THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
DEBT AFFORDABILITY STUDY

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Executive Summary

The City of New York (the "City" or "NYC") Office of the Comptroller (the "Comptroller's Office") retained Acacia Financial Group, Inc. ("Acacia") to prepare a Debt Affordability Study (the "Study"). Debt affordability is a broad topic, and many issuers, including NYC, have debt limits dictated by state or local law, or are self-imposed. The amount of debt that can be incurred by a jurisdiction, however, does not necessarily equate to the amount of debt that would be affordable for the taxpayers of that jurisdiction. Consequently, this report seeks to go beyond the statutory debt limit for the City and examine affordability as measured by the rating agencies, by comparing the City to its peers and lastly, by examining the capital commitments of the City funded by revenues and the issuance of bonds. This Study does not specifically examine the City's operating budget mandates and priorities, as these costs are assumed to be funded with the revenues remaining after paying for fixed costs, such as pension and Other Post Employment Benefits ("OPEB") contributions.

The City issues general obligation bonds ("GO") and through the NYC Transitional Finance Authority ("TFA"), issues future tax secured bonds ("TFA FTS") as the primary financing vehicles to fund is capital program. The City's statutory debt limit is set by the New York State Constitution at 10% of the five-year rolling average of the "full valuation taxable real estate" and the "indebtedness" that counts against this limit includes the outstanding principal amount of GO bonds, TFA FTS bonds in excess of $13.5 billion and contracted capital commitments not yet financed with bond proceeds. At the beginning of Fiscal Year ("FY") 2024, the City had $37.2 billion in additional borrowing capacity under this measure. The Study examines debt affordability consistent with the City's statutory debt limit while considering other factors such as fixed costs and peer analysis as measured by the rating agencies.

The Study addresses the three fundamental areas: credit ratings, peer analysis and funding of capital commitments.

- **Section I: Rating Agency Methodologies and Views of NYC's General Credit.** This section examines the City's debt affordability as measured by the rating agencies' assessment of the City's GO and TFA FTS credits, which are the City's primary financing vehicles for funding its capital program. Investors in the City's bonds judge the relative value of its debt based on the credit ratings the City receives for the GO and TFA credits. The higher the credit rating assigned, the lower the borrowing cost for the City.

- The GO bond rating is the foundation for all of an issuer's credits. The TFA FTS credit is secured by Personal Income Taxes ("PIT"). Therefore, ratings for the TFA FTS bonds are based on each rating agency's GO criteria in combination with any separate tax supported revenue criteria.

- Although the rating agencies use different methodologies and criteria to assign their credit ratings, the City's ratings for its GO and TFA FTS bonds are tightly grouped among the agencies and are considered highly rated in the AAA/AA range. This section reflects Acacia's assessment of each rating agency's methodology, the key rating determinants for the City and factors that could impact the City's ratings in the future.

- **Section II: Peer Group Selection and Analytics.** This section examines various debt affordability metrics of the City and its peers. By many measures, the City has no directly comparable peers in the U.S. For example, NYC has more than twice the population of the second most populous city, Los Angeles, and the City's scope of services and responsibilities is far broader than almost all its peers.

The peer group utilized for this report included the top 10 most populous cities in the U.S. and then three additional cities with similar governance characteristics, selected from the list of the top 25 most populous cities in the U.S.

- Comparisons to the City's closest U.S. peers can be useful as a point of reference regarding the broader topic of debt affordability. Several measurements used by the rating agencies were selected as a basis of comparison among the peer group. Evaluating these metrics can be useful to understanding the City's key credit rating attributes and its assigned ratings and performance in comparison with its peers.

- Overall, the City compared well to the peer group, especially regarding debt affordability, even though the City has significantly more debt outstanding than its peers.

- **Section III: Debt Affordability.** This section examines how the City's future capital plans impact its overall debt affordability. Rating agencies use a variety of metrics to gauge debt affordability and provide a measure of comparison with similar governmental units. Increasingly, consideration is given not only to the burden from issuance of long-term debt, but also includes fixed costs, which encompasses pension and OPEB liabilities.

- This section reviews several scenarios based on the January 2024 Five Year Financial Plan ("Current Plan"). This includes financing for its Capital Plan from FY 2024 – FY 2028 and is expected to be evenly divided between GO bonds and TFA FTS bonds. Long-term projections of tax revenue and baseline debt service under the Plan provided by the Comptroller's Office going out to FY2033 were used to measure the impact on the City's debt affordability metric, which calls for limiting debt service to no more than 15% of tax revenues in any given year.

- Along with the statutory debt limit, other metrics are used by the rating agencies to gauge affordability, against personal income, assessed value of properties and governmental revenues. In addition, measures of fixed costs and debt service coverage are two other factors which can impact both debt affordability and the City's ratings. As public sector pension and OPEB funding has become an increasing concern in recent years, the rating agencies' approaches have evolved from thinking of them as being discretionary to considering them as non-discretionary fixed costs which are required to be funded from operating budgets, regardless of the level of revenues and other expenditures.

NYC has a strong credit profile because of its financial policies and practices as well as its conservative budgeting. Assuming growth in dedicated tax revenues and fixed costs perform as projected, the amount of debt expected to be issued to support the Current Plan should have a minimal impact on the City's debt metrics.

Certain potential challenges are outside of the City's control, including performance of tax revenues and property tax valuations, a decline in either of which could pressure metrics used by the rating agencies and in assessing debt affordability. As the City enters into future capital commitments, it will begin to approach its statutory debt limit and its self-imposed measures of debt affordability. The City's current practice of updating financial projections throughout each FY, coupled with conservative budgeting, best positions the City to sustain its long-term debt affordability by balancing its planned capital commitments against its conservatively-forecasted revenue growth. This enables the City to determine what adjustments, if any, will need to be made in order to sustain its long-term debt affordability.

I. Rating Agency Methodologies and Highlights of New York City's General Credit

a. Summary of Each Applicable General Credit (or GO) Methodology

The City issues general obligation bonds ("GO") and future tax secured bonds ("TFA FTS") through the NYC Transitional Finance Authority ("TFA") as the primary financing vehicles to fund its capital program. This section presents summaries of the current GO rating methodologies which are utilized to rate the GO bonds. The GO bond rating (often synonymous with the Issuer Credit Rating, Underlying Rating or Issuer Default Rating) is the rating that sets the foundation for all the rest of an issuer's related credits. This is the rating that is also the focus of the peer analysis in Section II for analysis of debt affordability measures. The ratings for the TFA FTS bonds are established based on each agency's GO criteria and tax supported revenue criteria for their ratings. While related, for purposes of this study, any discussion related to rating agency criteria will focus solely on the GO credit.

The City GO credit is currently rated by Moody's Investors Service ("Moody's"), Standard & Poor's Global Ratings ("S&P"), Fitch Ratings ("Fitch") and Kroll Bond Rating Agency ("Kroll"). Although the rating agencies use different methodologies to assign their credit ratings, the City's ratings for its GO and TFA FTS are tightly grouped among the agencies for each credit, as shown in **Exhibit I-1: Overview of NYC's GO and TFA Ratings**. Kroll has established a GO rating that is one notch higher than the other three, citing the City's legal protections to support the rating. The higher rating for the TFA FTS bonds is based on the strength of the personal income tax ("PIT") revenues and the high coverage levels. Moody's rates the TFA FTS subordinate bonds one notch lower than the other rating agencies which is largely attributable to how Moody's evaluates the coverage levels between the senior and subordinate liens.

Exhibit I-1 Overview of NYC's GO and TFA Ratings[1]

Key NYC Credit Ratings as of 2/29/24				
Rating Agency/Credit	**Moody's**	**S&P**	**Fitch**	**Kroll**
GO	**Aa2**	**AA**	**AA**	**AA+**
TFA FTS Senior	*	*	*	**NR**
TFA FTS Subordinate	**Aa1**	**AAA**	**AAA**	**NR**

* No Future Tax Secured Senior Bonds are currently outstanding. TFA may issue Senior Bonds in the future to the extent permitted by the TFA Act and the Indenture.

Overview of Moody's Methodology[2]

Moody's GO methodology, "US Cities and Counties Methodology" (published 11/2/22), identifies the quantitative and qualitative factors that it believes are most likely to impact ratings. Moody's assesses cities and counties in their totality and includes both their governmental and business-type activities financial results, assets and liabilities in the analysis of the fundamental credit strength of the entity.

Moody's methodology features a "Scorecard" to approximate the credit profile of each applicable governmental unit. The Scorecard is comprised of four factors: Economy (30%), Financial Performance (30%), Institutional Framework (10%), and Leverage (30%), each of which incorporates sub-factors. The calculation of each of these factors is then converted to numerical scores that are used in the rating assessment. For the City, the two largest individual "sub-factors" are each worth 20% (40% in total) of the overall scorecard score and are: "Available Fund Balance Ratio" and "Long-Term Liabilities Ratio," as

[1] Source: NYC Comptroller Website, NYC Bonds – Rating Reports - General Obligation, Transitional Finance Authority, and NYC Municipal Water Finance Authority

[2] Moody's methodology is in the process of being updated, and a Request for Comment was issued on 1/16/2024, for its proposed "US Public Finance Special Tax Methodology: Proposed Methodology Update". The comment period ends 3/18/2024.

noted in **Appendix A, *Exhibit* I-*2: Overview of Moody's GO Rating Methodology: Scorecard Framework***. Long-term liabilities consist of debt, the Moody's calculated Adjusted Net Pension Liability ("ANPL") and other post-employment benefits ("OPEB"). ***Exhibit I-2*** also sets forth additional detailed information on the factors and sub-factors. The score assigned for each sub-factor is then combined to result in an overall numeric score.

After determining the numeric score that results from the Scorecard, Moody's has provided for "Notching Factors" which can result in up to 4.5 upward notches or 6.0 downward notches, as shown in **Appendix A, *Exhibit I-3: Overview of Moody's Notching Factors.*** Application of the Notching Factors results in a "scorecard indicated outcome" that can be further impacted by the judgement of the rating analysts and is not reflected in the scorecard.

Overview of S&P's Methodology[3]

S&P's GO methodology, "U.S. Local Governments General Obligation Ratings: Methodology and Assumptions" (9/12/13, re-published 9/26/22), established an Analytical Framework for Local GO Ratings, excluding special purpose districts. This study uses S&P's current methodology.

The current methodology features seven key Rating Determinants: Institutional Framework ("IF") (updated 10/12/22) (10%), Economy (30%), Management (20%), Financial Measures (30%, including Liquidity, Budgetary Performance and Budgetary Flexibility, each at 10%), and Debt & Contingent Liabilities (10%), as shown in greater detail in **Appendix A, *Exhibit I-4: Overview of S&P Global Ratings GO Rating Methodology.*** Application of the Rating Determinants with assigned values and weightings leads to an initial indicative rating. S&P views its credit ratings as being forward-looking. S&P states the most important credit features revolve around the entity's ability and willingness to effectively engage in prudent fiscal management and the support of its legal and political relationships at higher levels of government, rather than its economic trends or financial position.

As illustrated in **Appendix A, *Exhibit I-5: S&P Indicative Rating Scores*** the indicative scores resulting from application of the seven Rating Determinants are correlated with credit ratings, prior to application of S&P's positive and negative "overriding factors" by a potential net one-notch adjustment (but not higher than the applicable caps in each category) as shown in **Appendix A, *Exhibit I-6: Overview of S&P Overriding Factors*** resulting in assignment of a final rating.

Overview of Fitch's Methodology[4]

Fitch currently rates both state and local governments utilizing its "U.S. Public Finance Tax-Supported Rating Criteria" (published 5/4/21). This approach differs somewhat from Moody's and S&P which have tailored their applicable GO methodologies for local issuers to address only local units. Fitch's most recent GO report for the City was issued under this methodology.

Fitch's Current Methodology

Under Fitch's criteria, the starting point for all applicable credits is to evaluate the sector (U.S. State and Local Governments), the members of which share common attributes. Fitch notes that most credits in this sector are highly rated, within the range from AAA to A-, except for instances of specific credit features

[3] S&P's methodology is in the process of being updated, and a Request for Comment was issued on 1/11/2024, for its proposed "Methodology for Rating U.S. Governments." S&P anticipates that as much as 5% of its current ratings may be impacted by implementation of the new methodology. The comment period ends 3/11/2024.

[4] Fitch's methodology is in the process of being updated, and a Request for Comment was issued on 9/28/2023, for its proposed "Proposed New Local Government Rating Criteria." Fitch anticipates that as much as 35% of its current ratings may be impacted by implementation of the new methodology. The comment period ended 11/17/2023.

or other concerns. Fitch utilizes a two-step process for its credit analysis, first, considering general credit quality via its Issuer Default Rating ("IDR") and, second, determining a rating for specific security structure.

In conjunction with other elements of the methodology, Fitch uses its Fitch Analytical Stress Test ("FAST") model to perform Scenario Analysis for Cyclical Downturn.

As described more fully in **Appendix A, *Exhibit I-7: Overview of Fitch's Current GO Rating Methodology,*** the four Key Ratings Drivers ("KRDs") consist of the Revenue Framework, Expenditure Framework, Long-Term Liability Burden and Operating Performance for each issuer. Fitch assigns specific ratings categories ('aaa' to 'bb') for each KRD, based on long-term trends and expectations. Within each KRD there are several assessment categories that determine the appropriate rating level. Fitch does not commit to applying any standard weighting of the various factors, although in Acacia's follow-up discussions with analysts, the Operating Performance assessment was cited as being the most important of the four key ratings drivers. Ultimately the rating outcome results from consideration of issuer-specific qualitative and quantitative factors, giving additional flexibility to the analysts.

In addition to the KRD analysis detailed above, the final rating also considers Asymmetric Additional Risk Considerations (only negative), and Legal Pledge.

Overview of Kroll's ("KBRA") Methodology

Kroll's rating methodology, "U.S. Local Government General Obligation Rating Methodology" (published 9/6/18) focuses on four KRDs: Management Structure and Policies, Debt Burden and Additional Continuing Obligations, Financial Performance and Liquidity Position, and Municipal Resource Base as shown in **Appendix A, *Exhibit I-8: Overview of Kroll GO Rating Methodology***. Within each Rating Determinant there are several categories that are analyzed to determine the rating level that applies to each. In the methodology, Kroll "balances" the ratings of these Determinants and will assign an overall rating without applying a standard weighting system. In this process of balancing, Kroll may emphasize consideration of a particular credit factor, or factors, that have an overriding influence on the overall credit of the municipality. Credit factors may not be applied evenly across a given peer group. Kroll also gives itself additional flexibility by noting that the credit factors identified in the Methodology are not exhaustive and that there may be additional factors that impact the rating, reserving for itself the right to consider additional factors and measures not specifically addressed in the methodology.

b. Rating Agency Approach to Analysis of Fixed Costs and Long-Term Obligations

Over the last few decades, the rating methodologies for "Fixed Costs" and "Long-Term Obligations" have undergone a steady and significant shift in approach for all four rating agencies. Driving this evolution has been the growing recognition that unfunded public sector pension and OPEB liabilities were increasing, in some cases dramatically, and that these growing liabilities needed to be funded. Instead of the rating agencies considering the pension and OPEB as discretionary or "soft" liabilities, their annual funding requirements are now considered "fixed costs" and therefore, operating budgets need to fund these costs regardless of the level of revenues and other expenditures. As a result, the rating agencies have each developed their own methodologies to analyze Fixed Costs and Long-Term Obligations.

This is one of the most significant areas of difference in methodologies between the rating agencies. The financial crisis of 2008 and the subsequent enactment of Dodd-Frank has placed the rating agencies under SEC regulatory oversight with a mandate to review assigned ratings on an annual basis to ensure the accuracy of those ratings. It is not a coincidence that these changes in methodology have subsequently occurred at the same time and have become increasingly driven by quantitative analysis in order to be

more transparent to investors and issuers in how ratings are derived. There is a wide array of metrics currently used by the rating agencies in the assignment of a rating. Each rating agency has a slightly different approach to Fixed Costs and Long-Term Obligations. In general, these include debt (exact composition and calculations vary, including potentially re-amortization of debt), pension (calculated by actuaries or the Governmental Accounting Standards Board ("GASB") or recalculated by the rating agencies with their in-house actuaries) and OPEB (calculated by actuaries or GASB).

Moody's

Under the current methodology, Acacia notes that Moody's renamed the section previously called "Debt and Pensions" to "Leverage," which Acacia believes increases the emphasis on the importance of pensions and OPEB annual contributions. Leverage measures provide important indications of an issuer's capacity to invest in capital assets and pay fixed costs, including debt service, while meeting core responsibilities to provide municipal services. The Fixed Costs Ratio (Implied Debt Service + Pension Tread Water Indicator + OPEB Contributions + implied carrying costs for other long-term liabilities including capital leases) / Revenue, provides an important indication of the annual financial burden. The ratio also provides, by proxy, the percentage of revenue that remains available for the entity to provide core services after fixed costs are paid. Issuers with high fixed costs face a greater challenge in adjusting expenditures than ones with low fixed costs.

Acacia highlights the following key elements of the ratio calculations performed by Moody's, which include:

- **Implied Debt Service:** represents the annual cost to amortize debt over 20 years with level payments using a common implied interest rate that is periodically recalculated according to market conditions. The metric amounts to an implied carrying cost for debt.
- **Pension Tread Water Indicator:** represents the estimate of the pension contribution necessary to prevent reported unfunded pension liabilities from growing, year over year, in nominal dollars, if all actuarial assumptions are met. The pension tread water indicator is the sum of two components: the employer portion of the service cost and the implied interest on the reported net pension liability at the beginning of the plan's FY. This and Moody's ANPL result from Moody's in-house actuaries recalculating an issuers' pension liabilities.
- **OPEB Contributions** are an issuer's actual annual contribution. For any pension or OPEB funding bonds, depositing proceeds into a retirement system or trust is not considered a contribution in the analysis of fixed costs, nor in the analysis of pension contributions relative to the pension tread water indicator.
- **ANPL:** represents Moody's recalculation of an issuer's pension liability. This calculation is performed by Moody's with the assistance of actuaries to bring greater transparency and comparability between issuers. Revised assumptions (vs. the actuarial assumptions that determine the Actuarially Determined Contribution ("ADC")) include the assumed rate of return on the assets and the duration of the liability. Additionally, this calculation uses the GASB 68 Plan Fiduciary Net Position (Market Value), rather than the actuarial smoothing assumptions used to determine the ADC. Many units of government are required to use the ADC to budget their annual pension funding requirements.

S&P

Acacia notes the S&P Local Government GO Rating Methodology's key factor "Debt and Contingent Liabilities" addresses "Fixed Costs" and constitutes 10% of the overall rating weight, prior to application of Overriding Factors. The initial score is obtained by calculating (Total Governmental Funds Debt Service as a % of Total Governmental Funds Expenditures) and comparing the result to (Net Direct Debt as a % of

Total Governmental Funds Revenue). This is used to measure in the first instance, the annual fixed cost burden of debt on the issuer and in the second instance, the total debt burden on the government's revenue position, the results of which are compared to each other as shown in **Appendix A, *Exhibit I-9, Assessing S&P's Debt and Contingent Liabilities Score***.

The scores determined above can be impacted positively or negatively by one point in each direction if certain conditions exist. Positive factors (one point each) include net debt as a % of market value < 3% and rapid amortization of debt (65% amortizing within 10 years). Negative factors (one point each) include significant medium term debt plans, exposure to significant interest rate risk, net debt as a % of market value over 10%, and speculative contingent liabilities greater than 10% of total governmental revenue. Unfunded pension and OPEB situations that have not been managed lower the score by 2 points.

Fixed Costs and Long-Term Obligations also are a factor in the Financial Management Assessment ("FMA") methodology as the starting point for the "Management" Rating Factor. Ratings may be capped at the lower of "A" or one notch below an indicated rating, if an issuer has a debt, pension or OPEB burden that is considered very high, and management fails to have a credible plan to address the funding of these liabilities. Characteristics of an extremely high burden include total governmental funds debt service plus required annual pension payment plus annual OPEB payment as a percentage of total governmental funds expenditures over 50%; recent upward fixed cost trends; and the lack of fiscal flexibility to compensate for these high fixed costs.

Fitch

Under its current methodology, Acacia notes that Fitch evaluates Fixed Costs within the Expenditure Framework (the second KRD), and as part of each credit's overall liability profile. A key element of the analysis is consideration of the expected "organic" trends for expenditures vs. revenues, through the economic cycle, without consideration of management's budget or policy initiatives. Fitch appears to also be interested in understanding the flexibility of expenditures and analyzing how pressured the credit may be through the economic cycle. In considering flexibility, Fitch focuses on the issuer's practical vs. legal ability to reduce expenditures.

Against this backdrop, Fitch analyzes the "Carrying Costs" for each credit's Fixed Costs, using a ratio (Governmental debt service + Pension ADC + OPEB actual payments) / Governmental Expenditures for the most recent year. The purpose of this calculation is to isolate the portion of Expenditures that are resulting from Fixed Costs and therefore, considered inflexible and must be funded in the budget each year.

It should be noted that the actual debt service used for this ratio is considered to be level debt service; however, Fitch recalculates debt service assuming all tax-supported debt matures in 20 years at a 5% interest rate. Fitch does this to enable easier comparison among issuers. If the recalculated debt service is significantly divergent from the actual debt service, Fitch may replace the recalculated debt service with the actual debt service. Fitch's goal is to find sources of future budget pressure.

The resulting percentage determined by this metric impacts the Expenditure Framework score as follows:

"aaa" = < 10%; "aa" = 10%- 20%; "a" = 20% - 25%; "bbb" = 25% - 30%

Interestingly, Fitch does not automatically look at high debt service as a credit negative, as it can be a sign of rapid amortization which is a credit positive. Fitch sees a much greater risk from high pension ADCs and high OPEB payment requirements, which can be difficult to manage within the budget each year.

In terms of the Long-Term Liability Burden, Fitch utilizes the ratio (Overall local governmental debt + Fitch-adjusted direct net pension liability or "NPL") / Personal Income. Fitch looks at several factors, including

how this ratio may change over time, and how those changes may impact debt affordability. This resulting ratio falls along the ratings spectrum as follows:

“aaa” = < 10%; “aa” = 10%- 20%; “a” = 20% - 40%; “bbb” = 40% - 60%

Kroll

Acacia notes that Kroll’s methodology addresses Debt and Additional Continuing Obligations in Rating Determinant #2, the ratios identified in **Appendix A, Exhibit I-8**. As illustrated in this exhibit, Kroll focuses on both traditional debt ratios as well as the broader “Additional Continuing Obligations” perspective which incorporates pension and OPEB. A broad definition of debt includes direct and overlapping debt that specifically includes GO bonds and notes, direct bank loans, commercial bank lines of credit, appropriation backed debt and lease debt. Kroll is interested in both the quantitative and qualitative aspects of managing these liabilities and addresses them from the perspective of the issuer’s overall long-term obligations burden and the operating budget impacts.

Regarding pension liabilities, rather than being prescriptive, Kroll states that it may consider net pension liabilities to be increasingly like debt and may as a result include pension contributions in the debt ratio calculations as one of the calculations for consideration. Pension obligations are reviewed in the context of the issuer’s debt profile using the GASB Statement 68 calculation of net pension liability (“NPL”), which does not include multi-year smoothing of pension assets. Kroll also evaluates the actuarial methodologies used by many units of government, a unique dual perspective. Given this approach to the long-term liability burden, it makes sense that the various ratios included in **Exhibit I-8** incorporate both the ADC and actual pension payments in different metrics.

Regarding OPEB, Kroll examines both the required reporting under GASB 75 as well as the budget burden of annual OPEB payments as shown in Exhibit I-8. Kroll observes there are several factors impacting OPEB liabilities, many of which are difficult to quantify. Kroll’s methodology specifically cites the potential importance of management initiatives to control costs through plan design, etc.

c. Summary of NYC’s Positive and Negative Rating Factors from Recent GO Rating Agency Reports

The City’s GO and TFA credit ratings are tightly grouped and set the foundation for the rest of the City’s credits some of which utilize different methodologies, such as those for revenue bonds, utilities, priority lien (Sales Tax and PIT) and other criteria. As the City continues to actively manage its fiscal profile and consider options to meet the funding demands of its capital plan and operating budget, rating agency views can help inform consideration of the options available for future financial decisions. NYC’s financial profile is perhaps the most vibrant and complex of any City in the U.S., sharing attributes of the largest cities, counties and school districts in the nation, but in many ways in a class of its own, as discussed more fully in **Section II. Peer Group Selection and Analytics.** NYC shares many common attributes with the largest and most economically-important metropolitan centers on a global scale.

Below is an inventory of some of the key rating factors cited by the rating agencies in their reports, followed in each case by a table listing key credit factors that could impact the City’s future rating trajectory. Given the City’s essential leadership role for the U.S. economy, managing NYC’s credit ratings and financial profile is a complex and multi-faceted challenge, but one that has clearly been well-managed given the City’s high ratings.

Moody’s Positive and Negative Rating Factors for NYC

Key attributes cited by Moody’s include the City's competitive advantages of a highly skilled labor force, exceptional higher education and medical center anchors, strong transportation connections, and

relatively low crime rates compared to other large cities. The City's strength and depth of its budget and financial management team and the breadth and diversity of its revenue base are also fundamental drivers for its ratings. Moody's view is that the City's fixed costs for debt service, pensions and OPEB are among the strongest of the nation's largest local governments.

As noted in the outlook section and counter-balancing the above comments, is the risk and challenge that the State may continue to push some costs down onto the City. Another concern is the impact on commercial real estate while businesses are still adjusting to hybrid/remote work patterns, presenting an unknown impact on commercial real estate and property taxes. The City's very strong institutional budget practices and financial governance will be a strength as it manages through any future challenges. Other significant challenges include the migrant crisis, potential for slower revenue growth, inflation, and labor contracts, in addition to maintaining the funding for pension and OPEB.

As shown in ***Exhibit I-10: Moody's Key Rating Report Comments on NYC's GO Credit Drivers*****,** Moody's has cited various potential issues that could help improve the City's rating or exert pressure on it in the future.

Exhibit I-10: Moody's Key Rating Report Comments on NYC's GO Credit Drivers

Potential Positive Drivers as of February 2024	Potential Negative Drivers as of February 2024	Changes vs. March 2023
• Continued economic recovery that brings tax revenue growth closer to the 5.4% pre-pandemic trend, and ongoing structurally balanced budgets • Stronger reserves, including deposits to the Revenue Stabilization Fund • Reduction of fixed costs ratio closer to Aa median of about 11%	• Additional spending pressure that pushes forecast budget gaps closer to 10% of city funds revenue • Further declines in Moody's calculated available fund balance, or use of OPEB assets to balance the budget • Economic events such as sustained declines in equity prices, or trends that create significant structural budget imbalances beyond those caused by the current migrant crisis • Divergence from well-established fiscal practices and strong budgetary management	• In 2024, Moody's added a comment regarding additional spending pressure that pushes forecast budget gaps closer to 10% of City funds revenue

Source: Extracted from Moody's rating reports of 2/22/2024, Fiscal 2024 Series C and 3/24/2023, Fiscal 2023 Series E, except for commentary on changes year over year.

S&P's Positive and Negative Rating Factors for NYC

S&P cites the City's economy and population size, with the metropolitan area GDP the highest in the U.S. Excellent universities, first-class health care providers, active venture capital sector, and attractiveness as a leisure and business travel destination that support NYC's status as a global employment, financial and tourism hub. In addition, NYC's healthy financial reserves were at record levels at the end of FY 2022. Offsetting these strengths, the City's estimated costs for asylum-seekers are expected to continue to increase over the next three FYs. The City's enacted Program to Eliminate the Gap ("PEG") puts in place a 5% across the board budget cut, which is recognized as an effective budget measure.

As shown in ***Exhibit I-11 S&P's: Key Rating Report Comments on NYC's GO Credit Drivers*****,** S&P has cited various potential issues that could help improve the City's rating or exert pressure on it in the future.

Exhibit I-11: S&P's Key Rating Report Comments on NYC's GO Credit Drivers

Potential Positive Drivers as of February 2024	Potential Negative Drivers as of February 2024	Changes vs. March 2023
• If the City's economic trajectory and financial reserves remain robust, particularly if the change in the retiree supplemental health care plan to Medicare Advantage, if eventually implemented, substantially lowers the net OPEB liability	• If the City is unable to address its projected budget gaps, if national macroeconomic weakness impedes the economic recovery, or if longer-term population migration and working conditions fundamentally alter the revenue forecast and property tax values • If a persistent structural misalignment of revenues and expenditures emerges as the City exhausts federal stimulus funding	• In 2023, S&P stated that it was difficult to consider a higher rating because of net OPEB liability that exceeds the median for U.S. states

Source: Extracted from S&P's Rating reports of 2/23/2024, Fiscal 2024 Series C, and 3/24/2023, Fiscal 2023 Series E, except for commentary on changes year over year.

Fitch's Positive and Negative Rating Factors for NYC's GO Credit

Fitch cites the City's exceptionally strong budget monitoring and controls, supporting its high assessment of operating performance, combined with its revenues and recovery trends post-pandemic. This, coupled with improved reserves, should help the City address any upcoming economic or fiscal challenges due to reduced revenue growth, rising labor and asylum seeker costs and other uncertainties associated with a high inflationary environment.

Fitch expects the City's "slightly elevated but still-moderate" long-term liabilities to be relatively stable based on future debt requirements needs and its NPL. OPEB is high, approximately one-half of the combined level of debt and NPLs but will fluctuate with changes in interest rates. Fitch expects that the City will continue to achieve general fund operational stability while maintaining reserves at close to or better than current levels.

As shown below in ***Exhibit I-12 Fitch's: Key Rating Report Comments on NYC's GO Credit Drivers,*** Fitch has cited various potential issues that could help improve the City's rating or exert pressure on it in the future.

Exhibit I-12: Fitch's Key Rating Report Comments on NYC's GO Credit Drivers

Potential Positive Drivers as of February 2024	Potential Negative Drivers as of February 2024	Changes vs. March 2023
• Sustained long-term liabilities associated with debt and NPLs at a level below 20% of personal income and active management to control growth in OPEB liabilities • Improved expenditure flexibility as evidenced by, among other items, reductions in fixed cost spending as a percent of governmental spending • Sustained revenue growth above national GDP levels	• An increased gap between the natural pace of revenue and expenditure growth due either to a slowing of economic activity and prospects for revenue growth, or an acceleration of spending growth, or both • Sustained erosion of the City's reserve cushion or reduced ability to use related budget management tools such as the annual prepayment of expenditures	• No changes noted during this time period

Source: Extracted from Fitch's GO rating reports of 2/23/2024, Fiscal 2024 Series C, and 3/24/2023, Fiscal 2023 Series E, except for commentary on changes year over year.

Kroll's Positive and Negative Rating Factors for NYC's GO

Key attributes cited by Kroll include the City's "pre-eminent role" in the U.S. and globally as a business and cultural hub, the demonstrated resiliency of its broad and diverse economic base. Also cited are the City's elevated, but manageable debt obligations, and institutionalized procedures and plans to address near-term financial challenges. The City's global position combined with legal structure further supports the rating.

Issues cited include the susceptibility of the economic base to economic cyclicality; ongoing and out-year budget challenges complicated by migrant care; and geographical vulnerabilities to weather events, including flooding.

As shown below in ***Exhibit I-13: Kroll's: Key Rating Report Comments on NYC's GO Credit Drivers*****,** Kroll has cited various potential issues that could help improve the City's rating or exert pressure on it in the future.

Exhibit I-13: Kroll's Key Rating Report Comments on NYC's GO Credit Drivers

Potential Positive Drivers as of February 2024	Potential Negative Drivers as of February 2024	Changes vs. March 2023
• Maintenance of the City's sound fiscal posture, revenue resiliency and employment growth trend in the face of prevailing economic and social headwinds • Adoption of guidelines for target size of reserves and conditions for withdrawal • Reduction in out-year budget gaps	• Secular economic decline and/or deterioration in a key economic segment, such as commercial real estate, of sufficient magnitude to challenge budgetary balance • Relaxation of, or less adherence to, well-established policies and procedures	• Increased emphasis on economic and social headwinds • Heightened concern over secular economic declines

Source: Extracted from Kroll's Rating reports of 2/27/2024, Fiscal 2024 Series C, and 3/24/2023, Fiscal 2023 Series E, except for commentary on changes year over year.

II. Peer Group Selection and Analysis

a. Comparison with Selected Municipalities[1]

The City of New York is the largest city in the U.S., with a population over twice as large as that of second ranked Los Angeles, and has a complex, varied, and aging infrastructure. The City has more school buildings, firehouses, health facilities, community colleges, roads and bridges, libraries, and police precincts than any other city in the nation. Moreover, the City has broader responsibilities than the majority of other large cities in the U.S. These responsibilities include city, county, and school district functions and, as a result, NYC has similarities to many county governments. Responsibilities for various functions in other large U.S. cities generally are distributed broadly to state, county, school districts, public improvement districts, and public authority governmental units. NYC has responsibility for all of these functions.

b. Selection of the Peer Group

The City has important features that pose challenges when attempting to identify peers among other U.S. cities and in drawing useful comparisons. One of these is its sheer scale and density, including population, infrastructure, and economic activity relative to other large U.S. cities. The other feature to consider is NYC government's broad scope of responsibilities, an important difference that distinguishes it from virtually all of its potential peers. Therefore, when selecting an appropriate peer group for the City, it is important to consider both scale and governance. Differences in scale and governance can be partially mitigated with ratio analysis, similar to the efforts of rating agencies, and by using, where appropriate, direct and overlapping debt, in order to address differences in governance structure, when measuring debt burden and debt affordability. As discussed in more detail below, direct and overlapping debt includes not only the debt of the peer city, but also other debt (for example, issued by school districts) supported by taxpayers in that jurisdiction. The Peer Group includes the top 10 most populous U.S. cities, representing different regions and a variety of infrastructure life cycles, and then expanded by adding cities that were both highly ranked in population (that is, ranking at least among the top 25 nationally) and which also assumed city and county functions along with direct responsibility for funding and financing their schools. While NYC may have more in common with other international financial and commercial centers, such as London, Paris, Shanghai, Seoul, Tokyo and others in terms of population and level of business and cultural vibrancy, these were not considered for inclusion in the Peer Group because of the lack of direct comparability in terms of legal structure, funding sources, budgeting, accounting and financing practices.

[1]This section was largely included in the Annual Report on Capital Debt and Obligations for Fiscal Year 2024 issued by the Office of the New York City Comptroller. This section includes input from the NYC Comptroller's Office.

The Peer Group is shown in ***Exhibit II-1, New York City Peer Group Identified for Comparisons***, along with each city's credit ratings, population, and governing functions and responsibilities.

Exhibit II-1: New York City Peer Group Identified for Comparisons

					Population			
City	Moody's	S&P	Fitch	Kroll	Total	National Rank	City & County Functions	GO School Funding & Borrowing
New York City	**Aa2**	**AA**	**AA**	**AA+**	**8,467,513**	**1**	**Yes**	**Yes**
Los Angeles	Aa2	AA	AAA	AA+	3,853,323	2	No	No
Chicago	Baa3	BBB+	BBB+	A	2,746,388	3	No	No
Houston	Aa3	AA	AA	-	2,300,027	4	No	No
Phoenix	Aa1	AAA	AAA	-	1,630,195	5	No	No
Philadelphia	A1	A	A	-	1,576,251	6	Yes	No
San Antonio	Aaa	AAA	AA+	-	1,451,863	7	No	No
San Diego	Aa2	AA	AA	-	1,411,034	8	No	No
Dallas	A1	AA	-	-	1,304,379	9	No	No
Austin	-	AAA	AA+	-	975,321	10	No	No
San Francisco	Aaa	AAA	AA+	-	815,201	17	Yes	No
Nashville	Aa2	AA+	-	AA+	715,884	21	Yes	Yes
Washington DC	Aaa	AA+	AA+	-	667,837	23	Yes	Yes
Boston	Aaa	AAA	-	-	654,776	25	Yes*	Yes

* Formerly consolidated with Suffolk County, MA; county government abolished in 1999.

Source: Population as of 2021; derived from FY 2022 ACFRs or equivalent annual report of each city. Ratings sourced from publicly available credit reports as of 9/27/2023.

c. <u>Metrics Selected for Comparison between NYC and the Peer Group</u>

The Peer Group metrics provided herein utilize data and calculations from each Peer Group member's Annual Comprehensive Finance Report ("ACFR") or equivalent annual report. Although some of the nuances specific to each city are difficult to conform to, the ACFRs provide the most comparable and readily available data. Additionally, when comparing debt metrics between jurisdictions, it is important to obtain the data from uniform sources, wherever possible. Using the table of Direct and Overlapping Debt from each Peer Group member's ACFR ensures greater comparability, because this table provides the total amount of GO and other property tax levy supported debt obligations that are imposed upon the

taxpayers of each Peer Group member, regardless of governance structure. For example, if the Peer Group comparisons utilized Direct Debt rather than Direct and Overlapping Debt, the Chicago Board of Education's debt would be excluded from Chicago's calculations since it is a separate entity from City of Chicago and finances its own capital program. As a result, comparability between Chicago and NYC would be reduced because NYC directly finances the capital program for NYC Public Schools, the largest school district in the nation, which is an integral part of the City's reporting entity and included in its Direct Debt. At the same time, ACFR indicators and concepts may not correspond with indicators commonly used by the City or by the Peer Group members. This is most evident for debt service, which in the ACFRs includes the payment of refunded bond principal (which is actually paid with refunding bond proceeds) as well as the amortization of principal and the payment of interest. For the City, debt service as presented in the ACFR is greater than the amount of principal and interest paid from the debt service fund on GO, TFA FTS, and City-related subject-to-appropriation debt, which, as a percent of general fund tax revenues, is the City's measure of debt affordability per its debt management policy (the metric is shown in Chart 7 of this report). Similarly, revenues in this section of the report are Total Governmental Funds (TGF) tax/total revenues before other financing sources, which are different from General Fund revenues (used in Charts 7 and 8 of this report). For these reasons, the debt service ratios in this section are referred to as "ACFR" debt service as a percentage of TGF tax/TGF total revenues.

The key ratios selected for Peer Group comparisons are focused on debt burden and debt affordability. They include the following which are described in greater detail below:

- Debt per Capita
- Debt as a percent of the Full Value of Taxable Property
- Debt as a percent of Personal Income
- ACFR Debt Service as a percent of Tax Revenues
- ACFR Debt Service as a percent of Total Revenues

i. Debt per Capita

Exhibit II-2, Debt Per Capita for NYC and Peer Group (FY 2022), compares NYC's direct and overlapping debt per capita with the Peer Group members. Debt per capita is a widely used metric that measures the debt burden on a city's residents without considering other demographic indicators which measure income and wealth.

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Exhibit II-2: Debt Per Capita for NYC and Peer Group (FY 2022)

Peer & Rating (Moody's/S&P/Fitch/Kroll)	Population	Direct and Overlapping Debt Outstanding ($ Thousands)	Debt Per Capita
Washington DC (Aaa/AA+/AA+/NR)	667,837	$ 13,689,397	$ 20,498
New York City (Aa2/AA/AA/AA+)	8,467,513	102,539,000	12,110
San Francisco (Aaa/AAA/AA+/NR)	815,201	8,453,104	10,369
San Antonio (Aaa/AAA/AA+/NR)	1,451,863	10,169,250	7,004
Chicago (Baa3/BBB+/BBB+/A)	2,746,388	18,583,066	6,766
San Diego (Aa2/AA/AA/NR)	1,411,034	9,510,060	6,740
Austin (NR/AAA/AA+/NR)	975,321	5,602,408	5,744
Houston (Aa3/AA/AA/NR)	2,300,027	12,167,932	5,290
Dallas (A1/AA/NR/NR)	1,304,379	6,776,820	5,195
Nashville (Aa2/AA+/NR/AA+)	715,884	3,461,561	4,812
Philadelphia (A1/A/A/NR)	1,576,251	7,574,500	4,805
Los Angeles (Aa2/AA/AAA/AA+)	3,853,323	16,793,886	4,358
Boston (Aaa/AAA/NR/NR)	654,776	1,750,106	2,673
Phoenix (Aa1/AAA/AAA/NR)	1,630,195	3,025,498	1,856

Source: FY 2022 ACFRs or equivalent annual report: 2021 for population figures; FY 2022 for direct and overlapping debt

Note: Based on data extracted from each city's "Direct and Overlapping Debt Outstanding" exhibit included in that city's ACFR or equivalent annual report and population reported by each city in the statistical section of its respective ACFR. While the individual exhibits are similar in format, there is no assurance that the components of the data published in those exhibits are comparable. Debt figures include bond premiums and discounts. New York City figures exclude GASB 87 lease liabilities but include $653 million in capital leases.

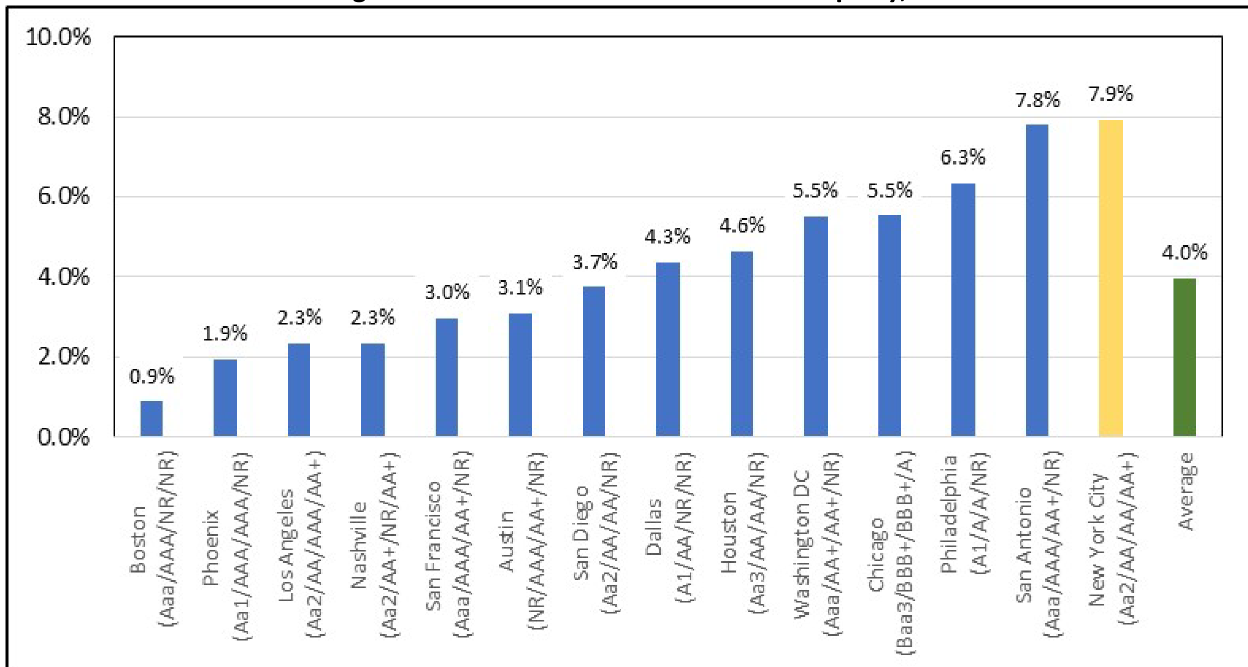
As shown in Exhibit II-2, in FY 2022, debt per capita for NYC was ranked second-highest among the Peer Group with Washington, D.C. almost twice as high and closely followed by San Francisco. Washington, D.C., San Francisco, and San Antonio have much lower populations and report a much lower total amount of direct and overlapping debt. At the time this report was prepared, all three are more highly rated than NYC with at least one "AAA" rating, which tends to indicate that debt per capita is not a critical rating driver when evaluated separately.[5]

[5] As the rating agencies have continued to adjust and refine their methodologies, each agency has also established its own set of metrics. S&P and Kroll each define their metrics differently, but the source data for each is readily available, generally from each municipality's respective ACFR or equivalent annual report. Moody's, and to a somewhat lesser degree Fitch, make adjustments to certain data elements found in each municipality's ACFR or equivalent annual report to produce their own customized set of

ii. *Debt as a % of the Full Value of Taxable Property*

Another way to examine a city's debt burden is to measure its debt relative to its taxable base. One commonly used measure of this relationship is shown in ***Exhibit II-3: Debt Outstanding as a % of the Full Value of Taxable Property, FY 2022.*** The rationale behind the use of this metric is that the taxable asset base provides a substantial revenue source for debt payment and that there is generally some reasonable limit on the amount of debt that can be borrowed against it, particularly with regard to taxation of real property. Unlike NYC, which does not impose taxes on personal property such as cars or jewelry, there are certain jurisdictions within the Peer Group (for example, Boston) that do impose personal property taxes in addition to taxation on real property. For those localities, the full value of taxable property also includes personal property in order to more accurately reflect the size of the taxable asset base.

Exhibit II-3: Debt Outstanding as a % of the Full Value of Taxable Property, FY 2022



Source: Each city's ACFR or equivalent annual report for FY 2022

Note: Debt Outstanding and Full Value of Taxable Property are based on data extracted from each city's "Direct and Overlapping Debt Outstanding" and "Assessed Value and Estimated Actual Value of Taxable Property" exhibits included its ACFR or equivalent annual report. While the individual exhibits are similar in format, there is no assurance that the components of the data published in those exhibits are comparable. See the note to Exhibit II-2 for the definitions of outstanding debt.

In Exhibit II-3, the City's ratio of debt as a % of full value of taxable property was 7.9 % in FY 2022. The comparison with other cities as presented in Exhibit II-3 shows that the average among the Peer Group members is 4.0 %. Its nearest Peers, San Antonio at 7.8 % with two "AAA" ratings and Philadelphia at 6.3 % with all "A" category ratings, reflect a big divergence and may show that this metric also is not a primary rating driver, although it is useful information to consider for credit analysis in the context of affordability and tax burden. As can be seen in the historical analysis featured in Chart 6 of the Office of the Comptroller's *Annual Report on Capital Debt and Obligations, Fiscal Year 2024* ("*Annual Report")*, released

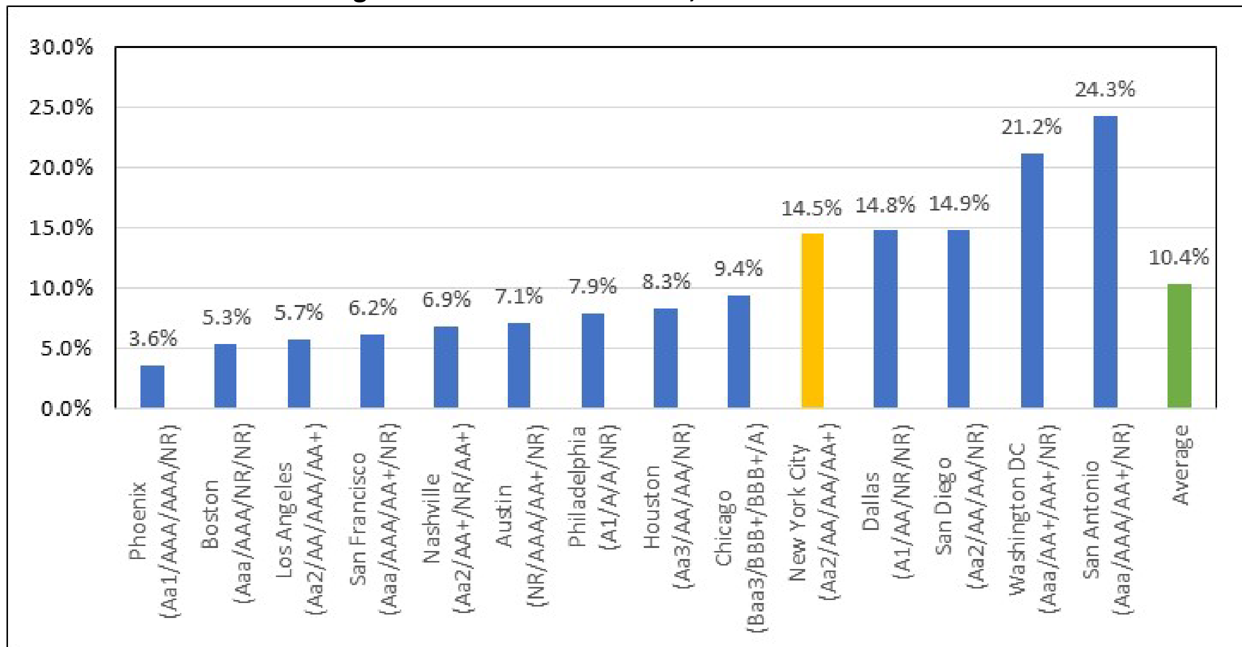
metrics that can be difficult to replicate. In addition, Fitch has issued an Exposure Draft and is seeing comments on its new rating methodology for local governmental units, which makes utilization of its metrics less meaningful until the methodology is finalized.

on December 1, 2023, NYC's debt outstanding to taxable assessed value ratio has generally declined since 2005, even as the debt outstanding has steadily risen, which speaks to the strength of the City's economic base. It should also be noted that TFA FTS debt is secured by Personal Income Tax and Sales Tax revenues, and that the property tax represents less than half of the City's tax revenues. Diversification of revenue is an important credit strength for the City. Therefore, the value of real estate is only a portion of the City's capacity to levy taxes and repay debt. Finally, as shown in Chart 11 of the City's most recent Annual Report the full valuation measure is an underestimate of the true value of real estate in NYC, and therefore the ratio shown in Exhibit II-3 is an overestimate of debt burden.

iii. *Debt as a % of Personal Income*

The debt to personal income ratio is conceptually related to the ability of the underlying population to repay the outstanding debt, whether or not a given municipality has a personal income tax.

Exhibit II-4: Debt Outstanding as a % of Personal Income, FY 2022



Source: Each city's ACFR or equivalent annual report for FY 2022

Note: Debt Outstanding is based on data extracted from each city's Direct and Overlapping Debt Outstanding exhibits included in each city's ACFR or equivalent annual report. While the individual exhibits are similar in form, there is no assurance that the components of the data published in those exhibits are comparable. See the note to Exhibit II-2 for the definitions of outstanding debt. 2021 Personal Income was used as this is the most recent year for which there is widely available data and is based on self-reporting by each individual city within the Statistical Section of its ACFR or equivalent annual report, and where unavailable, extrapolated based on data published by the U.S. Census Bureau in its American Community Survey (ACS) in addition to data from the U.S. Bureau of Economic Analysis (BEA, as published in 11/2022).

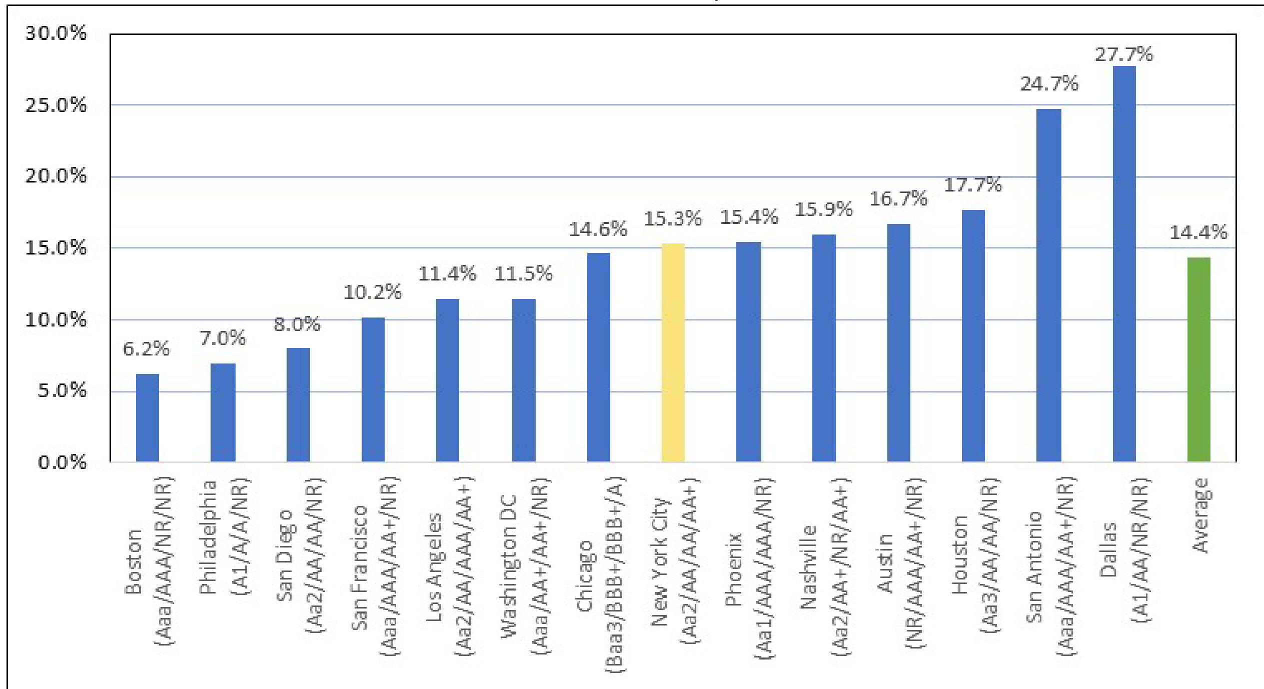
Looking at ***Exhibit II-4: Debt Outstanding as a % of Personal Income, FY 2022***, the City's ratio of 14.5 % in FY 2022 was the fifth highest among the sample cities, behind San Antonio at 24.3 %, Washington, D.C. at 21.2 %, San Diego at 14.9 % and Dallas at 14.8 %. Three of the Peers with a higher ratio of direct and overlapping debt as a percentage of personal income are rated the same as or higher than NYC, with only Houston rated below the City, so a higher ratio is not an obstacle to a higher rating, when considering other factors. Overall, NYC's direct and overlapping debt as a percentage of personal income is almost 1.4 times the 10.4 % average of the 13 members of the Peer Group. This measure of the population's ability

to repay debt is not a primary rating driver, although it is useful information to consider for credit analysis in the context of debt burden and debt affordability.

iv. *ACFR Debt Service as a % of Tax Revenues and Total Revenues*

Another way to examine the debt burden of a city is to measure its debt service as a percentage of tax revenues. All references to "ACFR Debt Service" include payments of principal, interest, and issuance costs as itemized in the table of *Statement of Revenues, Expenses, and changes in Fund Balances for Governmental Funds,* contained within each ACFR or equivalent annual report. This metric serves as a broad measure of affordability for the City and the Peer Group, with the caveat that ACFR debt service includes the value of bond redemptions, even if the debt is refinanced. This results in an overstated value for debt service because refunded principal is not paid with current revenues but rather refunding bond proceeds or perhaps some Peers defeased cash on hand. As such, refunded principal, included in the accounting total below, is not a burden on governmental revenues. Because redemptions can be volatile, the measure is an average of the last three available fiscal years for the Peer Group cities. The metrics presented below are intended to present the Peers on a comparable basis, whereas each value may be overstated due to the inclusion of refunded principal. We note that ACFR debt service as a percent of tax revenues, net of refunded debt service, was 9.6% for NYC in FY2022, which is below the City's Debt Policy maximum of 15%.

Exhibit II-5: ACFR Debt Service as a % of TGF Tax Revenues, FY 2020 – FY 2022



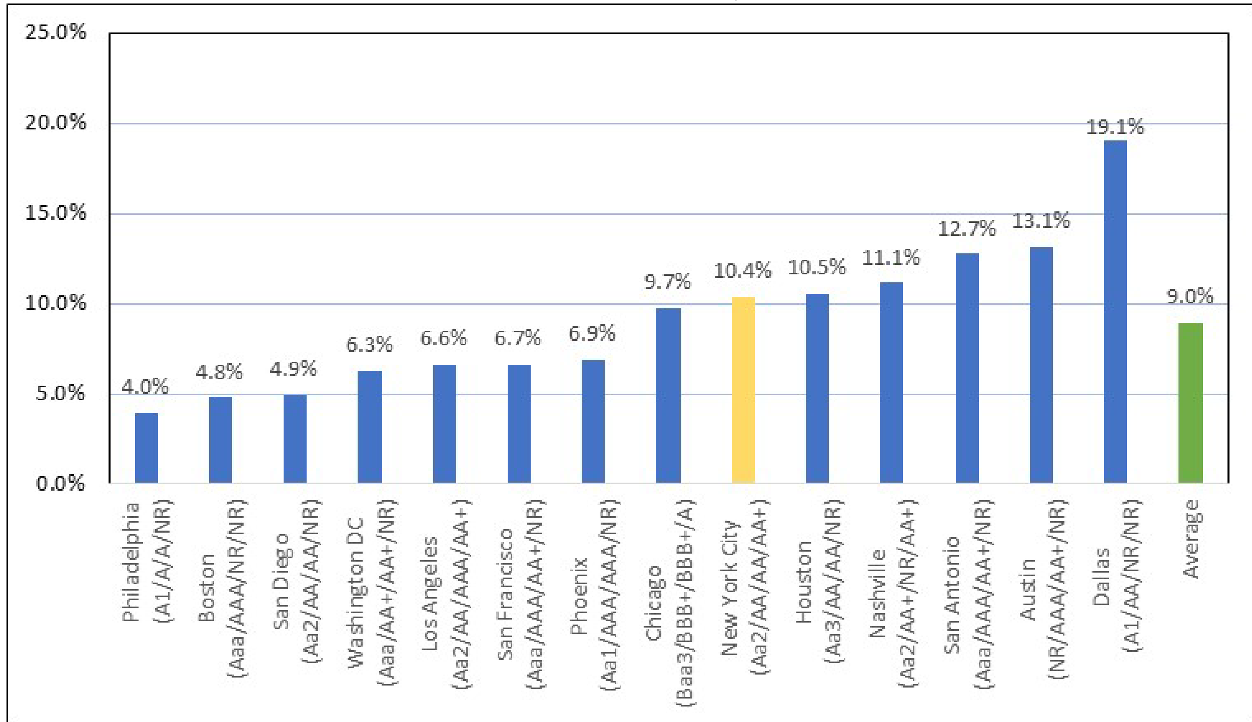
Source: Each city's ACFR or equivalent annual report for FY 2022

Debt Service and Tax Revenue are based on data extracted from each city's Statement Of Revenues, Expenditures, and Changes in Fund Balances exhibits included in that city's ACFR or equivalent annual report. While the individual exhibits are similar in form, there is no assurance that the components of the data published in those exhibits are comparable. The only adjustment made for NYC is the exclusion of Sales Tax Asset Receivable Corporation debt service in the numerator because the debt service and the final principal redemption in FY 2021 were paid by New York State.

*ACFR debt service as a percent of tax revenues, net of refunded debt service, 9.6% for NYC in FY2022.

As can be seen in Exhibit II-5 NYC's ratio was 15.3 % in FY 2020 - FY 2022, slightly above the average of 14.4% for the cities in the Peer Group. Another way to examine the debt burden of a city is to measure its ACFR debt service as a percentage of total revenues. As described above, in this section total revenues are defined as Total Governmental Funds ("TGF") revenues. This metric provides a more comprehensive view of a city's ability to meet debt payments, as it considers a more diverse revenue base and may not solely reflect the burden placed on taxpayers.

Exhibit II-6: ACFR Debt Service as a % of TGF Total Revenues, FY 2020 - FY 2022



Source: Each city's ACFR or equivalent annual report for FY 2022

Debt Service and Total Revenue are based on data extracted from each city's Statement of Revenues, Expenditures, and Changes in Fund Balances exhibits included in that city's ACFR or equivalent annual report. While the individual exhibits are similar in form, there is no assurance that the components of the data published in those exhibits are comparable.

As shown in ***Exhibit II-6: ACFR Debt Service as a % of TGF Total Revenues, FY 2020 - FY 2022,*** NYC's ratio was 10.4 % in FY 2020 - FY 2022, also slightly higher than the average of 9.0 % for the Peer Group. Although consummate comparability cannot be assured, in terms of ACFR debt service, the City is close to the average of the comparison cities despite its higher amount of debt outstanding, reflecting strong revenue diversity and sharply higher ACFR Debt Service as a percentage of TGF tax revenues for San Antonio and Dallas (See Exhibit II-5) which skews the overall average upwards.

d. Conclusion to Peer Group Analysis of Debt Burden and Debt Affordability

The City's debt burden and affordability are relatively high compared to the Peer Group, but not unreasonably so when viewed in context and across metrics. As shown in Exhibit II-1 and Exhibit II-2, NYC's population and its direct and overlapping debt are both well above the Peer Group; however, as shown in Charts 10, 11, and 12, NYC is much closer to the average for debt outstanding as a percentage of personal income, or debt burden as a percentage of city revenues. NYC should also be viewed as an essential leader of the global economy with economic strengths that flourish in a high-density

environment, which drives the need for greater infrastructure and debt financing. The City's capital assets for governmental activities net of depreciation and leases were valued at $65.6 billion in the FY 2022 ACFR. This is comparable to the combined capital assets of 11 of the 13 Peer Group cities. To put the City's rating in context, ***Exhibit II-7: Credit Ratings and Affordability Indicators Relative to Peer Group Mean,*** divides the Peer Group cities into quartiles with darker coloring indicating a higher debt burden (a credit negative) relative to the average for each of the indicators. Exhibit II-7 also ranks the Peer Group from highest to lowest overall rating using a Credit Quality Index which assigns values to ratings notches on a scale from 1 to 10, with 1 being equivalent to a BBB-/Baa3 rating and a 10 being equivalent to a AAA/Aaa rating and averages these across the major rating agencies.

Exhibit II-7: Credit Ratings and Affordability Indicators Relative to Peer Group Mean

Peer	Credit Quality Index	Direct & Overlapping Debt Per Capita	Total Direct & Overlapping Debt as % of Estimated Full Value	Total Direct & Overlapping Debt as % of Personal Income	ACFR Debt Service as % of TGF Tax Revenues	ACFR Debt Service as % of TGF Total Revenues
Boston (Aaa/AAA/NR/NR)	10.0	$2,673	0.9%	5.3%	6.2%	4.8%
Phoenix (Aa1/AAA/AAA/NR)	9.7	1,856	2.0	3.6	15.4	6.9
San Antonio (Aaa/AAA/AA+/NR)	9.7	7,004	7.8	24.3	24.7	12.7
San Francisco (Aaa/AAA/AA+/NR)	9.7	10,369	3.0	6.2	10.2	6.7
Austin (NR/AAA/AA+/NR)	9.5	5,744	3.1	7.1	16.7	13.1
Washington DC (Aaa/AA+/AA+/NR)	9.3	20,498	5.5	21.2	11.5	6.3
Los Angeles (Aa2/AA/AAA/AA+)	8.8	4,358	2.3	5.7	11.4	6.6
Nashville (Aa2/AA+/NR/AA+)	8.7	4,812	2.3	6.9	15.9	11.1
New York City (Aa2/AA/AA/AA+)	**8.3**	**12,110**	**7.9**	**14.5**	**15.3**	**10.4**
San Diego (Aa2/AA/AA/NR)	8.0	6,740	3.7	14.9	8.0	4.9
Houston (Aa3/AA/AA/NR)	7.7	5,290	4.6	8.3	17.7	10.5
Dallas (A1/AA/NR/NR)	7.0	5,195	4.3	14.8	27.7	19.1
Philadelphia (A1/A/A/NR)	5.3	4,805	6.3	7.9	7.0	4.0
Chicago (Baa3/BBB+/BBB+/A)	3.0	6,766	5.5	9.4	14.6	9.7

Source: FY 2022 ACFR or equivalent annual report of each city. "Credit Quality Index" represents the average rating assigned to each city by the major credit rating agencies based on an ascending scale ranging in value from 1 (BBB-/Baa3) to 10 (AAA/Aaa)

Key:		= Top Quartile (High Burden)		= Third Quartile		= Second Quartile		= Bottom Quartile (Low Burden)

There is not a direct relationship between the indicators and credit ratings. This is clearly shown in Exhibit II-7 where the shading of quartiles is not predictive of the assigned rating. For example, the City has three indicators in the third quartile of the distribution (debt as a percentage of personal income and the ACFR debt service ratios) and two in the top quartile (debt per capita and debt as a percentage of estimated full value). Boston and Phoenix are the cities with more indicators in the lowest debt burden quartile and receive the highest average rating. Conversely, both San Antonio and Washington DC have more indicators in the highest debt burden quartile than the City and receive a higher rating. This demonstrates that each city's rating is a combination of the rating agency's metrics and their subjective view of their overall creditworthiness. NYC's GO ratings of Aa2/AA/AA/AA+ (Moody's/S&P/Fitch/Kroll) all have a stable outlook. While each of the rating agencies uses its own methodology and metrics, the common overriding themes include the City's global dominance as a business and cultural center supported by strong transportation access, population size and resiliency of its economy, strong labor pool and educational opportunities, strong financial and management controls, reserve balances, diversity of revenues and access to world-class health care. Offsetting factors often cited include the exposure to economic cyclicality and real estate fluctuations, increasing vulnerability from weather events, and unfunded OPEB liabilities. NYC's debt is currently regarded by the rating agencies as manageable, albeit somewhat elevated in some cases, and appropriate given the scale of the City's responsibilities.

III. Debt Affordability

a. Overview of the State's Constitutional Debt Limit and Debt Affordability Metrics

The City's statutory debt limit is set by the New York State Constitution at 10% of the five-year rolling average of the "full valuation of taxable real estate". Under New York State Local Finance Law, the definition of "indebtedness" that counts against this limit includes the outstanding principal amount of GO bonds, TFA FTS bonds in excess of $13.5 billion and contracted capital commitments not yet financed with bond proceeds. There are various measures of qualitative and quantitative governmental debt affordability. Limits can be dictated by state or local law, or they can be self-imposed as is often found in an entity's debt management policy. Additionally, the rating agencies use a variety of metrics to gauge debt affordability and provide a measure of comparison with similar debt-issuing governmental units. At the beginning of FY 2024, the City had $37.2 billion in additional borrowing capacity under the statutory debt limit of $131.6 billion. This section examines the impact of expected commitments and issuance outlined in the January 2024 Five Year Financial Plan (the "Current Plan") as well as several scenarios related to incremental commitments not reflected in the Current Plan.

The Current Plan herein projects total issuance of approximately $55.8 billion in bonds from FY 2024 through FY 2028 ("Plan Period") to finance projects in the Capital Plan and is expected to be evenly divided between GO bonds and TFA FTS bonds. The amount of scheduled issuance for FY 2024 through FY 2027 is $43.8 billion and is slightly below the June 2023 Financial Plan total of $46.1 billion which served as an input for the City's Annual Report on Capital Debt and Obligations ("Annual Report").

In addition to the statutory debt limit, other metrics are used to gauge affordability. As discussed in the rating section of this report and in the Annual Report, the following metrics (as defined in the Annual Report) are used to measure the City's affordability:

- NYC Gross Debt as a Percent of Personal Income
- NYC Outstanding Debt as a Percentage of the Assessed Value of Taxable Real Property
- NYC Debt Service as a Percent of Total Revenues (consisting of Total Governmental Fund Revenues)

The Annual Report calculated the above metrics based on the June 2023 Financial Plan and forecast the impact on debt affordability of projected future borrowings through and including FY 2033 on the following metrics, as defined in the Annual Report:

- Bond Issuance and Debt Service
- Combined NYC Debt Outstanding (GO, TFA and TSASC)
- Debt-Incurring Margin
- NYC Debt Service as a Percentage of Tax Revenues (General Property Tax, Other Taxes and Tax Audit Revenue from the Current Plan)

Fixed Cost Ratio and Debt Service Coverage Ratio are two other factors which can impact both debt affordability and the ratings of the City. Fixed costs include debt service, annual pension and OPEB contributions, and lease expenses and are measured as a percentage of operating revenues herein. As discussed in *Section 1.B Fixed Costs: Rating Agency Definitions and Analytical Approaches,* the methodology for analyzing Fixed Costs is evaluated differently by each rating agency. As the topic of public sector pension and OPEB funding has become an increasing concern in recent years, the rating agencies' approaches have evolved. Rather than being considered somewhat discretionary, pension and

OPEB annual funding requirements are now considered "fixed costs" and therefore, operating budgets need to fund these costs regardless of the level of revenues and other expenditures. Because it is expected that half of the bonds issued to fund capital projects will be issued by the TFA, it is also critical to examine the debt service coverage on the projected issuance of TFA FTS bonds.

b. The Current Plan's Capital Commitments and Disbursements

As mentioned previously, the Current Plan projects issuance of approximately $55.8 billion in bonds from FY 2024 – 2028. It is important to note that this figure captures expected bonding activity occurring over those five years and is comprised of i) bonding for commitments that are expected to be awarded and receive disbursements, and ii) bonding for commitments authorized under prior plan periods that are expected to be awarded and paid during the Plan Period.

The Current Plan, after a reserve adjustment, authorizes new capital commitments of approximately $76.9 billion over FY 2024-FY 2028, including the Dept. of Environmental Protection (DEP).[6] Based on available information provided by the City Comptroller's Office, cash disbursements for committed projects are expected to be incurred over a period of approximately 10 years. A majority of those cash disbursements will be reimbursed to the General Fund from bond proceeds.

For purposes of calculating the City's statutory limit, once a project commitment is contracted, it is considered a debt of the City, regardless of whether it is has been funded through the issuance of bonds. When bonds are later issued to fund contracted project commitments, the debt incurred for purposes of the limit does not change in terms of amount but rather in terms of its character (i.e. where commitment becomes bonded debt). Consequently, the issuance of bonds for projects within a given Plan Period will continue for some time beyond the Plan Period. Due to timing differences, as bonds are issued over multiple years to fund capital commitments, key debt metrics used to measure debt affordability experience minimal impact during the Plan Period.

c. Impact of Current Plan and Various Scenarios on Debt Affordability and Rating Agency Metrics

Under its *Debt Management Policy* (dated September 2023), the primary metric the City uses to determine debt affordability as a percent of tax revenues should be no more than 15%. The City manages its debt issuances and Capital Commitment Plan to maintain affordability of debt service. Utilizing the Current Plan and assumptions of commitments and disbursements, the following analysis evaluates the impact of incurring significant additional capital commitments beyond the Current Plan on the debt service as a percentage of tax revenues over a 10-year period spanning FY 2024 through FY 2033.

A hypothetical scenario shown as ***Exhibit III-1*: *Hypothetical Commitment and Disbursement Cashflow Scenario*,** demonstrates how additional commitments beyond Current Plan levels would be incurred over time. Since the Mayor's Office is seeking legislation that would increase the City's debt limit by $18.5 billion, we tested additional commitments in increments of $6 billion, $12 billion, $15 billion, and $18.5 billion to test whether the level of bonding for these commitments would breach the 15% limit of dedicated tax revenues.

[6] When excluding DEP, the relevant GO and TFA funded portion of the January 2024 Capital Plan is about $63.3 billion over FY 2024-2028.

Exhibit III-1: Hypothetical Commitment and Disbursement Cashflow Scenario ($18.5 billion)
(in $ millions)

Commitment Increments	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
	$0	$3,083	$3,083	$3,083	$3,083	$3,083	$3,083	$0	$0	$0	$18,500
Commitment Disbursements	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Total**
	18.00%	24.00%	19.00%	12.00%	8.00%	7.00%	5.00%	4.00%	2.00%	1.00%	100.00%
Cashflow Increment	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**Total**
2025 Commitments		555	740	586	370	247	216	154	123	62	3,052
2026 Commitments			555	740	586	370	247	216	154	123	2,991
2027 Commitments				555	740	586	370	247	216	154	2,867
2028 Commitments					555	740	586	370	247	216	2,713
2029 Commitments						555	740	586	370	247	2,497
2030 Commitments							555	740	586	370	2,251
Incremental Spending/Borrowing	$0	$555	$1,295	$1,881	$2,251	$2,497	$2,713	$2,312	$1,696	$1,172	$16,372
Cumulative Unfunded Commitments	0	2,528	4,317	5,519	6,352	6,937	7,307	4,995	3,299	2,127	
Cumulative Bonding	0	555	1,850	3,731	5,982	8,479	11,193	13,505	15,201	16,372	
Cumulative Incurrence of Debt	$0	$3,083	$6,167	$9,250	$12,333	$15,417	$18,500	$18,500	$18,500	$18,500	

Source: Schedule of commitment disbursements based on information received from Office of the NYC Comptroller. Cumulative Unfunded Commitments, Bonding and Incurrence of Debt figures were calculated by Acacia.

Based on the above assumptions, it is estimated that the 15% limitation would be maintained through FY 2033 under this maximum additional commitment scenario of $18.5 billion. This hypothetical scenario assumes that $16.37 billion in bonds would have been issued by 2033, leaving approximately $2.13 billion in bonds yet to be issued to fund the expected disbursements for the remaining commitments.

Exhibit III-2: Impact of Incremental Commitment Levels on Debt Affordability, shows the rate of reduction in debt affordability under various stress scenarios, illustrated as a "heat map" in which coloring shifts from green to red as debt service as a percentage of dedicated tax revenues approaches the 15% policy limitation. As discussed previously, there is relatively little difference between the scenarios with respect to the short-term impact on Debt Affordability given the extended period of time over which bonding activity is distributed. It is important to note that any acceleration of actual disbursements relative to the expected timeline as well as any underperformance in the anticipated future growth of tax revenues could impact the acceleration of the rate of reduction in debt affordability.

Exhibit III-2: Impact of Incremental Commitment Levels on Debt Affordability

	Projected NYC Debt Service as a Percent of Tax Revenues, by Fiscal Year									
Total Commitments	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Current Plan	10.4%	10.9%	11.5%	11.9%	12.5%	12.7%	12.7%	12.9%	13.1%	13.1%
+ $6.00 bn	10.4%	10.9%	11.6%	12.0%	12.6%	12.9%	12.9%	13.2%	13.4%	13.5%
+ $12.00 bn	10.4%	10.9%	11.6%	12.0%	12.7%	13.1%	13.1%	13.5%	13.7%	13.8%
+$15.00 bn	10.4%	10.9%	11.6%	12.1%	12.7%	13.2%	13.2%	13.6%	13.9%	14.0%
+$18.50 bn	10.4%	10.9%	11.6%	12.1%	12.8%	13.3%	13.4%	13.8%	14.1%	14.2%

Note: Debt service projections assume long-term financing cost of approx. 5.78%.

Fixed Cost Ratio

Using the forecast from the Current Plan and other publicly disclosed financial data, ***Exhibit III-3: Projection of Fixed Costs (FY 2024 – 2028)***, shows the City's estimated fixed costs and the ratio of fixed costs to operating expenses over the FY 2024 - 2028 Plan Period.

Exhibit III-3: Projection of Fixed Costs[1] (FY 2024 – 2028)

(in $ millions)	2024	2025	2026	2027	2028
Debt Service	$ 7,653	$ 8,177	$ 8,861	$ 9,488	$ 10,265
Pension Expense	9,355	10,379	10,801	10,926	11,867
Lease Expense	1,175	1,145	1,104	1,020	970
OPEB Expense	3,428	3,595	3,754	3,914	4,090
Total Fixed Costs	$21,611	$23,296	$24,520	$25,348	$27,192
Operating Expense	$110,371	$105,590	$106,028	$108,072	$110,529
Fixed Cost Ratio	19.6%	22.1%	23.1%	23.5%	24.6%

[1]All amounts based on the January 2024 Five Year Financial Plan, except for i) Lease Expense, based on data provided in the NYC ACFR for FY2023, Note D.3; and ii) OPEB Expense, based on data disclosed in the NYC GO Bonds, Fiscal 2024 Series C official statement dated 02/29/2024 (page 46).

Based on the respective rating agency criteria, the fixed cost ratio projections are consistent with a rating within the "A" category for both Fitch and Kroll. S&P does not provide a breakout of ranges by ratings category for this metric. Moody's considers a fixed cost ratio higher than 20% to be consistent with a rating within the "Baa" category. Nevertheless, it should be noted that unlike the other rating agencies, Moody's measures Adjusted Fixed Cost against revenues, and not expenditures. We also note, as mentioned earlier, that the rating agencies apply their own adjustments to pension and OPEB metrics for the purpose of normalizing how these are treated across issuers. Fixed cost is one of the many factors considered in credit analysis and is not the sole determinative factor.

TFA FTS Bonds Debt Service Coverage Ratio

The January 2024 Five Year Financial Plan assumes bond issuance will be evenly divided between the GO and the TFA FTS credit. ***Exhibit III-4: Projection of TFA FTS Bonds Coverage (FY 2024 – 2028)***, shows an estimate of the impact of the anticipated borrowing schedule on projected debt service coverage levels for TFA FTS bonds over the Plan Period.

There are no projections of PIT and Sales Tax revenues extending beyond the Current Plan horizon of FY 2024 – 2028, and therefore, debt service coverage for TFA FTS bonds can only be calculated for the Current Plan. During the forecast period, we note that coverage remains strong, even as it is projected to decline from 8.03x in FY 2024 to 6.31x in FY 2028.

Exhibit III-4: Projection of TFA FTS Bonds Coverage (FY 2024 – 2028)

(in $ millions)	2024	2025	2026	2027	2028
NYC PIT Revenue	$16,001	$17,028	$17,399	$18,401	$19,137
NYC Sales Tax Revenue	9,926	10,408	10,972	11,388	11,838
Total Pledged Revenues	$25,927	$27,436	$28,371	$29,789	$30,975
TFA FTS Bonds Debt Service	$3,227	$3,557	$4,023	$4,479	$4,906
Coverage Ratio	8.03x	7.71x	7.05x	6.65x	6.31x

Source: Calculated using revenue data from NYC OMB January 2024 Five Year Plan and debt service breakout for TFA FTS provided by NYC Comptroller's Office.

d. Conclusion to Impact on Debt Limit and Debt Affordability

The City has a strong credit profile because of its financial policies and practices, as well as its conservative budgeting approach, which supports its current ratings for the GO and TFA FTS credits. Assuming dedicated tax revenues continue to increase as projected, as well as the projection of fixed costs, the amount of debt expected to be issued during the Current Plan should have a minimal impact on the debt measures calculated by the City and the rating agencies. The conservative budgeting approach of the City's management team plays an important role in the forecast of economically-sensitive revenues such as personal income tax revenue.

The potential challenges which remain outside of the City's control are the forecasts of tax revenues and property tax valuations. A decline in either of these quantitative data points could put pressure on the debt affordability measures calculated herein. As the City enters into future capital commitments, it will begin to approach its statutory debt limit and its self-imposed measure of debt affordability.

The City's current practice of updating financial projections throughout a fiscal year, coupled with conservative budgeting, best positions the City to sustain its long-term debt affordability by balancing its planned capital commitments against its conservatively-forecasted revenue growth. This enables the City to determine what adjustments, if any, will need to be made in order to sustain its long-term debt affordability.

Appendix

Exhibit I-2: Overview of Moody's GO Rating Methodology: Scorecard Framework

Scorecard Framework	
Economy (30%)	
Resident Income (10%)	• Median Household Income ("MHI") adjusted for Regional Price Differences ("RPP") / United States ("US") MHI • Moody's adjustment divides the issuer's MHI by the RPP for the Metropolitan Statistical Area ("MSA") • >120%=Aaa; 100-120%=Aa; 80-100%=A; 65-80%=Baa
Full Value per Capita (10%)	• Full Valuation of Tax Base / Population • >$180K=Aaa; $100-$180K=Aa; $60-$100K=A; $40-$60K=Baa
Economic Growth (10%)	• Difference between 5 Year Compound Annual Growth Rate ("CAGR") in Real GDP vs 5 Year CAGR in Real U.S. GDP • >0=Aaa; (1) %-0=Aa; (2.5) -(1) %=A; (4.5) -(2.5) %=Baa
Financial Performance (30%)	
Available Fund Balance Ratio (20%)	• (Available Fund Balance + Net Current Assets) / Revenue • Available fund balance = total available fund balance for all governmental funds • Net current assets = unrestricted current assets - current liabilities for business-type activities and internal services funds • Revenue = sum of revenue from total governmental funds, operating and non-operating revenue from total business-type activities, and non-operating revenue from internal services funds, excluding transfers and one-time revenue, e.g., bond proceeds or capital contributions. • >35%=Aaa; 25-35%=Aa; 15-25%=A; 5-15%=Baa
Liquidity Ratio (10%)	• Unrestricted Cash / Revenue • >40%=Aaa; 30-40%=Aa; 20-30%=A; 12.5-20%=Baa
Institutional Framework (10%)	
	• The statutory and legal framework defines the scope of services a city is required to provide and establishes its revenue structure. These determine how much flexibility there is to increase revenue or reduce spending. • Moody's considers whether the institutional framework gives the city or county control over most of its revenue across governmental and business-type activities, and whether this revenue is subject to caps (such as on property taxes or utility rates), or other limitations. • Rating is based on whether or not most revenue is subject to externally imposed caps and if the government can or cannot increase revenue meaningfully without limitation or without approval of voters or other governments and/or the extent to which the ability to meaningfully reduce expenditures is constrained by externally imposed mandates or restrictions.
Leverage (30%)	
Long-term Liabilities Ratio (20%)	• (Debt + Adjusted Net Pension Liability ("ANPL") + Adjusted Net OPEB + Other Long-Term Liabilities) / Revenue) • Debt includes long-term bonds and other obligations on governmental activities and business-type activities balance sheets and may include other obligations not reported on the balance sheet. • Other long-term liabilities typically comprise miscellaneous liabilities reported under the governmental and business-type activities entries in the financial statements that are not included in debt, ANPL or adjusted net OPEB liabilities. • <100%=Aaa; 100-200%=Aa; 200-350%=A; 350-500%=Baa
Fixed-Costs Ratio (10%)	• Adjusted Fixed Costs* / Revenue • <10%=Aaa; 10-15%=Aa; 15-20%=A; 20-25%=Baa **sum of the implied debt service, pension tread water indicator, OPEB contributions and implied carrying costs for other long-term liabilities.*

Source: Moody's Investors Service "US Cities and Counties Methodology 11/2/2022.

Exhibit I-3: Overview of Moody's Notching Factors

Moody's Notching Factors	
Additional Strength in Local Resources (0 to +2)	• Extremely High Adjusted MHI • Very High Full Value per Capita
Limited Scale of Operations (-1 to 0)	• Scale is assessed using total revenue • This factor does not result in upward notching because large size on its own does not reduce credit risk
Financial Disclosures (-2 to 0)	• Up to one cumulative downward notch related to pension disclosures • Up to one cumulative downward notch related to OPEB disclosures
Potential Cost Shift by State (-1 to +1)	• Assesses likelihood of a state government shifting material costs toward or away from cities or counties
Potential for Significant Change in Leverage (-2 to +1.5)	• Pension Asset Shock Indicator ("PASI") is used to assess exposure to potential pension system investment losses, expressed as a probability representing likelihood that the pension system(s) will experience investment losses each year that amount to 25% or more of City revenues o PASI of 18%-23% = downward half notch. PASI of 23% or higher = one downward notch • Pension Tread Water Gap reflects the difference between pension tread water indicator (or contribution benchmark) and actual pension contributions o Gap of 5%-10% of revenue = downward one-half notch o Additional downward one-half notch for each 5% increase in the gap up to a maximum of two notches • Capital Asset Depreciation Ratio o Ratio of accumulated depreciation to gross depreciable assets • Ratio < 25% = one-half upward notch • Ratio 25% - 65% = no notching • Ratio > 65% = one-half downward notch

Source: Moody's Investors Service "US Cities and Counties Methodology" 11/2/2022.

Exhibit I-4: Overview of S&P Global Ratings GO Rating Methodology

S&P's Seven Key Rating Determinants
Institutional Framework (10%)
Assesses the legal and practical environment in which the local government operates. • Areas of analysis used to assess the IF score include **predictability, revenue and expenditure balance, transparency and accountability, and system support.** • 1-1.5 = 1 (very strong); 1.75-2.75 = 2 (strong); 3.0-3.75 = 3 (adequate)'; 4.-4.5 = 4 (weak); 4.75-5 = 5 (very weak)
Economy (30%)
• Economic score assesses both the health of the asset base as well as likelihood of additional service demands resulting from economic deterioration. Projected per capita Effective Buying Income ("EBI") as a percentage of the U.S. level, and Total Market Value ("TMV") per capita combine to form the initial economic score.
Management (20%)
• Financial Management Assessment ("FMA") methodology is used as the starting point for the score. • FMA score of strong = 1 (very strong); FMA score of good = 2 (strong); FMA score of standard = 3 (adequate)'; FMA score of vulnerable = 4 (weak); management team that lacks relevant skills resulting in a weak capacity for planning, monitoring, and management = 5 (very weak)
Liquidity (10%)
• Score is assessed based on the Total Government Available Cash as a % of Total Governmental Funds Debt Service vs. Total Government Available Cash as a % of Total Governmental Funds Expenditures
Budgetary Flexibility (10%)
• Available fund balance as a % of expenditures • >15% = 1 (very strong); 8-15% = 2 (strong); 4-8% = 3 (adequate); 1-4% = 4 (weak); <1% = 5 (very weak)
Budgetary Performance (10%)
• Score is assessed based on Total Governmental Funds Net Result (%) vs. General Fund Net Result (%)
Debt and Contingent Liabilities (10%)

• Score results from the combination of two measures:
   o Total Governmental Funds Debt Service / Total Governmental Funds Expenditures
   o Net Direct Debt / Total Governmental Funds Revenue

Source: "U.S. Local Governments General Obligation Ratings: Methodology and Assumptions" (9/12/13, re-published 9/26/22).

Exhibit I-5: S&P Indicative Rating Scores

Indicative Rating Outcomes	
Indicative Rating Outcomes Resulting from the Weighted Average of Seven Factors	1.00-1.64 = AAA; 1.65-1.94 = AA+; 1.95-2.34 = AA; 2.35-2.84 = AA-; 2.85-3.24 = A+; 3.25-3.64 = A; 3.65-3.94 = A-; 3.95-4.24 = BBB+; 4.25-4.54 = BBB; 4.55-4.74 = BBB-

Source: "U.S. Local Governments General Obligation Ratings: Methodology and Assumptions" (9/12/13, re-published 9/26/22).

Exhibit I-6: Overview of S&P Overriding Factors

Overriding Factors that Notch from the Indicative Rating	
Rating Adjustments for certain economic measures	• Projected per capita EBI / U.S. projected per capita EBI o + 1 notch if > 225% o + 2 notches if > 300% • If TMV per capita < $30,000, final rating is lowered by one notch
Sustained Large Positive Fund Balances	• Available General Fund Balance exceeding 75% of General Fund expenditures for the most recently reported year, the current and next year, and that is projected to continue at that level raises the final rating by one notch
Low nominal fund balances	• Available General Fund Balance for the most recently reported year is below $500,000 (but above a level that causes a rating cap to occur), the final rating is lowered by one notch to reflect this vulnerability
Liquidity	• A liquidity score of '4' caps the final rating on a local government at 'BBB+' regardless of other strengths. An overall liquidity score of '5' limits the final rating to no higher than 'BB+'
Management	• Overall score of '4' = final rating at least 1 notch below indicative rating, with rating no higher than 'A' • Overall score of '5' = final rating at least 2 notches below indicative rating, with rating no higher than 'BBB-'
Large or chronic negative fund balances	• Available Fund Balance < -10% of General Fund Expenditures (“GFE”) in the most recently reported year caps the final rating at 'A+' • Available Fund Balance < -5% of GFE for the two most recently reported years caps final rating at ‘A-‘ • Available Fund Balance < -5% of GFE for the three most recently reported years caps final rating at ‘BBB’
Structural Imbalance	• Lack of a credible plan to restore structural imbalance caps rating at ‘BBB+’

Source: “U.S. Local Governments General Obligation Ratings: Methodology and Assumptions” (9/12/13, re-published 9/26/22).

Exhibit I-7: Overview of Fitch's Current GO Rating Methodology

<table>
<tr><th colspan="2">Fitch's Issuer-Specific Analysis</th></tr>
<tr><th colspan="2">Economic Base</th></tr>
<tr><td>Economic and Demographic Analysis — Key Considerations</td><td>Each issuer's economic base sets the foundation for credit analysis of KRDs, considering economic performance, trends and future prospects including:
• Growth trend in population, employment, home prices
• Growth trend and level of population aging, poverty rate, educational attainment
• Unemployment Rate
• Growth trend and level of MHI
• Market value per capita</td></tr>
<tr><th colspan="2">Key Ratings Drivers ("KRDs")</th></tr>
<tr><td colspan="2">Revenue Framework</td></tr>
<tr><td>Growth Prospects for Revenues</td><td>Historical performance of general fund revenues (adjusted for estimated impact of changes in tax policy), compared to growth in national GDP and inflation</td></tr>
<tr><td>Legal Ability to Raise Revenues</td><td>For issuers that have a legal limitation on raising revenues for operations, Fitch calculates a metric that considers the maximum revenue increase permitted by law as a percentage of the revenue decline in the 1% national GDP decline economic downturn scenario that Fitch applies to all credits. For a 'aaa' assessment, the maximum revenue increase must be at least 300% of the scenario revenue decline; for 'aa', at least 200%; for 'a', at least 100%; and for 'bbb', at least 50%</td></tr>
<tr><td colspan="2">Expenditure Framework</td></tr>
<tr><td>Natural Pace of Spending Growth Relative to Expected Revenue Growth</td><td>Slower to equal = "aaa"; Marginally above = "aa"; Above = "a"; Well above = "bbb"; Very high = "bb"</td></tr>
<tr><td>Flexibility of Main Expenditure Items (Ability to Cut Spending through the Economic Cycle)</td><td>• Carrying cost: Governmental debt service + pension actuarially determined contribution ("ADC") + OPEB actual payment / governmental expenditures (most recent year)
• Workforce evaluation: Consistent consideration of an issuer's control over work force spending based on factors such as management's independent control of headcount, compensation and work rules, existence / terms of contractual agreements with labor, and laws covering collective bargaining and the ability to strike
• Workforce evaluation highlights local government issuers' relative ability to control labor costs, which are more inflexible and represent a large part of most local government budgets</td></tr>
<tr><td colspan="2">Long-Term Liability Burden</td></tr>
<tr><td>Combined Burden of Debt and Net Pension Liabilities in Relation to Resource Base</td><td>• Liabilities-to-income metric < 10% = 'aaa' assessment; < 20% = 'aa'; < 40% = 'a'; < 60% = 'bbb'
• Using current metrics as a base, analysis focuses on expectations for the future, incorporating expectations of capital plans/needs and the pace at which debt is paid down, the adequacy of current pension contribution policies and economic expectations
• Per capita personal income ("PCPI") is reported for counties but not for other local governments. As a proxy for PCPI, Fitch calculates the ratio of money income to per capita income for the county in which the rated entity is located and applies that ratio to the entity's money income. The estimated PCPI is multiplied by population to get total personal income</td></tr>
</table>

Fitch's Issuer-Specific Analysis	
Operating Performance	
Financial Resilience through Downturns (Based on Scenario Analysis)	• Expenses are assumed to rise at a common rate (2%) meant to approximate inflation. Fitch notes that certain expenditures, such as those for social services, rise during economic downturns but believes this consistent and transparent assumption is adequate for purposes of the analysis. Growth assumptions may be temporarily adjusted in periods of extraordinarily high or low inflation. In such cases, Fitch will publicly communicate assumptions and apply them consistently to all issuers. • Local scenario analysis begins with consideration of the impact of the three-year scenario revenue estimate (generated by FAST) on an issuer's general fund position in the absence of any offsetting policy action. • FAST then puts the scenario-estimated change in revenues in context. Based on the issuer's specific budget flexibility profile, the local scenario shows the amount of reserves that Fitch would consider a minimum financial cushion for a given financial resilience assessment level in the context of the scenario. This is referred to as the reserve safety margin, which is not a recommendation or an expectation of where reserves should or will be; it is merely a base level at which Fitch's rating is expected to remain stable.
Budget Management at Times of Economic Recovery	• Consideration of historical and expected budgeting practices. • Dollar difference between pension ADC and actual pension contribution as a percentage of spending

Source: Fitch's "U.S. Public Finance Tax-Supported Rating Criteria" (published 5/4/21).

Exhibit I-8: Overview of Kroll GO Rating Methodology

Kroll Rating Methodology

Rating Determinant #1: Management Structure, Budgeting Practices and Policies

- Management Experience
- Budget Process
- Flexibility to Raise Revenues
- Fiscal Monitoring During Fiscal Year
- Executive / Legislative Ability to Adjust Budget During Fiscal Year (FY)
- Reserve Policy
- Capital Improvement Plan

Rating Determinant #2: Debt and Additional Continuing Obligations

- Overall Direct and Overlapping Debt as a % of Full Market Value of property
    - “AAA” = < 2%; “AA” = 2%- 6%; “A” = 6%- 10%; “BBB” = > 10%
- Overall Direct and Overlapping Debt on a Per Capita Basis
    - “AAA” = < $1,500; “AA” = $1,500 - $3,500; “A”= $3,500 - $8,500; “BBB” > $8,500
- Direct Debt Service as a % of Governmental Expenditures
    - “AAA” = < 5%; “AA” = 5%- 15%; “A” = 15%- 25%; “BBB” = > 25%
- Net Pension Liability as a % of Full Market Value
    - “AAA” = < 1%; “AA” = 1%- 5%; “A” = 5%- 10%; “BBB” = > 10%
- Fixed Cost as a % of Governmental Expenditures*
    - “AAA” = < 10%; “AA” = 10%- 20%; “A” = 20%- 35%; “BBB” = > 35%
- Payment of ADC

*Fixed Costs is defined as combined annual debt service, actual annual pension contribution, and actual OPEB cost

Rating Determinant #3: Financial Performance and Liquidity Position

- Basis of Budget/Financial Operations
- Accuracy of Revenue Forecasting
- Structural Budget Balance
- Historical General Fund Year End Results
- Maintenance of Unassigned Fund Balance in General Fund/Rainy Day Fund*
    - “AAA” >= 10%; “AA” >= 5%; “A” >= 1%; “BBB” < 1%
- Liquidity**
    - “AAA” >= 75 days; “AA” = 50- 75 days; “A” = 20- 50 days; “BBB” < 20 days

* Measured against % of General Fund expenses over the past three years
** Measured in terms of days cash, calculated using total cash in Governmental Funds and total Governmental Funds expenditures

Rating Determinant #4: Resource Base

- Population Trend (CAGR)
- Personal Income per Capita (measured vs. State avg.)
    - “AAA” > 135%; “AA” = 85%- 135%; “A” = 65%- 85%; “BBB” = > 65%
- Poverty Level (measured vs. State avg.)
    - “AAA” < State; “AA” < State; “A” <= State; “BBB” > State
- Top 10 Taxpayers as Share of Total Assessed Value
    - “AAA” < 10%; “AA” = 10%- 20%; “A” = 20%- 40%; “BBB” = > 40%
- Full Market Value per Capita
    - “AAA” > $120,000; “AA” = $70K - $120K; “A” = $40K - $70K; “BBB” < $40K
- Annual Change in Full Market Value of Property (measured vs. inflation rate “IR”)
    - “AAA” > IR; “AA” = IR; “A” <= IR; “BBB” significantly < IR
- Unemployment Rate (measured vs. State avg.)
    - “AAA” < 1.0x; “AA” = 1.0x – 1.2x; “A” = 1.2x – 1.5x; “BBB” = > 1.5x

Source: Kroll’s “U.S. Local Government General Obligation Rating Methodology” (published 9/6/18).

Exhibit I–9: Assessing S&P's Debt and Contingent Liabilities Score

	Net Direct Debt As % Of Total Governmental Funds Revenue				
Total Governmental Funds Debt Service As A % of Total Governmental Funds Expenditures	<30	30 to 60	60 to 120	120 to 180	≥180
< 8	1	2	3	4	5
8 to 15	2	3	4	4	5
15 to 25	3	4	5	5	5
25 to 35	4	4	5	5	5
≥35	4	5	5	5	5
A score of 1, 2, 3, 4 and 5 are very strong, strong, adequate, weak and very weak, respectively.					

Source: S&P's U.S. Local Governments General Obligation Ratings: Methodology and Assumptions. (9/12/13, re- published 9/26/22).