Philadelphia, Pennsylvania

New Issue Report

Ratings

New Issue

Water and Wastewater Revenue Refunding Bonds, Series 2017	A+
Outstanding Debt	
Water and Wastewater Revenue Bonds	A+

Rating Outlook

Stable

Related Research

2017 Water and Sewer Medians (December 2016)

2017 Outlook: Water and Sewer Sector (December 2016)

Fitch Rates Philadelphia, PA's Gas Works Rev Refunding Bonds'; Outlook Stable (August 2016)

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New Issue Details

Sale Information: Approximately $293,000,000 Water and Wastewater Revenue Bonds, Series 2017, scheduled to sell the week of April 3 via negotiated sale.

Security: First lien on net revenues of the Philadelphia Water Department's (PWD) combined water and sewer system.

Purpose: To finance capital improvements, make a deposit to the debt service reserve and pay issuance costs.

Final Maturity: Oct. 1, 2052.

Key Rating Drivers

Satisfactory Financial Performance: PWD generates narrow but consistent financial margins. All-in debt service coverage (DSC), calculated by Fitch Ratings, has averaged 1.3x over the past five years and was just 1.2x in fiscal 2016. While below Fitch's median for the rating category, PWD's consistency in setting rates annually to achieve 1.3x DSC and healthy liquidity levels support the 'A+' rating.

Significant Long-Term Capital Needs: PWD's capital improvement program (CIP) totals $2.2 billion through fiscal 2023. Longer-term capital needs are substantial, a result of required consent order projects and long-term maintenance needs associated with Philadelphia's (the city) aging infrastructure. Terms and conditions under the consent order provide the city with some flexibility as to the affordability and projected timeline of the projects.

Debt Burden to Rise: Debt levels are currently manageable but will increase significantly with sizable additional borrowing expected to fund 80% of PWD's long-term capital needs. Leverage levels are expected to become high with continued sizable borrowing planned over the next two decades.

Consistent Annual Rate Increases: PWD regularly raises water and sewer rates to support the increased capital spending and to achieve 1.3x DSC. Rates have risen by around 5% annually over the past decade. Rates are affordable but expected to continue trending higher to fund long-term capital improvements.

Economic Characteristics Remain Mixed: The service area is highly diverse and well anchored by a broad and stable economy. However, low income levels persist, contributing to below-average collection rates and high water loss.

Rating Sensitivities

Insufficient Rate Recovery: The Stable Rating Outlook reflects Fitch's expectation that consistent rate action will be taken to support planned capital spending. However, if PWD experiences any difficulty in achieving timely and sufficient rate recovery, financial margins could decline, which would likely prompt negative rating action.

Rating History — Revenue Bonds

Rating	Action	Outlook/ Watch	Date
A+	Affirmed	Stable	3/23/17
A+	Affirmed	Stable	10/6/16
A+	Affirmed	Stable	3/20/15
A+	Affirmed	Stable	12/31/13
A+	Affirmed	Stable	6/27/13
A+	Affirmed	Stable	10/9/12
A+	Revised	Stable	4/30/10
A–	Upgraded	—	6/7/00
BBB+	Assigned	—	12/1/98

Related Criteria

Revenue-Supported Rating Criteria (June 2014)

U.S. Water and Sewer Revenue Bond Rating Criteria (November 2016)

Credit Profile

Philadelphia's combined water and sewer utility system serves city residents on a retail basis and a small number of wholesale customers operating in neighboring counties. Service area characteristics include generally low wealth levels and higher than average unemployment rates that are sufficiently mitigated by a sizable and well-anchored employment base.

Management of the combined system falls under the water department, one of the city's 10 operating departments. The water department commissioner is appointed by the managing director of the city subject to mayoral approval. Financial results are reported as an enterprise fund in the city's audited financial statements, and financial management is centralized, with all city operating funds monitored by the city's finance and budget departments. While the revenues of the system are legally and practically separate from other city funds, the centralized system keeps the financial management of the city and water fund closely tied.

Of the PWD's roughly 2,067 employees, approximately 1,880 are unionized. A collective bargaining agreement recently reached for the vast majority established a four-year contract spanning fiscal years 2017–2020. Contract terms, including annual salary increases that will average 2.75%, appear manageable and are factored into the PWD's current financial forecast.

Customer Profile and Service Area

PWD serves a highly diverse and predominantly residential customer base. The water system serves all of the 1.6 million residents of the city as well as a small wholesale customer that serves customers in neighboring Montgomery and Delaware Counties. In total, the water system directly served 480,000 accounts in fiscal 2016. Limited growth in the customer base is anticipated.

The wastewater service area, which comprises greater portions of the surrounding counties, includes a larger population estimated at nearly 2.3 million. The system directly serves 450,000 wastewater customers and 50,000 storm water-only accounts. The combined system's 10 largest customers by revenue represent a stable mix of either large healthcare or governmental institutions that accounted for just 9.9% of fiscal 2016 total billings.

The city maintains 11 wholesale agreements for wastewater service and one wholesale contract for water service to customers outside the city's boundaries. Total wholesale revenue accounted for a moderate 5% of total system revenues in fiscal 2016. All of the wholesale agreements extend through at least fiscal 2023, with several running through fiscal 2025 or later.

Community Characteristics

Philadelphia's large population, sound economic underpinnings and distinct role as the economic driver for the broader metropolitan statistical area (MSA) ensure the continued stability of PWD's service area. Employment opportunities are fairly well diversified, despite being weighted towards a stable cluster of large higher education and healthcare institutions that dominate the city's 10 largest employers. The University of Pennsylvania remains by far the city's largest employer, followed by the Children's Hospital of Philadelphia. Tourism, government and financial services also play an important role in the city's economy.

Unemployment continues to trend downward but remains elevated relative to state and national levels. The city's November 2016 unemployment rate fell from the preceding months but increased slightly from the 5.8% recorded in November 2015. Weak income levels persist, as the city's poverty rate remains nearly twice the national rate, and median household income

(MHI) approximates just 70% of state and national averages. Consequently, PWD's accounts receivable balances and annual write-offs are consistently high relative to most utilities. Including the collection of delinquent accounts, management estimates annual revenue collection at about 95%.

Operating Profile

Water System

Operations are stable and system capacity is robust. The city's water supply, significant excess treatment capacity and lack of growth pressures position PWD well to continue meeting customer demand from existing resources for the foreseeable future. Approximately 59% of the utility's current water supply is drawn from the Delaware River; the balance is taken from the Schuylkill River. Annual water sales, even on peak days, typically equal about one-half of the city's combined rated treatment capacity of 546 million gallons daily (mgd), and nearly one-third of the combined withdrawal (680 mgd) permitted from both water supply sources. Storage capacity of treated and untreated water exceeds 1 billion gallons.

The water system is compliant with all applicable permits and regulatory standards and guidelines. However, unbilled, unaccounted for water loss continues to be a concern. Unauthorized consumption was reduced by a notable 40% during the 1990s, but progress has since stalled as non-revenue, unauthorized water has remained at or close to 30% over the past several years. Ongoing efforts to reduce water loss include the implementation of an automatic meter reading system, utilization of a leak detection program, locking of fire hydrants and replacing water mains.

Sewer System

The wastewater collection system consists of approximately 19 pumping stations, nearly 760 miles of sanitary sewer, about 740 miles of storm sewer, roughly 1,850 miles of combined sanitary and storm sewer, and 135 miles of major interceptor sewer that convey wastewater to three city-owned treatment plants. Wastewater treatment capacity is ample, as the system typically operates at approximately 36% of the 1,059-mgd maximum flow capacity.

All three treatment plants are currently operating under five-year National Pollutant Discharge Elimination System (NPDES) permits that expired on Aug. 31, 2012. The city filed its applications for permit renewal on time (in February 2012) and does not expect any hindrances in eventually getting the permits renewed. The system continues to operate under an extension of the expired permits, as determined by the policies of the Pennsylvania Department of Environmental Protection (DEP).

While officials have previously stated that no hindrances to renewing the NPDES permit are expected, the fairly recent declaration that the Delaware River is impaired due to an elevated level of polychlorinated biphenyls could potentially impede the renewal process and result in a costly remediation process. No estimate on the potential cost has been determined.

Green City, Clean Waters Program

The city signed a consent order and agreement (the COA) with the DEP in 2011 requiring the city to address combined sewer overflows (CSOs) over a 25-year period ending in fiscal 2036. Terms of the agreement, including total cost and timeline, are considered by Fitch to be generally favorable when compared to alternative, likely more costly strategies.

The city's long-term control plan to substantially eliminate CSOs is reflected in its Green City, Clean Waters Program (the program). Under the program, the city will continue to implement green technologies, including significant increases to the number of greened acres (9,600 in total) throughout the city as a means to capture rainwater runoff that would otherwise overwhelm the utility's combined sewers and pollute the city's waterways. The program also includes wastewater treatment facility enhancements, pipe renewal and replacement and the offer of a credit to customers willing to reduce the amount of impervious area on their property.

The COA sets the ultimate water quality goal as the elimination or removal of pollutants that otherwise would be removed by the capture of 85% by volume (average citywide) of the combined sewage collected in the city's combined sewer system during precipitation events. To that end, the COA requires water quality milestones to be met in five-year intervals. The milestones require the city to green a certain number of acres, reduce overflow volume and line a certain number of miles of interceptor. The city met the first five-year milestone, including construction of more than 800 greened acres, and management believes it is on track to meet the second five-year interim milestone in 2021. Fitch will continue to monitor the city's performance as the project milestones escalate.

The COA provides the city with some flexibility. Escalation of COA costs in excess of 2.27% of the city's MHI would allow the city to petition the DEP for an extension of time to complete the COA so the financial burden does not become excessive on ratepayers. While fines may result for non-compliance with any of the milestones, the amounts would not be significant. Fitch notes that COA costs used to calculate the percentage of MHI are based on the monthly sewer charge only.

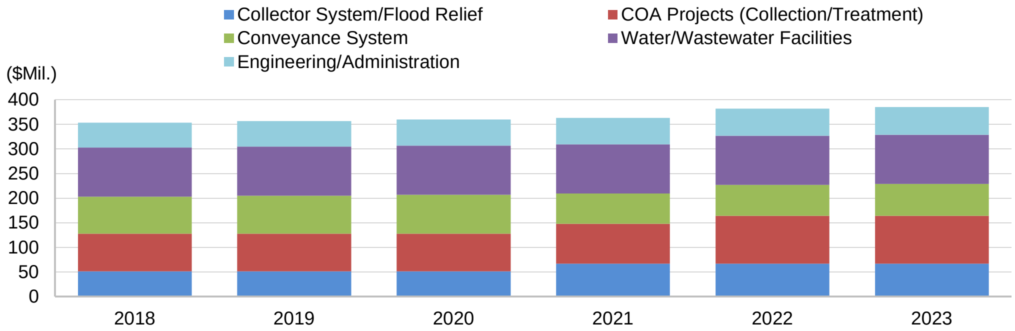
Environmental Regulations, R&R Drive Large Capital Program

Typical of most large, older urban combined utilities facing combined sewer overflow mitigation and long-term renewal and replacement issues, PWD's capital improvement plan (CIP) is substantial. Projected capital spending spanning fiscal years 2018–2023 totals $2.2 billion, or $366 million on average per year, and is over 20% higher than the CIP two years earlier. As only roughly 22% of the current CIP addresses CAO projects and infrastructure rehab and replacement are expected to be ongoing, Fitch expects capital spending will further increase over the intermediate term.

Water and wastewater treatment plant upgrades together with the COA and related long-term control plan projects account for the vast majority of planned spending and continue to be the primary drivers behind the ongoing escalation in costs. Other spending priorities include PWD's efforts to increase its sewer pipe and water main replacement programs to keep pace with the city's aging infrastructure. The city's average age of plant remains high at 22 years. However, much of the city's sewer collection system consists of brick sewer lines that typically have very long useful lives.

The current capital plan continues a trend of relying heavily on long-term debt as a funding source, primarily the result of modest operating margins and narrow debt service coverage that yield modest amounts of excess cash flow for pay-as-you-go capital funding. Including the current issuance, approximately 80% of project costs over the next six years will be financed with annual bond issuances averaging nearly $308 million through fiscal 2022. Equity contributions will fund the balance.

Capital Improvement Plan



Source: Philadelphia Water Department.

Debt Burden to Rise

PWD's debt burden is currently manageable but expected to rise significantly over time. As of fiscal year-end 2016, PWD had $1.8 billion of mostly fixed-rate long-term revenue bonds and $135 million in Pennsylvania Infrastructure Investment Authority loans outstanding. The utility's ratio of debt to net plant totaled 88% in fiscal 2016, which slightly exceeds Fitch's rating category median of 76%.

Debt to funds available for debt service was 7.5x as compared to the Fitch rating category median of 9.1x. Debt per customer, which includes an approximation of the number of retail customers served through wholesale contract, remains below the rating category median for the 'A' category at approximately $1,549 in fiscal 2016. However, Fitch expects all debt metrics to rise as PWD relies heavily on long-term debt as a funding source, primarily the result of narrow debt service coverage margins that yield modest amounts of excess cash flow. Including the current issuance, approximately 80% of project costs over the next six years will be financed with debt; annual bond issuances are projected to average roughly $308 million annually through fiscal 2022.

With long-term capital needs escalating, Fitch anticipates the amount of future debt will continue to outpace the rate of amortization of bonds outstanding, leading to a steady rise in leverage over time. Fitch believes the continued escalation in the size of the CIP, coupled with a strategy of funding capital costs almost entirely with long-term debt, could eventually begin pressuring financial margins.

Exposure to variable-rate debt and derivatives diminished significantly in recent years as management has taken a more conservative approach to debt management. As a result, total variable-rate debt comprises just 4% of the system's total debt portfolio, down from a peak of 30% in prior years. The system is party to a fixed payer swap with Citigroup (parent IDR rated 'A'/Stable by Fitch) as the counterparty. The notional amount is $51.6 million and the mark-to-market valuation is negative $1.5 million (as of June 30, 2016). The swap will terminate on Aug. 1, 2018 or may be terminated early by PWD if Citigroup's rating falls below 'A3'/'A–', or by Citigroup if PWD's rating falls below the same rating threshold (following a 30-day cure period).

Swap termination payments are subordinate to payment of senior-lien obligations, and there are no collateral posting requirements. If required, the city could easily absorb having to make a termination payment based on PWD's strong liquidity adjusted for swap exposure.

Charges and Rate Affordability

Rates for service generally consist of a service charge based on meter size as well as declining block consumption charges. Typical of most storm charges nationally, stormwater fees are based on a property's impervious surface area. Historically, management has typically taken a measured approach to raising rates, leading to combined charges that Fitch considers to be affordable for the majority of the rate base.

Consistent Rate Action

Financial margins have remained consistent as a result of regular annual rate action over at least the past 12 years. In early 2016, the rate board approved 5.1% and 4.5% increases for fiscals 2017 and 2018. The Philadelphia Water, Sewer and Storm Water Rate Board (the rate board), an independent rate-making body responsible for fixing and regulating water, sewer and stormwater rates, was established in 2014. The rate board has full rate-setting authority, and its decision regarding proposed rate adjustments must be made no later than 120 days following a rate filing. Rate board members are appointed by the mayor and approved by city council. Management reports that the rate approval process with the new rate board was timely and smooth. Fitch expects PWD's ability to continue to enact needed rate action to support planned capital spending is unchanged under the new process.

Before the rate board was created, PWD last established rates independently in fiscal 2012 by adopting a four-year rate plan that increased rates through fiscal 2015. Despite more than a decade of rate adjustments, including a 5.1% increase for fiscal 2017, the average monthly combined bill for water, sewer and storm remains fairly affordable at $74 per month (for 4,500 gallons), equal to approximately 2% of the city's MHI.

PWD continues to struggle with below-average collection rates. With delinquent collections factored in, roughly 95% of budgeted revenues are collected each year. Implementation of an income-based water rate assistance program within the current forecast period could aid in reducing receivables and increasing collections, although any improvement on both fronts would likely be offset by reduced rate revenue, which PWD estimates will be equal to roughly 2% of total revenue. Rates for fiscal years 2017 and 2018 factor in this anticipated loss of revenues.

Financial Performance

Fitch considers PWD's financial operations to be well managed, despite historically narrow DSC levels. Management budgets to meet a 1.3x DSC target, which in some years requires transfers from the rate stabilization fund (RSF) to balance lower projected cash flow amounts.

Depending on yearly customer demand, collections and containment of operating expenditures, the RSF is utilized to supplement operating revenues. However, rate revenues have historically covered annual debt service obligations by a satisfactory margin without the use of the RSF. Financial projections have historically shown annual drawdowns of the RSF, although actual results have either reduced or eliminated the need for the planned transfers.

Operating results for fiscal 2016 were in line with prior projections, continuing a consistent trend of satisfactory financial performance. DSC declined slightly to 1.2x from fiscal 2015's 1.3x, leaving the RSF largely unchanged at $205.7 million. Fitch's DSC calculation incorporates below the line transfers out of the water and sewer fund related to various contractual obligations. Total available liquidity, which includes the RSF, PWD's residual fund and unrestricted cash and investments also showed modest improvement, increasing to a robust 265 days of cash on hand. Fitch's DSC calculation incorporates below the line transfers out of the water and sewer fund related to various contractual obligations.

Financial Projections

Updated projected financial results provided by PWD's rate consultant show a continued trend of low but stable coverage and acceptable liquidity levels through fiscal 2022. DSC net of RSF transfers is forecast to remain in a relatively weak range of 1.15x–1.20x in fiscal years 2017 and 2018. DSC improves in fiscal 2019 as a scheduled decline in debt service is expected to lead to coverage of 1.30x–1.40x (not including RSF transfers). With sizable long-term capital spending needs and cost recovery expected to remain steady, stronger financial results are not anticipated.

RSF balances are anticipated to decline slightly with a projected ending balance in fiscal 2022 of $184 million. While liquidity will fluctuate somewhat over the next few years, Fitch expects PWD to sustain cash at levels generally consistent with the current 'A+' rating.

Assumptions built into the forecast appear reasonable, although anticipated future rate increases will depend on rate board approval. The rate board's approval of increases for fiscal years 2017 and 2018 are viewed positively by Fitch, and the board's role in rate approval is largely viewed to be neutral to the revenue bond rating. Modest declines in consumption are incorporated into the projections, and no additional growth in customer accounts is assumed.

Covenants

Security

The current offering and outstanding parity bonds are secured by a first lien on net revenues of the combined water and sewer system.

Rate Covenant

The rate covenant requires that rates, charges and fees be sufficient to yield net revenues at least equal to 1.2x senior-lien annual debt service (ADS) and 1.0x all-in ADS and all required deposits.

Additional Bonds Test

Additional parity debt can be issued if a consulting engineer certifies that with the issuance of the additional bonds, the rate covenant will be satisfied in the fiscal year the debt is issued in addition to the following two fiscal years. If capitalized interest is part of the debt structure, the two-year lookout provision begins the year after the capitalized interest period ends.

Debt Service Reserve Fund

The current offering will carry a cash-funded debt service reserve fund (DSRF). The DSRF requirement is the lesser of maximum annual debt service or the maximum amount permitted to be deposited under IRS regulations. Outstanding parity bonds carry a parity reserve that is fully funded with over $200 million in cash and accrued interest.

Financial Summary
($000, Audited Fiscal Years Ended June 30)

	2011	2012	2013	2014	2015	2016
Balance Sheet						
Unrestricted Cash and Investments	60,994	80,654	82,524	71,166	80,070	79,074
Other Unrestricted Current Assets	39,788	31,646	146,613	140,383	147,747	141,670
Available Restricted Cash and Investments	191,963	210,551	162,311	210,008	221,383	220,890
Current Liabilities Payable from Unrestricted Assets	(186,826)	(200,381)	(211,872)	(214,671)	(225,234)	(238,542)
Net Working Capital	**105,919**	**122,470**	**179,576**	**206,886**	**223,966**	**203,092**
Net Fixed Assets	1,886,726	1,938,001	2,019,350	2,070,492	2,149,680	2,230,233
Net Long-Term Debt Outstanding	1,739,179	1,819,891	1,830,387	1,935,252	2,110,797	1,967,114
Operating Statement						
Operating Revenues	558,483	601,801	610,988	639,974	676,867	670,820
Non-Operating Revenues Available for Debt Service	4,659	3,334	12,079	4,207	3,732	5,850
Connection Fees	2,038	—	—	—	—	—
Total Revenues Available for Debt Service	**565,180**	**605,135**	**623,067**	**644,181**	**680,599**	**676,670**
Operating Expenditures (Excluding Depreciation)	337,241	328,289	366,789	383,019	406,786	413,894
Depreciation	86,924	92,113	89,045	90,523	103,763	101,711
Fitch-Calculated Operating Income	**141,015**	**184,733**	**167,233**	**170,639**	**170,050**	**161,065**
Net Revenues Available for Debt Service	**227,939**	**276,846**	**256,278**	**261,162**	**273,813**	**262,776**
All-In Annual Debt Service (ADS)	185,500	192,400	201,000	201,710	205,270	219,304
Financial Statistics						
All-In ADS (x)	1.23	1.44	1.28	1.29	1.33	1.20
Days Cash on Hand	274	324	244	268	270	265
Days Working Capital	115	136	179	197	201	179
Debt/Net Plant (%)	92	94	91	93	98	88
Outstanding Long-Term Debt Per Customer ($)	1,337	1,401	1,410	1,549	1,663	1,549
Free Cash/Depreciation (%)	49	92	62	66	66	43

Note: Fitch may have reclassified certain financial statement items for analytical purposes.

Source: Philadelphia and Fitch.

The ratings above were solicited by, or on behalf of, the issuer, and therefore, Fitch has been compensated for the provision of the ratings.