Credit and Rating Overview

prepared for the

Philadelphia Water Department

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PFM®

Philadelphia PWD Water Department

What credit ratings are and aren't according to rating agencies

- Credit ratings are opinions about credit risk
- They are intended to be forward looking opinions
- They express opinion about the ability and willingness of an issuer to meet its financial obligations in full and on time
- Ratings are not a prognosis or recommendation, but intended to provide market participants with information about relative credit risk of issuers and individual debt issues that we rate
- They express relative opinions about creditworthiness of an issuer or credit quality of a debt issue, from strongest to weakest, within a universe of credit risk
- Credit ratings do not constitute investment advice nor do they opine on suitability for an investment
- Credit ratings are not indications of market liquidity of a debt security or its price in the secondary market
- Credit ratings are not guarantees of credit quality or future credit risk; assignment of a credit rating is not an exact science
- Credit ratings are not absolute measures of default probability

Source: S&P

Financial Performance and Flexibility: Factors Considered by Rating Agencies

- Analysis is VERY sector specific
- Sources of funding / security - revenue diversity and stability
- Financial flexibility
- Strength in operations
- Cash flow/liquidity/investments
- Debt Structure
- Strength of Management Team
- Historical performance, current year, and future

Sector Credit Concerns

- **"Continued Stability; Sector Challenges Persist but Remained Manageable"**

- **Economic Climate**
  - The Sector provides essential service, but is impacted by economic cycles.
  - Current expansion will have a "marginally positive impact" on operations.
- **Cost Recovery Remains Challenging**
  - Full cost recovery remains a challenge since utilities largely rely on consumer usage to fund fixed costs.
  - As consumption declines there will be increased pressure on operations.
- **Changes to Environmental Regulations**
  - Environmental regulations leading to acceleration in operating and capital costs could have a negative effect on utilities.
  - Wastewater utilities could face significant individual pressures from enhanced discharge requirements.
- **Delayed Capital Spending**
  - Long term capital spending remains either unchanged or slightly lower despite aging infrastructure and increased environmental regulations.

Sources: Fitch's "Special Report: 2016 Outlook: Water and Sewer Sector".

Key Rating Drivers

Moody's

Moody's is developing a "Scorecard" to evaluate issuer's rating.

Scorecard Metrics:

1. System Characteristics
   - Asset conditions
   - Service Area Wealth
   - System Size
2. Financial Strength
   - Debt Service Coverage
   - Days Cash on Hand
   - Debt to Operating Revenues
3. Management
   - Rate Management
   - Regulatory Compliance and Capital Planning
4. Legal Provisions
   - Rate Covenant
   - Debt Service Reserve Requirement

S&P

S&P Analytic Framework

Enterprise Risk Profile

1. Economic fundamentals
2. Industry Risk
3. Market position
4. Operational management

Financial Risk Profile

1. Coverage metrics
2. Liquidity and reserves
3. Debt and liabilities
4. Financial management

Key Ratios Used in Quantitative Analysis:

1. Liquidity Ratio - Days Cash on Hand
2. Debt to Capitalization
3. Debt Service Coverage
4. Contingent Liabilities/LT Debt

Fitch

Fitch's Four Key Rating Drivers:

1. Governance and Management
2. Financial Profile
3. Debt Profile
4. Operating Profile

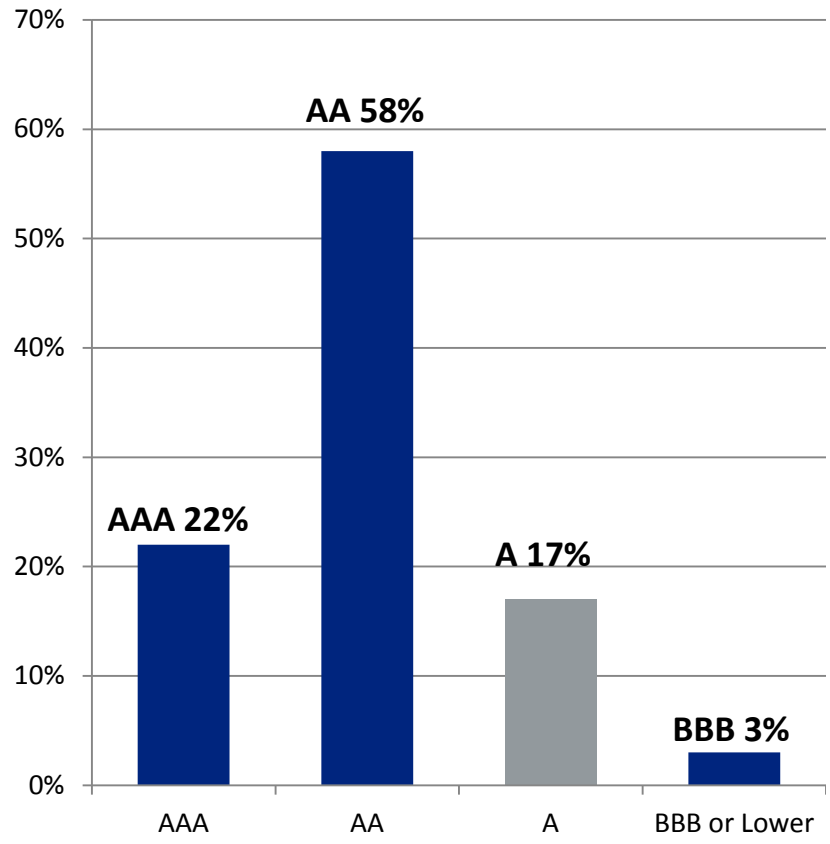
"10 Cs" Analytical Framework:

1. Crew (management)
2. Coverage and financial performance
3. Cash and balance sheet considerations
4. Charges and rate affordability
5. Capital demands and debt burden
6. Covenants
7. Customer growth and concentration
8. Capacity
9. Compliance with environmental laws and regulations
10. Community characteristics

Sources: Fitch "US Water and Sewer Revenue Bond Rating Criteria", 07-31-2013; Moody's "Request for Comment - US Municipal Utility Revenue Debt Proposed Methodology", 07-31-2014; S&P "Rating and Methodology and Assumptions". 1/19/2016.

Rating Distribution of Large Systems

- Standard & Poor's utility rating distribution for issuers with population of 500,000 and higher is presented below.
- The majority of PWD peer systems are currently rated in the "AA" Category.



City	Rating
Boston Water and Sewer Commission	Aa1/AA/AA+
City of Cleveland Water Enterprise	Aa1/AA
City of Baltimore Water and Sewer Enterprise	Aa2/AA
District of Columbia Water and Sewer	Aa2/AA+/AA
Houston Combined Utility System	Aa2/AA/AA-
Louisville and Jefferson County Metropolitan Sewer District	Aa3/AA-/AA-
New York City Municipal Water and Finance Authority	Aa1/AAA/AA+
Northeast Ohio Regional Sewer District	Aa1/AA+
Philadelphia Water Department	**A1/A/A+**

Source: S&P "2014 Review of U.S. Municipal Water and Sewer Ratings," May 12, 2014.

Rating Agency Credit Tiers

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1 Stable	A+	***A+ Stable***
A2	***A Stable***	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Moody's, S&P, and Fitch affirmed PWD's ratings in December 2013.

The City of Philadelphia's G.O. ratings are currently A2, A+, A- by Moody's, S&P, and Fitch, respectively.

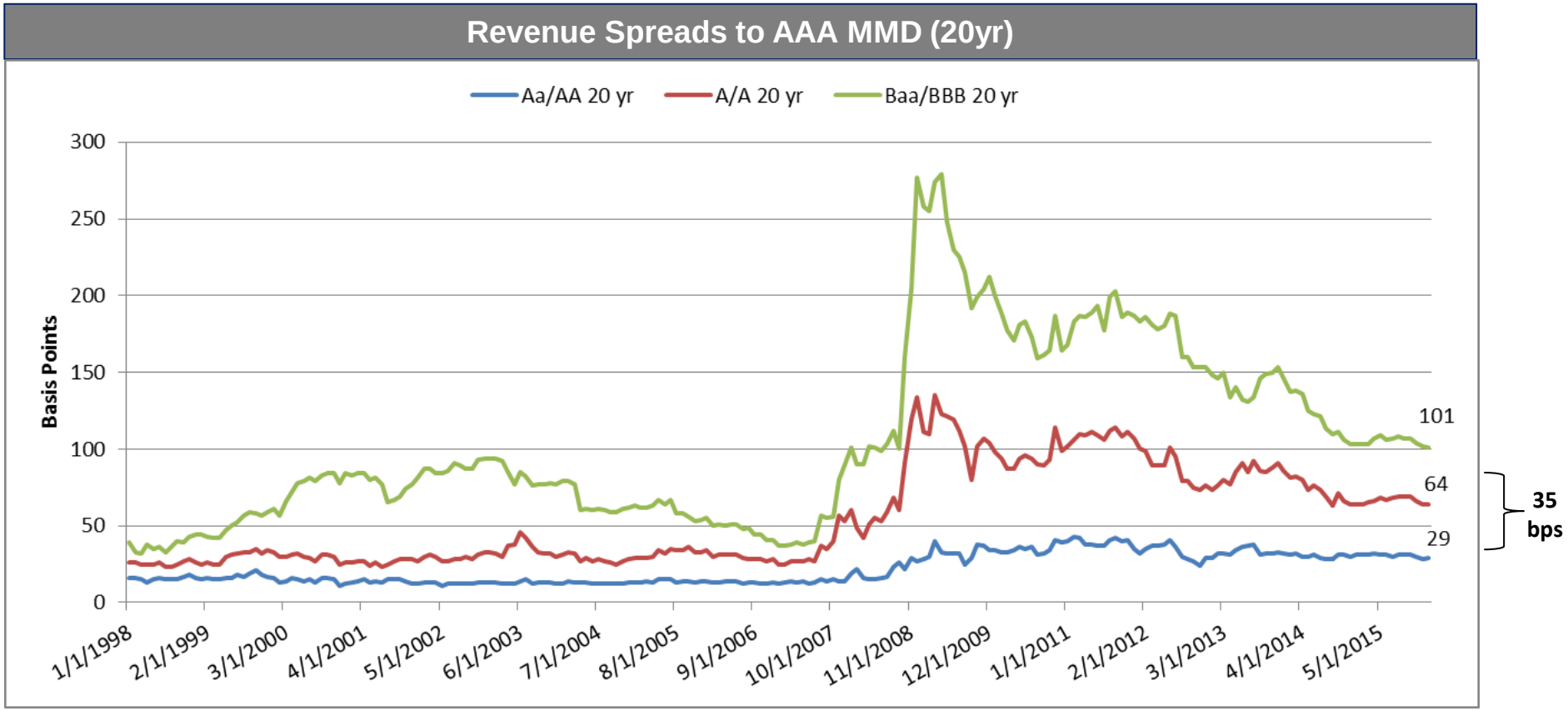
Key Rating Drivers-PWD

Fitch Rated: A+/Stable Outlook (3/23/2015)	Moody's Rated: A1/Stable Outlook (3/19/2015)	S&P Rated: A/Positive Outlook (3/20/2015)
Strengths		
• Essential service provider to large and diverse regional service area • Ample water supply and overall system treatment capacity	• Large and Diverse service area, stable operating profile • Narrow but consistent debt service coverage • Demonstrated willingness to increase user rates	• Diverse and board service area • Competitive rate structure • Stable financing performance
Challenges		
• Relatively weak demographics in the city • Above average debt levels with sizeable additional borrowing plans • Narrow debt service coverage levels	• A moderately weal legal structure that allows for the use of RSF to meet coverage • Narrow debt service coverage Above average leverage with significant additional debt planned • Relatively weak demographics	• Weaker economic profile • Overreliance on Rate Stabilization Fund withdrawals to support operations • $1.8 Billion capital improvement program will require additional debt financing for a utility that is highly leveraged.
Positive Credit Impact Items		
• Continued Sound management and stable operations • Continued and improving liquidity • Continued compliance with consent order and agreement	• Improvement in debt service coverage more consistent with peer credits • Increased improvements in service base	• Financing performance meets or exceeds current projections • No significant costs or unanticipated projects beyond current CIP • City economic profile continues to steadily improve

Key Rating Metrics

Moody's: U.S. Water and Sewer Credit Ratios: Medians (FY 2014)	PWD		A	AA
Total Long Term Debt ($000)	1,830,387		27,883	79,663
Total Operating Revenues ($000)	610,988		11,590	34,964
Operating ratio (%)	56.50		62.20	59.60
Debt Ratio (%)	66.70		37.30	31.80
Total Annual Senior Lien Debt Service Coverage (x)	1.40		2.54	2.40
Total Annual Debt Service Coverage (x)	1.40		1.81	2.03
Fitch: U.S. Water and Sewer Credit Ratios: Medians (FY 2014)	**PWD**	**Large System**	**A**	**AA**
Population	1,607,000 (water) 2,300,000 (wastewater)	928,281	139,915	339,172
MHI $	45,303	50,065	43,197	62,688
Total Water Customers [1]	475,000	218,450	20,930	90,576
Total Sewer Customers [1]	530,000	237,446	34,933	94,179
Average Annual CIP Costs Per Customer $	201	318	352	260
CIP Debt Financed %	70	58	64	35
Debt to Equity (x)	7.2	5.9	9.5	3.6
Total Outstanding Long-Term Debt Per Customer $	1,926	2,382	2,218	1,934
Senior Lien ADS Coverage	1.40	2.3	2.4	2.5
Days Cash on Hand	290	296	366	442
Standard & Poor's: U.S. Water and Sewer Ratios: Medians (FY 2013)	**PWD**	**Pop Above**	**A**	**AA**
Population	1,700,000 (water) 2,300,000 (wastewater)	998,454	18,919	74,051
EBI as % of U.S.	75.4	98	85	103
Water Rate $	28.71	30.12	40.84	32.84
Sewer Rate $	35.52	42.54	40.45	38.81
Total Operating Revenues $	639,974	174,087	4,245	15,835
Days' Cash (Excluding RSF*)	60-90*	281	283	417
Senior-lien Debt Service Coverage	1.20	2.02	1.73	2.4
All-in Debt Service Coverage	1.20	1.53	1.43	1.87

[1] Fitch and Standard & Poor's incorrectly counts customers served by wholesale agreements as direct customers of the system and which can distort the number of retail customers.

The Bond Market Has Been Largely Credit Driven Since 2008 Financial Crisis

- Cost to borrow for an A-rated versus AA-rated utility: The bond market currently charges about **35 basis points** more for a 20 year A-rated bond than a AA-rated bond.
- Credit spreads are more dramatic during disruptions in the market.
- Liquidity Facility Savings: PWD would also achieve savings on liquidity fees if upgraded.
- Credit ratings reflect the sustainability of a system.