

Green Evaluation

Capital Region Water Series 2017 Sewer System Revenue Bonds

Transaction Overview

Capital Region Water (CRW), which provides water and wastewater treatment service to the Harrisburg, Pa., area, issued \$44 million in 2017 sewer system revenue bonds to refund \$29.7 million in 2014 revenue bonds; fund \$19.5 million in certain capital improvements with respect to the wastewater treatment system; fund a debt-service reserve; and pay the cost of issuance. The issue date was May 18, 2017, with a final maturity of July 15, 2047. The 2017 bonds were not labelled green bonds, but S&P Global Ratings views all proceeds to be used for capital improvements to the wastewater treatment system as eligible to be evaluated under our analytic approach for a Green Evaluation. The 2014 revenue bonds were issued principally to finance the costs of the Advanced Wastewater Treatment Facility (AWTF) Improvement Project; other funds in the 2014 issuance and some of the 2017 proceeds are also used for other portions of CRW's long-term wastewater treatment system capital-improvement plan.

Entity: Capital Region Water
ICB subsector: N.A.
Location (HQ): U.S.
Financing value: US\$44 million
Proportion evaluated: 100%
Evaluation date: July 26, 2017
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Green Evaluation Overview

Transparency

- Use of proceeds reporting
 - Reporting comprehensiveness
- 57**

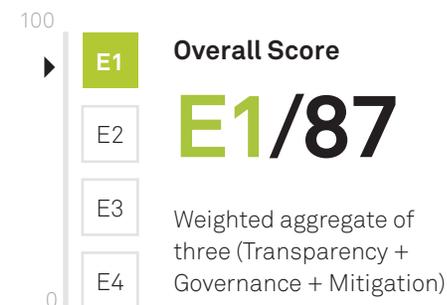
Governance

- Management of proceeds
 - Impact Assessment Structure
- 83**

Mitigation

Sector	→ Net Benefit Ranking	→ Hierarchy overlay	97
Water	Increasing availability of fresh water		

Adaptation **NA**



Project Description

Projects funded by the proceeds of the 2017 bonds make a number of improvements to water quality and storm water and wastewater management in the Chesapeake Bay watershed. All proceeds are used to refund debt associated with improvements to the AWTF and make other improvements to flow management and wastewater treatment system operations.

The 2014 revenue bonds being refunded with the 2017 issuance were used principally to finance the AWTF Improvement Project. The AWTF treats an average of 22 million gallons of sewage per day (mgd) for 120,000 residents in Harrisburg, Lower Paxton, Susquehanna, Swatara, Paxtang, Penbrook, and Steelton, and it is capable of treating 45 mgd. The treatment plant was initially constructed in 1959, and in 1979, anaerobic digesters were installed to capture of solids from primary treatment and convert them to methane. The methane is used to run generators, producing electricity and helping heat buildings located at the plant. The 2014 AWTF improvement project added biological nutrient removal to the existing processes to achieve nitrogen and phosphorus removal to comply with both the Chesapeake Bay Tributary Strategy and new National Pollutant Discharge Elimination Standards. The improvement project, financed using proceeds of the 2014 sewer system revenue bonds as well as other sources of funds, added new treatment units to reduce nitrogen pollution by 90% and suspended solids by nearly half. Prior to the construction of the 2014 improvements, CRW's AWTF's process limitations yielded ammonia nitrogen permit exceedances during summer months. The nutrient removal processes that were put into service at the upgraded facility in 2016 provide capacity for complete nitrification and enhanced denitrification, eliminating the potential for future exceedances. With the completion of the upgrade, CRW is now positioned to generate nutrient credits for sale should favorable markets emerge.

The remaining proceeds of the 2017 and 2014 revenue bonds are being used for other projects in the wastewater treatment system capital improvement plan. The 2017 capital plan includes additional projects to improve the AWTF, including enhancements to the cogeneration facilities; improvements to the conveyance system including pump station improvements and line repairs; planning and combined sewer overflow (CSO) outfall remediation; and the continued development and implementation of GIS mapping of the system to improve system efficiency and operations. Flow

control improvements are part of the CSO long-term control plan required by the partial consent decree negotiated with the U.S. Department of Justice, U.S. EPA, and Pennsylvania Department of Environmental Protection.

Scoring Summary

This transaction received an overall score of E1/87, which is the strongest Green Evaluation score on our scale of E1 (highest) to E4 (lowest). This score is determined by taking a weighted aggregate of the very strong Governance (83) and average Transparency (57) assessments and excellent Mitigation score (97). In our view, the project's favorable positive impact on water savings as well as the nature of its broad, system-wide enhancements position it at the top end of our water hierarchy.

Rationale

Summary

- The facility's Environmental Impact (mitigation) is ranked high compared to peers given that the AWTF and wastewater treatment system improvements will be a strong contributor to water quality and ameliorate water stress in the region.
- The solid Governance score reflects the retention of funds in a separate system construction account as well as the narrow authorization of CRW to provide water and wastewater treatment services. Such pure play entities receive scoring benefits under our analytical approach, as the potential use of proceeds is already constrained.
- Transparency is average and reflects standard disclosure of the environmental performance of the system, regulatory requirements, and disclosure of the CRW capital plan.

Key Strengths And Weaknesses

In our view, the water-related mitigation projects focus on using water resources and networks more efficiently and improving the quality of water treatment for various end uses and the environment. Therefore, the key environmental impact can be more efficient water use or distribution, increased levels of water recycling, and improved water treatment compared with the baseline scenario. Importantly, our evaluation takes into account regional baseline water stress

(the ratio of total annual water withdrawals to total available annual renewable supply of water). Baseline water stress for Pennsylvania outside of major metropolitan areas is medium as compared to, for instance, Oakland, Calif., which has extremely high water stress. The lower water stress in Pennsylvania somewhat moderates our Net Benefit Ranking (88) compared with other similar projects globally, but it is still very strong. Nevertheless, because of the system-wide nature of this project, we rank it at the top end of our water hierarchy, significantly enhancing the final Mitigation score of 97.

The robust Governance score reflects the single-purpose nature of CRW as a public water and wastewater treatment authority. New money proceeds will be spent for the capital plan, which focuses on improvements to system collection, transmission, and overall system operations and management; funds for capital expenditures are segregated in a separate account. However, the system does not have specific criteria or policies to determine whether to invest in green or grey forms of wastewater infrastructure, and it has no external review or validation of the allocation of proceeds. At the same time, we expect the system-wide environmental impact will be reported, including the AWTF and associated wastewater system assets. CRW has a track record of providing data on water quality outcomes both due to regulatory requirements and as a public information benefit to

customers. Data on AWTF capacity and usage is regulatory reported with financial results.

We view the project's Transparency (use of proceeds reporting and impact reporting) as average. CRW's status as a public water and wastewater utility also supports the transparency score: CRW's authorization already restricts the potential uses of funds, and regulatory requirements necessitate regular reporting on the environmental performance of the wastewater treatment system. Bond proceeds will be used to refund past AWTF and system improvements, which enhance transparency about the allocation of past financing, which is positive. Information about the system capital plan is updated annually, which provides greater disclosure about the use of proceeds for non-AWTF expenditures. There is public and regulatory oversight of system performance, and additional monitoring and disclosure to show compliance with environmental regulations and implementation of the partial consent decree. The transparency score is constrained because CWR does not estimate or track the environmental impact of investments specifically associated with the 2017 series, the disbursement status of proceeds, or, provide selection criteria for investments tied to the environmental objectives of the issuance. Labeled green bonds often provide such disclosures.

Sector level score

Sector	Location	Technology	Use of Proceeds (US\$ Mil.)	Use of Proceeds treatment	Net Benefit Ranking
Water	Pennsylvania	Waste water treatment with energy recovery	44	Actual	88
			44		

Green Evaluation Process

57

Transparency

83

Governance

97

Mitigation

Weighted aggregate of three
(Transparency + Governance + Mitigation)

E1/87

Overall score

Technology category	Baseline water stress	Net Benefit Ranking	Water hierarchy adjustment	Environmental Impact Score	Proceeds (US\$ Mil.)
	High  Low Pennsylvania				
Recycling wastewater to supply municipal water			System enhancements		
Recycling wastewater for water (agricultural uses)					
Recycling wastewater for water (other uses)					
Wastewater treatment with no energy recovery					
Wastewater treatment with energy recovery		88	System enhancements	97	44
Reducing water losses in the water distribution network			Marginal system enhancements		
Water desalination to supply municipal water			Enhancements with significant negative impacts		
Conservation measure in residential buildings			Demand-side improvements		
Conservation measure in commercial buildings					
Conservation measure in industrial buildings					
Smart metering in residential buildings					
Technology category	Baseline carbon intensity	Net Benefit Ranking	Carbon hierarchy adjustment	Environmental Impact Score	Proceeds (US\$ Mil.)
Carbon			Carbon		

Scores may vary slightly from the actual due to rounding.

Our Green Evaluation Approach

Weighted aggregate of three:



Common approach used amongst second opinion providers



Final Green Evaluation (E1 - E4 or R1 - R4)

eKPI – Environmental Key Performance Indicator

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