Texas Bond Review Board

Debt Affordability Study

February 2023

This study provides data on the state's historical, current, and projected debt positions and develops financial data from which policymakers can review various debt strategies by use of the study's Debt Capacity Model.

Debt Affordability Study
February 2023

Greg Abbott, Governor
Chairman

Dan Patrick, Lieutenant Governor

Dade Phelan, Speaker of the House of Representatives

Glenn Hegar, Comptroller of Public Accounts

Rob Latsha
Executive Director

Executive Summary

The 80th Legislature, 2007, passed Senate Bill 1332 that amended the Texas Government Code, Chapter 1231, to require the Texas Bond Review Board (BRB), in consultation with the Legislative Budget Board, to prepare annually the state's Debt Affordability Study (DAS).

The DAS Debt Capacity Model (DCM) assesses the impact of the state's annual debt service requirements for current and projected levels of not self-supporting (NSS) debt on general revenue over the next five years. Credit rating agencies examine variations of these debt capacity measures to assess the state's debt burden, a key factor affecting the state's credit rating and capacity for debt issuance.

State Debt Outstanding and the Constitutional Debt Limit
At the end of fiscal year 2022, Texas had $64.40 billion in total debt outstanding. Of this amount, $6.92 billion (10.8 percent) was NSS debt and $57.48 billion (89.2 percent) was self-supporting. The state's total NSS debt outstanding has increased 42.9 percent from $4.84 billion in fiscal year 2013, a compound annual growth rate of 4.0 percent.

As of August 31, 2022, the Constitutional Debt Limit (CDL) was 1.11 percent for outstanding debt and 2.25 percent for outstanding and authorized but unissued debt. This is a 12.8 percent decrease from the 2.58 percent calculated for fiscal year 2021.

Assumptions for the Debt Capacity Model
The DCM contains assumptions for the fiscal years under review, 2023–2027, including:

- Estimates of unrestricted general revenue (UGR)
- Estimates of NSS debt issuance
- Estimates of appropriations for Special Debt Commitments — (Capital Construction Assistance Projects (CCAPs) (formally known as Tuition Revenue Bonds (TRBs)) for higher education, and Instructional Facilities Allotment (IFA), Existing Debt Allotment (EDA), and the Additional State Aid for Homestead Exemption for Facilities (ASAHE – Facilities) for public education)
- Estimates of Texas' future population and total personal income

Ratios Used in the Debt Capacity Model
The DCM uses five ratio calculations to assess the impact of the state's annual debt service requirements paid from general revenue for current and projected levels of NSS debt over the next five years. A summary of each ratio follows:

- Ratio 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue measures the impact of debt service on the rolling three-year average of UGR. Because NSS debt service as a percentage of UGR has historically been below 2 percent, Ratio 1 has a target of 2 percent, a cap at 3 percent, and a maximum of 5 percent. Ratio 1 resembles the CDL but is only a guideline while the CDL is a legal limit set by the state's constitution. (See Appendix D for a discussion of the CDL.) Ratio 1 is calculated in two ways: 1) using only NSS debt service and 2) using NSS debt service plus Special Debt Commitments to show the latter's impact on the state's debt capacity. (See Chapters 1 and 3, and Appendix C.)
  Ratio 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue measures the debt service as a ratio to the budgeted general revenue for fiscal year 2023

based on the 2022-23 General Appropriations Act (GAA) (Senate Bill 1) from the 87th Legislature, 2021. Fiscal years 2024 and 2025 are based on the introduced versions of 2024–25 GAA House Bill 1 from the 88th Legislature, 2023, from both the House and Senate champers. This ratio is generally more restrictive because it does not use a rolling three-year average.

- Ratio 3: Not Self-Supporting Debt as a Percentage of Personal Income is an indicator of the state's ability to repay debt obligations by transforming personal income into revenue through taxation.
- Ratio 4: Not Self-Supporting Debt per Capita measures the dollar amount of debt per person.
- Ratio 5: Rate of Debt Retirement is the rate at which outstanding long-term debt is retired and measures the extent to which new debt capacity is created for future debt issuance.

Major Findings

- With moderate economic growth expected over the next five years, the state's General Revenue Fund is expected to increase for fiscal years 2023–2027. Assuming projected NSS debt issuance of $2.53 billion over the next five fiscal years, Ratio 1 remains below the target of 2 percent. Assuming revenues available for NSS debt service average $7.11 billion less per year than originally forecast, the ratio still remains below the 2 percent target.
- Including Special Debt Commitments (CCAPs for higher education, and the IFA, EDA, and ASAHE – Facilities for public education) and NSS debt, total debt service expected to be paid from general revenue appropriations exceeds Ratio 1's target of 2 percent for the five-year period. The 3 percent cap is never reached for fiscal years 2023–2027. (See *Figure 1.2*, Chapter 3, *Figure 4.1*, and Appendix C.)
- Special Debt Commitments are projected to account for more than half of total debt service expected to be paid from general revenue appropriations for fiscal years 2023–2026 and account for 48.6 percent in fiscal year 2027.
- For fiscal years 2023–2027, NSS debt service plus debt service for Special Debt Commitments are projected to peak at 2.48 percent in fiscal 2023. (See *Figure 4.1*.)
- At fiscal year-end 2022, using conservative assumptions, BRB staff estimated that approximately $18.60 billion in additional NSS debt capacity was available before reaching the CDL.
- NSS debt as a percentage of personal income and debt per capita are expected to be better than rating agency benchmarks through fiscal year 2027.
- The rates of debt retirement for NSS debt outstanding for the five-year and 10-year periods exceed the rating agency benchmarks.
- Ratio 1 remains below the 2 percent target after a one-time hypothetical debt issuance of $1 billion in addition to the $2.53 billion of NSS debt expected to be issued over the next five fiscal years.
- Assuming $2.53 billion of projected NSS debt issuance over the next five fiscal years coupled with scheduled retirements projected to be $2.07 billion over the same period, NSS debt outstanding is expected to continue to increase in upcoming fiscal years.
- As of August 31, 2022, state-funded pensions had approximately $66.73 billion of unfunded actuarial accrued liability (UAAL). (See Appendix H.)

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Cautionary Statements

Chapter 1231 of the Texas Government Code directs the Bond Review Board (BRB) to annually prepare a study regarding the state's current debt burden. The report must analyze the amount of additional not self-supporting debt the state can accommodate. It must include analysis, which may serve as a guideline for debt authorizations and debt-service appropriations by including ratios of such debt to personal income, population, budgeted and expended general revenue, as well as the rate of debt retirement and a target and limit ratio for not self-supporting debt service as a percentage of unrestricted general revenues. BRB delivers the report to the Governor, Lieutenant Governor, Texas Comptroller of Public Accounts, Senate Committee on Finance, and House Appropriations Committee. This report is intended to satisfy these Chapter 1231 duties.

The data in this report and on the BRB's website is compiled from information reported to the BRB from various sources and has not been independently verified. The reported debt data of state agencies may vary from actual debt outstanding, and the variance for a specific issuer could be substantial.

State debt data compiled does not include all installment purchase obligations, but certain lease-purchase obligations are included. In addition, SECO LoanSTAR Revolving Loan Program and certain other revolving loan program debt and privately placed loans are not included. Outstanding debt excludes debt for which sufficient funds have been escrowed to retire the debt either from proceeds of refunding debt or from other sources.

Future revenues, population, and personal income information of the state are derived from third-party estimates. Forward-looking statements include forecasts, projections, predictions, expectations, anticipation, hopes, beliefs, intentions, and strategies for the future. The forward-looking statements in this report have been made and are based on available information, assumptions, and estimates as of the date of the specified date of the forecast or other forward-looking statements and do not necessarily reflect current expectations. They are inherently subject to various known and unknown risks and uncertainties, including the possible invalidity of underlying assumptions and estimates; possible changes or developments in social, economic, business, industry, market, legal, and regulatory circumstances and conditions; extreme weather events; and actions taken or omitted to be taken by third parties, including consumers, taxpayers, and legislative, judicial, and other governmental authorities and officials, all of which are beyond the control of the BRB. Future debt issuance is based on estimates supplied by each issuing agency. Future debt service on variable rate, commercial paper, and other short-term and demand debt is estimated on the basis of interest rate and refinancing assumptions described in the report. Actual future issuance and debt service could be affected by changes in agency financing decisions, prevailing interest rates, market conditions, and other factors that cannot be predicted. Consequently, actual future data could differ from estimates included in this report, and the difference could be substantial. The BRB assumes no obligation to update any such estimate of future data.

Historical data and trends presented are not intended to predict future events or continuing trends, and no representation is made that past experience will continue in the future.

This report is intended to meet Chapter 1231 requirements and inform the state leadership and the Legislature to provide a guideline for state debt authorizations and debt-service appropriations. This report is not intended to inform investors in making a decision to buy, hold, or sell any securities, nor may it be relied upon as such. Data is provided as of the date indicated and may not reflect debt, debt service, population, or other data as of any subsequent date. This data may have changed from the date as of which it is provided. For more detailed or more current information, see the issuers' websites or their filings at Electronic Municipal Market Access (EMMA®). The BRB does not control or make any representation regarding the accuracy, completeness, or currency of any such site, and no referenced site is incorporated herein by that reference or otherwise.

Chapter 1 - Summary of Results

Background
The 80th Legislature, 2007, passed Senate Bill 1332 that amended the Texas Government Code, Chapter 1231, to require the Texas Bond Review Board (BRB), in consultation with the Legislative Budget Board (LBB), to prepare annually the state's Debt Affordability Study (DAS).

As defined in this study, debt affordability is the determination of the state's capacity for additional not self-supporting (NSS) debt, i.e., debt funded from unrestricted general revenue that has a direct impact on state finances. Debt affordability provides an integrated approach that helps manage and prioritize state debt by analyzing data on historical, current, and projected uses of NSS debt in conjunction with the financial and economic resources of the state and its capital needs.

Debt service for NSS debt depends solely on legislative appropriations from the state's General Revenue Fund and draws upon the same sources otherwise used to finance the operation of state government. The DAS Debt Capacity Model (DCM) provides financial data policymakers can use to review the impact of various strategies for NSS debt to determine acceptable levels of annual debt service and prioritize the state's available revenues to meet its priority needs.

The DCM uses five ratio calculations to assess the impact on general revenue of the state's annual debt service requirements for current and projected levels of NSS debt over the next five years. Credit rating agencies examine variations of these debt capacity measures to assess the state's debt burden, which is a key factor affecting the state's credit rating and capacity for debt issuance.

The DAS DCM does not take into account the state's pension liabilities or other post-employment benefit obligations. While pension liabilities are not the focus of this report, the BRB has included a brief discussion of state pension liabilities in this year's debt affordability study. The BRB believes that the state's pension liabilities are significant enough to be considered along with traditional debt for a better understanding of state debt. See Appendix H for a summary of the state's pension liabilities.

Summary of Results
Based on the authorizations for which the approximate issuance date is known, an estimated $2.53 billion in authorized and projected NSS debt is expected to be issued between fiscal years 2023 and 2027 for the following transactions:

- $1.49 billion in general obligation (GO) debt, related to Proposition 15 for cancer research (Texas Public Finance Authority (TPFA));
- $648.8 million in GO and revenue debt for capital projects for certain state agencies (TPFA), including $1.5 million of Proposition 4 authorization from the November 2007 General Election (Article III, Section 50-g), $3.0 million of authorization for border colonias roadway projects (Article III, Section 49-l), $570,005 of authorization for various construction and repair projects and equipment acquisitions (Article III, Section 50-f), $191.5 million of debt authorized by the 86th Legislature, 2019, and 87th Legislature, 2021, for deferred maintenance projects for the Health and Human Services Commission (HHSC), and $452.2 million of debt authorized by the 84th Legislature, 2015, and 86th Legislature, 2019, for

phase one and phase two of the Texas Facilities Commission (TFC) Capital Complex and North Austin Complex projects (TPFA);
- $196.9 million in GO bonds for the Higher Education Assistance Fund; and
- $200.0 million in GO bonds for the Texas Water Development Board's (TWDB) Economically Distressed Areas Program (EDAP).

In November 2011, voters approved Proposition 2, which enables the TWDB to issue additional debt for its Development Fund II Program in an amount not to exceed $6 billion of debt outstanding at any time. Legislative action is required for the issuance of NSS debt under this authorization. See Appendix B for an analysis of the debt ratios if a hypothetical $1 billion is issued in addition to the $2.53 billion in new NSS debt issuances currently projected for fiscal years 2023–2027. See *Figure E2* in Appendix E for detail on the state's debt outstanding as of August 31, 2022.

With moderate economic growth expected over the next five years, the General Revenue Fund is generally projected to increase at an average annual growth rate of 3.2 percent between fiscal years 2023–2027. Additionally, the February 2023 DAS estimates a decrease of 4.6 percent ($120.8 million) in total NSS debt to be issued during fiscal years 2023–2027, including authorized and unauthorized amounts, compared to the $2.65 billion estimated for fiscal years 2022–2026 in last year's DAS. The decrease in projected debt is mainly due to a decrease in the amount of TPFA authorized but unissued debt from recent debt issuances for various projects, including the Capitol Complex and North Austin Complex projects.

The following explains the ratios used in the DAS. The table below shows the results of the study.

<u>Ratio 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue</u>
Ratio 1 is calculated by dividing future debt service by the rolling three-year average of unrestricted general revenue (UGR). Chapter 1231 of the Texas Government Code requires the DAS to include a target and cap for Ratio 1, both of which can be adjusted as requested or as directed by the BRB or LBB. Since Texas has historically appropriated less than 2 percent of its UGR for NSS debt service, the analysis of Ratio 1 utilizes 2 percent as the target ratio, 3 percent as the cap ratio, and a maximum of 5 percent. UGR projections are provided by the LBB. (Ratio 1 should not be confused with the Constitutional Debt Limit (CDL) calculation. See Appendix D for further discussion of the CDL.)

Ratio 1 can be used to assess the impact of Special Debt Commitments (SDC) on the General Revenue Fund. Capital Construction Assistance Projects (CCAPs) (formally known as Tuition Revenue Bonds (TRBs)) for higher education, and the Instructional Facilities Allotment (IFA), Existing Debt Allotment (EDA), and Additional State Aid for Homestead Exemption for Facilities (ASAHE — Facilities) for public education comprise the SDC.

Figure 1.1 illustrates Ratio 1 for NSS annual debt service and SDC. *Figure 1.2* provides additional detail showing the impact of SDC on Ratio 1. (See also Chapter 3 and Appendix C.)

Figure 1.1
Debt Service Commitments as a Percentage of Unrestricted General Revenue

	2023	2024	2025	2026	2027
February 2023					
NSS Annual Debt Service	1.05%	1.06%	1.07%	1.10%	1.03%
Capital Construction Assistance Projects (CCAPs)	1.06%	0.98%	0.95%	0.85%	0.69%
IFA, EDA, and ASAHE - Facilities	0.37%	0.35%	0.35%	0.32%	0.28%
Total	**2.48%**	**2.39%**	**2.37%**	**2.26%**	**2.01%**

Totals may not sum due to rounding.
Source: Texas Bond Review Board.

Results

- Excluding SDC, debt service as a percentage of UGR is projected to remain below the 2 percent target and the 3 percent cap. (See *Figure 1.2*, Chapter 3, and Appendix C.) Assuming revenues available for NSS debt service average $7.11 billion less than originally forecasted, the ratio still remains below the 2 percent target and 3 percent cap. See Appendix A for a discussion of the methodology used for the DCM.

- Including SDC, debt service as a percentage of UGR is expected to exceed the 2 percent target but remain below the 3 percent cap for the five-year period (fiscal years 2023–2027). SDC are projected to account for more than half of total debt service expected to be paid from general revenue appropriations for the five-year period.

<u>Ratio 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue</u>
Unlike Ratio 1, this ratio does not use a rolling three-year average of UGR but instead uses the budgeted general revenue figures for fiscal year 2023 based on the 2022-23 General Appropriations Act (GAA) (Senate Bill 1) from the 87th Legislature, 2021. Fiscal years 2024 and 2025 are based on the 2024–25 introduced versions of the GAA for House Bill 1 from the 88th Legislature, 2023, from both the House and Senate champers.

Results
Ratio 2 is 1.23 percent for fiscal year 2023 and rises to 1.27 percent for fiscal year 2025. Historically, Texas' NSS debt service commitment has been less than 1.50 percent of budgeted general revenue as shown in *Figure 3.3* in Chapter 3.

<u>Ratio 3: Not Self-Supporting Debt as a Percentage of Personal Income</u>
This ratio is obtained by dividing NSS debt by total personal income and is an indicator of the state's ability to repay debt obligations by transforming personal income into revenues through taxation. Rating agencies use this ratio when establishing the state's credit rating. Personal income projections are provided by the Texas Comptroller of Public Accounts.

Results
Ratio 3 is 0.37 percent for fiscal year 2023 and declines to 0.30 percent for fiscal year 2027. These figures are below the rating agency benchmark of 2 percent.

<u>Ratio 4: Not Self-Supporting Debt per Capita</u>
This ratio is the amount of NSS debt divided by the state's population and measures the dollar amount of debt per person. Like Ratio 3, Ratio 4 is reviewed when establishing the state's credit rating.

Results
Ratio 4 is $234 per capita for fiscal year 2023 and rises to $236 per capita in fiscal year 2025. These figures are below the rating agency benchmark of $500 per capita.

<u>Ratio 5: Rate of Debt Retirement</u>
The rate at which long-term debt is retired measures the extent to which new debt capacity is created for future debt issuance. Credit rating agencies review the length of time needed for debt to be retired with the expectation that on average, 25 percent of the principal amount of debt with a 20-year maturity is retired in five years, and 50 percent is retired in 10 years.

Results
In five years, 29.9 percent of NSS debt will be retired, and 57.1 percent will be retired in 10 years. In 15 years, approximately 80.4 percent of NSS debt will be retired. These figures meet the rating agency benchmarks as all existing NSS debt is expected to mature by fiscal year 2046.

Figure 1.2 summarizes the ratio analysis for fiscal year 2023 through fiscal year 2027. The negative numbers in Ratio 1 indicate shortfalls in debt service when compared to the corresponding target, cap, or maximum percentage.

Figure 1.2
Summary of Ratios 1–5

Fiscal Year	2023		2024		2025		2026		2027	
RATIO 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue										
NSS Debt Service										
Issued	$ 699,686,396	1.02%	$ 679,463,261	0.94%	$ 635,887,941	0.87%	$ 613,440,714	0.81%	$ 588,063,609	0.72%
Authorized but Unissued	$ 20,763,362	0.03%	$ 71,576,990	0.10%	$ 120,864,266	0.17%	$ 173,385,481	0.23%	$ 191,767,699	0.23%
Projected	$ -	0.00%	$ 9,631,545	0.01%	$ 23,985,274	0.03%	$ 43,144,840	0.06%	$ 65,060,470	0.08%
Total NSS Debt Service (excluding SDC)	$ 720,449,758	1.05%	$ 760,671,795	1.06%	$ 780,737,481	1.07%	$ 829,971,036	1.10%	$ 844,891,778	1.03%
Special Debt Commitments	$ 982,817,866	1.43%	$ 955,961,348	1.33%	$ 942,328,125	1.30%	$ 882,106,199	1.17%	$ 799,293,590	0.98%
Total NSS and SDC Debt Service	$ 1,703,267,624	2.48%	$1,716,633,144	2.39%	$1,723,065,606	2.37%	$1,712,077,235	2.26%	$1,644,185,368	2.01%
SDC as a % of Total	57.7%		55.7%		54.7%		51.5%		48.6%	
Remaining Debt Service Capacity excluding SDC*										
Target (2%)	$ 654,520,875	0.95%	$ 677,538,865	0.94%	$ 672,877,831	0.93%	$ 684,153,784	0.90%	$ 793,412,244	0.97%
Cap (3%)	$ 1,342,006,192	1.95%	$1,396,644,196	1.94%	$1,399,685,488	1.93%	$1,441,216,194	1.90%	$1,612,564,255	1.97%
Max (5%)	$ 2,716,976,826	3.95%	$2,834,854,856	3.94%	$2,853,300,800	3.93%	$2,955,341,015	3.90%	$3,250,868,276	3.97%
Remaining Debt Service Capacity including SDC*										
Target (2%)	$ (328,296,990)	-0.48%	$ (278,422,483)	-0.39%	$ (269,450,294)	-0.37%	$ (197,952,415)	-0.26%	$ (5,881,346)	-0.01%
Cap (3%)	$ 359,188,327	0.52%	$ 440,682,847	0.61%	$ 457,357,362	0.63%	$ 559,109,995	0.74%	$ 813,270,665	0.99%
Max (5%)	$ 1,734,158,960	2.52%	$1,878,893,508	2.61%	$1,910,972,675	2.63%	$2,073,234,815	2.74%	$2,451,574,687	2.99%
RATIO 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue	1.23%		1.11%		1.27%					
RATIO 3: Not Self-Supporting Debt as a Percentage of Personal Income	0.37%		0.36%		0.34%		0.32%		0.30%	
RATIO 4: Not Self-Supporting Debt per Capita	$234		$235		$236		$232		$224	
RATIO 5: Rate of Debt Retirement	5 Years	10 Years								
Not Self-Supporting Debt	29.9%	57.1%								
Self-Supporting Debt	20.6%	40.1%								

* Debt service capacity is the available capacity to meet target, cap, or maximum percentages.
Totals may not sum due to rounding.
Sources: Texas Bond Review Board, Texas Comptroller of Public Accounts, and Legislative Budget Board.

Chapter 2 - Current Debt Position of the State

Texas has a decentralized approach to debt management. Debt issuance occurs at the level of the agency or institution of higher education rather than at the state level. Apart from Tax Revenue Anticipation Notes, State Highway Fund Revenue Anticipation Notes, Permanent University Fund issuances, and non-general obligation issuances by university systems that have an unenhanced long-term debt rating of at least AA- or its equivalent, the Texas Bond Review Board (BRB) provides oversight for all state debt issuances with a maturity of more than five years or a principal amount greater than $250,000.

When the Legislature considers the authorization of new debt, legislation is typically considered by legislative finance committees. The Legislature usually appropriates debt service payments for existing debt in the General Appropriations Act, which is organized by article based on governmental function. Subsequently, this process leads policymakers to review, develop, and approve proposed budget requests by agency or program.

Debt Types

Debt issued by Texas state entities falls into two major categories:

- **General Obligation (GO) debt** is legally secured by a constitutional pledge of the first monies coming into the state treasury that are not constitutionally dedicated for another purpose. GO debt must be passed by a two-thirds vote of both houses of the Legislature and a majority of the voters.
- **Non-General Obligation (Revenue) debt** is legally secured by a specific revenue source and does not require voter approval.

State debt is further classified based on its impact on the state's General Revenue Fund:

- **Self-Supporting (SS) debt** is designed to be repaid with revenues other than state general revenue and can be either GO debt or Revenue debt. Revenue SS debt also includes conduit debt that is not an obligation of the state and is repaid from funds generated by a third-party borrower. For more information regarding conduit debt, see the BRB Fiscal Year 2022 State Debt Annual Report.
- **Not Self-Supporting (NSS) debt** is intended to be repaid with state general revenue and can be either GO debt or Revenue debt.

Figure 2.1 illustrates the classifications for state debt and provides program examples for each type.

Figure 2.1
Debt Type and Examples

Debt Type	General Revenue Impact	Debt Program
General Obligation	Not Self-Supporting	Highway Improvement (Prop 12) Transportation Bonds Cancer Prevention and Research Bonds
General Obligation	Self-Supporting	Texas Mobility Fund Bonds and Student Loan Bonds Veterans' Land and Housing Bonds
Revenue	Not Self-Supporting	Building Revenue Bonds (including the capital complex project) Certain Deferred Maintenance Projects financed by TPFA
Revenue	Self-Supporting	College and University Revenue Financing System Bonds State Highway Fund Transportation Bonds

Source: Texas Bond Review Board.

State Debt Outstanding

Figure 2.2 provides details on the state's total debt outstanding on August 31, 2022.

Figure 2.2
Current Debt Outstanding (thousands)

Bond Types	Self-Supporting	Not Self-Supporting	Total
General Obligation	$ 11,102,425	$ 6,185,985	$ 17,288,410
Revenue	$ 37,018,139	$ 734,240	$ 37,752,379
Conduit	$ 9,362,517	$ -	$ 9,362,517
Total	**$ 57,483,081**	**$ 6,920,225**	**$ 64,403,306**

Source: Texas Bond Review Board.

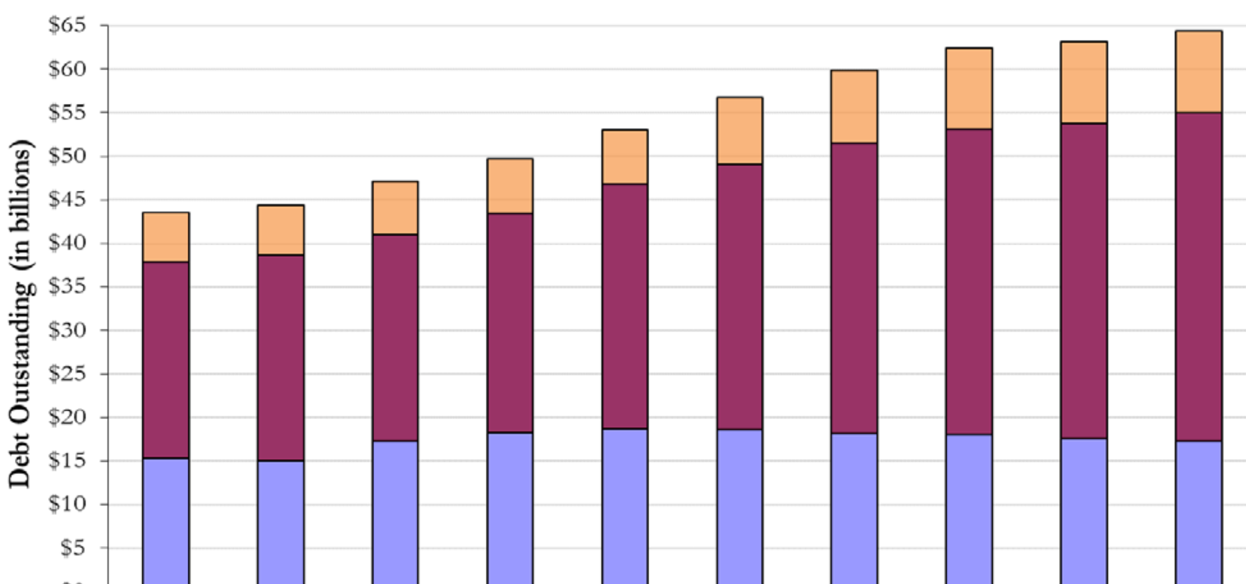
Growth Rates in Unrestricted General Revenue and Total Debt Outstanding

The state's unrestricted general revenue (UGR) increased from $45.05 billion in fiscal year 2013 to $74.44 billion in fiscal year 2022, an increase of 65.3 percent over the 10-year period.

GO debt increased by 12.6 percent from $15.35 billion in fiscal year 2013 to $17.29 billion in fiscal year 2022. At fiscal year-end 2022, 35.8 percent of the GO debt outstanding was NSS.

Figure 2.3 illustrates Texas' debt outstanding during the previous 10-year period by debt type.

Figure 2.3
Texas Debt Outstanding: General Obligation and Revenue for Fiscal Years 2013–2022



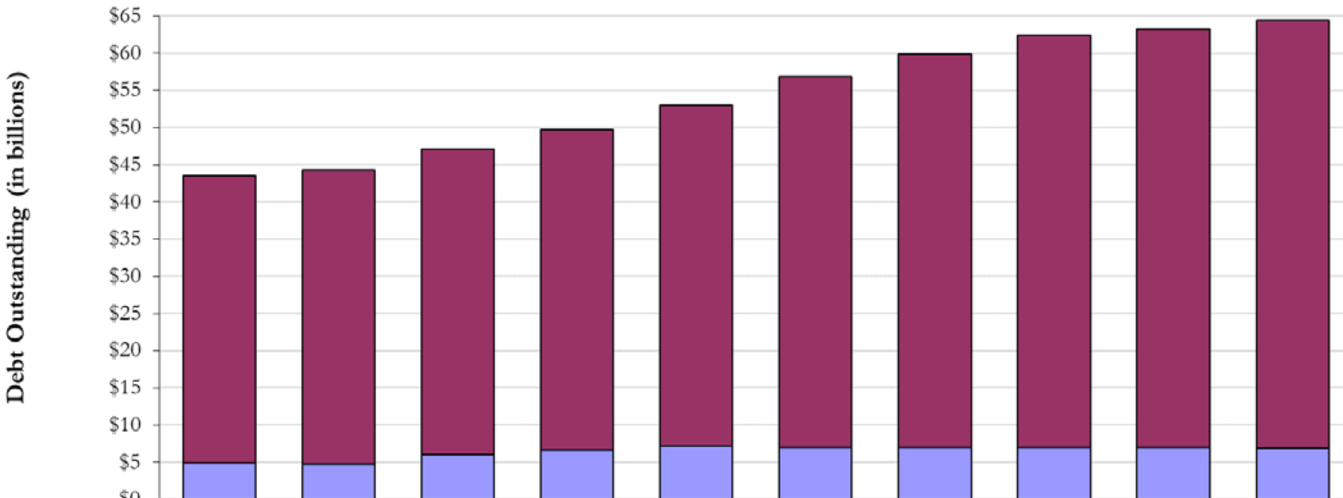
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Conduit	$5.64	$5.68	$6.11	$6.28	$6.24	$7.77	$8.39	$9.33	$9.47	$9.36
REV	$22.55	$23.56	$23.67	$25.20	$28.10	$30.47	$33.38	$35.11	$36.14	$37.75
GO	$15.35	$15.09	$17.31	$18.27	$18.68	$18.59	$18.14	$18.01	$17.61	$17.29
Total	$43.54	$44.33	$47.09	$49.75	$53.02	$56.83	$59.90	$62.44	$63.21	$64.40

Totals may not sum due to rounding.
Source: Texas Bond Review Board.

During the 10-year period ending at fiscal year-end 2022, revenue debt increased by 67.4 percent from $22.55 billion to $37.75 billion, and conduit debt outstanding increased by 66.0 percent from $5.64 billion to $9.36 billion. During the same period, the state's total debt outstanding increased by 47.9 percent from $43.54 billion to $64.40 billion.

Figure 2.4

Texas Debt Outstanding: Self-Supporting and Not Self-Supporting for Fiscal Years 2013–2022



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Self-supporting*	$38.69	$39.50	$41.04	$43.04	$45.84	$49.86	$52.89	$55.44	$56.26	$57.48
Not Self-supporting	$4.84	$4.83	$6.05	$6.71	$7.18	$6.97	$7.01	$7.00	$6.96	$6.92
Total	$43.54	$44.33	$47.09	$49.75	$53.02	$56.83	$59.90	$62.44	$63.21	$64.40

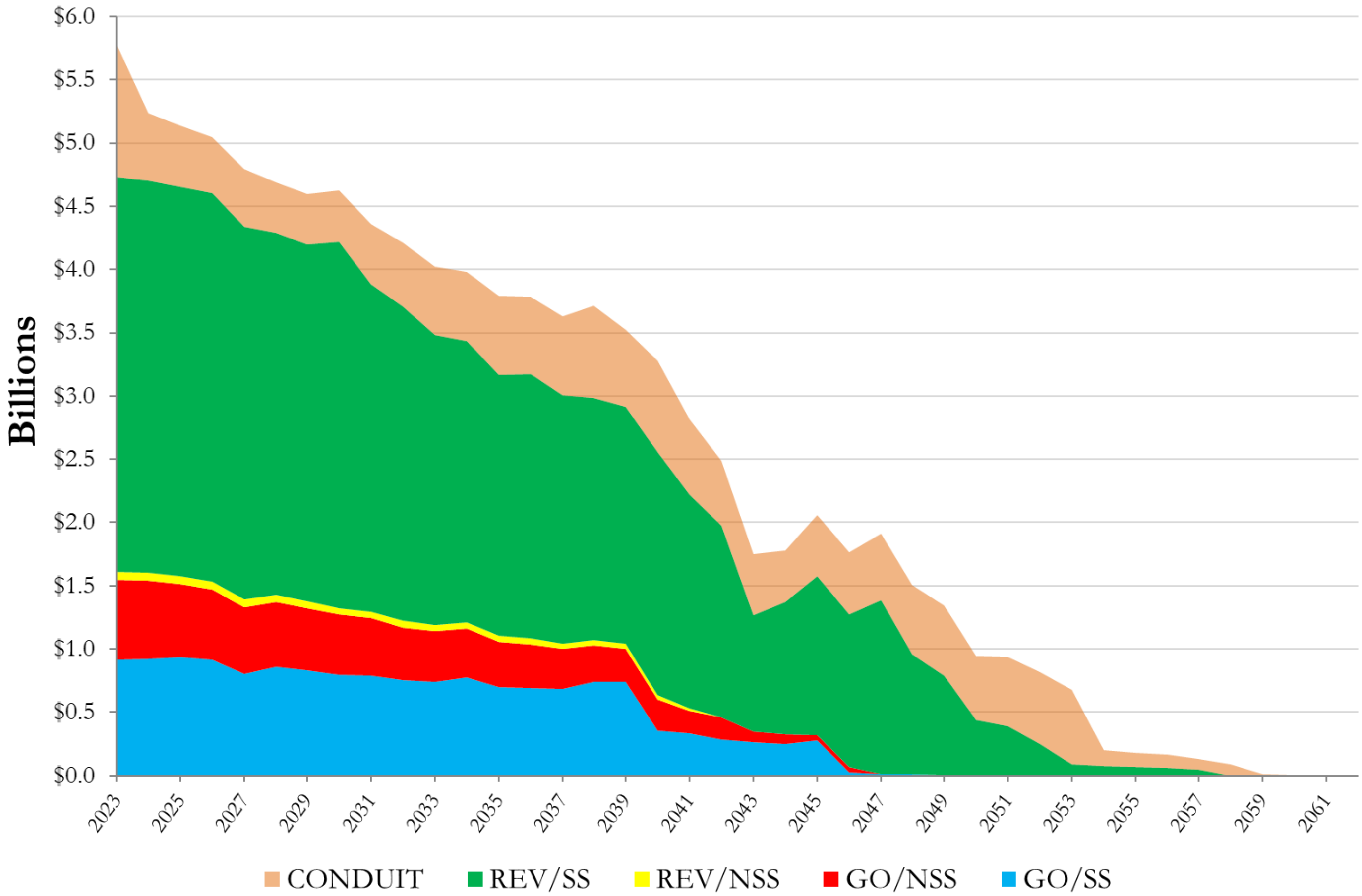
*Self-supporting debt portion includes all conduit debt.
Totals may not sum due to rounding.
Source: Texas Bond Review Board.

As shown in *Figure 2.4*, SS debt (including conduit debt), which is repaid with program revenues, increased by 48.6 percent over the previous 10-year period. During the same time period, NSS debt, which is typically repaid with general revenue, increased by 43.0 percent. With projected issuances of NSS debt totaling approximately $2.53 billion during fiscal years 2023–2027 and retirements of issued NSS debt projected to be $2.07 billion during the same period, NSS debt outstanding is expected to continue to increase in upcoming fiscal years.

Debt Service Commitments

Figure 2.5 illustrates the projected annual debt service for NSS and SS debt outstanding as of August 31, 2022.

Figure 2.5
Texas Debt Service on Outstanding Debt as of August 31, 2022



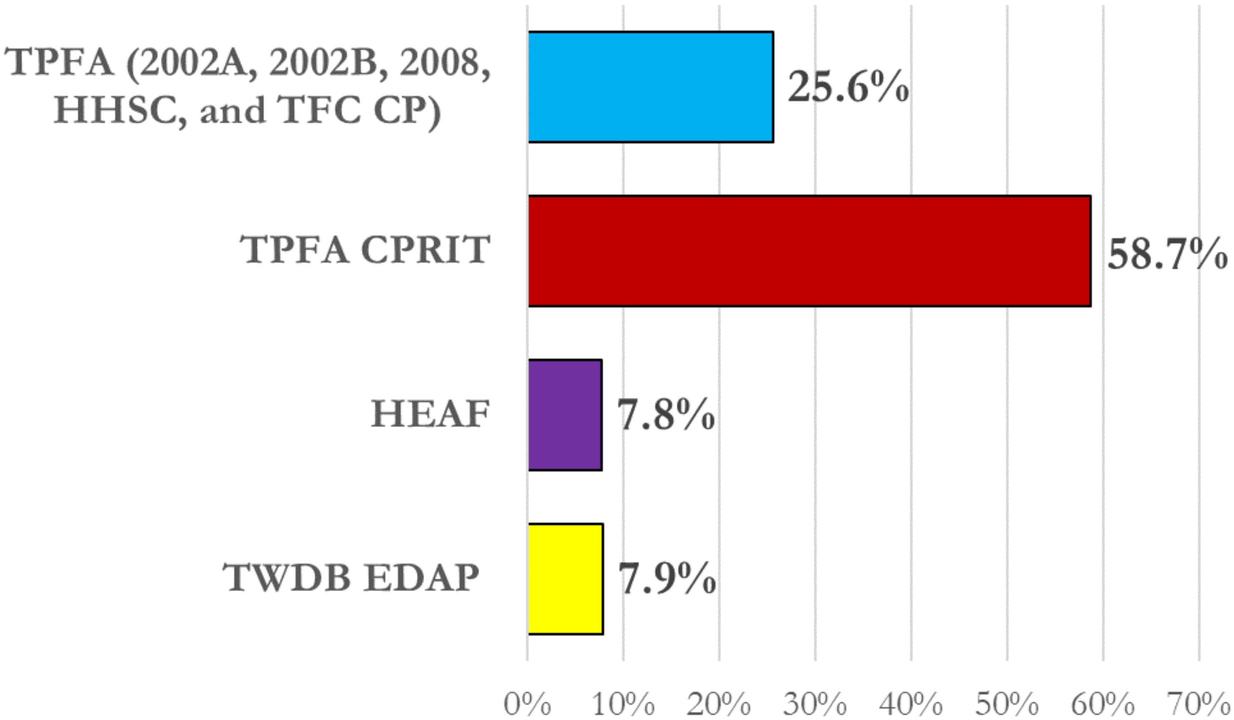
Source: Texas Bond Review Board.

Not Self-Supporting Debt

NSS debt is generally repaid from the state's General Revenue Fund. At fiscal year-end 2022, NSS debt outstanding comprised 10.7 percent ($6.92 billion) of the state's total debt outstanding and consisted of 89.4 percent GO debt and 10.6 percent revenue debt.

Based on the authorizations for which the approximate issuance date is known, an estimated $2.53 billion in projected NSS debt is expected to be issued between fiscal year 2023 and fiscal year 2027, while retirements of issued NSS debt is currently scheduled to be $2.07 billion during the same period. The issuances are included in each of the five ratios discussed throughout this report. *Figure 2.6* shows NSS debt issuance projections by debt program for fiscal years 2023–2027.

Figure 2.6
Not Self-Supporting Debt Issuance Projections for Fiscal Years 2023–2027 ($2.53 billion)

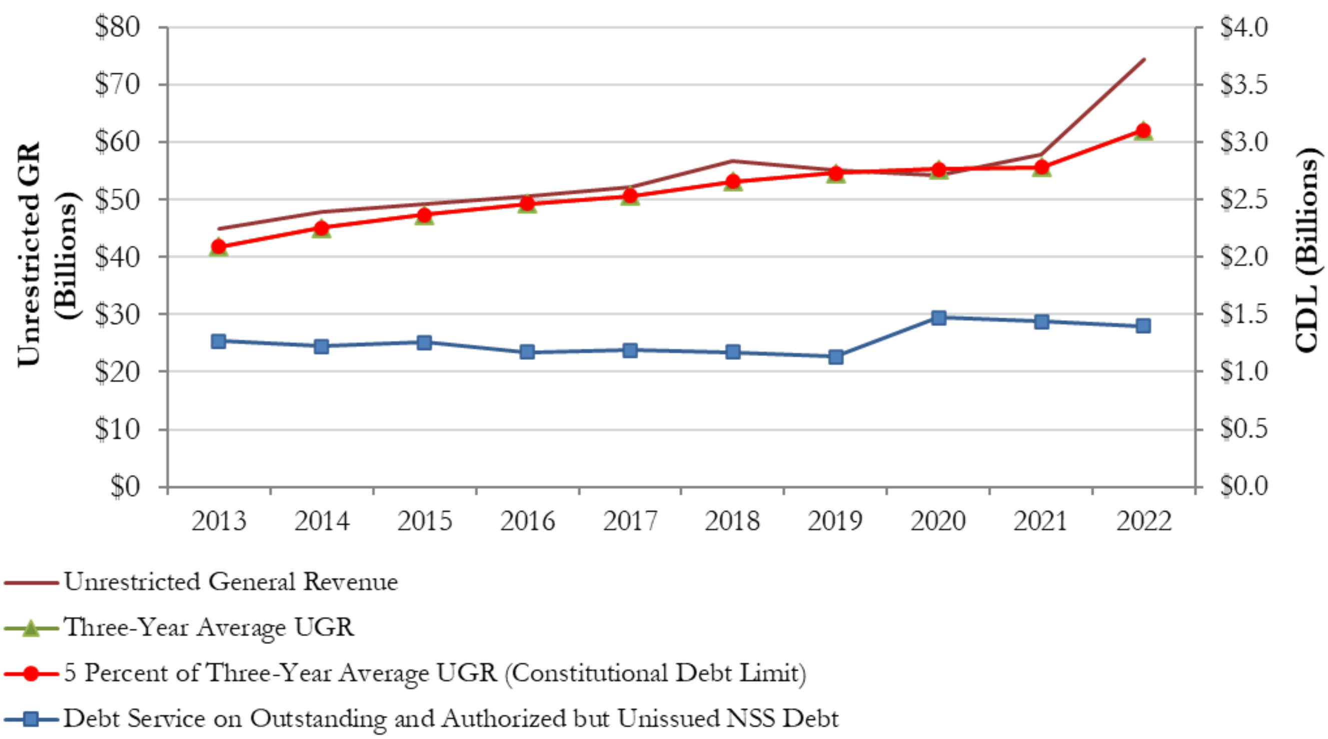


Source: Texas Bond Review Board.

The Constitutional Debt Limit

As of August 31, 2022, the Constitutional Debt Limit (CDL) remained below the maximum of 5 percent with 1.11 percent calculated for NSS debt outstanding and 2.25 percent calculated for both outstanding and authorized but unissued NSS debt. The CDL decreased 12.8 percent from the 2.58 percent calculated for outstanding and authorized but unissued debt calculated for fiscal year 2021. (See Appendix D for more discussion regarding the CDL.)

Figure 2.7
Unrestricted General Revenue and Constitutional Debt Limit for Fiscal Years 2013–2022



Source: Texas Bond Review Board.

The two lines at the top of *Figure 2.7* show the state's UGR (brown line with no shapes included) and the three-year moving average for UGR (green line with a triangle) used to calculate the CDL. (Note that the scale for those lines is on the left side of the graph.)

The red line with a circle in the middle of *Figure 2.7* shows the maximum amount of UGR available for debt service under the CDL, i.e., 5 percent of the moving average of the UGR. The blue line with a square at the bottom shows debt service for outstanding and authorized but unissued NSS debt. (Note that the scale for those lines is on the right side of the graph.) The white space between the red and blue lines represents available NSS debt service capacity under the CDL.

During the 10-year period from fiscal year 2013 to fiscal year 2022, UGR increased by 65.3 percent from $45.05 billion to $74.44 billion. The projected debt service for outstanding and authorized but unissued NSS debt increased by 10.2 percent from $1.27 billion in fiscal year 2013 to $1.40 billion in fiscal year 2022.

Chapter 3 - Debt Ratios in the Debt Capacity Model

An analysis of state debt ratios helps to assess the impact of bond issuances on the state's fiscal position. Credit rating agencies use ratios to evaluate the state's debt position and help determine its credit rating. As a mechanism for the state to determine debt affordability, the Debt Capacity Model (DCM) computes five key ratios that provide an overall view of the state's debt burden. Projections of these ratios under varying debt assumptions can provide state leadership with guidelines for decision making for future debt authorization and debt service appropriations.

Ratio 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue

Ratio 1 is calculated by dividing not self-supporting (NSS) debt service by a rolling three-year average of unrestricted general revenue (UGR). UGR estimates for fiscal years 2023, 2024, and 2025 were obtained from the Legislative Budget Board (LBB) using the Texas Comptroller of Public Accounts' (CPA) 2023 Biennial Revenue Estimate (BRE). The LBB also provided revenue projections for fiscal years 2026 and 2027. With moderate economic growth expected over the next five years, funds available for debt service are expected to increase.

This ratio is a critical determinant of debt capacity because the ability to generate revenue through taxation and appropriate funds for debt service is within the state's control. State revenues available to pay debt service are legislatively determined by taxation on such items as sales, business franchises, fuels, crude oil production, and natural gas production. The Legislature then appropriates debt service based on the amounts needed for both existing and newly authorized debt.

Target and cap limits for Ratio 1 provide the Legislature with realistic benchmarks against which to weigh the fiscal impact of new bond authorizations. For the purposes of this report, guideline ratios include a 2 percent target, a 3 percent cap to provide room for growth and flexibility, and a maximum of 5 percent. Two percent is used as the target ratio because NSS debt service as a percent of UGR has historically been less than 2 percent.

Figure 3.1 shows that the annual debt service requirements as of August 31, 2022, over the next five fiscal years for issued, authorized but unissued, and projected NSS debt will increase from $720.4 million in fiscal year 2023 to $844.9 million by fiscal year 2027. Debt service as a percentage of UGR will increase from 1.05 percent in fiscal year 2023 to a peak of 1.10 percent in fiscal year 2026. *Figure 3.1* only considers the projected debt service ratios for NSS debt for which the state's general revenue is required for repayment. (Neither *Figure 3.1* nor Ratio 1 should be confused with the Constitutional Debt Limit (CDL) calculation. See Appendix D for further discussion of the CDL.)

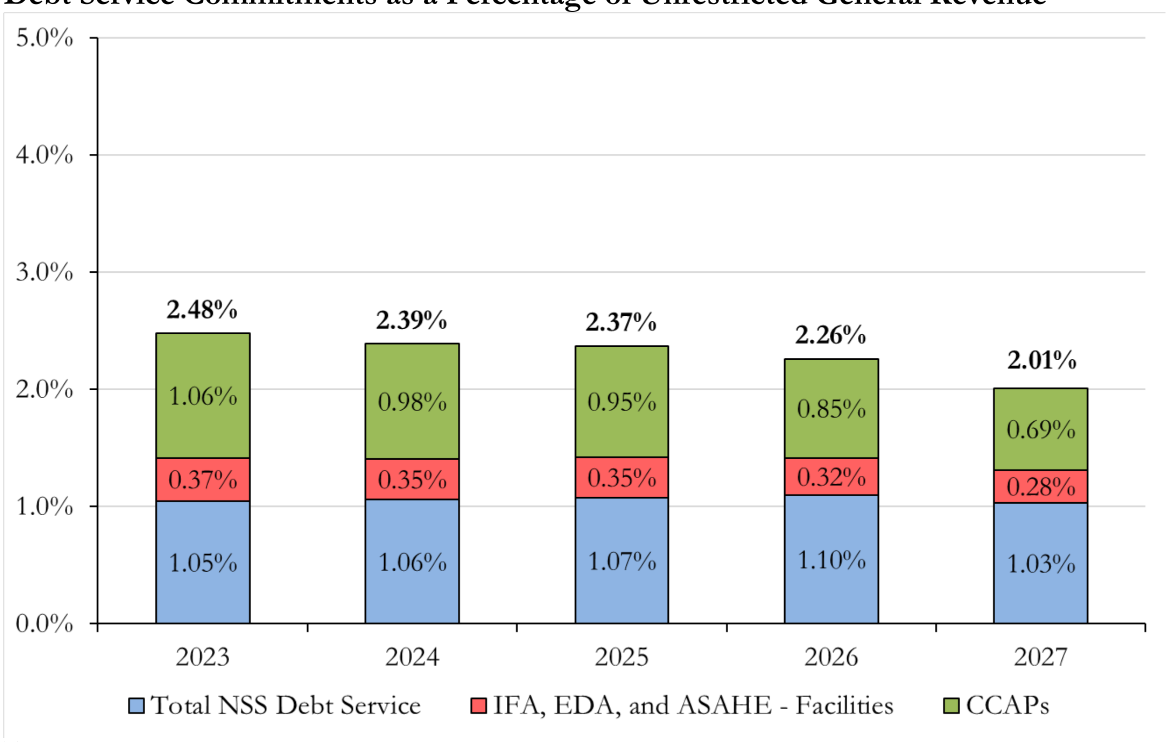
Figure 3.1
Ratio 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue for Fiscal Years 2023–2027

Fiscal Year	2023	2024	2025	2026	2027
Projected Unrestricted General Revenue	$73,814,709,544	$67,473,195,844	$76,754,391,459	$82,891,135,737	$86,100,076,068
Not Self-Supporting					
Annual Debt Service					
Issued Debt	$699,686,396	$679,463,261	$635,887,941	$613,440,714	$588,063,609
Authorized but Unissued Debt	$20,763,362	$71,576,990	$120,864,266	$173,385,481	$191,767,699
Projected Debt	$0	$9,631,545	$23,985,274	$43,144,840	$65,060,470
Total Debt Service	$720,449,758	$760,671,795	$780,737,481	$829,971,036	$844,891,778
Debt Service as a Percentage of Unrestricted General Revenue					
Issued Debt	1.02%	0.94%	0.87%	0.81%	0.72%
plus Authorized but Unissued Debt	1.05%	1.04%	1.04%	1.04%	0.95%
plus Projected Debt	1.05%	1.06%	1.07%	1.10%	1.03%
Remaining Debt Service Capacity					
Target (2%)	$654,520,875	$677,538,865	$672,877,831	$684,153,784	$793,412,244
Cap (3%)	$1,342,006,192	$1,396,644,196	$1,399,685,488	$1,441,216,194	$1,612,564,255
Max (5%)	$2,716,976,826	$2,834,854,856	$2,853,300,800	$2,955,341,015	$3,250,868,276

Sources: Texas Bond Review Board, Texas Comptroller of Public Accounts, and Legislative Budget Board.

Ratio 1 of the DCM can be used to provide various scenarios to assess the impact of increasing or decreasing the debt service capacity of Special Debt Commitments (SDC). SDC consist of Capital Construction Assistance Projects (CCAPs) for higher education, and the Instructional Facilities Allotment (IFA), Existing Debt Allotment (EDA), and Additional State Aid for Homestead Exemption for Facilities (ASAHE — Facilities for public education. The impacts of these payments on total debt capacity are shown in *Figure 3.2*.

Figure 3.2
Debt Service Commitments as a Percentage of Unrestricted General Revenue



Totals may not sum due to rounding.
Sources: Texas Bond Review Board, Texas Comptroller of Public Accounts, and Legislative Budget Board.

Ratio 1 resembles the CDL calculation, but the latter includes certain items that are not included in Ratio 1. For example, because debt service for Higher Education Fund (HEF) bonds is paid from a general revenue appropriation, the CDL calculation process requires that the maximum annual debt service for these bonds be included while Ratio 1 uses annual projections for debt service.

In addition, the CDL calculation omits certain debt service for Economically Distressed Areas Program (EDAP) bonds issued by the Texas Water Development Board (TWDB). Proceeds from the sale of EDAP bonds are used to make loans or grants to local governments or other political subdivisions for projects involving water conservation, transportation, storage, and treatment. Prior to fiscal year 2020, up to 90 percent of the bonds could be used for grants, and at least 10 percent must be used to make loans. With the passage of Senate Joint Resolution (SJR) 79 (including an additional $200 million of EDAP bonds outstanding at any one time authorized by the voters at the November 2019 general election) and Senate Bill (SB) 2452 by the 86th Legislature, 2019, now up to 70 percent of the bonds can be used for grants, and at least 30 percent must be used to make loans. For purposes of the CDL calculation, the debt service on the 30 percent used for loans is assumed to be repaid from sources other than general revenue and is omitted from the CDL calculation.

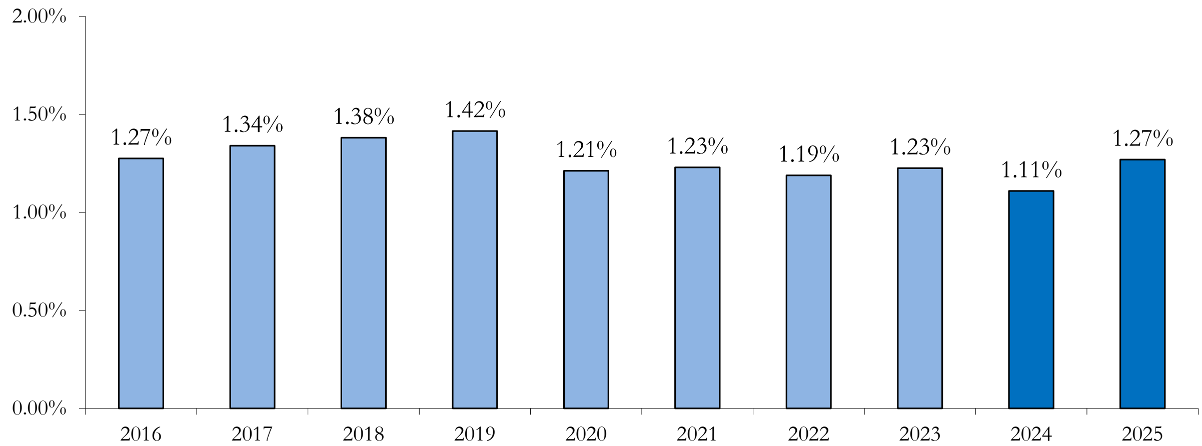
The CDL calculation for authorized but unissued debt assumes a single-issue date for all debt, level debt service, a conservative interest rate of 6 percent, and a 20-year term. By comparison, Ratio 1 uses projections provided by each issuer to more accurately reflect issuance timing, structure, and term.

For fiscal year 2023, Ratio 1 is 1.05 percent but increases to 2.48 percent with the addition of SDC. Including SDC, Ratio 1 peaks at 2.48 percent in fiscal 2023. (See Appendix C for more information on the impact of SDC.)

Ratio 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue
This ratio is similar to Ratio 1 but is generally more restrictive because the amount of available general revenue in this ratio is limited to budgeted general revenue. Unlike Ratio 2, UGR in Ratio 1 is based on a rolling three-year average (fiscal years 2021-2023).

Texas expended an average of 1.28 percent of budgeted general revenue for NSS debt service in fiscal years 2016–2023. Based on the introduced versions of 2024–25 General Appropriations Act (GAA) House Bill 1 from the 88th Legislature, 2023, from both the House and Senate champers, NSS debt service as a percentage of budgeted general revenue is projected to be 1.11 percent for fiscal year 2024 and 1.27 percent in fiscal year 2025. (See *Figure 3.3*.)

Figure 3.3
Ratio 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue for Fiscal Years 2016–2025



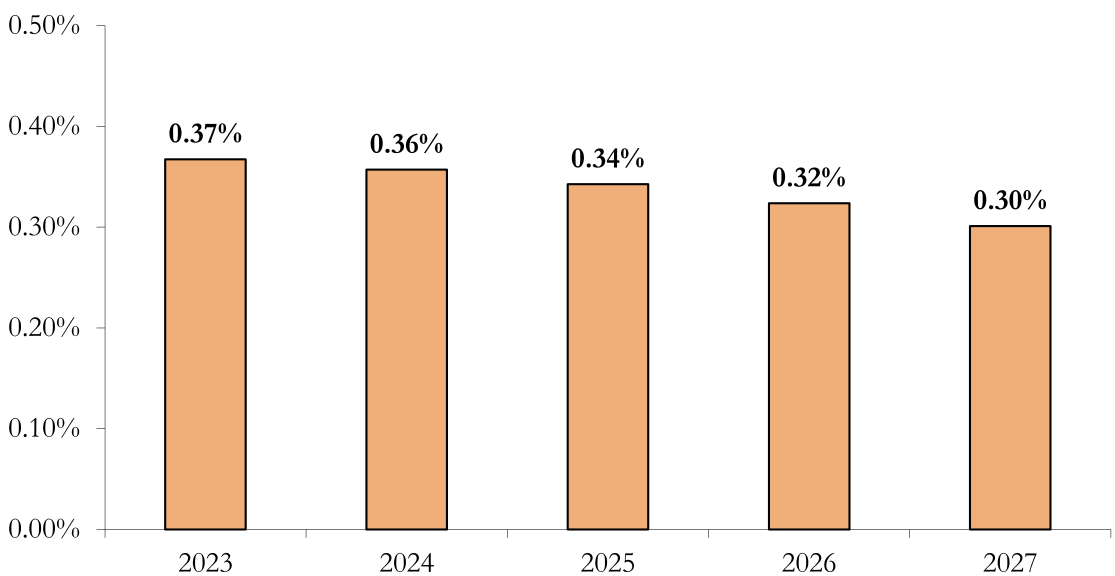
Sources: Texas Bond Review Board and Legislative Budget Board.

Ratio 3: Not Self-Supporting Debt as a Percentage of Personal Income

Ratio 3 is NSS debt divided by total personal income and is an indicator of a government's ability to repay debt obligations by transforming personal income into revenues through taxation. The rating agencies review this ratio when establishing the state's credit rating.

Based on personal income projections from the CPA's Fall 2022 Texas Economic Forecast, Ratio 3 peaks in fiscal year 2023 at 0.37 percent (*Figure 3.4*). Standard & Poor's considers a debt burden of less than 2 percent to be low.

Figure 3.4
Ratio 3: Not Self-Supporting Debt as a Percentage of Personal Income for Fiscal Years 2023–2027



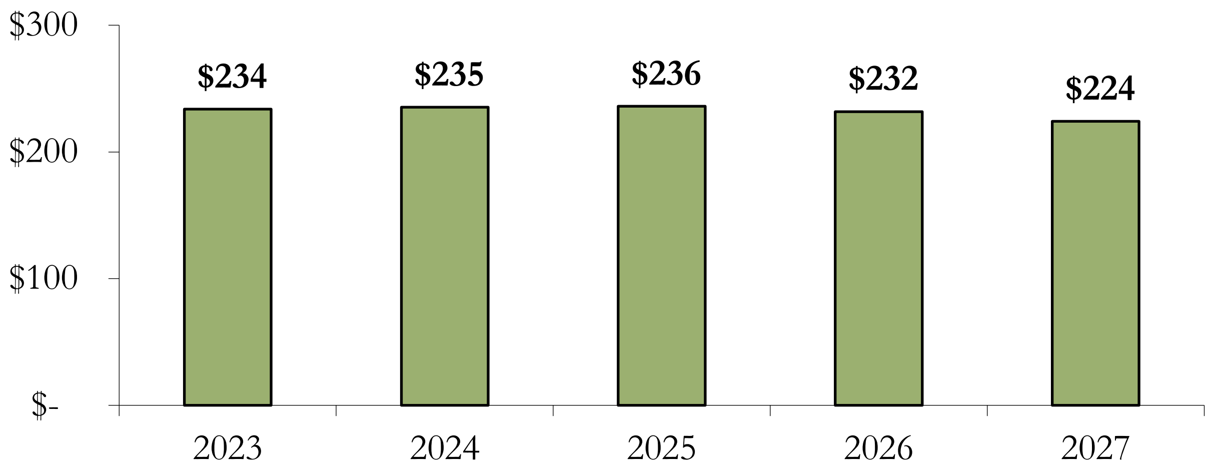
Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

Ratio 4: Not Self-Supporting Debt per Capita
Ratio 4 is the amount of NSS debt divided by the state's population and measures the dollar amount of debt per person. Like Ratio 3, the rating agencies review this ratio when establishing the state's credit rating.

Based on population projections in the CPA's Fall 2022 Texas Economic Forecast, the NSS debt per capita is expected to be $234 in fiscal year 2023 and is projected to peak at $236 in fiscal years 2025 (*Figure 3.5*). Standard & Poor's considers less than $500 of state debt per capita to be low.

Although tax-supported debt per capita and debt as a percentage of personal income at the state level are low, it is important to note that Texas' local debt burden is higher than other states. Among the nation's 10 most populous states, Texas ranks second in population and seventh in total (general obligation and revenue) state debt per capita but third in total local debt per capita with an overall rank of fourth for total state and local debt per capita. Approximately 82.1 percent of the state's total debt is local debt. (Sources: U.S. Census Bureau, State and Local Government Finances by Level of Government and by State, 2020; and U.S. Census Bureau, Population Division, July 2022 data, released December 2022. Both sources are the most recent data available.) See Appendix F for a comparison of Texas' debt with that of other states.

Figure 3.5
Ratio 4: Not Self-Supporting Debt per Capita for Fiscal Years 2023–2027



Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

Ratio 5: Rate of Debt Retirement
The rate of debt retirement is calculated as Ratio 5 in the DCM. This rate measures the extent to which new debt capacity is created for future debt issuance. Level principal payments result in more rapid repayment of principal than other structures such as level debt service payments. Annual debt service is higher in the earlier years for debt structured with level principal payments, but the more rapid principal amortization results in lower overall interest costs and more rapid replacement of debt capacity than level debt service payments. Credit rating agencies use the rate of principal retirement for NSS debt as a measure of the state's debt capacity and have benchmarked a rate of 25 percent of the principal amount of 20-year maturities to be retired in five years and 50 percent in 10 years.

Of Texas' NSS debt outstanding as of August 31, 2022, 29.9 percent will be retired in five years, and 57.1 percent will be retired in 10 years (see *Figure 3.6*). These figures meet the rating agency benchmarks. The rate of debt retirement decreased from fiscal year 2010's rates of 46.4 percent and 72.3 percent for the five-year and 10-year periods, respectively. This debt retirement rate decreased primarily due to the Texas Transportation Commission's (TTC) issuance of $977.8 million of Proposition 12 Bonds in September 2010 and an additional $918.2 million issued in December 2012, both with level debt service instead of level principal payments and a maturity of 30 years. In October 2014, May 2016, and November 2016, TTC issued $1.26 billion, $615.0 million, and $588.8 million, respectively, of the remaining Proposition 12 Bonds, with a level principal structure to accelerate the repayment of the debt and reduce overall interest costs. In 15 years, approximately 80.4 percent of NSS debt will be retired, and all outstanding NSS bonds are expected to mature by fiscal year 2046.

Approximately 20.6 percent of the state's self-supporting (SS) debt will be retired in five years, and 40.1 percent of debt will be retired in 10 years. The slower rate of retirement for SS debt is due in part to the use of level debt service and other forms of delayed principal repayment as well as the issuance of debt with maturities of 30 years or more to match the useful life of the projects financed (e.g., housing and water development programs). All outstanding SS bonds are expected to mature by fiscal year 2062.

Figure 3.6
Ratio 5: Rate of Debt Retirement in 5 and 10 Years for Not Self-Supporting and Self-Supporting Debt

	5 Years	10 Years
Not Self-Supporting Debt	29.9%	57.1%
Self-Supporting Debt	20.6%	40.1%

Source: Texas Bond Review Board.

Chapter 4 - Conclusion

The 80th Legislature, 2007, mandated the Texas Bond Review Board (BRB), in consultation with the Legislative Budget Board (LBB), to prepare annually the state's Debt Affordability Study (DAS). The DAS and its Debt Capacity Model provide the state's policymakers, leadership, and credit rating agencies with a comprehensive tool to evaluate current and proposed debt levels.

Chapter 1231 of the Texas Government Code requires the DAS to include a target and cap for Ratio 1, both of which can be adjusted as requested or as directed by the BRB or LBB. Since Texas has historically appropriated less than 2 percent of its unrestricted general revenue (UGR) for not self-supporting (NSS) debt service, this study utilizes 2 percent as the target, 3 percent as the cap, and 5 percent as the maximum for the key ratio, NSS Debt Service as a Percentage of UGR (Ratio 1).

Major Findings

- With moderate economic growth expected over the next five years, the state's General Revenue Fund is expected to increase for fiscal years 2023–2027. Assuming projected NSS debt issuance of $2.53 billion over the next five fiscal years, Ratio 1 remains below the target of 2 percent. Assuming revenues available for NSS debt service average $7.11 billion less per year than originally forecast, the ratio still remains below the 2 percent target.
- Including Special Debt Commitments (CCAPs for higher education, and the IFA, EDA, and ASAHE – Facilities for public education) and NSS debt, total debt service expected to be paid from general revenue appropriations exceeds Ratio 1's target of 2 percent for the five-year period. The 3 percent cap is never reached for fiscal years 2023–2027. (See *Figure 1.2*, Chapter 3, *Figure 4.1*, and Appendix C.)
- Special Debt Commitments are projected to account for more than half of total debt service expected to be paid from general revenue appropriations for fiscal years 2023–2026 and account for 48.6 percent in fiscal year 2027.
- For fiscal years 2023–2027, NSS debt service plus debt service for Special Debt Commitments are projected to peak at 2.48 percent in fiscal 2023. (See *Figure 4.1*.)
- At fiscal year-end 2022, using conservative assumptions, BRB staff estimated that approximately $18.60 billion in additional NSS debt capacity was available before reaching the CDL.
- NSS debt as a percentage of personal income and debt per capita are expected to be better than rating agency benchmarks through fiscal year 2027.
- The rates of debt retirement for NSS debt outstanding for the five-year and 10-year periods exceed the rating agency benchmarks.
- Ratio 1 remains below the 2 percent target after a one-time hypothetical debt issuance of $1 billion in addition to the $2.53 billion of NSS debt expected to be issued over the next five fiscal years.
- Assuming $2.53 billion of projected NSS debt issuance over the next five fiscal years coupled with scheduled retirements projected to be $2.07 billion over the same period, NSS debt outstanding is expected to continue to increase in upcoming fiscal years.
- As of August 31, 2022, state-funded pensions had approximately $66.73 billion of unfunded actuarial accrued liability (UAAL). (See Appendix H.)

Figure 4.1
Summary of Ratios 1–5

Fiscal Year	2023		2024		2025		2026		2027	
RATIO 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue										
NSS Debt Service										
Issued	$ 699,686,396	1.02%	$ 679,463,261	0.94%	$ 635,887,941	0.87%	$ 613,440,714	0.81%	$ 588,063,609	0.72%
Authorized but Unissued	$ 20,763,362	0.03%	$ 71,576,990	0.10%	$ 120,864,266	0.17%	$ 173,385,481	0.23%	$ 191,767,699	0.23%
Projected	$ -	0.00%	$ 9,631,545	0.01%	$ 23,985,274	0.03%	$ 43,144,840	0.06%	$ 65,060,470	0.08%
Total NSS Debt Service (excluding SDC)	$ 720,449,758	1.05%	$ 760,671,795	1.06%	$ 780,737,481	1.07%	$ 829,971,036	1.10%	$ 844,891,778	1.03%
Special Debt Commitments	$ 982,817,866	1.43%	$ 955,961,348	1.33%	$ 942,328,125	1.30%	$ 882,106,199	1.17%	$ 799,293,590	0.98%
Total NSS and SDC Debt Service	$ 1,703,267,624	2.48%	$1,716,633,144	2.39%	$1,723,065,606	2.37%	$1,712,077,235	2.26%	$1,644,185,368	2.01%
SDC as a % of Total	57.7%		55.7%		54.7%		51.5%		48.6%	
Remaining Debt Service Capacity excluding SDC*										
Target (2%)	$ 654,520,875	0.95%	$ 677,538,865	0.94%	$ 672,877,831	0.93%	$ 684,153,784	0.90%	$ 793,412,244	0.97%
Cap (3%)	$ 1,342,006,192	1.95%	$1,396,644,196	1.94%	$1,399,685,488	1.93%	$1,441,216,194	1.90%	$1,612,564,255	1.97%
Max (5%)	$ 2,716,976,826	3.95%	$2,834,854,856	3.94%	$2,853,300,800	3.93%	$2,955,341,015	3.90%	$3,250,868,276	3.97%
Remaining Debt Service Capacity including SDC*										
Target (2%)	$ (328,296,990)	-0.48%	$ (278,422,483)	-0.39%	$ (269,450,294)	-0.37%	$ (197,952,415)	-0.26%	$ (5,881,346)	-0.01%
Cap (3%)	$ 359,188,327	0.52%	$ 440,682,847	0.61%	$ 457,357,362	0.63%	$ 559,109,995	0.74%	$ 813,270,665	0.99%
Max (5%)	$ 1,734,158,960	2.52%	$1,878,893,508	2.61%	$1,910,972,675	2.63%	$2,073,234,815	2.74%	$2,451,574,687	2.99%
RATIO 2: Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue	1.23%		1.11%		1.27%					
RATIO 3: Not Self-Supporting Debt as a Percentage of Personal Income	0.37%		0.36%		0.34%		0.32%		0.30%	
RATIO 4: Not Self-Supporting Debt per Capita	$234		$235		$236		$232		$224	
RATIO 5: Rate of Debt Retirement	5 Years	10 Years								
Not Self-Supporting Debt	29.9%	57.1%								
Self-Supporting Debt	20.6%	40.1%								

* Debt service capacity is the estimated available capacity to meet target, cap, or maximum percentages.
Totals may not sum due to rounding.
Sources: Texas Bond Review Board, Texas Comptroller of Public Accounts, and Legislative Budget Board.

Appendix A - Methodology and the Debt Capacity Model

The core of the Debt Affordability Study is the Debt Capacity Model (DCM), which uses revenue and debt information to calculate the five debt ratios described in the study. This financial model provides a platform for economic sensitivity analyses by considering the state's financial condition, economic and demographic trends, and outstanding debt levels. Local debt and pension liabilities were omitted from the analysis in the DCM.

Economic Assumptions

The DCM contains three separate scenarios of general revenue available for not self-supporting (NSS) debt service to show the effect of economic factors on additional debt capacity (*Figure A1*). The model uses information and projections for fiscal year 2023 through fiscal year 2032 for general revenues, personal income, and population changes.

Scenario A (base scenario) uses a 10-year average for general revenues available for NSS debt service (i.e., 3.70 percent growth for fiscal years 2023–2032), personal income (i.e., 5.03 percent growth for fiscal years 2023–2032), and population change (e.g., 1.15 percent growth for fiscal years 2023–2032). All the figures listed in this report are based on Scenario A.

Scenario B (positive scenario) reflects a 0.5 percent increase in available general revenues over the base scenario. Total personal income and population change are based on the highest annual growth rate during the 10-year period.

Scenario C (negative scenario) assumes a 0.5 percent decrease relative to the base scenario in general revenues available for NSS debt service. Total personal income and population changes are based on the lowest annual growth rate during the 10-year period.

Figure A1
Percentage Growth Rates of Economic Factors Used in the Debt Capacity Model

Economic Factor	Base Scenario (A)	Positive Scenario (B)	Negative Scenario (C)
Revenues Available for Debt Service	3.70	4.20	3.20
Total Personal Income	5.03	5.76	4.70
Population Change	1.15	1.22	1.08

Sources: Texas Bond Review Board, Comptroller of Public Accounts, and Legislative Budget Board.

Unrestricted General Revenue Available for NSS Debt Service

The Legislative Budget Board (LBB) obtained unrestricted general revenue (UGR) data for fiscal year 2022 from Table 11 of the Texas Comptroller of Public Accounts' (CPA) 2022 State of Texas Annual Cash Report.

The LBB used the CPA's 2023 Biennial Revenue Estimate (BRE) for fiscal years 2023, 2024, and 2025. After fiscal year 2025, the LBB used the rate of growth for most tax revenue sources to match rates from the baseline scenario of the CPA's 2016 House Bill 32 report (https://www.comptroller.texas.gov/transparency/reports/hb32/96-1792.pdf).

Some exceptions to this method must be noted:

- Cigarette tax revenues were adjusted to reflect their irregular collection cycle.

- Revenues from the natural gas tax and oil production tax were estimated using the CPA's 2023 BRE forecast for natural gas and oil prices and production.

- Certain minor revenue sources that were estimated by the CPA to have no growth between fiscal year 2023 and fiscal year 2025 were maintained at the fiscal year 2025 level throughout the forecast period.

- The revenue forecast does not include tax revenue deposited into the Property Tax Relief Fund because these revenues are statutorily dedicated.

The estimates of UGR are significantly higher than the last estimate provided by the LBB in January 2022 for all years of the forecast period. The increase is driven primarily by the abnormally high growth of tax collections in fiscal year 2022. General Revenue tax collections increased 27.9 percent in fiscal year 2022, over 5 times higher than the long run historical average. High rates of consumer price inflation coupled with high oil and gas prices in fiscal year 2022 were the two main drivers of the increase.

Various scenarios can be generated at any time by simply varying the forecast assumptions in the DCM.

Appendix B - Debt Capacity – Ratio Analysis

The information presented in this Appendix focuses on existing and projected debt issuances for not self-supporting (NSS) debt. Existing debt consists of both issued and authorized but unissued debt, with a line item for each in the Ratio analyses.

Figure B1 illustrates Ratio 1 (Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue), assuming current and projected debt levels for fiscal years 2023–2027. As discussed in Chapter 3, if no new debt is added to the existing or projected issuances, NSS debt service as a percentage of unrestricted general revenue (UGR) will be less than the 2 percent target. It will range from 1.05 percent in fiscal year 2023 to a high of 1.10 percent in fiscal year 2026.

The report uses 2 percent as the target and 3 percent as the cap for Ratio 1. Based on projections from fiscal year 2023 through fiscal year 2027 for UGR and approximately $2.53 billion of NSS debt issuances, the 2 percent target for Ratio 1 would not be exceeded. (See Chapter 1 and Appendix D for a list of projected debt issuances.) For fiscal years 2023–2027 under the 2 percent target, the state's additional debt service capacity ranges from a high of $793.4 million for fiscal year 2027 to a low of $654.5 million for fiscal year 2023.

Figure B1
Ratio 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue for Fiscal Years 2023–2027

Fiscal Year	2023	2024	2025	2026	2027
Projected Unrestricted General Revenue	$73,814,709,544	$67,473,195,844	$76,754,391,459	$82,891,135,737	$86,100,076,068
Not Self-Supporting					
Annual Debt Service					
Issued Debt	$699,686,396	$679,463,261	$635,887,941	$613,440,714	$588,063,609
Authorized but Unissued Debt	$20,763,362	$71,576,990	$120,864,266	$173,385,481	$191,767,699
Projected Debt	$0	$9,631,545	$23,985,274	$43,144,840	$65,060,470
Total Debt Service	$720,449,758	$760,671,795	$780,737,481	$829,971,036	$844,891,778
Debt Service as a Percentage of Unrestricted General Revenue					
Issued Debt	1.02%	0.94%	0.87%	0.81%	0.72%
plus Authorized but Unissued Debt	1.05%	1.04%	1.04%	1.04%	0.95%
plus Projected Debt	1.05%	1.06%	1.07%	1.10%	1.03%
Remaining Debt Service Capacity					
Target (2%)	$654,520,875	$677,538,865	$672,877,831	$684,153,784	$793,412,244
Cap (3%)	$1,342,006,192	$1,396,644,196	$1,399,685,488	$1,441,216,194	$1,612,564,255
Max (5%)	$2,716,976,826	$2,834,854,856	$2,853,300,800	$2,955,341,015	$3,250,868,276

Sources: Texas Bond Review Board, Texas Comptroller of Public Accounts, and Legislative Budget Board.

The Debt Capacity Model (DCM) provides policymakers with the ability to review the impact of a state bond financed project or projects of any size on the state's finances. *Figure B2* shows the impact of new NSS debt authorizations on Ratio 1. The first scenario assumes a $250 million project, and the second scenario assumes a $1 billion project. For purposes of this analysis, the debt is assumed to have been issued in September 2022 and the first debt service payments to have been made in February 2023. The examples also assume a 20-year repayment term with 6 percent interest and level principal payments.

Figure B2
Impact of Additional Debt on Ratio 1

Fiscal Year	2023	2024	2025	2026	2027
Debt Service as a Percent of Unrestricted General Revenue					
Actual	1.05%	1.06%	1.07%	1.10%	1.03%
With $250M Project	1.09%	1.10%	1.11%	1.13%	1.06%
With $1B Project	1.20%	1.21%	1.22%	1.23%	1.15%
Remaining Debt Service Capacity					
Target (2%)					
Actual	$654,520,875	$677,538,865	$672,877,831	$684,153,784	$793,412,244
With $250M Project	$628,241,709	$650,759,699	$646,848,665	$658,874,618	$768,883,077
With $1B Project	$549,404,209	$570,422,199	$568,761,165	$583,037,118	$695,295,577
Cap (3%)					
Actual	$1,342,006,192	$1,396,644,196	$1,399,685,488	$1,441,216,194	$1,612,564,255
With $250M Project	$1,315,727,026	$1,369,865,029	$1,373,656,321	$1,415,937,028	$1,588,035,088
With $1B Project	$1,236,889,526	$1,289,527,529	$1,295,568,821	$1,340,099,528	$1,514,447,588

Source: Texas Bond Review Board.

The $250 million project would decrease annual debt service capacity by approximately $26.3 million in 2023, and Ratio 1 would rise approximately four basis points (bps) (0.04 percent) in fiscal year 2023. This percentage remains below the target ratio of 2 percent for the five-year period.

The $1 billion project would decrease annual debt service capacity by approximately $105.1 million in 2023, and Ratio 1 would rise approximately 15 bps (0.15 percent) in fiscal year 2023. With the $1 billion project, this percentage remains below the target ratio of 2 percent for the five-year period.

For the $1 billion project, Ratio 2 (Not Self-Supporting Debt Service as a Percentage of Budgeted General Revenue) would increase from 1.23 percent to 1.40 percent in fiscal year 2023, from 1.11 percent to 1.26 percent in fiscal year 2024, and from 1.27 percent to 1.44 percent in fiscal year 2025.

Figure B3 illustrates Ratio 3 (Not Self-Supporting Debt as a Percentage of Personal Income) for fiscal years 2023–2027. For this time period, the state will maintain a percentage of NSS debt to personal income below 0.50 percent during the five-year period. The effects of the assumed $250 million and $1 billion projected debt are also shown in *Figure B3*. If $1 billion of projected debt is added, this ratio would peak at 0.42 percent.

Figure B3
Ratio 3: Not Self-Supporting Debt as a Percentage of Personal Income for Fiscal Years 2023–2027

Fiscal Year	2023	2024	2025	2026	2027
Not Self-Supporting Debt					
Beginning Outstanding	$6,920,225,000	$7,055,584,470	$7,188,470,901	$7,294,611,877	$7,251,755,700
Planned Issuances	$579,377,102	$595,886,075	$573,181,277	$444,954,385	$338,185,000
Retirements - Existing Debt	$436,894,086	$432,306,782	$405,499,581	$400,124,864	$392,384,314
Retirements - New Debt	$7,123,546	$30,692,862	$61,540,720	$87,685,698	$108,867,097
Ending Outstanding	$7,055,584,470	$7,188,470,901	$7,294,611,877	$7,251,755,700	$7,088,689,289
Total Personal Income	$1,920,600,000,000	$2,013,300,000,000	$2,129,200,000,000	$2,240,571,583,352	$2,354,111,123,945
Not Self-Supporting Debt as a Percentage of Personal Income	0.37%	0.36%	0.34%	0.32%	0.30%
with $250 million project	0.38%	0.37%	0.35%	0.33%	0.31%
with $1 billion project	0.42%	0.41%	0.39%	0.37%	0.34%

Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

Figure B4 illustrates the impact of the $250 million and $1 billion projects on Ratio 4 (Not Self-Supporting Debt per Capita).

Figure B4
Ratio 4: Not Self-Supporting Debt per Capita for Fiscal Years 2023–2027

Fiscal Year	2023	2024	2025	2026	2027
Not Self-Supporting Debt Outstanding	$7,055,584,470	$7,188,470,901	$7,294,611,877	$7,251,755,700	$7,088,689,289
Projected Population	30,198,960	30,560,595	30,920,287	31,277,855	31,636,623
Not Self-Supporting Debt per Capita	$234	$235	$236	$232	$224
with $250 million project	$242	$243	$244	$240	$232
with $1 billion project	$267	$268	$268	$264	$256

Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

The $250 million and $1 billion project scenarios are structured with level principal payments over the 20-year term and do not impact Ratio 5 (Rate of Debt Retirement) because Ratio 5 is calculated using authorized and issued debt and does not consider projected debt. For fiscal years 2023–2032, the NSS debt issued for both the $250 million and $1 billion projects is retired at a rate of approximately 50 percent in 10 years.

Appendix C - Special Debt Commitments – CCAPs, EDA, and IFA

Two distinct versions of Ratio 1 (Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue) have been computed. The first considers only debt service for not self-supporting (NSS) debt for which the state is legally obligated. The second shows the impact of Special Debt Commitments (SDC) on the Debt Capacity Model (DCM) ratios. Although not legal obligations of the state, the state appropriates debt service for SDC, which includes Capital Construction Assistance Projects (CCAPs) for higher education, and the Existing Debt Allotment (EDA), Instructional Facilities Allotment (IFA), and Additional State Aid for Homestead Exemption for Facilities (ASAHE — Facilities) for public education. The following tables provide policymakers with metrics to review not only the impact of NSS debt but also the impact of these SDC, which are paid with general revenue.

Description of Special Debt Commitments

Three SDC are either reimbursed by or receive a contribution from the state. These obligations include:

<u>Capital Construction Assistance Projects (CCAPs)</u>

CCAPs are revenue bonds issued by the individual higher education institutions or systems or the Texas Public Finance Authority (on behalf of certain institutions) for new building construction or renovation. The Legislature must authorize the projects in statute, and CCAPs cannot be used for auxiliary space, such as dormitories. All college and university revenue bonds are equally secured by and payable from a pledge of all or a portion of certain "revenue funds" as defined in the Texas Education Code, Chapter 55. Though legally secured through an institution's tuition and fee revenue, the state historically has used general revenue to reimburse the universities for debt service for these bonds. The 84th Legislature, 2015, authorized $3.10 billion in CCAP debt with the passing of HB 100. The passage of SB 52 during the 87th Legislature, Third Called Session, 2021, authorized certain college systems, universities, and university systems to issue additional CCAPs in the aggregate amount of approximately $3.35 billion. These CCAP authorizations are included in the debt ratio calculations for outstanding and authorized but unissued debt projections in the DCM.

<u>Instructional Facilities Allotment (IFA)</u>

A component of the Foundation School Program, the IFA program was authorized in House Bill 4 by the 75th Legislature, 1997. The provisions that authorize the IFA program are incorporated into the Texas Education Code as Chapter 46, Subchapter A. The IFA program provides appropriated assistance to school districts (ISD or district) on qualifying bonds and lease-purchase agreements legally secured by the ISD. Districts must make application to the Texas Education Agency (TEA) to receive assistance. Bond or lease-purchase proceeds must be used for the construction or renovation of an instructional facility. A maximum allotment is determined based upon the lesser of annual debt service payments or the greater of $100,000 or $250 per student in average daily attendance (ADA).

Expansion of the IFA program through new award cycles is contingent on a specific appropriation for that purpose each biennium. Appropriations for the current biennium do not include additional funding for new awards. The estimates below assume no additional IFA awards in fiscal year 2023 and beyond.

Existing Debt Allotment (EDA)

A component of the Foundation School Program, the 76th Legislature, 1999, added Subchapter B to Chapter 46 of the Texas Education Code to create the EDA in 1999. The EDA is similar to the IFA program in that it provides appropriated assistance by equalizing local tax effort.

General obligation (GO) bonds of the ISD that have been issued during a biennium, with the first payment made during that biennium, are automatically eligible for EDA in the following biennium without the need for legislative action.

EDA equalizes local interest and sinking fund tax effort that is not receiving IFA funding with a maximum rate of $0.29 per $100 of valuation. Prior to fiscal year 2019, the guaranteed yield for EDA provided $35 per student in ADA per penny of tax effort. As a result of House Bill 21, 85th Legislature, First Called Session, 2017, the yield increased to the lesser of $40 or the amount that results in an additional $60 million in state aid over the amount of state aid to which districts would have been entitled at a $35 yield, beginning in fiscal year 2019.

EDA funding is shared between state and local resources. In addition to the $0.29 limit, the amount of state aid on eligible bonds during the current biennium (2022–2023) is further limited by the effective rate determined by fiscal year 2021 interest and sinking tax collections. If a district's fiscal year 2019 tax rate did not include tax effort for newly eligible bonds, it is possible the district may not receive EDA funding for those bonds until state fiscal year 2024, depending on local circumstances.

The EDA program operates without applications and has no award cycles. Instead, the program is based on a statutory definition of eligible debt, presently determined by the first payment of debt service in accordance with the Texas Education Code, Section 46.033. Refunding bonds as defined by the Texas Education Code, Section 46.007, are also eligible for EDA assistance. Only GO debt is eligible for the program. The projects originally financed by the debt do not impact eligibility since no restriction to instructional facilities exists.

In 2015, the 84th Legislature increased the amount of homestead valuation that is exempt from school property taxation from $15,000 to $25,000. The IFA and EDA structures deliver additional state aid in response to changes in a school district's tax base but do not fully replace the local interest and sinking revenue lost due to the change in the homestead exemption. Beginning with fiscal year 2016, Section 46.071 of the Texas Education Code provides qualifying school districts additional state support to replace local interest and sinking revenue lost due to the increase in the homestead exemption. State support under this provision is limited to the lesser of actual IFA and EDA eligible debt service for bonds each year or IFA and EDA eligible debt service for bonds as of September 1, 2015. For each year, the additional state support to replace local interest and sinking revenue represents the difference between the calculated loss of local revenue associated with allowable debt service and the amount of additional state aid generated by the existing IFA and EDA funding structures in response to the change in taxable value resulting from the increase in the homestead exemption. In keeping with Section 46.071 of the Texas Education Code, this additional state support of eligible debt service is commonly called the ASAHE — Facilities.

Additionally, the 87th Legislature, Third Called Session, 2021, passed Senate Bill 1, which further increased the residence homestead exemption from $25,000 to $40,000. Senate Bill 1 includes a provision to expand ASAHE to cover the additional increase in the homestead exemption from $25,000 to $40,000.

State costs for IFA, EDA, and ASAHE — Facilities support for local interest and sinking revenue loss are estimated based on currently available data. Updates to key source data, including local debt service, student counts, property values, and tax rates, may change estimated state costs for IFA, EDA, and ASAHE — Facilities significantly.

By statute, both IFA and EDA have a higher priority for appropriations than any other portion of the Foundation School Program. The Foundation School Program, of which state support for school district bond indebtedness is a part, contains additional revenue sources not included in the definition of unrestricted general revenue (UGR) that are available to fund the state's obligations for IFA, EDA, and ASAHE — Facilities. These sources include lottery proceeds, the Property Tax Relief Fund, the Tax Reduction and Excellence in Education Fund, and school district recapture payments.

Figure C1 shows the projected annual appropriated payments to be made for CCAPs, IFA, EDA, and ASAHE — Facilities, assuming no further statutory changes are made to IFA and EDA guarantee levels or eligibility. The estimates below assume no additional IFA awards in fiscal year 2023 and beyond.

Figure C1
Annual Projected Debt Appropriation Payments for Special Debt Commitments for Fiscal Years 2023–2027

Commitment	2023	2024	2025	2026	2027
Special Debt					
Outstanding CCAPs	$ 468,358,863	$ 443,933,279	$ 427,803,372	$ 379,805,281	$ 307,242,194
Authorized but Unissued CCAPs*	260,809,100	260,807,200	260,805,200	260,808,000	260,806,700
Instructional Facilities Allotment	75,426,980	64,830,903	54,491,490	45,814,216	37,857,997
Existing Debt Allotment	97,256,861	105,913,309	118,243,166	114,377,733	111,864,454
ASAHE - Facilities**	80,966,062	80,476,657	80,984,897	81,300,969	81,522,245
Total Debt Service	**$ 982,817,866**	**$ 955,961,348**	**$ 942,328,125**	**$ 882,106,199**	**$ 799,293,590**

*Debt service based on $3.01 billion authorized but unissued CCAP authority.
**Additional State Aid for Homestead Exemption — Facilities.
Sources: Texas Bond Review Board and Legislative Budget Board.

Figure C2 summarizes Ratio 1 for fiscal years 2023–2027. SDC are projected to account for more than half of total debt service expected to be paid from general revenue appropriations for fiscal years 2023–2027. The negative numbers indicate shortfalls in debt service capacity for the corresponding target, cap, or maximum percentage. SDC for Ratio 1, NSS annual debt service never exceeds the target capacity of 2 percent. Including SDC, debt service as a percentage of UGR is expected to exceed the 2 percent target but remain below the 3 percent cap for fiscal years 2023–27.

Figure C2
Impact of Special Debt Commitments on Ratio 1 for Fiscal Years 2023–2027

Fiscal Year	2023		2024		2025		2026		2027	
RATIO 1: Not Self-Supporting Debt Service as a Percentage of Unrestricted General Revenue										
NSS Debt Service										
Issued	$ 699,686,396	1.02%	$ 679,463,261	0.94%	$ 635,887,941	0.87%	$ 613,440,714	0.81%	$ 588,063,609	0.72%
Authorized but Unissued	$ 20,763,362	0.03%	$ 71,576,990	0.10%	$ 120,864,266	0.17%	$ 173,385,481	0.23%	$ 191,767,699	0.23%
Projected Debt	$ -	0.00%	$ 9,631,545	0.01%	$ 23,985,274	0.03%	$ 43,144,840	0.06%	$ 65,060,470	0.08%
Total NSS Debt Service	$ 720,449,758	1.05%	$ 760,671,795	1.06%	$ 780,737,481	1.07%	$ 829,971,036	1.10%	$ 844,891,778	1.03%
Remaining Debt Service Capacity (Excludes SDC)										
Target (2%)	$ 654,520,875	0.95%	$ 677,538,865	0.94%	$ 672,877,831	0.93%	$ 684,153,784	0.90%	$ 793,412,244	0.97%
Cap (3%)	$ 1,342,006,192	1.95%	$1,396,644,196	1.94%	$ 1,399,685,488	1.93%	$1,441,216,194	1.90%	$1,612,564,255	1.97%
Max (5%)	$ 2,716,976,826	3.95%	$2,834,854,856	3.94%	$ 2,853,300,800	3.93%	$2,955,341,015	3.90%	$3,250,868,276	3.97%
Debt Service including Special Debt Commitments										
NSS Debt Service	$ 720,449,758	1.05%	$ 760,671,795	1.06%	$ 780,737,481	1.07%	$ 829,971,036	1.10%	$ 844,891,778	1.03%
Special Debt Commitments	$ 982,817,866	1.43%	$ 955,961,348	1.33%	$ 942,328,125	1.30%	$ 882,106,199	1.17%	$ 799,293,590	0.98%
Total	$ 1,703,267,624	2.48%	$1,716,633,144	2.39%	$ 1,723,065,606	2.37%	$1,712,077,235	2.26%	$1,644,185,368	2.01%
Remaining Debt Service Capacity (Includes SDC)										
Target (2%)	$ (328,296,990)	-0.48%	$ (278,422,483)	-0.39%	$ (269,450,294)	-0.37%	$ (197,952,415)	-0.26%	$ (5,881,346)	-0.01%
Cap (3%)	$ 359,188,327	0.52%	$ 440,682,847	0.61%	$ 457,357,362	0.63%	$ 559,109,995	0.74%	$ 813,270,665	0.99%
Max (5%)	$ 1,734,158,960	2.52%	$1,878,893,508	2.61%	$ 1,910,972,675	2.63%	$2,073,234,815	2.74%	$2,451,574,687	2.99%

Totals may not sum due to rounding.
Sources: Texas Bond Review Board and Legislative Budget Board.

Appendix D - Constitutional Debt Limit

Constitutional Debt Limit

Article III, Section 49-j of the Texas Constitution prohibits the Legislature from authorizing additional state debt if the annual debt service in any fiscal year on state debt payable from the General Revenue Fund exceeds 5 percent of the average of unrestricted general revenue (UGR) from the preceding three fiscal years. The Texas Constitution also stipulates that state debt payable from the General Revenue Fund does not include debt that, although backed by the full faith and credit of the state, is reasonably expected to be paid from other revenue sources and is not expected to create a general revenue draw.

The Constitutional Debt Limit (CDL) is expressed as a percentage of debt service to the three-year average of UGR funds. As of August 31, 2022, the CDL percentage remained below the maximum of 5 percent with 1.11 percent calculated for not self-supporting (NSS) debt outstanding and 2.25 percent calculated for both outstanding and authorized but unissued debt, a 12.8 percent decrease from the 2.58 percent calculated for fiscal year 2021.

Based on the authorizations for which the approximate issuance date is known, an estimated $2.53 billion in authorized and projected NSS debt is expected to be issued between fiscal years 2023 and 2027 for the following transactions:

- $1.49 billion in general obligation (GO) debt, related to Proposition 15 for cancer research (Texas Public Finance Authority (TPFA));
- $648.8 million in GO and revenue debt for capital projects for certain state agencies (TPFA), including $1.5 million of Proposition 4 authorization from the November 2007 General Election (Article III, Section 50-g), $3.0 million of authorization for border colonias roadway projects (Article III, Section 49-l), $570,005 of authorization for various construction and repair projects and equipment acquisitions (Article III, Section 50-f), $191.5 million of debt authorized by the 86th Legislature, 2019, and 87th Legislature, 2021, for deferred maintenance projects for the Health and Human Services Commission (HHSC), and $452.2 million of debt authorized by the 84th Legislature, 2015, and 86th Legislature, 2019, for phase one and phase two of the Texas Facilities Commission (TFC) Capital Complex and North Austin Complex projects (TPFA);
- $196.9 million in GO bonds for the Higher Education Assistance Fund; and
- $200.0 million in GO bonds for the Texas Water Development Board's (TWDB) Economically Distressed Areas Program (EDAP).

Factors Affecting the Constitutional Debt Limit

Five main factors impact the CDL percentage. The first is the level of outstanding NSS debt service. Assuming all other variables are held constant, the CDL varies directly with the amount of NSS debt service to be paid.

The second factor is the inverse relationship between UGR and the CDL. In other words, as UGR increases, the CDL percentage decreases and vice versa. Because the calculation uses the average of UGR over the previous three years, the impact of a substantial change in UGR for one year is reduced.

The third factor is the estimate of debt service for the authorized but unissued NSS debt. Debt service amounts vary directly with interest rates. A conservative rate of 5 percent was used for the Master

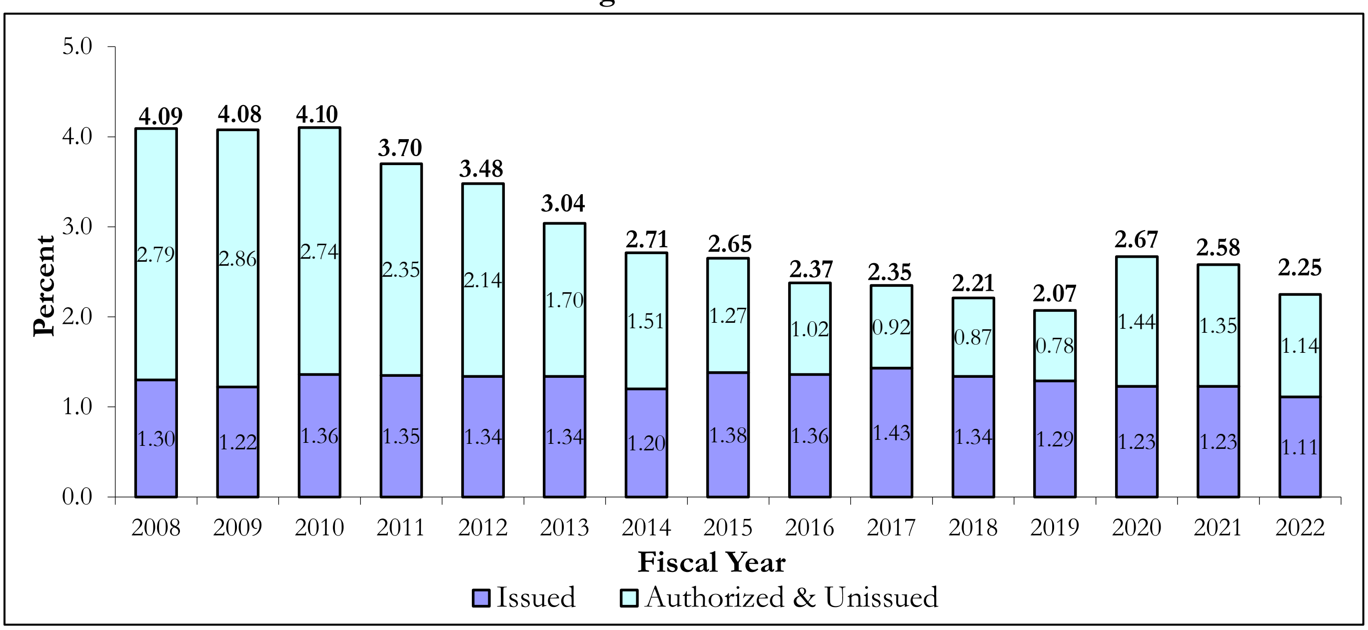
Lease Purchase Program and 6 percent was used for all other authorized but unissued debt. In addition, debt service varies inversely with the debt amortization period, and a conservative maturity of 20 years is used.

The impact of the fourth factor is determined by legislative action. The Texas Constitution states that debt service for NSS debt reasonably expected to be paid from other revenue sources and not expected to create a general revenue draw is excluded from the CDL calculation. Thus, NSS debt is excluded from the CDL calculation if it becomes self-supporting (SS) through legislative action that provides debt service support from an adequate revenue stream. For example, without a stated revenue stream for debt service, a $5 billion transportation authorization approved by the 80th Legislature, 2007, and approved by voters in the November 2007 general election is defined as NSS debt but would be reclassified to SS if legislative action provided a dedicated revenue stream for debt service for the entire life of the outstanding debt.

The impact of the fifth factor is determined by a reclassification of NSS debt to SS debt. This occurred for the first time in fiscal year 2010 when seven series of bonds totaling $369.9 million, comprised of $139.8 million from the TWDB State Participation Program (SPP) and $230.1 million from the Water Infrastructure Fund (WIF), were certified by the TWDB to have sufficient cash flow for debt service. In March 2013, an additional $35.1 million of SPP debt was removed for a total of $405 million of TWDB debt removed from the CDL. These reclassifications reduced the CDL by approximately seven basis points (0.07 percent). Additionally, on August 2, 2018, TWDB issued Series 2018B WIF refunding bonds that were certified by the TWDB to have sufficient cash flow for debt service. These refunding bonds defeased the NSS Series 2009B WIF bonds in the amount of $103,965,000, reducing the CDL by approximately three basis points (0.03 percent).

Figure D1 shows the CDL percentages for fiscal years 2008–2022. For fiscal year 2022, the CDL percentage was 1.11 for issued debt and 2.25 for issued and authorized but unissued debt.

Figure D1
Constitutional Debt Limit as a Percentage of Unrestricted General Revenue



Totals may not sum due to rounding.
Source: Texas Bond Review Board.

Calculation of the Constitutional Debt Limit
The CDL is calculated by first determining: 1) the total annual debt service for the fiscal year with the highest debt service for issued NSS debt, then adding in 2) an estimate of the projected annual debt service for one fiscal year for authorized but unissued NSS debt, under the assumption of a 6 percent interest rate and 20-year maturity with level debt service payments. Then, the CDL is determined by dividing 1 and 2 above by the average of UGR from the preceding three fiscal years. The Texas Constitution prohibits the Legislature from authorizing additional state debt if this calculation yields a percentage greater than 5 percent.

Calculation of the CDL requires the use of three components of state debt (see *Figures D2, D3*, and *D4*):

- Unrestricted general revenue for the three preceding fiscal years
- Debt service on outstanding debt
- Debt service for authorized but unissued debt

Unrestricted General Revenue
UGR is the net amount of general revenue remaining after deducting all constitutional allocations and other restricted revenue from total general revenue. The UGR figure can be found in Table 11 in the Comptroller's Annual Cash Report. The average UGR was $62.20 billion for fiscal years 2020–2022 (*Figure D2*). Thus, the maximum amount available for debt service is 5 percent of $62.20 billion, or $3.11 billion.

Figure D2
Unrestricted General Revenue (thousands)

Unrestricted General Revenue	
General Revenue Available After Constitutional Dedications (Year Ending 8/31/20)	54,165,463
General Revenue Available After Constitutional Dedications (Year Ending 8/31/21)	57,987,192
General Revenue Available After Constitutional Dedications (Year Ending 8/31/22)	74,443,694
Average Amount of Unrestricted General Revenue Available for the Three Preceding Fiscal Years	$ 62,198,783

Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

Debt Service on Outstanding Debt
The debt service on the outstanding debt portion of the CDL calculation uses debt service for the peak year for GO and non-GO NSS debt. Due to debt service amortizations and staggered issuances, the peak year usually occurs within five years of the current year. For the August 31, 2022, CDL, the peak debt service year was 2023 (*Figure D3*).

Figure D3
Not Self-Supporting Debt Service Requirements of Texas State Debt by Fiscal Year (thousands)

NOT SELF-SUPPORTING DEBT-SERVICE REQUIREMENTS OF TEXAS STATE DEBT BY FISCAL YEAR						
	2023	**2024**	**2025**	**2026**	**2027**	**2028 & beyond**
Not Self-Supporting [1]						
General Obligation Debt						
Higher Education Constitutional Bonds [2]	$2,972	$2,977	$2,971	$2,973	$0	$0
Texas Public Finance Authority Bonds	177,928	168,733	139,326	141,421	132,455	866,597
Cancer Prevention and Research Institute of Texas	147,338	143,229	139,728	123,865	120,557	1,032,688
Water Development Bonds - EDAP [3]	25,482	24,166	20,247	17,247	14,739	91,018
TTC GO Transportation Bonds	281,974	277,431	272,858	268,255	262,433	3,544,811
Total General Obligation Debt	**$635,694**	**$616,536**	**$575,132**	**$553,761**	**$530,184**	**$5,535,113**
Non-General Obligation Debt						
Texas Public Finance Authority Bonds	$58,263	$57,679	$56,663	$55,610	$54,108	$607,407
TPFA Master Lease Purchase Program	4,810	4,323	4,093	4,070	3,772	47,027
Texas Military Facilities Commission Bonds	920	926	-	-	-	-
Total Non-General Obligation Debt	**$63,992**	**$62,927**	**$60,756**	**$59,680**	**$57,880**	**$654,435**
Total Not Self-Supporting Debt	**$699,686**	**$679,463**	**$635,888**	**$613,441**	**$588,064**	**$6,189,548**

[1] Bonds that are not self-supporting (general obligation and non-general obligation) depend solely on the state's general revenue for debt service.

[2] While not explicitly a general obligation or full faith and credit bond, the revenue pledge contained in Constitutional Bonds has the same effect. Debt service is paid from the annual constitutional appropriation to qualified institutions of higher education from first monies coming into the state treasury not otherwise dedicated by the Texas Constitution.

[3] Economically Distressed Areas Program (EDAP) bonds do not depend totally on the state's general revenue fund for debt service.

Source: Texas Bond Review Board.

As of August 31, 2022, debt service for issued debt will require 1.11 percent of the average of UGR for the prior three fiscal years (see *Figure D5*).

Debt Service for Authorized but Unissued Debt

The CDL calculation for authorized but unissued debt is based on the cumulative debt service for all authorized but unissued debt, assuming that the debt is issued at an interest rate of 5 percent for the Master Lease Purchase Program and 6 percent for all other authorized but unissued debt. The calculation assumes a maturity of 20 years and level debt service payments. *Figure D4* illustrates the principal amounts used for the CDL calculation for authorized but unissued debt as of August 31, 2022.

Figure D4
Authorized but Unissued Not Self-Supporting Debt as of August 31, 2022

Not Self-Supporting Program Name	Constitutional Authorization	Statutory Authorization	Total Authorized but Unissued ($ in thousands)
Agricultural Water Conservation Bonds	Article III, Section 50-d	Texas Water Code, Chapter 15, Subchapters G, H, I and J	$164,840
Higher Education Constitutional Bonds (HEF)	Article VII, Section 17	No bond issuance limit, but debt service may not exceed $196.9 million per year.	***
Texas Public Finance Authority	Article III, Sections 49-h, 49-h(a), 49-h-(c)(1), 49-h-(d)(1), 49-h(e)(1), 50-f, 49-l, 50-g, and 67		3,493,127
Transportation Commission GO Bonds	Article III, Section 49-p	Transportation Code, Section 222.04	-
Water Development Bonds - EDAP [1]	Article III, Sections 49-d-7 and 40-d-10	Texas Water Code, Chapter 17, Subchapter K	200,000
Water Development Bonds - State Participation	Article III, Sections 49-c, 49-d, 49-d-2, 49-d-6 thru 49-d-9, and 49-d-11	Texas Water Code, Chapter 16, Subchapters E & F, Chapter 17	200,000
Water Development Bonds - WIF	Article III, Sections 49-d-9 and 49-d-11	Texas Water Code, Chapter 15, Subchapter Q	-
Total General Obligation Authorized but Unissued			**$4,057,967**
	Revenue Authorization		
Texas Public Finance Authority Bonds		Texas Government Code, Sections 1232.104, 1232.110; HB 1, 84th Leg. RS, p. I-45, Rider 19; HB 1, 86th Leg. RS, p. I-46, Rider 16; HB 1, 86th Leg. RS, p. II-50; HB 2, 87th Leg. RS, p. 21 Section 10; HB 1, 87th Leg. RS, p. IX-129-130	$784,577
TPFA Master Lease Purchase Program		Texas Government Code, Section 1232.103	258,300
Total Revenue Authorized but Unissued			**$1,042,877**
Total Not Self-Supporting Debt			**$5,100,844**

[1] Economically Distressed Areas Program (EDAP) bonds do not depend totally on the state's general revenue fund for debt service.

Source: Texas Bond Review Board.

As of August 31, 2022, debt service for authorized but unissued debt will require 1.14 percent of the average of UGR for the prior three fiscal years (see *Figure D5*).

Completing the CDL Calculation

For fiscal 2022, the CDL for both debt classifications was computed by adding the 1.11 percent computed for debt service on outstanding debt plus the 1.14 percent computed for debt service on authorized but unissued debt to obtain the total of 2.25 percent.

Calculation Detail for the CDL for the Fiscal Year 2021

Figure D5 illustrates the calculations made for fiscal year 2022.

Additional Debt Capacity under the CDL

At fiscal year-end 2022, using conservative assumptions, BRB staff estimated that approximately $18.60 billion in additional debt capacity was available before reaching the CDL. This figure accounts for the $767.7 million and $475.2 million of revenue bonds authorized by the 84th Legislature, 2015, and 86th Legislature, 2019 respectively, for the TFC Capitol Complex and North Austin Complex projects. Also included is the additional $3 billion for cancer research and $200 million for TWDB EDAP projects, both authorized by the voters at the November 2019 general election. Additional authorizations include $200 million for TWDB State Participation (SP) account projects and $208.8 million for HHSC deferred maintenance projects both authorized by the 86th Legislature, 2019. The 87th Legislature, 2021, authorized an additional $23.7 million for HHSC deferred maintenance projects and a $20 million bullion depository project, both of which are included in the CDL calculation. Because the interest rate for authorized but unissued debt is conservatively assumed to be 6 percent, debt issuance has historically increased debt capacity under the CDL. Given the recent rise of interest rates over the past year, staff believes any effect of issuing debt on debt capacity will be less noticeable in the future.

Figure D5
Constitutional Debt Limit Calculation

Constitutional Debt Limit - Article III Section 49-j
Based on Estimated Debt Outstanding as of 8/31/22
(All figures are thousands, except percentages.)

Maximum Annual Debt Service on Outstanding Debt [1]	**Authorized Debt**	**Debt Service**	**Percentage of UGR**
Debt Service on Bonds Payable from the General Revenue Fund *			
General Obligation Bonds (Not Self-Supporting)		$635,694	
(30 percent of EDAP Considered Self-Supporting)		(7,645)	
Non-General Obligation Bonds (Not Self-Supporting)		59,183	
		$687,233	
Debt Service on Commercial Paper Payable from the General Revenue Fund			
TPFA MLPP Commercial Paper ($41.7 million MLPP outstanding) **		$4,810	
Lease-Purchase Payments Greater than $250,000 Payable from the General Revenue Fund		-	
Total Debt Service on Outstanding Debt Payable from the General Revenue Fund		$692,043	**1.11%**
Authorized but Unissued Debt			
TTC Prop 12 General Obligation Bonds (Not Self-Supporting)	-		
General Obligation Bonds (Not Self-Supporting) excluding TTC Prop 12	$4,057,967		
(30 percent of EDAP Considered Self-Supporting)	(60,000)		
Non-General Obligation Bonds (Not Self-Supporting) excluding MLPP	784,557		
Total Authorized but Unissued Bonds Payable from the General Revenue Fund	4,782,524		
Estimated Debt Service on Authorized but Unissued Bonds Payable from the General Revenue Fund ***		$416,962	
Estimated Debt Service on HEF Bonds Payable from the General Revenue Fund		$193,903	
Amount of Authorized but Unissued MLPP Commercial Paper	$258,300		
Estimated Debt Service on MLPP Commercial Paper ****		$99,015	
Total Debt Service on Authorized but Unissued Debt Payable from the General Revenue Fund		$709,880	**1.14%**
Debt Service on Outstanding and Authorized but Unissued Debt		$1,401,923	**2.25%**
Unrestricted General Revenue			
General Revenue Available After Constitutional Dedications (Year Ending 8/31/20)	54,165,463		
General Revenue Available After Constitutional Dedications (Year Ending 8/31/21)	57,987,192		
General Revenue Available After Constitutional Dedications (Year Ending 8/31/22)	74,443,694		
Average Amount of Unrestricted General Revenue Available for the Three Preceding Fiscal Years	$62,198,783		
Debt Limit Percentages			
Debt Service on Outstanding Debt as a Percentage of Unrestricted General Revenue		**1.11**	
Debt Service on Authorized but Unissued Debt as a Percentage of Unrestricted General Revenue		**1.14**	
Debt Service on Outstanding and Authorized but Unissued Debt as a Percentage of General Revenue After Constitutional Dedications (**The Constitutional Debt Limit**) - May Not Sum Due to Rounding		**2.25**	

Notes:
[1] Debt service is based on maximum annual debt service payable from general revenue.
* The maximum amount occurs in fiscal year 2023.
** Amortization provided by TPFA.
*** Estimated debt service assumes 20 year, level debt service financing at 6 percent.
**** Interest rate of 5 percent provided by TPFA.

Sources: Texas Bond Review Board and Texas Comptroller of Public Accounts.

Appendix E - State Debt Overview and Debt Outstanding

As the state's debt oversight agency, the Texas Bond Review Board (BRB) approves state debt issues and lease purchases that have an initial principal amount greater than $250,000 or a term longer than five years, excluding the approval of Permanent University Fund (PUF), State Highway Fund Revenue Anticipation Notes, Tax and Revenue Anticipation Notes, and non-general obligation debt issuances by university systems that have an unenhanced long-term debt rating of at least AA- or its equivalent.

As of August 31, 2022, Texas had 18 state agencies and institutions of higher education as well as five nonprofit corporations authorized to issue debt (*Figure E1*). Effective September 1, 2021, Midwestern State University joined the Texas Tech University System.

Figure E1
State Debt Issuers

Office of Economic Development and Tourism	Texas State Affordable Housing Corp.
Stephen F. Austin State University	Texas State Technical College System
Texas Agricultural Finance Authority	Texas State University System
Texas Department of Housing and Community Affairs	Texas Tech University System
Texas Department of Transportation	Texas Veterans Land Board (General Land Office)
Texas Grand Parkway Transportation Corp.	Texas Water Development Board
Texas Higher Education Coordinating Board	Texas Woman's University
Texas Natural Gas Securitization Finance Corp.	The Texas A&M University System
Texas Private Activity Bond Surface Transportation Corp.	The University of North Texas System
Texas Public Finance Authority	The University of Texas System
Texas Public Finance Authority Charter School Finance Corp.	University of Houston System
Texas Southern University	

Source: Texas Bond Review Board.

The Texas Public Finance Authority (TPFA) is authorized to issue debt on behalf of 21 state agencies and institutions of higher education as well as for specific projects as authorized by the Legislature. TPFA continues to issue a significant portion of the state's not self-supporting (NSS) debt payable from general revenue and administers the state's Master Lease Purchase Program. The Texas Transportation Commission (TTC) previously issued a large portion of the state's NSS debt. However, with the additional $3 billion for cancer research projects, which was authorized by the voters in the November 2019 general election, and the additional revenue bonds authorized by the Legislature for which TPFA is designated as the state debt issuer, TPFA is retaking the position of the state's largest issuer of NSS debt. (For details on state debt outstanding, see *Figure E2*.)

Classifications of Debt Used by the State of Texas

General obligation (GO) debt is legally secured by a constitutional pledge of the first monies coming into the state treasury not constitutionally dedicated for another purpose. GO debt must be approved by a two-thirds vote of both houses of the Legislature and a majority of the voters. GO debt may be issued in installments as determined by the legislatively appropriated debt service or by the issuing agency or institution. GO debt often has a 20- to 30-year maturity with level principal debt service payments. The final maturity may depend on the useful life of the project to be financed. Examples include GO bonds issued by TPFA to finance cancer research and deferred maintenance projects of the state, the Veterans Land Board to finance land and housing loans to qualified veterans, and TTC for road improvements.

Revenue debt is legally secured by a specific revenue source(s), does not require voter approval, and usually has a 20- to 30-year final maturity depending on the project to be financed. Examples include State Highway Fund bonds issued by TTC and secured by the motor fuels tax and other revenues for construction and maintenance of the state's highway system as well as college and university bonds issued by institutions of higher education, secured by tuition and fees, and used to finance projects such as classroom facilities, dormitories, and other university buildings.

Self-supporting (SS) debt is repaid from revenues other than state general revenues. SS debt can be either GO or revenue debt. Examples of SS GO debt include Veterans Land Board bonds that are repaid from mortgage loan payments made by qualified veterans, GO bonds issued by the Texas Water Development Board that are repaid with loan payments made by political subdivisions for water projects, and GO Texas Mobility Fund bonds issued by TTC that are repaid from motor vehicle inspection fees and driver license fees deposited into the Texas Mobility Fund. An example of SS revenue debt includes bonds issued by institutions of higher education that are repaid from tuition, fees, and other revenues generated by colleges and universities. Revenue SS debt also includes conduit debt that is not an obligation of the state and is repaid from funds generated by a third-party borrower.

Not self-supporting (NSS) debt is intended to be repaid with state general revenues. NSS debt can be either GO debt or revenue debt. NSS GO and revenue debt is included in the Constitutional Debt Limit (CDL). (See Appendix D for a discussion of the CDL.) Examples of NSS GO debt include TPFA bonds to finance the Cancer Prevention and Research Institute of Texas as well as Proposition 12 highway improvement bonds issued by TTC, both previously approved by the voters during a general election. Examples of NSS revenue debt include bonds to finance deferred maintenance projects authorized by the Legislature as well as building revenue bonds, including bonds for the Capitol Complex and North Austin Complex projects, both issued by TPFA.

Debt Instruments Used by the State of Texas

Commercial Paper (CP) is a short-term debt obligation with a maturity between one and 270 days. A CP program can be secured by the state's GO pledge or by a specified revenue source(s). A CP program secured by the state's GO pledge must be initially approved by a two-thirds vote of both houses of the Legislature and a majority of the voters. When CP matures, it can be rolled over (reissued) or refinanced (repaid) with long-term debt. Examples include CP issued by TPFA to finance its Master Lease Purchase Program and CP issued to finance the early stages of construction projects.

Revenue Anticipation notes are short-term obligations that are issued for temporary financing needs. The principal payoff may be covered by a future longer term bond issue, taxes, or other form of revenue. These notes normally have maturities of one year or less, and interest is payable at maturity rather than semiannually.

As needed, Tax and Revenue Anticipation Notes (TRAN) have been issued by the Texas Comptroller of Public Accounts — Treasury Operations to address cash flow shortfalls caused by the timing mismatch of state revenues and expenditures in the General Revenue Fund. TRAN issuances must be repaid by the end of the biennium in which they are issued but are usually repaid by the end of each fiscal year with tax receipts and other revenues of the General Revenue Fund.

TRAN issuances must be approved by the Cash Management Committee, which is comprised of the Governor, Lieutenant Governor, and Texas Comptroller of Public Accounts, and the Speaker of the House as a non-voting member. Texas' most recent TRAN was issued in September 2020 in the amount of $7.20 billion. TRANs are not expected to be issued for the state's fiscal year 2023. It is anticipated that intrafund borrowing will be used to address daily cash flow deficits during the fiscal year, as needed.

Lease purchases finance the purchase of an asset over time through lease payments that include principal and interest. They can be financed through a private vendor or through one of the state's pool programs, such as TPFA's Master Lease Purchase Program. Lease-purchase financings include purchases such as automobiles, computers, data/telecommunications equipment, and equipment purchased for energy savings performance contracts.

The Legislature periodically authorizes Capital Construction Assistance Projects (CCAPs), formally known as Tuition Revenue Bonds (TRBs), for specific institutions for specific projects or purposes. CCAPs are revenue bonds issued by the institution, equally secured by and payable from the same pledge as the institution's other revenue bonds and are considered to be SS debt. However, the Legislature historically has appropriated general revenue to the institution to offset all or a portion of the debt service on CCAPs. The passage of Senate Bill 52 during the 87th Legislature, Third Called Session, 2021, authorized certain college systems, universities, and university systems to issue additional CCAPs in the aggregate amount of approximately $3.35 billion. Of this amount approximately $3 billion remains authorized but unissued as of August 31, 2022.

The University of Texas and Texas A&M University Systems may issue obligations backed by income of the PUF in accordance with the Texas Constitution, Article VII, Section 18. The state's other institutions may issue Higher Education Fund (HEF) bonds in accordance with the Texas Constitution, Article VII, Section 17.

Refunding bonds are issued to refinance existing bonds. They may be issued to obtain lower interest rates, change bond covenants, or change repayment schedules (i.e., "restructure" the bonds). A current refunding is a refunding in which the municipal securities being refunded will mature or be redeemed within 90 days or less from the date of issuance of the refunding issue. An advance refunding is a refunding in which the refunded issue remains outstanding for a period of more than 90 days after the issuance of the refunding issue. For tax-exempt bonds issued after 1986, federal tax law allows only one advance refunding but places no limit on the number of current refundings for an issue. The Tax Cuts and Jobs Act of 2017 eliminated the option of issuing a tax-exempt advance refunding of a tax-exempt municipal debt after December 31, 2017.

Debt Guidelines

The State of Texas Debt Issuance Guidelines and Policies for Interest Rate Management Agreements can be found online at http://www.brb.texas.gov/bfo/guidelines.aspx and http://www.brb.texas.gov/bfo/IRMA_Policy.aspx, respectively.

Figure E2
State Debt Outstanding as of August 31, 2022 (thousands)

Debt Type	Amount
General Obligation Debt	
Veterans' Land and Housing Bonds	$2,993,445
Water Development Bonds	814,985
Water Development Bonds - State Participation	44,920
Water Development Bonds - WIF	109,600
Economic Development Bank Bonds	45,000
College Student Loan Bonds	1,274,285
Texas Agricultural Finance Authority	0
Texas Mobility Fund Bonds	5,801,490
Texas Public Finance Authority - TMVRLF	18,700
Total - Self-Supporting	**$11,102,425**
Higher Education Constitutional Bonds	$10,875
Texas Public Finance Authority Bonds	1,333,980
Cancer Prevention and Research Institute of Texas	1,347,195
Park Development Bonds	0
Water Development Bonds - EDAP	153,135
Water Development Bonds - State Participation	0
Water Development Bonds - WIF	0
TTC GO Transportation Bonds	3,340,800
Total - Not Self-Supporting	**$6,185,985**
Total - General Obligation Debt	**$17,288,410**
Non-General Obligation Debt	
Permanent University Fund Bonds	
The Texas A&M University System	$1,462,180
The University of Texas System	3,498,090
College and University Revenue Bonds	16,370,694
Texas Water Resources Finance Authority Bonds	0
TxDot Toll Revenue Bonds	2,912,238
Texas Department of Housing and Community Affairs - SF	1,371,797
Economic Development Program (Leverage Fund)	0
Veterans' Financial Assistance Bonds	0
Texas Workforce Commission Unemp. Comp. Bonds	0
State Highway Fund	3,213,930
TPFA Revenue Bonds (TXDOT Austin Campus Project)	312,285
Water Development Bonds - State Revolving Fund	1,376,800
Water Development Bonds - SWIRFT	6,500,125
Total - Self-Supporting	**$37,018,139**
Texas Public Finance Authority Bonds	$690,800
TPFA Master Lease Purchase Program	41,700
Texas Military Facilities Commission Bonds	1,740
Parks and Wildlife Improvement Bonds	0
Total - Not Self-Supporting	**$734,240**
Texas Windstorm Insurance Association	$0
Texas Dept. of Housing and Community Affairs Bonds - MF	1,379,353
Texas State Affordable Housing Corporation	387,818
Texas Grand Parkway Transportation Corporation	4,528,410
Texas PAB Surface Transportation Corporation	2,947,940
TPFA Charter School Finance Corporation	118,995
Total - Conduit	**$9,362,516**
Total - Non-General Obligation Debt	**$47,114,895**
Total - Debt Outstanding	**$64,403,305**

Certain lease purchase, SECO LoanSTAR, and other revolving loan program debt is not included.
Source: Texas Bond Review Board.

Appendix F - Texas Debt Compared to Other States

The use of debt affordability studies and debt capacity models is becoming more common, particularly by states with "highest" or "high" credit ratings. Of the 11 states that receive triple-A ratings from the three major credit rating agencies (Moody's, Standard & Poor's, and Fitch), nine—Florida, Georgia, Maryland, Minnesota, North Carolina, Tennessee, Texas, Utah, and Virginia—use a debt affordability tool. In addition, other highly rated states—including New Mexico, Oregon, Washington, South Carolina, Vermont, Massachusetts, New Hampshire, and New York—as well as lower rated states—such as Alaska, California, Kentucky, and West Virginia—use a debt affordability tool. *Figure F1* provides a comparison of highly rated states that use debt affordability tools to highly rated states that do not.

Figure F1
Comparison of Highly Rated States and Debt Affordability Usage as of September 2022

State	Debt Affordability Study?	Moody's	Standard & Poor's	Fitch	Kroll
Delaware	No	Aaa	AAA	AAA	AAA
Florida	Yes	Aaa	AAA	AAA	Not Rated
Georgia	Yes	Aaa	AAA	AAA	Not Rated
Maryland	Yes	Aaa	AAA	AAA	Not Rated
Minnesota	Yes	Aaa	AAA	AAA	Not Rated
Missouri	No	Aaa	AAA	AAA	Not Rated
North Carolina	Yes	Aaa	AAA	AAA	Not Rated
Tennessee	Yes	Aaa	AAA	AAA	Not Rated
Texas	Yes	Aaa	AAA	AAA	AAA
Utah	Yes	Aaa	AAA	AAA	Not Rated
Virginia	Yes	Aaa	AAA	AAA	Not Rated
South Carolina	Yes	Aaa	AA+	AAA	Not Rated
Washington	Yes	Aaa	AA+	AA+	Not Rated
New York	Yes	Aa1	AA+	AA+	AA+
Vermont	Yes	Aa1	AA+	AA+	Not Rated
Oregon	Yes	Aa1	AA+	AA+	Not Rated
Massachusetts	Yes	Aa1	AA	AA+	Not Rated
New Hampshire	Yes	Aa1	AA	AA+	Not Rated
New Mexico	Yes	Aa2	AA	Not Rated	Not Rated

Sources: Moody's, Standard & Poor's, Fitch, and Kroll.

Factors Affecting State Debt Ratings

According to data provided in a Moody's Investors Service Report (titled "States - US, Debt, Pension and OPEB liabilities all up in fiscal 2021"), published on September 7, 2022, pension obligations remained the largest liability for most states by far and increased significantly in fiscal 2021, according to Moody's data on state long-term liabilities. Total net tax-supported debt (NTSD), the second largest liability for most states, also rose in fiscal 2021 (the most recent data available), but at a much slower pace. States' ability to service debt, pension, other post-employment benefits (OPEB), and other long-term obligations improved in fiscal 2021.

The Moody's report provides a helpful framework to compare Texas' debt burden with that of other states. This report tracks four key debt measures: 1) NTSD, 2) NTSD as percentage of own-source revenue, 3) NTSD per capita, and 4) NTSD as a percentage of personal income. In its report, Moody's defines own-source revenue as the total governmental revenue, less funds received from federal sources plus net transfers in, as reported in states' audited financial statements. When considering debt burdens, Moody's focuses on NTSD, which is characterized as debt secured by statewide taxes and other governmental revenue, net of obligations that are paid with revenue other than taxes and other governmental revenue, and that is accounted for in non-governmental activities, such as utility or higher education funds. The numbers used for Texas throughout this Appendix are slightly different from those in the Debt Capacity Model (DCM) due to timing and classification differences for data available to Moody's at the time its report was created.

Texas' Debt Compared to Other States

Based on U.S. Census Bureau population data for the nation's 10 most populous states, Texas' state debt remains below the mean and median for three of the debt measures computed in *Figure F2* (NTSD, NTSD per capita, and NTSD as a percentage of 2021 personal income, as published by Moody's Investors Service). Texas ranks sixth for NTSD with $20.13 billion, compared to the group median of $20.19 billion. Texas ranks eighth for NTSD as percent of own-source revenue with 21.6 percent, compared to the group median of 38.8 percent. Texas ranks tenth in NTSD per capita with $682 compared to the group median of $1,352. For NTSD as a percentage of 2021 personal income, Texas ranks tenth with 1.1 percent compared to the group median of 2.3 percent. (Note that in *Figure F2* and *Figure F4*, debt burdens are ranked on a scale of 1 to 10, with 1 being the highest debt burden. For *Figure F3*, 1 indicates the highest debt burden while 50 represents the lowest.)

Figure F2
State Debt: Texas Compared to the 10 Most Populous States, 2022

State	Population	Moody's Credit Rating	Net Tax-Supported Debt (billions)		Net Tax-Supported Debt as % of Own-Source Revenue		Net Tax-Supported Debt per Capita		Net Tax-Supported Debt as a % of 2021 Personal Income	
California	39,029,342	Aa2	$96.44	1	45.2%	4	$2,458	3	3.2%	3
Texas	30,029,572	**Aaa**	**20.13**	**6**	**21.6%**	**8**	**682**	**10**	**1.1%**	**10**
Florida	22,244,823	Aaa	16.48	7	28.5%	7	756	8	1.2%	8
New York	19,677,151	Aa1	76.78	2	59.8%	2	3,871	1	5.1%	1
Pennsylvania	12,972,008	Aa3	20.95	4	39.8%	5	1,616	5	2.5%	5
Illinois	12,582,032	Baa1	37.49	3	63.2%	1	2,958	2	4.4%	2
Ohio	11,756,058	Aa1	20.24	5	52.5%	3	1,718	4	3.0%	4
Georgia	10,912,876	Aaa	11.74	8	37.7%	6	1,087	6	2.0%	6
North Carolina	10,698,973	Aaa	7.24	10	19.7%	10	686	9	1.2%	8
Michigan	10,034,113	Aa1	8.38	9	20.7%	9	833	7	1.5%	7
Ten Most Populous Mean			**$31.59**		**38.9%**		**$1,667**		**2.5%**	
Ten Most Populous Median			**$20.19**		**38.8%**		**$1,352**		**2.3%**	
National Mean							**$1,535**		**2.5%**	
National Median							**$1,039**		**1.9%**	

Sources: Moody's Investors Service Report, States - US, Debt, Pension and OPEB liabilities all up in fiscal 2021, released September 7, 2022; U.S. Census Bureau - July 2022 data, released December 2022.

According to Moody's report, Texas ranked thirty-first among all states in fiscal year 2021 (the most recent data available) state NTSD as a percent of own-source revenue (*Figure F3).*

Figure F3
Selected Debt Measures by State

FISCAL 2021 STATE NET TAX-SUPPORTED DEBT (NTSD) METRICS RANKING BASED ON FISCAL 2021 NTSD AS % OF OWN-SOURCE REVENUE							
Rank	State	FY 2020 NTSD ($ thousands)	FY 2021 NTSD ($ thousands)	FY 2021 NTSD as % of own-source revenue	FY 2021 NTSD per capita	FY 2021 NTSD as % of personal income	FY 2021 NTSD as % of state GDP
1	Connecticut	$28,182,286	$28,894,722	119.6%	$8,014	9.8%	9.7%
2	Hawaii	$8,632,337	$9,932,624	114.0%	$6,890	11.4%	11.0%
3	Massachusetts	$46,172,568	$47,667,335	98.4%	$6,825	8.3%	7.5%
4	New Jersey	$46,335,039	$50,131,913	98.0%	$5,410	7.2%	7.5%
5	Washington	$24,111,262	$25,045,399	72.4%	$3,236	4.5%	3.8%
6	Rhode Island	$3,509,009	$3,402,892	64.5%	$3,106	5.0%	5.2%
7	Illinois	$36,007,973	$37,487,860	63.2%	$2,958	4.4%	4.0%
8	New York	$71,184,815	$76,775,955	59.8%	$3,871	5.1%	4.1%
9	Maryland	$16,865,373	$17,371,753	56.3%	$2,818	4.1%	4.0%
10	Mississippi	$5,769,251	$5,830,096	55.5%	$1,976	4.3%	4.7%
11	West Virginia	$4,710,992	$4,828,392	55.4%	$2,708	5.7%	5.5%
12	Delaware	$3,745,971	$4,156,829	53.9%	$4,143	7.0%	5.1%
13	Ohio	$20,057,898	$20,243,849	52.5%	$1,718	3.0%	2.7%
14	Oregon	$10,529,198	$10,952,413	51.2%	$2,579	4.3%	4.1%
15	Louisiana	$8,434,905	$8,023,754	49.5%	$1,735	3.2%	3.1%
16	Wisconsin	$11,244,335	$10,848,496	46.1%	$1,840	3.1%	3.0%
17	California*	$96,436,768	$96,436,768	45.2%	$2,458	3.2%	2.9%
18	Virginia	$14,003,100	$15,753,614	42.9%	$1,823	2.8%	2.7%
19	Kentucky	$7,960,576	$7,364,148	42.5%	$1,633	3.2%	3.1%
20	Pennsylvania	$19,312,691	$20,949,565	39.8%	$1,616	2.5%	2.5%
21	Georgia	$11,018,772	$11,743,971	37.7%	$1,087	2.0%	1.7%
22	Alabama	$4,763,855	$5,908,665	34.5%	$1,172	2.4%	2.4%
23	Nevada	$2,119,926	$2,151,708	33.9%	$684	1.2%	1.1%
24	Kansas	$4,469,440	$4,145,206	30.9%	$1,413	2.4%	2.2%
25	Florida	$17,316,854	$16,476,308	28.5%	$756	1.2%	1.3%
26	New Hampshire	$1,234,029	$1,226,181	28.4%	$883	1.2%	1.2%
27	Colorado	$4,253,928	$5,080,369	28.2%	$874	1.3%	1.2%
28	Minnesota	$8,363,998	$8,346,673	25.0%	$1,462	2.2%	2.0%
29	Maine	$1,447,497	$1,496,851	24.0%	$1,091	1.9%	2.0%
30	Utah	$3,385,598	$3,001,550	22.0%	$899	1.6%	1.4%
31	**Texas**	**$20,392,232**	**$20,128,257**	**21.6%**	**$682**	**1.1%**	**1.0%**
32	Arizona*	$4,111,696	$4,111,696	21.1%	$565	1.0%	1.0%
33	Michigan	$7,382,000	$8,376,200	20.7%	$833	1.5%	1.5%
34	North Carolina	$6,733,036	$7,236,690	19.7%	$686	1.2%	1.1%
35	Vermont	$725,718	$765,183	17.4%	$1,185	2.0%	2.1%
36	South Dakota	$524,117	$502,671	16.6%	$561	0.9%	0.8%
37	New Mexico	$2,420,408	$2,719,414	15.4%	$1,285	2.6%	2.5%
38	Missouri	$2,789,828	$2,455,447	15.4%	$398	0.7%	0.7%
39	South Carolina	$2,472,378	$2,257,799	11.9%	$435	0.8%	0.8%
40	Alaska	$1,245,699	$1,272,891	11.9%	$1,737	2.6%	2.3%
41	Oklahoma	$1,420,828	$1,572,272	11.3%	$394	0.7%	0.8%
42	Idaho	$888,954	$881,459	11.2%	$464	0.9%	0.9%
43	Iowa	$1,409,258	$1,301,529	10.8%	$408	0.7%	0.6%
44	Arkansas	$1,385,311	$1,199,696	10.4%	$396	0.8%	0.8%
45	Tennessee	$2,085,493	$1,990,960	8.2%	$285	0.5%	0.5%
46	Indiana	$1,716,813	$1,475,443	6.0%	$217	0.4%	0.4%
47	Montana	$148,023	$187,380	4.6%	$170	0.3%	0.3%
48	North Dakota	$35,018	$132,194	1.8%	$171	0.3%	0.2%
49	Nebraska	$31,430	$37,825	0.5%	$19	0.0%	0.0%
50	Wyoming	$13,982	$11,401	0.2%	$20	0.0%	0.0%
TOTAL		$599,512,467	$620,292,267	43.80%	$1,873	3.00%	2.70%
MEAN		$11,990,249	$12,405,845	36.20%	$1,772	2.80%	2.60%
MEDIAN		$4,590,216	$4,954,380	28.40%	$1,179	2.10%	2.10%

*Arizona and California's fiscal 2021 NTSD reflects fiscal 2020 figures because these states did not have fiscal 2021 audited financial statements available as of the publication of this report.

Sources: State audited financial statements and Moody's Investors Service Report, States - US, Debt, Pension and OPEB liabilities all up in fiscal 2021 (released September 7, 2022)

It is important to note that states with higher state debt levels may have lower local debt levels and vice versa. During calendar year 2020 (the most recent data available compared to other states), local debt accounted for approximately 82.1 percent of Texas' total debt burden. (Local debt includes debt issued by cities, school districts, water districts, counties, community colleges, special districts, and health and hospital districts) Among the nation's 10 most populous states, Texas ranks second in population and seventh in total (GO and revenue) state debt per capita but third in total local debt per capita with an overall rank of fourth for total state and local debt per capita (*Figure F4*).

Figure F4
Total State and Local Debt Outstanding

	Total State and Local Debt				State Debt				Local Debt			
State	Population (thousands)	Amount (millions)	Capita Amount	Per Capita Rank	Amount (millions)	% of Total Debt	Capita Amount	Capita Rank	Amount (millions)	% of Total Debt	Per Capita Amount	Per Capita Rank
New York	19,677	$368,276	$18,716	1	$156,004	42.4%	$7,928	1	$212,272	57.6%	$10,788	1
California	39,029	519,537	13,311	2	144,041	27.7%	3,691	4	375,496	72.3%	9,621	2
Illinois	12,582	159,311	12,662	3	64,854	40.7%	5,155	2	94,457	59.3%	7,507	4
Texas	**30,030**	**324,213**	**10,796**	**4**	**57,887**	**17.9%**	**1,928**	**7**	**266,326**	**82.1%**	**8,869**	**3**
Pennsylvania	12,972	128,442	9,901	5	51,735	40.3%	3,988	3	76,707	59.7%	5,913	5
Michigan	10,034	81,886	8,161	6	34,403	42.0%	3,429	5	47,483	58.0%	4,732	8
Ohio	11,756	93,306	7,937	7	30,412	32.6%	2,587	6	62,894	67.4%	5,350	6
Florida	22,245	130,745	5,878	8	25,013	19.1%	1,124	10	105,732	80.9%	4,753	7
Georgia	10,913	62,963	5,770	9	14,116	22.4%	1,293	9	48,847	77.6%	4,476	9
North Carolina	10,699	47,759	4,464	10	15,099	31.6%	1,411	8	32,660	68.4%	3,053	10
MEAN		**$191,644**	**$9,760**		**$59,356**	**31.7%**	**$3,253**		**$132,287**	**68.3%**	**$6,506**	
Totals may not sum due to rounding.												

Sources: U.S. Census Bureau, State and Local Government Finances by Level of Government and by State: 2020, the most recent data available. U.S. Census Bureau, Population Division - July 2022 data, released December 2022.

Appendix G - Investment Grade Credit Ratings

Rating Agencies

The four credit rating agencies for state debt are Moody's Investors Service (Moody's), Standard & Poor's (S&P), Fitch (Fitch), and Kroll Bond Rating Agency (Kroll). Ratings from these agencies provide investors with a measure of an issuer's overall financial soundness and ability to repay its debt and have a direct impact on the interest rate state issuers will pay on debt issuances. Higher credit ratings result in lower financing costs. Ratings for the state's general obligation (GO) debt are the most important because the state's full faith and credit is pledged to its repayment, and GO ratings provide a benchmark rate for the state's revenue debt. Texas' GO debt is rated at Aaa, AAA, AAA, and AAA by Moody's, S&P, Fitch, and Kroll, respectively. All four rating agencies maintain their outlook as "stable."

Figure G1 provides a summary of the investment grade ratings scale for each rating agency.

Figure G1
Investment Grade Bond Ratings by Rating Agencies

Rating	Moody's	S&P	Fitch	Kroll
Highest	Aaa	AAA	AAA	AAA
High	Aa1 Aa2 Aa3	AA+ AA AA-	AA+ AA AA-	AA+ AA AA-
Medium	A1 A2 A3	A+ A A-	A+ A A-	A+ A A-
Lower medium	Baa1 Baa2 Baa3	BBB+ BBB BBB-	BBB+ BBB BBB-	BBB+ BBB BBB-

Sources: Moody's, S&P, Fitch, and Kroll.

Rating agencies consider four factors in determining a state's GO bond rating: economy, finances, debt, and management. Specific items considered are shown in *Figure G2*. In addition, rating agencies consider environmental, social, and governance (ESG) factors when assessing the credit quality of a debt issuer and assigning a public finance credit rating. Some examples of ESG factors a credit rating agency may consider include, but are not limited to, climate change adaptation, air pollution, energy efficiency, land use planning, clean water, education, public health, public safety, labor practices, transparency and accountability, housing, poverty, employment, long-term planning, and cybersecurity.

Figure G2
Factors Affecting State General Obligation Bond Ratings

Economy	Finances
Population trends Wealth Economic diversity Economic stability Infrastructure needs	Change in major general revenue sources Change in permanent or FTE positions Spending per capita General fund balances, rainy day fund balance Accounting and financial reporting practices Tax and revenue administration Investment practices
Debt	**Management**
Pay down price for net long-term debt Net debt per capita Net debt as a percent of personal income Net debt as a percent of tax valuation Annual debt service on net debt as a percentage of general fund Pension liabilities	Coherent structure of governance Constitutional constraints Initiatives and referenda Executive branch controls Mandates to balance budget Fund reserve policies

Sources: Moody's, S&P, Fitch, and Kroll.

Ratings for Texas General Obligation Debt

Texas GO debt receives the highest available credit rating from Moody's, S&P, Fitch, and Kroll ratings and is perceived as a strong credit in the municipal bond market.

On June 2, 2022, Moody's affirmed its Aaa rating and stable outlook of Texas' GO debt. In its report of that date, titled "Moody's assigns Aaa/VMIG 1 to Texas' general obligation Veterans Bonds Series 2022; outlook stable," Moody's stated that "Texas' Aaa rating reflects multiple strengths, including a strong economy that in the long run will outpace the nation, robust population growth, reserves that provide a very healthy buffer to economic and revenue downturns, strong fiscal management and governance, and low bonded debt, offset by high pension liabilities."

S&P's latest action on Texas' GO rating was to affirm its AAA rating and stable outlook on March 23, 2022. In its report of that date, titled "Texas Water Development Board; Appropriations; General Obligation; General Obligation Equivalent Security," S&P stated that "The rating reflects our view of the state's: diverse and resilient economy, which has outpaced that of the nation in terms of job growth; strong revenue forecasting and cash management practices, including comprehensive monthly revenue and expenditure cash monitoring and willingness to maintain strong liquidity to meet constitutionally defined priorities; low overall net debt, although with elevated unfunded pension and long-term liabilities, which we believe will require further active management to ensure that benefit costs remain affordable; and potential long-term budgetary pressures related to increasing public education expenses and modifications to the school funding formula in the 2019 legislative session that shifted a greater burden of the cost to the state."

On March 24, 2022, Fitch affirmed its AAA rating and stable outlook of Texas' GO debt. In its report of that date, titled "Fitch Rates Texas' $267 Million GO Bonds 'AAA'; Outlook Stable," Fitch stated that "Texas' 'AAA' IDR and GO rating reflect its growth-oriented economy and the ample fiscal flexibility provided both by its conservative approach to financial operations and the maintenance of substantial reserves, including in its budgetary reserve, the economic stabilization fund (ESF)."

On August 5, 2022, the Kroll Bond Rating Agency affirmed its long-term rating of AAA with a stable outlook in its State of Texas Public Finance Surveillance Report of the same date. Kroll stated that "The rating actions reflect the following key credit considerations: the State's broad and diverse economy has performed well through the pandemic and remains among the fastest growing in the Nation; conservative budget procedures and financial management practices support consistently strong reserve levels and operating flexibility; and the debt burden is low in terms of direct debt per capita and debt expense as a percentage of expenditures."

The state's GO bond ratings history is shown in *Figure G3*.

Figure G3
Changes in Texas' GO Bond Ratings for Calendar Years 1961 to Current

Year	Moody's	S&P	Fitch	Kroll
1961 (Initial)	*	AAA	*	*
1962 – 1985	Aaa	AAA	*	*
1986	Aaa	AA+	*	*
1987 – 1992	Aa	AA	*	*
1993 – 1996	Aa	AA	AA+	*
1997 – 1998	Aa2**	AA	AA+	*
1999 – 2008	Aa1	AA	AA+	*
2009	Aa1	AA+	AA+	*
2010 – 2012	Aaa**	AA+	AAA**	*
2013 – 2016	Aaa	AAA	AAA	*
2016 – Current	Aaa	AAA	AAA	AAA
* Not rated ** Recalibration				

Sources: Moody's, S&P, Fitch, and Kroll.

Appendix H - State Pension Liabilities

Pension Liabilities

According to the Texas Pension Review Board (PRB), there are 347 public retirement systems in Texas. Of these, 100 are actuarially funded defined benefit plans, including two hybrid plans, 166 are defined contribution plans, and 81 are pay-as-you-go volunteer firefighter plans. Based on the most recent filings on record with the PRB, these retirement systems had approximately $369 billion in total net assets and over 3.17 million members, as of December 2022. The following information summarizes liabilities of Texas public retirement systems that receive state funds.

In November 1936, voters approved an amendment to the Texas Constitution to create a statewide teacher retirement system. The Teacher Retirement System of Texas (TRS) was officially established by the Legislature in 1937. TRS is the largest public retirement system in Texas, in both membership and assets. All revisions in funding, benefits, membership eligibility, and creditable service under TRS require legislative action. As of August 31, 2022, TRS had approximately $51.65 billion of unfunded actuarial accrued liability (UAAL) for its pensions alone (not including other post-employment benefits (OPEB)).

Figure H1
Teacher Retirement System (TRS) ($ in Millions)

Summary of Current Plan Data										
Date of Actuarial Valuation	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Discount Rate	Amortization Period (Years)	Membership		Contribution	
							Active	Annuitant	Member	Employer
8/31/2022	$245,560.96	$193,908.59	$51,652.37	78.97%	7.00%	26	928,418	475,952	8.00%	9.19%

Note: The state will contribute 8.00 percent for fiscal year 2023, and 8.25 percent for fiscal year 2024 and each year thereafter. In addition, covered employers whose employees are not participating in Social Security contribute 1.50 percent of their salary in fiscal year 2020. This rate increases by 0.1 percent annually from fiscal year 2021 to fiscal year 2025, then remaining at 2.00 percent thereafter. For fiscal year 2023, these combined contributions are approximately 9.19 percent of total payroll. The member contribution rate is also set to increase to 8.00 percent in fiscal year 2022 and again to 8.25 percent in fiscal year 2024.

In November 1946, voters approved an amendment to the Texas Constitution to create a retirement fund for state employees. The Employees Retirement System of Texas (ERS) was officially established by the Legislature in 1947. ERS is responsible for overseeing retirement benefits for elected state officials and state employees. All revisions in funding, benefits, membership eligibility, and creditable service under ERS require legislative action. As of August 31, 2022, ERS had approximately $14.25 billion of UAAL for its pension alone (not including OPEB). In 2021, the 87th Legislature created a fourth tier for new members hired after September 1, 2022, which will operate as a cash balance defined benefit plan. They also adopted a legacy contribution schedule to fund the unfunded liability over the course of 33 years. This legacy contribution will be $510 million beginning in fiscal year 2022.

Figure H2
Employees Retirement System of Texas (ERS) ($ in Millions)

Summary of Current Plan Data										
Date of Actuarial Valuation	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Discount Rate	Amortization Period (Years)	Membership		Contribution	
							Active	Annuitant	Member	Employer
8/31/2022	$45,862.48	$31,615.91	$14,246.57	68.94%	7.00%	32	133,751	122,720	9.50%	16.83%

Note: Employer contribution represents state contribution at 9.50 percent, state agency contribution at 0.50 percent, and a $510 million dollar legacy contribution.

The Judicial Retirement System Plan One Fund (JRS I) is a pay-as-you-go pension plan and not administered through a trust. In accordance with GASB Statement No. 73, a pension plan that is not administered through a trust should be reported as an agency fund. Therefore, JRS I was reclassified from a Pension and Other Employee Benefit Trust Fund to an agency fund, effective September 1, 2015.

The Judicial Retirement System of Texas Plan Two (JRS II) is a retirement plan for state judges and justices who took office after August 31, 1985. This plan is also administered by ERS. All revisions in funding, benefits, membership eligibility, and creditable service under JRS II require legislative action.

Figure H3
Judicial Retirement System of Texas Plan Two (JRS II) ($ in Millions)

Summary of Current Plan Data										
Date of Actuarial Valuation	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Discount Rate	Amortization Period (Years)	Membership		Contribution	
							Active	Annuitant	Member	Employer
8/31/2022	$642.31	$553.37	$88.94	86.20%	7.00%	Infinite	583	536	9.38%	15.66%

Note: Member contributions may cease after 20 years or Rule of 70 with 12 years of service on Appellate Court. The current average member contribution rate is 9.38 percent.

The Law Enforcement and Custodial Officer Supplemental Retirement Fund (LECOSRF) was created by the Legislature in 1979. It is a supplemental plan to ERS and is administered by ERS. Membership is limited to law enforcement officers who have been commissioned by the Department of Public Safety, Texas Alcoholic Beverage Commission, Parks and Wildlife Department, and those members whose commissions are recognized by the Commission on Law Enforcement Officer Standards and Education. Membership is also provided to custodial officers employed by the Texas Department of Criminal Justice and certified by the department as having direct contact with inmates. The supplemental benefits are available to any employee who completes 20 years of service in an eligible position.

Figure H4
Law Enforcement and Custodial Officer Supplemental Retirement Fund (LECOSRF)
($ in Millions)

Summary of Current Plan Data										
Date of Actuarial Valuation	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Discount Rate	Amortization Period (Years)	Membership		Contribution	
							Active	Annuitant	Member	Employer
8/31/2022	$1,729.35	$1,014.06	$715.29	58.60%	7.00%	Infinite	31,075	15,923	0.50%	1.28%

Note: Employer contribution represents the state's contribution at 0.50 percent and court fee contributions equivalent to 0.78 percent. Rates are in addition to rates paid for ERS.

The Texas Emergency Services Retirement System (TESRS) was initially created in 1977 by the 65th Legislature as the Statewide Volunteer Fire Fighter's Retirement Act. TESRS was previously administered by the Office of the Fire Fighters' Pension Commissioner and became a stand-alone state agency effective September 1, 2013, with the passing of Senate Bill 220, 83rd Legislature, 2013. TESRS covers volunteer fire fighters and emergency services personnel in 238 member departments. The system was created as a funded alternative to numerous local volunteer plans operated under the Texas Local Fire Fighters Retirement Act (TLFFRA). The state pays some of the costs of administering this fund and has a statutory obligation to contribute an amount not to exceed one-third of fire department contributions to the extent the system needs the funds to be actuarially sound.

Figure H5
Texas Emergency Services Retirement System (TESRS) ($ in Millions)

Summary of Current Plan Data										
Date of Actuarial Valuation	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Discount Rate	Amortization Period (Years)	Membership		Contribution	
							Active	Annuitant	Member	Employer
8/31/2022	$165.38	$139.48	$25.90	84.30%	7.50%	21	3,379	3,991	0.00%	Varies

Note: TESRS contributions are comprised of two parts paid by local municipalities. Part one varies with a minimum contribution of $36 per member per month. Part two does not affect annuities and is adjusted by the state board based on the most recent actuarial valuation, effective for the following two state fiscal years. Members are volunteers and the covered group does not have a payroll. The 2022 valuation notes that with the expected part one contributions from the governing bodies of participating departments and $675,000 each year from the state for administrative expenses, the maximum annual contributions from the state would be needed for 21 years in order for the System to have a 30-year amortization period for its UAAL.

As of August 31, 2022, state-funded pensions had approximately $66.73 billion of UAAL.

Appendix I - Glossary

Additional State Aid for Homestead Exemption for Facilities (ASAHE — Facilities) – In 2015, the 84th Legislature increased the amount of homestead valuation that is exempt from school property taxation from $15,000 to $25,000. Beginning with fiscal year 2016, Section 46.071 of the Texas Education Code provides qualifying school districts additional state support to replace local interest and sinking revenue lost due to the increase in the homestead exemption. The 87th Legislature, Third Called Session, 2021, passed Senate Bill 1, which further increased the residence homestead exemption from $25,000 to $40,000. Senate Bill 1 includes a provision to expand ASAHE to cover the additional increase in the homestead exemption from $25,000 to $40,000.

Advance Refunding – A refunding transaction in which the issue to be refunded remains outstanding for a period of more than 90 days after the issuance of the refunding issue. The Tax Cuts and Jobs Act of 2017 eliminated the option of issuing a tax-exempt advance refunding of a tax-exempt municipal debt after December 31, 2017.

Authorized but Unissued – Debt that has been authorized for a specific purpose by the voters and/or the Legislature but has not yet been issued. Authorized but unissued debt can be issued without the need for further legislative action.

Average Daily Attendance (ADA) – The total number of students in attendance each day of the entire school year divided by the number of instructional days in the school year.

Bond – A certificate of debt issued by a government or corporation guaranteeing payment of the original investment plus interest by a specific future date. The bond specifies the date the debt is due ("term" or "maturity," e.g., 20 years), the interest rate (e.g., 5 percent), the repayment dates (e.g., monthly, semiannually, annually), and the revenue source pledged to make the payments.

Budgeted General Revenue – The amount of revenue budgeted by the Legislature to be expended during each fiscal year for state operations. This figure is generally less than unrestricted general revenue available for debt service.

Capital Construction Assistance Projects (CCAPs) (formally known as Tuition Revenue Bonds (TRBs)) – Revenue bonds issued by the individual higher education institutions or systems or the Texas Public Finance Authority (on behalf of certain institutions) for new building construction or renovation. The Legislature has to authorize the projects in statute, and CCAPs cannot be used for auxiliary space, such as dormitories. All college and university revenue bonds are equally secured by and payable from a pledge of all or a portion of certain "revenue funds" as defined in the Texas Education Code, Chapter 55. Though legally secured through an institution's tuition and fee revenue, the state historically has used general revenue to reimburse the universities for debt service for these bonds. The 84th Legislature, 2015, authorized $3.10 billion in CCAP debt with the passing of HB 100. The passage of SB 52 during the 87th Legislature, Third Called Session, 2021, authorized certain college systems, universities, and university systems to issue additional CCAPs in the aggregate amount of approximately $3.35 billion. These CCAP authorizations are included in the debt ratio calculations for outstanding and authorized but unissued debt projections in the DCM.

Commercial Paper (CP) – Short-term, unsecured promissory notes that mature within 270 days and are backed by a liquidity provider (usually a bank) that stands by to provide liquidity in the event the notes are not remarketed or redeemed at maturity.

Constitutional Debt Limit (CDL) – Article III, Section 49-j of the Texas Constitution prohibits the Legislature from authorizing additional state debt if the annual debt service in any fiscal year on state debt payable from the General Revenue Fund exceeds 5 percent of the average of unrestricted general revenue from the preceding three fiscal years. The Texas Constitution also stipulates that state debt payable from the General Revenue Fund does not include debt that, although backed by the full faith and credit of the state, is reasonably expected to be paid from other revenue sources and is not expected to create a general revenue draw.

Coupon – The interest rate paid on a security.

Current Refunding – A refunding transaction in which the securities to be refunded will mature or be redeemed within 90 days or less from the date of issuance of the refunding issue.

Debt Capacity Model (DCM) – A financial model that assesses the impact on unrestricted general revenue of the state's annual debt service requirements for current and projected levels of not self-supporting debt over the next five years.

Existing Debt Allotment (EDA) – Appropriated as part of the Foundation School Program, the EDA program was created by the 76th Legislature, 1999, and incorporated as Subchapter B to Chapter 46 of the Texas Education Code. The EDA is similar to the IFA program in that it provides tax rate equalization for local debt service taxes. EDA equalizes local interest and sinking fund tax effort that is not receiving IFA funding with a maximum rate of $0.29 per $100 of valuation. Prior to fiscal year 2019, the guaranteed yield for EDA provided $35 per student in average daily attendance per penny of tax effort. As a result of House Bill 21, 85th Legislature, First Called Session, 2017, beginning in fiscal year 2019, the yield increased to the lesser of $40 or the amount that results in an additional $60 million in state aid over the amount of state aid to which districts would have been entitled at a $35 yield.

General Obligation (GO) Debt – Debt legally secured by a constitutional pledge of the first monies coming into the State Treasury not otherwise constitutionally dedicated for another purpose. GO debt must be approved by a two-thirds vote of both houses of the Legislature and by a majority of the voters.

General Revenue (GR) – The amount of total state tax collections and federal monies distributed to the state for its operations.

Higher Education Fund (HEF) – Appropriations that became available beginning in 1985 through a constitutional amendment to fund permanent capital improvements for certain public higher education institutions. This term may refer either to HEF Treasury Funds (funds reimbursed from the State HEF appropriation for university expenditures) or HEF Bond Funds (monies received through the issuance of bonds and secured by HEF Treasury Funds).

Instructional Facilities Allotment (IFA) – Appropriated as part of the Foundation School Program, the IFA program was authorized in House Bill 4 by the 75th Legislature, 1997. The provisions that authorize the IFA program are incorporated into the Texas Education Code as Chapter 46, Subchapter A. The IFA program provides appropriated assistance to school districts (ISD or district) on qualifying bonds and lease-purchase agreements legally secured by the ISD. Districts must make application to the Texas Education Agency (TEA) to receive assistance. Bond or lease-purchase proceeds must be used for the construction or renovation of an instructional facility. A maximum allotment is determined based upon the lesser of annual debt service payments or the greater of $100,000 or $250 per student in average daily attendance (ADA).

Interest & Sinking Fund (I&S) Tax Rate – The I&S tax rate provides funds for payments on the debt that finances a district's facilities.

Lease Purchase – The purchase of an asset over time through lease payments that include principal and interest. Lease purchases can be financed through a private vendor or through one of the state's pool programs such as the Texas Public Finance Authority's Master Lease Purchase Program.

Municipal Bond – A debt security issued by a state, municipality, or county. Municipal securities are generally exempt from federal taxes and from most state and local taxes.

Non-General Obligation (Revenue) Debt – Debt that is legally secured by a specific revenue source and does not require voter approval.

Not Self-Supporting (NSS) Debt – Either general obligation or revenue debt intended to be repaid with state general revenues.

Permanent University Fund (PUF) – The PUF is a state endowment contributing to the support of certain institutions and agencies of the University of Texas System and the Texas A&M University System. The PUF was established by the Texas Constitution in 1876 with land grants ultimately totaling 2.1 million acres, primarily in West Texas (PUF Lands).

Put Bond – A bond that allows the holder to force the issuer to repurchase the security at specified dates before maturity. The repurchase price is set at the time of issue and is usually par value.

Refunding Bond – A bond that is issued to retire or defease all or a portion of outstanding debt.

Self-Supporting (SS) Debt – Debt that is designed to be repaid with revenues other than state general revenues. Self-supporting debt can be either general obligation debt or revenue debt.

Special Debt Commitments (SDC) – Revenue debt commitments supported by state general revenues but not legally backed by the state's GO pledge: Capital Construction Assistance Projects, Existing Debt Allotment, Instructional Facilities Allotment, and Additional State Aid for Homestead Exemption for Facilities.

Tax and Revenue Anticipation Notes (TRAN) – Short-term loans that the state uses to address cash flow needs created when expenditures must be incurred before tax revenues are received.

Unfunded Actuarial Accrued Liability (UAAL) – The UAAL is an actuarial term that refers to the difference between the actuarial values of assets and the actuarial accrued liabilities of a pension plan. Essentially, the UAAL is the amount of retirement that is owed to an employee in future years that exceed current assets and their projected growth.

Unrestricted General Revenue (UGR) – The net amount of general revenue remaining after deducting all constitutional allocations and other restricted revenue from total general revenue.

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