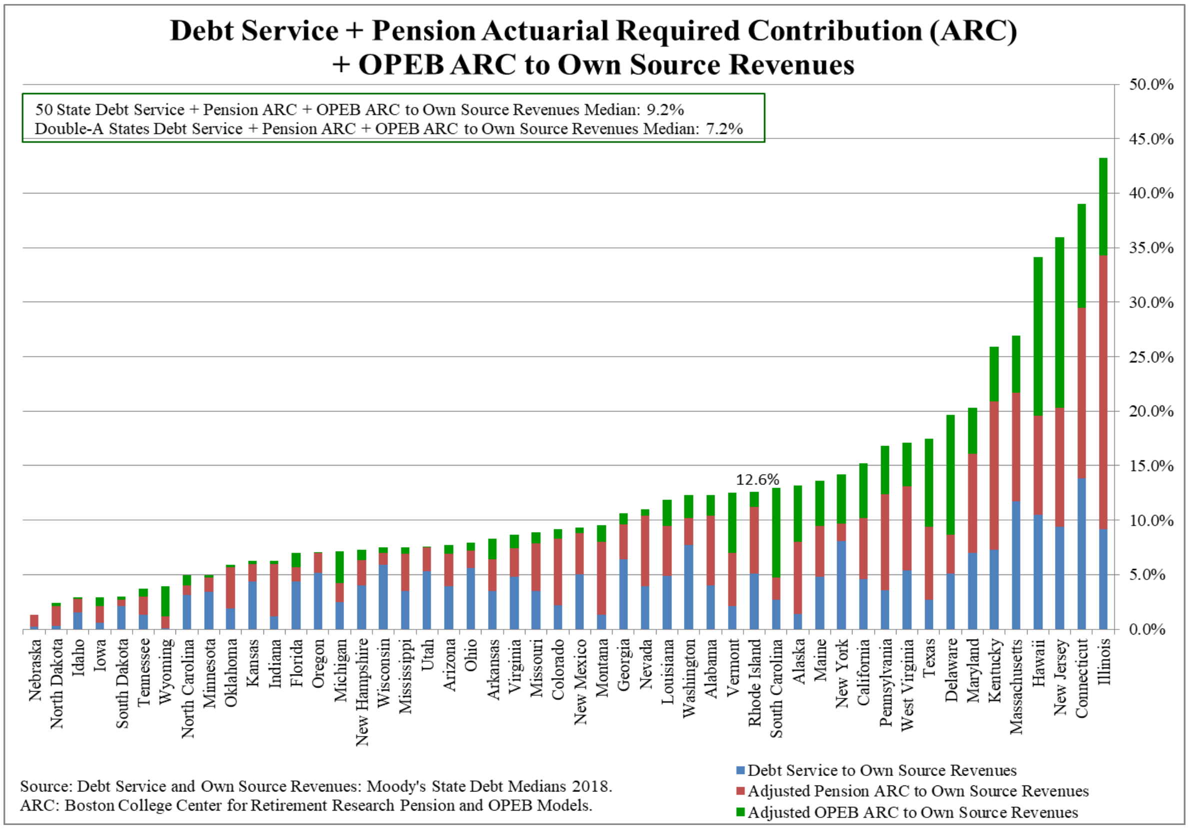
	Boston College - Center for Retirement Research Pension Statistics		Debt + Pension Ratios with Boston College - Center for Retirement Research Pension Statistics	
State (M/S/F)	Annual Required Contribution (ARC) ($ milllion)	Unfunded Actuarial Accrued Liability (UAAL) ($million)	Debt Service + ARC to Own Source Revenues	Net-Tax Supported Debt + UAAL to Personal Income
Montana (Aa1/AA/AA+)	208.6	2,180.3	8.0%	4.9%
Nebraska (Aa1/AAA/--)	64.2	594.6	1.3%	0.6%
Nevada (Aa2/AA/AA+)	376.9	2,640.7	10.4%	3.2%
New Hampshire (Aa1/AA/AA+)	83.2	972.1	6.3%	2.5%
New Jersey (A3/A-/A)	4,365.0	52,949.4	20.3%	15.5%
New Mexico (Aa2/AA/--)	389.3	4,389.6	7.7%	8.1%
New York (Aa1/AA+/AA+)	1,448.8	3,618.9	9.7%	4.9%
North Carolina (Aaa/AAA/AAA)	276.4	1,741.3	4.0%	1.7%
North Dakota (Aa1/AA+/--)	86.5	707.8	2.1%	1.9%
Ohio (Aa1/AA+/AA+)	503.8	5,316.0	7.2%	3.3%
Oklahoma (Aa2/AA/AA)	396.8	3,496.9	5.7%	2.7%
Oregon (Aa1/AA+/AA+)	258.4	3,105.3	7.0%	5.6%
Pennsylvania (Aa3/A+/AA-)	3,843.0	38,700.0	12.4%	8.0%
South Carolina (Aaa/AA+/AAA)	280.7	3,496.1	4.7%	2.9%
South Dakota (Aaa/AAA/AAA)	13.9	2.6	2.7%	1.4%
Tennessee (Aaa/AAA/AAA)	332.0	1,824.6	3.0%	1.3%
Texas (Aaa/AAA/AAA)	4,822.9	44,050.0	9.4%	4.1%
Utah (Aaa/AAA/AAA)	194.5	799.6	7.5%	2.3%
Vermont (Aa1/AA+/AAA)	178.1	6,550.9	7.0%	8.5%
Virginia (Aaa/AAA/AAA)	687.0	6,550.9	7.4%	4.1%
Washington (Aa1/AA+/AA+)	649.2	4,893.2	10.2%	5.6%
West Virginia (Aa2/AA-/AA)	499.7	5,026.0	13.1%	9.8%
Wisconsin (Aa1/AA/AA)	219.8	0.0	7.0%	3.4%
Wyoming (--/AA+/--)	36.2	360.7	1.2%	1.1%

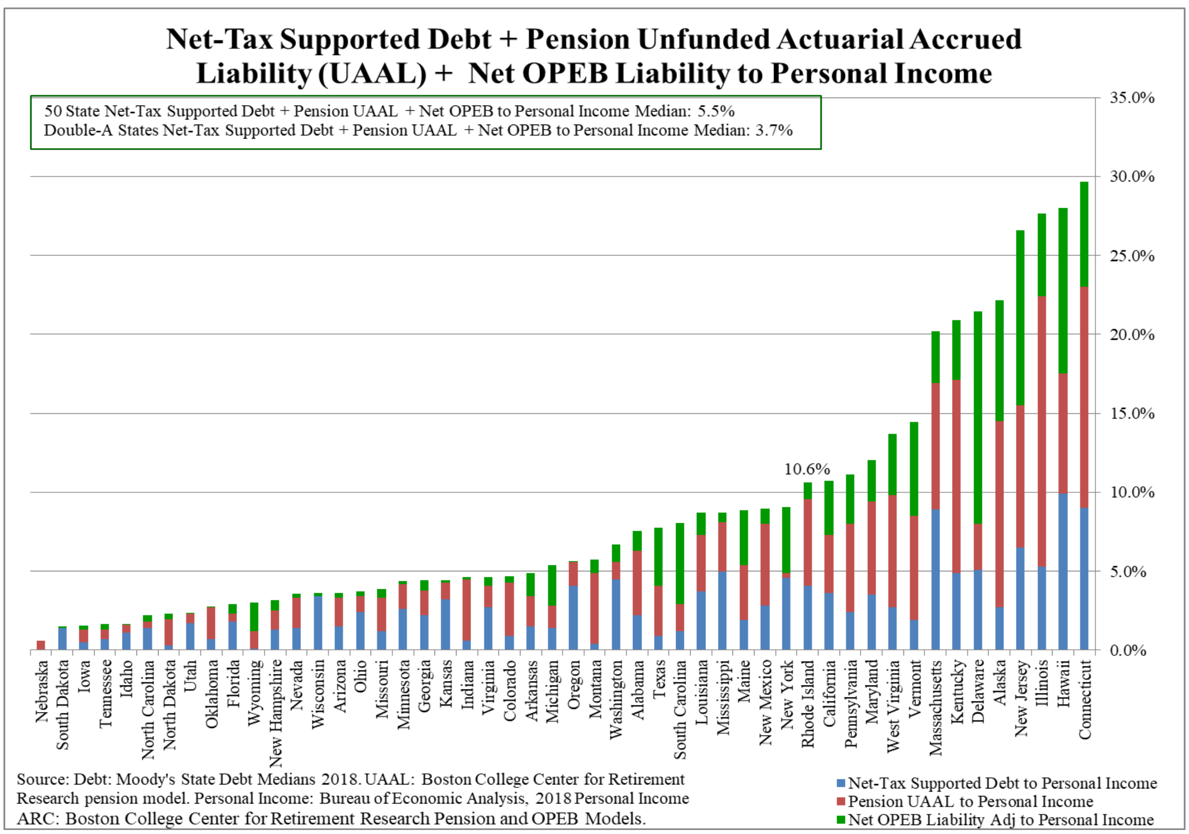
Source: Debt: Moody’s State Debt Medians 2018. UAAL: Boston College Center for Retirement Research pension model. Personal Income: Bureau of Economic Analysis, 2017 Personal Income

The Boston College Center for Retirement Studies pension model produces a standardized Actuarial Determined Employer Contribution (ADEC) previously reported as Actuarial Required Contribution (ARC) and Net Pension Liability (NPL) previously reported as Unfunded Accrued Actuarial Liability (UAAL) for each of the 50 states and relies on data from Fiscal Year 2017 state Comprehensive Annual Financial Reports (CAFRs) and actuarial valuations and CAFRs for pension plans. For each state, the analysis includes only pension plans for which the state has a funding obligation and the data set generally excludes pension plans for judges and elected officials and, where possible, excludes the pension liabilities and contributions associated with state component units. The model estimates a standardized ARC and adjusts the reported liabilities based on differences between each plan's own assumptions and methods and a selected model discount rate, amortization period, amortization level, and payroll growth assumptions. For its larger plans (State Employees and Teachers), Rhode Island assumes a 7.0% discount rate, 20-year amortization period, level percent amortization method and 3.00% payroll growth, and these are consistent with the assumptions used in the CRR model to normalize pension liabilities across the 50 states.

GASB 67 reporting standards require plans to report the sensitivity of the reported NPL to changes in the discount rate. As a result, CAFRs now contain sensitivity tables that show the change in the dollar value of the reported net pension liability for each a one-percentage-point change in the discount rate. This data is used to create a discount rate sensitivity factor for each plan. Using the discount rate sensitivity factor, the model estimates each plan's Total Pension Liability (TPL) value at the 7.0% discount rate by applying the plan's discount rate sensitivity factor to the difference between the plan's reported discount rate and 7.0% discount rate. The adjusted NPL is then estimated by subtracting each plan's reported net position from the adjusted plan's Total Pension Liability value.

To re-calculate the ARC of a plan under the standard assumptions, CRR first separates the 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. 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 unfunded 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 NPL using the actuarial assets and the re-discounted liability; and 3) calculating an amortization payment for the new NPL 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.


Debt Service + Pension Actuarial Required Contribution (ARC) + OPEB ARC to Own Source Revenues
50 State Debt Service + Pension ARC + OPEB ARC to Own Source Revenues Median: 9.2%
Double-A States Debt Service + Pension ARC + OPEB ARC to Own Source Revenues Median: 7.2%
12.6%
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Nebraska
North Dakota
Idaho
Iowa
South Dakota
Tennessee
Wyoming
North Carolina
Minnesota
Oklahoma
Kansas
Indiana
Florida
Oregon
Michigan
New Hampshire
Wisconsin
Mississippi
Utah
Arizona
Ohio
Arkansas
Virginia
Missouri
Colorado
New Mexico
Montana
Georgia
Nevada
Louisiana
Washington
Alabama
Vermont
Rhode Island
South Carolina
Alaska
Maine
New York
California
Pennsylvania
West Virginia
Texas
Delaware
Maryland
Kentucky
Massachusetts
Hawaii
New Jersey
Connecticut
Illinois
Source: Debt Service and Own Source Revenues: Moody's State Debt Medians 2018.
ARC: Boston College Center for Retirement Research Pension and OPEB Models.
Debt Service to Own Source Revenues
Adjusted Pension ARC to Own Source Revenues
Adjusted OPEB ARC to Own Source Revenues


Net-Tax Supported Debt + Pension Unfunded Actuarial Accrued Liability (UAAL) + Net OPEB Liability to Personal Income
50 State Net-Tax Supported Debt + Pension UAAL + Net OPEB to Personal Income Median: 5.5%
Double-A States Net-Tax Supported Debt + Pension UAAL + Net OPEB to Personal Income Median: 3.7%
10.6%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Nebraska
South Dakota
Iowa
Tennessee
Idaho
North Carolina
North Dakota
Utah
Oklahoma
Florida
Wyoming
New Hampshire
Nevada
Wisconsin
Arizona
Ohio
Missouri
Minnesota
Georgia
Kansas
Indiana
Virginia
Colorado
Arkansas
Michigan
Oregon
Montana
Washington
Alabama
Texas
South Carolina
Louisiana
Mississippi
Maine
New Mexico
New York
Rhode Island
California
Pennsylvania
Maryland
West Virginia
Vermont
Massachusetts
Kentucky
Delaware
Alaska
New Jersey
Illinois
Hawaii
Connecticut
Source: Debt: Moody's State Debt Medians 2018. UAAL: Boston College Center for Retirement Research pension model. Personal Income: Bureau of Economic Analysis, 2018 Personal Income
ARC: Boston College Center for Retirement Research Pension and OPEB Models.
Net-Tax Supported Debt to Personal Income
Pension UAAL to Personal Income
Net OPEB Liability Adj to Personal Income

The Boston College Center for Retirement Studies OPEB model produces a standardized OPEB ARC and Net OPEB Liability for states reporting OPEB liabilities and relies on data from Fiscal Year 2017 state Comprehensive Annual Financial Reports (CAFRs). The analysis includes states that had a funding obligation -- the data set generally excludes plans for judges and elected officials and, where possible, excludes the liabilities and contributions associated with component unit OPEB plans. The data used includes the state's portion of each plan's net OPEB liability, the State's contributions to each plan, and the actuarial assumptions for each plan. The model estimates a standardized OPEB ARC and adjusts the reported liabilities based on differences between each plan's own assumptions and methods and a selected discount rate, amortization period, and other actuarial assumptions. For its larger plans (State Employees and Teachers), Rhode Island assumes a 5.0% discount rate, 19-year amortization period, level percent amortization method and 3.25% to 6.00% in projected salary increase and 9% increase in health care cost for the first year and grading down to 3.5% in 2031 and later. These are the assumptions used in the CRR model to normalize the OPEB liabilities across the included states.

With the introduction of OPEB liability reporting under GASB 43 and 45 in 2007 and the subsequent shift to GASB 74 and 75 reporting standards in 2015, the current reporting for OPEB liabilities varies greatly depending on each state's timeline and approach to implementing the standards. GASB 43 and 45 standards required the reporting of funded status (actuarial asset and liabilities) and employer contributions. GASB 74 and 75 continue to require the funded status (under slightly different measures of asset and liabilities than GASB 43 and 45) and employer contributions. But, importantly, the GASB 74 and 75 standards also require the reporting of certain items, including the government's proportionate share of plan OPEB liabilities, and the sensitivity of the plan OPEB liability to changes in the discount rate.

To re-calculate a plan's OPEB ARC under the standard assumptions, the normal cost and amortization payment components are analyzed separately. First, the reported service cost is adjusted to the chosen discount rate using an actuarial rule-of-thumb that assumes a 22.5-percent increase in the service cost for each 1-percentage point change in the discount rate. For those that report under GASB 43 and 45 standards and do not provide a service cost, the service cost is estimated by either a) using an average of the ratio of service cost to OPEB liability for those using GASB 74 and 75 or b) netting out an estimate of the amortization payment from the reported required contributions. The amortization payment is estimated through an amortization function designed to pay down the net OPEB liability – adjusted to the standard discount rate – over the chosen amortization period and using the standard amortization method. The adjusted normal cost and amortization payment are added together to produce the adjusted ARC. Finally, employer contributions are subtracted to generate the employer ARC.

Under GASB 74 and 75, the state's share of the OPEB liability is directly reported. However, for those reporting under GASB 43 and 45, the State's share of the OPEB liability are required to be estimated. This is done by first generating the State's proportion percentage and then applying the percentage to the plan-level data reported under GASB 43 and 45. Each state's proportion percentage is based on the state's contribution to the OPEB plan relative to the total contributions to the OPEB plan. GASB 74 and 75 also requires reporting on the sensitivity of the OPEB liability to changes in the discount. As a result, many CAFRs now contain sensitivity tables that show the change in the dollar value of the net OPEB liability for a one-percentage-point change in the discount rate. This data is used to create a discount rate sensitivity factor for each OPEB plan. For those reporting under GASB 43 and 45, the sensitivity factor is based on the average sensitivity factor of those that report under GASB 74 and 75. Once a state's share of the OPEB liability and the sensitivity factor are set for each plan, the model estimates the OPEB liability value at the standard discount rate by applying the sensitivity factor to the difference between the plan's reported discount rate and the standard discount rate. The Net OPEB Liability is then estimated by subtracting the reported OPEB assets from the adjusted OPEB liability value.

Appendix B – Part II

Quasi-Public Agencies Debt Information

APPENDIX B

TABLE OF CONTENTS

Outstanding Debt of Quasi-Public Agencies

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2018
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	$208,260,000
Rhode Island School of Design	A1/--/A+	Pledge of Unrestricted College Revenues.	Additional bonds must have a letter of credit and ratings confirmation.	$145,435,000
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.	$103,992,336
Salve Regina University	--/BB/--	Secured by Tuition Fees and Mortgage	Additional bonds may be issued pursuant to a supplemental loan and trust agreement	$43,988,027
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.	$38,823,763
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.	$1,885,000
Rhode Island Health and Educational Building Corporation – Health Care				
Blackstone Valley Community Health Care	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$5,435,413
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	$140,495,591
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.	$7,652,498
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.	$8,284,500
J. Arthur Trudeau Memorial Center	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$2,150,000
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 1.10x coverage with additional tests.	$253,370,869
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.	$16,813,000

Outstanding Debt of Quasi-Public Agencies

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2018
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.	$2,540,000
Ocean State Assisted Living	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$8,925,000
Rhode Island Blood Center	--/--/--	Secured by pledge of borrower's gross receipts	No additional bonds test	$7,744,242
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.	$490,648
Saint Elizabeth Home, East Greenwich	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$13,578,476
Saint Elizabeth Manor, East Greenwich	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$7,480,827
Scandinavian Home, Inc	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$3,738,857
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.	$4,602,165
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.	$39,435,000
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.	$4,473,000
Tamarisk, Inc	--/--/--	Secured by pledge of borrower's gross receipts and a mortgage	No additional bonds test	$8,677,585
The Frassati	--/--/--	Secured by pledge of borrower's gross receipts	No additional bonds test	$5,738,375
The Kent Center	--/--/--	Secured by pledge of borrower's gross receipts	No additional bonds test	$4,146,280
The Providence Community Health Centers, Inc.	--/--/--	Secured by pledge of borrower's gross receipts	No additional bonds test	$9,757,304

Outstanding Debt of Quasi-Public Agencies

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2018
Thundermist Health Center	--/--/--	General obligation of the borrower and a mortgage	No additional bonds test	$2,515,458
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
Rhode Island Infrastructure Bank				
Water Pollution Control Revenue Bonds	--/AAA/AAA	Pledged loan payments from underlying borrowers, debt service reserve accounts for certain borrowers, and Local Interest Subsidy Trust (LIST) fund reserves (if applicable).	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.	$492,730,000
Safe Drinking Water	--/AAA/AAA	Pledged loan payments from underlying borrowers, debt service reserve accounts for certain borrowers, and Local Interest Subsidy Trust (LIST) fund reserves (if applicable).	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.	$184,895,000
Municipal Road and Bridge	--/AA/--	Pledged loan payments from underlying borrowers, debt service reserve accounts for certain borrowers.	Additional bonds can be issued if projected loan revenues are at least 1.20x existing plus proposed annual debt service in each subsequent year.	$13,965,000
Efficient Buildings Fund	--/TBD/--	Pledged loan payments from underlying borrowers, program debt service reserve fund.	Additional bonds can be issued if projected loan revenues are at least 1.20x existing plus proposed annual debt service in each subsequent year.	$23,345,000
Other Water Pollution Control and Drinking Water (non-SRF)	Various	Conduit bond issues. Net revenue pledges secure the bonds.	Revenue Sufficiency Certificate, stating that revenues are sufficient to pay debt service.	$73,729,000

Outstanding Debt of Quasi-Public Agencies

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2018
Rhode Island Housing and Mortgage Finance Corporation				
RI Housing	Not Rated Private Placement RIH Housing has a AA- GO Rating	General Obligation Note		$5, 000,000
Homeownership Opportunity Bonds	Aa1/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	$515,162,194
Home Funding Bonds and Notes	Aa1/AA+/--	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	$91,464,966
Rental Housing Bonds	Aa2/--/--	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	$29,232,589
Multi-Family Funding Bonds	Aa2/--/--	Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	$87,255,000
Multi-Family Development Bonds	Aa2/--/--	Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	$237,207,280
Multi-Family Mortgage Rev Bonds	Aa2/--/--	Freddie Mac credit enhancement. Mortgage loans and revenues	Certificate stating revenues are sufficient to provide for the payment of bonds	$127,518,110
Rhode Island Student Loan Authority				
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.	$301,485,000
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.	FFELP Loan program eliminated in 2010. Any additional bonds would likely be only for refinancing outstanding bonds.	$176,947,000
Santander Bank Line of Credit	Not Rated	Secured by RISLA refinanced loans. Bank has a security interest on loan repayments and the refinanced loans pledged to the Line. Underwriting and servicing are approved by the Bank.	Letter of credit facility expired on December 29, 2016. No additional draws permitted.	$9,413,182

Outstanding Debt of Quasi-Public Agencies

Issuer/Debt Program	Ratings (M/S/F)	Security	Indenture Required Additional Bonds Test	Outstanding as of 6/30/2018
Webster Bank Line of Credit	Not Rated	Secured by RISLA refinanced loans. Bank has a security interest on loan repayments and the refinanced loans pledged to the Line. Underwriting and servicing are approved by the Bank.	Letter of Credit Facility expires on June 2, 2019. Additional draws are permitted until expiration date up to a maximum borrowing of $15,000,000 for certain tranches of the line.	$11,844 031

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

	Fitch Ratings	Moody's Investors Service	Standard & Poor's
Portfolio Analysis	Assess Weighted Average Default Rate (WADR) and calculates a Portfolio Stress Model (PSM) based on long-term default rates of corporate entities. Assess credit quality of underlying borrowers. Liability Rating Stress Hurdle	Pool financings: Debt obligations secured by loan repayments from a small group of obligors. Evaluate underlying credit quality of pool participants and nature of obligation. Employ Weighted Average Probability of Default. Determine weighted average credit quality of pool participants. State Revolving Funds: Evaluate Portfolio Credit Quality and Default Tolerance Score**:** • Portfolio size and diversity (size, percentage of borrowers with less than 1% of the portfolio, percentage of loans to the top five borrowers)	Calculate **Enterprise Risk Score** • Industry risk for government and not-for-profit municipal pool programs equates to low risk • Market position reflects level of government support received, existence of legislative authorization and presence of any significant challenges that could affect demand. • Geographic concentration – programs that target only one metropolitan area receive a one-notch negative adjustment Calculate Financial Risk Score • Determine relative default rates given credit quality of underlying loan portfolio • Review operating performance • Review financial policies and practices
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	State aid intercept mechanisms Required program-level reserves Moral obligation to fund debt service reserve funds may benefit from rating improvement Surplus Reserve Fund release requirements (cash flow coverage test must be met before surplus is released or de-allocated) Review Additional Bonds Test Review other credit enhancements (debt service fund, additional local reserve requirements, higher interest rate on a delinquent loan) Review any provisions for cross-collateralization.	Presence of a debt service reserve fund viewed as credit strength. Provision for obligating pool participants to make up any funding shortfall or refill a DSRF. Restrictions on removing surplus funds from the program. SRF: Review rate covenants, pledged reserves at borrower level; presence of state aid intercept or moral obligation of individual loans; presence of step-provisions. Review assets pledged, cross-collateralization. Surplus Reserve Fund release requirements (cash flow coverage test must be met before surplus is released or de-allocated) Review additional bonds test, reserve requirements.	Examine state sponsored programs for power to influence local borrower behavior: • Regulatory or oversight authority • State intercept provisions • Other measures to compel nonpayment without court action

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

	Fitch Ratings	Moody's Investors Service	Standard & Poor's
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.	Review cash flow structure and over-collateralization of loans to bonds. Also allows for hybrid structures using features from both the cash flow structure and the reserve structure to over-collateralize.	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. Aggregates sub AA- debt instruments from same obligor to determine largest single obligor.
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.		
	U.S. Public Finance State Revolving Fund and Municipal Pool Program Rating Criteria, March 13, 2019	*Public Sector Financings, July 18, 2012* *U.S. State Revolving Fund Debt, March 20, 2013*	*U.S. Public Finance Long-Term Municipal Pools: Methodology and Assumptions, March 19, 2012 - Updated as of June 21, 2019*

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)
  - 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

APPENDIX C
TABLE OF CONTENTS

Outstanding Municipality Debt

				Governmental Activities - Tax-Supported									Business Activities				
Municipality	Moody's	S&P	Fitch	General Obligation Bonds	Loans Payable	Capital Leases	Net Direct Debt	Housing Aid Reimbursement (Bonds Only) (2017/2018-2032)	GO Debt Service	Loans Debt Service	Lease Payments	Total Debt Service (2017)	Enterprise Debt	Debt Service	Gross Direct Debt	Overlapping Debt	Overall Debt
Barrington	Aa1	AAA	NR	8,230,000	68,444,636	926,028	77,600,664	(11,226,412)	1,637,956	3,546,996	204,278	5,389,230	12,874,814	1,547,531	90,475,478	0	90,475,478
Bristol	Aa2	AA+	NR	28,469,528	0	535,957	29,005,485	0	3,520,200	na	na	3,520,200	34,927,005	3,516,127	63,932,490	8,134,540	72,067,030
Burrillville	Aa2	NR	NR	10,157,229	0	0	10,157,229	(1,834,673)	1,675,981	0	0	1,675,981	7,585,000	641,727	17,742,229	4,216,788	21,959,017
Central Falls	Ba2	BBB	NR	5,895,000	5,215,000	0	11,110,000	(4,521,466)	2,361,366	na	na	2,361,366	23,960,670	1,984,284	35,070,670	0	35,070,670
Charlestown	Aa2	NR	NR	4,845,000	0	351,602	5,196,602	0	380,045	0	100,971	481,016	0	0	5,196,602	11,858,681	17,055,283
Coventry	A1	AA	NR	41,550,000	1,015,576	0	42,565,576	(7,257,522)	4,941,519	0	0	4,941,519	24,484,226	3,127,890	67,049,802	1,089,457	68,139,259
Cranston	A1	AA-	AA+	70,526,000	10,840,000	2,780,000	84,146,000	(13,233,071)	10,531,437	0	906,401	11,437,838	22,159,152	1,914,443	106,305,152	0	106,305,152
Cumberland	Aa3	AA+	NR	28,805,000	19,093,523	5,750,232	53,648,755	(10,004,225)	4,181,730	2,262,889	1,460,933	7,905,552	45,920,957	3,459,999	99,569,712	10,452,046	110,021,758
East Greenwich	Aa1	AA+	NR	43,400,001	1,846,500	16,943	45,263,444	(13,333,992)	5,579,473	0	16,943	5,596,416	26,873,658	3,641,823	72,137,102	0	72,137,102
East Providence	A2	AA	NR	44,014,349	0	1,361,274	45,375,623	(13,200,148)	5,735,487	na	226,975	5,962,462	90,612,152	7,819,883	135,987,775	0	135,987,775
Exeter	NR	NR	NR	451,391	0	114,258	565,649	0	123,564	0	78,575	202,139	0	0	565,649	1,847,774	2,413,423
Foster	NR	NR	NR	0	0	25,560	25,560	0	0	0	6,778	6,778	0	0	25,560	11,210,471	11,236,031
Glocester	NR	AA+	NR	1,620,000	320,920	0	1,940,920	(149,150)	279,818	na	0	279,818	0	0	1,940,920	21,129,018	23,069,938
Hopkinton	Aa3	NR	NR	2,529,000	na	152,339	2,681,339	0	374,449	na	80,503	454,952	0	0	2,681,339	9,427,634	12,108,973
Jamestown	Aa1	NR	NR	8,350,000	0	457,187	8,807,187	(129,102)	1,138,431	0	83,000	1,221,431	6,680,000	945,686	15,487,187	0	15,487,187
Johnston	A3	AA-	NR	28,730,275	19,365	0	28,749,640	(1,668,400)	3,558,735	na	413,458	3,972,193	35,458,911	3,013,994	64,208,551	0	64,208,551
Lincoln	Aa2	NR	AAA	22,595,000	0	123,105	22,718,105	(6,042,000)	3,055,638	0	511,908	3,567,546	39,003,621	3,286,099	61,721,726	1,746,182	63,467,908
Little Compton	NR	AAA	NR	9,780,000	0	290,905	10,070,905	(3,349,469)	850,975	0	70,612	921,587	0	0	10,070,905	0	10,070,905
Middletown	Aa1	NR	NR	33,550,000	300,000	415,646	34,265,646	(1,770,997)	3,419,852	na	194,463	3,614,315	6,465,289	1,386,995	40,730,935	0	40,730,935
Narragansett	Aa2	AA+	NR	22,284,000	1,152,837	362,737	23,799,574	(4,180,200)	2,291,200	179,614	189,944	2,660,758	1,991,112	603,209	25,790,686	0	25,790,686
New Shoreham	NR	AA	NR	15,190,305	0	136,128	15,326,433	(1,494,750)	2,148,942	126,810	na	2,275,752	4,233,959	245,040	19,560,392	0	19,560,392
Newport	NR	AA+	NR	36,211,000	0	353,018	36,564,018	(11,756,868)	5,322,381	na	124,971	5,447,352	134,798,226	13,364,124	171,362,244	0	171,362,244
North Kingstown	Aa2	AA+	NR	32,696,890	0	0	32,696,890	(8,612,870)	4,906,900	0	0	4,906,900	17,706,822	1,179,407	50,403,712	0	50,403,712
North Providence	A2	AA-	NR	10,429,000	0	0	10,429,000	(3,054,187)	1,880,159	0	na	1,880,159	49,415,291	4,092,289	59,844,291	0	59,844,291
North Smithfield	Aa2	NR	NR	28,174,416	0	63,906	28,238,322	(9,114,574)	3,823,525	0	64,986	3,888,511	3,861,537	475,216	32,099,859	0	32,099,859
Pawtucket	A3	A	A+	87,225,293	na	7,667,932	94,893,225	(39,345,540)	8,190,929	na	na	8,190,929	192,257,229	16,919,302	287,150,454	0	287,150,454
Portsmouth	Aa2	AAA	NR	23,744,440	0	1,177,420	24,921,860	(2,019,657)	2,474,340	0	457,614	2,931,954	693,044	228,509	25,614,904	2,313,000	27,927,904
Providence	Baa1	BBB	A-	105,478,000	5,102,000	319,379,000	429,959,000	(168,652,363)	19,865,000	0	44,323,000	64,188,000	388,514,847	31,653,128	818,473,847	0	818,473,847
Richmond	Aa3	NR	NR	2,890,000	0	8,000	2,898,000	0	547,628	0	2,367	549,995	2,030,462	91,431	4,928,462	9,289,018	14,217,480
Scituate	NR	AA	NR	3,621,000	2,711,000	50,500	6,382,500	(2,094,932)	896,496	290,243	50,500	1,237,239	330,617	65,245	6,713,117	0	6,713,117
Smithfield	Aa2	AA	NR	22,028,273	0	0	22,028,273	(2,234,771)	2,352,063	0	na	2,352,063	7,433,196	663,529	29,461,469	0	29,461,469
South Kingstown	Aa1	NR	NR	12,495,000	0	0	12,495,000	(2,721,974)	2,173,357	0	47,293	2,220,650	1,200,000	210,937	13,695,000	1,241,804	14,936,804
Tiverton	A1	NR	NR	41,030,000	0	1,043,839	42,073,839	(9,966,895)	4,329,269	0	272,560	4,601,829	0	0	42,073,839	5,737,176	47,811,015
Warren	Aa3	NR	NR	13,887,329	0	0	13,887,329	0	1,715,082	0	0	1,715,082	3,007,373	344,417	16,894,702	4,730,461	21,625,162
Warwick	A1	AA	NR	46,554,440	0	5,905,962	52,460,402	(11,027,160)	6,229,548	0	1,472,655	7,702,203	102,343,493	15,700,106	154,803,895	14,000	154,817,895
West Greenwich	NR	AA+	NR	4,675,000	46,593	0	4,721,593	0	570,557	na	0	570,557	283,171	55,882	5,004,764	2,031,660	7,036,423
West Warwick	Baa2	NR	NR	43,037,000	0	1,627,000	44,664,000	(4,584,527)	4,351,780	na	306,947	4,658,727	27,764,382	4,116,361	72,428,382	0	72,428,382
Westerly	Aa3	AA	NR	43,840,000	23,456,000	2,121,462	69,417,462	(13,804,240)	6,036,100	1,085,000	969,034	8,090,134	6,556,691	448,146	75,974,153	2,061,119	78,035,272
Woonsocket	Baa3	NR	A	139,963,462	0	255,198	140,218,660	(45,094,152)	15,492,100	na	130,566	15,622,666	65,470,070	6,520,695	205,688,730	0	205,688,730
Total				1,128,952,621	139,563,950	353,453,138	1,621,969,709	(427,480,287)	148,944,012	7,491,552	52,768,235	209,203,799	1,386,896,975	133,263,454	3,008,866,684	108,530,828	3,117,397,512

State Housing Aid for North Providence reflects reimbursements for FY2018 bond issue and data for North Providence reflects FY2017. Used 2017 DAS State Housing Aid information.

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

	Pension and OPEB							Demographics/Economic Statistics				
Municipality	Net OPEB Liability	Net Pension Liability	Overall Debt + Pensions+OPEB	Pension Actual ADC (FY2017)	Pension Required ADC (FY2017)	OPEB Actual Payment (FY2017)	OPEB Required Payment (FY2017)	Governmental Fund Revenues	Governmental Fund Expenditures	Population	Personal Income	Taxable Assessed Value
Barrington	0	59,592,515	150,067,993	5,013,722	4,744,617	1,355,265	495,897	80,296,706	97,549,575	16,218	1,731,521,132	3,014,035,859
Bristol	9,367,345	20,416,939	101,851,314	4,676,616	4,676,616	1,350,016	1,066,000	52,007,019	54,224,201	22,318	1,328,042,756	2,807,886,464
Burrillville	0	31,364,063	53,323,080	2,807,158	2,807,158	237,959	261,152	53,397,356	53,262,209	16,363	829,891,142	1,683,588,822
Central Falls	3,267,708	27,691,403	66,029,781	2,692,408	2,710,764	293,377	284,360	21,445,518	23,550,777	19,395	460,874,474	477,452,665
Charlestown	1,863,558	5,383,936	24,302,777	505,426	505,426	694,081	449,904	28,453,976	26,926,851	7,762	455,806,920	2,505,604,851
Coventry	17,107,002	161,583,565	246,829,826	10,468,088	10,468,088	952,546	1,605,868	112,049,038	115,427,074	34,873	1,851,269,078	3,463,244,373
Cranston	50,756,692	404,838,085	561,899,929	36,953,541	36,953,541	5,923,914	5,923,914	306,459,799	320,328,829	80,979	4,097,850,686	7,092,748,076
Cumberland	20,986,634	82,518,148	213,526,540	7,527,303	7,476,662	1,503,461	1,677,202	104,707,539	113,795,507	34,498	2,292,864,981	4,034,005,249
East Greenwich	39,218,245	46,489,295	157,844,642	4,141,316	4,141,316	1,194,912	4,095,673	70,903,695	71,474,117	13,094	1,170,645,558	2,371,973,994
East Providence	26,911,297	200,150,063	363,049,135	15,802,743	16,765,218	7,374,080	5,451,057	168,048,505	173,631,738	47,425	2,328,363,340	4,004,793,750
Exeter	0	0	2,413,423	0	0	0	0	15,659,897	15,040,000	6,761	422,820,998	826,724,971
Foster	240,035	5,000,506	16,476,572	525,071	525,071	67,394	36,594	14,933,064	14,590,378	4,689	283,909,049	552,023,011
Glocester	1,757,261	10,781,359	35,608,558	1,029,674	1,029,674	139,556	174,569	28,816,216	28,673,314	9,993	578,080,518	1,034,537,474
Hopkinton	0	3,671,074	15,780,047	369,598	369,598	0	0	25,891,526	25,824,510	8,112	505,635,439	922,414,624
Jamestown	9,568,941	10,217,212	35,273,340	1,164,916	1,183,623	625,090	702,717	24,722,686	24,841,191	5,505	485,351,859	2,284,811,475
Johnston	199,723,677	168,915,938	432,848,166	14,058,192	21,241,798	9,367,130	18,051,553	121,749,223	118,921,965	29,159	1,545,865,123	2,177,298,266
Lincoln	13,343,281	61,101,947	137,913,136	6,254,431	6,254,431	1,804,537	1,333,965	87,943,446	88,024,036	21,630	1,352,627,098	2,736,150,768
Little Compton	2,414,372	6,013,927	18,499,204	692,468	692,468	144,114	144,114	14,775,532	14,507,058	3,521	250,676,736	2,022,287,464
Middletown	18,496,899	37,358,873	96,586,707	5,597,087	4,325,407	3,550,098	2,415,706	69,511,215	76,285,153	16,100	874,387,755	2,860,796,992
Narragansett	35,040,392	72,130,905	132,961,983	7,885,538	7,745,975	3,863,274	3,874,650	65,100,514	65,497,632	15,601	1,103,778,304	4,540,889,213
New Shoreham	501,555	5,750,355	25,812,302	563,253	563,253	72,587	58,123	15,107,010	18,802,026	830	58,076,733	1,679,027,591
Newport	71,855,080	136,431,195	379,648,519	5,768,174	5,768,174	6,614,215	7,162,648	119,446,169	118,724,496	83,204	5,145,491,716	6,848,183,901
North Kingstown	13,900,756	89,328,576	153,633,044	8,128,793	8,128,793	1,263,315	2,915,354	104,960,332	104,605,076	26,178	1,812,253,754	4,112,990,874
North Providence	57,236,838	65,135,343	182,216,472	5,878,379	6,176,259	3,146,059	4,331,922	108,957,571	105,484,814	32,345	1,713,321,002	2,193,256,327
North Smithfield	8,875,324	24,541,420	65,516,603	2,222,801	2,222,801	839,988	1,053,212	46,890,479	45,857,303	12,301	778,673,795	1,604,003,920
Pawtucket	348,618,912	284,693,912	920,463,278	25,528,179	25,528,179	14,613,247	21,155,209	240,396,507	267,298,519	71,770	2,744,419,224	3,599,698,844
Portsmouth	21,878,757	72,639,920	122,446,581	6,668,668	6,668,668	1,069,210	1,629,782	67,838,820	72,113,644	17,463	1,277,709,519	3,366,696,071
Providence	1,007,294,000	1,250,276,000	3,076,043,847	99,103,000	97,424,000	26,854,000	56,757,000	836,368,000	833,606,000	179,509	6,912,543,333	11,564,081,000
Richmond	0	729,680	14,947,160	191,052	191,052	0	0	24,558,357	25,361,626	7,608	446,547,781	825,965,637
Scituate	7,424,899	34,061,717	48,199,733	2,797,978	2,763,573	273,226	649,403	37,978,650	37,275,382	10,529	752,846,245	1,484,106,507
Smithfield	41,138,385	63,906,072	134,505,926	3,534,379	3,534,379	1,280,410	3,391,137	75,665,639	77,724,969	21,611	1,264,074,097	2,755,071,181
South Kingstown	6,572,335	69,572,335	91,081,474	5,115,032	5,115,032	2,704,160	1,829,061	96,886,000	94,214,000	30,712	1,731,864,159	4,618,115,189
Tiverton	26,378,098	32,637,591	106,826,704	3,071,323	2,946,786	679,087	1,594,417	54,938,537	62,162,540	15,870	956,461,064	2,013,324,899
Warren	4,104,306	6,990,615	32,720,083	683,813	683,813	212,194	341,832	27,241,774	26,559,792	10,492	673,803,200	1,171,817,550
Warwick	125,493,413	456,769,388	737,080,696	42,983,193	42,095,022	9,522,392	30,737,358	323,851,763	321,958,918	81,218	4,666,974,119	9,374,661,894
West Greenwich	0	3,095,324	10,131,747	378,894	378,894	0	0	19,977,075	19,655,377	6,118	371,712,432	852,267,620
West Warwick	63,026,019	166,779,219	302,233,620	12,773,227	12,782,978	4,270,977	4,956,467	103,936,770	102,607,574	28,709	1,287,477,814	2,146,935,966
Westerly	27,948,460	59,845,170	165,828,902	5,505,689	5,265,889	1,912,794	1,501,065	101,072,524	103,416,004	22,626	1,332,086,769	5,932,488,094
Woonsocket	145,101,262	159,372,077	510,162,069	12,201,805	12,201,805	4,638,340	4,638,340	164,339,113	159,086,588	41,508	1,511,667,861	1,918,933,238

FY17 OPEB data was used for Burrillville, Coventry,Charlestown, Central Falls, Cranston

Municipality – Other Debt and Pension Ratios

				Other Debt Ratios							Other Pensions Ratios	
Municipality	Moody's	S&P	Fitch	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	AAA	NR	3.00%	0.97x	Aaa	5.2%	96.6%	5.5%	1	2.0%	Aa
Bristol	Aa2	AA+	NR	2.57%	0.56x	A	5.4%	55.8%	6.5%	3	0.7%	Aaa
Burrillville	Aa2	NR	NR	1.30%	0.19x	Aa	2.6%	19.0%	3.1%	2	1.9%	Aa
Central Falls	Ba2	BBB	NR	7.35%	0.52x	A	7.6%	51.8%	10.0%	4	5.8%	Baa
Charlestown	Aa2	NR	NR	0.68%	0.18x	Aaa	3.7%	18.3%	1.8%	1	0.2%	Aaa
Coventry	A1	AA	NR	1.97%	0.38x	Aa	3.7%	38.0%	4.3%	2	4.7%	A
Cranston	A1	AA-	AA+	1.50%	0.27x	Aaa	2.6%	27.5%	3.6%	1	5.7%	Baa
Cumberland	Aa3	AA+	NR	2.73%	0.51x	Aa	4.8%	51.2%	6.9%	2	2.0%	Aa
East Greenwich	Aa1	AA+	NR	3.04%	0.64x	A	6.2%	63.8%	7.8%	4	2.0%	Aa
East Providence	A2	AA	NR	3.40%	0.27x	Aaa	5.8%	27.0%	3.4%	1	5.0%	Aa
Exeter	NR	NR	NR	0.29%	0.04x	Aaa	0.6%	3.6%	1.3%	1	0.0%	Aaa
Foster	NR	NR	NR	2.04%	0.00x	Aaa	NA	0.2%	0.0%	1	0.9%	Aaa
Glocester	NR	AA+	NR	2.23%	0.07x	Aaa	4.0%	6.7%	1.0%	1	1.0%	Aaa
Hopkinton	Aa3	NR	NR	1.31%	0.10x	Aaa	2.4%	10.4%	1.8%	1	0.4%	Aaa
Jamestown	Aa1	NR	NR	0.68%	0.36x	Aa	3.2%	35.6%	4.9%	2	0.4%	Aaa
Johnston	A3	AA-	NR	2.95%	0.24x	Aaa	4.2%	23.6%	3.3%	1	7.8%	Baa
Lincoln	Aa2	NR	AAA	2.32%	0.26x	Aa	4.7%	25.8%	4.1%	2	2.2%	A
Little Compton	NR	AAA	NR	0.50%	0.68x	A	NA	68.2%	6.4%	3	0.3%	Aaa
Middletown	Aa1	NR	NR	1.42%	0.49x	Aa	4.7%	49.3%	4.7%	2	1.3%	Aa
Narragansett	Aa2	AA+	NR	0.57%	0.37x	Aa	2.3%	36.6%	4.1%	2	1.6%	Aa
New Shoreham	NR	AA	NR	1.16%	1.01x	A	NA	101.5%	12.1%	5	0.3%	Aaa
Newport	NR	AA+	NR	2.50%	0.31x	Aa	3.3%	30.6%	4.6%	2	2.0%	Aa
North Kingstown	Aa2	AA+	NR	1.23%	0.31x	Aa	2.8%	31.2%	4.7%	2	2.2%	Aa
North Providence	A2	AA-	NR	2.73%	0.10x	Aaa	3.5%	9.6%	1.8%	1	3.0%	Aa
North Smithfield	Aa2	NR	NR	2.00%	0.60x	A	4.1%	60.2%	8.5%	4	1.5%	Aa
Pawtucket	A3	A	A+	7.98%	0.39x	Aaa	10.5%	39.5%	3.1%	1	7.9%	Baa
Portsmouth	Aa2	AAA	NR	0.83%	0.37x	Aaa	2.2%	36.7%	4.1%	1	2.2%	Aa
Providence	Baa1	BBB	A-	7.08%	0.51x	Aa	11.8%	51.4%	7.7%	3	10.8%	Baa
Richmond	Aa3	NR	NR	1.72%	0.12x	Aaa	3.2%	11.8%	2.2%	1	0.1%	Aaa
Scituate	NR	AA	NR	0.45%	0.17x	Aaa	0.9%	16.8%	3.3%	1	2.3%	Aaa
Smithfield	Aa2	AA	NR	1.07%	0.29x	Aaa	2.3%	29.1%	3.0%	1	2.3%	A
South Kingstown	Aa1	NR	NR	0.32%	0.13x	Aaa	0.9%	12.9%	2.4%	1	1.5%	Aa
Tiverton	A1	NR	NR	2.37%	0.77x	A	5.0%	76.6%	7.4%	3	1.6%	Aa
Warren	Aa3	NR	NR	1.85%	0.51x	Aa	3.2%	51.0%	6.5%	2	0.6%	Aaa
Warwick	A1	AA	NR	1.65%	0.16x	Aaa	3.3%	16.2%	2.4%	1	4.9%	A
West Greenwich	NR	AA+	NR	0.83%	0.24x	Aaa	1.9%	23.6%	2.9%	2	0.4%	Aaa
West Warwick	Baa2	NR	NR	3.37%	0.43x	Aaa	5.6%	43.0%	4.5%	1	7.8%	Baa
Westerly	Aa3	AA	NR	1.32%	0.69x	A	5.9%	68.7%	7.8%	3	1.0%	Aaa
Woonsocket	Baa3	NR	A	10.72%	0.85x	A	13.6%	85.3%	9.8%	4	8.3%	Baa

SUMMARY OF FIRE DISTRICTS

		FY17 Debt Service Payment*						
Fire District	Debt Limit	Principal	Interest	Total	Long-Term Debt FY17**	Net Assessed Value***	FY17 Approved Budget	Long-Term Debt as % of FY17 Budget#
Oakland-Mapleville	3% of assessed	$11,929.00	$24,765.00	$36,694.00	$509,098.00	$246,330,224.00	$545,579.00	93.31%
Pascoag	1,000,000	$72,250.00	$46,750.00	$119,000.00	$908,317.00	$501,212,800.00	$1,387,408.00	65.47%
Harrisville	None	$54,517.00	$23,944.00	$78,461.00	$2,799,373.00	$383,888,823.00	$1,420,048.00	197.13%
Nasonville	3% of assessed	-	-	$0.00	N/A	Not reported	$516,156.00	N/A
Charlestown	5,000,000	$93,318.00	$123,387.00	$216,705.00	$3,384,131.00	$1,324,223,500.00	$771,323.00	438.74%
Quonochontaug Central	1.5% of assessed	$8,802.00	$5,598.00	$14,400.00	$100,414.00	$233,562,936.00	$314,612.00	31.92%
Shady Harbor	3% of assessed	$4,750.00	$5,789.00	$10,539.00	$114,000.00	$60,906,000.00	$265,686.00	42.91%
Central Coventry	1/2 of annual budget	-	-	$0.00	N/A	$1,693,114,595.00	$4,931,585.00	N/A
Coventry	1 year of tax revenue	UNK	UNK	$0.00	N/A	$672,320,095.00	$2,592,449.00	N/A
Hopkins Hill	1,000,000	-	-	$0.00	N/A	$343,872,996.00	$1,212,425.00	N/A
Western Coventry	0.5% of assessed	$40,319.00	$54,650.00	$94,969.00	$1,089,457.00	$352,046,200.00	$617,758.00	176.36%
Cumberland	$100,000 unless voted	$54,000.00	$8,400.00	$62,400.00	$10,452,046.00	$3,362,798,055.00	$7,580,233.00	137.89%
Exeter	1% of assessed	-	-	$0.00	N/A	$755,460,554.00	$1,303,849.00	N/A
Chepachet	9% of assessed	$72,892.00	$9,108.00	$82,000.00	$110,217.00	$421,319,883.00	$585,482.00	18.83%
Harmony	3% of assessed	-	-	$0.00	$139,522.00	$296,582,266.00	$666,017.00	20.95%
West Glocester	3% of assessed	-	-	$0.00	$59,832.00	$263,730,874.00	$436,690.00	13.70%
Ashaway	3% of assessed	$33,368.00	$106,981.00	$140,349.00	$2,527,871.00	$406,520,400.00	$524,750.00	481.73%
Hope Valley-Wyoming	None	-	-	$81,754.00	$428,302.00	$680,745,370.00	$819,176.00	52.28%
Albion	None	$64,886.00	$48,123.00	$113,009.00	$1,263,165.00	$640,889,324.00	$1,113,109.00	113.48%
Lime Rock	1,000,000	$41,547.00	$7,671.00	$49,218.00	N/A	$964,816,694.00	$2,473,239.00	N/A
Lonsdale	1% of assessed	NR	UNK	$0.00	$483,017.00	$318,073,411.00	$530,640.00	91.03%
Manville	None	-	-	$0.00	N/A	$218,004,245.00	$333,636.00	N/A
Quinnville	50,000	-	-	$0.00	N/A	Not reported	$92,576.00	N/A
Saylesville	2,000,000	NR	NR	$0.00	NR	$441,016,901.00	$730,100.00	N/A
Bonnet Shores	None	-	-	$0.00	N/A	$527,271,800.00	$299,100.00	N/A
Pojac Point	1,500	-	-	$0.00	N/A	$28,553,088.00	$58,500.00	N/A
Portsmouth Water & Fire	None	$286,170.00	$89,405.00	$375,575.00	$2,313,000.00	$2,719,659,300.00	$4,670,434.00	49.52%
Ricmond Carolina	1% of assessed	$96,706.00	$75,391.00	$172,097.00	$1,912,075.00	$481,363,736.00	$536,895.00	356.14%
Indian Lake Shores	9% of assessed	-	-	$0.00	N/A	$32,047,600.00	$45,520.00	N/A
Kingston	2,000,000	-	-	$207,749.00	$1,030,108.00	$248,401,032.00	$713,617.00	144.35%
Union	10,000,000	$199,130.00	$25,660.00	$224,790.00	$211,696.00	$4,138,530,422.00	$3,598,466.00	5.88%
North Tiverton	None	$145,587.00	$153,693.00	$299,280.00	$4,637,898.00	$746,261,775.00	$2,249,427.00	206.18%
Stone Bridge	2,274,167	-	-	$51,069.00	$1,099,278.00	$356,804,300.00	$986,284.00	111.46%
Buttonwoods	20,000	$7,000.00	-	$7,000.00	$14,000.00	$74,915,300.00	$128,507.00	10.89%
Bradford	<9% of assessed	-	-	$27,537.00	$122,148.00	Not reported	$104,553.00	116.83%
Misquamicut	3% of assessed with adjmts	-	-	$0.00	$17,320.00	$631,173,054.00	$757,408.00	2.29%
Shelter Harbor	None					Not reported	$228,220.00	0.00%
Watch Hill	TAN limit of $100,000	$33,369.00	$48,591.00	$81,960.00	$883,068.00	$1,177,118,930.00	$1,275,910.00	69.21%
Weekapaug	10% of assessed	-	$3,404.00	$3,404.00	$247,020.00	$498,448,478.00	$836,705.00	29.52%
Westerly	1% of assessed	-	-	$0.00	N/A	$2,040,533,885.00	$1,323,550.00	N/A
Dunn's Corners	None	$133,667.00	$44,500.00	$178,167.00	$1,125,882.00	$1,563,053,700.00	$959,533.00	117.34%

* Source: RI Division of Municipal Finance, based on FY17 RI Fire District Adopted Budget Survey (based on self-reported data)

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

*** Certifications as of 12/31/2014 (Self-reported certifications to the Division of Municipal Finance)

Cumberland, Cumberland Hill, North Cumberland and Valley Falls fire districts have since merged into a single Cumberland Fire District as of 7/1/2016

Other Special Districts

				Governmental Activities									Demographics/Economic	
Special Districts	Moody's	S&P	Fitch	GO Bonds (FY2017)	Loans Payable (FY2017)	Capital Leases (FY2017)	Total Outstanding (FY2017)	Housing Aid (2017-2032)	GO Debt Service (2018)	Loans Debt Service (2018)	Lease Payments (2018)	Total Debt Service (2018)	Governmental Fund Revenues / Operating Revs	Governmental Fund Expenditures / Operating Exps
Bristol-Warren Regional SD	NR	NR	NR	12,865,000	0	0	12,865,000	(6,826,432)	2,563,650	0	0	2,563,650	60,395,792	61,561,772
Bristol Cnty Wtr Auth	NR	NR	NR	8,075,000	5,978,133	0	14,053,133		989,512	619,912	0	1,609,424	13,181,975	9,417,889
Burrillville Hsg Auth	NR	NR	NR				0						NO CAFR	NO CAFR
Chariho Regional School District	Aa3	NR	NR	21,334,000	440,221	0	21,774,221	(9,185,249)	n/a	na	na	1,810,996	62,867,622	65,636,016
Coventry Hsg Auth	NR	AA-	NR				0						2010 CAFR	2010 CAFR
Cumberland Hsg Auth	NR	AA-	NR				0						NO CAFR	NO CAFR
Exeter-West Greenwich Regional S.D.	NR	NR	NR	350,000	3,475,000	54,434	3,879,434	(1,813,958)	188,125	466,438	33,624	688,187	34,044,815	35,007,998
Foster-Glocester School District	Aa3	NR	NR	0	31,950,000	79,918	32,029,918	(17,980,125)	0	4,899,369	82,556	4,981,925	28,454,670	28,346,388
Kent County Water Authority	Aa2	AA-	NR	20,200,000	0	0	20,200,000		3,986,317	0	0	3,986,317	22,262,324	12,792,567
North Providence Hsg Auth	NR	AA-	NR										NO CAFR	NO CAFR
Pascoag Util Dist	NR	A	NR										2014 CAFR	2014 CAFR
Pawtucket Hsg Auth	NR	A+	NR	4,610,000	0	0	4,610,000		453,550	0	0	453,550	15,168,808	16,052,377
Providence Hsg Dev Corp	NR	NR	NR	8,785,000	0	9,776,158	18,561,158		1,186,031	0	1,047,816	2,233,847	46,014,973	45,929,000
Providence Pub Bldg Auth	NR	BBB-	NR	265,565,000	0	476,645,000	742,210,000		42,163,000	0	31,687,000	73,850,000	13,815,000	413,000
Providence Redev Agy	NR	BBB-	NR	Included in City of Providence tax-supported debt.										
Providence Wtr Supply Brd	NR	AA-	NR	116,740,085	0	0	116,740,085		8,030,975	0	0	8,030,975	71,778,075	55,765,388
Woonsocket Hsg Auth	NR	AA-	NR	4,410,000	0	0	4,410,000		598,055	0	0	598,055	16,651,329	17,712,043

Other Special Districts

Allocation of Narragansett Bay Commission Debt

NBC Debt Outstanding 6/30/18	NBC RIIB Debt Outstanding 6/30/18	Total NBC Debt Outstanding	FY2019 Debt Service
$ 242,820,000.00	$ 331,776,407.00	$ 574,596,407.00	$47,584,757.00

Municipality	% of Revenues FY2018*	NBC Debt	NBC RIIB Debt	Total Debt	Allocation of Debt Service
Central Falls	4.17%	$ 10,125,594.00	$ 13,835,076.17	$ 23,960,670.17	$ 1,984,284.37
Cranston	0.36%	$ 874,152.00	$ 1,194,395.07	$ 2,068,547.07	$ 171,305.13
Cumberland	5.86%	$ 14,229,252.00	$ 19,442,097.45	$ 33,671,349.45	$ 2,788,466.76
East Providence	3.16%	$ 7,673,112.00	$ 10,484,134.46	$ 18,157,246.46	$ 1,503,678.32
Johnston	5.87%	$ 14,253,534.00	$ 19,475,275.09	$ 33,728,809.09	$ 2,793,225.24
Lincoln	5.83%	$ 14,156,406.00	$ 19,342,564.53	$ 33,498,970.53	$ 2,774,191.33
North Providence	8.60%	$ 20,882,520.00	$ 28,532,771.00	$ 49,415,291.00	$ 4,092,289.10
Pawtucket	17.57%	$ 42,663,474.00	$ 58,293,114.71	$ 100,956,588.71	$ 8,360,641.80
Providence	48.23%	$ 117,112,086.00	$ 160,015,761.10	$ 277,127,847.10	$22,950,128.30
Smithfield	0.15%	$ 364,230.00	$ 497,664.61	$ 861,894.61	$ 71,377.14
Other	0.20%	$ 485,640.00	$ 663,552.81	$ 1,149,192.81	$ 95,169.51
Total	100.00%	$ 242,820,000.00	$ 331,776,407.00	$ 574,596,407.00	$ 47,584,757.00

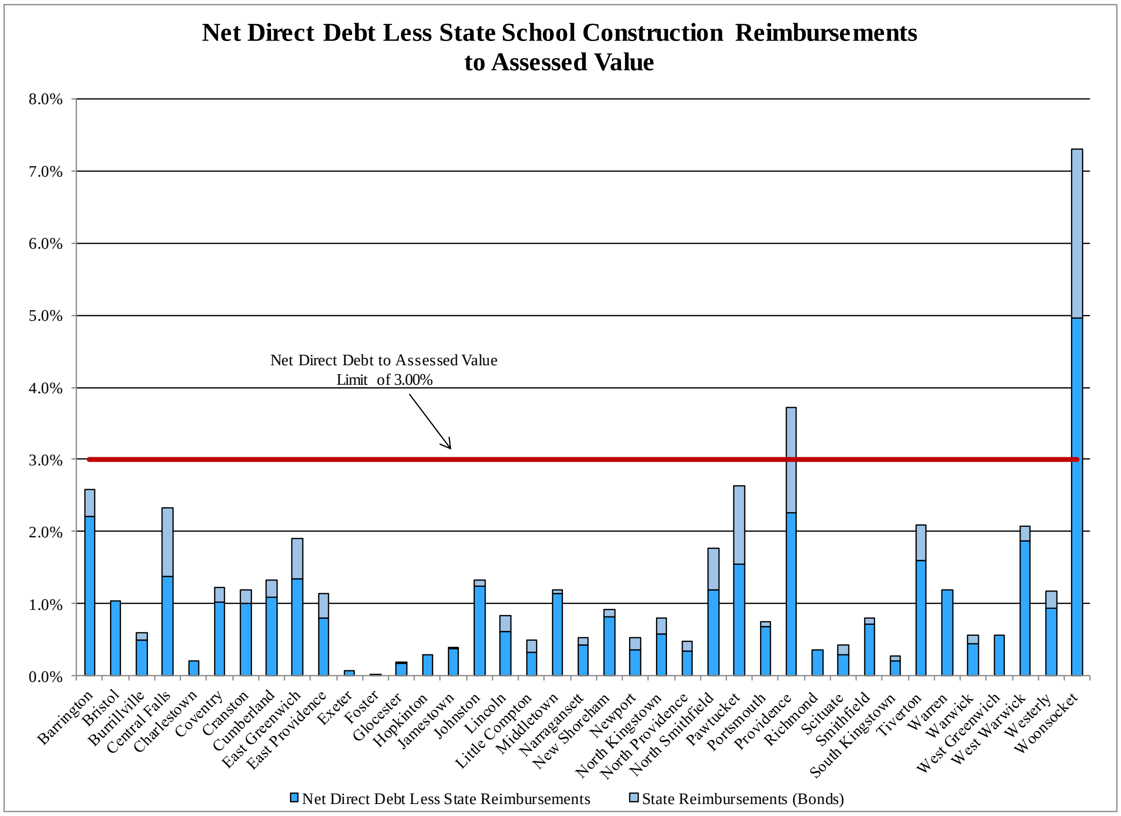
* From Narragansett Bay Commission

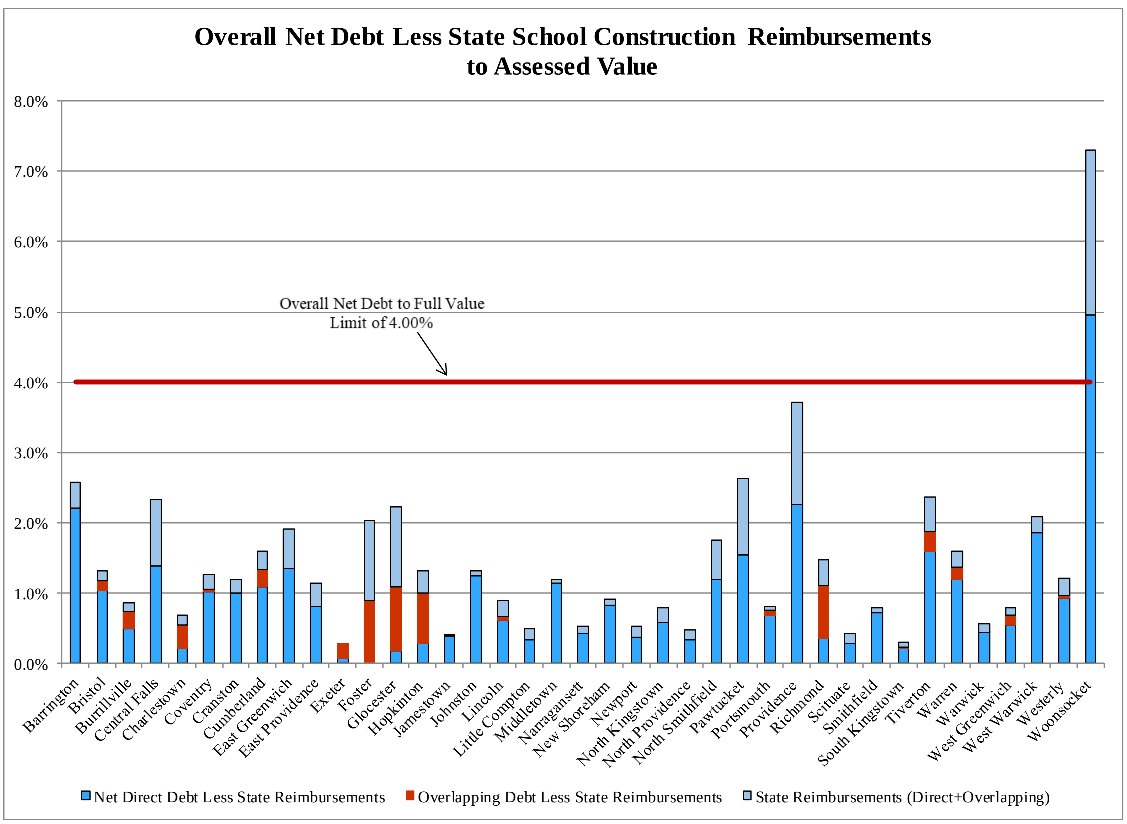
Debt and debt service: NBC Annual Report FY2018

State Reimbursements for School Building Projects (FY2017-FY2032) – Bonds Only

State Housing Aid - Construction Entitlements (Bonds-Principal)																		
District	Total (2017-2032)	Total (2018-2032)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Barrington	11,468,221	11,226,412	241,809	215,250	215,250	636,156	1,576,692	646,802	666,511	672,215	702,052	737,155	772,258	810,870	852,994	877,565	903,892	940,750
Bristol Warren	7,835,248	6,826,432	1,008,816	1,035,491	678,178	701,887	669,798	699,434	726,107	758,708	420,637	440,964	428,762	266,466	0	0	0	0
Burrillville	2,049,982	1,834,673	215,309	212,276	209,244	206,211	203,179	203,179	200,146	200,146	200,146	200,146	0	0	0	0	0	0
Central Falls	4,521,466	3,390,396	1,131,070	1,126,506	1,126,506	564,325	66,635	71,077	75,519	79,961	84,404	93,289	102,174	0	0	0	0	0
Chariho	9,777,293	9,185,249	592,044	601,194	845,194	924,494	945,844	964,144	994,644	1,025,144	603,947	621,447	644,197	236,250	246,750	260,750	271,250	0
Coventry	8,314,917	7,257,522	1,057,395	1,070,831	950,097	982,088	949,430	947,105	496,447	206,836	206,836	206,836	206,836	206,836	206,836	206,836	206,836	206,836
Cranston	14,439,040	13,233,071	1,205,969	1,452,321	1,371,783	1,376,951	1,224,193	1,198,312	1,008,211	1,035,355	1,055,751	849,912	512,826	536,093	552,562	341,051	352,936	364,814
Cumberland	11,040,145	10,004,225	1,035,920	1,028,524	890,505	899,249	932,549	957,931	959,206	956,151	918,843	947,345	757,860	756,062	0	0	0	0
East Greenwich	13,333,992	12,524,049	809,943	826,212	906,144	861,099	857,771	841,660	866,628	893,676	839,986	862,872	881,598	874,343	879,325	688,807	709,480	734,448
East Providence	13,200,148	11,992,609	1,207,539	1,146,174	1,170,993	1,200,854	1,091,068	1,126,827	1,142,144	1,176,806	982,915	378,824	392,196	405,564	421,163	436,762	452,360	467,959
Exeter-West Greenwich	2,095,834	1,813,958	281,876	281,876	177,172	177,172	174,220	171,267	171,267	168,314	99,937	99,937	98,183	98,183	96,430	0	0	0
Foster	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Foster-Glocester	20,079,054	17,980,125	2,098,929	2,244,323	2,235,474	2,359,723	1,660,165	1,376,392	1,432,632	1,503,670	1,212,519	1,267,014	1,330,592	667,129	690,492	0	0	0
Glocester	166,206	149,150	17,056	14,915	14,915	14,915	14,915	14,915	14,915	14,915	14,915	14,915	14,915	0	0	0	0	0
Jamestown	172,136	129,102	43,034	43,034	43,034	43,034	0	0	0	0	0	0	0	0	0	0	0	0
Johnston	1,884,278	1,668,400	215,878	249,112	231,351	195,059	213,313	154,882	167,002	167,068	109,337	24,106	24,588	25,070	25,552	26,516	27,481	27,963
Lincoln	6,667,587	6,042,000	625,587	493,500	514,500	534,000	556,500	585,000	615,000	645,000	673,500	697,500	727,500	0	0	0	0	0
Little Compton	3,534,570	3,349,469	185,101	174,755	176,697	180,580	186,405	192,230	201,939	209,706	217,473	225,240	236,890	248,540	258,249	269,899	279,608	291,258
Middletown	1,890,839	1,770,997	119,842	119,842	186,139	247,750	139,103	140,836	142,570	100,335	75,429	78,029	81,497	88,847	90,191	91,983	93,327	95,119
Narragansett	4,447,200	4,180,200	267,000	279,000	292,500	299,700	309,000	321,000	333,000	348,000	363,000	381,000	399,000	418,500	436,500	0	0	0
New Shoreham	1,651,500	1,494,750	156,750	161,250	164,250	168,750	171,750	176,250	182,250	183,750	189,750	33,750	15,750	15,750	15,750	15,750	0	0
Newport	12,659,423	11,756,868	902,555	1,078,055	985,016	988,128	991,239	994,351	726,307	730,975	735,643	738,754	631,400	631,400	631,400	631,400	631,400	631,400
North Kingstown	8,612,870	7,876,554	736,316	733,274	736,316	694,432	683,941	690,024	690,107	692,470	700,074	706,158	713,763	167,199	167,199	167,199	167,199	167,199
North Providence	30,987,168	30,578,668	408,500	408,500	408,500	4,276,639	1,976,883	2,040,676	2,100,796	1,961,997	1,849,819	1,936,054	2,026,059	2,116,066	2,213,569	2,314,796	2,419,796	2,528,518
North Smithfield	9,774,981	9,114,574	660,407	688,812	677,691	756,664	788,141	821,365	793,505	837,552	881,254	941,955	784,850	827,157	74,372	78,000	79,814	83,442
Pawtucket	40,687,616	39,345,540	1,342,076	1,546,088	1,671,274	3,124,425	2,541,295	2,592,178	2,653,320	2,740,584	2,833,001	2,915,505	2,844,958	2,962,736	2,849,554	2,598,462	2,689,707	2,782,453
Portsmouth	2,351,573	2,019,657	331,916	327,437	324,213	323,386	204,765	176,103	138,891	139,238	124,211	124,560	32,023	32,486	17,362	17,825	18,289	18,868
Providence	179,509,132	168,652,363	10,856,769	16,873,905	16,364,542	16,217,456	15,093,744	15,453,208	15,653,090	16,264,282	14,519,209	13,912,317	14,564,524	11,091,760	1,371,966	408,116	425,263	438,981
Scituate	2,186,028	2,094,932	91,096	94,096	95,596	188,500	129,500	134,500	141,500	146,500	153,500	160,500	179,290	183,790	188,290	99,790	99,790	99,790
Smithfield	2,474,912	2,234,771	240,141	327,983	183,342	183,342	183,342	183,342	183,342	183,342	100,842	100,842	100,842	100,842	100,842	100,842	100,842	100,842
South Kingstown	3,187,637	2,721,974	465,663	491,143	457,951	472,544	296,347	146,347	144,808	136,062	101,208	93,509	82,732	67,335	67,335	67,335	48,659	48,659
Tiverton	10,449,979	9,966,895	483,084	417,491	523,630	897,742	805,695	824,324	850,970	887,073	930,355	973,636	901,581	697,462	480,734	258,734	258,734	258,734
Warwick	11,027,160	10,199,701	827,459	1,070,752	1,103,595	915,387	893,342	834,133	784,356	694,537	647,307	586,712	577,701	391,900	405,372	418,793	430,265	445,549
West Warwick	5,385,499	4,584,527	800,972	773,185	608,319	547,890	577,937	580,393	459,860	105,108	107,564	112,474	107,996	112,907	115,360	120,270	125,177	130,087
Westerly	15,039,504	13,804,240	1,235,264	1,254,764	1,275,764	1,298,264	1,320,764	1,339,364	1,367,864	1,399,364	1,432,364	791,864	587,864	434,000	434,000	434,000	434,000	0
Woonsocket	47,503,285	45,094,152	2,409,133	2,500,902	2,680,616	2,777,945	2,870,630	2,975,365	3,018,509	2,811,824	2,680,440	2,816,208	2,955,854	3,103,259	3,262,301	3,425,222	3,541,594	3,673,483
Source: RI Department of Elementary and Secondary Education																		

State Reimbursements for School Building Projects (FY2017-FY2032) – Bonds Only





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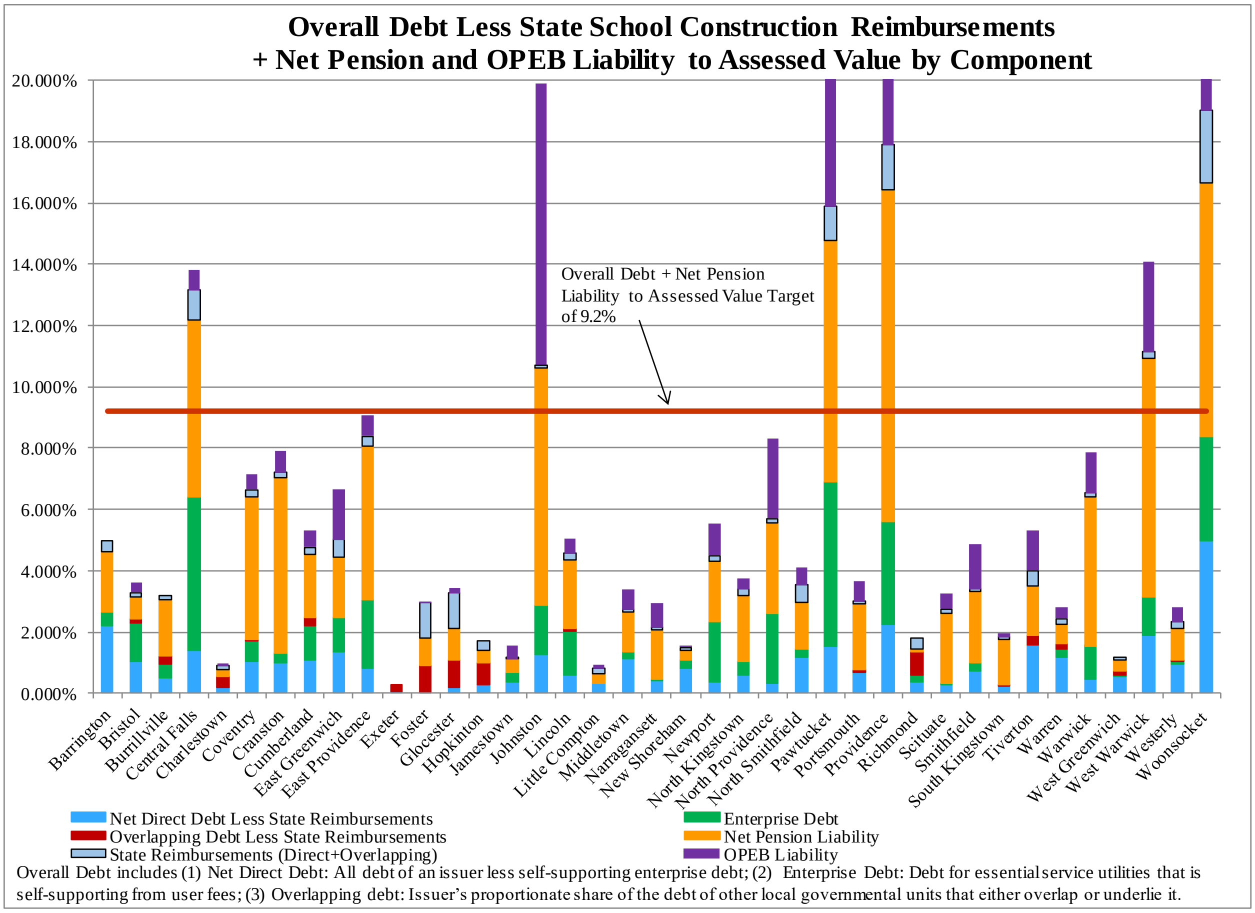

GLOSSARY OF TERMS

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 issuer. 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), Fitch Ratings, and Kroll Bond Rating Agency are the four 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