



The Bond Rating Process:

A View From Moody's Investors Service

Washington Public Ports Association

Agenda

1. **What is a bond rating? (And what isn't a bond rating?)**
2. **How do we assign a rating?**
3. **What factors do we use to determine a rating?**
4. **What happens after your bond rating is assigned?**
5. **Port ratings in Washington**

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What is a bond rating?

What Are Bond Ratings?

“The purpose of Moody's ratings is to provide investors with a simple system of gradation by which future relative creditworthiness of securities may be gauged.”

The Moody's Rating Scale (Long-Term)

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 have speculative elements 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 classification from Aa through Caa. The modifier 1 indicates that the 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.

The Moody's Rating Scale (Municipal Short-Term)

MIG 1	This designation denotes superior credit quality. Excellent protection is afforded by established cash flows, highly reliable liquidity support, or demonstrated broad-based access to the market for refinancing.
MIG 2	This designation denotes strong credit quality. Margins of protection are ample, although not as large as in the preceding group.
MIG 3	This designation denotes acceptable credit quality. Liquidity and cash-flow protection may be narrow, and market access for refinancing is likely to be less well-established.
SG	This designation denotes speculative-grade credit quality. Debt instruments in this category may lack sufficient margins of protection.

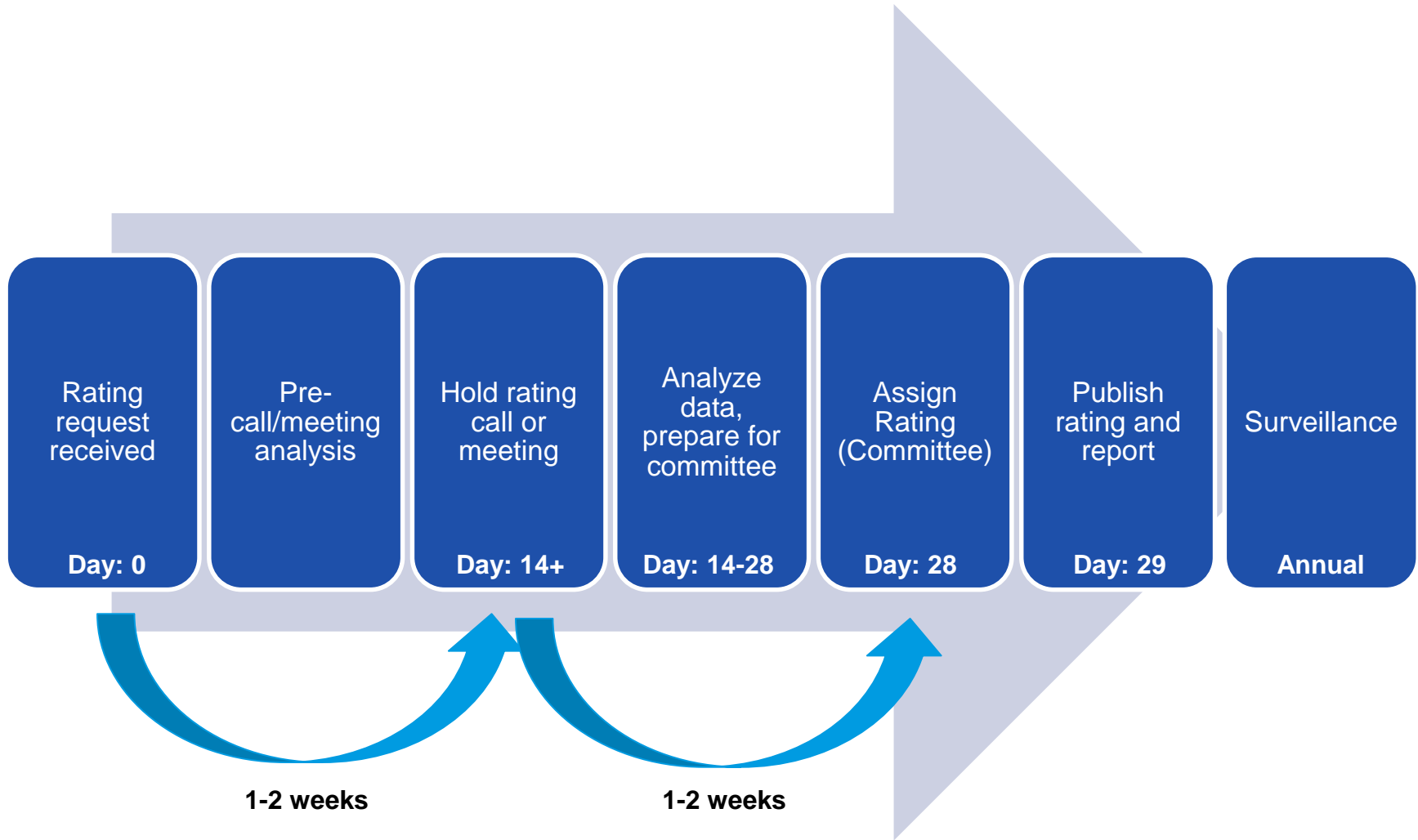
What *Aren't* Bond Ratings?



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How do we assign a rating?

The Rating Process (An Analyst's View)



What to Expect During the Rating Process

» Issuers can expect the Lead Analyst to:

- Identify the appropriate methodology
- Be informed and prepared to discuss an issuer's credit strengths and challenges
- Be familiar with issues specific to local governments in the state or sector
- Explain the rating process and methodology criteria
- Give issuers feedback prior to committee on key drivers of the rating
- Provide complete rationale for the rating after committee
- Give issuers an opportunity to review the draft report for factual accuracy

Credit Discussions between Issuers and Analysts

- » An opportunity for issuer to tell its story to help analysts prepare for rating committee
- » Usually helpful for the issuer to begin with an overview, addressing matters such as governance practices, strategic plans or priorities, and other relevant credit factors
 - Productive meetings tend to follow a written agenda or presentation while also allowing for open dialogue
- » **Analysts are prohibited from providing advice or discussing fees**, but will explain the rating process and rationale
 - We are market observers providing credit analysis and opinions, based upon our rating methodologies
 - Commercial team assists issuers and intermediaries with business arrangements

Rating Committee Process

Before Committee	During Committee	Post Committee
<p>1. The analyst has spoken to the issuer, he/she looks at all of the information in its entirety</p>	<p>1. The lead analyst and a committee chair – typically a senior analyst or manager overseeing the sector being rated – are responsible for determining that committee composition is adequate (i.e. a sizable, diverse group).</p>	<p>1. The analyst informs the issuer verbally of the rating and rationale.</p>
<p>2. The analyst reviews the previous Moody's report on the issuer (if one exists), the scorecard and peer comparison data</p>	<p>2. Committees consist of analysts with relevant and complementary areas of expertise, and a diversity of opinions.</p>	<p>2. Before we publicly disseminate a rating and rating report, the lead analyst will provide a copy of the rating report to the issuer for review.</p>
<p>3. The analyst arrives at a rating recommendation and drafts a rating committee memo that highlights the pertinent facts to discuss in rating committee.</p>	<p>3. The committee chair is responsible for guiding the discussion so that different points of view are heard and that committee members are able to express and formulate their views.</p>	<p>3. Our ratings and reports are publicly posted on Moodys.com and disseminated to various financial news outlets.</p>
	<p>4. Votes are taken, with the majority vote determining the rating and outlook.</p>	<p>4. Ongoing annual reviews of the credit at least annually.</p>

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What factors do we use?

Methodologies Used In Rating Washington Ports

- » **US Local Government General Obligation Debt (December 2016)**
 - Unlimited Tax General Obligation (UTGO, GOULT) Bonds
 - Limited Tax General Obligation Bonds (LTGO, GOLT)

- » **Public Port Revenue Bonds (December 2013)**
 - Port Revenue Bonds

About the GO Methodology

- » Applies to a many forms of municipal government that issue GO debt: cities, counties, school districts, port districts, utility districts, and other special districts
- » We use a scorecard tool that is a starting point for our rating discussions
- » Scorecard factors include measures of the economy, finances, legal framework and management, and debt and pensions
- » “Notching” adjustments include other considerations not included in rating factors



Scorecard Factor 1: Economy & Tax Base – 30%

	<i>Very Strong</i>	<i>Strong</i>	<i>Moderate</i>	<i>Weak</i>	<i>Poor</i>	<i>Very Poor</i>	
	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%

- » The tax base is the source of a significant portion of local government revenues – although tapping that base can have obstacles
- » Full value per capita and MFI indicate local wealth, which implies ability and capacity to tax residents

Scorecard Factor 2: Finances – 30%

	<i>Very Strong</i>	<i>Strong</i>	<i>Moderate</i>	<i>Weak</i>	<i>Poor</i>	<i>Very Poor</i>	
	Aaa	Aa	A	Baa	Ba	B & Below	Weight
FINANCES (30%)							
Fund Balance as % of Revenues	> 30.0% > 25.0% for School Districts	30.0% ≥ n > 15.0% 25.0% ≥ n > 10.0% for SD	15.0% ≥ n > 5.0% 10.0% ≥ n > 2.5% for SD	5.0% ≥ n > 0.0% 2.5% ≥ n > 0.0% for SD	0.0% ≥ n > -2.5% 0.0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	10%
5-Year Dollar Change in Fund Balance as % of Revenues	> 25.0%	25.0% ≥ n > 10.0%	10.0% ≥ n > 0.0%	0.0% ≥ n > -10.0%	-10.0% ≥ n > -18.0%	≤ -18.0%	5%
Cash Balance as % of Revenues	> 25.0% > 10.0% for School Districts	25.0% ≥ n > 10.0% 10.0% ≥ n > 5.0% for SD	10.0% ≥ n > 5.0% 5.0% ≥ n > 2.5% for SD	5.0% ≥ n > 0.0% 2.5% ≥ n > 0.0% for SD	0.0% ≥ n > -2.5% 0.0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	10%
5-Year Dollar Change in Cash Balance as % of Revenues	> 25.0%	25.0% ≥ n > 10.0%	10.0% ≥ n > 0.0%	0.0% ≥ n > -10.0%	-10.0% ≥ n > -18.0%	≤ -18.0%	5%

- » Our analysis relies on data from audited financial statements for scorecard inputs
 - Also consider adopted/draft budgets to be forward-looking and understand AZ's unique budget process
- » Based upon non-restricted cash and fund balances
 - Makeup of reserves matters: if mostly dedicated to debt service we may make below-the-line adjustment
- » 5-year trends more insightful than point-in-time fluctuations (and reflects an economic cycle)
- » Breakpoints for schools reflect their limited flexibility but more predictable funding sources

Scorecard Factor 3: Management – 20%

	<i>Very Strong</i>	<i>Strong</i>	<i>Moderate</i>	<i>Weak</i>	<i>Poor</i>	<i>Very Poor</i>	
	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%

- » “Washington port districts have an institutional framework score of 'Aa', or strong. Revenue composition can vary widely, depending upon the type and size of operations performed at the port, with some districts subject to greater competitive pressures. Port districts can levy multiple types of property taxes without voter approval, but are generally subject to certain limitations as prescribed by law. Expenditures are generally predictable, though the strength of bargaining groups in the state generally limits significant cost reduction options.”
- » 5-year operating history provides a trend, indicating management’s effectiveness at matching revenues and spending → 1.0 = balanced*

Scorecard Factor 4: Debt & Pensions – 20%

	<i>Very Strong</i>	<i>Strong</i>	<i>Moderate</i>	<i>Weak</i>	<i>Poor</i>	<i>Very Poor</i>	
	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%

- » Debt metrics measure leverage on taxpayers and informs fixed costs burden on revenues
- » Pensions utilize Moody's adjusted net pension liabilities (ANPL) metrics
 - 3-year average to smooth volatility in pension plans' investment performance and contribution rates
 - ANPL higher than reported liabilities since we use more conservative earnings rates, etc.
- » Overall factor weight was increased to 20% from 10% in 2014 to capture pension risks

GO Scorecard Example: WA Port District

Enter Sector Below	<i>Very Strong</i> 0.50 - 1.49	<i>Strong</i> 1.50 - 2.49	<i>Moderate</i> 2.50 - 3.49	<i>Weak</i> 3.50 - 4.49	<i>Poor</i> 4.50 - 5.49	<i>Very Poor</i> 5.50 - 6.50	Input	Weight	Score
Special District	Aaa	Aa	A	Baa	Ba	B & Below			
ECONOMY/TAX BASE (30%)									
Tax Base Size: Full Value (in 000s)	> \$12B	\$12B ≥ n > \$1.4B	\$1.4B ≥ n > \$240M	\$240M ≥ n > \$120M	\$120M ≥ n > \$60M	≤ \$60M	\$3,699,076	10%	2.28
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	\$94,606	10%	2.15
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	87.20%	10%	2.69
FINANCES (30%)									
Fund Balance as % of Revenues	> 30.0% > 25.0% for School Districts	30.0% ≥ n > 15.0% 25.0% ≥ n > 10.0% for SD	15.0% ≥ n > 5.0% 10.0% ≥ n > 2.5% for SD	5.0% ≥ n > 0.0% 2.5% ≥ n > 0.0% for SD	0.0% ≥ n > -2.5% 0.0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	57.79%	10%	0.57
5-Year Dollar Change in Fund Balance as % of Revenues	> 25.0%	25.0% ≥ n > 10.0%	10.0% ≥ n > 0.0%	0.0% ≥ n > -10.0%	-10.0% ≥ n > -18.0%	≤ -18.0%	-50.29%	5%	6.50
Cash Balance as % of Revenues	> 25.0% > 10.0% for School Districts	25.0% ≥ n > 10.0% 10.0% ≥ n > 5.0% for SD	10.0% ≥ n > 5.0% 5.0% ≥ n > 2.5% for SD	5.0% ≥ n > 0.0% 2.5% ≥ n > 0.0% for SD	0.0% ≥ n > -2.5% 0.0% ≥ n > -2.5% for SD	≤ -2.5% ≤ -2.5% for SD	76.86%	10%	0.50
5-Year Dollar Change in Cash Balance as % of Revenues	> 25.0%	25.0% ≥ n > 10.0%	10.0% ≥ n > 0.0%	0.0% ≥ n > -10.0%	-10.0% ≥ n > -18.0%	≤ -18.0%	-27.76%	5%	6.50
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	Aa	10%	2.00
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	2.19x	10%	0.50
DEBT/PENSIONS (20%)									
Net Direct Debt / Full Value	< 0.75%	0.75% ≤ n < 1.75%	1.75% ≤ n < 4.00%	4.00% ≤ n < 10.00%	10.00% ≤ n < 15.00%	> 15.00%	0.06%	5%	0.58
Net Direct Debt / Operating Revenues	< 0.33x	0.33x ≤ n < 0.67x	0.67x ≤ n < 3.00x	3.00x ≤ n < 5.00x	5.00x ≤ n < 7.00x	> 7.00x	0.26x	5%	1.30
3-Year Average of Moody's Adjusted Net Pension Liability / Full Value	< 0.90%	0.90% ≤ n < 2.10%	2.10% ≤ n < 4.80%	4.80% ≤ n < 12.00%	12.00% ≤ n < 18.00%	> 18.00%	0.05%	5%	0.55
3-Year Average of Moody's Adjusted Net Pension Liability / Operating Revenues	< 0.40x	0.40x ≤ n < 0.80x	0.80x ≤ n < 3.60x	3.60x ≤ n < 6.00x	6.00x ≤ n < 8.40x	> 8.40x	0.21x	5%	1.03

Total Score 1.89
Unadjusted Outcome Aa2

Notching Factors For GO Bonds

Adjustments/Notching Factors	
<i>Description</i>	<i>Direction</i>
Economy/Tax Base	
Institutional presence	up
Regional economic center	up
Economic concentration	down
Outsized unemployment or poverty levels	down
Other analyst adjustment to Economy/Tax Base factor (specify)	up/down
Finances	
Outsized contingent liability risk	down
Unusually volatile revenue structure	down
Other analyst adjustment to Finances factor (specify)	up/down
Management	
State oversight or support	up/down
Unusually strong or weak budgetary management and planning	up/down
Other analyst adjustment to Management factor (specify)	up/down
Debt/Pensions	
Unusually strong or weak security features	up/down
Unusual risk posed by debt/pension structure	down
History of missed debt service payments	down
Other analyst adjustment to Debt/Pensions factor (specify)	up/down
Other	
Credit event/trend not yet reflected in existing data sets	up/down

Typical adjustments for a port district rating include:

- Enterprise risk (-)
- Full vs. modified accrual (-)

Other common rating adjustments include:

- Taxpayer or customer concentration risk (-)
- Banked levy capacity (+)

Moody's Port Scorecards - A Starting Point

Why Two?

Private Ports Companies:

- » Are owned or operated by a corporate entity
- » Bondholders are subject to the corporate risks of that entity
- » Gov't support factored in Moody's GRI scale

Public Ports:

- » Owned / operated by a government
- » Credit risk is primarily on the strength of the port
- » Likely to receive implicit gov't support as a key economic driver

Public Port Revenue Bonds

DECEMBER 4, 2013

Moody's INVESTORS SERVICE

RATING METHODOLOGY

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Summary

This rating methodology explains Moody's approach to assessing credit risk for global public port revenue bonds in various coastal countries that have ocean, estuarine, and other

Privately Managed Port Companies

MAY 21, 2019

Moody's INVESTORS SERVICE

RATING METHODOLOGY

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Summary

This rating methodology provides detailed rating guidance regarding Moody's global approach to rating privately managed ports around the world. Local government owned and financed ports are rated according to the companion Rating Methodology for those credits. In particular this document outlines the key analytical factors that underpin ratings assigned to both port owning and port operating companies, and provides guidance as to how Moody's combines each of these factors to arrive at a final rating outcome.

This methodology applies to the following companies:

- » Publicly listed or investor owned port landlord and/or operating companies.
- » Publicly listed or investor owned port companies operating concessions at government owned ports.
- » International port operating companies which are wholly or partially government owned.
- » Government-owned port companies with independent management.

Port companies, whilst simple in concept, provide a wide range of services to global and regional trade, and provide an irreplaceable interface between sea and land transportation. While ports have been enablers of economic growth throughout history, port operations have changed considerably over the last 50 years, with high levels of automation and the ability to dock ever increasing size and complexity of vessel.

As with other long-term infrastructure assets, such as airports and toll-roads, ports require a reasonable degree of renewal and upgrade to ensure that they are able to meet capacity demands over time. However, irrespective of capital expenditure requirements, the geographical location of some ports means that size and depth restrictions cannot be overcome.

THIS CREDIT RATING METHODOLOGY CONTAINS AN UPDATE IN THE RELATED RESEARCH AT THE END OF THE REPORT. THE CONTENT OF THE CREDIT RATING METHODOLOGY HAS NOT BEEN CHANGED OR UPDATED. ORIGINAL DATE OF PUBLICATION REMAINS THE EFFECTIVE DATE OF THE CREDIT RATING METHODOLOGY.

Moody's Public Port Scorecard- A Starting Point

How It Works

- » Four Major Factors
- » 8 Sub-Factors
- » Notching factors for:
 - Financial Liquidity
 - Tax support for operating

Public Ports Factor Weighting	
Weight	Factor
40%	Market Position
15%	Diversity and Volatility
5%	Capital Program
40%	Key Financial Credit Metrics
+ / -	Notching Considerations

- » Sample sub-factor:

	Aaa	Aa	A	Baa	Ba	B	Caa
a) Port size (Operating Revenues)	Greater than \$300 million	\$200 million or greater but less than \$300 million	\$75 million or greater but less than \$200 million	\$50 million or greater but less than \$75 million	\$30 million or greater but less than \$50 million	\$15 million or greater but less than \$30 million	less than \$5 million

Scorecard Process

Factors		Subfactors	Weight
1. Market Position	40%	a) Operating Revenue	25%
		b) Competition and Service Area	7.5%
		c) Operational restrictions	7.5%
2. Diversity and Volatility	15%	a) Operating Revenue & Volatility (5 year CAGR)	10%
		b) Customer Diversity	5%
3. Capital Program	5%	a) Capital Needs Requiring Leverage	5%
4. Key Credit Metrics	40%	a) Net Revenues DSCR (3 year avg) ²	20%
		b) Debt to Operating Revenue (3 year avg)	20%
Total	100%	Total	100%

Notching Adjustments (+1 to -1 notches):

1. Tax Support for Operations

+1 notch= Tax revenues currently support O&M and/or debt service

+0.5 notch= Ability to levy tax to support O&M, but not implemented

2. Liquidity (-1, -0.5, 0, +0.5, +1 Notches) – Based on the ratio of cash to debt:

+1 notch= Cash to debt >100%
debt < 10%

-1 notch= Cash to

+0.5 notch= Cash to debt < 100%, >70% -0.5 notch= Cash to debt >10%, <30%

Moody's Public Port Scorecard- Limitations

Snapshot

- » Metrics are current/past
- » Other common rating considerations

VRDO's

Purpose of debt

Swaps

MAGs

Future Debt

Shipping line trends

Cargo growth trend

Labor relations

Debt service structure

Lease schedule

Management strength

Other financial metrics

DECEMBER 4, 2013

INFRASTRUCTURE

Moody's
INVESTORS SERVICE

RATING METHODOLOGY

Public Port Revenue Bonds

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Summary

This rating methodology explains Moody's approach to assessing credit risk for global public ports and is intended to provide general guidance that helps ports, investors, and other interested market participants understand how qualitative and quantitative risk characteristics are likely to affect rating outcomes for public ports. This document does not include an exhaustive treatment of all factors that are reflected in Moody's ratings but should enable the reader to understand the qualitative considerations and financial information and ratios that are usually most important for ratings in this sector.

This rating methodology replaces¹ the Rating Methodology for US Ports published in February 2005. While reflecting many of the same core principles as the 2005 methodology, this updated document provides a more transparent presentation of the rating considerations that are usually most important for issuers in this sector and incorporates refinements in our analysis that better reflect credit fundamentals of the industry. No rating changes will result from the publication of this methodology.

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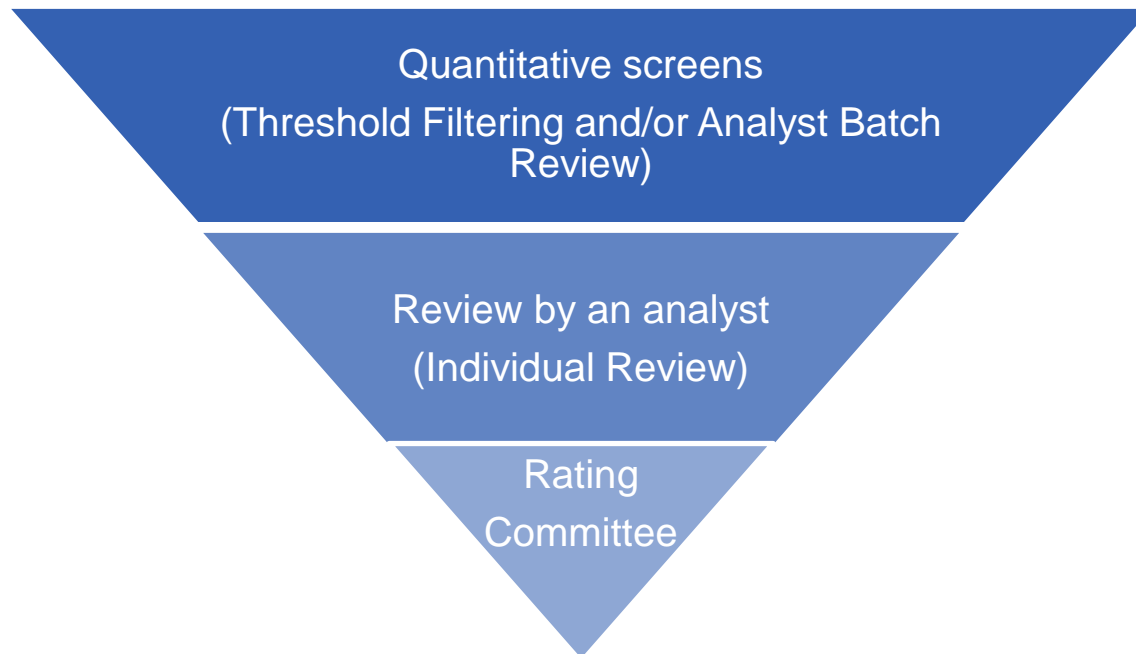
¹ This update may not be effective in some jurisdictions until certain requirements are met.

4

What happens after your rating is assigned?

Public Finance Rating Monitoring Framework

- » Surveillance process involves multiple screens, each with increased scrutiny and analyst involvement
 - Every rating is reviewed at least once every 365 days
- » Most ratings are deemed appropriate through the various filtering steps
 - However, some do proceed to a rating committee for possible rating action



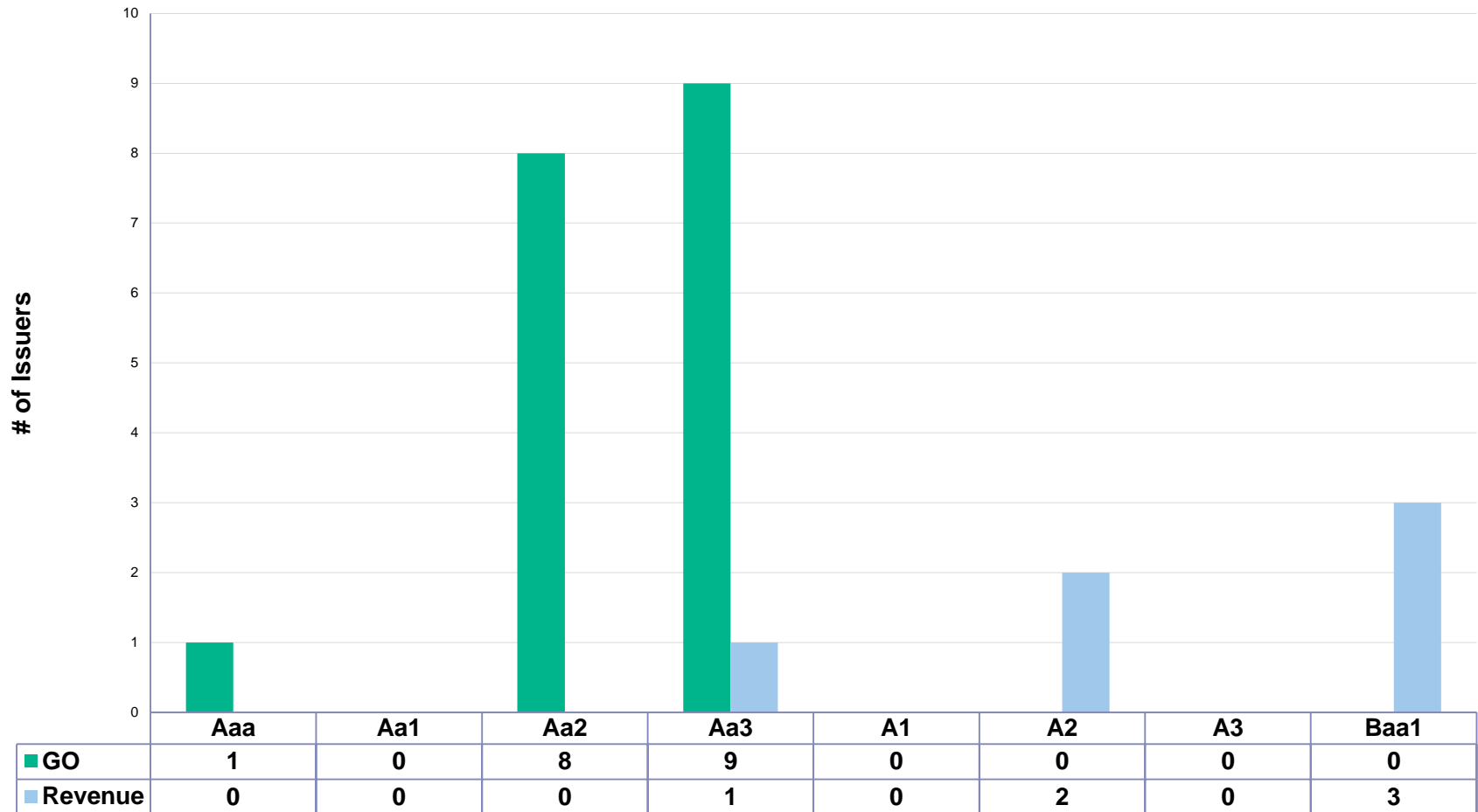
Public Finance Surveillance

- » **We require at least biennial audits in order to maintain a rating**
 - » On the year when you do not receive an audit, we will use unaudited state submissions, tax records, budgets, and other publicly available documents; we may also request financial or other data
 - » For our purposes, audits can come from state auditor's office or from a private, independent third-party
- » We may conduct surveillance outside of the receipt of new annual financial information
 - » Example: News event, changes in local economy, changes in methodologies

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Port Ratings in Washington

Moody's Ratings for Washington Ports



Source: Moody's Investors Service

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