MOODY'S
INVESTORS SERVICE

Municipal Bonds – Credit Ratings - NALEO National Policy Institute on Public Finance

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Agenda

1. The meaning of credit ratings
2. The rating process
3. GO methodology & notched ratings
4. Municipal utility debt methodology
5. Credit questions Moody's asks

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The meaning of credit ratings

Moody's public finance ratings

- The mission of the US Public Finance Group (PFG) is to provide **reliable and independent opinions** about the credit risk of states, cities, school districts, governmental authorities, and other US municipal borrowers.
- We publish our opinions in the form of ratings, which rank debt issuers based on their relative credit quality.
- We complement our ratings with written research that explains our analysis and makes our rating rationales transparent.
- We constantly strive to strengthen the quality, transparency, and independence of our credit ratings.

The meaning of credit ratings

What ratings are:

- Independent, objective assessments of the relative creditworthiness of debt obligations
- Shorthand symbols denoting the relative ability and willingness of debt issuers to make full and timely payment
- Opinions about future potential risks

What ratings are <u>not</u>:

- Recommendations to purchase, sell, or hold particular securities
- Predictors of non-credit-related market price movements
- Audits of the issuer - ratings do not guarantee the authenticity of information
- Public policy report cards, although politicians sometimes use them as such
- Fixed in time - ratings may change

Rating analysts provide objective opinions – they are not financial advisors or investment bankers.

Moody's rating scale

Lowest risk

Highest risk

Global Long-Term Rating Scale	
Aaa	Obligations rated Aaa are judged to be of the highest quality, with minimal credit risk.
Aa	Obligations rated Aa are judged to be of high quality and are subject to very low credit risk.
A	Obligations rated A are considered upper-medium grade and are subject to low credit risk.
Baa	Obligations rated Baa are subject to moderate credit risk. They are considered medium grade and as such may possess certain speculative characteristics.
Ba	Obligations rated Ba are judged to be speculative and are subject to substantial credit risk.
B	Obligations rated B are considered speculative and are subject to high credit risk.
Caa	Obligations rated Caa are judged to be of poor standing and are subject to very high credit risk.
Ca	Obligations rated Ca are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
C	Obligations rated C are the lowest rated class and are typically in default, with little prospect for recovery of principal or interest.
Note: *Moody's appends numerical modifiers 1,2, and 3 to each generic rating category from Aa through Caa. The modifier 1 indicates that the issuer or obligation ranks in the higher end of its generic rating category; the modifier 2 indicates a mid-range ranking; and the modifier 3 indicates a ranking in the lower end of that generic rating category.*	

Below investment grade (Ba or lower) does not necessarily indicate expected default.

Moody's public finance local government team

- Moody's assigns ratings to securities issued by local governments
  - 15,000+ issuers including cities, counties, school districts, municipal utility systems, special districts
  - Types of securities include general obligation (limited and unlimited tax), revenue (enterprise, sales tax, etc.)
- Related research and investor outreach
  - Write and publish ratings methodologies
  - Write and publish special sector and issuer comments
  - Attend and speak at conferences and events
- Additional teams in PFG rate other entities
  - States, housing authorities, hospitals, universities

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The rating process

The six-step rating process

Assignment	Methodology	Analysis	Discussions	Committee	Publication
The rating process starts with the assignment of a Lead Analyst	The Lead Analyst identifies the appropriate methodology	The Lead Analyst gathers information and begins to analyze the credit	The Lead Analyst holds a credit discussion with the Issuer (in-person or conference call)	The Lead Analyst develops a recommendation and presents it to a committee of senior analysts	The Lead Analyst informs the marketplace of any rating actions by publishing a report

The rating process

In the course of the rating process, a Moody's analyst will:

- Gather information sufficient to evaluate the risk of a given security
- Develop a rating recommendation and make a presentation to committee, based on published methodology and key rating factors
  - Committee of senior analysts assigns the rating, ensuring an objective process
- Inform the marketplace of any rating actions via press release and produce longer credit opinion for Moody's subscribers
- Monitor the rating over the life of the obligation, including an annual assessment of whether a rating change is warranted

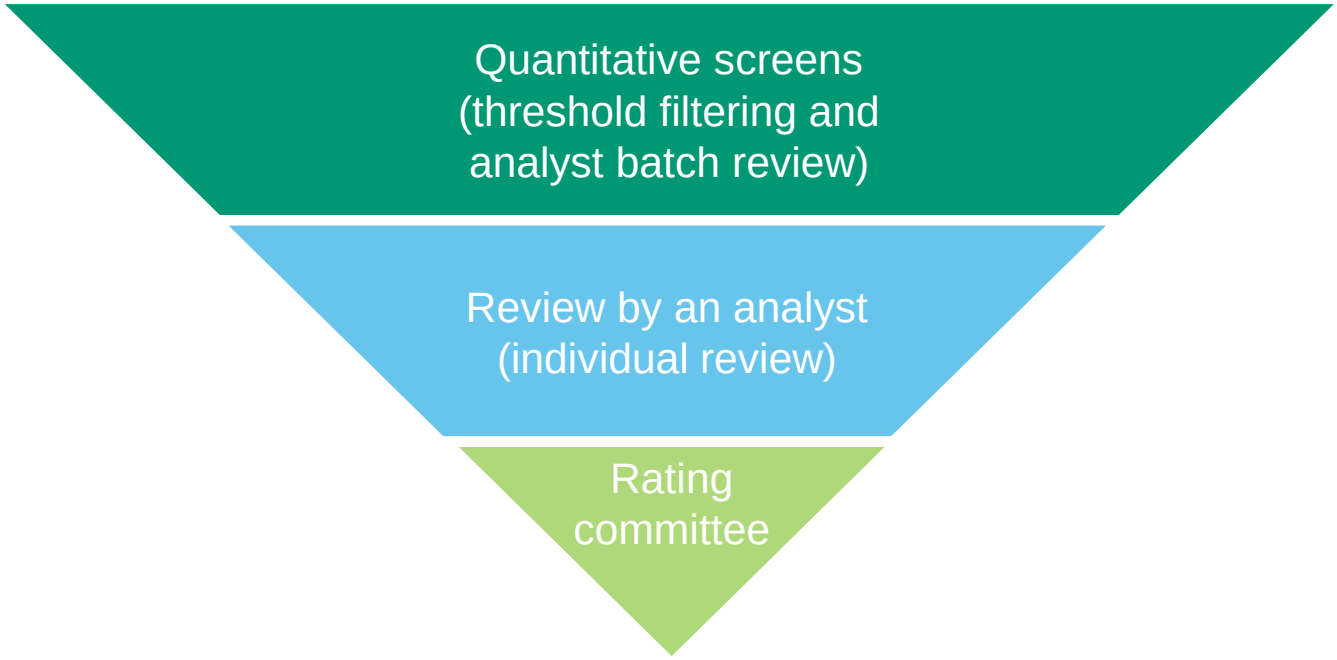
The rating process (continued)

Analyst has discussions with issuer and advisors to gain insight.

- Issuer's operations, strategic goals, governance structure
- Relevant regional and local economic conditions, developments, sector trends
- Financial condition and operating environment, revenue and expenditure trends, status of labor agreements
- Budgeting and forecasting practices, strength of financial policies
- Planned revenue measures or proposals, any new programs or projects requiring funding
- Current and future debt plans, security for current issuance, private placements, debt structure
- Plans for managing pension and OPEB liabilities and costs
- Any strengths or challenges unique to the issuer

US PFG monitoring framework

- We review every rating at least annually to maintain accuracy
- Surveillance process involves multiple screens
- Most ratings are deemed appropriate through the various filtering steps
- Some do proceed to a rating committee for possible rating action



Common methodologies and securities

US Local Government General Obligation Debt	GO Bonds (limited and unlimited tax)
Lease, Appropriation, Moral Obligation and Comparable Debt of US State and Local Governments	Lease-backed financing, unsecured loans
US Municipal Utility Revenue Debt	Bonds secured by net revenue of water, sewer, solid waste, and storm water systems
Tax Increment Debt	Redevelopment projects
US Public Finance Special Tax	Bonds secured by pledge of sales tax
Special Assessment/Special Property Tax (Non-Ad Valorem) Debt	Community facilities districts
US Bond Anticipation Notes	Short-term note to be taken out with other debt
Short-Term Cash Flow Notes	Tax and revenue anticipation notes
Public Sector Pool Financings	Any of the above securities, issued in a pool with other municipalities

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General obligation methodology & notched ratings

Local government GO bond rating

Used for bonds backed by a GO debt service pledge and as an underlying measure of an issuer's credit strength

- The most common GO pledge is a contractual "full faith and credit pledge"
  - Typically an obligation to levy unlimited ad valorem property tax for debt service
  - Sometimes secured solely by an unlimited ad valorem tax without the broader "full faith and credit pledge"
  - Sometimes subject to limits on tax rate or amount of pledge
- We look beyond the property taxes generated under the GO pledge to the issuer's other revenues and financial resources
  - Issuers typically pledge all revenue-producing powers to meet GO debt service
  - Even with a narrower legal pledge, issuer finances are relevant, as a measure of the issuers overall resources and wherewithal to meet all obligations
- Obligations with lesser legal security, such as loans or leases, are rated with a different methodology, typically notched one or two below the underlying GO rating

General obligation (GO) bond scorecard

Purpose and use of the scorecard

- Acts as a starting point for a more thorough and individualistic analysis
- Captures the key considerations that correspond to particular rating categories
- Is not an exhaustive list of factors that we consider in every local government rating
- Includes sub-factors that are quantitative metrics scored an initial grid

Additional information can lead to adjusted scorecard ratings

Grid-indicated rating is starting point for analysis and discussion.

Rating committee determines any “below-the-line” adjustments.

Grid-Indicated Rating → **Issuer Discussions** → **Additional Considerations** → **Adjusted Scorecard Rating**

Issuer discussions inform whether there are any additional considerations.

Final rating may differ from adjusted scorecard rating.

GO scorecard and methodology

Incorporates four fundamental rating factors

Economy & Tax Base (30%)

The ultimate basis for repaying debt is the strength and resilience of the local economy. The size, diversity and strength of the tax base and the economic strength of taxpayers drive the ***ability to generate financial resources***.

Financial Operations (30%)

Fiscal position indicates the ***ability to meet current financial obligations*** and the flexibility to adjust to new ones. Financial structure shows the ***ability to extract revenues from the tax base adequate for operations***.

Management & Governance (20%)

The legal structure and practical environment influence the ability to fund services, maintain budget balance and tap resources from local economy. The legal and practical framework shapes the ***ability and flexibility to meet responsibilities***.

Debt & Pensions (20%)

Debt and pension burdens ***measure the financial leverage of a community***. The more leveraged a tax base, the more difficult it is to service debt and the greater likelihood that tax base or financial deterioration will result in difficulty funding debt service.

Scorecard grid factors, sub-factors & weights

The weighted average of quantitative scores determines a raw score that maps to Moody's rating scale

Factors & Sub-Factors	Weights
Factor 1: Economy/Tax Base	**30%**
Full Value (market value of taxable property)	10%
Full Value per Capita	10%
Median Family Income	10%
Factor 2: Finances	**30%**
Fund Balance as % of Operating Revenue	10%
5-Year Dollar Change in Fund Balance as % of Revenues	5%
Cash Balance as % of Revenues	10%
5-Year Dollar Change in Cash Balance as % of Revenues	5%
Factor 3: Management	**20%**
Institutional Framework	10%
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	10%
Factor 4: Debt/Pensions	**20%**
Net Direct Debt / Full Value	5%
Net Direct Debt / Operating Revenue	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	5%

Scorecard factor 1: economy/tax base – 30%

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*	
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**	**Weight**
ECONOMY/TAX BASE (30%)							
Tax Base Size: Full Value	> $12B	$12B ≥ n > $1.4B	$1.4B ≥ n > $240M	$240M ≥ n > $120M	$120M ≥ n > $60M	≤ $60M	10%
Full Value Per Capita	> $150,000	$150,000 ≥ n > $65,000	$65,000 ≥ n > $35,000	$35,000 ≥ n > $20,000	$20,000 ≥ n > $10,000	≤ $10,000	10%
Socioeconomic Indices: MFI	> 150% of US median	150% to 90% of US median	90% to 75% of US median	75% to 50% of US median	50% to 40% of US median	≤ 40% of US median	10%

Possible Adjustments

- Up – Institutional presence (university, state capital, military base)
- Up – Location within regional economic center (daytime population greater than nighttime population)
- Up – Exceptionally high wealth levels
- Up – Expected future development with specific construction completion dates and projected increases in property taxes
- Down – Expected decline in assessed valuation due to corporate closure or tax appeals
- Down – Outsized poverty or unemployment levels
- Down – Unusually high taxpayer or industry concentration

Scorecard factor 2: financial operations – 30%

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*	
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**	**Weight**
ECONOMY/TAX BASE (30%)							
Fund Balance as % of Revenues	> 30% > 25% for School Districts	30% ≥ n > 15% 25% ≥ n > 10% for SD	15% ≥ n > 5% 10% ≥ n > 2.5% for SD	5% ≥ n > 0% 2.5% ≥ n > 0% for SD	0% ≥ n > -2.5% 0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	10%
5-Year Dollar Change in Fund Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%
Cash Balance as % of Revenues	> 25% > 10% for School Districts	25% ≥ n > 10% 10% ≥ n > 5% for SD	10% ≥ n > 5% 5% ≥ n > 2.5% for SD	5% ≥ n > 0% 2.5% ≥ n > 0% for SD	0% ≥ n > -2.5% 0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	10%
5-Year Dollar Change in Cash Balance as % of Revenues	> 25%	25% ≥ n > 10%	10% ≥ n > 0%	0% ≥ n > -10%	-10% ≥ n > -18%	≤ -18%	5%

Possible Adjustments

- Up – Material available revenues and balances outside the general fund
- Up – Additional, borrowable liquidity outside of the general fund
- Down – Reliance on uncertain state aid or one-time revenues for ongoing expenditures
- Down – unusually volatile revenue structure (economically sensitive revenues are majority of operating funds or major revenue 10%+ one-year change)
- Down – financially weak enterprise fund poses risk to issuer
- Up/Down – Financial trends in grid reflect one-time events

Scorecard factor 3: management – 20%

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*	
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**	**Weight**
MANAGEMENT (20%)							
Institutional Framework	Very strong legal ability to match resources with spending	Strong legal ability to match resources with spending	Moderate legal ability to match resources with spending	Limited legal ability to match resources with spending	Poor legal ability to match resources with spending	Very poor or no legal ability to match resources with spending	10%
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures	> 1.05x	1.05x ≥ n > 1.02x	1.02x ≥ n > 0.98x	0.98x ≥ n > 0.95x	0.95x ≥ n > 0.92x	≤ 0.92x	10%

Possible Adjustments

- Up – Ability and willingness to make adjustments beyond what is captured in grid
- Up – Thoughtful plan for restoring structural operating balance and/or replenishing reserves
- Up – History of conservative budgeting and active monitoring of budget performance
- Up – Formal financial policies
- Down – Reliance on cash flow borrowing
- Down – Lack of compliance with adopted financial policies
- Up/Down – Unique legal/charter provisions that increase/restrict issuer's revenue-raising and expenditure-cutting abilities, relative to other issuers in the same state and sector

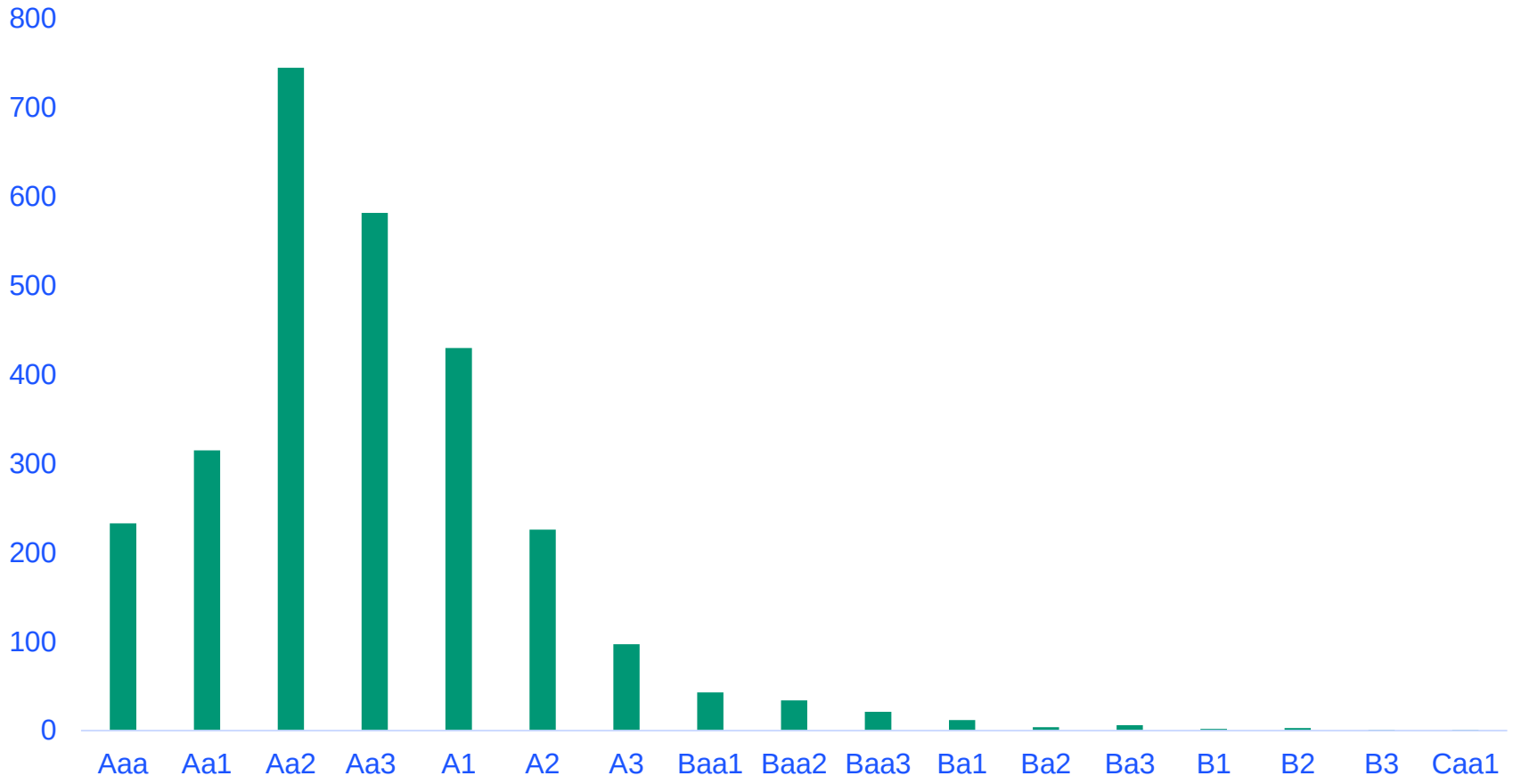
Scorecard factor 4: debt/pensions – 20%

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*	
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**	**Weight**
DEBT/PENSIONS (20%)							
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4%	4% ≤ n < 10%	10% ≤ n < 15%	> 15%	5%
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3x	3x ≤ n < 5x	5x ≤ n < 7x	> 7x	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	< 0.9%	0.9% ≤ n < 2.1%	2.1% ≤ n < 4.8%	4.8% ≤ n < 12%	12% ≤ n < 18%	> 18%	5%
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	< 0.4x	0.4x ≤ n < 0.8x	0.8x ≤ n < 3.6x	3.6x ≤ n < 6x	6x ≤ n < 8.4x	> 8.4x	5%

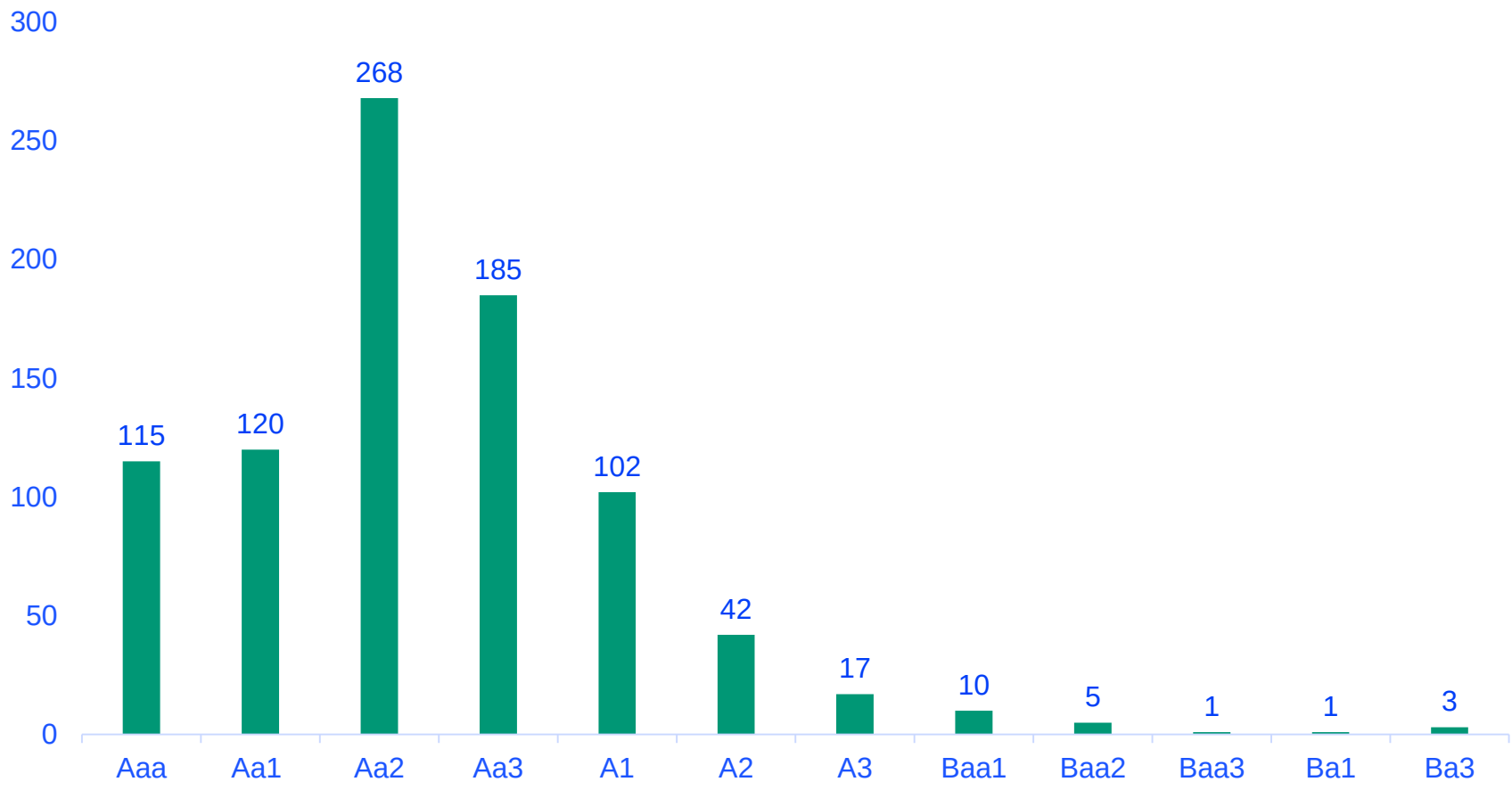
Possible Adjustments

- Up – Rapidly amortizing debt (e.g. flat principal payments, 15-year maturity)
- Up – Double-barrel pledge (for lease-backed general fund obligations)
- Down – Lack of market access
- Down – High exposure to variable-rate debt and/or swaps without sufficient liquidity to buffer basis, counterparty and/or termination risks
- Down – Steeply ascending debt structure, bullet payment, or deficit financing
- Down – Unusually high pension and/or OPEB liabilities and/or fixed costs
- Down – History of missed debt service payments

Moody's rates 2,755 US cities with a median rating of Aa3



Moody's rates 869 US counties with a median rating of Aa2



Example Aa3-rated municipality

Key indicators table

Aa3-rated Municipality	2014	2015	2016	2017	2018
Economy/Tax Base					
Total Full Value ($000)	$20,800,000	$20,800,001	$21,424,001	$22,923,681	$22,923,682
Population	205,000	210,000	211,000	212,000	213,000
Full Value Per Capita	$101,463	$99,048	$101,536	$108,131	$107,623
Median Family Income (% of US Median)	92.0%	93.0%	94.0%	93.0%	93.0%
Finances					
Operating Revenue ($000)	$271,440	$279,583	$293,562	$314,112	$320,394
Fund Balance ($000)	$55,000	$58,000	$44,000	$40,000	$50,000
Cash Balance ($000)	$65,000	$70,000	$55,000	$50,000	$65,000
Fund Balance as a % of Revenues	20.3%	20.7%	15.0%	12.7%	15.6%
Cash Balance as a % of Revenues	23.9%	25.0%	18.7%	15.9%	20.3%
Debt/Pensions					
Net Direct Debt ($000)	$485,000	$475,000	$450,000	$500,000	$525,000
3-Year Average of Moody's ANPL ($000)	$605,000	$625,000	$680,667	$749,667	$901,333
Net Direct Debt / Full Value (%)	2.3%	2.3%	2.1%	2.2%	2.3%
Net Direct Debt / Operating Revenues (x)	1.8x	1.7x	1.5x	1.6x	1.6x
Moody's - adjusted Net Pension Liability (3-yr average) to Full Value (%)	2.9%	3.0%	3.2%	3.3%	3.9%
Moody's - adjusted Net Pension Liability (3-yr average) to Revenues (x)	2.2x	2.2x	2.3x	2.4x	2.8x

Example Aa3-rated municipality

Published scorecard

Aa3-rated Municipality

Rating Factors	Measure	Score
Economy/Tax Base (30%) [1]		
Tax Base Size: Full Value (in 000s)	$23,611,393	Aaa
Full Value Per Capita	$109,820	Aa
Median Family Income (% of US Median)	93.0%	Aa
Finances (30%)		
Fund Balance as a % of Revenues	15.6%	Aa
5-Year Dollar Change in Fund Balance as % of Revenues	-3.1%	Baa
Cash Balance as a % of Revenues	20.3%	Aa
5-Year Dollar Change in Cash Balance as % of Revenues	-1.6%	Baa
Management (20%)		
Institutional Framework	A	A
Operating History: 5-Year Average of Operating Revenues / Operating Expenditures (x)	1.00x	A
Debt and Pensions (20%)		
Net Direct Debt / Full Value (%)	2.2%	A
Net Direct Debt / Operating Revenues (x)	1.6x	A
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value (%)	3.8%	A
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues (x)	2.8x	A
Notching Factors:[2]		
Unusually Strong or Weak Security Features		Up
Standardized Adjustments [3]: Unusually Strong or Weak Security Features - Secured by statute		
	Scorecard-Indicated Outcome	Aa3
	Assigned Rating	Aa3

Notched ratings

Notching Guide

The key factors for rating general government contingent obligations discussed above have bee
summarized in a notching guide (Exhibit 6).

EXHIBIT 6

Notching Guide for Lease, Annual Appropriation, and Moral Obligations

Security Type	Non-Contingent Lease-Backed Obligations	Contingent Lease-Backed and Annual Appropriation Obligations			Moral Obligation		
Essentiality	NA	More		Less	More		
Legal structure	Strong	Moderate	Weak		Strong	Moderate	We
Notches from GO rating:							
Zero	X						
One		X					
Two			X	X	X		
Three						X	X

Essentiality in notched ratings

Necessity to core government functions not provided by private sector

The essentiality of a specific asset or project can change over time based on a state or local go
fiscal, economic, political and legal circumstances. Thus, the Exhibit 5 is based on our view of w
governments will consider more essential or less essential most of the time.

EXHIBIT 5

Essentiality Categories by Asset/Project Type

More Essential to Government Operations	Less Essential to Government Operations
Affordable/senior housing	Animal shelters
Continuing care centers/nursing homes	Community/senior centers
Courthouses	Convention centers
Jails	Golf courses
Landfills	Hotels
Libraries	Ice rinks
Parking garages attached to essential facilities	Marinas
Police and fire stations	Miscellaneous economic development pro
Roads, streets, and interchanges	Parking garages attached to non-essential
School buildings	Sports stadiums
Water and sewer system facilities	Theaters and concert halls
	Parks and undeveloped land

Note: Not an exhaustive list

Source: Moody's Investors Service

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Municipal utility debt methodology

Municipal utility methodology

Assesses the credit quality of essential service US municipal utility revenue bonds

- Utility enterprises typically operated by local governments
  - Water distribution
  - Sanitary sewerage
  - Storm water disposal
  - Solid waste disposal
  - Gas distribution
  - Electric distribution
- Primary factors driving our analysis
  - System size & health
  - Financial strength of operations
  - Legal provisions
  - Rate management & regulatory compliance
- Sub-factors are measures that serve as proxies for characteristics, conditions, and practices that can be difficult to measure objectively and consistently
- A municipality's utility ratings are typically within two notches of its GO rating

Municipal utility scorecard and methodology

Incorporates four fundamental rating factors

System Characteristics (30%)

The health of capital assets, the size and diversity of operations, and the strength and resources in the service base indicate the **capacity to fund operations and capital needs**.

Financial Strength (40%)

Financial health indicates a utility's **flexibility to respond to contingencies, resilience against short-term shocks, and cushion against any long-term unfavorable trend.**

Management & Governance (20%)

A municipal utility's track record of rate-setting and capital planning indicates its **willingness and ability to keep the system in good working order and to pay for it**.

Legal Provisions (10%)

The pledge of net utility revenues is not open-ended, making legal provisions critical to bondholder security. **Covenants specify the minimum legal requirements of management.**

Municipal scorecard factors, sub-factors and weights

Factors & Sub-Factors	Weights
System Characteristics/Service Area (35%)	**30.0%**
Asset Condition (Remaining Useful Life)	10.0%
Service Area Wealth (Median Family Income)	12.5%
System Size (O&M)	7.5%
Financial Strength (35%)	**40.0%**
Annual Debt Service Coverage	15.0%
Days Cash on Hand	15.0%
Debt to Operating Revenues	10.0%
Management (20%)	**20%**
Rate Management	10%
Regulatory Compliance and Capital Planning	10%
Legal Provisions (10%)	**10%**
Rate Covenant	5%
Debt Service Reserve Requirement	5%

System characteristics (30%)

		Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*
		Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**
SYSTEM CHARACTERISTICS (30%)							
Asset Condition (Years Useful Life – Net Fixed Assets/ Annual Depreciation) (10%)		n > 75 yrs	75 yrs ≥ n > 25 yrs	25 yrs ≥ n > 12 yrs	12 yrs ≥ n > 9 yrs	9 yrs ≥ n > 6 yrs	n ≤ 6 yrs
Service Area Wealth (MFI as % of US MFI) (12.5%)		n > 150%	150% ≥ n > 90%	90% ≥ n > 75%	75% ≥ n > 50%	50% ≥ n > 40%	n ≤ 40%
System Size (O&M) (7.5%)	Water and/or Sewer, or Solid Waste	n > $65M	$65M ≥ n > $30M	$30M ≥ n > $10M	$10M ≥ n > $3M	$3M ≥ n > $1M	n ≤ $1M
	Stormwater	n > $30M	$30M ≥ n > $15M	$15M ≥ n > $8M	$8M ≥ n > $2M	$2M ≥ n > $750K	n ≤ $750K
	Gas or Electric	n > $100M	$100M ≥ n > $50M	$50M ≥ n > $20M	$20M ≥ n > $8M	$8M ≥ n > $3M	n ≤ $3M

Potential adjustments

- High poverty or unemployment rate, home foreclosures, per capita income, or median home values
- Unusually high or low rates relative to regional average
- High rate-payer or industry concentration
- Resource vulnerability or exposure to volatility

Financial strength (40%)

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**
FINANCIAL STRENGTH (40%)						
Annual Debt Service Coverage (15%)	n > 2.00x	2.00x ≥ n > 1.70x	1.70x ≥ n > 1.25x	1.25x ≥ n > 1.00x	1.00x ≥ n > 0.70x	n ≤ 0.70x
Days Cash on Hand (15.0%)	n > 250 days	250 days ≥ n > 150 days	150 days ≥ n > 35 days	35 days ≥ n > 15 days	15 days ≥ n > 7 days	n ≤ 7 days
Debt to Operating Revenues (10.0%)	n < 2.00x	2.00x ≥ n > 4.00x	4.00x ≤ n < 7.00x	7.00x ≤ n < 8.00x	8.00x ≤ n < 9.00x	n ≥ 9.00x

Potential adjustments

- Reliance on connection fee revenues for coverage, particularly if volatile
- Repeated reliance on rate stabilization fund to meet bond covenant coverage
- Falling below coverage covenant, even if higher than 1 times
- Constrained liquidity due to oversized transfers
- Oversized pension liability or actuarial required contribution
- Significant exposure to puttable debt and/or swaps or other unusual debt structure

Management (20%)

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**
MANAGEMENT (20%)						
Rate Management (10%)	Excellent rate-setting record; Rates and cost adjustments in 20 days or less	Strong rate-setting record; Rates and cost adjustments in 21-50 days; Small, well-defined general fund transfers governed by policy	Average rate-setting record; Rates and cost adjustments 51-80 days; Moderate general fund transfers governed by policy	Adequate rate-setting record; Rates and cost adjustments 81-120 days; Large general fund transfer not governed by policy	Below average rate-setting record; Sizeable general fund transfer not governed by policy	Record of insufficiently adjusting rates; Large general fund transfer not governed by policy
Regulatory Compliance and Capital Planning (10%)	Fully compliant or proactively addressing compliance issues; Sophisticated, manageable CIP that covers more than 10-years	Actively addressing minor compliance issues; Comprehensive, manageable 10-year CIP	Moderate violations with adopted plan to address issues; Manageable 5-year CIP	Significant compliance violations with limited solutions adopted; Single year CIP	Not fully addressing compliance issues; Limited or weak capital planning	Not addressing compliance issues; No capital planning

Potential adjustments

» Unusually strong or weak capital planning

Legal provisions (10%)

	Very Strong	*Strong*	*Moderate*	*Weak*	*Poor*	*Very Poor*
	Aaa	**Aa**	**A**	**Baa**	**Ba**	**B & Below**
LEGAL PROVISIONS (10%)						
Rate Covenant (5.0%)	n > 1.30x	1.30x ≥ n > 1.20x	1.20x ≥ n > 1.10x	1.10x ≥ n ≥ 1.00x	n ≤ 1.00x	
Debt Service Reserve Requirement (5.0%)	DSRF funded > MADS	DSRF funded at MADS	DSRF funded at lesser of standard 3-prong test	DSRF funded at less than 3-prong test **OR** springing DSRF	NO explicit DSRF; **OR** funded with speculative grade surety	

Potential adjustments

- Variations from standard rate covenant coverage calculation, such as a "rolling" calculation, which includes prior year surpluses
- Unusually strong or weak liquidity for issuers with bonds that have no debt service reserve requirement
- Structural enhancements such as lockbox features
- Subordinate lien position

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Credit questions Moody’s asks

Credit questions Moody's asks

General government

- Do you have board-approved financial and debt policies or goals?
- Are decisions being made consistent with those policies or goals?
- Are finances structurally balanced? (Do ongoing expenditures match with ongoing revenues?)
- Do you budget conservatively? Do you use multi-year financial planning?
- Are your fixed costs (debt service, pension and OPEB contributions) affordable? Are they growing relative to your resources?
- Is there demonstrated community (i.e. voter) support for debt-funded projects?
- Are your unfunded liabilities growing? Are you setting aside reserves to fund future pension and OPEB contributions?

Municipal utilities

- Do you use multi-year rate setting?
- Are your rates affordable to your residents while also sustaining your capital needs?

Credit questions Moody's asks

Municipal utilities (continued)

- Do you have a five- or ten-year capital improvement plan?
- Does meeting your net revenue coverage rely on receiving connection fees?
- Does your system have adequate capacity? Access and/or rights to sufficient resources (i.e. water)?
- Are there any environmental compliance issues? If so, are you addressing them?

All credits

- Are enterprise funds supporting (or relying on) general government operations through large transfers?
- Have you identified and are you planning for environmental risks like flooding, sea rise, wildfires? And for social risks like population shifts, homelessness, aging populations?
- Are you prepared for cyber risks including phishing and ransomware?

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