Appendix 7 - Debt Affordability Study

State of Hawaii
Debt Affordability Study

12/14/2022

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DEBT AFFORDABILITY STUDY

I. Introduction

A. Goals and Objectives

The Director of Finance has undertaken a biennial Debt Affordability Study (Study) in order to optimize the use of limited debt capacity while meeting public spending goals and to ensure the prudent use of debt and to preserve sufficient future debt capacity. The Study has been prepared by PFM Financial Advisors LLC on behalf of the State of Hawaii (State) and Department of Budget and Finance (B&F). The Study summarizes and analyzes the current debt outstanding and future capital plans of the State and State Departments as it evolves over time. The Study aims to aid in decision making with respect to the State and State Department multi-year capital plans and to understand trade-offs while evaluating projects and debt alternatives.

The Study seeks to identify affordability metrics to measure debt burden, assess affordability of proposed debt issuances, ensure the State does not over leverage, and assess overall adequacy of revenues to pay for all obligations including pension and other postemployment benefits (OPEB) costs.

B. Scope

On June 26, 2015, Governor David Y. Ige signed Act 149, Session Laws of Hawaii 2015 directing the Director of Finance to submit a debt affordability study to promote both transparency in budget-making and more informed decisions on capital improvement project and debt issuance authorizations. The Director of Finance is charged with the submission of a debt affordability study to the legislature before the convening of the regular session of each odd-numbered year. The Act is codified within the Hawaii Revised Statutes §37C on State Debt and the first such report on affordability was submitted in December 2016 before the start of the 2017 legislative session. This is the fourth report.

C. Summary of Overall State Debt and State Department Debt Programs

The Department of Budget and Finance plans, monitors, and manages the issuance of State bonds. B&F oversees the general management of State debt, including reimbursable general obligation bonds (RGO) and non-reimbursable general obligation (GO) bonds, special assessment bonds, refunding bonds, mortgage credit certificates, short-term loans, certificates of participation (COPs), and municipal lease financings. In addition, B&F has oversight responsibility for revenue bonds and special facility revenue bonds issued by State Departments including the Department of Transportation – Airports, Harbors, and Highways Divisions, University of Hawaii, Hawaiian Home Lands, Department of Business, Economic Development, and Tourism, and Hawaii Housing Finance and Development Corporation.

The Study focuses on each financing program to review outstanding debt, discuss legal limitations, summarize callable bonds, project and analyze multi-year capital plans, and measure affordability based on pertinent metrics and credit and peer considerations.

D. General Assumptions

This Study makes certain assumptions and projections about future financial information and bond issuance timing and amount, for the purpose of analyzing debt affordability. The projected debt plans are as of August 31, 2022. In addition, conservative interest rate assumptions were utilized (see Appendix A for details) for estimating debt service on the debt issuance plans reported in the Study. Actual financial performance, bond issuance timing and amounts, interest rates, and therefore the debt and credit metrics, may vary from the projections presented in this Study. In addition, this Study does not take into consideration potential future refundings that may occur and may reduce annual debt service costs. The credit ratings reflected in this report are as of November 1, 2022. The debt outstanding under each financing program is as of November 1, 2022. For B&F, the debt and credit profile include the most recent issuance in November 2022. For the latest credit and financial information, please refer to the State's investor relations website: http://investorrelations.hawaii.gov.

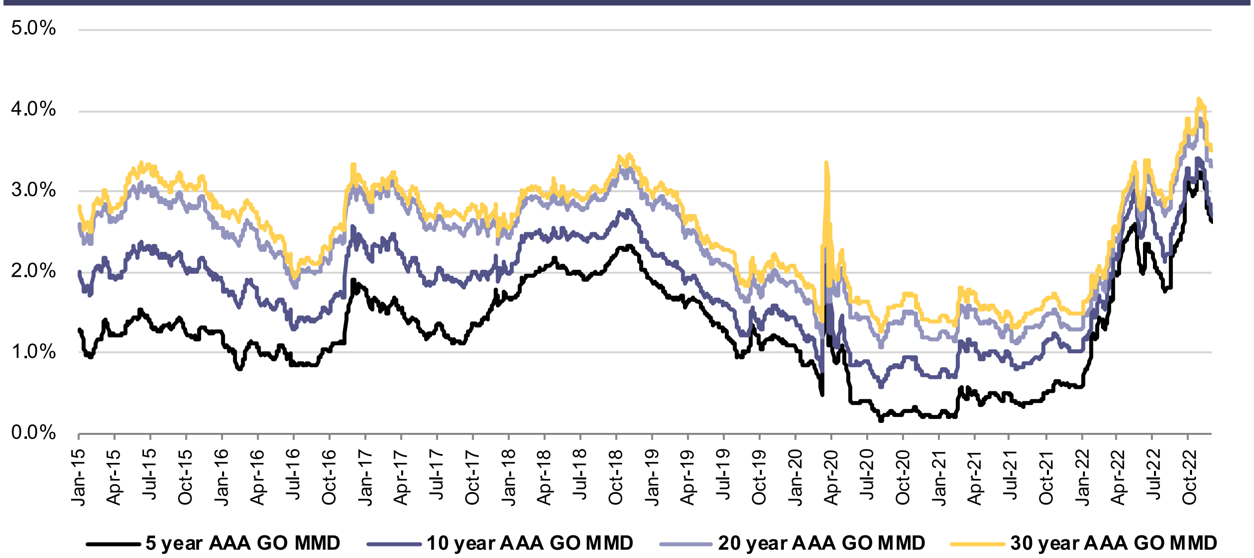
E. Market Conditions

This section highlights the municipal market conditions over the last five years. These factors affect the market for the State's bonds.

Interest Rates

The Refinitiv TM3 Municipal Market Data (MMD) AAA curve is the benchmark for tax-exempt municipal borrowing rates. The chart below depicts the 5-year, 10-year, 20-year and 30-year AAA MMD interest rates.

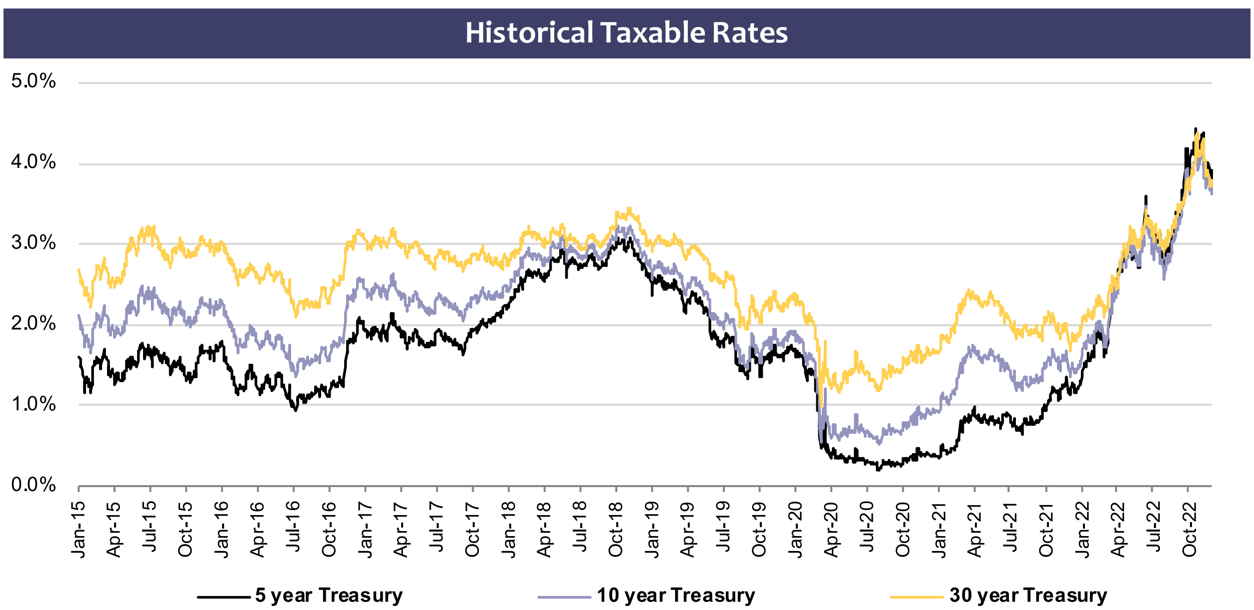
Historical Tax-Exempt Rates



Source: Refinitiv TM3

The last three years have been very eventful resulting in interest rates swinging from one direction to the other. As reflected in the chart, interest rates were extremely volatile in early 2020 when the news of COVID-19 pandemic first broke. The Federal Reserve (Fed) dropped the Federal Funds rate to zero soon after and Congress passed multiple bills to support the economy in the subsequent months that calmed the markets. Following that, the tax-exempt interest rates dropped to all-time lows in 2020 and remained close to historic-low levels through 2021. There was a dramatic shift in the trend in early 2022. Rates increased significantly in response to Fed actions and broader inflation concerns. The Fed raised interest rates six times through November 2022 by a total of 3.75% and the AAA MMD rates followed suit. The 30-year MMD surpassed 4.0% briefly, the highest it has been in over a decade. In November 2022 interest rates changed coarse again and are backing-off their recent highs as the October 2022 inflation read indicated a moderating inflation rate.

The US Treasury yield curve is the benchmark for taxable municipal borrowing rates. The chart below depicts the 5-year, 10-year, and 30-year US Treasury rates, which much like the AAA MMD, have swung from all-time lows to the highest levels in recent history. As reflected below, Treasury rates plummeted in March 2020 as COVID-19 fears sparked flight to quality. Investors flocked to US Treasury bonds, which are considered safe assets. For a brief period, the entire Treasury curve dropped below 1%, a record low. Treasury rates started ticking up in 2021 and skyrocketed in 2022 with the 30-year rate crossing 4.0% for the first time in over a decade. In mid-2022 the treasury curve “flattened” and eventually “inverted” in November, meaning short-term rates are higher than long-term rates. An inversion in interest rates is considered a precursor to a recession however it cannot predict a recession with certainty.



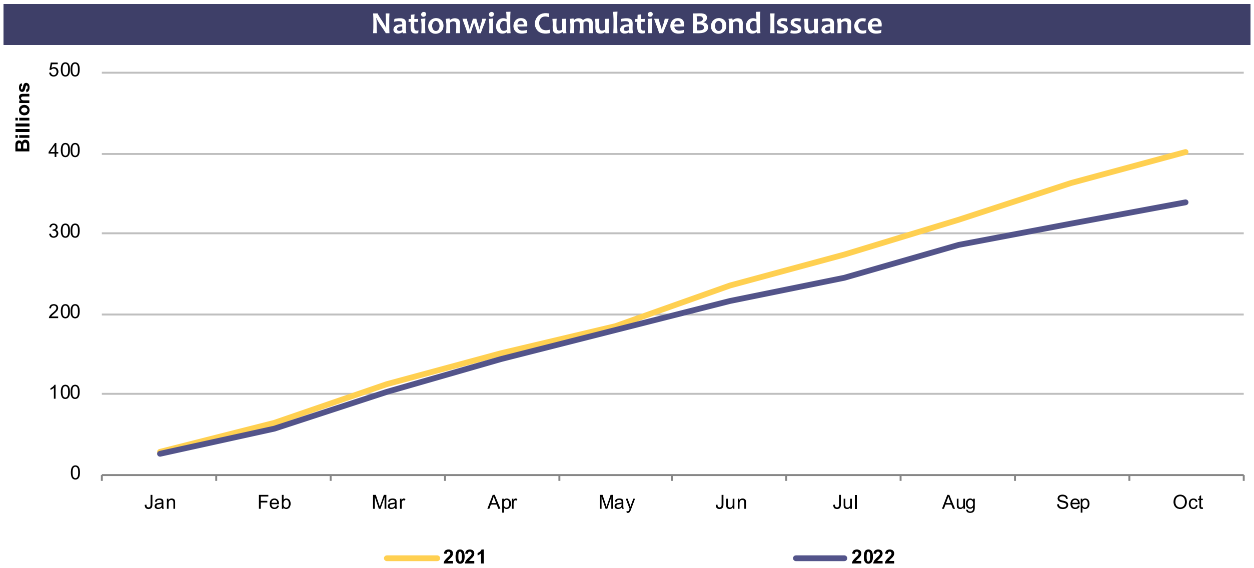
Source: Refinitiv TM3

Bond Issuance Volume

Generally, the interest rates for municipal bonds is a function of supply and demand relative to other fixed-income investments. A good measure of supply is the amount of new municipal issuance in a given year relative to prior years.

Nationally, municipal bond issuance volume year-to-date has been lower in 2022 than in 2021 as seen in the following chart. Cumulative bond issuance for the first ten months through October 2022 was $337.5

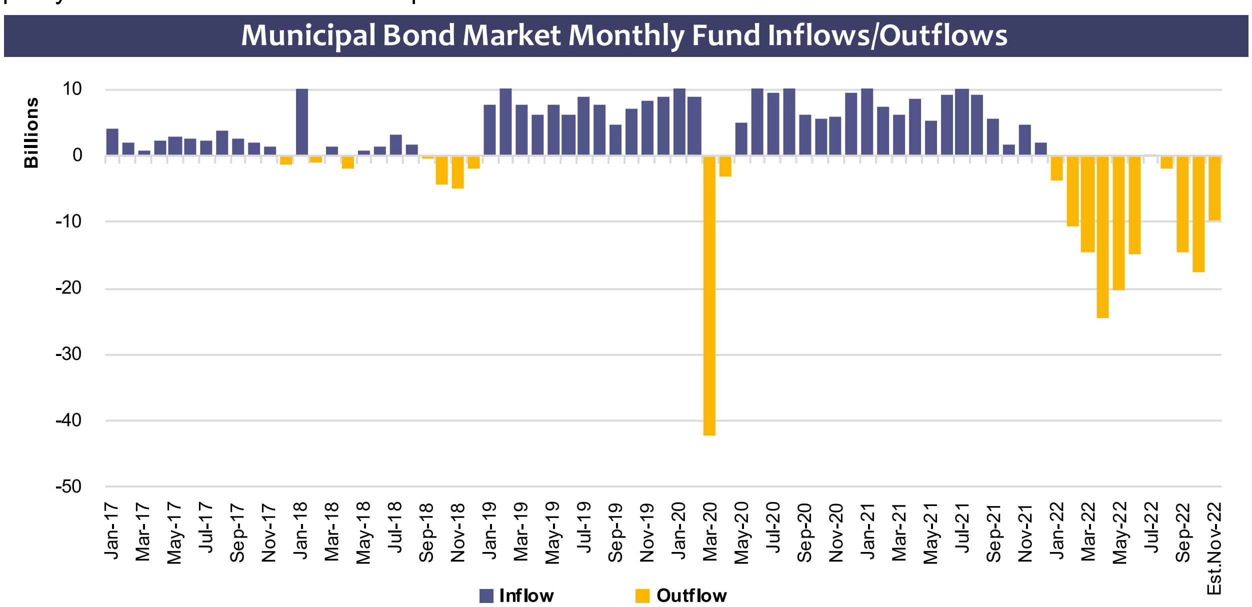
billion or 16.1% lower compared to the same period in 2021. Much of the decrease is attributable to the volatile rate environment and generally high interest rates.



Source: Refinitiv TM3

Municipal Bond Market Monthly Fund Inflows/Outflows

Municipal bond mutual funds specializing in tax advantaged investments represent a significant segment of the investor base for tax-exempt bonds. Asset inflows and outflows of cash from these funds are a good proxy of overall demand for municipal bonds.



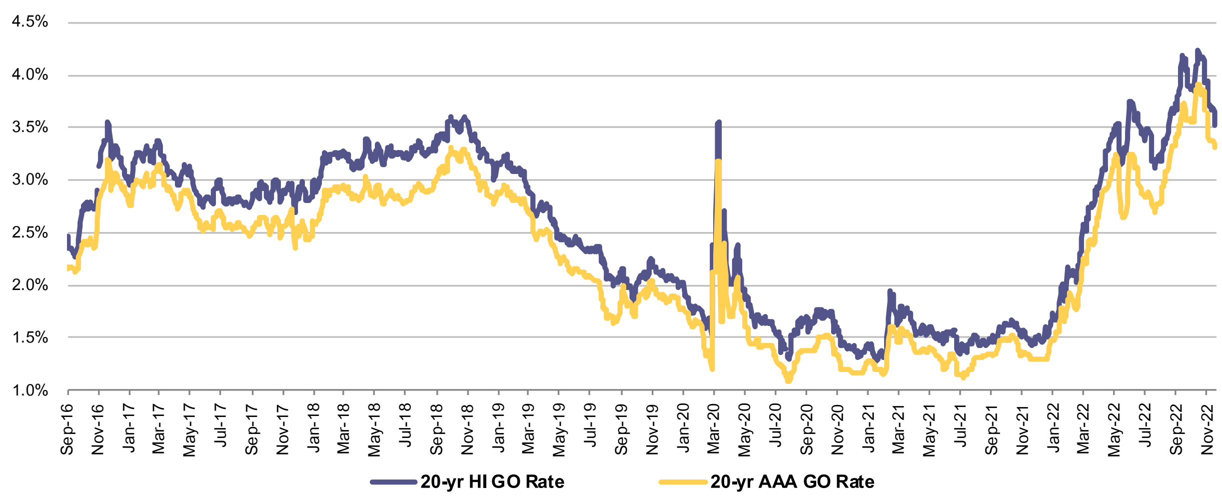
Source: Investment Company Institute

The chart above shows a history of monthly inflows and outflows from long-term municipal bond funds. The strong inflows in municipal bond funds in 2021 were offset by significant outflows in 2022. The looming fear of a recession has led end investors to move money out of bond funds in 2022 leaving fund managers no option but to sell-off their positions. The decline in demand caused credit spreads to widen significantly during 2022. Despite this trend, the municipal bond market has continued to function well and transactions continue to be executed successfully, albeit at higher rates than in the recent past.

Interest Rates on Hawaii's Bonds

Interest rates on Hawaii's bonds are driven by both State-specific factors such as credit ratings as well as overall market conditions. Given the State's GO credit ratings in the 'AA' category, the State's GO bonds trade close to the AAA benchmark rates. Over the last five years, the State's interest rates have consistently tracked the AAA benchmark as seen in the following chart.

20-Year Hawaii GO Rate and 20-Year AAA MMD GO Rate Since 2015



Source: Refinitiv TM3

F. Other Considerations

Environmental Natural Disasters:

Given the State's geology and location in the Pacific Ocean, natural disasters such as earthquakes, volcanic eruptions, hurricanes, flooding, mudslides and tsunamis may impact the State. In fact, such geothermal activity as well as storms are not unusual for the State. The State has experienced and managed such events in the past, with most recent being the 2018 earthquake and volcanic eruption of Kilauea. There have not been any sustained adverse effects on tourism following any such natural disaster. Between 1953 and 2022, the State has been exposed to far fewer instances of what Federal Emergency Management Agency (FEMA) defines as "Major Disaster" or "Emergency" situations, relative to other States. The 2018 natural disasters were not viewed as credit risks to the State's ratings by the rating agencies. The State's strong financial position and funding assistance from FEMA and other federal sources, support these views. In the same vein, there are minimal debt affordability implications for the State and its Departments from the natural disasters on record.

COVID-19 Pandemic and Broader Economic Environment:

The COVID-19 pandemic had a significant impact on the US economy and state and local governments. With reduced air travel and tourism, the impact on State finances was severe but relatively short-lived.

Federal aid and a surge in tourism resulted in stronger-than-expected financial performance for the State. Yet several of the State's debt ratings were impacted due to the COVID-19 pandemic.

Heading into 2023, economists and business leaders have expressed concerns over a possible recession. The Federal Reserve raised the Fed Funds Rates several times in 2022 to bring all-time high inflation under control. There is likelihood of more rate hikes in late 2022 and early 2023. The market fears that with the multiple rate hikes, the Federal Reserve risks over tightening the monetary policy which could tip the economy into a recession. It is not possible to predict if and when a recession may occur. Market participants are tracking several economic indicators such as GDP growth forecast, yield curve inversion, national retail sales, layoffs and unemployment, continuing supply chain issues, international tensions, among other things which could provide any early signs of stress. Issuers should take the economic backdrop into consideration when evaluating new debt.

Overview of Recent Financial Performance and Revenue Projections:

For most of the State Departments, FY2019 revenues were the strongest in recent history. FY2020 finances and revenue collections through the month of February (pre-COVID-19) were outperforming or at least on par with FY2019 levels. However, with various degrees of lockdowns and travel restrictions implemented in February 2020 across the world, most State Departments ended FY2020 with lower revenues compared to FY2019. As other variants of the coronavirus emerged, lockdowns and restrictions remained in place for a majority of FY2021 resulting in the lowest revenue collections for all the State Departments for that year. Multiple federal aid packages provided substantial relief in the down years. Unaudited or estimated FY2022 revenues indicate a strong rebound, and collections are projected to return to pre-pandemic levels in the next two to three years for all the State Departments. Actual performance may vary from the projections presented in this report especially if there are other economic events. Given the uncertainty, many State Departments do not expect to issue debt in the next six years and the ones that have borrowing plans will evaluate such future debt in the context of economic conditions and financial position at the time.

II. The Department of Budget and Finance and General Fund Debt

The Department of Budget and Finance, headed by the Director of Finance, administers the State budget, develops near-term and long-term financial plans and strategies for the State, conducts reviews of finances, organization, and operations of each department of the State to ensure appropriate and effective expenditure of public funds and provides programs for the improvement of management and financial management of the various departments and agencies. The issuance of all debt issued by Departments of the State is coordinated with and overseen by the Director of Finance and the Department of Budget and Finance. Non-general fund State financing programs are described in the following sections under applicable Departments.

It is important to note that the State has unique characteristics as compared to the other 49 U.S. states by virtue of its location in the Pacific Ocean. Since the State is not physically connected to any other state, it is dependent on air and sea transportation to bring goods and people to and from the islands. The State has a large military presence because of its strategic location. This results in sizeable federal spending in the State which is a significant component of the State economy, particularly in relation to its size and population. Compared to most other states, Hawaii's scenic location promotes tourism and is a source of considerable economic activity and revenues for the State.

Additionally, the State of Hawaii's general fund supports several functions that are typically supported by regional and local governments in other states across the nation. These additional responsibilities include GO bond funding for the K-12 education system, the community college system, the hospital system, and the jail and penitentiary system that are typically supported by cities and counties, school districts, community college districts, hospital districts etc. in other states.

The combination of these economic characteristics that drive the State's revenues in combination with the State's expanded support of otherwise regional/local obligations make the State of Hawaii particularly unique and it is challenging to compare the State with other states. While these programs contribute to the overall debt levels of the State, they are essential to the long-term viability of the State and the welfare of the population. Major State general fund tax revenues include general excise and use tax, income taxes, transient accommodations tax, and other taxes.

B&F administers the issuance of general fund supported debt including GO bonds. While GO bonds are the primary financing program, B&F also issues COPs and enters into financing agreements such a capital leases, as required. All GO bonds are secured by the full faith and credit of the State, and the State must take action to ensure that sufficient revenues will be raised and provided from time to time for the purpose of payment of principal and interest on GO bonds. The State also issues reimbursable GO bonds on behalf of other Departments, and debt service on these bonds is reimbursed by the beneficiary Department from revenues or user taxes, or both, derived from the public undertaking or improvements that were financed by such GO bonds. The State also issues short-term GO debt or bond anticipation notes (BANs) to provide interim financing. These notes are also secured by the State's general fund but are typically repaid from the proceeds of long-term GO bonds. COPs and capital leases are payable from any lawfully available funds of the State including the general fund and are subject to legislative appropriation.

A. Debt Profile

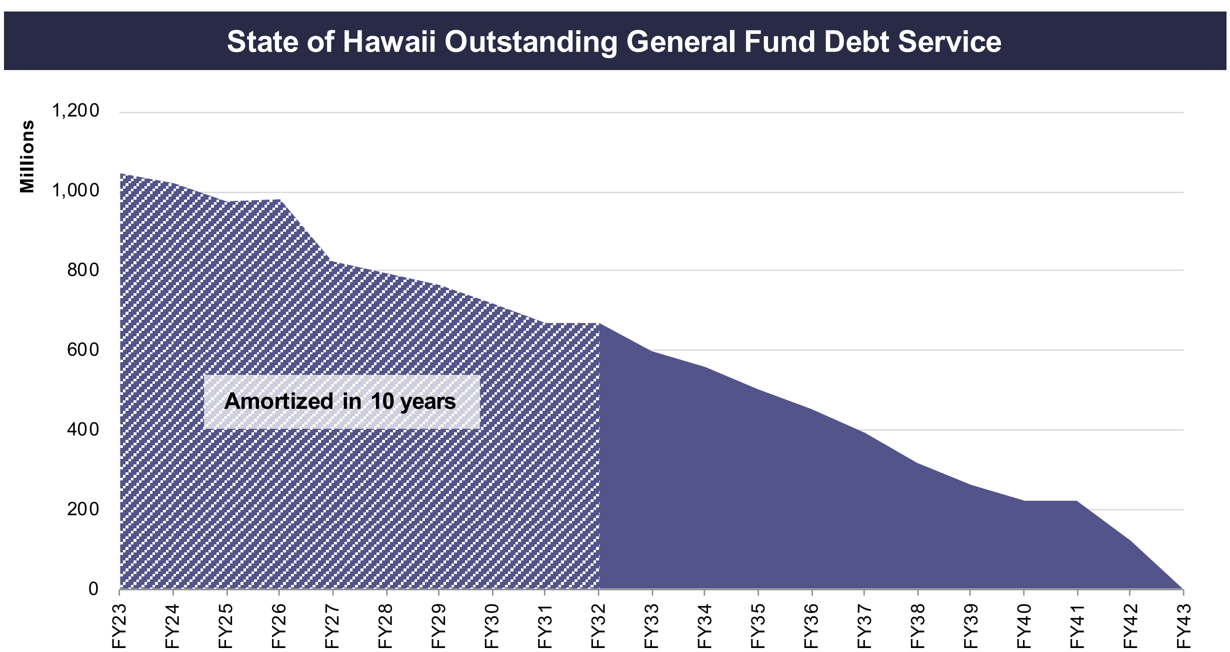
The State currently has 38 series of GO bonds outstanding with a total par amount of $8.9 billion. The State had issued GO bond anticipation notes (GO BANs) during the COVID-19 pandemic for working capital needs which have all be refinanced. In addition to GO debt, the State has capital leases outstanding in the amount of $38.6 million, which are payable from the general fund and account for less than 1% of the total debt portfolio. A detailed list of all outstanding series supported by the general fund is included in **Appendix B**.

Summary of General Fund Supported Debt			
GENERAL FUND SUPPORTED DEBT	**OUTSTANDING**		
Figures in thousands	Reimbursable	Non-Reimbursable	Total
General Obligation Bonds	$47,336*	$8,856,407	$8,903,742
Capital Lease	NA	$38,577	$38,577
TOTAL GENERAL FUND SUPPORTED DEBT	**$47,336**	**$8,894,984**	**$8,942,319**

*As of July 1, 2022

B. Debt Service Chart

Per the Hawaii Constitution, the State is required to structure all GO bonds with annual level principal payments or annual level debt service payments resulting in an overall tapering amortization schedule as seen below. With the State's conservative GO debt structure, the State's debt service amortization is rapid. About 66.5% of GO bonds principal is repaid within ten years. The chart below reflects the State's annual general fund debt service.



C. Credit Ratings

Credit ratings provide an independent opinion regarding the State's ability and willingness to meet its financial commitments. Credit ratings issued by the bond rating agencies are a major factor in determining the cost of borrowed funds in the municipal bond market and are one of the tools used by investors when purchasing municipal obligations. Moody's Investors Service (Moody's), Standard & Poor's (S&P), and Fitch Ratings (Fitch) assign ratings to the State's GO bonds and general fund COPs. As reflected in the table below, the State maintains 'AA' category ratings from Moody's, S&P and Fitch.

State of Hawaii GO Credit Ratings			
	Moody's	**S&P**	**Fitch**
General Obligation Debt	Aa2 Stable	AA+ Stable	AA Stable

S&P assigned a negative outlook on State's GO credit in 2020 but revised it back to stable in 2021. S&P still maintains a 'AA+' rating on the State's GO debt which was most recently affirmed in October 2022. Moody's and Fitch both downgraded the State's rating in 2020 by one notch to 'Aa2' and 'AA', respectively. The downgrades were driven by the impact of the COVID-19 pandemic on the State and its prominent tourism sector. Moody's assigned a positive outlook in 2021 as the economic and financial picture improved considerably from its lowest point during the COVID-19 pandemic. However, it was revised back to stable most recently in October 2022 given the tourism industry concerns, lagging demographic trends and already high cost of living, which in Moody's opinion makes the State vulnerable to high inflation and potentially less favorable economic conditions ahead. Fitch affirmed the 'AA' with a stable outlook in September 2022.

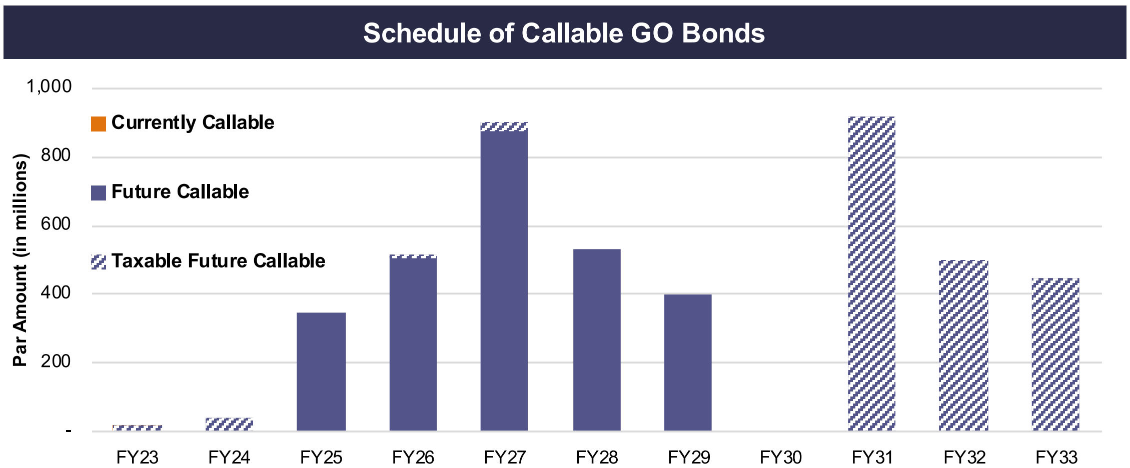
The State's strong credit ratings are a result of its strong financial position, which has weathered several major economic stressors during the last two decades; strong financial governance practices including multi-year planning, frequent revenue forecast updates from the independent Council on Revenues facilitating prompt identification of budget gaps and alignment needs; strong executive power to reduce spending; and commitment to and progress toward reducing pension and OPEB liabilities. Additional credit strengths include rapid amortization of debt with a conservative all-fixed-rate debt profile, stable military presence and sound reserve and liquidity position.

Credit challenges include vulnerability to tourism and to a global downturn as seen during the recent COVID-19 pandemic, challenging demographics (outmigration, aging population, and below average labor force participation) that constrain long-term economic growth, substantial fixed costs with higher-than-average debt ratios and large pension and OPEB liabilities.

The State's GO ratings are largely driven by outside forces. Economic performance continues to be a major driver of the credit picture for the State. Continued sound financial management and proactive measures will contribute to addressing rating concerns. Although the State's debt levels are among the highest in the nation, additional credit factors including historical fiscal conservatism and management's willingness to utilize the fiscal governance tools at its disposal provide stability to the State's credit. In addition, this biennial Debt Affordability Study promotes a systematic approach towards prudent use of debt further supporting sound financial management. The State has always strived to obtain the highest possible credit ratings in order to minimize interest costs while maintaining future flexibility and the State continues to work towards that goal despite the current economic challenges.

D. Schedule of Callable Bonds

The State monitors its debt portfolio for refunding opportunities and from time to time, the State has executed refundings, both current and advance, based on market conditions and other factors. Over the last 10 fiscal years, the State issued $4.11 billion in refunding bonds for total nominal savings of $375.1 million and present value savings of $313.0 million.



The chart above provides a summary of outstanding GO callable par amounts by fiscal year. The State's total outstanding GO callable par is about $4.6 billion. Of the callable par, a small amount $17.5 million in currently callable and the remaining is callable in future years beginning in FY2024. As indicated in the chart, the callable par amounts also include certain portions of taxable bonds that are callable without the make-whole-call (MWC) premium that is typically associated with taxable bonds.

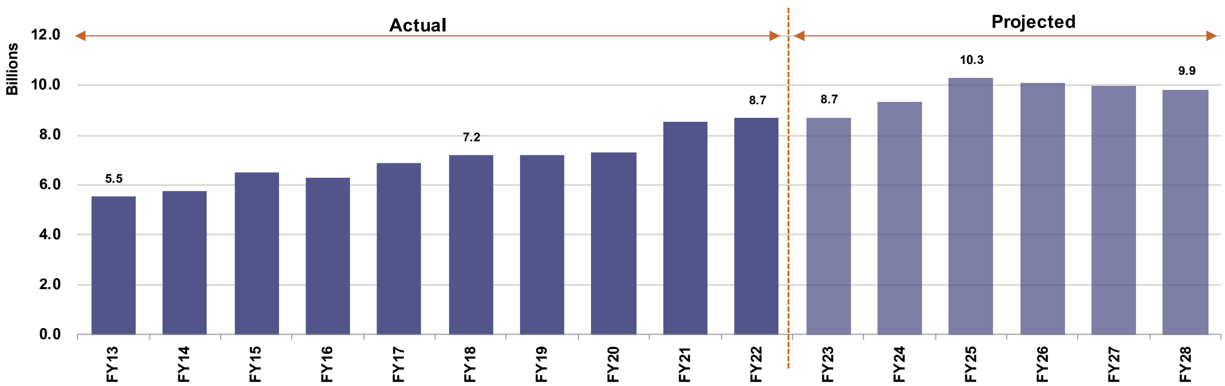
Pursuant to the criteria outlined in its Debt Management Policy, the State may pursue opportunities to refund callable bonds. However, with the elimination of tax-exempt advance refundings, the State may choose to wait until the call date to current refund bonds or explore other options such as a forward refunding on a case-by-case basis.

E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt and Anticipated Issuance

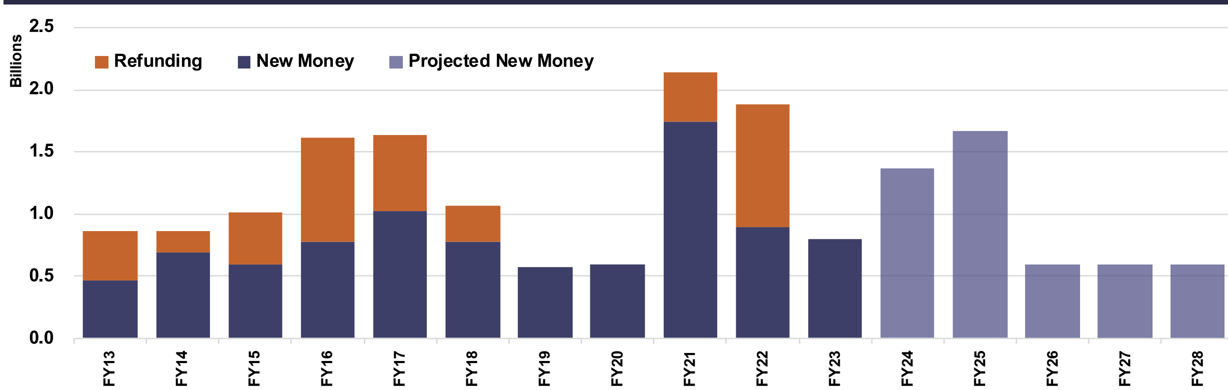
The State's annual issuance, and by relation the amount of GO debt outstanding, has increased significantly since 1990, more rapidly so in recent years. New money issuance in the last five fiscal years totaled $4.6 billion including the most recent $800 million issued in November 2022. The amount of debt supported by the general fund increased by 21% over the five-year period. The State accessed the market twice in FY2021 with relatively large debt issuance which included $600 million for working capital borrowing to shore up liquidity during the COVID-19 pandemic. As the working capital borrowing gets paid off through FY2026 and provided the State's new money requirements remain moderate, we anticipate the total GO debt to level-off and start to decline within the next five years.

Current and Projected Outstanding General Obligation Bonds



The State issued $800 million in GO bonds in November 2022 and anticipates issuing an additional $4.84 billion new money GO bonds through FY2028. These GO bonds are anticipated to fund infrastructure projects throughout the State.

Bond Issuance – Historical and Projected



Authorized but Unissued Debt

As of August 31, 2022, the State had about $5.02 billion authorized unissued remaining and the State has since issued $800 million in GO bonds in November 2022.

F. Measuring Debt Burden

Debt ratios form the basis for peer comparison and allow the State to measure and track its debt burden over time. It is important to note that the State is unique in that it funds capital needs that are more typically funded by local municipal entities (as described previously). As such, the State's debt burden metrics are higher in comparison to medians and peers. The State's affordability metrics since FY2015 are provided below. In addition, the State is projected to issue $5.725 billion in new money GO Bonds through FY2027 and the projected impact on affordability metrics is shown in the table as well.

Historical and Projected (six-years) Metrics

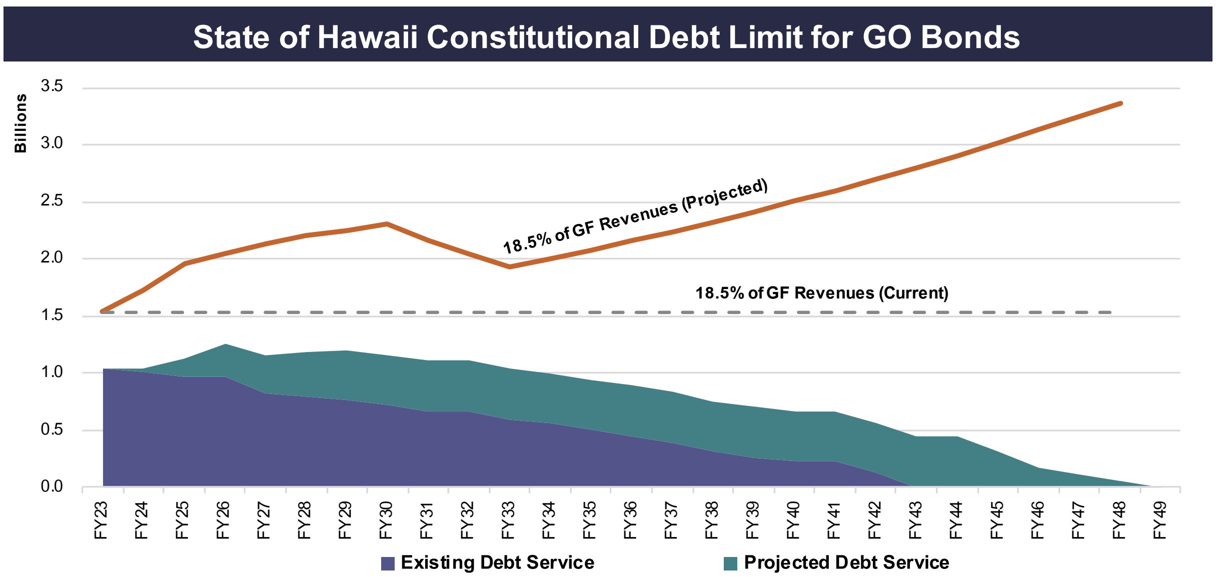
AFFORDABILITY METRICS	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	10.8%	10.2%	10.5%	11.5%	10.9%	9.5%	10.1%	9.3%	9.9%	10.7%	9.5%	9.7%
Pension contribution to annual revenues	8.2%	8.2%	8.3%	10.1%	11.4%	8.5%	8.6%	8.1%	8.1%	8.1%	8.0%	8.3%
OPEB contribution to annual revenues	10.0%	9.7%	10.5%	11.2%	16.7%	5.4%	8.1%	7.2%	7.5%	7.5%	7.6%	7.9%
All annual obligations to annual revenues	29.0%	28.1%	29.3%	32.8%	39.0%	23.3%	26.8%	24.7%	25.5%	26.3%	25.1%	25.9%
Annual debt service to annual appropriations	12.0%	11.0%	12.0%	12.2%	11.2%	10.9%	9.6%	11.2%	11.8%	12.9%	11.9%	12.1%
Pension contribution to annual appropriations	9.0%	8.8%	9.5%	10.7%	11.7%	9.8%	8.1%	9.8%	9.7%	9.7%	10.0%	10.3%
OPEB contribution to annual appropriations	11.0%	10.4%	12.0%	11.8%	17.2%	6.2%	7.7%	8.6%	9.0%	9.1%	9.4%	9.8%
All annual obligations to annual appropriations	32.0%	30.2%	33.6%	34.8%	40.0%	26.9%	25.4%	29.6%	30.6%	31.7%	31.3%	32.3%
Debt per capita	$4,772	$4,970	$4,994	$5,055	$5,950	$6,608	$6,080	$6,516	$7,146	$6,980	$6,888	$6,785
Debt per capita (Adjusted)	$2,903	$3,020	$3,034	$3,070	$3,610	$4,007	$3,687	$3,949	$4,329	$4,227	$4,171	$4,107
Pension UAAL per capita	$6,363	$6,156	$6,265	$6,640	$7,188	$6,775	$6,804	$6,809	$6,796	$6,757	$6,693	$6,606
OPEB UAAL per capita	$6,222	$6,386	$6,457	$6,570	$6,153	$5,639	$5,885	$5,871	$5,872	$5,843	$5,793	$5,726
Debt as a % of state GDP	8.1%	8.2%	8.0%	8.4%	10.0%	10.2%	8.8%	9.1%	9.6%	9.0%	8.6%	8.2%
Debt as a % of state GDP (Adjusted)	4.9%	5.0%	4.9%	5.1%	6.0%	6.2%	5.3%	5.5%	5.8%	5.5%	5.2%	5.0%
Pension UAAL as a % of state GDP	10.8%	10.1%	10.0%	11.1%	12.0%	10.4%	9.9%	9.5%	9.1%	8.8%	8.4%	8.0%
OPEB UAAL as a % of state GDP	10.6%	10.5%	10.3%	10.9%	10.3%	8.7%	8.5%	8.2%	7.9%	7.6%	7.3%	6.9%
Debt as a % of personal income	9.5%	9.6%	9.4%	9.1%	10.2%	11.0%	10.0%	10.5%	11.2%	10.6%	10.1%	9.6%
Debt as a % of personal income (Adjusted)	5.8%	5.8%	5.7%	5.5%	6.2%	6.7%	6.1%	6.3%	6.8%	6.4%	6.1%	5.8%
Pension UAAL as a % of personal income	12.7%	11.9%	11.8%	12.0%	12.3%	11.3%	11.2%	10.9%	10.6%	10.2%	9.8%	9.3%
OPEB UAAL as a % of personal income	12.4%	12.4%	12.2%	11.9%	10.5%	9.4%	9.7%	9.4%	9.2%	8.9%	8.5%	8.1%
Pension UAAL as a % of total GF revenues	139.4%	127.1%	122.0%	132.3%	141.2%	95.6%	94.4%	87.6%	85.2%	82.2%	79.0%	78.5%
OPEB UAAL as % of total GF revenues	136.3%	131.8%	125.7%	130.9%	120.8%	79.6%	81.7%	75.5%	73.6%	71.1%	68.4%	68.0%
Liquidity – days' cash on hand	37 days	29 days	28 days	47 days	87 days	108 days	68 days	154 days	221 days	291 days	382 days	-

Note: Projected metrics assume issuance of $4.84 billion of additional new money GO bonds during the projection period (see anticipated debt above)

Relevant Affordability Metrics

The table on the prior page offers several metrics to measure debt burden and evaluate affordability. Many of the metrics are used for peer/median comparisons which is another way to measure debt levels and affordability. Some of the most relevant metrics are discussed below.

1. Constitutional Debt Limit for GO Bonds (Per Constitutional Calculation): The State constitution limits maximum annual debt service on aggregate outstanding GO bonds to 18.5% of average of general fund revenues for the three preceding years. Current revenue projections by the State reflects capacity under the 18.5% ceiling (orange line in the chart below) even after accounting for future debt of $4.84 billion over the next six years. Projected debt service including the additional debt service is estimated to reach a maximum of 11.4% of projected general fund revenues (average for three preceding years) in FY2026.



2. Annual debt service payments to annual revenues or Annual debt service payments to annual appropriations: Both of these ratios indicate the percentage of the State's general fund budget that is allocated to "fixed costs" such as debt service payments. It is a measure of financial flexibility available within the State's general fund. High fixed costs limit such flexibility. For FY2022, an estimated 9.5% of general fund revenue was utilized to service debt, down from 10.8% in FY2017. Strong rebound in State's revenues in FY2022 has resulted in the improvement in this ratio. With modest growth in projected revenues and additional debt service from the planned new money issuance, this ratio is expected to remain at or about 10% through FY2028. Debt service payments account for 10.9% of FY2022 general fund expenditures, down from 12.0% in FY2017. This ratio is expected to increase over the projection period and peak at 12.9% in FY2026 as new debt service comes online. More generally, these ratios have been moderating slowly but steadily over the last decade and trending in the right direction. Strong growth in revenues relative to new debt have enabled the debt service related fixed cost to moderate overtime.

Pension and OPEB Contributions: The general fund's contribution towards pension and OPEB are also considered "fixed" costs with limited ability to lower them. Accounting for these contributions over and above the debt service payments, approximately 23.3% of the State's general fund revenue for FY2022 supported fixed costs. The FY2022 OPEB contribution was lower than the annual required contribution (ARC) for the year as the amount was pre-funded in FY2021. Had the full ARC been contributed in FY2022 the ratio would be 26.5%, which is still lower than 29.0% in FY2017. Overall revenue growth has outpaced fixed costs resulting in the gradual decline in this ratio.

Act 17, effective July 1, 2017, enacted substantial increases in employer contribution rates to the State's Employee Retirement System (ERS) which was phased in over a four year period through FY2021. Per the Act, employer contributions for police and firefighters will be increased to 41% by FY2021 from 25% in FY2017, and for all other employees to 24% by FY2021 from 17% in FY2017. The State expects to continue to contribute 100% of required contribution towards these pension plans.

Act 268 which was enacted in 2013 required employer contribution for the State's OPEB plan to be equal to the ARC determined by an actuary commencing FY2019. The State suspended the Act 268 UAAL prefunding payments for all public employers starting in FY2021 to help address budget shortfalls resulting from the impacts of the COVID-19 pandemic. However, the State not only funded 100% of the ARC for FY2021, but also prefunded a substantial amount for FY2022. Significant federal stimulus enabled the State to continue to meet its OPEB requirements. The State expects to contribute 100% of required contribution for OPEB in the foreseeable future.

As the State continues to fund its pension and OPEB plans, total fixed costs are projected to be 25%-27% of general fund revenues through FY2028. Strong financial management has allowed the keep total fixed costs contained despite significant increases in the pension and OPEB contribution since 2015.

3. Debt as a percentage of State GDP: This ratio is a measure of financial leverage provided by the State's economy and its ability to repay debt based on the goods and services produced in its economy. Debt-to-GDP is 10.2% for FY2022 which is higher than other states partly due to State funding of K-12 education that is normally funded at the local level in other states. It is projected to decline to 8.2% by FY2028 despite the estimated $4.84 billion planned borrowing as debt repayment outpaces new issuance and the working capital debt gets paid off by FY2026.

   Although not direct debt, the unfunded actuarial accrued liability (UAAL) for pension and OPEB are mandatory long-term obligations, and as such get treated akin to debt for financial analysis. The pension UAAL and OPEB UAAL account for about 10.4% and 8.7% of the estimated 2022 state GDP.

   The OPEB UAAL was as high as 11.3% of State GDP in FY2014 compared to the 8.7% in FY2022. OPEB reforms (mandating 100% of actuarially determined required contribution including prefunding to achieve 100% funded ratio in about 30 years) adopted by the State over the last few years made a significant impact in addressing these unfunded liabilities.

4. Debt as a percentage of personal income: Total personal income for a state provides the basis for evaluating its revenue generating ability. The debt-to-personal income metric measures a state's ability to continually generate sufficient revenues to repay debt. For FY2022, B&F's debt-to-personal income

ratio is 11.0% and is projected to peak in FY2025 and moderate from there on. Pension UAAL and OPEB UAAL are 11.3% and 9.4% of the estimated FY2022 personal income. The ratio is similar to the debt-to-GDP ratio and therefore follows the same trend as discussed above.

5. Debt per capita: This ratio is a measure of the debt burden shared by each resident of a state on average. Since it accounts for all residents with no specificity for age, income or employment, the ratio is not as efficient in measuring ability to repay debt but is still meaningful for peer comparison. The State's debt per capita is $6,608 for FY2022. It is projected to increase modestly to about $7,146 per capita by FY2025 as the State executes the projected borrowing program. Pension and OPEB UAAL add roughly another $6,800 and $5,800 per capita, respectively, to B&F's obligations.

   As discussed in detail in the next section, the State's debt levels are very high. As such, the State needs to carefully monitor its debt issuances in relation to potential credit impact which may lead to borrowing cost increases, especially since rating agencies are being conservative having recently witnessed the severe impact of COVID-19 pandemic on revenue performance. It is important to note that debt burden is one of several evaluation factors which determine the State's ratings, and a holistic credit review would take into account other pertinent criteria besides leverage.

Median Comparisons

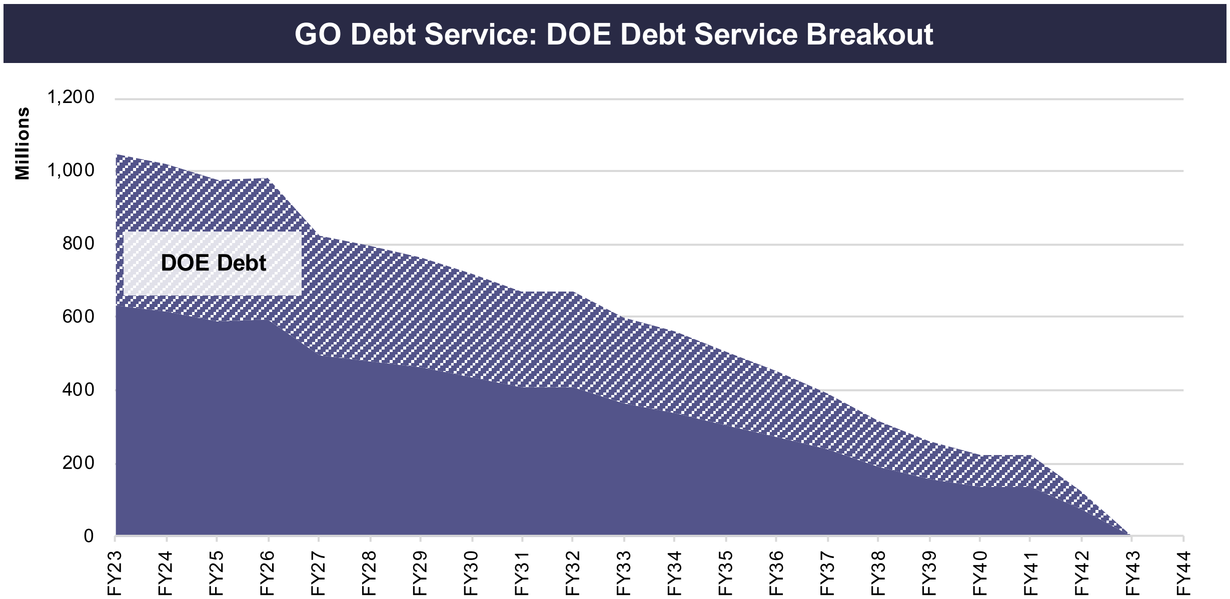
Moody's publishes an annual Debt Median Report including debt ratios for all 50 States and the sector means and medians. The report provides a broader perspective on debt levels and basis for affordability through the comparison of Hawaii's debt burden to other states across the country. The following table summarizes the State's GO debt metrics alongside Moody's 2020 medians data. The 50-state FY2020 median for debt as percentage of state GDP and debt as a percentage of personal income is 2.04% and 1.9%, respectively. On a per capita basis, the 50-state median is $1,039. As discussed previously, the State's general fund supports significant capital needs for local municipalities in contrast to other states in the nation. As such, the State's general fund supported debt metrics are considerably higher than the states medians and are among the highest debt levels seen among states (rank in the top 3).

DEBT METRICS	MOODY'S STATES SECTOR DEBT REPORT			STATE OF HAWAII	
2020	**Median**	**Average**	**Max**	**Actual**	**Adjusted***
Debt Service Ratio	3.90%	4.10%	14.10%	11.55%	6.98%
Debt as a % of State GDP	2.04%	2.43%	9.59%	8.42%	5.11%
Debt as a % of Personal Income	1.90%	2.50%	10.10%	9.13%	5.54%
Debt per Capita	$1,039	$1,535	$6,971	$5,055	$3,070

* Adjusted to exclude estimated debt incurred for K-12 school system; According to Moody's, Debt Service Ratio is annual debt service as a % of revenues

Unlike other states, Hawaii has the responsibility for funding the K-12 school system, hospital system, and penitentiary capital needs which contributes to the State's high debt levels. To account for its unique characteristic and aid a more accurate comparison with State medians, the affordability metrics table also presents Hawaii's debt metrics as adjusted for the largest of these obligations: Department of Education (DOE) K-12 related obligations.

The following graph reflects the estimated DOE related debt service in relation to the State's overall GO debt portfolio. The *adjusted* debt ratios remain high when benchmarked against states' medians. With the modified metrics, the State still ranks among the top ten states with the highest debt levels. Note that the size and purpose of debt programs vary greatly for each state since they are driven by several different factors and the resulting medians should be viewed as such.



G. Discussion on Debt Affordability, Potential Concerns and Recommendations

The State estimates issuing about $4.84 billion GO bonds during the next five years. With the additional debt issuances, the State is projected to remain comfortably below the 18.5% constitutional debt limit based on current revenue projections. Taking into account the projected GO bond issuances, general fund revenues would have to decline by more than 17.7% from their current levels or 38.2% from their projected levels, in the year of peak debt service, before the debt limit is breached. Barring any other extraordinary events, legal limits are unlikely to hinder the State's ability to borrow in accordance with the projected debt plan.

From a broader affordability perspective, projected revenues are sufficient to cover existing and projected debt service and anticipated pension and OPEB contributions. As per projections, fixed cost ratios are expected to remain stable and even moderate slightly over the next five years. This is an improvement over the past trend where the fixed cost ratios were trending up. That said, fixed costs remain elevated and an important discussion point with rating agencies.

From a credit perspective, the State is at the highest level of debt burden under the rating agency methodologies. The State's affordability metrics for general fund debt as evaluated on the basis of economic factors (debt-to-personal income, debt-to-GDP and debt-per-capita) are among the highest in the nation. Given the unique nature of the State's responsibilities, the State will remain at the high end of the debt ratios spectrum and there is limited comparability to other states. We note here that all rating analysts acknowledge the State's distinct funding needs when comparing it to other states and sector medians. For that reason, the ratings are more focused on the State's ability to manage its operations and budget while funding the high fixed costs related to debt and retiree benefits. Maintaining financial flexibility and preserving liquidity and reserve levels while funding its obligations will be key to future credit ratings.

It is important to note that the past trend of the State's debt and affordability metrics indicate that borrowing has somewhat outpaced economic growth in the State. The State's stronger-than-expected revenue performance emerging from the COVID-19 pandemic and higher-than-ever general fund reserve levels help offset these concerns to some degree. However, the State should continue to monitor its debt levels to alleviate rating pressure.

As reflected in the analysis above, based on the revenue projections, the State can afford to issue the proposed debt while still complying with legal debt limits. As long as new issuances keep pace with economic expansion and revenue growth, debt affordability concerns are mitigated. That said, the ramp-up period to fund the full pension contributions and OPEB ARC concluded in FY2021 and while OPEB funding has been suspended through FY2025 the State funded 100% in FY2021 and FY2022. The retiree benefits costs are fully baked in the State's expenditure structure and these fixed costs along with debt service, limit the State's financial flexibility. Furthermore, industry experts are warning of a possible recession in 2023 which could impact tourism and the State's revenues in general. Therefore, it will be critical to maintain some contingency in the budget to offset any revenue declines in the near-to-medium term. It may also behoove the State to remain conservative in its spending plans in deference to building reserves. As always, prioritizing essential capital projects and evaluating projects that can be deferred will preserve financial flexibility and will position the State to manage through future economic cycles, just as past fiscal prudence and financial strength has enabled the State to navigate the most recent COVID-19 pandemic.

H. Reserves

The State adopted a formal reserve policy in 2016. The policy was recently reviewed in multiple contexts including revenue volatility, potential force majeure or other major economic event, rating agency criteria, and state peers and industry best practices. Taking all that into consideration the State is committed to maintaining appropriate reserve levels. Pursuant to Administrative Directive (AD) No. 22-01 which became effective in December 2022, the State Reserve Policy is modified to target a higher 20%-25% reserve, up from 15% as per the 2016 State Reserve Policy. State reserves include the Emergency and Budget Reserve Fund (EBRF), the unassigned general fund carryover balance, and the Hawaii Hurricane Relief Fund (HHRF). The State shall maintain an overall target balance of either 25% of general fund revenue or, if the EBRF fund balance objective is met, 20% of general fund revenue.

Reserve Levels

The EBRF reached an estimated $326 million or approximately 3.6% of revenues in FY2022. The legislature approved a $500 million transfer to the EBRF for FY2023 which will increase the projected balance to $831 million or 8.1% of revenues. The State has been able to supplement its reserve fund position substantially in the last two years by also maintaining a general fund balance that increased from $993 million in FY2020 to an estimated $2.6 billion in FY2022 (or 29.0% of general fund revenues). The estimated market value of the HHRF investment portfolio at the end of FY2022 was $173 million. Combined reserve levels (EBRF plus unassigned general fund carryover balance plus HHRF) are estimated at 35%

of general fund revenues in FY2022 and projected to be approximately 30% in FY2023, above the 25% target level indicated in the State Reserve Policy.

Importance of Reserves in the Context of Debt Affordability

The State has some of the highest debt ratios (debt-to-GDP and debt-to-personal income) in the nation and its pension and OPEB liabilities are also considerably large. High leverage and overall fixed costs limit financial flexibility and have always been an important credit consideration for rating agencies. Given the State's unique responsibilities, the State's debt levels are expected to remain high. One way to address debt-related credit concerns is to mitigate them with strong financial position and management. Sufficiently high general fund balance strengthened by a formal reserve policy and commitment to maintaining strong reserve and liquidity position can help mitigate credit concerns with respect to financial flexibility and overall debt affordability. To that end, the State's recent efforts to bolster its reserve policy by adopting a higher target balance and periodic reporting on information relevant to the State Reserve Policy to the State Legislature, reflects the State's commitment to maintaining a strong financial position. The State may periodically undertake a revenue volatility study and develop budget stress test scenarios to determine the adequacy of the reserve policy target set in AD 22-01. A brief summary of any such future analysis and studies related to the State's Reserve Policy may be included in subsequent Debt Affordability Studies.

III. Department of Transportation – Airports

The Department of Transportation (DOT) maintains and operates the transportation facilities of the State and are carried out through three primary divisions: Airports, Harbors and Highways. The Department of Transportation, Airports Division (DOT-Airports) supervises and controls all State airways and State owned or managed airports and other air navigation facilities with the exception of private federal facilities. Nearly all non-military passenger traffic throughout Hawaii passes through the Airports System. The System includes five primary and ten secondary airports. The primary airports are Daniel K. Inouye International (on the Island of Oahu), Kahului (on the Island of Maui), Hilo International and Ellison Onizuka Kona International at Keahole (both on the Island of Hawaii), and Lihue (on the Island of Kauai).

Airports System revenues consist of operating revenues which include aeronautical revenues (landing fees, terminal rentals and user fees, aviation fuel tax and airports system support charges) and non-aeronautical revenues (non-aeronautical rentals, concession fees including duty-free, retail, and food and beverage revenues as well as parking revenues and ground transportation). Non-operating revenues include interest income, federal operating grants, passenger facility charges, rental customer facility charges, debt service support charges, and other revenues.

DOT-Airports' primary financing program consists of *airport system revenue bonds* secured by net available revenue. Net available revenue represents, generally, total operating revenues less total operating expenses excluding depreciation. DOT-Airports also issues COPs and enters into financing agreements such as loans and leases, as required. The COPs are also secured by the same net revenues however their claim is subordinated to revenue bonds. The rates and charges prescribed by the DOT-Airports on participating airlines are determined by a cost center residual hybrid rate-setting methodology. Under this methodology, the airlines are charged landing fees to allow DOT-Airports to fully recover operating and capital costs associated with the airfield facilities (runways, taxiways, and other facilities), net of any grant reimbursements. Costs associated with the terminal facilities are recovered through aeronautical rentals and user fees. System-wide deficit, if any, will be recovered via airline system support charges under the Airline Lease Extension Agreement. This provides DOT-Airports the flexibility to set rates such that it is fully compensated for all operating expenses including debt service.

As such, DOT-Airports benefits from relative financial stability in the fact that as operating costs and debt service increase, there is a corresponding increase in airline revenues sufficient to cover the increase in costs. However, as debt service costs increase, the cost to the airlines to operate at the airports will also increase which could eventually lead to airlines reducing service, particularly if those costs are materially higher than at other U.S. airports. This risk is mitigated by the high level of demand to, from, and in-between the islands, and the lack of alternative options for such travel, but airlines will generally deploy resources to their most profitable routes. As such, airline costs, measured by cost per enplanement (CPE), are an important measure of the ability of DOT-Airports to afford new debt. During the COVID-19 pandemic as enplanements plummeted, all *per-enplanement* metrics were skewed, however these have normalized since, with the return of passenger traffic.

DOT-Airports is authorized under Act 226, SLH 2008 to impose a Customer Facility Charge (CFC) on car rentals at the airport, effective September 1, 2008. The rate was increased as per Act 104, SLH 2011 and is currently set at $4.50 per day. The CFC has no expiration. Under Section 261-7, HRS, the DOT-Airports has the power to adjust the CFC rate, when necessary, without rule-making or legislative approval. The CFC revenues can be used for enhancement, renovation, operation, and maintenance of existing rental car facilities and the development of new rental car facilities and related services to better serve visitors and residents. DOT-Airports initiated its consolidated rental car facilities (ConRACs) program in 2011 funded by a combination of CFC revenues, bond proceeds from *CFC revenue bonds* and other debt secured by CFC revenues. The CFC revenue bonds are issued under a separate Master Trust Indenture and are secured by a pledge of CFC revenues and other payments related to rental car activity at the Airports. The CFC revenue bonds do not have a pledge of general airport revenues. DOT-Airport's ConRAC System consists of completed ConRACs at Kahului and Honolulu and ConRACs in the planning stages at other airports in the airport system.

DOT-Airports also issues special facility revenue bonds payable from leasing revenues collected from airlines. Given the payment source of special facility revenue bonds, such bonds would be excluded from DOT-Airports' affordability discussion. At this time, there is no such debt outstanding.

A. Debt Profile

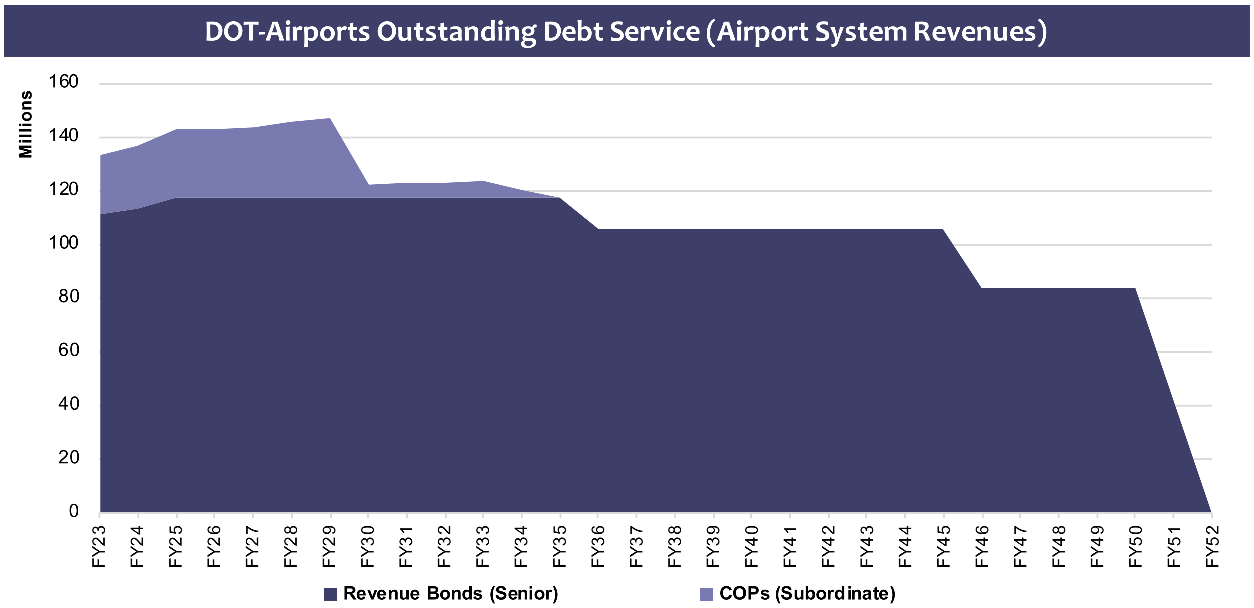
Including the recent issuance in February 2022, DOT-Airports currently has 13 series of senior lien general airport revenue bonds outstanding for a total par amount of $1.74 billion and three series of subordinate lien COPs outstanding for a total par amount of $157.5 million.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Par Call Date	Callable Par
Senior Lien Airport System Revenue Bonds							
Series 2015A	AMT	235,135,000	11/18/15	7/1/45	235,135,000	7/1/2025	235,135,000
Series 2015B	Non-AMT	9,125,000	11/18/15	7/1/45	9,125,000	7/1/2025	9,125,000
Series 2018A	AMT	388,560,000	8/22/18	7/1/48	388,560,000	7/1/2028	378,760,000
Series 2018B	Non-AMT	26,125,000	8/22/18	7/1/27	26,125,000	NC	-
Series 2018C	Non-AMT	93,175,000	4/7/20	7/1/28	92,300,000	NC	-
Series 2018D	Non-AMT	142,150,000	4/7/20	7/1/34	142,150,000	7/1/2030	100,030,000
Series 2020A	AMT	113,140,000	10/21/20	7/1/45	113,140,000	7/1/2030	110,220,000
Series 2020B	Non-AMT	165,885,000	10/21/20	7/1/50	165,885,000	7/1/2030	165,885,000
Series 2020C	Taxable	20,295,000	10/21/20	7/1/50	20,295,000	7/1/2030	20,295,000
Series 2020D	Non-AMT	184,855,000	10/21/20	7/1/39	184,855,000	7/1/2030	178,095,000
Series 2020E	Taxable	98,315,000	10/21/20	7/1/30	98,315,000	NC	-
Series 2022A	AMT	209,280,000	2/3/22	7/1/51	209,280,000	7/1/2032	209,280,000
Series 2022B	AMT	53,035,000	2/3/22	7/1/24	53,035,000	NC	-
Sub-Total					**1,738,200,000**		**1,406,825,000**
Subordinate Lien Certificate of Participation							
Series 2013	Non-AMT	167,740,000	12/19/13	8/1/28	111,620,000	8/1/2023	98,215,000
Series 2016	Non-AMT	8,057,000	4/13/16	8/1/25	2,528,308	8/1/2018	2,528,308
Series 2017	Non-AMT	51,500,000	3/31/17	8/1/34	43,326,547	8/1/2019	43,326,547
Sub-Total					**157,474,855**		**144,069,855**
Customer Facility Charge Revenue Bonds							
Series 2017	Taxable	249,805,000	7/27/17	7/1/47	223,610,000	7/1/2027	193,770,000
Series 2019	Taxable	194,710,000	8/27/19	7/1/47	179,690,000	7/1/2029	140,860,000
Sub-Total					**403,300,000**		**334,630,000**
Total					**2,298,974,855**		**1,885,524,855**

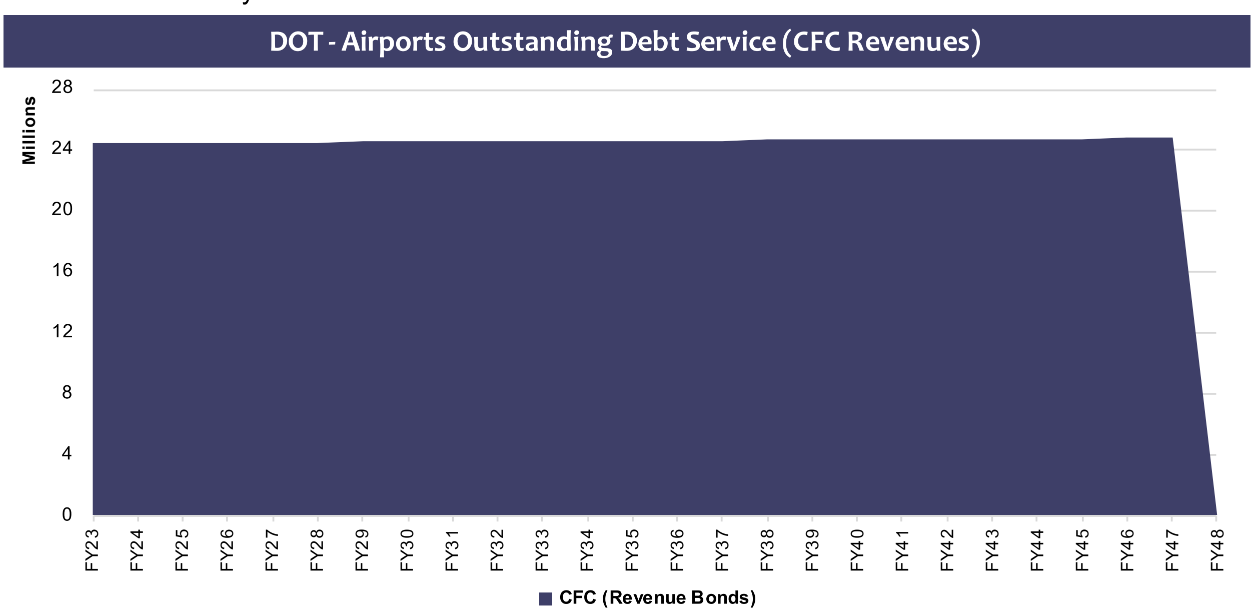
The COPs were issued to fund energy conservation projects and in addition to being secured by a subordinate lien on the net revenues of the airport system they are also secured by the improvements funded by these COPs. Energy savings generated from the projects are sufficient to cover debt service related to the COPs. In addition, DOT-Airports has $403.3 million in CFC revenue bonds outstanding.

B. Debt Service Chart

DOT-Airports' revenue bonds debt service profile is fairly level. Total annual debt service on the senior lien revenue bonds is approximately $117.5 million per year through 2035 followed by small step-downs in FY2036 and again in FY2046 as certain bonds get paid off. Approximately 27% of revenue bond principal is expected to be paid off over the next ten years.



The debt service profile for CFC revenue debt consists of $14.2 million level annual debt service payments until the final maturity in 2047.



C. Credit Ratings

The COVID-19 pandemic had the most immediate and severe impact on air travel resulting in several rating actions across the sector for both airports as well as airlines. DOT-Airports, however, still maintains strong A-category ratings from all rating agencies. Moody's affirmed all ratings and outlooks for DOT-Airports in 2020 and again in 2022 due to the system's strong financial flexibility to manage COVID-related pressures. Fitch had assigned a negative outlook to DOT-Airports' bonds at the onset of the COVID-19 pandemic but with air travel recovery, Fitch revised it back to stable in 2021. S&P lowered DOT-Airports' rating by one notch to 'A+' in 2020. However, most recently in 2022, DOT-Airports' outlook was revised to positive with the potential of an upgrade "if overall activity levels continue to improve and normalize, particularly the international passenger segment, supporting both rate-setting flexibility and revenue growth resulting in adequate debt service coverage levels and overall strong financial profile". Additional leverage to complete ongoing projects as well as new projects, especially if recovery in traffic is jeopardized by a slowdown in the economy, could lead to additional pressure on the ratings.

Department of Transportation Airport System Credit Ratings			
	Moody's	**S&P**	**Fitch**
Airport System Revenue Bonds	A1 Stable	A+ Positive	A+ Stable
Certificates of Participation	A2 Stable	A Positive	A Stable

Credit strengths include strong liquidity position, supportive cost recovery framework, uniquely strong competitive position as the monopoly air travel provider, modest cost per enplanement (CPE), and leverage. Credit challenges include volatility from high degree of tourism and leisure-focused traffic and an ongoing capital program with corresponding projected decline in financial metrics.

Department of Transportation CFC Credit Ratings			
	Moody's	**S&P**	**Fitch**
CFC Revenue Bonds	A2 Stable	A- Stable	A Stable

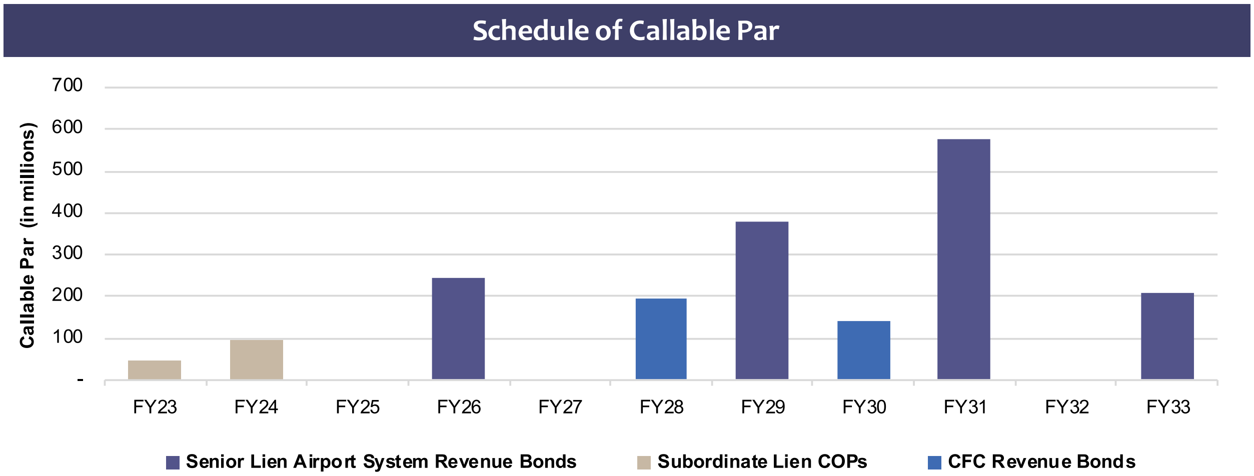
Fitch and Moody's both affirmed the CFC revenue bonds rating since the COVID-19 pandemic. S&P downgraded the bonds by two notches to 'A-' and assigned a negative outlook in 2020. The outlook has since been revised to stable. The rating concerns are somewhat mitigated by limited future capital needs and an experienced and effective management team.

D. Schedule of Callable Bonds

The following chart provides a summary of callable DOT-Airports debt along with the par amounts and call dates. Of the total senior lien revenue bonds outstanding, $1.4 billion represents callable par with future call dates starting 2025.

The CFC revenue bonds were issued with a 10-year par call and will be callable in FY2028 and FY2030.

In addition to the above, $45.9 million of the subordinate lien COPs are currently refundable at the option of DOT-Airports and another $98.2 million COPs outstanding may be refundable after the call date in August 2023.

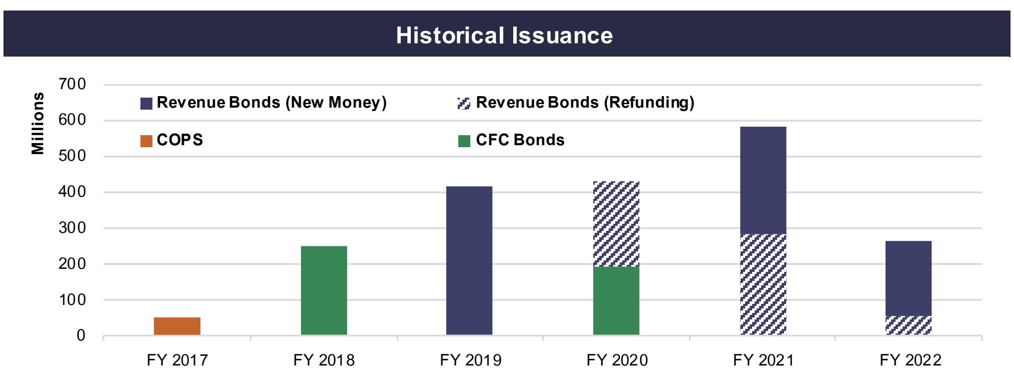


Pursuant to the criteria outlined in its Debt Management Policy, DOT-Airports may pursue opportunities to refund callable bonds.

E. Multi-Year Program Anticipated/Intended Debt Issuance

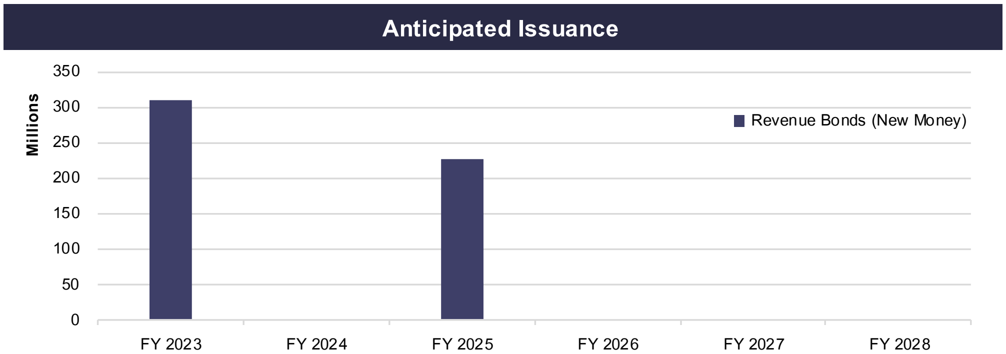
Existing Debt

DOT-Airports currently has $1.74 billion senior lien airport system revenue bonds outstanding as reflected above. DOT-Airports' most recent Series 2022 airport system revenue bonds were issued to fund capital projects as well as to refund a portion of Series 2011 bonds. The last COP private placement was executed in FY2017 in relation to energy savings projects. The first series of CFC revenue bonds was issued in FY2018 followed by a second series in FY2020.



Anticipated Debt

As DOT-Airports makes progress on its airport capital program it is anticipated that new debt may need to be issued to fund these capital needs. DOT-Airports may issue approximately $539.0 million in airport system revenue bonds over the next five years. A portion of that will be used to complete ongoing projects with the remaining attributable to new projects from 2022-2026. These may be deferred depending on traffic and economic conditions.



Authorized but Unissued Debt

DOT-Airports has a total of $1.224 billion in authorized but unissued revenue bonds as of June 30, 2022.

F. Measuring Debt Burden

Last Full Fiscal Year and Projected (six-years) Metrics

AFFORDABILITY METRICS (Airport Revenue Debt)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	17.6%	23.5%	25.5%	24.8%	26.2%	25.3%	24.5%
Annual debt service to annual appropriations	20.7%	25.2%	27.4%	27.0%	27.8%	26.9%	28.1%
Senior lien debt service coverage (excluding Coverage a/c)	2.84x	1.81x	1.29x	1.38x	1.28x	1.26x	1.26x
Total debt service coverage (excluding Coverage a/c)	1.99x	1.43x	1.05x	1.12x	1.06x	1.05x	1.03x
Senior lien debt service coverage (including Coverage a/c)	3.38x	2.12x	1.56x	1.68x	1.57x	1.56x	1.55x
Total debt service coverage (including Coverage a/c)	2.36x	1.68x	1.27x	1.37x	1.31x	1.29x	1.27x
Cost per Enplanement	13.67	14.80	14.99	15.33	16.19	16.76	17.51
Debt per Enplanement	134.94	139.87	119.69	122.26	116.19	110.51	105.11
Liquidity – days' cash on hand	673 days	644 days	622 days	585 days	550 days	522 days	495 days

Note: Projected metrics assume issuance of $539 million of additional airport system revenue bonds during the projection period (see anticipated debt above)

AFFORDABILITY METRICS (CFC Revenue Debt)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Debt service coverage (Indenture)	2.46x	2.71x	3.06x	3.22x	3.29x	3.34x	3.39x
Debt service coverage (excluding rolling coverage fund)	2.21x	2.47x	2.81x	2.97x	3.04x	3.09x	3.14x
CFC Transaction Days ('000 days)	12,040	13,412	15,313	16,174	16,549	16,851	17,104

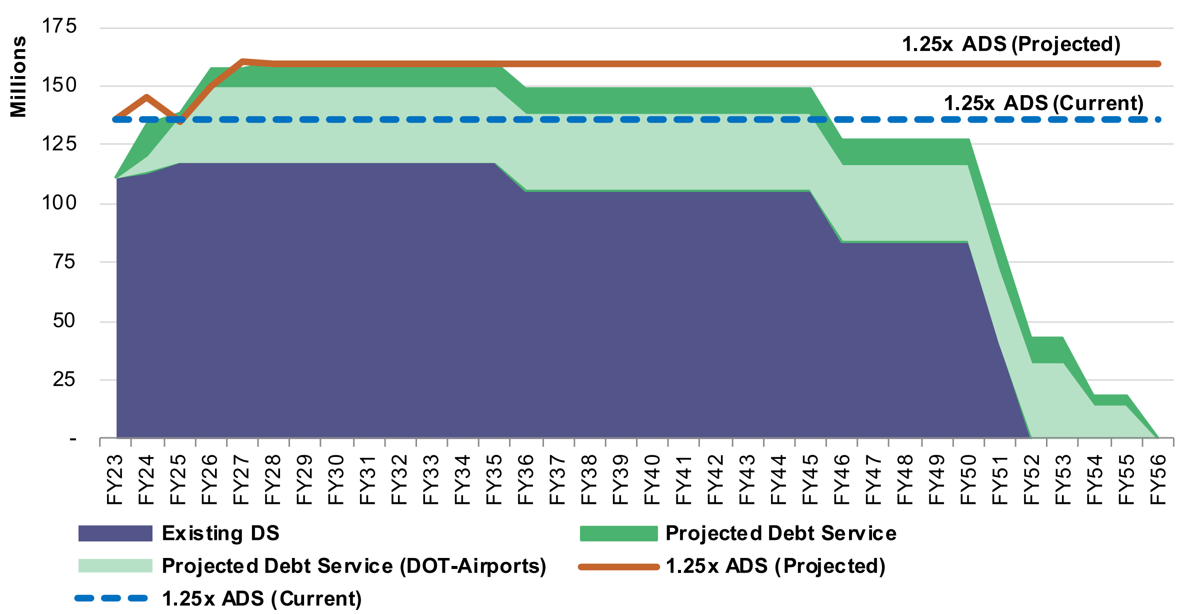
Note: No new CFC revenue bonds anticipated during the projection period.

Relevant Affordability Metrics

1. Certificate and Indenture Limitations: The Certificate of the Director of Transportation dated May 1, 1969, contains a rate covenant relating to DOT-Airports' airport system revenue bond debt. DOT-Airports shall impose rates and charges, which together with unencumbered funds on deposit in the Airport Revenue Fund at the end of the fiscal year certified as Revenues, should be sufficient to yield net revenues and taxes at least equal to 1.25 times debt service on all revenue bonds. The Certificate allows for the inclusion of the "Funded Coverage Account" in the computation of the rate covenant which is pre-funded at 25% of gross debt service.

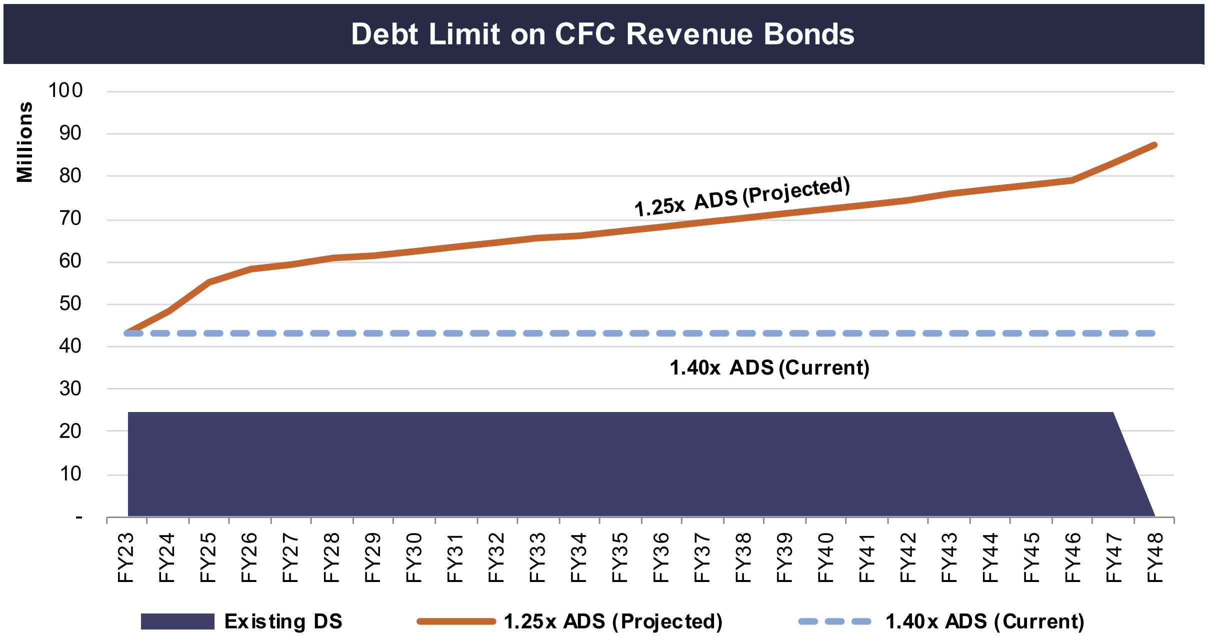
DOT-Airports may issue approximately $539 million in airport revenue bonds to fund future capital projects. Any such additional bonds are subject to an additional bonds test (ABT) wherein pledged revenues based on most recent audited fiscal year must be at least 1.25 times annual debt service on outstanding debt for the year as well as projected pledged revenues as estimated by a consulting engineer over a three-year period after close of construction must be at least 1.25 times annual debt service on all bonds then outstanding including the additional bonds. As reflected in the following chart, current revenues are expected to be at least equal to 1.25 times current debt service in compliance with the rate covenant (with existing debt service in purple less than the 1.25 times revenue threshold depicted by the blue dotted line). The projected debt service provided by DOT-Airports satisfies the ABT test (with the total debt service falling below the orange line representing the 1.25 times threshold in the chart).

Debt Limit on Airport Revenue Bonds



As previously described, DOT-Airports employs a residual hybrid rate-setting methodology: essentially, the airlines fully compensate DOT-Airports for any operating expenses and debt service. Due to cost recovery mechanisms in place, DOT-Airports is anticipated to have sufficient revenues to meet the indenture coverage requirements for any planned debt issuances, so long as the airlines are willing and able to pay the resulting rates and charges. To ensure the continued support of airlines, DOT-Airports will get all necessary concurrence and approvals on any new projects before proceeding.

The 1969 Certificate of the Director also permits the construction of special facilities, such as the ConRAC facilities being constructed at the various airports, and provides for the issue of bonds, such as the CFC revenue bonds under the CFC Indenture. All debt secured by CFC revenues, including the EB-5 loan, is issued pursuant to the CFC Indenture of Trust dated August 14, 2014, as amended and supplemented. As per the indenture DOT-Airports must set the CFC rate and collect such CFC revenues as well as any additional “deficiency payments” from the rental car companies so as to provide a 1.40 times debt service coverage including funds available in the rolling coverage fund. The rolling coverage account is pre-funded at 25% maximum annual debt service.



DOT-Airports currently has no plans to issue additional CFC revenue bonds. Any additional bonds are subject to an ABT test wherein projected CFC revenues as estimated by a consulting engineer over three-year period after final expenditure of capitalized interest must be at least 1.25 times maximum annual debt service on all bonds then outstanding including the additional bonds. As reflected in the chart above, current CFC revenues and funds in the rolling coverage account are expected to be at least equal to 1.40 times current debt service in compliance with the rate covenant (with existing debt service in purple less than the 1.40 times revenue threshold depicted by the blue dotted line). Should DOT-Airports plan to issue future CFC revenue bonds for additional ConRACs at Lihue or other airports within the system, the projected CFC revenues will be sufficient to pass the ABT test.

2. Annual debt service payments to annual revenues and Annual debt service payments to annual appropriations: Annual debt service is projected to be consistently at about 24% to 26% of annual revenues during the next six years. Annual debt service is projected to be approximately 25% to 28% of annual expenditures. The ratios peak in the years following new debt issuance and are stable thereafter. Including pension and OPEB contributions along with annual debt service, total fixed costs accounts for about one-third of revenues.

3. Debt Service Coverage Ratio (DSCR): Debt service coverage is equal to net revenues, as defined in the Certificate, plus certain funds on hand (mainly the Coverage Account which is funded at 25% of annual debt service) and divided by principal and interest requirements for the fiscal year. The net revenues are adjusted to include federal grants including CARES Act funding available for operations and debt service and to exclude operating expense for the ConRACs and non-cash pension and OPEB contributions.

Due to DOT-Airports' hybrid rate setting methodology, revenues shall always be sufficient to meet existing and projected debt service requirements on all airport revenue debt as well as pay projected operating expenses.

Based on net revenues from operations alone, without including the Coverage Account, estimated senior lien coverage was 2.84 times in FY2022. Accounting for additional debt, it is projected to remain above 1.25 times over the next five years. Including the Coverage Account balance, the debt service coverage on senior lien debt is adequate (at least 1.5 times) over the projection period and the total debt service coverage on all senior and subordinate lien debt is also adequate (about 1.3 times). The projections assume that enplanements will continue to improve and will match or exceed FY2019 levels by FY2025 resulting in improved coverage ratio and financial position over the projection period.

4. Liquidity – days' cash on hand: Days' cash-on-hand, a measure of liquidity, is unrestricted cash and investments plus discretionary reserves, divided by operating and maintenance expenditures and multiplied by 365. DOT-Airports anticipates maintaining current levels of unrestricted cash and investments which provide strong days' cash on hand. Over the projection period through FY2028, DOT-Airports is estimated to maintain over 500 days' cash on hand providing significant liquidity and flexibility.

5. Cost per enplanement: CPE is airline-derived revenues (airline payments for the use of airport facilities in accordance with the adopted rates and charges methodology) divided by enplaned passengers. Actual dollar cost to airlines is projected to increase over the next few years as DOT-Airports funds capital projects and layers on additional debt service. However, DOT-Airports' CPE levels remain competitive.

6. Debt per enplanement: Debt per enplaned passenger (DPE) is total debt divided by total enplaned passengers. DPE is projected to increase as DOT-Airports plans to issue debt over the next few years. It is expected to moderate thereafter.

7. CFC debt service coverage: Based on projected collections through FY2026, coverage on CFC revenue bonds is expected to be strong, that is, close to or above 3.0 times. DOT-Airport has the authority to increase the CFC rate in the future, if needed. Like the airport revenue bonds program, DOT-Airports is made whole by rental car companies. If CFC revenues are insufficient, the rental car agencies must provide "deficiency payments" to cover all of costs under the indenture. Hence revenues can always be expected to be sufficient to meet debt service requirements on CFC bonds.

8. CFC transaction days: At all Hawaii airports, a CFC or user fee is imposed on each rental car user. A $4.50 CFC fee is collected per transaction per day. Transaction days is an estimate of total rental car transactions times the average number of days a car is rented. Transaction days declined by 22% in FY2020 relative to FY2019 and another 48% in FY2021. They are projected to recover to pre-COVID levels by FY2025 and grow at a modest 1.5% annually thereafter, in line with anticipated visitor volume.

Peer/Median Comparisons

It is important to note that DOT-Airports is relatively unique in that it is a system of airports rather than a single airport. As such, it is challenging to evaluate DOT-Airports among peer airports. Using Fitch's Analytic Comparative Tool (FACT) for U.S. Airports for FY2020, DOT-Airports compares favorably to the operational and financial medians reflected below.

DEBT AND OPERATING METRICS	DOT Airports FY 2022	DOT Airports FY 2020	FITCH AIRPORTS SECTOR FY2020 MEDIANS				
			All	Large Hub	Regional O&D	AA-Rated	A-Rated
Fitch Rating	A+	A+					
Enplanements	14,164	14,392	3,987	12,650	2,215	12,291	2,809
Largest Carrier Share	43%	43%	41%	46%	34%	39%	44%
O&D	90%	90%	95%	73%	97%	79%	95%
CPE	13.67	11.09	12.47	18.29	11.35	13.76	12.35
Days' Cash on Hand	673	705	556	495	628	774	541
Total Debt Service Coverage Ratio (x)	3.38	2.24	1.64	1.48	2.07	1.78	1.63
Net Debt/Cash Flow After Debt Service	6.86	5.04	5.05	7.43	3.62	6.39	5.28
Debt/O&D Enplanement	150	116	147	278	110	200	126
Debt/Enplanement	135	104	132	228	104	180	124

Fitch Analytic Comparative Tool for U.S. Airports FY2020. FY2022 data from DOT-Airports.

DOT-Airports' total debt service coverage was better than most peers and sector medians. DOT-Airport's liquidity position, which was paramount during the COVID-19 pandemic, was also stronger than or in line with peers and sectors medians. FY2020 DPE is low for DOT-Airports compared to the median for large hubs but this metric will continue to evolve as DOT-Airports as well as other airports layer on additional debt. Similarly, FY2020 CPE for DOT-Airports also compares favorably with the median for large hubs. But it is projected to increase to about $17.50 by FY2028 after accounting for new money issuance and similar increases in CPE are also expected for several peers and large hubs as they execute their capital plans. As noted earlier, per-enplanement metrics for FY2020 and FY2021 were skewed as enplanements levels dropped during the COVID-19 pandemic and all peer comparisons and median ratios should be viewed in that context.

DEBT AND OPERATING METRICS	DOT Airports FY 2022	DOT Airports FY 2020	PEERS					
			San Diego	Tampa	Greater Orlando	Alaska	Broward County	Las Vegas
Fitch Rating	A+	A+	AA-	AA-	AA-	A+	A+	A+
Enplanements	14,164	14,392	9,236	6,681	14,538	2,649	10,684	19,038
Largest Carrier Share	43%	43%	38%	30%	22%	69%	27%	33%
O&D	90%	90%	96%	90%	95%	100%	89%	91%
CPE	13.67	11.09	13.73	8.97	9.95	12.39	10.78	12.55
Days' Cash on Hand	673	705	1,235	432	728	630	490	626
Total Debt Service Coverage Ratio (x)	3.38	2.24	2.26	1.69	2.07	2.55	1.23	1.26
Net Debt/Cash Flow After Debt Service	6.86	5.04	3.92	5.93	7.43	2.55	9.08	6.48
Debt/O&D Enplanement	150	116	151	181	206	126	259	182
Debt/Enplanement	135	104	145	163	196	126	230	166

Fitch Analytic Comparative Tool for U.S. Airports FY2020. FY2022 data from DOT-Airports.

More generally, DOT-Airports must carefully balance the need to fund infrastructure with maintaining attractive airline cost structure. Given DOT-Airports' monopolistic position in the service area and strong tourism levels, higher CPE is less of a concern than for other airports that have competing airports nearby.

Moody's also publishes US Airport Medians annually, and sector medians for FY2020 are presented below. DOT-Airports' debt and financial position compares favorably with A-rated credits, higher rated credits as well as residual airports.

DEBT AND OPERATING METRICS	DOT Airports FY 2022	DOT Airports FY 2020	MOODY'S AIRPORTS SECTOR FY2020 MEDIANS			
			Residual	Aa3 Rated	A1 Rated	A2 Rated
Moody's	A1	A1				
Enplanements	14,164	14,392	4,446	14,538	4,724	5,056
Largest Carrier Share	43%	43%	46%	33%	42%	48%
O&D	90%	90%	85%	85%	80%	87%
CPE	13.67	11.09	18.19	9.95	12.39	12.53
Days' Cash on Hand	673	705	427	959	668	714
Debt Service Coverage - Indenture (x)	3.38	2.06	1.45	1.40	1.60	2.03
Debt Service Coverage - Moodys (x)	2.84	1.71	1.27	1.58	1.55	1.56
Debt/O&D Enplanement	150	116	283	224	201	200
Debt/Enplanement	135	104	241	191	161	174

Moody's Investor Service: US Airport Medians Fiscal 2020. FY2022 data from DOT-Airports.

The DOT-Airports' CFC credit is one of the highest rated among airports in the nation. In the table below, we provide a comparison of the DOT Airports' CFC metrics with some of its peers, several of whom also have a significant tourism sector. The DOT-Airports' coverage and legal covenants compare very favorably to most of its peers and support its A-category ratings which are the highest amongst its peers.

CFC DEBT METRICS	DOT Airports	PEERS						
		Massport	San Diego	Tampa	Portland	New Orleans	Anchorage	Orlando
Rating	A2/A-/ A	A3/BBB+/A	A3/BBB+/-	A3/BBB+/-	-/A-/A-	Baa1/A/-	Baa2/-/-	NR
CFC Rate	4.5	6.0	9.0	6.0	6.0	8.0	9.8	3.5
Rate Covenant (x)	1.40	1.30	1.30	1.50	1.50	1.35	1.25	1.25
FY2021 DSCR (x) *	5.08	2.05	1.49	1.62	1.70	2.58	1.25	1.35

Source: Audit Reports and Continuing Disclosure Reports for FY2021, New Orleans data as of FY2020; * Debt service coverage ratios include rolling coverage account, supplemental reserve fund, CFC surplus account and other supporting accounts, as applicable.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

As DOT-Airports evaluates funding of future capital improvements, affordability for DOT-Airports can be assessed by several factors including debt service coverage, liquidity and cash balances, cost per enplanement and debt per enplanement. Often assessing whether an airport is over-leveraged is difficult because of the cost recovery mechanisms in place through the airline and/or rental car agreements. Forward looking leverage and affordability assessments are even more challenging with concerns of a recession and its impact on travel demand.

Enplanements grew by 14.9% between FY2014 and FY2019 but declined by 68% in FY2020-FY2021. FY2022 enplanement are at 76% of FY2019 levels and are forecasted to return to pre-pandemic levels by FY2025 and increase by a modest 1.5% thereafter. However, the enplanement levels and projected financial metrics are subject to volatility due to unforeseen economic events. Continued progress on DOT-Airports' capital improvement plan combined with improved and stable operational and financial metrics support DOT-Airports' credit and overall affordability. Projections reflect higher but still competitive CPE and DPE levels. Current enplanement and revenue projections indicate stable liquidity levels and sufficient revenues to pay existing and projected debt service on additional airport revenue debt.

Residual airline agreement and ability to adjust rates and charges coupled with extraordinary coverage protection in the form of Airports System Support Charge provide adequate coverage levels and compliance with the rate covenant regardless of enplanement levels. DOT-Airports' ability to adjust the scope and timing of projects provides additional flexibility in volatile times. That said, future projects should be evaluated in the broader economic context and in close collaboration with signatory airlines.

Similar to enplanement levels, CFC transactions at Hawaii airports are expected to return to pre-COVID levels by FY2025. It is noted here that DOT-Airports has the flexibility to raise the CFC rate (which at $4.50 is lower than several other airports) and has contractual protection under the agreements with rental car agencies that must provide for deficiency payments, if needed. There are currently no plans to issue additional CFC Revenue Bonds. The DOT-Airports' overall conservative approach to funding as much of the ConRAC capital cost as possible with pay-go dollars, supports overall affordability of any future CFC revenue bonds, if and when contemplated, to fund ConRACs at Lihue or other airports in the system. Any such future debt should be evaluated in the context of rental car activity.

IV. Department of Transportation – Harbors

The Department of Transportation, Harbors Division (DOT-Harbors) manages a commercial harbors system that facilitates safe and efficient operations of commercial cargo, passenger, fishing, and other commercial maritime-related services.

The Harbor System is comprised of ten harbors. DOT-Harbors operates as a landlord port. DOT-Harbors derives its revenues from three major sources: services revenues, rental income and other operating revenue. Services revenues are derived from tariffs assessed on the activities of ships and handling of cargo and include wharfage charges, dockage fees, port entry fees, demurrage, mooring charges and fees for other services. Rental income includes charges for wharf space and land, storage, pipeline usage and automobile parking space. DOT-Harbors operated for many years without any increase in tariffs but it has remedied that in recent years. In 2016, DOT-Harbors adopted a schedule of discrete multi-year tariff increases in consultation and with support from primary harbor system users. Tariffs were increased by 17% in FY2017, followed by 15% in FY2018 and FY2019. Following these three increases, rates will be automatically raised every year by 3% or the Honolulu Consumer Price Index (CPI) rate, whichever is higher. The planned FY2021 tariff increase of 3% was deferred from July 1, 2020, to Jan 1, 2021, due to the COVID-19 pandemic. That was the only pandemic-driven deferral with the 3% increase implemented as planned for FY2022. FY2023 tariffs will be raised by 6% as January 2022 Honolulu CPI was 6%.

DOT-Harbors' primary financing program consists of harbor revenue bonds secured by net available revenue. Net available revenue represents generally, total operating revenues and interest earned on investments (including but not limited to rates and charges assessed in relation with the services provided) deposited into the Harbor Special Fund after payment of any operating costs. DOT-Harbors has the legal and contractual obligation to adjust the rates and charges prescribed for the services and facilities to ensure sufficiency of revenues. In certain cases, B&F may issue GO bonds on behalf of DOT-Harbors repayment of which is entirely the responsibility of DOT-Harbors. Repayment of reimbursable GO bonds is subordinate to payment on DOT-Harbors' revenue bonds.

A. Debt Profile

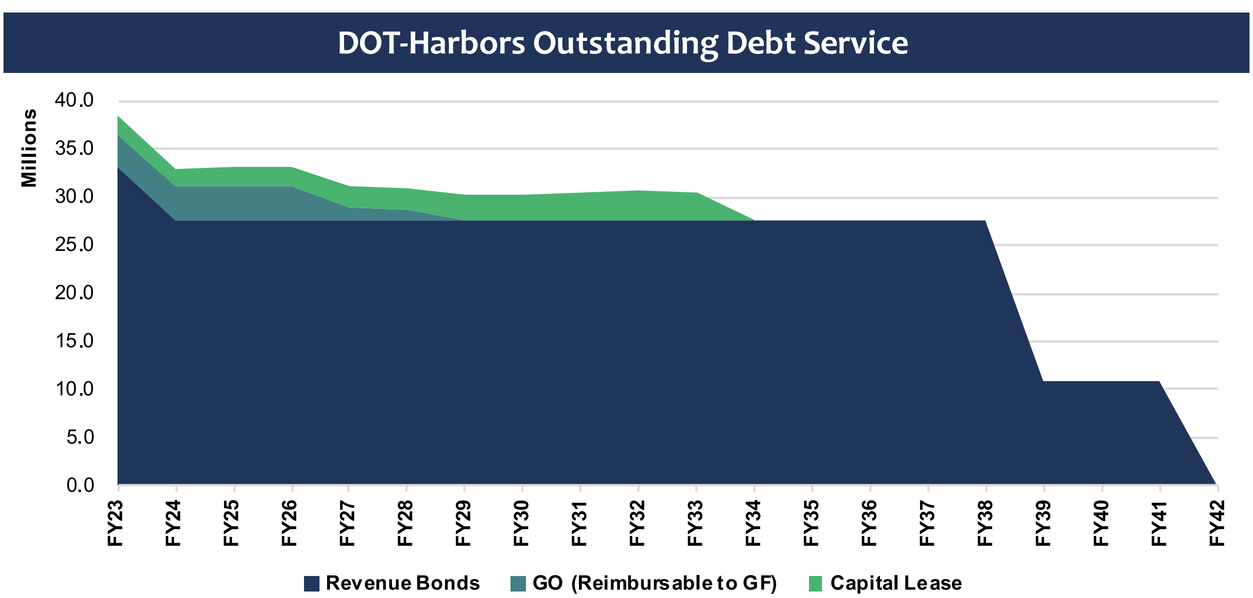
DOT-Harbors currently has seven series of harbor revenue bonds outstanding totaling $334.8 million. In addition, DOT-Harbors is responsible for payments on $13.7 million in reimbursable GO bonds. It also has a $22.4 million capital lease outstanding the proceeds of which were used to fund energy conservation projects. Energy savings generated from the projects are sufficient to cover the lease payments.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Par Call Date	Callable Par
				Revenue Bonds			
Series 2013A	AMT	23,615,000	8/2/13	7/1/29	7,995,000	7/1/2019	7,995,000
Series 2016A	AMT	14,565,000	12/6/16	1/1/24	4,385,000	1/1/2018	4,385,000
Series 2016B	AMT	68,535,000	12/6/16	1/1/31	51,425,000	1/1/2026*	51,425,000*
Series 2016D	AMT	22,425,000	7/5/17	7/1/27	17,040,000	7/1/2018	17,040,000
Series 2020A	AMT	147,520,000	12/2/20	7/1/37	145,090,000	7/1/2030	102,310,000
Series 2020B	Taxable	15,685,000	12/2/20	7/1/24	5,470,000	-	-
Series 2020C	Non-AMT	103,345,000	12/2/20	7/1/40	103,345,000	7/1/2030	90,245,000
Sub-Total	-	-	-	-	**334,750,000**	-	**273,400,000**
				GO Bonds (Reimbursable)			
GO Bonds	Tax-Exempt	-	-	-	13,666,488	-	-
				Capital Lease			
Capital Lease	Tax-Exempt	26,992,659	9/17/15	10/1/32	22,385,438	-	-
Total	-	-	-	-	**370,801,926**		**273,400,000**

*$19.465 million is currently callable with the remaining $31.96 million callable on January 1, 2026.

B. Debt Service Chart

DOT-Harbors has a level debt service profile with periodic step-downs in FY2024 and FY2039. Total debt service including reimbursable GO bonds and capital lease is approximately $38.5 million in FY2023, gradually decreasing to $27.7 million through FY2034, and finally stepping down to about $11.0 million in



FY2039. DOT-Harbors has moderate debt amortization with 50% of revenue bond principal being repaid over the next ten years.

C. Credit Ratings

DOT-Harbors maintains strong ratings in the AA-category as reflected in the table below. Moody's last affirmed the rating in 2020 and Fitch in 2022. DOT-Harbors' ratings were not affected by the COVID-19 pandemic. It entered the pandemic from a position of strength with very strong debt service coverage (more than 4.0 times) and liquidity position (over 1,000 days) that allowed DOT-Harbors to withstand short-term loss of cargo and cruise passengers during fiscal 2021, the period severely impacted by COVID-19 shutdowns.

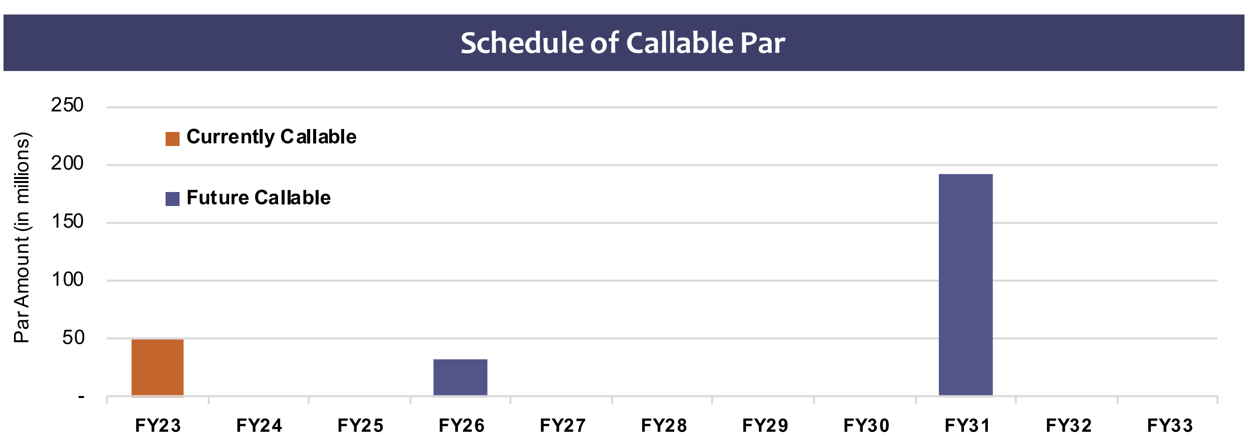
Department of Transportation Harbors Credit Ratings		
	Moody's	**Fitch**
Revenue Bonds	Aa3 Stable	AA- Stable

Credit strengths include DOT-Harbors' monopolistic position and its essentiality to Hawaii's economy, strong management focus on financial performance, demonstrated willingness to leverage its market position with multi-year series of tariff increases, strong financial position in terms of coverage and cash balances owing to strong cargo and container growth over the past decade, primarily cash-funded capital program and conservative debt structure.

Credit challenges include exposure to economic volatility owing to a significant tourism industry, customer concentration of cargo in one shipping line and relatively weak debt service reserve fund requirement compared to similarly rated credits and peers.

D. Schedule of Callable Bonds

The following chart provides a summary of callable harbor revenue bonds and par amounts. DOT-Harbors has approximately $273.4 million in callable par outstanding. About $48.9 million is currently callable as reflected in FY2023 in the chart (Series 2013A, Series 2016A, and part of Series 2016B and Series 2016D) but are unlikely to be refunded for savings at this time. Approximately $32.0 million is callable several years from now in FY2026 and another $192.6 million callable in FY2031. Pursuant to the criteria outlined in its



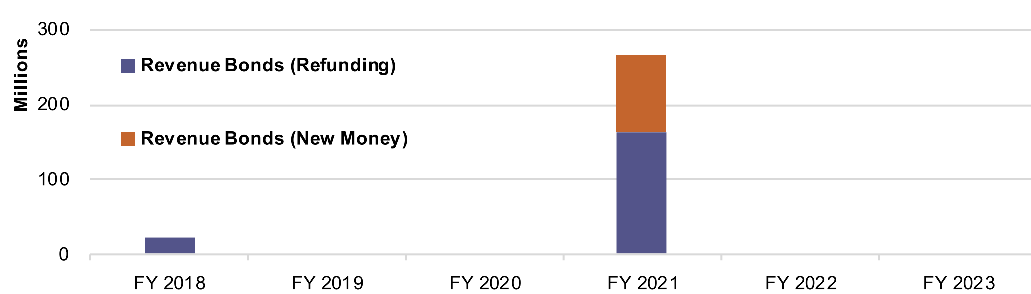
Debt Management Policy, DOT-Harbors may pursue opportunities to refund such callable bonds when appropriate and financially advantageous.

E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt

In the past five years, DOT-Harbors has issued refunding bonds in FY2018 (Series 2016D Bonds) and FY2021. DOT-Harbors historically cash-funded most of its CIP; however, DOT-Harbors issued new money bonds in December 2020, the first new money issuance since 2010.

Historical Issuance



Anticipated Debt

DOT-Harbors anticipates significant cash-funding of its CIP with no additional debt plans in the next six years.

Authorized but Unissued Debt

DOT-Harbors has approximately $440.6 million in authorized but unissued revenue bonds as of August 1, 2022.

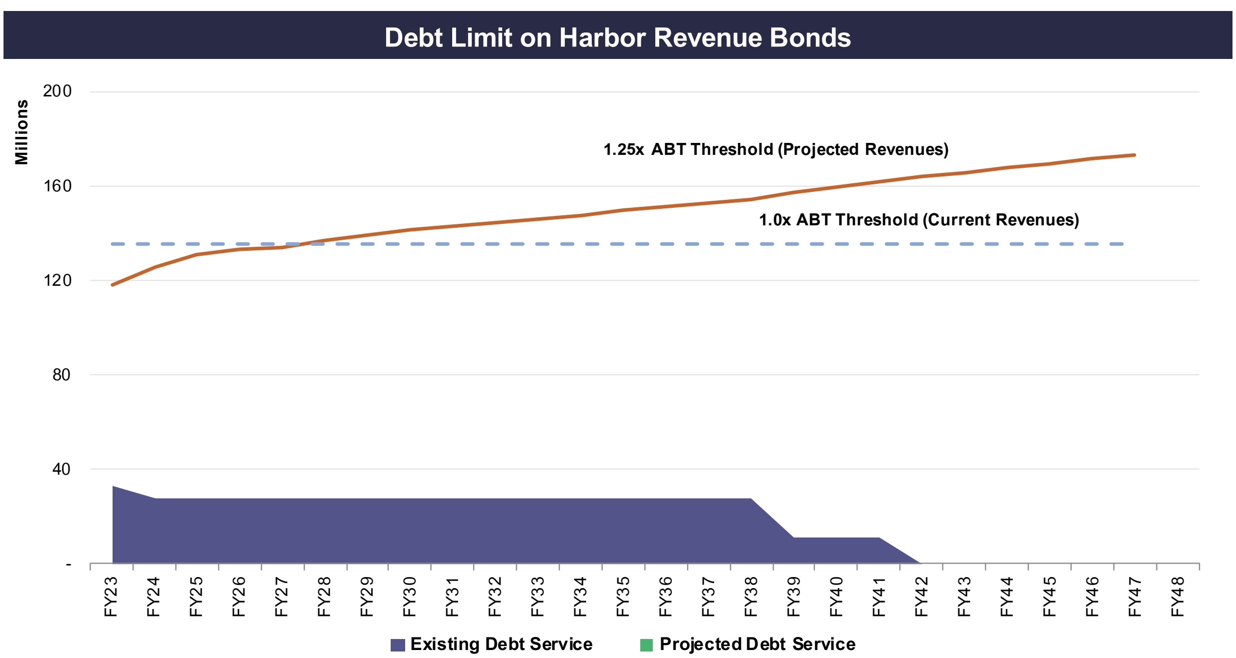
F. Measuring Debt Burden

Last Full Fiscal Year and Projected (six-years) Metrics

AFFORDABILITY METRICS	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	16.3%	17.5%	14.4%	13.8%	13.5%	12.4%	12.0%
Annual debt service to annual appropriations	32.6%	29.1%	25.9%	25.1%	24.6%	22.5%	21.9%
Revenue bonds debt service coverage (Indenture Revenues)	5.54x	4.44x	5.68x	5.92x	6.03x	6.07x	6.19x
Total debt service coverage (Indenture Revenues)	4.68x	3.83x	4.76x	4.94x	5.02x	5.39x	5.52x
Revenue bonds debt service coverage (Net Revenues)	4.79x	3.80x	4.90x	5.11x	5.22x	5.25x	5.35x
Total debt service coverage (Net Revenues)	4.05x	3.28x	4.10x	4.27x	4.34x	4.65x	4.77x
Debt to operating revenues	1.88x	1.64x	1.48x	1.34x	1.22x	1.11x	1.01x
Liquidity – days' cash on hand (days)	1,031	873	974	1,082	1,260	1,408	1,577

Relevant Affordability Metrics

1. Bond Certificate Limitations: As per the Bond Certificate of the Director of Transportation dated March 1, 1997, the DOT-Harbors' revenue bonds are subject to a rate covenant that requires setting appropriate rates, rents, fees, and charges so as to always remain self-supporting, i.e., generate sufficient revenues to cover all of DOT-Harbor's obligations including but not limited to operating expenses and debt service on outstanding revenue and reimbursable GO bonds. In other words, DOT-Harbors is required to demonstrate one times coverage on all bonds from net revenues of the system before adjustments. Additionally, net revenues over the next 12-month period, when adjusted for balances available in the reserve and contingency are subject to a rate covenant of 1.25 times aggregate debt service. Over and above that, should DOT-Harbors want to issue additional senior lien debt, the Certificate dictates a twofold ABT test - at least one times coverage on all anticipated debt based on historical net revenues



(such threshold shown as gray dotted line in the chart) and 1.25 times coverage after inclusion of any projected increases in most recent year's net revenues (such threshold shown as an orange line in the chart). With no plans to issue any additional revenue bonds, DOT-Harbors is projected to maintain very strong debt service coverage levels. Historical revenues, even before incorporating projected increases, provide coverage of over 1.0 times and projected revenues provide a coverage much greater than 1.25 times future debt service with significant capacity under the ABT test.

2. Annual debt service payments to annual revenues and annual debt service payments to annual appropriations: The annual debt service to annual revenues ratio is expected to gradually decline over the projection period, from 17.5% in FY2023 to 12.0% in FY2028. A combination of strong demand for the harbors system and scheduled as well as inflation-driven increases in various fees and tariffs, have resulted in strong revenue performance for DOT-Harbors in recent years with a favorable impact on the debt service-to-annual revenues ratio. Over the projection period, annual debt service to annual appropriations also improved from 29.1% to 21.9% (FY2028).

   DOT-Harbors' total fixed costs, including estimated pension and OPEB contributions along with annual debt service, were modest at about 19% of revenues in FY2022. The ratio could further moderate with growth in revenues provided there are no large swings in required pension and OPEB contributions.

3. Debt service coverage: Debt service coverage is net revenues, as defined in the Certificate, divided by principal and interest requirements for the fiscal year. Over the projection period, debt service coverage for the revenue bonds (based on net revenues as adjusted based on the Certificate) is projected to remain strong – in excess of 4.0 times. Total debt service coverage including all debt is also projected to remain strong at over 3.0 times.

4. Debt-to-operating revenue: The debt-to-operating revenues ratio is calculated by dividing total outstanding debt by total annual operating revenues and is a measure of leverage. It has steadily declined since it's 2011 peak of 4.9 times to 1.9 times in FY2023 with limited new debt and healthy increases in operating revenues over the period. With a cash-funded capital plan and no additional debt needs in the foreseeable future, the ratio is projected to decline to 1.0 times by FY2028.

5. Liquidity – days' cash on hand: Days' cash on hand, a measure of liquidity, is unrestricted cash and investments plus discretionary reserves, divided by operating and maintenance expenditures and multiplied by 365. Despite DOT-Harbors' planned use of cash on hand to fund capital projects and setting aside certain funds for future projects, liquidity ratios are very strong. DOT-Harbors estimates 1,031 days cash on hand at the end of FY2022. Despite some declines in liquidity levels in FY2020 and FY2021 due to planned use for ongoing capital projects as well as revenue shortfalls attributable to the COVID-19 pandemic, liquidity is anticipated to improve substantially over the next six years.

Peer/Median Comparisons

Utilizing FACT for U.S. Ports for FY2020, we compare DOT-Harbors against Fitch rated seaports sector medians, Harbor Department of Los Angeles, Port of Long Beach, Port of Beaumont Navigation District, and San Diego Unified Port District. As reflected in the tables, DOT-Harbors' liquidity is extremely strong in comparison to the seaports sector median and in line with what its peers maintain. The projected cash on hand of over 1,000 days over the next six years is significantly higher than the sector median.

DEBT AND OPERATING METRICS	DOT Harbors FY2022	DOT Harbors FY2020	FITCH SEAPORTS FY2020 MEDIANS		
			Overall Seaports	AA Rated	A Rated
Fitch Rating	AA-	AA-			
Days' Cash on Hand	1,031	1,298	565	1,268	545
Total Debt Service Coverage (x)	5.54	4.53	1.87	3.94	1.72
Net Debt/Cashflow available for debt	0.98	0.33	2.28	Cash +ve	5.47
Minimum Annual Guarantees as a % of Operating Revenues	0%	0%	56%	43%	58%

Fitch Analytic Comparative Tool for U.S. Ports released March 2022. FY2022 data from DOT-Harbors.

Since the tariff increases were implemented, DOT-Harbors debt service coverage ratio of 4.0-5.0 times is very strong, well above the sector median (1.87 times) and most of its peers.

DEBT AND OPERATING METRICS	DOT Harbors FY2022	DOT Harbors FY2020	PEERS			
			Harbor Dept. of Los Angeles	Port of Long Beach	Port of Beaumont Nav. District	San Diego Unified Port District
Fitch Rating	AA-	AA-	AA	AA	AA-	A+
FY Cargo TEU	-	-3.0%	-11.6%	-1.1%	NA	5.0%
FY Cargo Tons	-	-9.4%	-14.7%	-7.2%	7.3%	-14.4%
FY Cruise Passengers	-	-30.3%	-17.0%	NA	NA	-30.0%
Days' Cash on Hand	1,031	1,298	1,239	1,397	1,083	205
Total Debt Service Coverage (x)	5.54	4.53	2.98	3.35	12.26	1.03
Net Debt/Cashflow avail. for debt service	0.98	0.33	Cash +ve	2.10	Cash +ve	Cash +ve
Minimum Annual Guarantees as a % of Operating Revenues	0%	0%	80%	90%	6%	49%

Fitch Analytic Comparative Tool for U.S. Ports released March 2022. FY2022 data from DOT-Harbors.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

DOT-Harbors' modernization plan is being funded primarily from cash and no additional debt is anticipated over the projection period. As reflected in the affordability metrics above, DOT-Harbors is projected to maintain sufficient revenues to support outstanding debt service along with very strong coverage levels of over 3.0 times. DOT-Harbors' projected liquidity (as measured by days' cash on hand) is anticipated to remain high (above 800 days and growing to over 1,500 days). This sizeable liquidity position provides tremendous financial flexibility and budgetary stability. It also continues to be a significant credit positive, and the rating agencies continue to cite DOT-Harbors' ability to utilize its cash to pay-go fund infrastructure needs as well as provide budgetary relief as stabilizing credit factor. DOT-Harbors' projected revenues are sufficient to cover existing bond debt service and comfortably satisfy future ABT tests should additional debt be issued, even though none is planned at this time. Revenue growth assumptions remain conservative, driven primarily by inflation-driven tariff increases which provides additional assurance on the affordability assessment.

V. Department of Transportation – Highways

The Department of Transportation, Highways Division (DOT- Highways) supervises the management and maintenance of the State Highway System and the location, design and construction of new highways roads and facilities. The State imposes taxes, fees, and charges relating to the operation and use of motor vehicles on the public highways of the State and these funds are deposited into the State Highway Fund. The major revenue sources of the State Highway Fund include highway fuel license taxes, vehicle registration fees, vehicle weight taxes, and rental motor vehicle, tour vehicle and car-sharing vehicle surcharge taxes. In response to COVID-19 pandemic-driven decline in revenues, the rental motor surcharge tax was raised by $0.50 per day to $5.50 per day for the calendar year 2022 and set to increase by $0.50 per day in each subsequent year through 2027.

DOT-Highways' primary financing program consists of highway revenue bonds. These revenue bonds are secured by a gross pledge of revenues in the State Highway Fund, including but not limited to highway fuel license taxes, registration fees, weight taxes rates and rental motor vehicle taxes. The flow of funds requires payment of debt service before operations and maintenance. With legislative approval, DOT-Highways has the flexibility to adjust the rates and allocation of the fees and taxes prescribed to ensure sufficiency of revenues. In certain cases, B&F may issue GO bonds on behalf of DOT-Highways, repayment of which is entirely the responsibility of DOT-Highways. Repayment of reimbursable GO bonds is subordinate to payment on DOT-Highways' revenue bonds as well as O&M and necessary capital costs. DOT-Highways also issues COPs and Lease Purchase Agreements payable from funds appropriated for DOT-Highways.

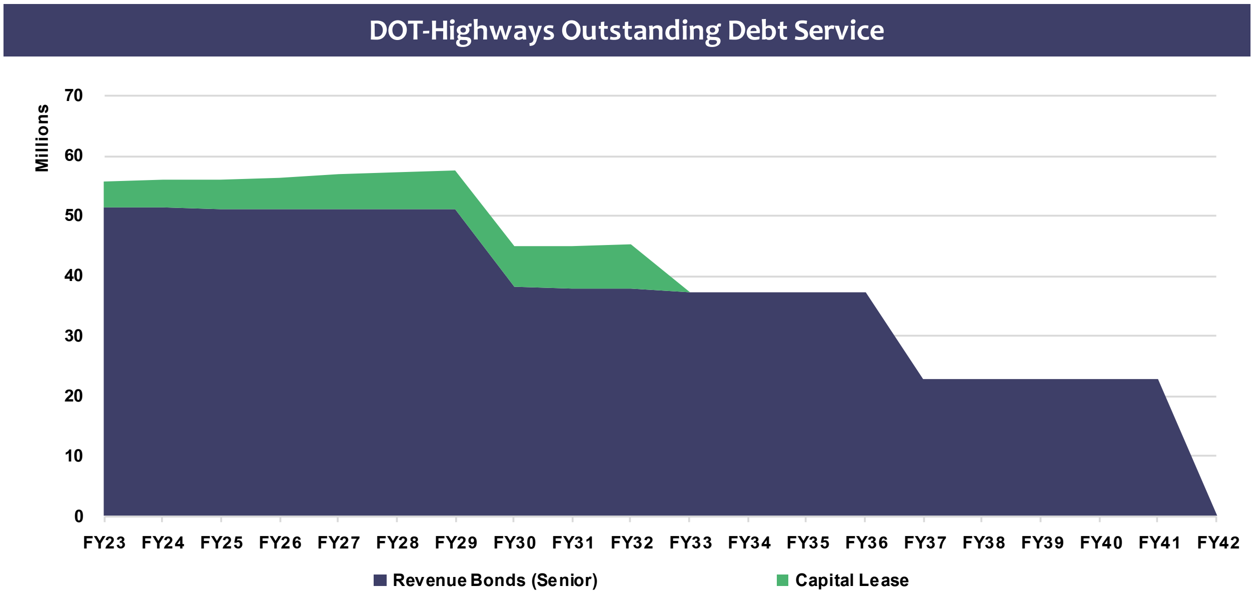
A. Debt Profile

DOT-Highways currently has eight series of highway revenue bonds outstanding for a total outstanding par of $506.3 million. It also has a $50.6 million capital lease outstanding, the proceeds of which were used to fund energy conservation projects. Energy and cost savings from the project are typically sufficient to cover the lease payments.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Call Date	Callable Par
			Revenue Bonds				
Series 2011B	Tax-Exempt	5,095,000	12/15/11	1/1/23	5,095,000	1/1/2022	5,095,000
Series 2014A	Tax-Exempt	103,375,000	8/14/14	1/1/34	73,810,000	7/1/2024	64,305,000
Series 2014B	Tax-Exempt	32,285,000	8/14/14	1/1/26	14,745,000	7/1/2024	7,735,000
Series 2016A	Tax-Exempt	103,395,000	9/8/16	1/1/36	82,175,000	7/1/2026	63,520,000
Series 2016B	Tax-Exempt	101,090,000	9/8/16	1/1/30	88,325,000	7/1/2026	52,080,000
Series 2019A	Tax-Exempt	81,835,000	12/11/19	1/1/40	81,835,000	1/1/2029	58,005,000
Series 2021	Tax-Exempt	137,205,000	6/9/21	1/1/39	137,205,000	1/1/2031	117,465,000
Series 2019B	Tax-Exempt	23,130,000	10/7/21	1/1/32	23,130,000	NA	-
Sub-Total	-	-	-	-	**506,320,000**	-	**368,205,000**
			Capital Lease				
Capital Lease	-	-	7/8/15	8/1/31	50,608,975	-	-
Total	-	-	-	-	**556,928,975**	-	**368,205,000**

B. Debt Service Chart

DOT-Highways' aggregate debt service structure is level for the next few years with periodic step-downs in FY2030 and FY2037. DOT-Highways structures series with level debt service except for refunding bonds which are structured to generate level savings. The principal amortization of revenue bonds is above average with nearly 61% of principal being amortized over the next ten years.



C. Credit Ratings

The DOT-Highways' revenue bonds carry strong credit ratings in the 'AA' category from all three rating agencies. DOT-Highways rating is linked with (and equal to) the State's GO credit ratings which were recently affirmed by all three rating agencies at the levels shown in the table below. These ratings reflect a one notch downgrade on DOT-Highways revenue bonds in 2020 by Moody's and Fitch, following a one-notch downgrade in the State's GO rating to 'Aa2/AA' on account of weakening in the State's credit quality attributable to the COVID-19 pandemic and the impact on the State's tax revenues and tourism industry. For a more detailed discussion on the State's rating please refer to Section II Subsection C of this report.

Department of Transportation Highways Credit Ratings			
	Moody's	**S&P**	**Fitch**
Revenue Bonds	Aa2 Stable	AA+ Stable	AA Stable

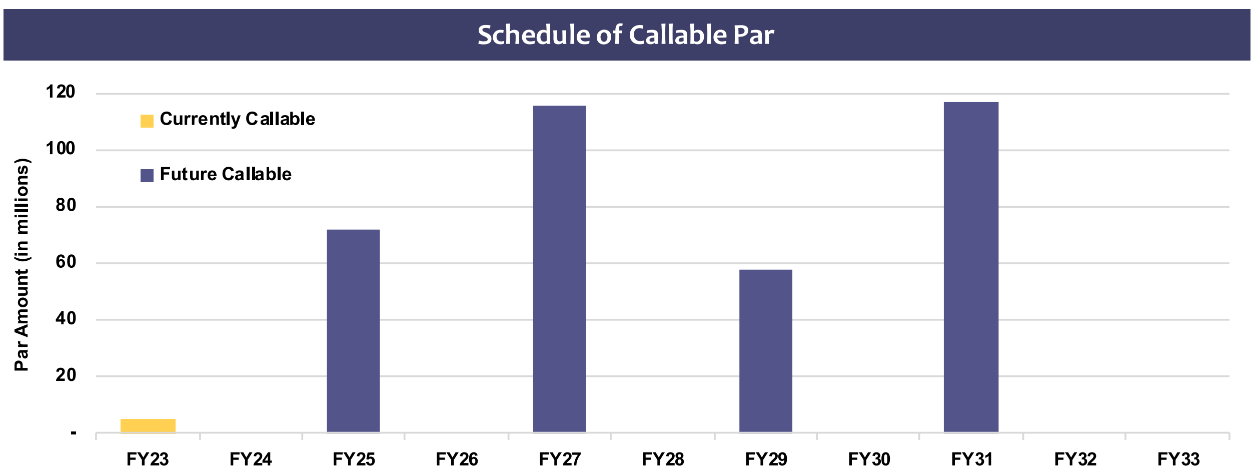
Credit strengths include strong senior lien debt service coverage (despite significant decline in revenues during the COVID-19 pandemic which have since rebounded), the diversity of the pledged revenue stream, the state legislature's demonstrated willingness to add new pledged revenues as needed to fund the state's highway program, 100% fixed-rate debt portfolio, limited future borrowing plan coupled with strong additional bonds test that provides bondholders protection against overleveraging in the future, diverse and robust economy with strong demographics and a healthy rental car market, and prudent management.

Credit challenges include volatility of pledged revenues either driven by economic considerations, dependence on tourism and the high proportion of car rental surcharges and transfers from the highway fund to the general fund, as had occurred in the past, although none are anticipated at this time.

Per the indenture, DOT-Highways funds a debt service reserve sized at one-half of maximum annual debt service for its revenue bonds. However, DOT-Highways, through a supplemental indenture, will eliminate the debt service reserve fund requirement pending consent of 100% of bondholders which has not been attained yet. Rating agencies are aware of the potential change and have not indicated any potential impact to DOT-Highways' credit ratings as their methodologies do not place too much emphasis on reserve funds for special tax credits like DOT-Highways.

D. Schedule of Callable Bonds

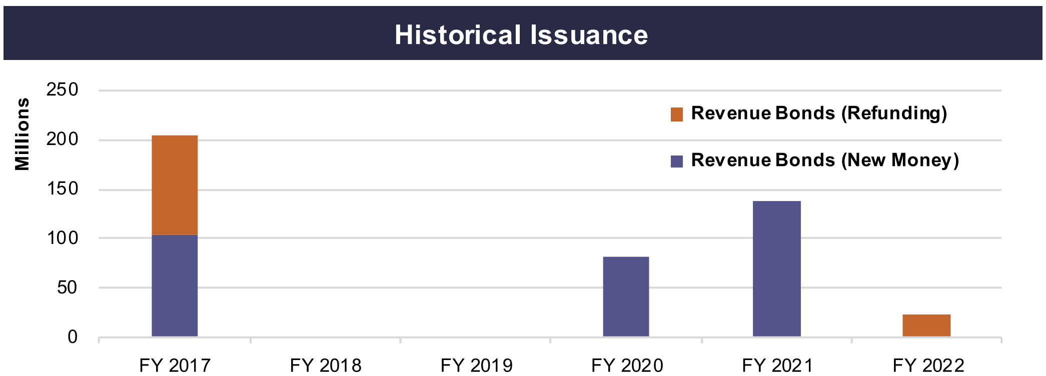
The following chart provides a summary of callable highway revenue bonds. About $368.2 million of the outstanding debt is callable in advance of final maturity. Technically, about $5.1 million of that is current callable as represented by the yellow bar in the chart below. However, it is an insignificant amount, and that debt matures on January 1, 2023. The next call date is in July 2024 with $72.01 million callable at the time. Future call dates for the remaining par are in FY2027, FY2029 and FY2031. Pursuant to the criteria outlined in the Debt Management Policy, DOT-Highways may pursue opportunities to refund callable bonds when appropriate.



E. Multi-Year Program Anticipated/Intended Debt Issuance

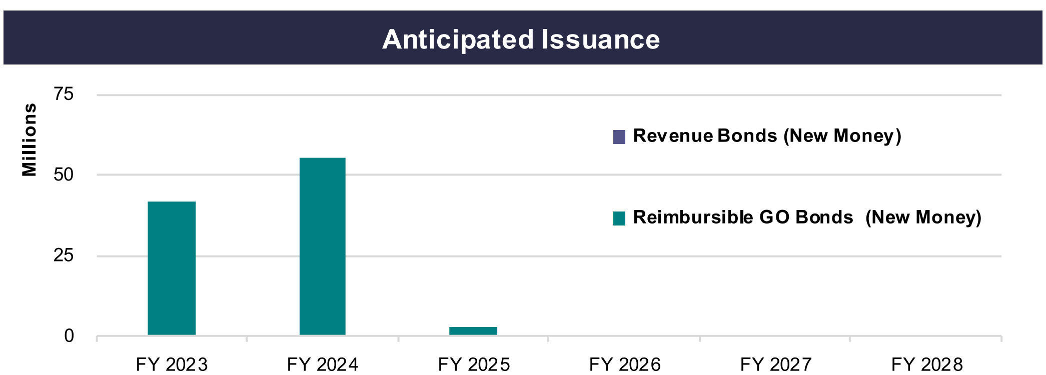
Existing Debt

DOT-Highways has accessed capital markets for both new money and refunding bonds every two to three years with the last issuance in June 2021. New money issuance has been in the range of $50 million to $150 million with the latest issuance par of $137 million in FY2021. Series 2019B bonds (forward delivery contract to refund Series 2011A) were delivered in October 2021.



Anticipated Debt

As of August 31, 2022, DOT-Highways does not anticipate issuing revenue bonds. DOT-Highways anticipates using $100 million reimbursable GO proceeds for capital projects over the next three years.



Authorized but Unissued Debt

DOT-Highways has about $3.03 billion authorized but unissued revenue bond debt remaining. DOT-Highways has received allotment of the $100 million RGO appropriation.

F. Measuring Debt Burden

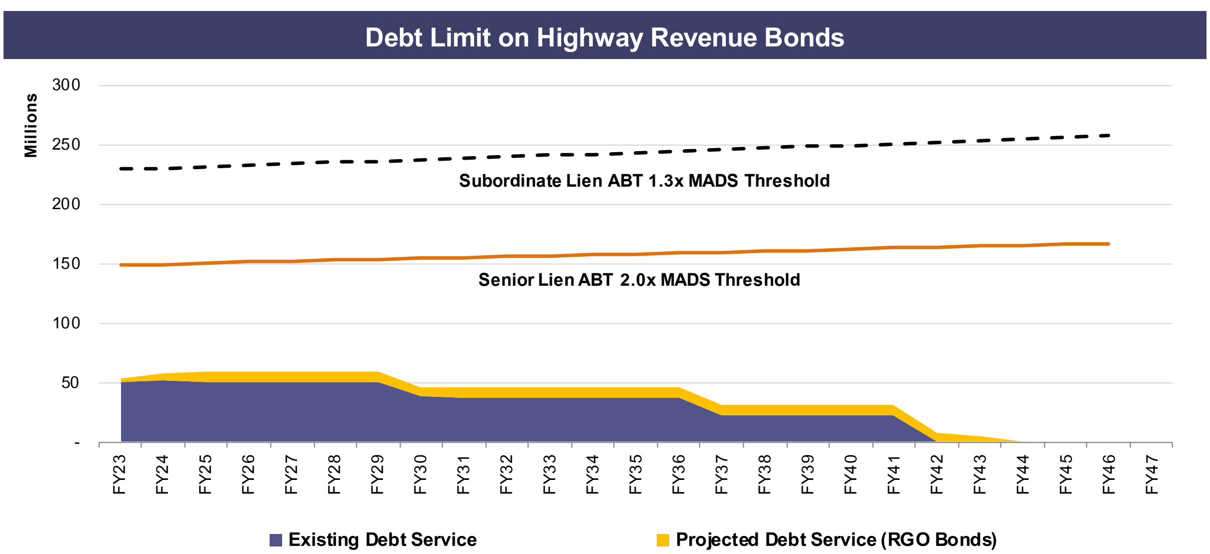
Last Full Fiscal Year and Projected (six-years) Metrics

AFFORDABILITY METRICS	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	16.9%	18.0%	19.5%	19.8%	19.7%	19.7%	19.6%
Annual debt service to annual appropriations	23.5%	24.8%	26.3%	26.5%	26.4%	26.4%	26.3%
Debt service coverage (Gross)	5.93x	5.84x	5.86x	5.93x	5.96x	5.97x	6.00x
Debt service coverage (Net)	2.68x	2.52x	2.32x	2.28x	2.28x	2.29x	2.29x
Liquidity – days' cash on hand	474 days	468 days	458 days	455 days	455 days	455 days	455 days

Note: Projected metrics, except gross debt service coverage, assume issuance of $100 million of additional reimbursable GO bonds (see anticipated debt above)

Relevant Affordability Metrics

1. Master Certificate Limitations: As per the Master Certificate of the Director of Transportation dated August 1, 1993, DOT-Highways' revenue bonds are subject to a rate covenant that requires setting appropriate rates, rentals, fees, and charges so as to generate sufficient revenues to cover all of DOT-Highway' obligations including but not limited to operating expenses and debt service on all outstanding bonds including reimbursable GO bonds. In other words, DOT-Highways is required to maintain one times coverage on all bonds. Over and above that, should DOT-Highways want to issue additional senior lien debt, the Certificate dictates an ABT test of 2.0 times coverage (orange line in the chart) on projected maximum annual debt service (MADS) payment from pledged revenues for any 12 consecutive calendar month period out of the last 18 consecutive calendar month preceding the date of issuance. If DOT-Highways were to issue new bonds on a subordinated lien to currently outstanding debt which are all senior lien bonds, the ABT requirement is 1.3 times MADS (black line in the chart). There is no ABT requirement for issuing reimbursable GO bonds.



As reflected in the chart, there is significant debt capacity for revenue bonds and reimbursable GO debt even with the rate covenant and ABT limitations. DOT-Highways can fund its projected capital needs with reimbursable GO bonds within indenture limits and in compliance with the rate requirement. While DOT-Highways has sufficient senior lien capacity and does not intend to leverage the subordinate lien at this time, that option is also available to DOT-Highways and provides additional borrowing capacity. These legal limits are based on gross revenues before payment of operating expenses which is typical for state highway DOTs.

2. Annual debt service payments to annual revenues or annual debt service payments to annual appropriations: These ratios measure the financial flexibility available to DOT-Highways by analyzing the fixed costs embedded in the budget. Debt service, which is a fixed cost, accounts for 16.9% of FY2022 revenues which is a significant improvement from FY2019 owing to a strong growth in operating revenues driven by rental vehicle surcharge revenues. Not only did the tourism increase during the time but the surcharge was raised by $2.00 to $5.00 per day right before the COVID-19 pandemic in FY2020 and is set to increase further by $0.50 per day every year starting in 2022 through 2027. The growth in base revenues has placed DOT-Highways in a favorable position to be able to execute its planned borrowing without any adverse budgetary impact. The debt service is 23.5% of FY2022 expenditures. The ratios are expected to peak after debt issuance at 19.8% of revenues and 26.5% of expenditures in FY2025. Revenue projections are very conservative resulting in the very gradual improvement from the peak years. Including pension and OPEB contributions along with annual debt service, total fixed costs accounts for about one-third of revenues.

3. Gross debt service coverage: Gross debt service coverage is computed based on gross pledged revenues before payment of any operating expenses. Based on conservative revenue estimates for FY2022, the coverage on *revenue bonds* is very strong at 5.9 times. Gross coverage has also improved significantly since FY2019 on account of the revenue growth discussed above. In the absence of additional revenue bonds over the next six years, the coverage is expected to remain strong at or about 5.8 times, with significant debt capacity relative to the 2.0 times ABT requirement discussed above. It should be noted that while there is capacity to issue debt, any significant dilution in coverage must be reviewed in the broader affordability and credit rating context.

4. Net debt service coverage: Legally, debt service is payable before operating expenses reflecting the strength of the gross revenue pledge. However, it is important to evaluate debt service coverage based on net revenues (after operating expenses) and including all debt, that is the reimbursable GO bonds apart from the revenue bonds. This ratio is a better measure and reflection of self-sustainability and overall affordability. Net debt service coverage is based on net revenues which are available for debt service after payment of necessary operating costs. Over the next six years DOT-Highways is projecting a healthy surplus after operations. The projected coverage using such net revenues on all debt, including the projected reimbursable GO debt, is expected to be above 2.0 times. Such strong net debt service coverage levels will help bolster DOT-highways bottom line and cash position.

5. Liquidity – days' cash on hand: DOT-Highways' liquidity levels have improved to 469 days in FY2021 which is over one year's operating expenses. While it did have unspent grants in the balance, DOT-highways projects the cash position to remain strong in the foreseeable future.

Peer Comparisons

We compare DOT-Highways with other similarly rated state transportation agencies across the nation, namely, Arizona Transportation Board, Missouri Highways and Transportation Commission, Kansas DOT, Oregon DOT and Nevada DOT. As reflected in the table, the gross coverage of MADS maintained by DOT-Highways on its senior lien bonds is in line with the selected peers in the sector. DOT-Highways' debt service as a percentage of operating expenditures is at 10.4%, also in line with peer agencies.

DEBT METRICS	DOT-	STATE DEPARTMENT OF TRANSPORTATION PEERS				
FY2021	**Highways**	**Missouri**	**Nevada**	**Oregon**	**Arizona**	**Kansas**
Lien	Senior	Third	Senior	Subordinate	Subordinate	Senior
Credit Ratings	Aa2/AA+/AA	Aa1/AA+/AAA	Aa2/AAA/AA+	Aa2/AA+/AA+	Aa2/AA+/--	Aa2/AA/AA-
Par Outstanding	$538.0 million	$1.41 billion	$712.71 million	$2.44 billion	$1.14 billion	$1.86 billion
Additional Bonds Test	2x MADS	2x MADS	3x MADS	3x MADS	3x MADS	3x MADS
Gross Coverage	4.85x	4.57x	4.38x	4.40x	5.35x	7.56x
Debt Service to OpEx*	10.4%	12.5%	6.3%	11.4%	8.2%	12.9%

Source: Audit Reports for FY2021 *Operating Expenditures

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

DOT-Highways' financial position is significantly improved compared to past years. The revenue capacity has been meaningfully enhanced due to higher rental vehicle surcharge rates. The rate increases will help offset volatility in tourism as well as supplement declining fuel taxes with the advent of electric vehicles. Gross debt service coverage is stronger as a result and net debt service coverage after payment of operating expenses is also solid, above 2.0 times, and is projected to remain above 2.0 times after accounting for estimated debt service on the anticipated RGO borrowing. In addition, the borrowing plan is modest and is not expected to have a significant impact on projected debt metrics. Instead of highway revenue bonds, the planned borrowing is anticipated to be RGO debt which does not have an ABT requirement. From that perspective it is a more flexible borrowing tool and cost effective in terms of issuance costs. DOT-Highways' liquidity position is also stronger which provides more budgetary stability going forward. With robust revenues and cash balance on one hand and limited debt plans on the other, there are no affordability concerns at the moment.

VI. University of Hawaii

The State of Hawaii University System (UH) is a multi-institutional system comprised of a major research university (the University of Hawaii at Manoa), two baccalaureate campuses (Hilo and West Oahu), seven community colleges (Hawaii, Honolulu, Kapiolani, Kauai, Leeward, Maui, and Windward) and nine educational centers distributed across the State. UH is the sole public higher education system within the State and, therefore, has a unique competitive position and value in Hawaii. Furthermore, the UH system is the only truly integrated higher education system in the country that seamlessly arranges its universities and community colleges into one system. Other public higher education systems in the country are typically separate and distinct systems defined by the type of system (community colleges, junior colleges and universities).

In addition to being an integrated higher education system, the UH system distinguishes itself through its Hawaiian, Asian and Pacific orientation and its position as one of the world's foremost multicultural centers for global and indigenous studies. Students are members of a population in which no one ethnic group constitutes a majority, and the educational experience is enriched by the diversity of cultures represented. UH's fall 2022 enrollment totaled 48,373 (88% undergraduate and 12% graduate students) which is only 2.8% lower than fall 2021. Hawaii residents comprised 80% of all enrolled students, nearly 15% were from the U.S. mainland, and the remaining 5% of students were international students from over 100 countries.

Major UH operating revenue sources include State operating support, net tuition and fee revenue, and federal funding of research. UH also receives significant State capital support. Net tuition revenue has either declined or improved modestly over the last three audited fiscal years as a result of enrollment declines during the period. Increase in tuition fees somewhat offset the impact on tuition revenues. Enrollment has been declining for the last few years and measures have been taken to stabilize the trend including focus on underserved regions and population and scholarship programs. As a result, the rate of decline has slowed and over the next few years, enrollment is projected to remain strong since UH offers a strong local opportunity for Hawaii residents to remain close to home to advance their education offering both 4-year and community college formats. After several years of moderate tuition increases, in May 2019 the Board of Regents approved a three-year freeze of undergraduate tuition rates at all ten campuses beginning with 2020-2021 academic year to retain affordability for students and improve retention. As such, net tuition revenue is expected to be flat at least through FY2024 with strong likelihood that rates will be increased from FY2025 as reflected in the projections.

UH's primary financing program consists of university revenue bonds which are generally secured by income derived by UH from its ownership and management of the Network including housing and auxiliary activities and moneys in any special fund or revolving fund, which include tuition and fees. Certain revenue bonds series are additionally secured by other revenues such as cigarette tax revenues or appropriations from the Hawaii Tobacco Settlement Special Fund.

In certain cases, B&F may issue reimbursable GO bonds on behalf of UH, repayment of which is entirely the responsibility of UH. Repayment of reimbursable GO bonds is subordinate to payment of UH's revenue bonds. As described above, UH receives significant operating and capital support from the State's general fund – including non-reimbursable GO bond funding.

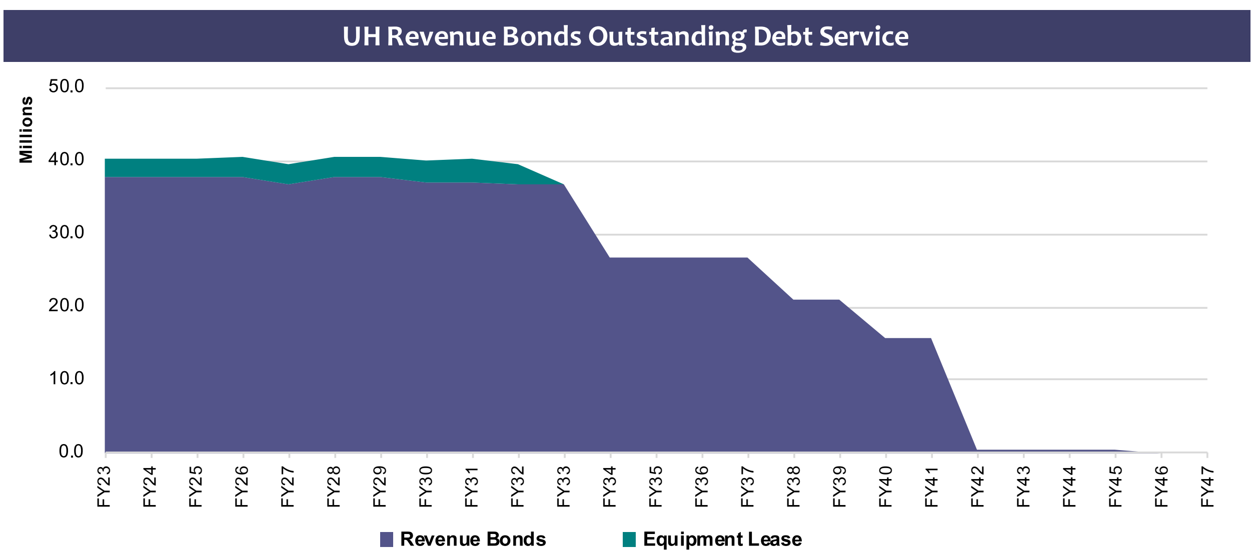
A. Debt Profile

UH currently has 15 series of bonds outstanding for a total par amount of $416.8 million. UH also has a couple of equipment finance leases outstanding in the amount of $22.5 million.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Call Date	Callable Par
				Revenue Bonds			
Series 2015A	Taxable	8,575,000	9/24/15	10/1/44	7,270,000	10/1/2025	6,630,000
Series 2015B	Tax-Exempt	47,010,000	9/24/15	10/1/36	44,880,000	10/1/2025	34,610,000
Series 2015E	Tax-Exempt	67,400,000	4/20/16	10/1/32	60,260,000	10/1/2026	34,200,000
Series 2017A	Tax-Exempt	3,990,000	12/28/17	10/1/32	2,925,000	10/1/2027	1,610,000
Series 2017B	Tax-Exempt	12,040,000	12/28/17	10/1/28	12,040,000	10/1/2027	6,110,000
Series 2017C	Taxable	4,110,000	12/28/17	10/1/28	4,110,000	10/1/2027	2,090,000
Series 2017D	Tax-Exempt	13,185,000	12/28/17	10/1/30	13,185,000	10/1/2027	3,250,000
Series 2017E	Taxable	4,450,000	12/28/17	10/1/30	4,450,000	10/1/2027	3,390,000
Series 2017F	Tax-Exempt	52,275,000	12/28/17	10/1/38	45,395,000	10/1/2027	33,110,000
Series 2017G	Taxable	20,745,000	12/28/17	10/1/38	17,330,000	10/1/2027	12,325,000
Series 2020A	Taxable	10,045,000	10/28/20	10/1/40	9,195,000	10/1/2030	5,575,000
Series 2020B	Tax-Exempt	44,555,000	10/28/20	10/1/31	38,795,000	10/1/2030	4,655,000
Series 2020C	Taxable	54,300,000	10/28/20	10/1/40	54,300,000	10/1/2030	54,300,000
Series 2020D	Tax-Exempt	77,135,000	10/28/20	10/1/36	71,500,000	10/1/2030	35,190,000
Series 2020E	Taxable	31,130,000	10/28/20	10/1/40	31,130,000	10/1/2030	31,130,000
Sub-Total	-	-	-	-	**416,765,000**	-	**268,175,000**
				Other Obligations			
Equipment Leases	-	36,800,860	2018	2031	22,538,370	-	-
Total	**-**	**-**	**-**	**-**	**439,303,370**	**-**	**268,175,000**

B. Debt Service Chart

UH's debt service is fairly level with $37 to $38 million annual payments through FY2033. Thereafter, debt service gradually steps down until all debt is repaid in FY2045. The annual payment on the lease ranges from about $2.2 million to $3.2 million through FY2032. UH typically issues 30-year revenue bonds. Approximately 56% of outstanding principal will be paid down in the next ten years.



C. Credit Ratings

UH's credit ratings are split among the rating agencies on account of different methodologies and evaluation of UH's credit profile. UH's revenue bonds carry AA-category ratings as reflected below.

University of Hawaii Credit Ratings		
	Moody's	**Fitch**
Revenue Bonds	Aa3 Stable	AA Stable

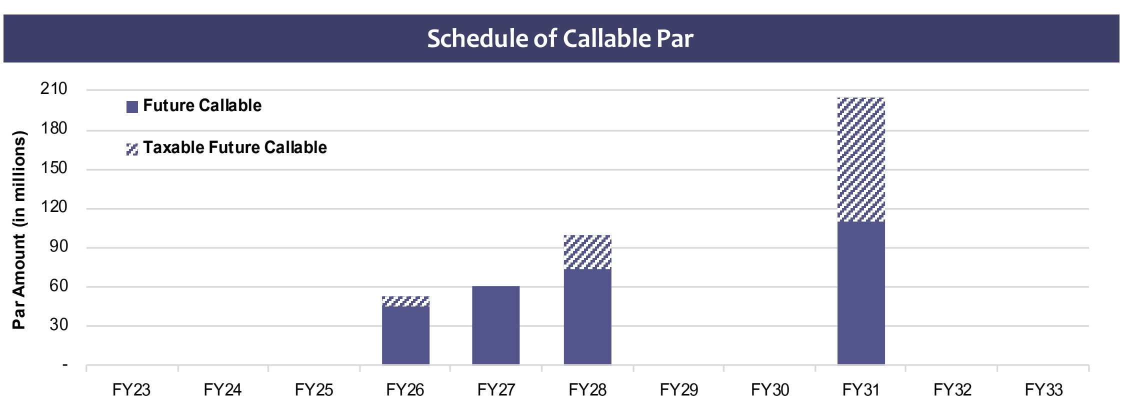
Fitch affirmed UH's 'AA' rating and stable outlook recently, in 2022, with the expectation that UH's financial profile will continue to weather near-term economic pressures as enrollment challenges persist and as it manages extensive renewal and maintenance needs under its capital improvement program over the next several years. The stable outlook was predicated on continued State support and willingness to raise tuition in the future to preserve balanced operations. Moody's downgraded the rating by one notch to Aa3 back in 2020 and affirmed that rating level in 2021. The downgrade was driven by UH's exposure to likely material reductions in State support which would be difficult to accommodate given already thin operating performance and limited autonomy to reduce expenses.

Credit strengths include UH's essential role as the State's only public system of higher education and an economic driver within the State with non-residents comprising 40% of the student population, continued support from the State for capital and operations and GO debt issuances, large scale and scope of operations with strategically important research enterprise, diverse revenue sources including the willingness to raise tuition rates, reserve and liquidity levels that have grown over time providing operating cushion and a manageable debt profile.

Credit challenges include continuing enrollment challenges and rising capital needs across UH's multi-campus system, weak operations and flat projected net tuition revenues, rigidity in labor structure lacking flexibility to make independent budget reductions, large backlog of deferred maintenance and very high pension and OPEB obligations.

D. Schedule of Callable Bonds

The following chart provides a summary of callable university revenue bonds and par amounts along with their call dates. The total callable par in UH's debt portfolio is $268.2 million. UH does not have any currently

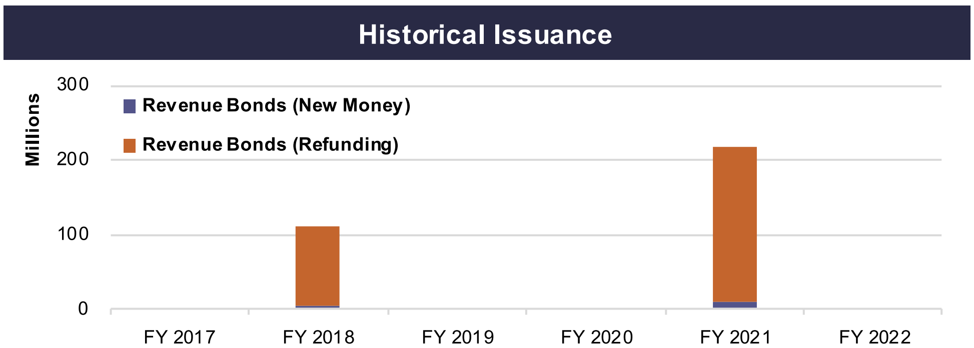


callable bonds. The earliest call date is in FY2026 at which time $41.24 million is callable. Future call dates are in FY2027, FY2028 and FY2031. A portion of the callable debt is taxable as shown below. Pursuant to the criteria outlined in its Debt Management Policy, UH may pursue opportunities to refund callable bonds.

E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt

UH's last sizeable new money issuance was in FY2011 with the most recent issuance in October 2020 largely being refunding bonds.



Anticipated Debt

Over the next six years, UH does not plan to issue additional revenue bonds. UH's 6-year $1.849 billion capital improvement projects plan for FY2024-29 will focus on improving facility utilization and addressing the systemwide $863 million deferred maintenance. UH received $363.88 million of capital appropriations for FY2022 and FY2023. At this time, any additional spending in the capital improvement projects plan is not anticipated to be funded with UH revenue bonds, but with other sources including non-reimbursable GO Bonds (subject to approval). UH continues to strive to meet its capital funding needs through alternative funding strategies such as P3 housing projects instead of additional debt.

Authorized but Unissued Debt

UH has no authorized but unissued revenue bonds remaining.

F. Measuring Debt Burden

Last Full Fiscal Year and Projected (six-years) Metrics

AFFORDABILITY METRICS	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	5.4%	5.3%	5.2%	5.1%	5.0%	4.9%	5.0%
Pension pay-go to annual revenues	20.0%	19.6%	19.5%	19.0%	18.7%	18.4%	18.4%
OPEB pay-go annual revenues	18.4%	18.1%	17.9%	17.5%	17.2%	16.9%	16.9%
All annual obligations to annual revenues	43.7%	43.0%	42.6%	41.7%	40.9%	40.2%	40.3%
Annual debt service to annual appropriations	2.5%	2.4%	2.4%	2.3%	2.2%	2.1%	2.2%
Pension pay-go to annual appropriations	9.7%	9.1%	9.2%	8.8%	8.5%	8.2%	8.2%
OPEB pay-go annual appropriations	8.9%	8.3%	8.5%	8.1%	7.8%	7.5%	7.5%
All annual obligations to annual appropriations	21.2%	19.8%	20.1%	19.3%	18.6%	17.8%	17.9%
Debt service coverage	8.83x	6.03x	6.76x	5.03x	4.97x	2.37x	3.53x
Operating margin(1)	-105.5%	-116.6%	-111.6%	-115.4%	-119.8%	-125.0%	-125.1%
Operating margin(2)	20.1%	10.8%	9.4%	6.8%	0.2%	-6.9%	-6.9%
Liquidity – days' cash on hand	154 days	144 days	146 days	140 days	135 days	130 days	130 days
Debt to operating revenues	0.27x	0.25x	0.24x	0.22x	0.21x	0.19x	0.18x
Debt to net cash flow from operations	(0.58x)	(0.49x)	(0.48x)	(0.43x)	(0.38x)	(0.33x)	(0.31x)

(1) Excluding State support for operations (2) Including State support for operations

Relevant Affordability Metrics

1. Indenture Limitations: UH's revenue bonds do not have legal covenants limiting the issuance of additional bonds nor a rate covenant required to maintain revenues at a certain level.
2. Annual debt service payments to annual revenues or annual debt service payments to annual appropriations: This ratio is a measure of budgetary flexibility afforded to UH by evaluating how much of UH's budget is tied up in fixed costs such as debt service. UH's debt service payments account for 5% of revenues and 2% of UH expenditures. However, including pension and OPEB contributions UH's fixed costs are anticipated to be a sizeable 40%-44% of revenues.
3. Debt service coverage: While legally only a part of UH operating revenue defined as 'network revenues' are pledged for any specific series; in the context of affordability, we look to all available revenues of the university system to evaluate debt service coverage. Debt service coverage after payment of all operating expenses is projected to remain adequate at or above 2.4 times. Additionally, over half of the debt service is covered by cigarette tax and tobacco securitization funds which are pledged to specific bonds series.
4. Operating margin: This is a ratio of net income from operating activities to operating revenue. It's a basic ratio used to gauge profitability of operations. UH's operating margin is negative as it relies on grants, contributions and State support for its operations. UH reports a positive operating margin in FY2022 which reverts back to the former trend over the projection period wherein operating margin is slightly negative or near break-even, after accounting for the State support it receives for operations. UH's reliance on State support for operations is largely attributable to its broader scope and functions which include community colleges.

5. Liquidity – days' cash on hand: For FY2022, UH estimates having adequate liquidity with about 154 days' cash on hand.
6. Balance sheet leverage – expendable resources to debt: The ratio measures the resources available to UH to repay debt in case of short-to-medium term volatility in operations. UH's expendable resources are negative limiting its ability to respond to operational volatility.
7. Income statement leverage – expendable resources to operations: This ratio evaluates the ability to operate relying on wealth that can be accessed over time without earning additional revenue and is discussed in the following section on peer comparison.
8. Debt to operating revenues: The ratio is a balance sheet ratio which measures the coverage of debt from annual revenues. UH's debt-to-operating ratio is 0.27 times for FY2022 which is considered low. It has been gradually decreasing over the last five years and is projected to continue to decrease over the six-year planning horizon indicative of limited borrowing as compared to revenue growth allowing the ratio to moderate overtime.
9. Debt to cashflow: This ratio measures the ability of UH to repay its debt from the profitability of its current operations and is a good measure of debt affordability. UH's operating margin has been negative for several years resulting in a negative debt-to-cashflow. It is reflective of UH's reliance on State transfers for operations.

Peer/Median Comparisons

It is important to note that UH is unique in that it is a system of university campuses, community colleges, and educational centers. As such, it is challenging to compare UH against peer universities and university systems based on UH's specific characteristics. Moody's publishes a median ratios report for public universities analyzing various financial metrics relevant to the sector, some of which were discussed in the affordability metrics section.

DEBT AND OPERATING METRICS (2021)	**UH***	**MOODY'S UNIVERSITY MEDIANS**			
Rating Level	**Aa3**	**Aa1**	**Aa2**	**Aa3**	**A1**
Capital Ratios					
Spendable Cash & Investments to Total Debt (x)	**2.0**	3.1	1.8	1.7	1.8
Total Cash & Investments to Total Debt (x)	**2.6**	3.7	2.6	2.1	2.2
Total Debt to Operating Revenue (x)	**0.3**	0.4	0.7	0.5	0.5
Debt Service to Operating Expenses (%)	**2.4**	2.7	5.3	4.0	5.2
Balance Sheet Ratios					
Spendable Cash & Investments to Operating Expenses (x	**0.6**	1.2	0.9	0.9	1.0
Operating Ratios					
Moody's Operating Margin (%)	**1.1**	5.2	6.0	5.5	7.4
Annual Debt Service Coverage (x)	**4.5**	5.0	3.3	3.4	3.9

*US Public Universities 2021 Moody's Medians; *UH data from Moody's Financial Ratios Analysis*

***UH is currently rated Aa3 by Moody's as discussed above. UH was rated Aa2 in 2019.*

In the adjoining tables, in addition to comparing UH's metrics to FY2021 sector medians, we analyze UH against specific credits rated in the 'Aa' category like UH. These peers include the University of Utah, Texas Tech University System, University of Colorado, University of Kentucky, University of Arizona and University of New Mexico.

DEBT AND OPERATING METRICS (FY 2021)	Univ. of Hawaii	Univ. of Utah	Texas Tech Univ. Sys.	Univ. of Colorado	Univ. of Kentucky	Univ. of Arizona	WA State Univ.
Rating	Aa3**	Aa1	Aa1	Aa1	Aa2	Aa3	Aa3
Capital Ratios							
Spendable Cash & Investments to Total Debt (x)	**2.0**	2.6	2.9	2.9	2.5	0.7	2.8
Total Cash & Investments-to-Total Debt (x)	**2.6**	3.1	3.9	3.3	3.1	1.4	3.6
Total Debt to Operating Revenue (x)	**0.3**	0.2	0.4	0.4	0.3	0.8	0.2
Debt Service to OpEx* (%)	**2.4**	2.4	4.7	0.7	2.4	5.8	1.7
Balance Sheet Ratios							
Spendable Cash & Investments to OpEx* (x)	**0.6**	0.6	1.2	1.3	0.8	0.6	0.6
Operating Ratios							
Moody's Operating Margin (%)	**1.1**	7.1	7.1	7.5	13.2	2.8	8
Annual Debt Service Coverage (x)	**4.5**	5.5	3.5	19.7	9.0	2.2	7.7

Moody's Financial Ratios Analysis **Operating Expenditure*

***UH is currently rated Aa3 as discussed above. UH was rated Aa2 in 2019.*

UH's debt service coverage levels, while better than the median, are weaker compared to similarly rated peers. Its operating margin, at 1.1%, is much lower than the 5.5% sector median for 'Aa3' rated universities. This is indicative of UH's significant reliance on State support. Some of its capital ratios which compare liquidity and spendable resources against debt burden are in line with or better than 'Aa2' sector medians and similarly rated peers. UH's debt service expenditure is low, accounting for about 2.4% of operations and compares favorably with AA-category medians and peers.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

UH's revenues and coverage levels are adequate, stabilized by State support received for operations and capital purposes. Additionally, net tuition revenue growth is projected to be limited given the desire to maintain affordable tuition rates for students. State support was constrained at the onset of the COVID-19 pandemic but in light of the State's strong revenue performance in the past couple of years, UH does not anticipate reduction in appropriations arising from fiscal pressure. As reflected in the affordability metrics, projected revenues are sufficient to cover existing debt service over the projection period and no new revenue bonds are anticipated at this time.

On a broad level, UH's debt affordability is constrained by – flat-to-declining enrollment, budgetary fixed costs including labor and post-retirement benefits, and its reliance on State support for operations and capital needs. Pension and OPEB contribution make up a significant portion of UH's expenses. As the funding requirements for these liabilities ramp up, UH should preserve budgetary flexibility and financial capacity in consideration of any future debt issuances. While state support for university systems across the nation is not atypical, it will be crucial for UH to secure necessary appropriations to fulfill debt obligations, address the capital backlog, and maintain operations in the long-term. Increased fixed costs (pension and OPEB) pressure UH's budgetary requirements and continued reliance on State support limit progress towards department self-sustainability.

As UH addresses its capital plan needs, it is essential for UH to continue to seek solutions and alternative funding strategies (similar to the P3 housing project) which minimize reliance on UH operating revenues. A strategic focus on securing funding or partnerships with stakeholders will improve financial metrics and gradually enhance debt affordability and regain higher credit ratings over time.

VII. Hawaiian Home Lands

The Department of Hawaiian Home Lands (DHHL) is responsible for the management and disposition of the 'Hawaiian Home Lands' which are lands set aside for rehabilitation of native Hawaiians by the Hawaiian Home Commission Act (HHCA). DHHL's primary mission is to provide qualified native Hawaiians the opportunity to own homes on the trust's lands. DHHL performs various functions including administering the homestead lease program, providing direct loans to lessees for construction and repairs, undertaking infrastructure development for the homestead lands, administering other general leases, licenses and permits and managing the overall land inventory system. Major DHHL revenue sources include general lease revenues, and income derived from DHHL's loans made to native Hawaiian lessees.

DHHL primarily issues revenue bonds and COPs. The revenue bonds are secured by a gross pledge on general lease and license and permit fee revenues with debt service having priority over operating costs. DHHL has the flexibility to revise rates, rentals, fees and charges to ensure sufficiency of revenues for payment of debt service on its revenue bonds. DHHL's COPs are payable from funds appropriated by the State for DHHL.

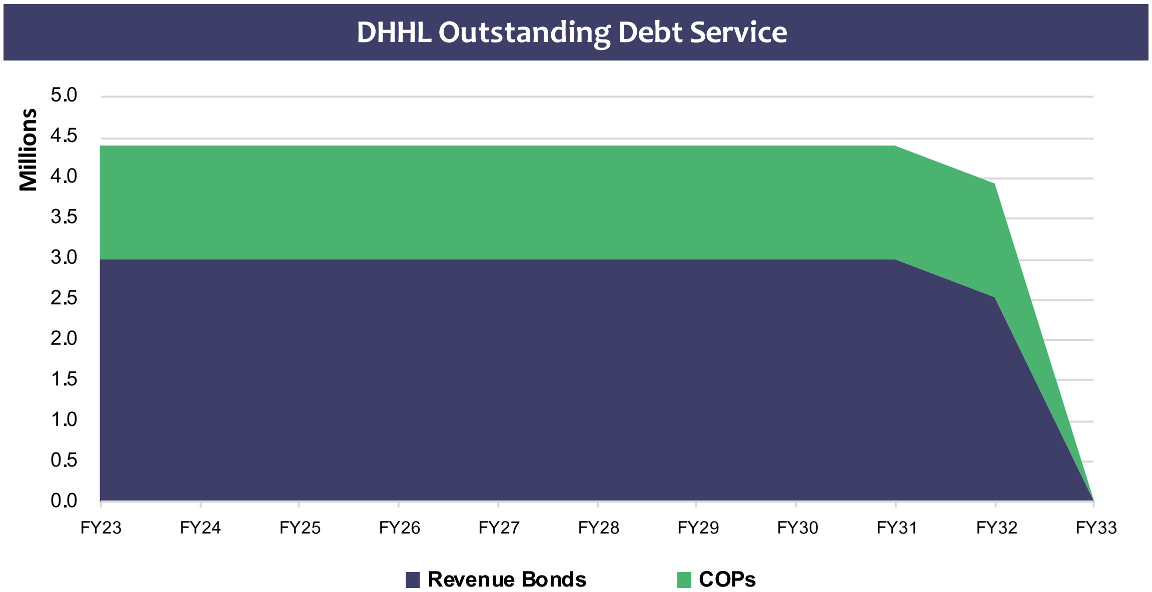
A. Debt Profile

DHHL currently has one revenue bond series outstanding for a total par of $23.1 million. DHHL also has COPs outstanding in the amount of $10.1 million. For the purpose of this Study, only the "available lands" (as defined in Section 207(a) of the Hawaiian Homes Commission Act, 1920) related debt is evaluated.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Par Call Date	Callable Par
				Revenue Bonds			
Series 2017	Tax-Exempt	30,940,000	8/25/17	4/1/32	23,125,000	4/1/2027	12,755,000
				COPs			
Series 2017A	Tax-Exempt	15,125,000	8/25/17	11/1/31	10,125,000	11/1/2027	5,065,000
Total	-	-	-	-	**33,250,000**	-	**17,820,000**

B. Debt Service Chart

DHHL's debt service structure consists of level annual debt service payments on both the revenue bonds and COPs. Annual debt service is approximately $4.4 million through final maturity in FY2032. All of the debt will be repaid within the next ten years.



C. Credit Ratings

DHHL's revenue bonds and COPs are rated at or above 'A1'.

Department of Hawaiian Home Lands Credit Ratings			
	Moody's	**S&P**	**Fitch**
Revenue Bonds	A1 Stable	NR	NR
Certificates of Participation	Aa3 Stable	NR	NR

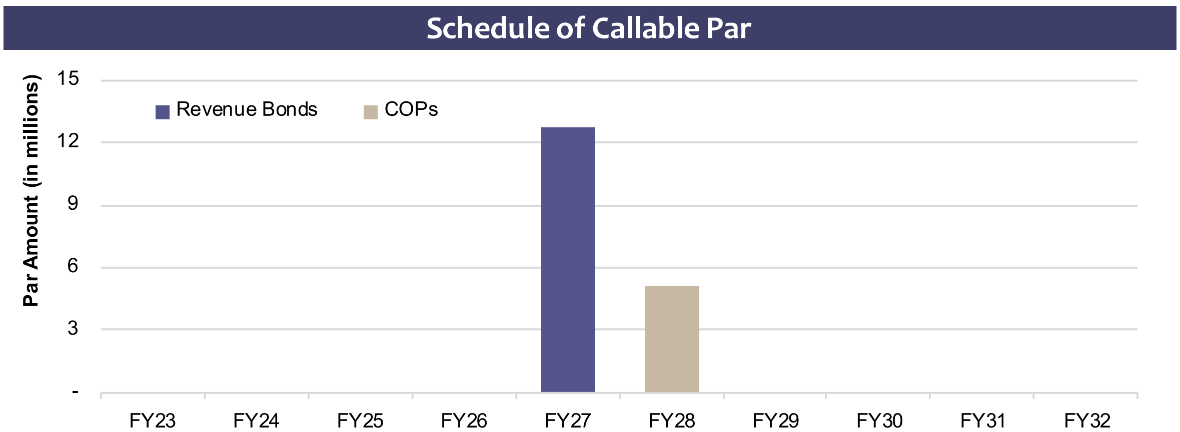
The rating on DHHL's debt was lowered by one notch in July 2020 by Moody's, following a one-notch downgrade in the State's GO rating to 'Aa2' on account of weakening in the State's credit quality attributable to the COVID-19 pandemic and the impact on the State's tax revenues and tourism industry. Moody's recently affirmed the State's rating at the 'Aa2' level and also revised the outlook to 'stable' from 'positive' indicating no upgrade is expected at this time. For a detailed discussion on the State's GO rating please refer to Section II of this report for B&F.

The rating on the revenue bonds is dependent on the State's economy and rating and is two notches below the State's current 'Aa2' GO rating. The revenue bonds' credit strengths include DHHL's Office of Hawaiian Affairs (OHA) and the State's commitment to develop homesteads for native Hawaiians, increasing income from non-homestead trust lands, adequate debt service coverage supported by availability of OHA payments and no future debt plans. Credit challenges include concentration of revenues from top lessees and non-payment risk from lessees.

The COP rating is driven by the State's GO rating and is one notch below the State's 'Aa2' reflecting the limited, subject-to-appropriation nature of a lease security; the essentiality of the leased asset; and the State's obligation to fund administrative and operating costs of the department, including lease payments, from its general fund. As such the strengths and weaknesses for the credit are also driven by the State's credit characteristics.

D. Schedule of Callable Bonds

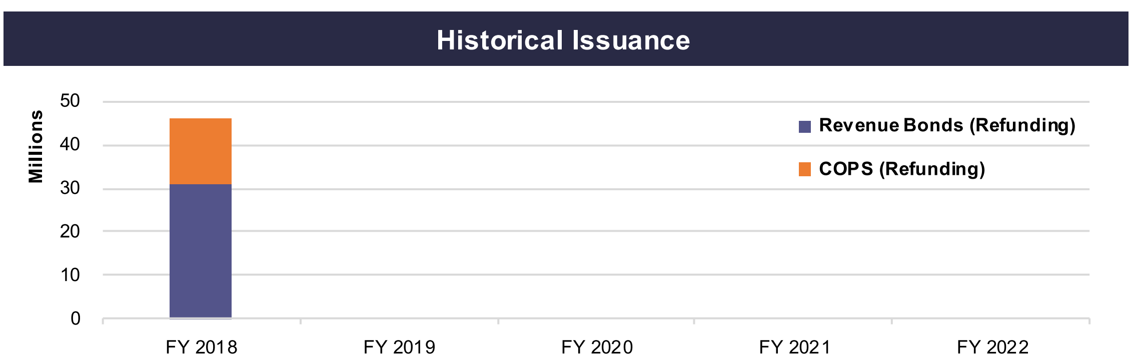
Both the revenue bonds and COPs have a 10-year call option. Approximately $12.8 million of the revenue bonds outstanding and $5.0 million of the COPs outstanding are callable in April and November of 2027 respectively.



E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt

DHHL has not issued any new money debt in the last five years. DHHL last issued debt in FY2018 to refund prior debt.



Anticipated Debt

DHHL does not have any plans for additional debt over the next six years.

Authorized but Unissued Debt

DHHL does not have any unissued bond authorization remaining.

F. Measuring Debt Burden

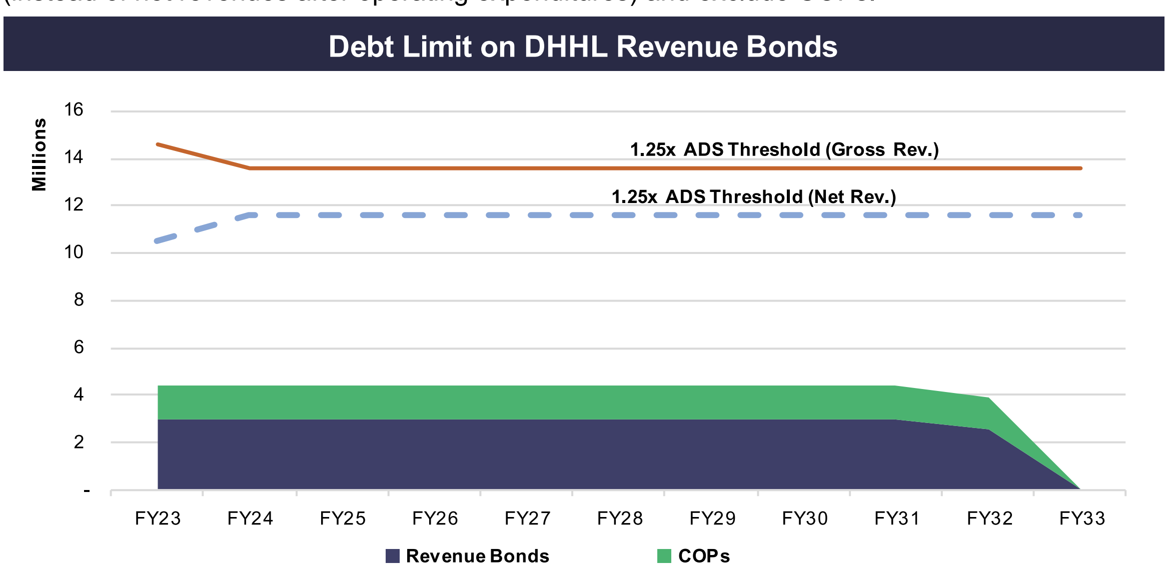
Last Full Fiscal Year and Projected (six-years) Metrics

AFFORDABILITY METRICS	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Annual debt service to annual revenues	6.8%	7.3%	7.3%	7.3%	7.3%	7.3%	7.3%
All annual obligations to annual revenues	15.9%	20.4%	20.4%	20.4%	20.4%	20.4%	20.4%
Annual debt service to annual appropriations	6.2%	9.7%	9.7%	9.7%	9.7%	9.7%	9.7%
All annual obligations to annual appropriations	15.3%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%
Gross Debt Service Coverage (Revenue Bonds)	6.07x	5.65x	5.65x	5.65x	5.65x	5.65x	5.65x
Net Debt Service Coverage (Revenue Bonds)	4.35x	4.82x	4.82x	4.82x	4.82x	4.82x	4.82x
Liquidity – days' cash on hand	1,360 days	2,138 days	2,138 days	2,138 days	2,138 days	2,138 days	2,138 days

Note: Projected metrics assume no additional debt issuances.

Relevant Affordability Metrics

1. <u>Indenture Limitations:</u> DHHL's revenue bonds are subject to a rate covenant to maintain rates, rentals, fees, and charges of at least 1.25 times aggregate annual debt service. In addition, the indenture includes a twofold ABT test – a forward looking test requiring projected revenues for the next six years to provide a coverage of at least 1.25 times on projected debt service including debt service on the proposed issuance and a historical test requiring revenues in the most recent fiscal provide a coverage of at least 1.25 times on the maximum aggregate debt service including the debt service on the proposed issuance. The COPs are lease obligations payable from appropriations and such structures typically do not have debt limitations in the indenture as with revenue bonds. DHHL's revenue bonds follow the rate covenant reflected in the following chart. The debt service on outstanding revenue bonds is significantly lower than the legal maximum allowable debt service while maintaining 1.25 times coverage (orange line in the chart). The legal requirements are based on gross revenues pledged in the indenture (instead of net revenues after operating expenditures) and exclude COPs.



However, the rate covenants are met even on a net revenue basis after incorporating debt service on COPs. There is capacity under the legal limits to issue additional debt, if required. None is anticipated at this time.

2. Annual debt service payments to annual revenues or annual debt service payments to annual appropriations: Both of these ratios give an indication of the amount of fixed costs that are built into the budget and are a measure of financial/operational flexibility. For FY2022, the estimated debt service on all outstanding debt to total DHHL revenues was 6.8%. Debt service compared to total DHHL expenditures was 6.2% in FY2022. This ratio is temporarily lower as operating expenses were significantly higher during the COVID-19 pandemic. As they return to pre-pandemic levels as is the DHHL's expectation, the ratio is projected to be higher at 9.7% for the projection period. These ratios are expected to remain stable over the projected horizon through FY2028 as operations normalize. Additionally, the State is expected to continue to make appropriations towards the repayment of the COPs.

3. Gross debt service coverage: Gross debt service coverage is computed based on gross pledged revenues before payment of any operating expenses. Gross coverage has been very strong historically and is projected to remain above 5.0 times.

4. Net debt service coverage: Legally, debt service is payable before operating expenses reflecting the strength of the gross revenue pledge. However, it is important to evaluate debt service coverage based on net revenues (after operating expenses) as a measure of self-sustainability and overall affordability. FY2022 coverage was 3.8 time, slightly lower than the last few years but strong, nevertheless. Projected net debt service coverage on the revenue bonds is also strong at over 4.0 times for the next six years.

5. Liquidity – days' cash on hand: The unrestricted cash balance accessible to DHHL is very strong at approximately 1,360 days of cash in FY2022.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

As reflected in the affordability metrics above, DHHL is projected to generate more than sufficient revenues to pay debt service on all of its obligations. Furthermore, its finances are buoyed by its exceptionally strong cash balances. Current debt service is well under the legal limits dictated by the indenture with capacity for more debt should DHHL require it. From a broader affordability perspective, net debt service coverage is very strong on existing debt. However, the high coverage levels help balance the risk from the narrow revenue stream. With State's Moody's rating and therefore DHHL's debt ratings, still below the pre-pandemic levels, maintaining sufficiently high coverage levels will be important for the underlying credit in the long-term. At this time, DHHL has no borrowing plans over the next six years and affordability metrics are expected to remain stable.

VIII. Hawaii Housing Finance and Development Corporation

The Hawaii Housing Finance and Development Corporation (HHFDC) was established with the purpose of amalgamating other housing corporations, authorities and trust funds of the State under one corporation. HHFDC's mission is to increase the supply of workforce and affordable homes by providing tools and resources to facilitate housing development. Tools and resources include housing tax credits, low interest construction loans, equity gap loans, developable land and expedited land use approvals.

HHFDC manages two financing programs: Single family mortgage purchase revenue bonds (SF Program), and the multifamily housing revenue bonds. The multifamily housing revenue bonds are conduit issuances and not direct obligations of HHFDC. As a result, detailed affordability discussion on the multifamily housing revenue bonds program is excluded from this Study. The affordability discussion is limited to the SF Program.

SF Program

The SF Program assists eligible borrowers to finance the purchase of single-family homes. HHFDC uses proceeds of these bonds to purchase mortgage loans. The SF Program revenue bonds are pledged by payments on mortgage-backed pass-through securities guaranteed by Ginnie Mae and Fannie Mae.

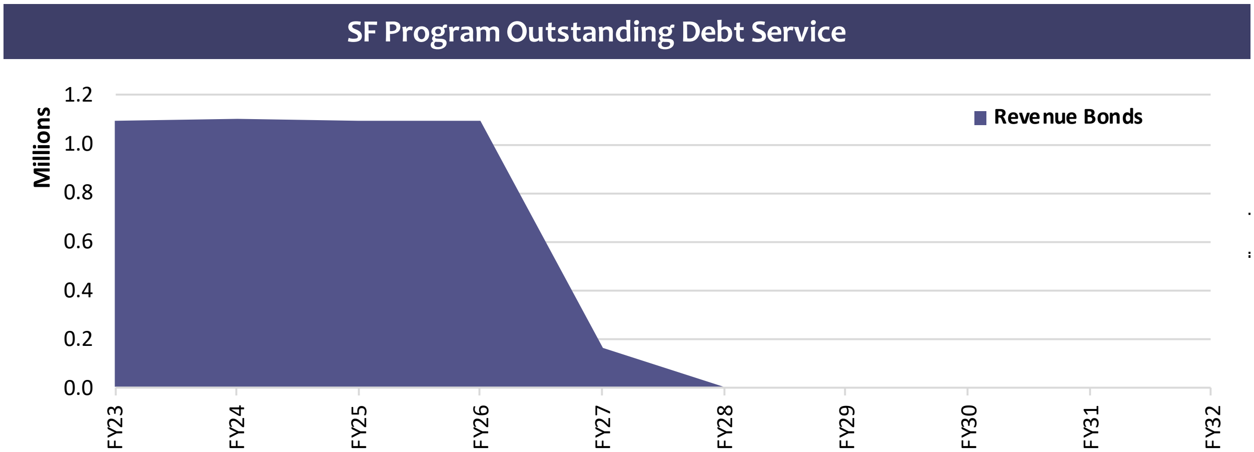
A. Debt Profile

The SF Program has a single series of bonds outstanding for a total par value of $4.0 million. In prior years, HHFDC has used excess revenues to redeem debt sooner than the scheduled maturity date and continues to do so resulting in very little debt outstanding.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Call Date	Callable Par
Series 2013A	Taxable	26,309,825	3/28/13	7/1/37	3,985,675	Current	3,985,675
Total	**-**	**-**	**-**	**-**	**3,985,675**	**-**	**3,985,675**

B. Debt Service Chart

For the SF Program, annual debt service is about $1.1 million through FY2026 with a small final payment of $160,000 in FY2027. All of the debt is expected to be repaid in the next five years.



C. Credit Ratings

The SF Program carries the ratings and outlook of the U.S. government as shown in the table below. Credit strengths include high level of security provided by pledged indenture assets consisting of mortgage-backed pass-through securities guaranteed by Ginnie Mae and Fannie Mae, sound legal structure including a debt service reserve fund and a mortgage loan reserve fund and fixed-rate debt portfolio.

Hawaii Housing Finance and Development Corporation SF Program Credit Ratings			
	Moody's	**S&P**	**Fitch**
Revenue Bonds	Aaa Stable	AA+ Stable	AAA Stable

D. Schedule of Callable Bonds

All of the bonds currently outstanding can be called and repaid anytime. As mentioned earlier, HHFDC uses excess revenues to repay debt in advance of scheduled maturity date. Very little debt remains outstanding and is expected to be fully repaid within the next five years.

E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt

No new money debt has been issued under the SF Program in the last five years; however, HHFDC has issued refunding bonds on occasion. The last refunding series was issued in FY2013.

Anticipated Debt

HHFDC issues revenue bonds under the SF program when market conditions are favorable. With the high borrowing interest rate environment, slowdown in the housing market, and limited bond issuance capacity it is not a suitable time for new debt under this program. HHFDC does not expect to issue new debt under the SF Program in the next five years.

Authorized but Unissued Debt

HHFDC has $326.95 million in revenue bonds authorized but unissued under the SF Program.

F. Measuring Debt Burden

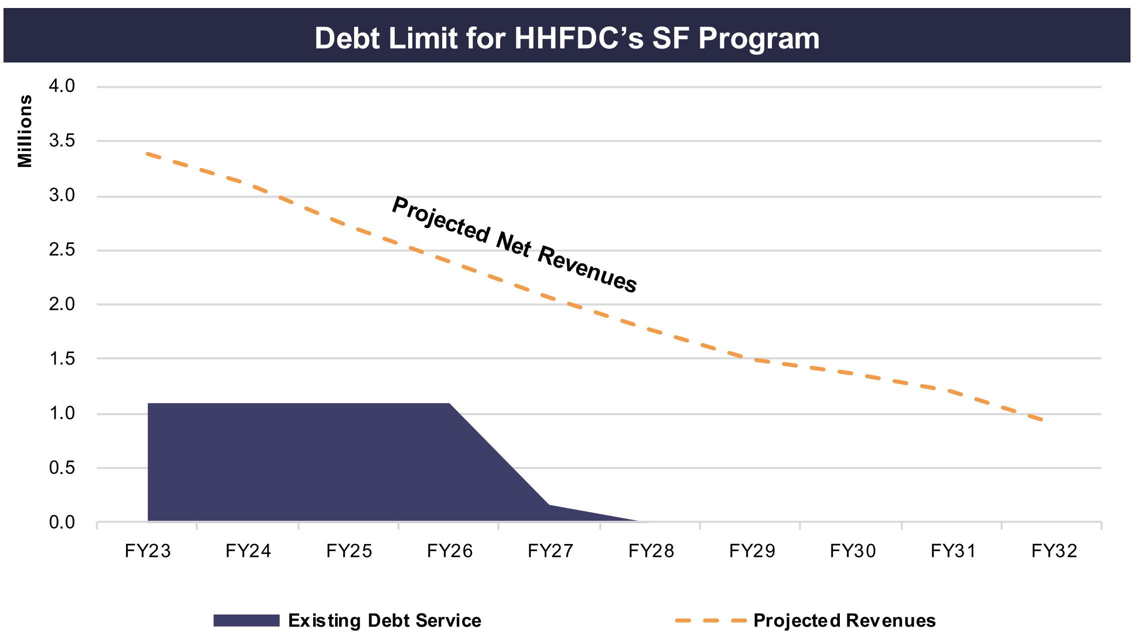
Last Full Fiscal Year and Projected (six-years) Metrics: SF Program

AFFORDABILITY METRICS	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028*
Annual debt service to annual revenues	22.7%	29.7%	32.0%	35.9%	39.9%	6.6%	n/a
Annual debt service to annual appropriations	83.0%	78.0%	77.3%	76.6%	75.9%	30.8%	n/a
Debt service coverage (Net)	4.20x	3.08x	2.83x	2.48x	2.19x	12.82x	n/a

*Note: Projected metrics assume no new debt in the next five years and *all outstanding debt paid off by FY2027*

Relevant Affordability Metrics

1. Indenture Limitations: There are no legal limitations in the bond indenture for SF Program revenue bonds. However, if market conditions are conducive to additional borrowings, HHFDC would need to structure the program such that sufficient revenues are available to pay debt service. The debt is secured by mortagage-backed pass-through income and structured to generate sufficient net revenues to pay for debt service without significant excess. Any excess when available is used to pay off debt in advance. For that reason projected revenues (orange line in the following chart) are trending down concurrently with debt which is expected to be paid off in the next five years.



2. Annual debt service payments to annual revenues and annual debt service payments to annual appropriations: These ratios are used to measure the fixed costs in a budget to evaluate the degree of flexibility in the budget. These metrics are more meaningful when evaluated for a department as a whole. Usually at a program level, a majority of the revenues are dedicated towards debt service, with little being assigned to ongoing costs and administrative expenses. For this reason, the high debt service ratios (debt service of about 30% to 83% of the program budget) for the SF Program are not atypical.

3. Net debt service coverage: The net debt service coverage on SF Program revenue bonds is expected to be adequate at or above 2 times debt service.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

For the SF Program, the projected revenues are sufficient to pay debt service on existing debt. A single series remains outstanding and is expected to be repaid in the short-term. The bonds are secured by payments on mortgage-backed pass-through securities guaranteed by Ginnie Mae and Fannie Mae. Therefore, in the event of non-payment by borrowers, the program will continue to receive its principal and interest payments from the Ginnie Mae insurance or Fannie Mae guaranty. Despite these guarantees, when new debt is being planned, HHFDC considers interest rates in the bond and mortgage markets to determine if a bond issue is financially feasible. HHFDC also assesses the local housing and mortgage markets to ascertain adequate demand for a proposed mortgage lending program. With the high borrowing interest rates, slowdown in the housing market, and limited bond issuance capacity, no new money debt is expected under the SF Program during the next five years. HHFDC's focus for bond issuance has shifted to the multifamily housing revenue bonds program. This program provides the State with the best opportunity to utilize the limited bond issuance capacity to finance the greatest number of affordable housing units.

IX. Department of Business, Economic Development, and Tourism

The Department of Business, Economic Development, and Tourism (DBEDT) is Hawaii's resource center for economic and statistical data, business development opportunities, energy and conservation information, and foreign trade advantages. DBEDT's mission is to achieve a Hawaii economy that embraces innovation and is globally competitive, dynamic and productive, providing opportunities for all Hawaii's citizens. Through its attached agencies, DBEDT fosters planned community development, creates affordable workforce housing units in high-quality living environments, and promotes innovation sector job growth.

The State acting through DBEDT issued Green Energy Market Securitization (GEMS) Bonds to fund the Hawaii Green Infrastructure Loan Program which is administered by Hawaii Green Infrastructure Authority (HGIA). The Loan Program finances the purchase or installation of green infrastructure equipment for clean energy technology, energy use reduction, demand side management infrastructure among other related purposes as authorized by the public utilities commission highlighted in the statute (HRS §39A, HRS §196 Part IV and HRS §269 Part X).

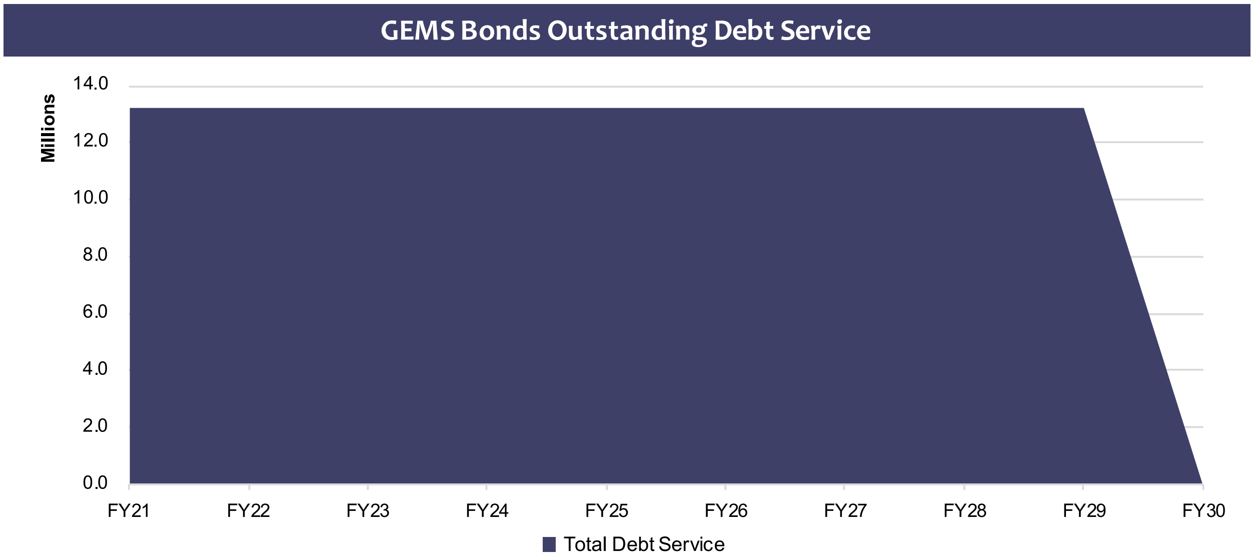
A. Debt Profile

The GEMS Bonds 2014 Series A were issued in two tranches totaling $150 million in paramount; the A-1 tranche has been retired and $92.4 million is currently outstanding under the A-2 tranche. The HGIA has received preliminary approval, subject to review and acceptance of loan documents, from the Governor for a $20 million loan from U.S. Department of Agriculture for the purpose of expanding access to clean energy financing for Hawaii's rural communities. The loan documents are still under review and final approval not yet received. As such, the loan is not included in the study at this time.

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par
Series 2014 A-2	Taxable	100,000,000	11/1/14	1/1/29	92,429,003
Total	-	-	-	-	92,429,003

B. Debt Service Chart

GEMS Bond annual debt service is approximately $13.2 million through FY2029.



C. Credit Ratings

The GEMS Bonds carry the highest credit ratings.

Department of Business, Economic Development & Tourism Credit Ratings			
	Moody's	**S&P**	**Fitch**
Green Energy Market Securitization Bonds	Aaa Stable	AAA Stable	AAA Stable

Credit strengths include the State's legislative non-impairment pledge, the size, stability and diversity of the service area, and the statutory true-up mechanism which adjusts the charges to ensure sufficient collections for payment of debt service.

D. Schedule of Callable Bonds

The GEMS Bonds are not subject to optional redemption prior to maturity. As such, there are no refunding opportunities associated with the GEMS Bonds.

E. Multi-Year Program Anticipated/Intended Debt Issuance

Existing Debt

DBEDT issued $150 million of GEMS Bonds 2014 Series A as reflected in the debt profile above.

Anticipated Debt

DBEDT does not have any plans for additional Green Infrastructure debt over the next six years.

Authorized but Unissued Debt

DBEDT does not have any authorized but unissued debt.

F. Measuring Debt Burden

The GEMS Bond structure is unique in the strength of the security and pledge to bondholders. Per the Certificate of the Director of the DBEDT, the GEMS bonds are supported by green infrastructure property and DBEDT's irrevocable right to impose, collect, and adjust non-by-passable securitization charges from all existing and future electric service customers of Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited. A statutorily uncapped true-up mechanism mandatorily adjusts the securitization charges to ensure sufficient collections for timely payments on the bonds.

The GEMS Bond's unique structure ensures that sufficient revenues will be generated, along with available funds, to cover all operating expenses and debt service payments. As such current year and projected years' coverage (revenues plus available funds) is greater than or equal to 1.00 times debt service in every year.

G. Discussion on Debt Affordability, Potential Concerns and Recommendations

The GEMS Bond true-up mechanism adjusts the securitization charges to ensure sufficient collections for timely payments on the bonds. With the strength of the credit and structure in place, it is clear that sufficient revenues will be available to pay existing debt service on the GEMS Bonds.

Appendix

A. Debt Service Assumptions

New Money Assumptions

Department	Credit Ratings	Coupon	First Principal	Final Maturity
B&F	Aa2/AA+/AA	6.75%	year 1	20
DOT-Airports (GARB)	A1/A+ (P)/A+	Debt service provided by DOT-Airports		
DOT-Airports (CFC)	A2/A (P)/A	n/a - no bonds anticipated		
DOT-Harbors	Aa3/--/AA-	n/a - no bonds anticipated		
DOT-Highways	Aa2/AA+/AA	6.75%	year 1	20
University of Hawaii	Aa3/-/AA	n/a - no bonds anticipated		
DHHL (Revenue Bonds)	A1/--/--	n/a - no bonds anticipated		
DHHL (COPs)	Aa3/--/--	n/a - no bonds anticipated		
HHFDC - Single Family	Aaa/AA+/AAA	n/a - no bonds anticipated		
DBEDT (GEMS)	Aaa/AAA/AAA	n/a - no bonds anticipated		

(P) indicates positive outlook

B. General Fund Debt Outstanding by Series

Series Name	Tax Status	Issue Size	Delivery Date	Final Maturity	Outstanding Par	Next Call Date	Callable Par
				GO Bonds			
Series DS	Taxable	32,000,000	11/5/09	9/15/24	6,040,000	-	-
Series DX	BAB	500,000,000	2/18/10	2/1/30	295,875,000	MWC	-
Series EG	Taxable	26,000,000	12/4/12	11/1/32	17,460,000	11/1/2022	17,460,000
Series EH	Tax-Exempt	635,000,000	11/21/13	8/1/33	13,645,000	8/1/2023	Refunded
Series EL	Tax-Exempt	50,860,000	11/21/13	8/1/23	8,205,000	NC	-
Series EM	Taxable	25,000,000	11/21/13	8/1/33	18,730,000	8/1/2023	17,355,000
Series EN	Taxable	29,795,000	11/21/13	8/1/33	20,470,000	8/1/2023	18,605,000
Series EO	Tax-Exempt	575,000,000	11/25/14	8/1/34	391,000,000	8/1/2024	347,320,000
Series EP	Tax-Exempt	209,015,000	11/25/14	8/1/26	54,595,000	8/1/2024	-
Series EQ	Taxable	25,000,000	11/25/14	8/1/34	19,895,000	MWC	-
Series ET	Tax-Exempt	190,000,000	10/29/15	10/1/35	99,440,000	10/1/2025	71,665,000
Series EU	Tax-Exempt	35,000,000	10/29/15	10/1/35	26,940,000	10/1/2025	21,600,000
Series EX	Tax-Exempt	25,035,000	10/29/15	10/1/25	11,370,000	NC	-
Series EY	Tax-Exempt	212,120,000	10/29/15	10/1/27	142,325,000	10/1/2025	61,230,000
Series EZ	Tax-Exempt	215,590,000	10/29/15	10/1/28	89,870,000	10/1/2025	24,180,000
Series FA	Taxable	25,000,000	10/29/15	10/1/35	19,420,000	10/1/2025	15,695,000
Series FB	Tax-Exempt	500,000,000	4/14/16	4/1/36	420,420,000	4/1/2026	323,515,000
Series FE	Tax-Exempt	219,690,000	4/14/16	10/1/28	144,615,000	10/1/2026	53,095,000
Series FF	Taxable	119,730,000	4/14/16	10/1/28	75,030,000	10/1/2026	26,345,000
Series FG	Tax-Exempt	375,000,000	10/13/16	10/1/36	317,040,000	10/1/2026	246,845,000
Series FH	Tax-Exempt	379,295,000	10/13/16	10/1/31	324,645,000	10/1/2026	197,840,000
Series FI	Tax-Exempt	2,710,000	10/13/16	10/1/33	2,375,000	10/1/2026	1,635,000
Series FK	Tax-Exempt	575,000,000	5/24/17	5/1/37	507,445,000	5/1/2027	374,315,000
Series FN	Tax-Exempt	229,355,000	5/24/17	10/1/31	196,460,000	10/1/2027	98,275,000
Series FP	Taxable	7,500,000	5/24/17	5/1/37	6,510,000	5/1/2027	4,685,000
Series FS	Tax-Exempt	275,363,064	12/21/17	10/1/33	255,392,429	10/1/2028	125,201,985
Series FT	Tax-Exempt	631,215,000	2/14/18	1/1/38	606,525,000	1/1/2028	430,720,000
Series FW	Tax-Exempt	431,665,000	2/21/19	1/1/39	431,665,000	1/1/2029	271,915,000
Series FZ	Taxable	995,000,000	8/12/20	8/1/40	995,000,000	8/1/2030	653,280,000
Series GB	Taxable	600,000,000	10/29/20	10/1/25	450,000,000	MWC	-
Series GC	Taxable	400,000,000	10/29/20	10/1/40	400,000,000	10/1/2030	264,610,000
Series GD	Taxable	700,000,000	10/12/21	10/1/41	670,490,000	10/1/2031	387,380,000
Series GE	Taxable	200,000,000	10/12/21	10/1/41	191,445,000	10/1/2031	110,400,000
Series GH	Taxable	138,700,000	10/12/21	8/1/23	138,700,000	MWC	-
Series GI	Taxable	105,000,000	10/12/21	8/1/24	105,000,000	MWC	-
Series GJ	Taxable	629,705,000	10/12/21	8/1/33	629,705,000	MWC	-
Series GK	Taxable	740,000,000	11/2/22	10/1/41	740,000,000	10/1/2032	445,695,000
Series GL	Taxable	60,000,000	11/2/22	4/1/23	60,000,000	MWC	-
Sub-Total	**-**	**11,125,343,064**	**-**	**-**	**8,903,742,429**	**-**	**4,610,861,985**
				Capital Lease			
DAGS Facilities I	-	12,377,000	9/3/09	6/1/26	6,145,424	NA	NA
DAGS Facilities II	-	25,512,000	4/14/11	11/1/30	17,457,613	NA	NA
Public Safety Div.	-	18,835,000	8/1/13	9/20/33	14,974,000	NA	NA
Sub-Total	**-**	**56,724,000**	**-**	**-**	**38,577,037**	**-**	**-**
Grand Total	**-**	**11,182,067,064**	**-**	**-**	**8,942,319,466**	**-**	**4,610,861,985**

Glossary

Advance Refunding: When bonds are refunded more than 90 days prior to their express call date, the refunding is said to be an advance refunding. It should be noted that not all callable bonds are eligible for advance refunding. Only bonds, the proceeds of which are applied to projects, or bonds issued for current refundings may be advance refunded. Tax-exempt advance refundings were eliminated in December 2017.

Build America Bonds or BABs: BABs are taxable municipal securities issued through December 31, 2010, under the American Recovery and Reinvestment Act of 2009 (ARRA). BABs may be direct pay subsidy bonds, wherein the issuer would receive a direct payment from federal government equal to about 35% of the interest costs or they may be tax credit bonds wherein the issuer may offer a tax credit to the buyer.

Current Refunding: When bonds are refunded no sooner than 90 days before their call date, the refunding is said to be a current refunding.

Forward Refunding: When bonds are priced to refund bonds more than 90 days prior to their express call date, with delivery within 90 days of the call date, the refunding is said to be a forward refunding.

Make Whole Call (MWC): A type of call option that is designed to protect the investor from losses as a result of the earlier call. In order to exercise the call, the issuer must make a lump sum payment (referred to as a “make-whole-call premium”) derived from a formula based on the net present value of future interest payments that will not be paid as a result of the call. Because the cost can often be significant, such a call option is rarely exercised.

Net Revenues: Net Revenues, are the total operating revenues net of any operations and maintenance cost for the department, program, project or undertaking as the case may be.

Optional Call or Redemption: The terms of the bond contract, sometimes referred to as “call or prepayment provisions,” giving the issuer the right to redeem or call, all or a portion of an outstanding issue of bonds prior to its stated date of maturity. Optional redemptions often can be exercised only on or after a specified date (referred to as the “call date”), typically for a municipal security beginning approximately ten years after the issue date.

Present Value Savings: It is the difference, expressed in current dollars, between the debt service on a refunded bond (or maturity) and debt service on the refunding bond (or maturity). It is calculated by discounting the difference in the future debt service payments at an appropriate discount rate.