

# Auditor Certifies Revenue in Support of \$300 Million in General Obligation Debt

May 31, 2022

A Report by District Economic Group for the Office of the D.C. Auditor



# Introduction

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On May 2, 2022, the Deputy Chief Financial Officer and Treasurer of the District of Columbia requested that the Auditor certify the issuance of up to \$300 million in general obligation bond anticipation notes. The District's stated intention was to issue these notes in two separate series, Series 2022A and Series 2022B, and in the form of commercial paper during the week of May 16, 2022.<sup>1</sup>

This report sets forth the results of the Auditor's analysis performed by the District Economics Group (DEG) of the OCFO's Fiscal Year (FY) 2022 non-dedicated local source General Fund Revenue estimate of \$9,086,718,000.

## The objectives of the analysis were to:

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Assess the reasonableness and attainability of the OCFO's FY 2022 non-dedicated local source General Fund Revenue estimate of \$9,086,718,000.

Determine if the issuance of the proposed general obligation bond anticipation notes would cause the District to exceed the 17 percent revenue limitation (the "17 percent test"), as outlined in D.C. Official Code § 1-206.03(b)(1).

## Changes to the economic forecast

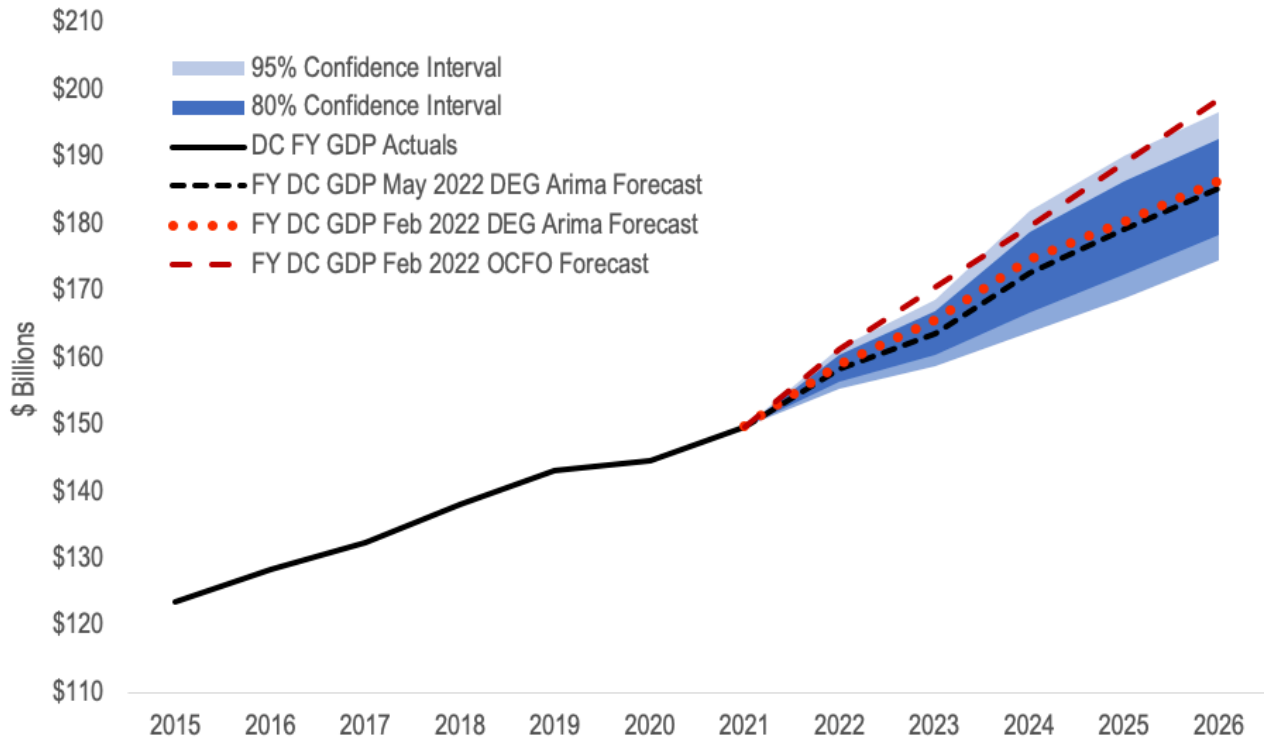
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The DEG May 2022 forecast of D.C. Gross Domestic Product (GDP) for FY 2022 is \$158.37 billion in comparison to its corresponding DEG February 2022 forecast of \$159.00 billion, \$0.63 billion or 0.39% less.<sup>2</sup> Figure 1 shows both the May and February DEG forecasts of FY D.C. GDP through FY 2026 as well as the OCFO's February 2022 estimates for comparison.<sup>3</sup> DEG's May forecast (black dashed line) is very similar to its February forecast (red dotted line), although just slightly lower in each fiscal year. While DEG's May forecast is similar to the OCFO's forecast (maroon dashed line) for FY 2022, the two forecasts diverge through the rest of the forecast window with the OCFO's forecast higher in each fiscal year.

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1 Notice sent from OCFO's Office of Finance and Treasury to the Office of the D.C. Auditor pursuant to D.C. Official Code, Section 1-206.03(b)(1).  
2 For a detailed explanation of the DEG forecast see "Modeling the D.C. Economy, Revenues, and Debt Service Obligations," Office of the District of Columbia Auditor, March 23, 2022. The estimates provided in that report were based upon estimates prepared in February of 2022.  
3 The OCFO's February 2022 Revised Revenue Estimates is available at: <https://cfo.dc.gov/node/1584446>.

Figure 1. DEG Revised and OCFO Forecasts of D.C. GDP for FY 2022-2026



The DEG model of FY D.C. GDP relies on data from the Bureau of Economic Analysis (BEA) for historical estimates of quarterly U.S. and D.C. GDP. Between DEG’s February 2022 and May 2022 model revisions, the BEA updated its U.S. GDP estimates, revising calendar 2021Q4 slightly upward by 0.02% and releasing its estimate for calendar 2022Q1.<sup>4</sup> Comparing like quarters, the BEA’s U.S. GDP estimate of \$24.38 trillion for 2022Q1 is 10.64% greater than its 2021Q1 estimate of \$22.04 trillion and 13.51% greater than its 2020Q1 estimate of \$21.48 trillion, indicating substantial GDP growth as the national economy continues to recover from the impacts of the COVID-19 pandemic. The BEA also updated its D.C. GDP data by releasing its estimate of \$156.46 billion for 2021Q4, which is 6.13% greater than the estimate of \$147.42 billion for 2020Q4.<sup>5</sup> While the DEG forecasting model relies upon quarterly data, it is worth discussing the BEA’s release of its Calendar Year (CY) 2021 D.C. GDP estimate as well because annual growth more accurately reflects longer-term economic trends. The BEA’s D.C. GDP estimate of \$152.01 billion for CY 2021 is 5.16% greater than its CY 2020 estimate of \$144.55 billion and 5.26% greater than its CY 2019 estimate of \$144.41. This speaks to the strength of the District’s economic recovery, directly contrasting the almost negligible growth the District experienced between CY 2019 and CY 2020.

4 The BEA released revised and new statistics for quarterly U.S. GDP on April 28, 2022 using calendar year as distinct from the District’s use of Oct. 1-Sept. 30 fiscal years. This update which is incorporated into DEG’s models is available at: <https://tinyurl.com/2p989du2>.

5 The BEA released new estimates for quarterly D.C. GDP on March 31, 2022. This update which is incorporated into DEG’s models is available at: <https://tinyurl.com/bdffyp6>.

Each of these data updates from the BEA is incorporated into DEG’s May 2022 model, which despite the improved outlook for U.S. GDP, estimates slightly lower FY D.C. GDP than DEG’s February 2022 model for each year of the forecast window. This is due to DEG’s inclusion of the BEA’s estimate of 2021Q4 D.C. GDP in its May ARIMA modeling. ARIMA models rely on historical data and trends to forecast future values and so, at \$156.46 billion, the BEA’s 2021Q4 estimate acts as an anchoring point for creating an annual estimate of FY 2022 D.C. GDP, and therefore, for forecasting FY 2023-2026 D.C. GDP as well. With the BEA’s 2021Q4 estimate taken into account, DEG’s May model forecasts a FY 2022 D.C. GDP of \$158.37 billion whereas its February model, which relied on data through 2021Q3 (the last quarter of FY 2021), forecasted a slightly larger \$159.00 billion.

DEG’s modeling also relies on projections from the Congressional Budget Office (CBO) for future U.S. GDP to forecast future values of D.C. GDP. However, both the February 2022 and May 2022 DEG forecasts rely on the same economic projections data from the CBO’s most recent publication dated July 2021.<sup>6</sup> The CBO will release its update of the U.S. GDP on May 25 of this year.

Figure 2 displays the DEG May 2022 D.C. GDP and gross revenue forecasts for FY 2022-2026 alongside the D.C. OCFO’s forecasts from its February 2022 Revised Revenue Estimates. DEG’s estimates of D.C. GDP are lower than the OCFO’s for each forecasted fiscal year, and the divergence between the two increases significantly throughout the forecast window, with the smallest difference being \$2.93 billion for FY 2022 and the largest being \$13.23 billion for FY 2026. The OCFO’s model anticipates predominantly higher levels of annual growth in future fiscal years as the District’s economy continues to recover from the effects of the COVID-19 pandemic. The OCFO forecasts 5.77% annual growth between FY 2022 and FY 2023, 5.22% annual growth between FY 2023 and FY 2024, 5.35% annual growth between FY 2024 and FY 2025, and 4.97% annual growth between FY 2025 and FY 2026 whereas DEG’s model forecasts those growth rates at 3.29%, 5.54%, 3.82%, and 3.37%, respectively. Despite this divergence in D.C. GDP growth rates, the DEG and OCFO gross revenue forecasts are similar in each fiscal year with DEG’s estimates slightly greater.

**Figure 2. Comparison of DEG May 2022 and OCFO February 2022 forecasts for Fiscal Year D.C. GDP and Gross Revenues**

Fiscal Year	DEG D.C. GDP Forecast (\$billions)	OCFO D.C. GDP Forecast (\$billions)	DEG Gross Revenues Forecast (\$thousands)	OCFO Gross Revenues Forecast (\$thousands)
2022	\$158.37	\$161.30	\$9,883,938	\$9,810,558
2023	\$163.58	\$170.60	\$10,169,686	\$10,194,827
2024	\$172.64	\$179.50	\$10,678,010	\$10,482,184
2025	\$179.23	\$189.10	\$10,956,021	\$10,782,830
2026	\$185.27	\$198.50	\$11,255,877	\$11,087,433

<sup>6</sup> The CBO’s economic projections are available at: <https://www.cbo.gov/data/budget-economic-data#4>. The Quarterly GDP forecasts are within the “10-Year Economic Projections” files.

## Changes to the revenue forecast

In February 2022, DEG updated its revenue modeling methodology to incorporate CoStar real estate data for commercial and multi-family properties specific to Washington, D.C. where appropriate in an effort to capture market-specific events that could influence the District’s revenues. The ARIMA models remain consistent between DEG’s February 2022 and May 2022 revisions, making the two forecasts comparable. With DEG’s new methodology, changes between two DEG forecasts could be attributable to an updated forecast of FY D.C. GDP as well as to updated CoStar forecasts. This is unlike DEG’s prior certifications where the ARIMA revenue stream models only incorporated D.C. GDP as an additional component.

Figure 3 highlights the changes in DEG’s revenue stream estimates between its May 2022 (orange shaded columns) and its February 2022 (gray shaded columns) forecasts. The white columns show the changes within each revenue stream between the two model revisions. The forecasted gross revenue streams on this table are estimates before dedicated revenues are netted out.

**Figure 3. Revised Gross Fiscal Year Revenue Stream Forecasts for May 2022 (in orange) and February 2022 (in grey) (\$ Thousands)**

Fiscal Year	Income tax revenue			Property tax revenue			Sales and excise tax revenue		
	Feb-22	May-22	Difference	Feb-22	May-22	Difference	Feb-22	May-22	Difference
2022	\$3,827,004	\$3,845,172	\$18,168	\$2,954,686	\$2,964,948	\$10,262	\$1,645,115	\$1,649,340	\$4,225
2023	\$3,985,118	\$3,936,995	-\$48,123	\$2,889,600	\$2,910,436	\$20,836	\$1,872,428	\$1,864,129	-\$8,299
2024	\$4,278,835	\$4,236,070	-\$42,765	\$2,849,094	\$2,866,687	\$17,593	\$2,069,608	\$2,073,909	\$4,301
2025	\$4,460,918	\$4,456,959	-\$3,959	\$2,789,846	\$2,834,127	\$44,281	\$2,199,894	\$2,203,339	\$3,445
2026	\$4,670,074	\$4,662,507	-\$7,567	\$2,763,597	\$2,808,728	\$45,131	\$2,288,858	\$2,304,640	\$15,782
Fiscal Year	Other tax revenue			Gross receipts revenue			Nontax and lottery revenue		
	Feb-22	May-22	Difference	Feb-22	May-22	Difference	Feb-22	May-22	Difference
2022	\$542,121	\$529,962	-\$12,159	\$370,572	\$370,572	\$0	\$523,602	\$523,944	\$342
2023	\$577,331	\$559,430	-\$17,901	\$370,379	\$370,379	\$0	\$530,132	\$528,318	-\$1,814
2024	\$614,207	\$592,875	-\$21,332	\$370,464	\$370,464	\$0	\$539,714	\$538,005	-\$1,709
2025	\$561,777	\$549,510	-\$12,267	\$370,426	\$370,426	\$0	\$545,922	\$541,660	-\$4,262
2026	\$581,964	\$565,377	-\$16,587	\$370,443	\$370,443	\$0	\$551,037	\$544,182	-\$6,855

Source: DEG forecasts incorporating BEA historical U.S. and D.C. GDP data, CBO forecasts of U.S. GDP, CoStar historical data and forecasts of various real estate market measures for D.C., and D.C. OCFO’s historical revenue collections data. DEG February 2022 forecasts from “Modeling the D.C. Economy, Revenues, and Debt Service Obligations” published by the Office of the District of Columbia Auditor on March 23, 2022.

In contrast with its February 2022 model estimates, DEG’s May 2022 estimates show consistently greater property tax revenue as well as predominantly higher sales and excise tax revenue for FY 2022-2026. DEG’s model of property tax revenue incorporates both multi-family and office building vacancy rates – two measures related to the demand for D.C. property – as additional regressors whereas its model

of sales and excise tax revenue includes average revenue per available hospitality room from CoStar.<sup>7</sup> The hospitality sector – including hotels, restaurants, and bars – largely bore the brunt of the pandemic economically due to restrictions implemented on travel and social gatherings, as well as indoor dining; sales tax revenue from these businesses in particular declined by 46 percent in FY 2020 according to the OCFO’s FY 2022 Budget and Financial Plan Revenue Chapter.<sup>8</sup> To capture the effect that tourist activity has on sales tax revenue collections, DEG includes average revenue per hospitality room in its model as a proxy for tourism in the District. Furthermore, the increases in property and sales and excise tax revenue estimates between DEG’s February 2022 and May 2022 forecasts are attributable to updates in CoStar’s forecasts: with regard to FY 2022-2026, CoStar increased its forecasts of office vacancy rates, decreased its forecasts of multi-family vacancy rates, and increased its forecasts of average revenue per available hospitality room. In effect, the updated CoStar data counteracts the effects of DEG’s lower FY D.C. GDP estimates.

DEG’s May 2022 model forecasts consistently lower “other tax revenues” as well as predominantly lower income tax and nontax and lottery revenues than its February 2022 model for FY 2022-2026. Because other tax revenues include deed recordation and transfer fees, DEG incorporates CoStar data on net deliveries – the difference between completed construction projects and demolitions – for multi-family and office properties into its model of other tax revenues to capture the dynamics of the construction market. On the other hand, DEG’s income tax revenue model includes CoStar data on multi-family asking rents as a proxy for the demand for living space in the District. Both of these models also include DEG’s forecast of FY D.C. GDP which alone would lead to decreased estimates between its February 2022 and May 2022 revisions and so, extrapolating the effect of the updated CoStar data may not be as straightforward. CoStar maintained its forecasts of multi-family asking rent per square foot for FY 2022-2026, meaning that the decrease in DEG’s forecast of income tax revenues is attributable to its lower forecast of FY D.C. GDP. On the other hand, CoStar lowered its forecasts of net deliveries, meaning that the decrease in DEG’s forecast of other tax revenue is driven by both the updated CoStar data as well as DEG’s lower forecast of FY D.C. GDP. In contrast, DEG’s model of nontax and lottery revenues does not incorporate FY D.C. GDP and only includes office vacancy rates, indicating that CoStar’s higher forecasts of office vacancy for FY 2022-2026 lead to lower nontax and lottery revenue estimates in DEG’s May 2022 model.

Using the revised revenue stream forecasts in Figure 3 and netting out any dedicated revenues from the gross amounts, an updated version of the D.C. Auditor Certification Table is shown below in Figure 4.<sup>9</sup> DEG’s May 2022 estimate of the District’s Total Local Source, General Fund Revenue for FY 2022 is \$9.16 billion, which is \$20.84 million (0.23%) greater than DEG’s February 2022 estimate of \$9.14 billion.

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7 CoStar defines hospitality properties as “all types of lodging facilities including hotels and motels. Hotels are facilities that offer lodging accommodations and a wide range of other services, e.g., restaurants, casinos, convention facilities, meeting rooms, recreational facilities, and commercial shops. These facilities can be labeled Resort, Mixed Use, Luxury, Full Service, Extended Stay, Convention, Apartment, All Suite, etc.”

8 Revenue Chapter: FY 2022 Budget and Financial Plan, OCFO’s Office of Revenue Analysis, September 17, 2021. <https://ora-cfo.dc.gov/sites/default/files/dc/sites/ora-cfo/publication/attachments/FY22%20DC%20Revenue%20Chapter.pdf>.

9 DEG nets out the District’s dedicated revenues for FY 2022 which are detailed in Table 1 of the OCFO’s February 2022 Revised Revenue Estimates: under each individual revenue source, any dedicated revenues are titled as “Dedicated to other funds.”

**Figure 4. FY 2022 Total Local Source,  
General Fund Revenue Estimate (Net of Dedicated Taxes) (\$ Thousands)**

Revenue Source	DEG's FY 2022 Total Local Source, General Fund Revenue Estimate (Net of Dedicated Taxes)
Income Taxes	\$3,845,172
Property Taxes	\$2,925,552
Sales and Excise Taxes	\$1,198,016
Gross Receipts Taxes	\$223,749
Other Taxes	\$443,665
Total Taxes	\$8,636,154
Total Non-Tax and Lottery Revenues	\$523,944
<b>Total Local Source, General Fund Revenue Estimate</b>	<b>\$9,160,098</b>

Figure 5 details the District's potential debt service for FY 2022 on general obligation (GO) and income tax secured (ITS) bonds, incorporating into the District's current outstanding principal and interest payments its plans to issue the Series 2022A and Series 2022B commercial paper general obligation bond anticipation notes the week of May 16, 2022. As shown in Figure 5, DEG's estimate of the 17 percent test statistic - the ratio of the District's FY 2022 principal and interest payments on GO and ITS bonds, including the planned Series 2022A and 2022B GO bond anticipation notes, to DEG's FY 2022 General Fund Revenue Estimate - is 9.26%.

**Figure 5. FY 2022 Debt Service Applicable to the 17% Test, Comprised of Principal and Interest Payments on the District's Current GO and ITS Bond Obligations as well as its Planned Series 2022A and Series 2022B GO Bond Anticipation Notes (\$ Dollars)**

Principal and Interest From:	FY 2022 Principal and Interest Payments Including General Obligation Commercial Paper Bond Anticipation Notes, Series 2022A and Series 2022B	FY 2022 Payments as Percent of General Fund Revenue Estimate
General Obligation (GO) bonds	\$506,881,308	5.53%
Income Tax Secured (ITS) bonds	\$341,591,061	3.73%
Total	\$848,472,370	9.26%

Source: DEG estimates of revenues and debt service obligation data provided by the OCFO for outstanding ITS and GO bonds as of May 18, 2022.

## Issues with forecast revision

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Both the February 2022 and May 2022 DEG forecasts were prepared using revenue collections data from the OCFO's February 2022 Revised Revenue Estimates. As the OCFO notes, the District's economy continues to recover from the pandemic-induced recession of 2020. Revenues have returned to FY 2019 levels, driven largely by business and individual income taxes; and while sales tax revenue collections have improved, the District's commercial real property market is expected to decline in FY 2022 as expanded levels of remote work reduce demand for office space. By improving our methodology to incorporate CoStar measures of commercial real estate, hospitality, and multi-family housing into our models of the District's individual revenue streams, DEG added sensitivity into our forecasts, allowing us to capture these divergent revenue paths induced by the pandemic and recovery.

While the District's economy continues to recover, the outlook remains cautious. In part, this is due to the Omicron wave which has reversed the gradual trend of office workers returning to their offices in the District; the pace and extent to which employees return to the workplace will continue to impact the demand for office space and therefore property tax revenues, as well as other revenue streams such as parking tickets which may be dependent on worker traffic as well as enforcement levels. And although the Omicron wave of the pandemic had had less economic impact than previous waves, the potential for the emergence of new and more resistant variants could pose greater economic consequences. Additionally, the magnitude and persistence of inflation is a key source of uncertainty. These risks render modeling D.C. revenues difficult, relying on assumptions about the District's path toward recovery, taking into account these sustained risks as well as the pandemic's long-term effects.

## Existing and projected outstanding GO bond debt service

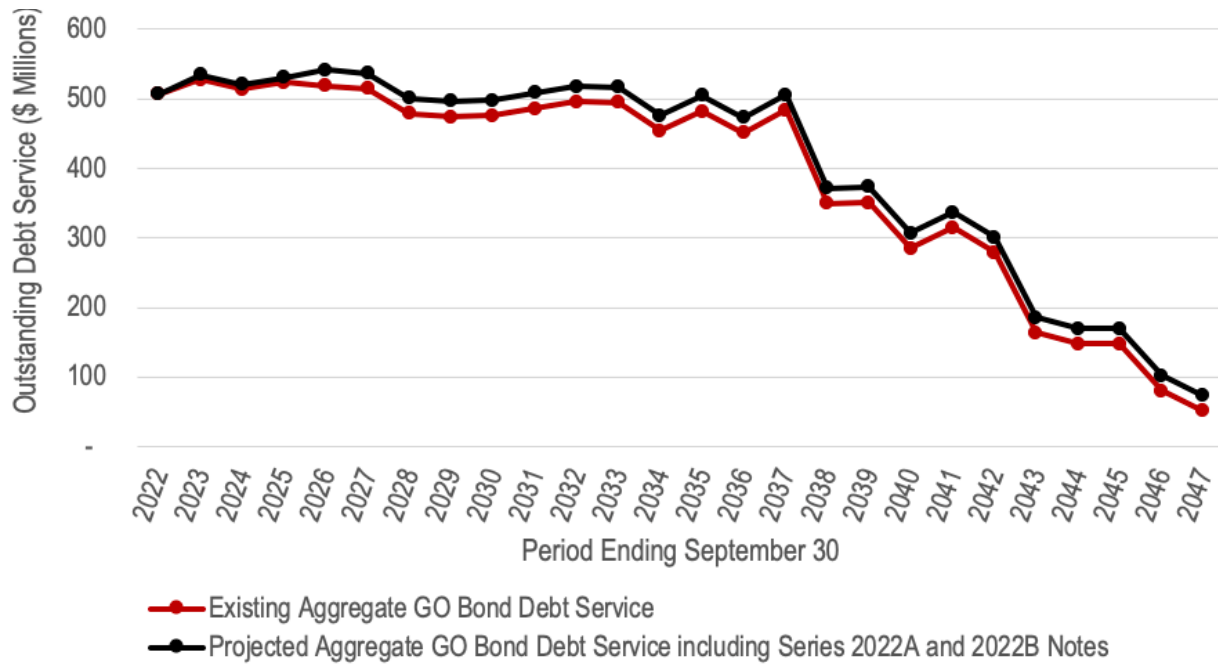
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Figure 6 shows the maximum increase in General Obligation (GO) bond debt service that the District plans to issue with the Series 2022A and Series 2022B GO bond anticipation notes. The maroon line depicts the District's aggregate GO bond debt service requirements *at present*, broken out for each fiscal year from 2022-2047, whereas the black line depicts the same, *plus* the projected debt service undertaken by issuing the Series 2022A and 2022B notes. Overall, there will be an additional \$511.52 million in GO bond debt service for FY 2022-2047, increasing the District's aggregate GO bond debt service from \$10.05 billion to \$10.56 billion for that time period. Incorporating data from the OCFO's FY 2021 Annual Comprehensive Financial Report (ACFR) on additional debt service requirements through maturity, the District's projected total debt service through FY 2047, including the series 2022A and 2022B notes, is \$20.50 billion.<sup>10</sup>

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<sup>10</sup> This calculation incorporates data on the District's ITS and GO bond debt service requirements as of May 18, 2022. The updated data was compiled by the OCFO to aid in the ODCA's certification of the Series 2022A and 2022B commercial paper general obligation anticipation bonds. It also incorporates the additional debt service requirements detailed in "Note 7. Long-Term Liabilities" of the ACFR, specifically those on Qualified Zone Academy, Tobacco Settlement Asset-Backed, TIF, Ballpark Revenue, Federal Highway Grant Anticipation Revenue, Deed Tax Revenue, and PILOT bonds, as well as the 225 Virginia Avenue Lease. However, it is important to note that the ACFR data is not updated for any payments of principal or interest made throughout FY 2022 and so, this is a rough estimation of the District's total debt service obligation through FY 2047.

**Figure 6. Existing Aggregate GO Bond Debt Service (Maroon) and Projected Aggregate GO Bond Debt Service After Inclusion of Series 2022A and 2022B GO Bond Anticipation Notes (Black) as of May 18, 2022**



## Conclusion

DEG’s estimate for the District’s FY 2022 non-dedicated Local Fund Revenue is \$9,160,098,000 or 100.81% of the OCFO’s estimate of \$9,086,718,000. Given the similarity, DEG finds the OCFO’s estimate to be both reasonable and attainable.

Additionally, based on the analysis performed by DEG, the Auditor can certify that after issuance of the Series 2022A and Series 2022B general obligation bond anticipation notes, the District will comply with statutory debt limitations.

The Auditor only certifies that the revenue estimate, at the time of certification, appears sufficiently supported and achievable. As the OCFO frequently revises projections throughout the fiscal year after gathering additional information, we stress that our report is based on the information available at the time of our review.

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## About ODCA

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To fulfill our mission, we conduct performance audits, non-audit reviews, and revenue certifications. The residents of the District of Columbia are one of our primary customers and we strive to keep the residents of the District of Columbia informed on how their government is operating and how their tax money is being spent.

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