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Innovation in ESG municipal bond investing

Nuveen developed a proprietary ESG scoring methodology designed to evaluate a municipal issuer's potential contribution to positive ESG outcomes relative to their peers. Using a comprehensive approach, Nuveen seeks to help clients achieve the investment benefits of municipal fixed income while aligning with their values and helping to provide positive outcomes for our communities.

ESG INTEGRATION IS UNDERDEVELOPED IN THE MUNICIPAL INDUSTRY

Over the past decade, the integration of environmental, social and governance (ESG) factors into investment analysis and decision making has become common in public equities and corporate taxable fixed income. ESG integration into the municipal bond market, however, remains underdeveloped.¹

We believe this disparity exists for a few reasons. First, the municipal market lacks third-party ESG ratings from data providers, who offer valuable inputs into the equity and taxable fixed income markets. The sheer volume of municipal issuers — approximately 50,000 — and the shortage of ESG

disclosure by these municipal issuers contribute further to the gap. As a result, very few municipal strategies explicitly integrate ESG factors or ratings, and those that do tend to focus on social and green bonds.

Another factor may be an underlying belief that municipal bond investments are inherently ESG oriented, since most municipal issuers finance public services like transportation, sanitation infrastructure, schools and utilities.

However, like any industry or asset class, municipal issuers may vary significantly as to how well they are governed and how constituents experience environmental and social outcomes. We believe that considering ESG factors in our municipal strategies may help encourage these positive outcomes.

NUVEEN HAS A HISTORY OF LEADERSHIP

Nuveen's long history and leadership in the municipal bond market, coupled with our responsible investing expertise, prompted us to develop a proprietary, quantitative methodology to assess municipal ESG leadership, tailored to individual municipal bond sectors.

At the same time, we actively participate in organizations that have shaped the responsible investing field over the past five decades such as the Principles for Responsible Investment

(PRI) and the Global Impact Investing Network (GIIN). We have advised on white papers with the UN Principles for Responsible Investment’s Sub-Sovereign Debt Advisory Committee, the Government Finance Officers Association (GFOA), the California Debt and Investment Advisory Commission (CDIAC) and the California Green Bond Market Development Committee (CGBMDC). We also participated in an ESG disclosure pilot program for municipal issuers with CDP (formerly Carbon Disclosure Project) and advocated for increased ESG-related disclosure in issuer documents to the Municipal Securities Rulemaking Board (MSRB).

By participating in industry groups focused on responsible investing as well as traditional public finance, Nuveen seeks to bridge the gaps in conversations that have historically left ESG out of the municipal market. Through these partnerships, Nuveen is helping to advance ESG disclosure and best practices in the field, bringing focus and client interest to this growing area.

PROPRIETARY METHODOLOGY IDENTIFIES BONDS THAT MAY DELIVER POSITIVE OUTCOMES

Nuveen’s ESG municipal scores — developed in 2018 by senior members of Nuveen’s municipal research team and responsible investment team — seek to analyze a municipal issuer’s potential contribution to positive ESG outcomes relative to peers. Examples of positive ESG outcomes may

include, but are not limited to, improvements in education, public health, housing affordability and public infrastructure. The team designed sector-specific models that consider relevant ESG factors and weighting criteria unique to each sector. The models are intended to score a meaningful portion of municipal issuers.

These scores are made available to research analysts and portfolio managers for consideration in the investment process. For client mandates with explicit ESG investment parameters, the scores are used in portfolio construction, as described more fully below.

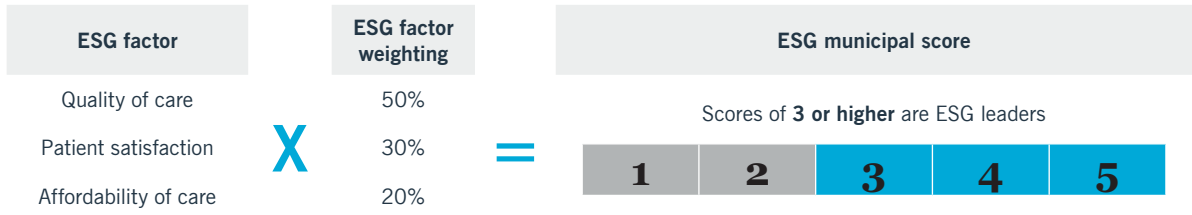
Scoring identifies ESG leaders by sector

For each municipal issuer, sector-specific ESG factors are weighted and scored using a proprietary methodology to determine the overall ESG municipal score.

The weighted average of the ESG factor scores is aggregated to create an overall ESG score on a range of 1 to 5. A 1/5 represents issuers that are least/most likely to contribute to positive ESG outcomes relative to peers. Municipal issuers scoring 3 and higher are considered ESG leaders and typically represent 50% to 65% of our regularly traded municipal holdings.² Issuers scoring a 1 or 2 are considered ESG laggards. For example, Figure 1 shows how scoring would work in the hospital sector based on quality of care, patient satisfaction and affordability of care.

Figure 1: ESG factors and weightings determine an overall score

Example sector: Hospitals



ESG laggards are generally not eligible to be included in municipal portfolios with explicit ESG investment parameters unless the bond has a qualifying use of proceeds with positive environmental or social impact (see the thematic use of proceeds section), or the bond otherwise meets the investment criteria of the client mandate.

Aligning municipal bonds to the UN Sustainable Development Goals

We believe the United Nations Sustainable Development Goals (SDGs), as shown in Figure 2, serve as a guide for how municipal bond investments may translate to real-world, positive

outcomes. These 17 interconnected goals are designed to be a “blueprint to achieve a better and more sustainable future for all.”³ Underpinned by 167 development targets, the goals were agreed to by 193 governments in 2015 to go through 2030.

As part of our proprietary ESG scoring methodology, we developed an SDG alignment framework that aligns sector model factors to the underlying targets of specific SDGs. SDG-alignment indicates if an investment is directionally consistent with or linked to the overarching theme of one or more of the SDGs. Issuers with an aggregate ESG score of 3 or higher are generally aligned to the sector-relevant SDG.

Figure 2: Nuveen’s investing approach is aligned with United Nations goals



Data source: United Nations Sustainable Development.

Thematic use of proceeds from bonds can add to diversification

For strategies with explicit ESG investment parameters, we also have the capability to invest in municipal bonds with a use of proceeds intended to directly finance projects with environmental or social benefits. These bonds typically make up less than 15% to 20% of these portfolios, but may allow for diversification. They could have green, social or sustainable labels assigned by the issuer or could be unlabeled.

Unlabeled thematic bonds are identified through our active fundamental research process, by

reviewing the offering documentation to determine whether the projects are making a positive impact. For example, as shown in Figure 3, proceeds may be used for the construction or maintenance of water sanitation facilities. Social and sustainability bonds might support affordable housing development, the creation of education facilities or health care in low-income communities.

We also evaluate thematic use of proceeds by leveraging market standards such as the International Capital Markets Association’s SDG framework.

Figure 3: Financing projects that can help communities

Example: thematic use of proceeds



Ohio Water Development Authority (OWDA)	
Background/purpose	OWDA provides low interest loans to communities throughout Ohio for water and wastewater projects.
Use of proceeds	<ul style="list-style-type: none">• \$1.7B awarded in 2024 for the planning and construction of water, sewer and stormwater facilities, including: \$782M raised for Water Pollution Control Loan Fund; \$250M raised for Drinking Water Assistance Fund; \$123M raised for Fresh Water; \$31M award for Research and Development since 1985.
Outcomes	<ul style="list-style-type: none">• 446 septic systems replaced with Un-sewered Area Assistance Fund• Projects awarded in 84 of the 88 counties. These projects replaced aging infrastructure, expanded the capacity of treatment plants, installed technology for better water quality, and addressed the treatment of harmful algal blooms.

Source: Ohio Water Development Authority 2024 Annual Report, owda.org. Performance data shown represents past performance and does not predict or guarantee future results. This example was created by Nuveen for illustrative purposes only and does not reflect actual performance results of a product currently or previously managed, and should not be relied upon for investment advice. The reader should not assume that investment in the securities listed within were or will be profitable. Certain information was obtained from third-party sources we believe to be reliable, but are not guaranteed as to their accuracy or completeness.

APPLYING ESG SCORES: REAL-WORLD EXAMPLES

The consideration of ESG factors can be an important input when constructing portfolios. Municipal issuers with similar credit ratings may exhibit divergent ESG profiles.

Figure 4 compares the credit quality and ESG considerations of two city general obligation bonds. While they maintain relatively similar credit metrics and ratings, their ESG profiles (as measured by Nuveen’s proprietary ESG scoring

methodology) are very different. Atlanta excels relative to its peers in accessibility to mass transit, clean air quality and spending on services including housing, education, public safety, social services and sanitation, which align to the underlying goals of sustainable cities (SDG 11). Conversely, Las Vegas lags relative to peers in safety, clean air quality and housing affordability.

Leveraging this analysis, an ESG leader may provide a more positive intended outcome (e.g., a higher quality of life) relative to its peers.

Figure 4: Identifying ESG leaders among issuers with similar credit profiles



Example: ESG municipal scoring

Atlanta general obligation bonds		Las Vegas general obligation bonds	
Credit rating (Moody's/S&P/Fitch)	Aa1/AAA/AA+	Credit rating (Moody's/S&P/Fitch)	Aa2/AA+/NR
Population	510,000	Population	670,000
Total fund balance as a % of general fund reserves	25% – 35%	Total fund balance as a % of general fund reserves	35% – 45%
Total taxable assessed valuation	>40B	Total taxable assessed valuation	>25B
Total direct debt % full value	1.1%	Total direct debt % full value	0.8%
Median household income as a % of the U.S.	105%	Median household income as a % of the U.S.	91%
ESG considerations include:		ESG considerations include:	
Accessibility: Better than 80% of peers for mass transit		Safety: Worse than 80% of peers for violent crime	
Community investment: Better than 80% of peers for city spending per capita on ESG services		Air quality: Lower than 60% of peers	
Air quality: Better than 60% of peers		Affordability: Lower than 60% of peers	
ESG status	ESG leader	ESG status	ESG laggard

Data sources: Nuveen tabulated using CreditScope; City of Atlanta and City of Las Vegas, Annual Comprehensive Financial Report for the Fiscal Year ended 30 June 2024; population and median household information data from U.S. Census Bureau estimates for 2023; all data updated June 2025; updated annually. **Performance data shown represents past performance and does not predict or guarantee future results.** This example was created by Nuveen for illustrative purposes only and does not reflect actual performance results of a product currently or previously managed, and should not be relied upon for investment advice. The reader should not assume that investment in the securities listed within were or will be profitable. Certain information was obtained from third-party sources we believe to be reliable, but are not guaranteed as to their accuracy or completeness.

ESG FACTORS SERVE AS AN ADDITIONAL EVALUATION TOOL

Municipal bonds are known for generating tax-exempt income and enhancing portfolio diversification, but they can also provide a way for investors to make positive contributions to society through their investments. Adding an ESG focus means analyzing sound environmental, social and governance practices by municipal

issuers, which may result in positive outcomes for their constituents.

Nuveen brings together market-leading responsible investing and municipal investment capabilities by evaluating ESG scores at the municipal issuer level. Employing ESG analysis provides an additional lens with which to view the portfolio, helping clients seeking to align their investments with their values.

For more information, please visit nuveen.com.

Endnotes

Sources

- 1 Summary of Responses to the MSRB's Request for Information on ESG Practices in the Municipal Securities Market, August 2022
- 2 Nuveen, Perform/CreditScope, June 2025
- 3 United Nations Sustainable Development, <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

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Important information on risk

Investing involves risk; principal loss is possible. All investments carry a certain degree of risk and there is no assurance that an investment will provide positive performance over any period of time. Investing in municipal bonds involves risks such as interest rate risk, credit risk and market risk. The value of the portfolio will fluctuate based on the value of the underlying securities. There are special risks associated with investments in high yield bonds, hedging activities and the potential use of leverage. Portfolios that include lower rated municipal bonds, commonly referred to as "high yield" or "junk" bonds, which are considered to be speculative, the credit and investment risk is heightened for the portfolio. Bond insurance guarantees only the payment of principal and interest on the bond when due, and not the value of the bonds themselves, which will fluctuate with the bond market and the financial success of the issuer and the insurer. No representation is made as to an insurer's ability to meet their commitments. This information should not replace an investor's consultation with a financial professional regarding their tax situation. Nuveen is not a tax advisor. Investors should contact a tax professional regarding the appropriateness of tax-exempt investments in their portfolio. If sold prior to maturity, municipal securities are subject to gain/losses based on the level of interest rates, market conditions and the credit quality of the issuer. Income may be subject to the alternative minimum tax (AMT) and/or state and local taxes, based on the state of residence. Income from municipal bonds held by a portfolio could be declared taxable because of unfavorable changes in tax laws, adverse interpretations by the Internal Revenue Service or state tax authorities, or noncompliant conduct of a bond issuer. It is important to review your investment objectives, risk tolerance and liquidity needs before choosing an investment style or manager.

Responsible investing incorporates Environmental Social Governance (ESG) factors that may affect exposure to issuers, sectors, industries, limiting the type and number of investment opportunities available, which could result in excluding investments that perform well.

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