U.S. Water and Sewer Rating Criteria

Sector-Specific Criteria

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This report replaces "U.S. Water and Sewer Rating Criteria," dated Nov. 30, 2017.

Related Criteria

Rating Criteria for Public-Sector, Revenue-Supported Debt (February 2018)

U.S. Public Finance Tax-Supported Rating Criteria (April 2018)

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Scope

This criteria report details Fitch Ratings' approach to rating new and existing debt issued by U.S. municipal water and sewer (sanitary and stormwater) utilities whose activities support essential public services and whose debt is intended to be repaid from the utility's own revenues or resources. Utility revenues and resources may be derived from various sources, including charges for services, public grants and tax support.

Ratings under these criteria are international scale ratings and are typically assigned to individual debt instruments and are therefore issue ratings. Fitch's issue ratings on water and sewer debt obligations are assessed on a stand-alone basis and are not explicitly connected to the rating of any parent municipality unless specific linkages are identified that would cause the rating to be limited by the parent municipality (for example, significant transfers from the utility to the parent municipality that impairs or severely weakens utility operations). Ratings under these criteria are applicable to all water and sewer utilities, although particular aspects of these criteria may have more or less applicability depending on the type of operations and related risks of a given utility. Ratings under these criteria may also be applied in conjunction with the "U.S. Public Finance Tax-Supported Rating Criteria."

Key Rating Drivers

Revenue Defensibility: Fitch's analysis addresses the ability of a utility to generate cash flow based on its legal framework and fundamental economics. Fitch will evaluate demand and pricing characteristics that influence revenue volatility and the tools available to the utility to respond to fluctuation in demand.

Operating Risks: Fitch's analysis considers the issuer's operating profile, including predictability and volatility of costs, life cycle/capital renewal risks, key resource cost risks and the ability to manage growth in costs over time.

Financial Profile: Fitch assesses the level of financial flexibility that an issuer can sustain as it encounters stresses expected to occur over the relevant forecast period. Metrics are used to evaluate the issuer's operating margins, liquidity profile and overall leverage in the context of the issuer's overall risk profile. This area of the analysis includes the majority of Fitch's key ratios. As a result, the financial profile of a utility is a primary determinant in the rating outcome.

Asymmetric Risk Factors: Risk factors such as debt structure, management and governance, legal and regulatory are also considered when assigning a rating. These risk factors are not scaled, and only weaker characteristics impact the rating.

Revenue Defensibility

Charges and Rate Affordability

In assessing revenue defensibility, Fitch assesses the rate approval process and general relationship with the utility's rate-making body. A major credit strength of most municipal utilities is local control over rate setting without required approval from outside parties. Still, situations may arise where local authorities may be subject to other community interests or political pressures, which could negatively affect the rating. For example, a lengthy rate review process, a demonstrated reluctance by rate-making officials to adjust charges in line with increasing costs, or an added layer of oversight from an external rate-regulatory body could hinder timely cost recovery. Similarly, the involvement of influential consumer councils in rate setting could further limit financial flexibility.

Most utilities bill customers based on a fixed amount (that is, a readiness-to-serve charge) and a volumetric rate relative to actual usage. Because systems with greater percentages of fixed charges have less volatility in their revenue streams than systems that rely extensively or completely on volumetric charges, utilities whose fixed-charge components generate a significant amount (30% or more) of their revenue streams are considered stronger.

Because the financial health of a utility depends on the receipt of revenues for services rendered, Fitch considers the development and maintenance of adequate billing and collection measures an imperative to investment-grade credit quality. Consequently, inadequate practices include failure to meter customers or to replace aging meters. Fitch also considers the existence of policies regarding the termination of service for unpaid accounts and a utility's practice of acting on those policies when necessary. In cases where accounts receivable (expressed as days of operating revenues) are significantly high in relation to a utility's billing cycle (for example, 2.0x or higher), this could negatively affect a rating.

Fitch also assesses affordability of residential charges, which generally comprises the bulk of utility revenues. Fitch generally considers rates for service higher than 1% of median household income (MHI) for an individual water, sewer and stormwater utility (based on 7,500 gallons of water usage and 6,000 gallons of sewer flows per month) to be financially burdensome. Fitch may also utilize the cost of service from other comparable utilities in the region, where available, in measuring relative affordability given a regional comparison may act as a counterbalance to the 1% threshold where rates overall are above average but well within local norms or, conversely, low to moderate overall but at or near 1% of MHI. Utilities with charges that are considered high by Fitch could face rating pressure, particularly if ongoing rate adjustments are necessary to support mandated capital requirements. However, concerns may be mitigated to some extent in situations where there is limited pushback from customers and governing officials.

For wholesale providers, Fitch focuses on the relevant service contracts to understand the nature of the related obligations and to assess the terms. This includes an evaluation of the expiration and renewal terms of the contracts relative to the final maturity of a wholesaler's outstanding bonds. Debt maturities beyond the terms of the agreements generally are considered a negative rating factor given the uncertainty of sufficient revenue to meet debt service post-expiration. In these cases, Fitch will evaluate the likelihood of contract renewal, as well as the viability of the assets or enterprise to generate alternative revenue sufficient to meet debt service.

The credit quality of the purchasing utilities is also an important consideration when rating wholesale providers because the corresponding payments enable the wholesalers to meet their obligations on a full and timely basis. The ability and willingness of purchasers to make their required payments must therefore be considered. The degree to which a wholesaler's rating is influenced by the credit quality of any individual purchaser (or subset of purchasers) is determined by the specific terms of the contract and the nature of the obligation.

Contract obligations are typically characterized as take-and-pay or take-or-pay. Under take-and-pay contracts, a purchaser's payment obligation is not unconditional, but contingent upon the delivery of service and/or water supplies provided. Fitch expects wholesale utilities providing services through take-and-pay contracts will be required to set rates sufficient to meet debt service requirements. Rates must therefore be adjusted to account for nonpayment by a member system or changes in retailer demands. This provides an implicit or explicit unlimited step-up requirement for participating systems to mitigate operational risk. Consequently, ratings for wholesalers providing service under take-and-pay contracts are generally less sensitive to the credit quality of individual purchasers. Instead, the ratings broadly reflect the credit quality of the pool, or its largest purchasers, given the default protection provided by unlimited step-up provisions.

Take-or-pay contracts are often used to finance individual projects or particular systems. Under these contracts, purchasers usually are obligated to pay a fixed percentage of the project or system costs, including debt service, which corresponds to their allocated ownership interest or percentage of output. Payments by purchasers typically are subject to limited or no step-up provisions. Consequently, a wholesaler's ability to meet its obligations, including debt service, depends on each participant meeting its required payment, making the ratings more sensitive to individual purchaser credit quality. In these cases, the rating for a take-or-pay provider will generally reflect the credit quality of the weakest purchaser or purchasers after factoring the applicable step-up provision.

Where a step-up provision is insufficient to cover an individual purchaser's obligations if it were to default, the wholesaler's rating may be capped by the credit quality of that purchaser. For example, if a wholesaler's step-up is limited to 25%, then that wholesaler's ability to meet debt service obligations would be highly reliant on payments from any purchaser with an allocated share higher than 20%. Stepping up the required payments from the remaining systems responsible for less than 80% of the project costs by 25% would likely result in a shortfall in revenue.

If a wholesaler is highly reliant on more than one purchaser (that is, each purchaser has an allocated share of more than 20% in the case above), then the wholesaler's rating may be capped by the credit quality of the weakest of those purchasers. Although reserve funds could be used to avert an immediate default on the supplier's debt obligations, the long-term rating reflects the likelihood of payment through final maturity.

Fitch seeks to assess the credit quality of purchasing or member utilities using all available information, including public and private disclosure. In the absence of a Fitch public rating of a purchasing system, Fitch may assign its own rating or credit opinion, consider ratings of the local government or other related enterprises, refer to ratings from other nationally recognized credit rating agencies, or rely on comparative peer metric reviews in determining credit quality.

Community Characteristics

The service area economy and customer base characteristics are part of the rating analysis since the essentiality of the enterprises' services provides localities with a de facto ability to tax for their provisions. Quantitative factors related to the analysis of this particular area typically include employment/unemployment statistics, wealth levels in the form of median household income, poverty rates and an evaluation of major employers relative to the total employment base. The highest rated utilities typically reflect service areas with broad economies and broad and diverse customer bases, since they are less vulnerable to sectoral downturns and cyclical economic shifts.

Attributes: Revenue Defensibility

Stronger	• Residential charges for individual or combined water/sewer utilities less than or equal to 0.6% or 1.2% of MHI, respectively. • Approximately 30% or more of revenues recovered through fixed base charges. • Customer accounts stable or growing less than 1% annually. • Top 10 customers for retail utilities represent 5% or less of system revenues and no customer accounts for more than 2% of system revenues. • Unbilled/unaccounted for water of less than 10%. • Service territory MHI equal to 110% or more of the state and/or nation.
Midrange	• Residential charges for individual or combined water/sewer utilities of about 0.8% or 1.5% of MHI, respectively. • Approximately 15% of revenues recovered through fixed base charges. • Customer account growth of 1%–3% annually. • Top 10 customers for retail utilities represent approximately 10% of system revenues and no customer accounts for more than 5% of system revenues. • Unbilled/unaccounted for water of about 12%. • Service territory MHI equal to around 100% of the state and/or nation.
Weaker	• Residential charges for individual or combined water/sewer utilities in excess of 1.0% or 2.0% of MHI, respectively. • Little or no revenues recovered through fixed base charges. • Customer accounts declining or growth in excess of 3% annually. • Top 10 customers for retail utilities represent over 20% of system revenues and/or individual customer concentration accounts for 10% or more of system revenues. • Unbilled/unaccounted for water exceeds 15%. • Service territory MHI equal to 85% or less of the state and/or nation.

Note: Stronger attributes are typically associated with issuers exhibiting ‘AAA’ credit quality; midrange, ‘AA’ credit quality; weaker, ‘A’ and below credit quality.
Source: Fitch Ratings.

Customer Growth and Concentration

A central component of a utility’s revenue profile, also affecting its operating profile, is the level of growth of a utility’s residential, commercial, industrial and government customer bases, as well as the utility’s customer concentration. In terms of growth, demonstrated steady increases of end-users are considered positive from a credit perspective, given projecting financial results and planning for needed improvements or expansions are generally easier in such stable environments. Conversely, high-growth and declining customer bases are more likely to affect a rating negatively, as they can pressure the financial and capital decisions of a utility. Fitch considers annual growth rates above 3% to be challenging to plan for in regard to capacity or water supplies, whereas rates of 1% and under are viewed as stable; annual growth rates between 1% and 3% are seen as moderate.

In a declining service base environment, customer concentration may ultimately lead to the loss of significant revenues with the departure of a single customer or downturn in a particular industry. This is considered a negative characteristic in the analysis. To this end, Fitch evaluates concentration levels in light of a service area’s economic focus and sector concentration among the users. Volatility in the service base can be most severe when the largest customers, particularly industrial entities, exit a community or substantially downsize operations. In such a case, a utility not only would face pressures from the loss of revenues of such large users, but also may be constrained to increase rates because of elevated unemployment among its residential customers. In general, Fitch views revenue concentration within retail systems from the top 10 customers in excess of 20% as high. Fitch also considers concentration in excess of 5% from any individual customer as high.

Following on from the above assessment of revenue growth, a high-growth environment poses special challenges in terms of the timing and funding of capital improvements. As a community expands, water and wastewater infrastructure must often be built in advance of growth and/or additional water supplies or treatment capacity must be developed. Potential vulnerabilities include instances when growth does not occur as fast as anticipated. In such cases, user charges will likely be raised for existing customers to cover debt and operating costs. Not only can this provoke political and rate pressure for the utility, potentially resulting in strained financial margins, but it can also reduce the community's attractiveness to new residents and businesses, compounding the growth challenge. On the other end of the spectrum, Fitch considers the pressure associated with a declining customer base. Utilities with long-term planning practices in place may find savings through cost or personnel reduction and rely less on underused assets, when possible.

Operating Risks

Costs of Operations

A utility's ability to generate adequate margin, while maintaining competitive rates and preserving affordability, is dependent in part on its ability to manage operating expenses, including costs for purchased services, such as power, water supply and treatment, as well as labor costs. Fitch considers a utility's operating cost burden in the context of its cost flexibility, focusing on a utility's ability to limit growth escalation. Fitch also considers the level of transfer out to the parent municipality as part of its analysis given the expectation these payments would continue to be made, even during periods of financial stress.

Capacity

Fitch considers treatment capacity available to service demands and contracted requirements as related capital expansion costs will likely be required once available capacity falls below 120% of demands. Fitch's criteria also consider a utility's comprehensive plans to maintain existing facilities and replace aging or obsolete assets. Consequently, Fitch views trends of deferred maintenance as a credit risk. Fitch evaluates a utility's annual depreciation in relation to its total historical depreciation of fixed assets to determine the age of plant. Fitch also compares a utility's annual capital expenditures in relation to depreciation for the year to gauge the amount of ongoing capital investment. Utilities with aging infrastructure or annual capital spending that regularly falls below the amount of annual depreciated assets may require substantial upgrades over time to maintain regulatory compliance. Another quantitative indicator is the amount of treated but unbilled water distributed. Water utilities regularly replacing aging pipelines should experience unbilled water rates at or below the 10%–12% typically seen within the industry.

The availability of adequate water supplies is critical for a utility to meet its customer demands. Credit quality is enhanced for utilities that demonstrate a sustainable long-term supply to meet current and expected future growth needs. Alternatively, negative credit implications arise for utilities whose resources may be insufficient to meet ongoing demands or allow for continued economic development.

Attributes: Operating Risks

Stronger	• Transfers to the parent municipality equal to less than 2% of operating revenues. • Treatment capacity in excess of 140% of demand or flows. • Annual renewal of 100% or more of depreciated assets. • Full compliance with regulatory requirements. • Existing and five-year projected debt per customer of $1,200 or less. • Existing and five-year projected debt per capita of $350 or less. • Total outstanding debt to net plant assets of 25% or less. • Debt funding of capital of 35% or less. • Amortization of principal equal to 90% or greater over the ensuing 20 years.
Midrange	• Transfers to the parent municipality of between 2%–5% of operating revenues. • Treatment capacity of about 130% of demand or flows. • Some deferred maintenance. • Limited noncompliance with regulatory requirements. • Existing and five-year projected debt per customer of approximately $1,800. • Existing and five-year projected debt per capita of about $500. • Total outstanding debt to net plant assets of 45%. • Debt funding of capital of about 45%. • Amortization of principal of approximately 80% over the ensuing 20 years.
Weaker	• Transfers to the parent municipality greater than 5% of operating revenues. • Treatment capacity falls below 120% of demand or flows. • Significant deferred maintenance. • Material noncompliance with regulatory requirements, resulting in significant capital expenses and/or fines. • Existing and five-year projected debt per customer of $2,100 or greater. • Existing and five-year projected debt per capita of approximately $600 or greater. • Total outstanding debt to net plant assets of 65% or more. • Debt funding of capital of about 55% or more. • Amortization of principal of about 70% or less over the ensuing 20 years.

Note: Stronger attributes are typically associated with issuers exhibiting ‘AAA’ credit quality; midrange, ‘AA’ credit quality; weaker, ‘A’ and below credit quality.
Source: Fitch Ratings.

Compliance with Environmental Laws and Regulations

Mandates have been a dominant factor for sector credits since passage of the federal Clean Water Act in 1972 (as amended) and federal Safe Drinking Water Act in 1974 (as amended). Although regulatory requirements continue to pressure some enterprises, utilities can reduce credit risk by consistently attempting to predict and stay ahead of expected requirements at both the state and federal level given this typically provides more flexibility to utilities than acting while under the threat of orders and fines from regulatory bodies or the courts.

For utilities facing regulatory enforcement, Fitch evaluates in the rating process the events leading to enforcement, scope of the corrective plan, current stage of the corrective plan and projected timeline for completion. Fitch also focuses on the expected impact on ratepayers and management’s commitment to meeting the set milestones and returning to compliance.

Capital Demands and Debt Burden

Utilities are capital intensive with debt service burdens that often surpass those of general governments as measured by the percentage of revenues. Because of the burden capital and debt activities can have on a utility’s operating and financial profiles, resultant analysis directly affects an entity’s credit rating. Debt ratios are an overarching consideration, with such ratios compared with those of other utilities to help gauge relative capital needs and debt burden.

In general, utilities limiting debt exposure by utilizing annual pay-as-you-go funding, including excess user charges and growth-related fees, for a significant portion of their capital programs are considered stronger than those relying predominantly on debt. Elevated debt issuance over the near term may not adversely affect credit quality, although, in its projections, Fitch considers anticipated debt issuance in light of outstanding obligations, affordability levels and historical financial performance, as well as the need for financing such projects.

Key ratios used in evaluating an entity's debt burden include the measurement of outstanding debt on both a customer and per capita basis, as well as expected customer and per capita debt levels five years into the future; for wholesale systems, the measurement generally is limited to just debt per capita. Other ratios typically considered include the expected level of annual capital spending per customer through the capital improvement program (CIP) cycle, the percentage of debt funding relative to total CIP costs, and debt relative to equity and net plant assets. In addition, to gauge a utility's capacity for future debt issuances over the long term, Fitch evaluates the amortization rate of all debt payable from system revenues.

Financial Profile

Coverage and Financial Performance

Measuring an entity's revenues and expenditures relative to its debt, financial ratios serve as a primary indicator in a credit rating. These ratios are not only used to gauge current, historical and projected performance, but are also compared with those of other peer systems.

Attributes: Financial Profile

Stronger	• Total debt service coverage of approximately 2.5x or greater for retail systems and 1.5x or greater for wholesale utilities with take-and-pay contracts. • Coverage of all obligations of approximately 2.0x or greater for retail systems and 1.5x or greater for wholesale utilities with take-and-pay contracts. • Days cash and days of working capital equal to well over one year for retail systems and over 120 days for wholesale utilities with take-and-pay contracts. • Free cash relative to depreciation equal to 100% or greater. • Debt to FADS of around 4.0x or less for retail systems and of around 7.0x or less for wholesale utilities with take-and-pay contracts.
Midrange	• Total debt service coverage of approximately 2.0x for retail systems and approximately 1.3x for wholesale utilities with take-and-pay contracts. • Coverage of all obligations of approximately 1.5x for retail systems and approximately 1.3x for wholesale utilities with take-and-pay contracts. • Days cash and days of working capital of about one year for retail systems and around 75 days for wholesale utilities with take-and-pay contracts. • Free cash relative to depreciation equal to approximately 90%. • Debt to FADS of around 6.0x for retail systems and around 8.0x for wholesale utilities with take-and-pay contracts.
Weaker	• Total debt service coverage of approximately 1.5x or less for retail systems and less than 1.1x for wholesale utilities with take-and-pay contracts. • Coverage of all obligations of approximately 1.2x or less for retail systems and less than 1.1x for wholesale utilities with take-and-pay contracts. • Days cash and days of working capital of 180 days or less for retail systems and less than 60 days for wholesale utilities with take-and-pay contracts. • Free cash relative to depreciation equal to approximately 75% or less. • Debt to FADS of around 8.0x greater for retail systems and greater than 10.0x for wholesale utilities with take-and-pay contracts.

FADS – Funds available for debt service. Note: Coverage of full obligations takes into account off-balance sheet obligations and transfers to the parent municipality. Stronger attributes are typically associated with issuers exhibiting 'AAA' credit quality; midrange, 'AA' credit quality; weaker, 'A' and below credit quality.
Source: Fitch Ratings.

Fitch typically rates only the senior lien debt of an issuer, as subordinate debt is more commonly privately placed with a state revolving fund and not rated. However, Fitch reviews not only an entity's senior lien debt service coverage, but also coverage on all debt supported by the utility. This provides a more complete assessment of an entity's ability to pay all its obligations (that is, operating and debt) and generate adequate financial margins. Fitch takes into consideration all pledged revenues but also reviews coverage ratios without growth-sensitive revenues, such as connection fees, given their variability.

Systems meet their service requirements through a variety of arrangements. Most utilities own and operate their own water supply and treatment facilities and/or sewer treatment and disposal facilities, while others receive some or all required services through membership in municipal wholesalers. Fitch's analysis of utilities purchasing services includes an evaluation of the service provided and the related business risks in accordance with the criteria outlined in this report. Membership in a wholesale provider is generally viewed positively by Fitch, particularly for smaller systems, as wholesalers provide greater economies of scale and diversification of resources vis-à-vis asset ownership.

Financial metrics diverge widely with asset ownership and related borrowings. Utilities that have financed supply and system facilities on-balance sheet typically report lower debt service coverage and higher leverage metrics than systems that contract for water and/or sewer services. When rating water and sewer systems, Fitch factors contractual debt obligations in its analysis, particularly those issued by wholesalers or other third parties on behalf of its member systems and supported by service contracts. Financial metrics are adjusted for off-balance sheet obligations as appropriate to facilitate peer comparison. Fitch reviews all relevant service contracts to understand the nature of the related obligations and to assess the terms. Although a purchaser's payment obligation is not unconditional under a take-and-pay contract, as it is under a take-or-pay contract, Fitch does not generally distinguish between the obligations when evaluating a utility's financial metrics.

Fitch also performs cash flow scenario analyses, which include both an expected forecast as well as the expected forecast after application of a standardized stress. The stress scenario is used solely as an internal tool to inform financial performance in the event of a weakening operating environment and is not a key determiner of the final rating outcome. In the stress scenario, Fitch's applies a 2% decrease in forecast revenues in year 1 followed by an additional 1% decrease (i.e. 3% cumulative decrease) in forecast revenues in year 2. In year 3, revenues are assumed to improve slightly but remain 2% below forecast revenues. Years 4 and 5 assume revenues return to forecast results.

Other types of financial performance indicators evaluated by Fitch within its credit evaluation include growth in operating revenues and expenditures and the strength of the cash flows. Each of these ratios provides insight into the operations of the utility and serves to illuminate particular credit concerns. For example, growth in operating expenditures consistently outpacing that of operating revenues may signal that costs are not being adequately recovered in the rate structure. Also, cash flows consistently lower than the annual depreciation expense may signal that insufficient internal resources are being generated for renewal needs, which could lead to increased reliance on borrowable resources over time.

Wholesale providers exhibit financial metrics that in many cases are weaker than retail water/sewer systems for a given rating level, particularly those with take-or-pay projects where debt service coverage can be as low as 1.0x and cash balances held by the issuer may be limited. In general, Fitch believes the credit quality and strong contractual obligations of the member systems serve as mitigating factors to lower financial metrics of wholesalers.

For wholesalers with take-or-pay contracts, exceptionally strong project operating performance could potentially enhance the rating of a wholesaler above the level the purchaser evaluation would otherwise suggest, although such instances are rare. Conversely, poor operating characteristics would not necessarily result in a project rating lower than purchaser credit quality would suggest. Fitch's analysis assumes valid and binding take-or-pay obligations will be paid as required and any financial strain related to a poor-performing project would be separately reflected in the credit quality of the purchasers.

Fitch views long-term financial planning as a fundamental component for successful utility operations given long-range planning can clearly highlight future structural deficits necessitating revenue development, expenditure containment or both. Fitch believes stable utilities make such decisions in advance, as a result of financial forecasting, rather than on a reactive basis, under pressure and with increased political controversy.

Numerous factors can cause financial volatility, including variations in water supply, weather-related demand and economic cycles. Consequently, highly rated utilities set goals for appropriate financial margins, including items such as debt service coverage levels, debt affordability and reserve funding (such as rate stabilization, repair and rehabilitation, and operating reserves), and consistently establish rates and budgets that comply with their goals. Utilities operating in areas especially prone to rainfall volatility that consider the effect of such variability on their revenues and establish financial cushions or rate structures to deal with potential weather events are considered stronger than those that do not consider such risks.

Cash and Balance Sheet Considerations

A utility's cash and other available assets serve as key indicators of an entity's credit rating. For the most part, relevant ratios are designed to measure a utility's available liquid resources to meet near-term liabilities, particularly in the event of unforeseen hardships or difficult operating conditions. Because of the nature of these calculations, Fitch considers liquid resources to be current unrestricted assets, although credit may be given to noncurrent or restricted assets if they are available for general purposes at the discretion of the governing body (for example, a restricted operating reserve fund) and if Fitch is aware of such resources.

The key ratios Fitch uses in determining an entity's liquidity are days cash and days of working capital, which compare available resources with operating expenses. However, other measurements may also be used, including quick and current ratios, to gauge a utility's ability to meet near-term liabilities. Fitch also considers an entity's cash position relative to swap termination events to gauge the hardship such an event might pose to continued operating performance.

Asymmetric Risk Considerations

Contingent and Derivative Obligations

Fitch will evaluate the debt structure to identify liabilities from other sources, including derivatives identified in the audited and unaudited financial statements. Utilities with a perceived high degree of exposure (for example, a significant proportion of variable-rate debt and/or swaps relative to all outstanding debt or a high exposure of credit facilities with a single institution) and/or a perceived lack of understanding and ability to manage such exposure will face tighter scrutiny than those with little or no variable-rate obligations or swap agreements outstanding. In evaluating variable-rate and swap exposure Fitch evaluates lien payments of regular and termination payments, collateral posting requirements and cross-default provisions, and the ability to meet termination payments from unrestricted reserves.

Covenants

Fitch focuses on actual and likely future performance as opposed to minimum covenanted levels in debt instrument documentation. Consequently, risk factors in this area work asymmetrically, where only below-standard features are factored into the rating, while more credit-positive features are viewed as the norm with a neutral impact on the rating.

Fitch views standard bond covenants for retail utilities and most wholesale providers as those that limit parity bond issuance of either senior and/or subordinate lien obligations to instances when historical and/or projected revenues cover annual debt service (ADS) at least 1.1x and require 1.1x rate setting annually to cover both operations and debt service costs. Fitch also views 1.0x coverage of ADS from ongoing net revenues, excluding one-time sources such as connection fees, as standard for the additional bonds test and rate covenant. Additional covenants requiring debt service reserve funds and set-asides for operational, maintenance and other financial reserves are considered less standard but heighten prospects for stable financial management.

In nearly all cases, Fitch will consider financial performance on a net revenue basis even if a gross revenue debt security pledge is present, as creditworthy systems must reliably cover operating expenditures from the same revenue streams used to pay debt service. However, most retail and wholesale utilities comfortably exceed their covenant coverage and liquidity requirements and should continue to do so. For them, the focus of a rating review should be actual and likely future performance, not minimum covenanted performance in a stress scenario.

Covenants will be an increasingly greater credit factor for lower rated credits and in cases of declining credit quality. Consequently, any loosening or modernization of such covenants may be expected to have a negative impact on the credit rating in these instances.

Attributes: Asymmetric Risk Considerations

Neutral to risk assessment	• Rate covenant of 1.10x or more of ADS by net revenues. • Additional bonds test of 1.10x or more of ADS by historical or projected net revenues. • General stability, effectiveness and experience of leadership. • Limited to no political pressure from governing body. • Transparency and communication between management and governing body. • In the case of wholesale systems, coordinated efforts among member utility systems and the governing body. • History of forecasts and resource management plans. • Documented policies and procedures.
Negative to risk assessment	• Rate covenant of less than 1.10x ADS by net revenues and/or less than 1.0x ADS from recurring net revenues. • Additional bonds test of less than 1.10x coverage of ADS by historical or projected net revenues and/or less than 1.0x ADS from historical or projected recurring net revenues. • Lack of experience, depth and/or stability in leadership at the utility. • Significant political pressure in the underlying municipality or in the members' service areas. • Failure to maintain open communications between management and the governing body, which may reveal itself in unexpected, significant rate increases. • In the case of wholesale systems, significant discord between the wholesaler and its members that may affect utility operations. • Lack of forecasts and resource management plans. • Lack of policies and procedures.

Source: Fitch Ratings.

Crew

Fitch's evaluation of management and management practices includes a review of organizational policies and practices. Because sound management practices are critical to a utility's operations and affect all aspects of Fitch's rating criteria, Fitch's assessment in this area has an asymmetric impact on a utility's credit rating, with standard to above-standard performance considered credit neutral and below-standard performance considered a credit negative. In general, utilities exhibiting management practices that promote operational stability (including actions that limit expenditure escalation by anticipating future regulatory and growth/supply demands), reliably implement rate increases to cover operational and capital costs, and ensure sufficient liquidity to cope with unexpected sales shortfalls or emergency needs are expected to be the norm. Numerous management practices that affect credit quality are discussed and highlighted throughout this report, in addition to being summarized in Appendix B.

Rating Sensitivities

U.S. water and sewer ratings are subject to positive or negative adjustment based on actual utility experience. Below is a non-exhaustive list of the primary sensitivities that can influence water and sewer ratings.

- Supply/Demand Performance: Changes in supply levels and resulting sales performance can affect a utility's ability to earn projected revenues and potentially reduce its ability to service the debt.
- Price Risk: Lower than expected rate action could reduce the expected cash flow generation, affecting coverage and leverage metrics and ultimately weighing negatively on a utility's rating.
- Costs: Operating and capital expenditures that deviate materially from projections may indicate greater than expected cost volatility, higher than expected funding needs or a failure to properly estimate or fully capture all relevant cost items.

Data Sources

Key assumptions underlying these criteria are developed by the analysis of data on water and sewer utilities and their vulnerability to credit risk. This includes the analysis of the key rating drivers and their performance over prolonged periods, analytical conclusions drawn from financial reports, public and private sector information, and analytical information received from issuers and other market participants. Assumptions are derived from experienced analytical judgment using such information.

Fitch's analysis and rating decisions are based on relevant information available. The sources are the issuer, the arranger, financial advisory consultants, third-party engineers or consultants, and the public domain. This includes publicly available information on the issuer, such as audited and unaudited (for example, interim) financial statements and regulatory filings. The rating process can incorporate information provided by other third-party sources. If this information is material to the rating, the specific rating action will disclose the relevant source.

Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions and available at www.fitchratings.com.

Variations from Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

Appendix A: Key Ratios Used in the Rating Process

Ratio	Definition	Significance
Total Outstanding Long-Term Debt per Customer ($)	Total amount of utility long-term debt divided by the number of utility customers (for a combined utility, the aggregate number of water and sewer accounts is used)	Indicates the existing debt burden attributable to ratepayers (principal only)
Projected Debt per Customer Year Five ($)	Total projected outstanding system debt (existing debt less scheduled amortization plus planned issuances) divided by total outstanding projected customers five years from the date of the rating (for a combined utility, the aggregate number of water and sewer accounts is used and is inflated by anticipated growth)	Indicates the total debt burden to ratepayers five years from the date of the rating (principal only)
Total Outstanding Long-Term Debt per Capita ($)	Total amount of utility long-term debt divided by total population served by the utility	Indicates the existing debt burden of a utility attributable to each person served by the utility (principal only)
Projected Debt per Capita Year Five ($)	Total projected outstanding system debt (existing debt less scheduled amortization plus planned issuances) divided by total projected population served by the utility (population is inflated based on anticipated growth)	Indicates the total debt burden of a utility to each person served by the utility five years from the date of the rating (principal only)
Three-Year Historical Average Senior Lien Annual Debt Service (ADS) Coverage (x)	Most recent three-year historical average of annual revenues available for debt service divided by respective senior lien debt service for the year	Indicates the historical trend in senior lien ADS coverage
Senior Lien ADS Coverage (x)	Current-year revenues available for debt service divided by current-year senior lien debt service	Indicates the financial margin to meet current senior lien ADS with current revenues available for debt service
Minimum Projected Senior Lien ADS Coverage (x)	Minimum debt service coverage projected typically over the ensuing five-year period, based on revenues available for debt service in any given fiscal year, divided by the respective senior lien debt service amount for that fiscal year	Indicates the financial margin during the year in which future senior lien ADS coverage is projected to be the lowest
Three-Year Historical Average All-In ADS Coverage (x)	Most recent three-year historical average of annual revenues available for debt service divided by respective total debt service for the year	Indicates the historical trend in total ADS coverage
All-In ADS Coverage (x)	Current-year revenues available for debt service divided by current-year total debt service	Indicates the financial margin to meet current total ADS with current revenues available for debt service
Minimum Projected All-In ADS Coverage (x)	Minimum debt service coverage projected typically over the ensuing five-year period, based on revenues available for debt service in any given fiscal year, divided by the respective total debt service amount for that fiscal year	Indicates the financial margin during the year in which future total ADS coverage is projected to be the lowest
Days Cash on Hand	Current unrestricted cash and investments plus any restricted cash and investments (if available for general system purposes), divided by operating expenditures minus depreciation, divided by 365	Indicates financial flexibility to pay near-term obligations
Days of Working Capital	Current unrestricted assets plus any restricted cash and investments (if available for general system purposes) minus current liabilities payable from unrestricted assets, divided by operating expenditures minus depreciation, divided by 365	Indicates financial flexibility to pay near-term obligations
Free Cash as % of Depreciation	Current surplus revenues after payment of operating expenses, debt service and operating transfers out divided by current-year depreciation	Indicates annual financial capacity to maintain facilities at current level of service from existing cash flows

Source: Fitch Ratings.

Appendix B: Water and Sewer Management Practices

Revenue Defensibility Related

- Willingness of governing board to adjust rates when necessary.
- Collection policies that regularly track the rate of timely payment receipts and enforce penalties against late payers or terminate service for nonpayment.
- Rate affordability guidelines that consider absolute levels of rates and their affordability relative to income levels.
- Limited operating exposure to growth-sensitive revenues, such as tap, connection or impact fees.

Operating Risks Related

- Limited exposure to financial operations of the general government, so that system revenues can be relied on for use to operate and improve the utility. For transfers to the general fund, policies that specifically limit their scope and growth are favorable.
- Prioritized capital improvement plans that cover at least five years and consider capacity, supply, regulatory, and replacement and renewal needs.
- Use of professional engineers, either within the utility or outside of it, to prepare objective reviews of system performance and needs on a regular basis and provide periodic revisions of construction cost estimates.
- Regular consultation with regional and local growth planners, community development officials and demographers to predict and, if possible, limit infrastructure needs related to population and business growth.
- Debt issuance policies, including types, terms and suitability under specific conditions, as well as the total amount of variable-rate debt deemed appropriate.

Financial Profile Related

- Long-term integrated financial forecasting that considers future demand, expected rate increases, regulations, and infrastructure renovation and renewal needs.
- Policies to ensure appropriate financial margins, including debt service coverage and operating liquidity levels.
- Regular financial reporting and monitoring systems that enable policymakers access to timely information on fiscal performance relative to the budget.
- Compliance with industry accounting practices and establishment of appropriate internal controls.

Asymmetric Risk Related

- Key management industry experience and active participation in organizations to keep pace with sector issues, regulatory mandates and technological advances.
- Development of comprehensive policies on the use of hedge agreements and their disclosure prior to entering into any such agreements. Utilities with variable-rate debt and swap agreements are expected to understand the implications and potential risks of such capital management strategies. In addition, these utilities should include management’s rationale for the sizing of financial reserves and the adequacy of those reserves to cope with interest rate fluctuations and possible termination payments.