



FitchRatings

U.S. Water and Sewer: Peer Review

U.S. Water and Sewer: Peer Review

Overview

Fitch Ratings presents the inaugural 2021 edition of our “U.S. Water and Sewer: Peer Review.” This report compares the recent financial performance of retail and wholesale water and sewer systems. The ratios highlighted include some of the financial calculations used to compare utility systems in Fitch’s committee process and can assist market participants in making their own comparisons. Financial metrics represent only one key component among others in Fitch’s utility credit analysis. To review Fitch’s full water and sewer rating criteria, please see “[U.S. Water and Sewer Rating Criteria](#).”

This peer review is a point-in-time assessment of Fitch-rated public water and sewer utilities. Ratios for each issuer are calculated using audited information. Fiscal year-end 2020 results notably do not include the full range of Fitch-rated public water and sewer utilities, particularly those with a Dec. 31, 2020 fiscal year-end date for which audited information was not yet available.

Financial ratios and metrics detailed in the report may occasionally differ from those reported in new issue and rating reports. This can be a result of adjustments made by Fitch during the rating review process to reflect additional information received from the issuer and circumstances unique to the credit. In each case, we seek to highlight these adjustments to benefit the reader in the reports and press releases published during the rating process.

2020 Performance Highlights

- While the coronavirus caused increased delinquencies and bad debts in 2020, these impacts were less significant than many sector participants had initially anticipated. Most utilities fared well, evidenced by improved year-over-year operating revenue growth combined with decreases in the operating cost burden for both retail and wholesale systems.
- The five-year average capex-to-depreciation median ratios for retail systems held strong and above 150% for the second year in a row. Conversely, the median ratios for wholesale systems declined, albeit to levels still above 100% in 2020.
- Leverage metrics increased slightly for retail systems and declined for wholesale systems, but remained very strong for both system types. A robust liquidity profile, as evidenced by solid COFO levels and current days cash on hand of well over 550 days, further supports utilities' overall very strong financial profile.

FACT – 2021

The “U.S. Water and Sewer: Peer Review” is accompanied by the release of the “[Water and Sewer - Fitch Analytical Comparative Tool \(FACT\) - 2021](#).” The interactive FACT provides enhanced trend analysis and peer comparison tables to improve the peer review’s usefulness as a tool for investors and other market participants. The FACT graphically plots historical financial ratios and metrics, as well as operating data for prior fiscal years (2014–2019) and the current fiscal year for each of the water and sewer issuers included in the peer review. This edition will also allow for peer comparisons based on Fitch’s key rating driver assessments.

The FACT also features dynamic charting applications and peer analysis that allow users to compare trends in operational and financial data for up to four systems and against medians calculated on a notch-specific rating basis, within the same rating category (i.e. AAA, AA, A), against the entire portfolio of Fitch-rated issuers or against an entirely customized peer group.



Table of Contents

Inside	Page
Overview	2
2020 Performance Highlights	2
FACT – 2021.....	2
What’s New?	4
Utility Systems Included in Report	4
Commentary	4
Water and Sewer Operating Profiles.....	5
Portfolio Trends.....	15
Retail Trends	17
Wholesale Trends.....	18
Financial Ratios by Rating Category	19
Retail Systems	19
Wholesale Systems.....	28
2021 Water and Sewer Retail Medians	30
2021 Water and Sewer Wholesale Medians	31
Appendix A: Water and Sewer Definitions	32
Contacts	33
Related Research	33

What's New?

Fitch first published its water and sewer medians in 2004 to provide issuers, consultants, analysts, investors and others with a quantitative framework of ratios used in our water and sewer rating process. This inaugural edition of the “U.S. Water and Sewer: Peer Review” and FACT expands upon Fitch's previously published water and sewer medians reports by more closely mirroring the key metrics identified in Fitch's new criteria for rating U.S. water and sewer utilities. The revised criteria was originally published on April 3, 2020 and updated on March 18, 2021. This report includes the current key rating driver assessments for each issuer in the *Water and Sewer Operating Profiles* and also includes the assessments in our FACT. We also aligned the reported data with the analytical metrics featured in our criteria, including calculations for the net adjusted debt-to-adjusted funds available for debt service (FADS) ratio, as well as a revised calculation of debt service coverage (Fitch-calculated, which treats all transfers and distributions as operating expenses).

Utility Systems Included in Report

The majority of utility systems rated by Fitch's Water and Sewer group fall into two categories: retail systems and wholesale systems. The following is a brief description of each of the categories.

Retail Systems

Fitch generally considers retail water and sewer utilities to be those whose primary purpose is to provide water and sewer service to residential, commercial and industrial (including irrigation) end users, regardless of the amount of revenues generated from wholesale services. While some water and sewer utilities are independent entities, many are owned by the municipalities they serve and operate as closely integrated enterprise funds of the local government. Moreover, water and sewer utilities may operate as part of a combined utility system that provides other services, including retail solid waste, hydroelectric, among others.

Wholesale Systems

Fitch generally considers wholesale utilities to be those whose primary purpose is to provide water and sewer service to retail utilities, regardless of the amount of revenues generated from retail services. Fitch also treats conduit issuers as wholesalers for purposes of its

criteria. Fitch's evaluation of wholesale water and sewer providers is rooted in its analysis of the contractual responsibilities and obligations of the provider and its purchasers. Most wholesale providers are organized to provide all or a portion of their members' water supply and/or sewer treatment and disposal requirements pursuant to long-term contracts. Fitch considers the terms, tenor and conditionality of the contractual obligations (i.e. take-or-pay; take-and-pay) where contracts are present to understand the risks borne by each party and to determine the context for assessing the rating factors.

Fitch also considers the counterparty risks associated with any contract structure in its evaluation, factoring the operational interdependency and governance relationship between the wholesale provider and its purchasers, in addition to purchaser credit quality. In some contractual frameworks, where revenues and costs are largely balanced via pass-through charges to purchasers and typically generate sum-sufficient debt service coverage — particularly single-asset projects — purchaser credit quality (PCQ) may be more of a consideration in the final rating than the wholesaler's financial profile. Conduit issuers and wholesale providers where the PCQ carries greater significance in determining the final rating were excluded from the peer review and FACT.

Commentary

Medians Are Not Targets

While the peer review includes median calculations for financial ratios by rating category, these should not be construed as targets for specific ratios or ratings. The medians reflect a single point in time, may not reflect relevant adjustments, and in many instances, are based on a small sampling of public power issuers.

Comments Welcome

As always, Fitch welcomes comments, ideas and suggestions from users to improve the value of the “U.S. Public Power: Peer Review.”

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
AAA Rated Credits												
Arlington (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aaa	105,180	103,328	4,354	193
Beverly Hills (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Small	aa	a	aaa	11,193	—	10,004	112
Burbank Water and Power (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Midsize	aa	aa	aaa	26,777	0	5,312	136
Carrollton (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	aa	a	aaa	39,300	39,300	5,844	44
Cary (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	63,887	63,887	5,010	174
Charlotte (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	aa	aa	aaa	297,098	270,640	4,231	151
Chesapeake (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	69,143	67,888	5,374	111
Chesterfield County (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	114,660	97,570	3,897	59
Cobb County (GA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	aa	aa	aaa	193,890	161,199	4,380	67
Collier County (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	a	aaa	75,837	75,837	20,673	81
Fairfax County (VA) - Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	aa	aa	aaa	—	375,626	4,942	165
Gilbert (AZ) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aaa	89,094	80,247	3,126	192
Greensboro (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	106,840	102,696	4,071	228
Henrico County (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	100,500	97,500	5,263	217
Hillsborough County (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	aa	aa	aaa	168,038	154,753	—	155
Irvine Ranch Water District (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Midsize	aa	aa	aaa	118,263	113,176	5,988	182
Lewisville (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aaa	23,988	22,670	3,229	122
Manatee County (FL) - Water, Sewer, Stormwater & Solid Waste Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	130,674	111,555	7,105	153
Mansfield (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Small	aa	aa	aaa	23,364	20,501	4,546	176
Mesa Water District (CA) - Water Revenues (2nd Lien)	AAA	RO:Sta	West	Retail	Midsize	aa	aa	aaa	25,032	—	5,959	186
Moulton Niguel Water District (CA) - Water & Sewer Revenues	AAA	RO:Sta	West	Retail	Small	aa	a	aaa	55,135	55,135	7,900	156
Olivenhain Municipal Water District (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Small	aa	a	aaa	28,803	7,244	8,768	85
Orange County Sanitation District (CA) - Sewer Revenues	AAA	RO:Sta	West	Retail	Large	aa	aa	aaa	—	905,359	4,113	120
Orem (UT) - Water & Stormwater Revenues	AAA	RO:Sta	West	Retail	Small	aa	aa	aaa	23,023	25,065	1,955	100
Orlando (FL) - Sewer Revenues & UST (2nd Lien)	AAA	RO:Sta	Southeast	Retail	Midsize	aa	a	aaa	—	81,646	—	145
Rancho California Water District (CA) - Water & Sewer Revenues	AAA	RO:Sta	West	Retail	Midsize	aa	aa	aaa	45,218	8,362	5,053	68
Scottsdale (AZ) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aaa	91,802	82,320	4,355	78
Seacoast Utility Authority (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Small	aa	aa	aaa	36,371	32,097	5,140	112
South Jordan (UT) - Water Revenues	AAA	RO:Sta	West	Retail	Small	aa	aa	aaa	25,929	—	3,645	114
Suffolk County Water Authority (NY) - Water & Sewer Revenues	AAA	RO:Sta	Northeast	Retail	Large	aa	aa	aa	398,894	—	2,675	138

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Tampa (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	137,127	111,705	4,786	131
Tohopekaliga Water Authority (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	129,356	105,757	—	170
Virginia Beach (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	134,665	131,747	—	131
Washington Suburban Sanitary District (MD) - General Obligation - Unlimited Tax	AAA	RO:Sta	Southeast	Retail	Large	aa	aa	aa	470,801	442,654	11,718	294
AAA Rated Median									89,094	89,910	4,976	137
AA+ Rated Credits												
Anaheim (CA) - Water Revenues	AA+	RO:Neg	West	Retail	Midsize	aa	aa	aa	64,421	—	4,640	193
Athens-Clarke County Unified Government (GA) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	a	aa	aaa	38,603	28,844	3,929	78
Billings (MT) - Sewer Revenues	AA+	RO:Sta	West	Retail	Midsize	aa	aa	aa	—	35,667	1,771	419
Broward County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Large	aa	aa	aa	—	—	—	223
Buncombe County Metropolitan Sewerage District (NC) - Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	aa	aa	aaa	—	56,195	3,228	198
Dallas (TX) - Water & Sewer Revenues	AA+	RO:Neg	Southwest	Retail	Large	aa	aa	aa	606,000	287,000	2,428	207
Dover (DE) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	a	aa	aaa	12,952	12,211	3,962	206
Durham (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	95,827	95,827	5,377	348
East Bay Municipal Utility District (CA) - Water Revenues (2nd Lien)	AA+	RO:Sta	West	Retail	Large	aa	aa	aa	392,671	0	6,479	267
East Bay Municipal Utility District (CA) - Sewer Revenues (2nd Lien)	AA+	RO:Sta	West	Retail	Large	aa	aa	aa	0	179,341	4,180	175
Eastern Municipal Water District (Riverside County) (CA) - Water & Sewer Revenues (3rd Lien)	AA+	RO:Pos	West	Retail	Large	aa	aa	aaa	155,918	256,610	5,217	103
El Paso (TX) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	Southwest	Retail	Large	aa	aa	aa	240,833	225,138	3,368	237
Erie County Water Authority (NY) - Water Revenues (2nd Lien)	AA+	RO:Sta	Northeast	Retail	Large	aa	aa	aa	171,854	—	2,407	195
Eugene (OR) - Water Revenues	AA+	RO:Pos	West	Retail	Midsize	aa	aa	aaa	0	—	—	235
Gastonia (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	aa	aa	aaa	31,215	28,529	3,786	335
Helix Water District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	a	a	aa	56,447	—	8,903	123
Hernando County (FL) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	aa	aa	aaa	63,018	30,606	3,733	107
High Point (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	a	aa	aa	43,093	41,005	3,803	127
Hillsborough (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	aa	bbb	aa	—	—	16,170	214
Honolulu Board of Water Supply (HI) - Water Revenues	AA+	RO:Pos	West	Retail	Large	aa	aa	aa	170,694	—	4,173	134
Jurupa Community Services District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	aa	aa	aaa	33,180	—	4,506	75

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Lake Arrowhead Community Services District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	—	a	bbb	aa	8,397	10,681	11,025	131
Lakeland (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	—	—	13,427	205
Lee County (FL) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Large	aa	a	aaa	90,869	67,606	8,251	109
McAllen (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	48,415	43,218	2,396	181
Metropolitan St. Louis Sewer District (MO) - Sewer Revenues	AA+	RO:Sta	Midwest	Retail	Large	aa	aa	aa	—	426,976	1,923	322
New York City Municipal Water Finance Authority (NY) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	Northeast	Retail	Large	aa	aa	aa	835,500	835,500	3,265	172
Norfolk (VA) - Water Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	66,964	—	3,377	207
Oakland (CA) - Sewer Revenues	AA+	RO:Pos	West	Retail	Midsize	aa	aa	aaa	—	115,728	2,592	293
Okaloosa County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aaa	—	—	—	181
Orange Water & Sewer Authority (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	a	aa	aa	21,823	21,823	6,621	180
Padre Dam Municipal Water District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	aa	a	aaa	23,343	15,577	14,055	173
Pasadena (CA) - Water Revenues	AA+	RO:Pos	West	Retail	Midsize	aa	aa	aaa	38,193	—	6,321	189
Pasco County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Large	aa	aa	aaa	121,821	108,169	5,880	160
Plano (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	82,206	79,507	5,625	112
Riverside (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Midsize	aa	aa	aa	66,031	—	3,248	137
Sacramento Area Sewer District (CA) - Sewer Revenues	AA+	RO:Pos	West	Retail	Large	aa	aa	aaa	—	420,297	—	52
San Antonio (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Large	aa	aa	aa	529,392	473,478	4,277	214
San Juan Water District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	aa	aa	aa	51,487	—	1,460	137
Sarasota County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	a	aa	92,521	87,851	22,265	123
South Coast Water District (CA) - Water & Sewer Revenues	AA+	RO:Neg	West	Retail	Small	aa	a	aa	12,706	19,143	—	319
South Ogden Conservation District (UT) - Water Revenues	AA+	RO:Sta	West	Retail	Small	a	aa	aa	9,948	—	770	666
Spotsylvania County (VA) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	aa	aa	aaa	32,216	30,852	5,683	83
Stamford Water Pollution Control Authority (CT) - Water & Sewer Revenues	AA+	RO:Sta	Northeast	Retail	Midsize	aa	a	aa	—	19,348	3,408	92
Tallahassee (FL) - Water, Sewer & Stormwater Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	87,001	74,977	7,465	110
Tamarac (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	aa	aa	aa	—	—	4,394	136
Tempe (AZ) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	43,724	43,724	2,884	139
Tualatin Valley Water District (OR) - Water Revenues	AA+	RO:Sta	West	Retail	Small	aa	aa	aa	59,938	—	5,621	370
Vallecitos Water District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	aa	a	aa	21,925	20,733	15,446	79

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Winston-Salem (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	121,899	93,706	2,904	214
AA+ Rated Median									59,938	56,195	4,180	180
AA Rated Credits												
Albuquerque Bernalillo County Water Utility Authority (NM) - Water & Sewer Revenues (2nd Lien)	AA	RO:Pos	Southwest	Retail	Large	aa	a	aa	209,779	201,349	4,724	80
Brevard County (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Large	aa	aa	aa	3,285	75,925	5,934	394
Citrus County (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	a	aa	aa	—	—	4,728	192
Clarksville (TN) - Water, Sewer & Gas Revenues	AA	RO:Pos	Southeast	Retail	Midsize	aa	aa	aa	70,613	62,176	7,559	64
Clearwater (FL) - Water & Sewer Revenues	AA	RO:Pos	Southeast	Retail	Midsize	a	a	aa	45,760	34,442	7,803	39
Contra Costa Water District (CA) - Water Revenues (3rd Lien)	AA	RO:Sta	West	Retail	Large	aa	aa	aa	61,736	—	3,824	98
Cucamonga Valley Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	aa	aa	aa	50,646	0	4,462	109
District of Columbia Water & Sewer Authority (DC) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Northeast	Retail	Large	aa	aa	aa	126,113	126,113	3,203	704
Eagle Mountain City (UT) - Water & Sewer Revenues	AA	RO:Sta	West	Retail	Small	aa	aa	aa	—	—	—	216
Elsinore Valley Municipal Water District (CA) - Water & Sewer Revenues	AA	RO:Sta	West	Retail	Small	aa	aa	aa	45,870	36,638	7,958	100
Escondido (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Midsize	aa	aa	aa	—	48,425	7	260
Fort Worth (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Large	aa	aa	aa	270,000	258,000	2,238	150
Fresno (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	a	aa	aaa	—	194,424	3,149	172
Garland (TX) - Water & Sewer Revenues (4th Lien)	AA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	—	—	4,280	134
Glendale (AZ) - Water & Sewer Revenues - Subordinate Lien	AA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	62,440	58,114	4,071	118
Greater New Haven Water Pollution Control Authority (CT) - Sewer Revenues	AA	RO:Sta	Northeast	Retail	Large	aa	aa	aa	—	—	—	199
Hampton Roads Sanitation District (VA) - Sewer Revenues (2nd Lien)	AA	RO:Pos	Southeast	Retail	Midsize	aa	aa	aa	—	478,000	4,289	234
Houston (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Large	aa	aa	aa	—	—	3,243	188
JEA (FL) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Southeast	Retail	Large	-	aa	aa	363,597	285,104	5,334	124
Jurupa Community Services District (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	aa	aa	aa	—	31,214	6,793	329
Lehi (UT) - Water Revenues	AA	RO:Sta	West	Retail	Small	aa	aa	aa	18,811	—	6,635	174
Los Angeles (CA) - Sewer Revenues (2nd Lien)	AA	RO:Sta	West	Retail	Large	aa	aa	aa	—	654,132	4,613	184
Los Angeles Department of Water & Power (CA) - Water Revenues	AA	RO:Neg	West	Retail	Large	aa	aa	aa	689,000	0	6,000	377
Marin Municipal Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	aa	a	aa	61,900	—	10,163	194

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Melbourne (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	a	a	aa	59,110	29,435	5,594	103
Mojave Water Agency (CA) - Water Revenues	AA	RO:Pos	West	Retail	Large	a	bbb	aa	—	—	5,897	62
North Salt Lake (UT) - Water Revenues	AA	RO:Pos	West	Retail	Small	aa	aa	aa	8,375	—	3,062	82
Oceanside (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	a	aa	aa	44,298	—	9,921	234
Oro Valley (AZ) - Water Revenues	AA	RO:Sta	Southwest	Retail	Small	aa	aa	aa	20,461	—	—	81
Palm Coast (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	aa	a	aa	43,108	40,758	7,142	143
Peoria (AZ) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	60,705	62,617	5,413	74
Pima County (AZ) - Sewer Revenues (2nd Lien)	AA	RO:Sta	Southwest	Retail	Large	aa	a	aa	—	284,446	6,672	85
Pleasant Grove (UT) - Water Revenues	AA	RO:Pos	West	Retail	Small	aa	aa	aa	8,588	—	2,750	171
Polk County (FL) - Water & Sewer Revenues	AA	RO:Pos	Southeast	Retail	Large	aa	a	aa	70,413	52,776	7,146	199
Provo (UT) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	aa	aa	aa	19,860	—	1,488	454
Richmond (VA) - Water, Sewer & Gas Revenues	AA	RO:Sta	Southeast	Retail	Midsize	a	aa	aa	65,459	62,050	6,481	136
Sacramento (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	a	aa	aa	0	78,583	3,621	284
San Diego (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	aa	aa	aa	—	—	5,257	154
San Luis Obispo (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	aa	a	aa	15,672	—	13,651	121
Santa Margarita/ Dana Point Authority (CA) - General Obligation - Unlimited Tax - Improvement Districts 2, 3, 4	AA	RO:Sta	West	Retail	Midsize	aa	a	aa	57,132	54,343	7,498	214
Sarasota (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	a	a	aa	—	—	17	221
Sausalito-Marín City Sanitary District (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Small	aa	bbb	aa	—	7,605	—	292
Sonoma Valley County Sanitation District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	a	bbb	aa	—	17,533	13,707	122
St. Petersburg (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	94,558	86,349	6,956	241
Sugar Land (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	40,329	37,978	5,279	69
Truckee Meadows Water Authority (NV) - Water Revenues (2nd Lien)	AA	RO:Pos	West	Retail	Midsize	aa	aa	aa	127,022	—	3,831	120
Union County (NC) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	aa	aa	aa	51,961	38,834	5,511	175
Union Sanitary District (CA) - Wastewater Revenues	AA	RO:Sta	West	Retail	Midsize	aa	a	aa	—	115,405	7,668	70
Venice (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	a	a	aa	12,574	12,228	23,591	147
Village Center Community Development District (FL) - Water & Sewer Revenues - VCSA System	AA	RO:Sta	Southeast	Retail	Midsize	aa	a	aaa	9,544	9,529	2,884	75
West Palm Beach (FL) - Water, Sewer & Stormwater Revenues	AA	RO:Sta	Southeast	Retail	Midsize	a	a	aa	33,305	26,905	7,391	181
Yuba City (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	a	aa	aaa	—	—	3,538	33

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Yucaipa Valley Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	aa	aa	aa	19,355	—	—	97
AA Rated Median									50,646	54,343	5,373	150
AA- Rated Credits												
Atlanta (GA) - Water & Sewer Revenues	AA-	RO:Pos	Southeast	Retail	Large	a	aa	aa	163,889	93,136	4,130	240
Austin (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Large	aa	aa	aa	200,812	230,127	5,526	112
Brunswick County (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Midsize	a	aa	aa	44,583	19,825	5,022	139
Clackamas River Water (OR) - Water Revenues	AA-	RO:Pos	West	Retail	Midsize	aa	aa	aa	12,790	—	3,710	355
Corpus Christi (TX) - Water, Sewer, Stormwater & Gas Revenues (2nd Lien)	AA-	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	95,553	90,303	3,808	191
East Valley Water District (CA) - Water & Sewer Revenues	AA-	RO:Sta	West	Retail	Small	aa	aa	aa	21,507	19,679	4,711	319
Edinburg (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	29,478	24,395	2,334	114
Florida Keys Aqueduct Authority (FL) - Water Revenues	AA-	RO:Sta	Southeast	Retail	Small	a	a	aa	52,579	0	9,360	119
Foster City and Estero Municipal Improvement District (CA) - Wastewater Revenues	AA-	RO:Sta	West	Retail	Small	aa	a	aa	—	—	9,295	633
Glendale (CA) - Water Revenues	AA-	RO:Sta	West	Retail	Midsize	aa	aa	aa	34,350	—	6,112	84
Honolulu (City & County) (HI) - Sewer Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Large	aa	aa	aa	—	147,610	6,100	324
Laredo (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsize	aa	aa	aa	75,854	70,451	3,916	118
Lodi (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Small	a	a	aa	—	24,724	10,559	69
Los Angeles County Sanitation District No. 14 (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsize	a	aa	aa	—	71,452	5,001	63
Los Angeles County Sanitation District No. 20 (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsize	a	aa	a	—	45,385	6,450	12
Louisville & Jefferson County Metropolitan Sewer District (KY) - Sewer & Stormwater Revenues	AA-	RO:Sta	Midwest	Retail	Large	aa	aa	aa	—	280,309	3,792	277
Lubbock (TX) - Water & Sewer Revenues	AA-	RO:Pos	Southwest	Retail	Midsize	aa	aa	aa	92,291	85,884	4,913	178
Marco Island (FL) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	aa	a	aa	10,255	9,803	7,599	39
Midvale City (UT) - Water & Sewer Revenues	AA-	RO:Pos	West	Retail	Small	aa	aa	aa	7,807	2,987	22,613	169
North Miami Beach (FL) - Water Revenues	AA-	RO:Sta	Southeast	Retail	Midsize	a	aa	aa	32,507	—	5,225	229
Oakland Park (FL) - Water & Sewer Revenues	AA-	RO:Pos	Southeast	Retail	Small	a	aa	aa	—	—	3,233	504
Provo (UT) - Sewer Revenues	AA-	RO:Pos	West	Retail	Midsize	aa	aa	aa	—	18,860	2,018	670
Ross Valley Sanitary District (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsize	aa	a	aa	—	21,641	12,384	591
Sacramento (CA) - Water Revenues	AA-	RO:Sta	West	Retail	Large	aa	aa	aa	144,669	—	3,566	340
Salisbury (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	a	a	aa	18,955	17,249	3,708	67

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
San Angelo (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsize	a	aa	aa	35,680	38,468	3,745	232
San Diego (CA) - Water Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Large	aa	aa	aa	285,237	—	8,928	294
Sanford (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	a	aa	aa	18,673	9,949	4,507	135
Santa Clarita Valley Water Agency (CA) - Water Revenues (2nd Lien)	AA-	RO:Pos	West	Retail	Midsize	aa	aa	aa	73,767	—	5,266	—
Stockton (CA) - Water Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Midsize	a	aa	aa	49,980	—	4,385	9
Victoria (TX) - Water & Sewer Revenues	AA-	RO:Pos	Southwest	Retail	Small	aa	aa	aa	23,135	21,586	4,613	116
Village Center Community Development District (FL) - Water & Sewer Revenues - LSSA System	AA-	RO:Pos	Southeast	Retail	Midsize	aa	aa	aaa	13,078	13,042	2,362	25
Western Nassau County Water Authority (NY) - Water Revenues	AA-	RO:Sta	Northeast	Retail	Large	aa	aa	aa	28,193	—	3,684	397
Yuma (AZ) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Small	a	bbb	aa	32,715	25,855	3,328	36
AA- Rated Median									34,350	24,560	4,662	169
A+ Rated Credits												
CWA Authority (IN) - Sewer Revenues	A+	RO:Sta	Midwest	Retail	Large	a	aa	a	—	250,000	2,327	299
Daleville (AL) - Water & Sewer Revenues	A+	RO:Sta	Southeast	Retail	Small	bbb	a	a	3,693	—	—	58
Deltona (FL) - Water & Sewer Revenues	A+	RO:Sta	Southeast	Retail	Small	a	aa	a	34,389	—	6,478	132
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Lehigh System	A+	RO:Sta	Southeast	Retail	Large	a	a	a	13,505	11,179	7,598	71
Fort Myers (FL) - Water, Sewer & Reclaimed Water Revenues	A+	RO:Sta	Southeast	Retail	Small	a	a	a	27,939	25,683	7,412	175
Fresno (CA) - Water Revenues (2nd Lien)	A+	RO:Sta	West	Retail	Large	a	aa	aa	138,332	—	2,235	680
Galveston (TX) - Water & Sewer Revenues	A+	RO:Sta	Southwest	Retail	Small	a	aa	a	26,811	26,811	5,246	101
Indianapolis (IN) - Water Revenues (2nd Lien)	A+	RO:Pos	Midwest	Retail	Large	a	aa	aa	337,656	0	2,589	139
Miami-Dade County (FL) - Water & Sewer Revenues	A+	RO:Pos	Southeast	Retail	Large	aa	aa	aa	451,509	367,618	3,018	211
Philadelphia (PA) - Water & Sewer Revenues	A+	RO:Sta	Northeast	Retail	Large	a	aa	a	—	—	8,010	220
Port St. Lucie (FL) - Water & Sewer Revenues	A+	RO:Pos	Southeast	Retail	Midsize	aa	a	aa	78,623	60,968	6,953	90
Stockton (CA) - Wastewater Revenues	A+	RO:Sta	West	Retail	Midsize	a	aa	a	—	117,241	6,130	123
Westlands Water District (CA) - Water Revenues	A+	RO:Sta	West	Retail	Large	a	a	a	905	0	767	38
A+ Rated Median									31,164	26,811	5,688	132
A/A- Rated Credits												
Eagle Pass (TX) - Water & Sewer Revenues	A	RO:Sta	Southwest	Retail	Small	a	aa	a	17,824	16,125	3,143	177
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Unified Utility System	A	RO:Sta	Southeast	Retail	Large	a	a	a	7,791	1,995	8,354	145

Water and Sewer Operating Profiles – Retail

System	Rating	Outlook	Region	Type	Size	Revenue Defens- ibility	Operat- ing Risk	Financial Profile	Water Cust- omers	Sewer Cust- omers	Opera- ting Cost Burden (\$/mg)	Capital Expenditures/ Depreciation (5-year Average) (%)
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Consolidated Utility System	A	RO:Sta	Southeast	Retail	Large	a	a	a	6,854	3,492	10,106	221
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Lake Aqua Utility System	A	RO:Sta	Southeast	Retail	Large	a	a	a	5,058	1,251	8,035	104
North Hudson Sewerage Authority (NJ) - Water & Sewer Revenues	A	RO:Sta	Northeast	Retail	Small	a	aa	a	—	24,087	3,783	245
Sangamon County Water Reclamation District (IL) - Sewer Revenues	A	RO:Neg	Midwest	Retail	Midsized	aa	aa	a	—	61,441	1,145	408
Santa Cruz (CA) - Water Revenues	A-	RO:Neg	West	Retail	Small	a	bbb	a	24,545	—	16,285	417
A/A – Rated Median									7,791	9,809	8,035	221
BBB/BB Rated Credits												
Guam Waterworks Authority (GU) - Water & Sewer Revenues	BBB	RO:Sta	West	Retail	-	a	a	bbb	—	—	—	371
Jefferson County (AL) - Sewer Revenues (2nd Lien)	BB	RO:Sta	Southeast	Retail	Large	bbb	bbb	bb	—	—	—	40
BBB/BB Rated Median									—	—	—	260

Source: Fitch Ratings.

Water and Sewer Operating Profiles — Wholesale

System	Rating	Outlook	Region	Type	Size	Revenue Defensibility	Operating Risk	Financial Profile	Operating Cost Burden (\$/mg)	Capital Expenditures / Depreciation (5-year Average) (%)
AAA Rated Credits										
Cobb County-Marietta Water Authority (GA) - Water Revenues	AAA	RO:Sta	Southeast	Wholesale	Large	aa	aa	aaa	1,601	247
Orange County Water District (CA) - Water Revenues	AAA	RO:Sta	West	Wholesale	Large	aa	aa	aaa	1,462	116
Weber Basin Water Conservancy District (UT) - Water Revenues	AAA	RO:Sta	West	Wholesale	Midsize	aa	aa	aaa	389	188
Western Municipal Water District (CA) - Water Revenues	AAA	RO:Sta	West	Wholesale	Large	aa	aa	aaa	5,093	147
AAA Rated Median									1,531	168
AA Category Credits										
Alameda County Flood and Water Conservation District Zone 7 Water Agency (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Wholesale	Small	aa	a	aa	6,721	377
Central Utah Water Conservancy District (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	aa	aa	aa	919	524
East Central Regional Wastewater Treatment Facilities Operation Board (FL) - Sewer Revenues	AA+	RO:Pos	Southeast	Wholesale	Large	aa	aa	aaa	1,639	673
Jordan Valley Water Conservancy District (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Large	aa	aa	aa	1,522	410
Metropolitan Water District of Salt Lake and Sandy (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	aa	aa	aa	940	77
San Diego County Water Authority (CA) - Water Revenues (2nd Lien)	AA+	RO:Sta	West	Wholesale	Large	aa	aa	aa	4,950	109
Santa Clara Valley Water District (CA) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	West	Wholesale	Large	aa	aa	aa	—	—
Sonoma County Water Agency (CA) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	aa	aa	aa	2,499	104
Southern California Water Replenishment District (CA) - Water Revenues	AA+	RO:Neg	West	Wholesale	Large	aa	aa	aa	1,058	1,065
Tampa Bay Water, A Regional Water Supply Authority (FL) - Water Revenues	AA+	RO:Sta	Southeast	Wholesale	Large	aa	aa	aa	1,593	32
Timpanogos Special Service District (UT) - Water & Sewer Revenues	AA+	RO:Sta	West	Wholesale	Large	aa	aa	aa	—	58
Central Valley Water Reclamation Facility (UT) - Sewer Revenues	AA	RO:Sta	West	Wholesale	Large	aa	aa	aa	1,459	377
Central Weber Sewer Improvement District (UT) - Sewer Revenues	AA	RO:Pos	West	Wholesale	Midsize	aa	aa	aaa	1,132	70
Massachusetts Water Resources Authority (MA) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Northeast	Wholesale	Large	aa	aa	aa	—	65
Peace River Manasota Regional Water Supply Authority (FL) - Water Revenues	AA	RO:Sta	Southeast	Wholesale	Midsize	aa	aa	aa	2,864	63
AA Category Median									1,557	106
A Category Credits										
North Harris County Regional Water Authority (TX) - Water Revenues	A+	RO:Sta	Southwest	Wholesale	Large	aa	aa	a	1,136	193

Water and Sewer Operating Profiles – Wholesale

System	Rating	Outlook	Region	Type	Size	Revenue Defensibility	Operating Risk	Financial Profile	Operating Cost Burden (\$/mg)	Capital Expenditures / Depreciation (5-year Average) (%)
Great Lakes Water Authority (MI) - Water Revenues (2nd Lien)	A	RO:Sta	Midwest	Wholesale	Large	aa	aa	a	2,575	32
Great Lakes Water Authority (MI) - Sewer Revenues (2nd Lien)	A	RO:Sta	Midwest	Wholesale	Large	aa	aa	a	3,160	35
A Category Median									2,575	35

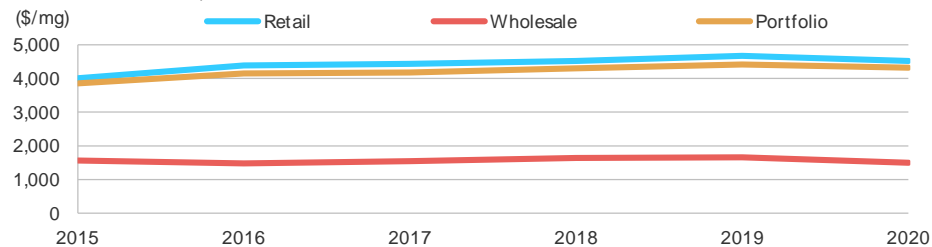
Source: Fitch Ratings.

Portfolio Trends

Below, the trends of medians for all retail and wholesale water and sewer systems are displayed for eight of the financial metrics used in Fitch's analysis. Note that 2020 data is divergent, particularly for wholesale systems, given the lack of audited information for the entire portfolio.

Operating Cost Burden

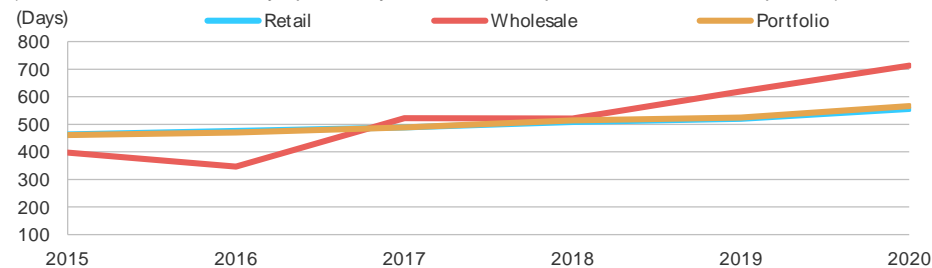
(Provides a measure of total operating costs relative to million gallons (mg) of water produced and/or sewer flow treated.)



Source: Fitch Ratings.

Current Days Cash on Hand

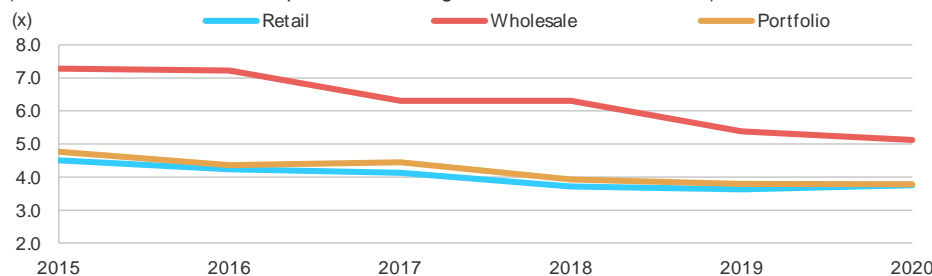
(Indicates financial flexibility, specifically cash and cash equivalents, relative to expenses.)



Source: Fitch Ratings.

Net Adjusted Debt/Adjusted FADS

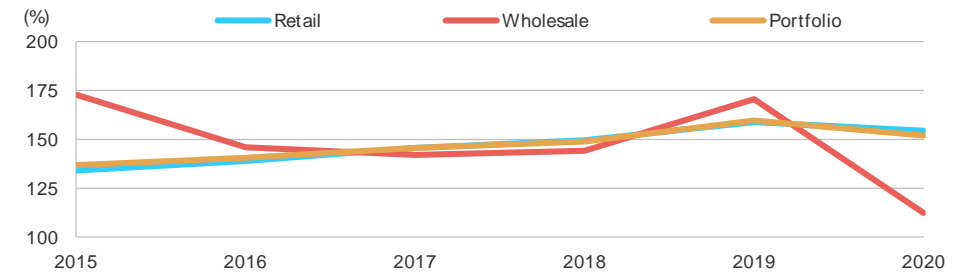
(Indicates the size of debt compared to the margin available for debt service.)



Source: Fitch Ratings.

5-Year Average Capex/Depreciation

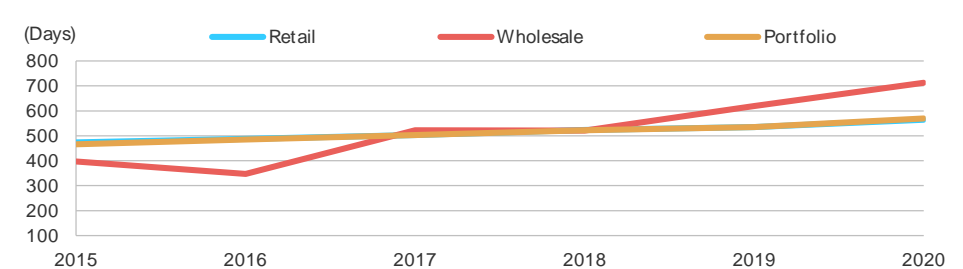
(Indicates whether 5-year average annual capital spending keeps pace with depreciation.)



Source: Fitch Ratings.

Liquidity Cushion Ratio

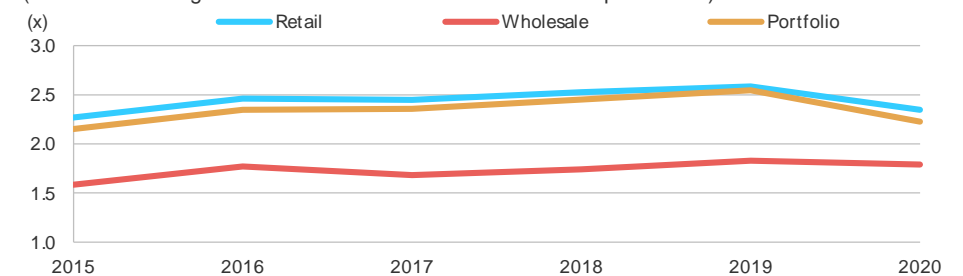
(Indicates financial flexibility, including all available sources of cash and liquidity relative to expenses.)



Source: Fitch Ratings.

Fitch-Calculated Total Debt Service Coverage

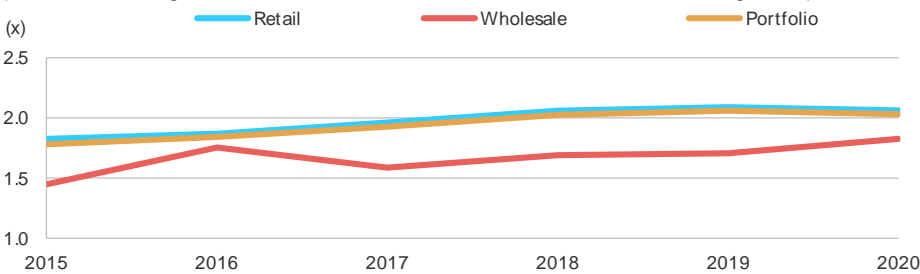
(Indicates the margin available to meet current debt service requirements.)



Source: Fitch Ratings.

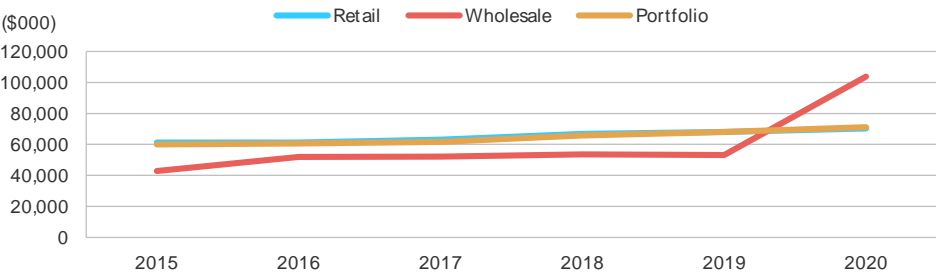
Coverage of Full Obligations

(Indicates the margin available to meet current debt service and other fixed obligations.)



Source: Fitch Ratings.

Total Operating Revenues

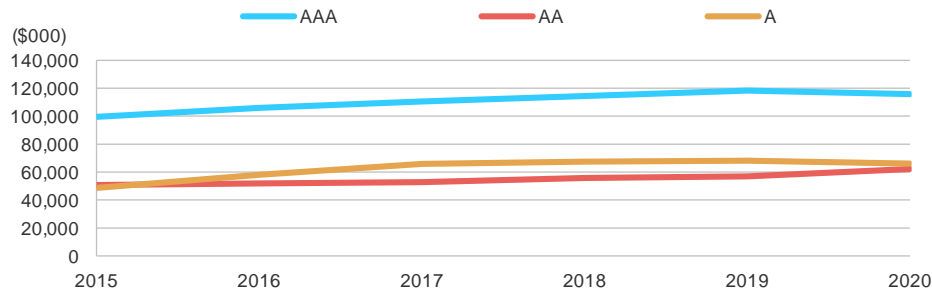


Source: Fitch Ratings.

Retail Trends

Below, the trends of 'AAA', 'AA' and 'A' medians for retail water and sewer systems are displayed for six of the financial metrics used in Fitch's analysis.

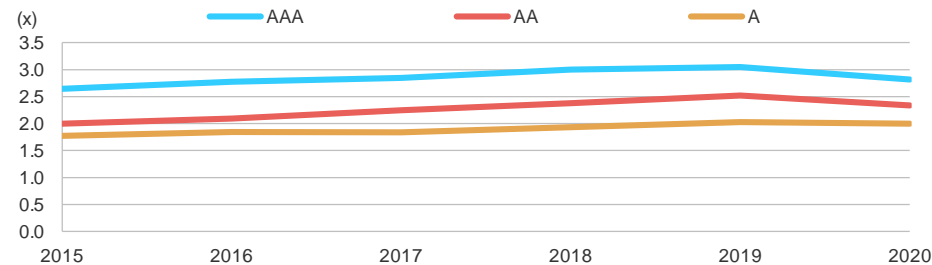
Total Operating Revenues



Source: Fitch Ratings.

Fitch-Calculated Total Debt Service Coverage

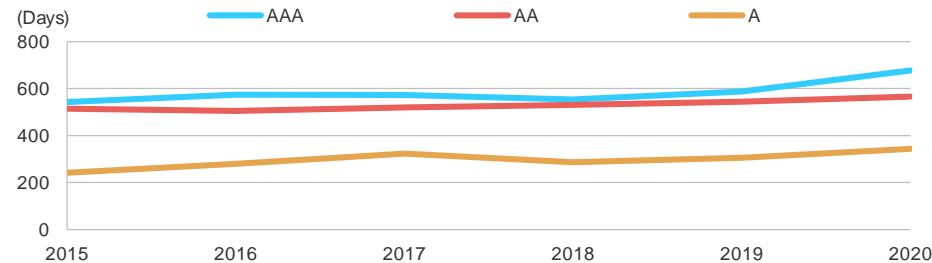
(Indicates the margin available to meet current debt service requirements.)



Source: Fitch Ratings.

Current Days Cash on Hand

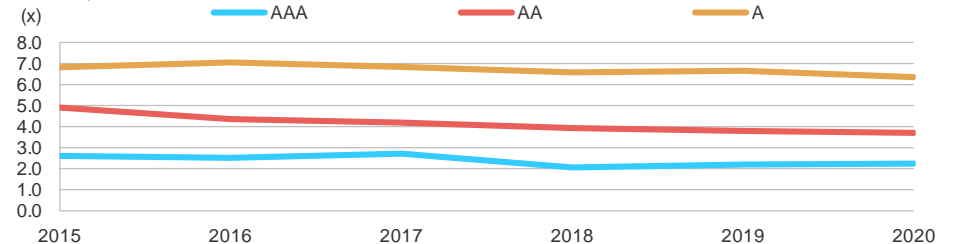
(Indicates financial flexibility, specifically current cash and cash equivalents, relative to expenses.)



Source: Fitch Ratings.

Net Adjusted Debt/Adjusted FADS

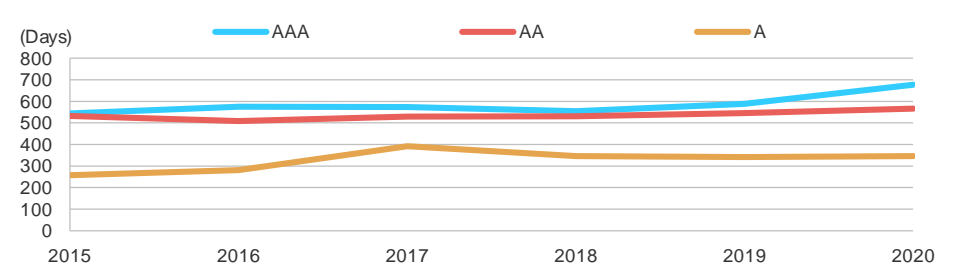
(Indicates the size of net debt and other fixed obligations compared to the margin available for debt service.)



Source: Fitch Ratings.

Liquidity Cushion Ratio

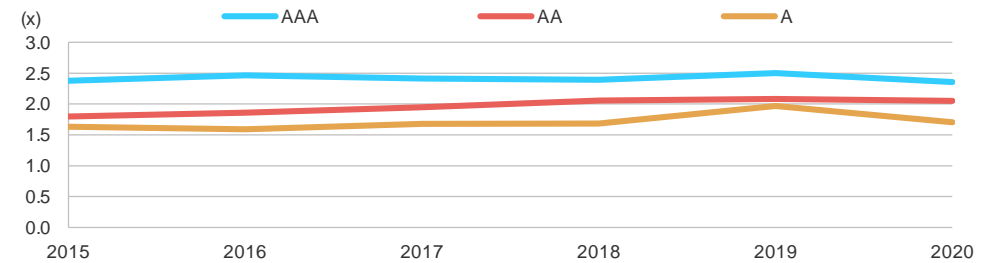
(Indicates financial flexibility, including all available sources of cash and liquidity, relative to expenses.)



Source: Fitch Ratings.

Coverage of Full Obligations

(Indicates the margin available to meet current debt service and other fixed obligations.)

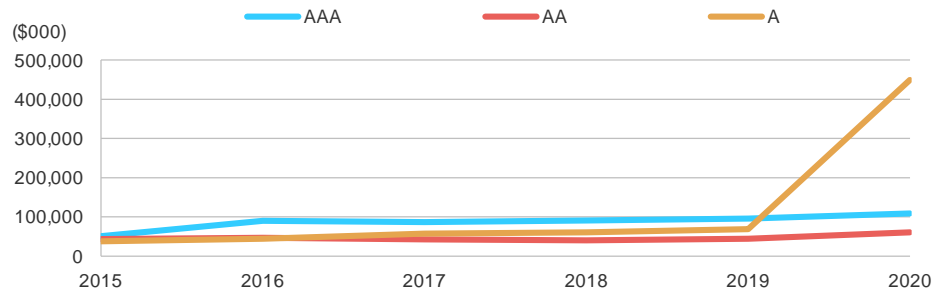


Source: Fitch Ratings.

Wholesale Trends

Below, the trends of 'AAA', 'AA' and 'A' medians for wholesale water and sewer systems are displayed for six of the financial metrics used in Fitch's analysis. Of note is that the 2020 sample size is small, and thus somewhat skewed, as audited information was not yet available for the full range of wholesale water and sewer utilities, particularly those with a Dec. 31, 2020 fiscal year-end date.

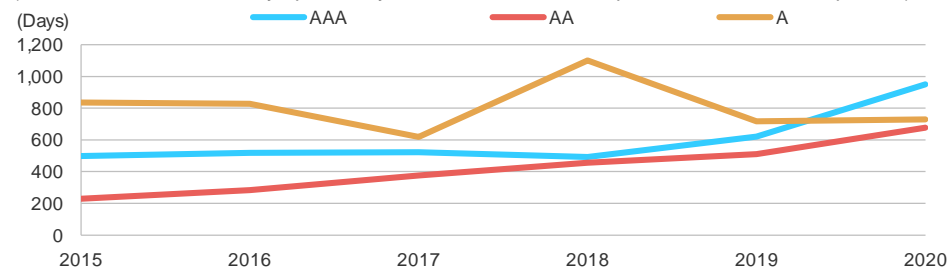
Total Operating Revenues



Source: Fitch Ratings.

Current Days Cash on Hand

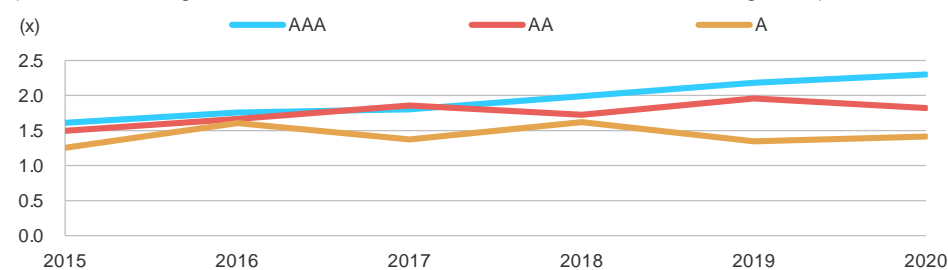
(Indicates financial flexibility, specifically current cash and cash equivalents, relative to expenses.)



Source: Fitch Ratings.

Coverage of Full Obligations

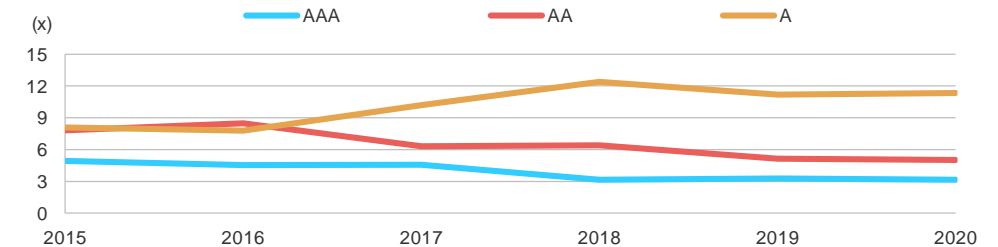
(Indicates the margin available to meet current debt service and other fixed obligations.)



Source: Fitch Ratings.

Net Adjusted Debt/Adjusted FADS

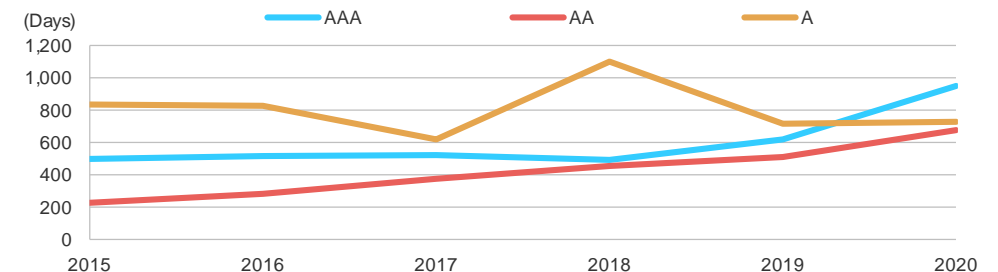
(Indicates the size of net debt and other fixed obligations compared to the margin available for debt service.)



Source: Fitch Ratings.

Liquidity Cushion Ratio

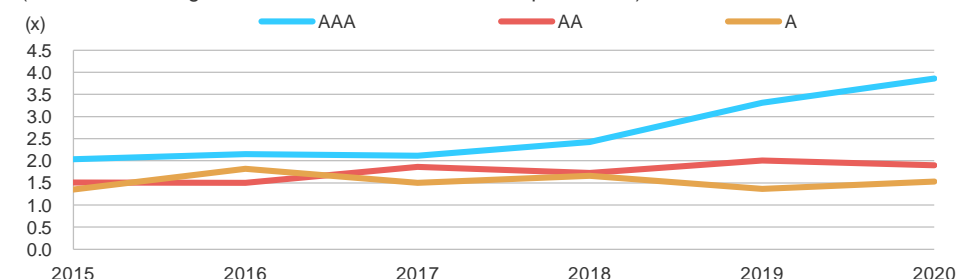
(Indicates financial flexibility, including all available sources of cash and liquidity relative to expenses.)



Source: Fitch Ratings.

Fitch-Calculated Total Debt Service Coverage

(Indicates the margin available to meet current debt requirements.)



Source: Fitch Ratings.

Financial Ratios — Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
AAA Rated Credits												
Arlington (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	165,047	1.3	2.4	137	313,199	71,979	5.75
Beverly Hills (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Small	38,531	1.9	2.2	572	38,313	18,436	1.64
Burbank Water and Power (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Midsize	33,349	1.6	2.4	143	40,283	14,730	5.53
Carrollton (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	49,168	1.3	2.9	310	13,130	18,982	2.61
Cary (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	85,318	2.4	2.4	2,135	280,682	56,114	0.01
Charlotte (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	438,105	1.7	1.7	807	1,644,648	273,206	4.59
Chesapeake (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	78,500	2.4	3.1	646	88,655	42,987	1.14
Chesterfield County (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	109,210	8.4	11.5	3,048	37,843	96,585	(4.01)
Cobb County (GA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	221,702	1.6	2.7	148	199,706	84,987	4.18
Collier County (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	162,702	3.2	3.6	708	237,127	79,953	1.08
Fairfax County (VA) - Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	217,854	2.6	2.6	455	610,541	142,630	3.44
Gilbert (AZ) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	78,919	3.8	4.1	1,768	132,865	57,004	(1.22)
Greensboro (NC) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	122,358	0.8	0.8	213	311,363	58,323	3.96
Henrico County (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	126,008	2.3	2.5	862	449,798	84,854	3.45
Hillsborough County (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Large	283,150	3.0	5.1	487	335,590	285,201	6.21
Irvine Ranch Water District (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Midsize	167,400	2.8	2.8	813	706,092	127,686	3.71
Lewisville (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	34,990	2.1	2.9	636	54,135	17,957	1.69
Manatee County (FL) - Water, Sewer, Stormwater & Solid Waste Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	199,203	6.3	—	907	290,075	93,669	(0.92)
Mansfield (TX) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Small	41,944	2.1	3.4	329	34,508	20,811	2.11
Mesa Water District (CA) - Water Revenues (2nd Lien)	AAA	RO:Sta	West	Retail	Midsize	36,725	2.6	2.8	469	97,215	14,286	4.99
Moulton Niguel Water District (CA) - Water & Sewer Revenues	AAA	RO:Sta	West	Retail	Small	65,224	2.0	3.7	197	136,082	48,469	2.37
Olivenhain Municipal Water District (CA) - Water Revenues	AAA	RO:Sta	West	Retail	Small	57,583	1.7	2.8	525	57,133	29,778	2.61
Orange County Sanitation District (CA) - Sewer Revenues	AAA	RO:Sta	West	Retail	Large	341,064	3.7	3.7	1,910	1,004,216	344,033	0.42
Orem (UT) - Water & Stormwater Revenues	AAA	RO:Sta	West	Retail	Small	38,943	7.5	9.6	1,200	20,747	24,113	(1.24)

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Orlando (FL) - Sewer Revenues & UST (2nd Lien)	AAA	RO:Sta	Southeast	Retail	Midsize	106,032	6.0	6.1	895	78,723	47,341	(2.59)
Rancho California Water District (CA) - Water & Sewer Revenues	AAA	RO:Sta	West	Retail	Midsize	65,647	1.9	2.4	1,391	268,964	71,869	1.39
Scottsdale (AZ) - Water & Sewer Revenues	AAA	RO:Sta	Southwest	Retail	Midsize	163,392	2.2	2.5	816	289,693	74,694	0.87
Seacoast Utility Authority (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Small	59,655	0.6	0.6	1,033	47,554	41,565	(0.77)
South Jordan (UT) - Water Revenues	AAA	RO:Sta	West	Retail	Small	22,691	2.5	3.9	878	9,292	15,086	(0.20)
Suffolk County Water Authority (NY) - Water & Sewer Revenues	AAA	RO:Sta	Northeast	Retail	Large	209,005	2.8	2.8	796	1,001,346	115,502	5.78
Tampa (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	242,949	2.9	3.7	729	551,016	86,461	3.35
Tohopekaliga Water Authority (FL) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	131,566	10.7	10.7	483	241,640	93,869	1.65
Virginia Beach (VA) - Water & Sewer Revenues	AAA	RO:Sta	Southeast	Retail	Midsize	130,509	2.0	2.6	426	197,041	62,679	2.89
Washington Suburban Sanitary District (MD) - General Obligation - Unlimited Tax	AAA	RO:Sta	Southeast	Retail	Large	749,758	0.8	0.8	113	3,670,501	369,545	10.58
AAA Rated Median						115,784	2.4	2.8	677	218,417	67,274	2.24
AA+ Rated Credits												
Anaheim (CA) - Water Revenues	AA+	RO:Neg	West	Retail	Midsize	84,943	1.3	1.9	288	208,114	39,298	7.47
Athens-Clarke County Unified Government (GA) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	60,267	2.5	2.6	1,950	210,172	39,939	2.11
Billings (MT) - Sewer Revenues	AA+	RO:Sta	West	Retail	Midsize	21,076	2.4	2.4	1,445	68,002	12,849	2.56
Broward County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Large	152,193	1.9	2.0	99	748,838	77,262	9.76
Buncombe County Metropolitan Sewerage District (NC) - Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	43,841	3.1	3.1	1,526	104,986	30,320	1.23
Dallas (TX) - Water & Sewer Revenues	AA+	RO:Neg	Southwest	Retail	Large	635,940	1.1	1.3	222	3,166,801	310,343	9.58
Dover (DE) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	14,922	2.3	4.8	448	14,336	6,539	2.52
Durham (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	102,821	3.9	3.9	565	332,180	51,540	4.81
East Bay Municipal Utility District (CA) - Water Revenues (2nd Lien)	AA+	RO:Sta	West	Retail	Large	573,702	2.6	2.6	756	3,010,510	441,378	7.13
East Bay Municipal Utility District (CA) - Sewer Revenues (2nd Lien)	AA+	RO:Sta	West	Retail	Large	119,961	2.7	2.7	567	393,781	70,752	5.76
Eastern Municipal Water District (Riverside County) (CA) - Water & Sewer Revenues (3rd Lien)	AA+	RO:Pos	West	Retail	Large	256,907	2.4	2.9	593	971,792	202,968	4.13

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
El Paso (TX) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	Southwest	Retail	Large	268,999	2.1	2.1	72	816,988	172,172	4.41
Erie County Water Authority (NY) - Water Revenues (2nd Lien)	AA+	RO:Sta	Northeast	Retail	Large	80,751	5.6	5.6	443	57,302	37,458	0.50
Eugene (OR) - Water Revenues	AA+	RO:Pos	West	Retail	Midsized	38,881	4.1	4.1	436	78,358	23,316	2.82
Gastonia (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	40,458	1.8	1.8	254	59,761	10,137	4.31
Helix Water District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	86,788	2.1	9.1	170	6,700	36,548	2.92
Hernando County (FL) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsized	39,335	2.8	2.8	744	77,437	21,547	1.57
High Point (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsized	55,133	1.7	1.7	691	166,367	27,708	4.24
Hillsborough (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	28,871	2.6	3.9	593	34,490	16,882	2.03
Honolulu Board of Water Supply (HI) - Water Revenues	AA+	RO:Pos	West	Retail	Large	231,108	3.6	3.6	305	381,267	99,418	0.54
Jurupa Community Services District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	39,789	4.4	4.4	961	23,791	13,524	(3.76)
Lake Arrowhead Community Services District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	—	15,399	5.9	6.0	869	20,407	10,436	0.63
Lakeland (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsized	71,127	4.0	5.1	304	107,161	38,242	2.67
Lee County (FL) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Large	116,654	2.5	2.5	798	229,966	55,385	1.04
McAllen (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsized	39,928	2.0	2.1	117	132,744	18,569	5.56
Metropolitan St. Louis Sewer District (MO) - Sewer Revenues	AA+	RO:Sta	Midwest	Retail	Large	437,982	1.9	1.9	641	1,690,335	290,973	4.50
New York City Municipal Water Finance Authority (NY) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	Northeast	Retail	Large	3,830,892	1.4	1.4	58	33,090,405	2,342,127	13.22
Norfolk (VA) - Water Revenues	AA+	RO:Sta	Southeast	Retail	Midsized	94,061	1.7	2.0	706	337,458	52,019	5.52
Oakland (CA) - Sewer Revenues	AA+	RO:Pos	West	Retail	Midsized	68,010	6.2	6.6	527	29,072	24,711	1.30
Okaloosa County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsized	37,134	3.1	3.1	769	64,810	22,305	1.10
Orange Water & Sewer Authority (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	36,306	1.8	1.8	157	80,026	17,502	3.75
Padre Dam Municipal Water District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	71,815	2.4	4.6	594	55,084	38,440	2.07
Pasadena (CA) - Water Revenues	AA+	RO:Pos	West	Retail	Midsized	62,466	1.8	3.2	331	57,521	26,912	3.40

Financial Ratios — Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Pasco County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Large	145,271	4.6	4.6	949	247,638	83,797	(0.28)
Plano (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsize	169,258	1.2	6.4	190	34,806	55,337	4.40
Riverside (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Midsize	69,720	1.1	1.4	292	270,123	25,462	11.05
Sacramento Area Sewer District (CA) - Sewer Revenues	AA+	RO:Pos	West	Retail	Large	112,397	4.2	4.2	598	169,356	48,986	1.88
San Antonio (TX) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Large	794,917	2.8	2.9	622	4,171,263	576,079	6.12
San Juan Water District (CA) - Water Revenues	AA+	RO:Sta	West	Retail	Large	24,422	4.0	4.0	578	35,781	12,044	1.32
Sarasota County (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	118,793	2.5	2.6	787	231,429	58,058	1.23
South Coast Water District (CA) - Water & Sewer Revenues	AA+	RO:Neg	West	Retail	Small	35,784	2.1	3.2	501	95,716	17,546	5.13
South Ogden Conservation District (UT) - Water Revenues	AA+	RO:Sta	West	Retail	Small	2,994	2.3	2.6	1,494	8,352	1,720	2.72
Spotsylvania County (VA) - Water & Sewer Revenues	AA+	RO:Pos	Southeast	Retail	Midsize	36,811	2.7	2.7	1,695	124,742	31,815	0.44
Stamford Water Pollution Control Authority (CT) - Water & Sewer Revenues	AA+	RO:Sta	Northeast	Retail	Midsize	25,993	1.0	1.0	810	96,392	17,115	3.32
Tallahassee (FL) - Water, Sewer & Stormwater Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	124,391	1.6	2.0	328	355,200	48,053	7.05
Tamarac (FL) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Small	27,251	3.7	7.9	1,106	22,572	11,637	(1.75)
Tempe (AZ) - Water & Sewer Revenues	AA+	RO:Sta	Southwest	Retail	Midsize	85,223	1.2	1.2	872	329,288	47,957	4.75
Tualatin Valley Water District (OR) - Water Revenues	AA+	RO:Sta	West	Retail	Small	70,087	13.0	—	1,169	0	51,529	(1.12)
Vallecitos Water District (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Retail	Small	64,886	2.1	3.9	500	52,531	36,891	2.11
Winston-Salem (NC) - Water & Sewer Revenues	AA+	RO:Sta	Southeast	Retail	Midsize	115,211	1.8	1.8	573	517,757	77,463	5.38
AA+ Rated Median						70,607	2.4	2.8	585	115,952	37,850	2.87
AA Rated Credits												
Albuquerque Bernalillo County Water Utility Authority (NM) - Water & Sewer Revenues (2nd Lien)	AA	RO:Pos	Southwest	Retail	Large	225,609	1.2	1.2	415	685,288	109,692	5.76
Brevard County (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Large	38,944	10.9	11.8	739	69,765	19,842	1.64
Citrus County (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	24,748	3.5	3.8	1,182	66,115	13,162	2.08
Clarksville (TN) - Water, Sewer & Gas Revenues	AA	RO:Pos	Southeast	Retail	Midsize	92,209	1.9	2.1	654	202,074	41,736	2.68
Clearwater (FL) - Water & Sewer Revenues	AA	RO:Pos	Southeast	Retail	Midsize	91,069	3.9	5.0	884	131,647	44,951	0.33

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Contra Costa Water District (CA) - Water Revenues (3rd Lien)	AA	RO:Sta	West	Retail	Large	140,334	1.8	1.8	306	386,644	94,476	3.41
Cucamonga Valley Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsized	80,942	1.6	2.0	273	169,404	44,375	5.33
District of Columbia Water & Sewer Authority (DC) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Northeast	Retail	Large	736,828	1.7	1.8	257	3,846,676	439,654	7.23
Eagle Mountain City (UT) - Water & Sewer Revenues	AA	RO:Sta	West	Retail	Small	10,232	8.6	15.4	1,317	21,112	24,460	0.12
Elsinore Valley Municipal Water District (CA) - Water & Sewer Revenues	AA	RO:Sta	West	Retail	Small	78,169	2.3	2.9	663	166,802	54,263	0.29
Escondido (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Midsized	35,975	1.8	1.8	545	58,945	10,670	1.50
Fort Worth (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Large	478,888	3.1	4.0	400	953,524	291,793	4.36
Fresno (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	77,249	11.5	11.6	665	74,051	46,946	(0.22)
Garland (TX) - Water & Sewer Revenues (4th Lien)	AA	RO:Sta	Southwest	Retail	Midsized	127,747	1.2	1.7	207	237,245	50,286	5.63
Glendale (AZ) - Water & Sewer Revenues - Subordinate Lien	AA	RO:Sta	Southwest	Retail	Midsized	108,248	2.2	2.2	224	201,666	60,582	3.28
Greater New Haven Water Pollution Control Authority (CT) - Sewer Revenues	AA	RO:Sta	Northeast	Retail	Large	45,361	1.4	1.4	669	153,944	25,268	4.35
Hampton Roads Sanitation District (VA) - Sewer Revenues (2nd Lien)	AA	RO:Pos	Southeast	Retail	Midsized	322,032	1.5	1.5	378	835,479	171,247	3.63
Houston (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Large	1,100,092	1.3	1.4	1,276	7,865,578	724,972	8.89
JEA (FL) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Southeast	Retail	Large	483,859	2.7	2.9	127	1,339,204	338,524	4.32
Jurupa Community Services District (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	20,644	2.0	2.5	1,067	65,642	14,683	2.96
Lehi (UT) - Water Revenues	AA	RO:Sta	West	Retail	Small	11,111	5.1	5.1	390	20,645	7,018	1.32
Los Angeles (CA) - Sewer Revenues (2nd Lien)	AA	RO:Sta	West	Retail	Large	752,727	1.7	1.7	120	2,938,352	412,772	6.52
Los Angeles Department of Water & Power (CA) - Water Revenues	AA	RO:Neg	West	Retail	Large	1,293,837	1.7	1.8	298	6,334,100	795,701	8.42
Marin Municipal Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsized	97,271	2.7	3.1	143	168,072	49,230	4.89
Melbourne (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	54,040	2.0	2.3	872	93,143	21,679	(0.02)
Mojave Water Agency (CA) - Water Revenues	AA	RO:Pos	West	Retail	Large	10,280	3.3	4.5	515	46,248	36,917	0.49
North Salt Lake (UT) - Water Revenues	AA	RO:Pos	West	Retail	Small	5,456	3.3	4.2	635	2,769	3,880	(0.60)

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Oceanside (CA) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	69,352	1.9	6.7	565	12,384	26,795	0.63
Oro Valley (AZ) - Water Revenues	AA	RO:Sta	Southwest	Retail	Small	17,781	1.5	1.6	1,008	35,801	10,756	1.24
Palm Coast (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	45,069	2.8	2.9	296	148,171	29,208	3.76
Peoria (AZ) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Midsize	70,399	2.3	2.4	693	61,986	31,625	(0.46)
Pima County (AZ) - Sewer Revenues (2nd Lien)	AA	RO:Sta	Southwest	Retail	Large	160,552	1.2	1.3	476	496,944	98,931	3.92
Pleasant Grove (UT) - Water Revenues	AA	RO:Pos	West	Retail	Small	8,102	3.2	3.3	819	20,886	5,567	2.14
Polk County (FL) - Water & Sewer Revenues	AA	RO:Pos	Southeast	Retail	Large	95,185	2.6	2.6	420	177,272	50,742	2.80
Provo (UT) - Water Revenues	AA	RO:Sta	West	Retail	Midsize	15,255	5.4	7.7	298	9,802	4,570	0.70
Richmond (VA) - Water, Sewer & Gas Revenues	AA	RO:Sta	Southeast	Retail	Midsize	314,360	1.7	1.8	512	934,727	121,499	5.74
Sacramento (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	44,562	7.7	8.8	835	61,451	35,865	0.64
San Diego (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Large	360,823	1.3	1.3	490	876,295	149,158	3.64
San Luis Obispo (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	25,667	2.8	3.2	385	12,851	8,257	1.12
Santa Margarita/Dana Point Authority (CA) - General Obligation - Unlimited Tax - Improvement Districts 2, 3, 4	AA	RO:Sta	West	Retail	Midsize	79,638	1.9	2.5	452	119,788	53,895	2.32
Sarasota (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	48,697	5.4	5.4	609	64,950	20,721	0.56
Sausalito-Marín City Sanitary District (CA) - Sewer Revenues	AA	RO:Sta	West	Retail	Small	8,967	2.4	2.4	2,101	37,828	6,926	2.51
Sonoma Valley County Sanitation District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	17,000	3.6	3.6	656	18,121	8,618	(0.47)
St. Petersburg (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	177,085	1.7	2.3	689	737,429	76,830	8.00
Sugar Land (TX) - Water & Sewer Revenues	AA	RO:Sta	Southwest	Retail	Midsize	49,530	1.0	1.3	458	199,686	16,767	9.31
Truckee Meadows Water Authority (NV) - Water Revenues (2nd Lien)	AA	RO:Pos	West	Retail	Midsize	108,073	3.7	3.7	893	412,791	84,132	3.45
Union County (NC) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Midsize	56,155	1.9	2.0	862	160,270	35,480	1.30
Union Sanitary District (CA) - Wastewater Revenues	AA	RO:Sta	West	Retail	Midsize	61,676	7.5	7.5	790	73,508	43,310	0.96
Venice (FL) - Water & Sewer Revenues	AA	RO:Sta	Southeast	Retail	Small	27,215	4.6	5.3	904	38,755	13,734	0.58
Village Center Community Development District (FL) - Water & Sewer Revenues - VCSA System	AA	RO:Sta	Southeast	Retail	Midsize	7,346	2.3	2.3	1,667	6,835	4,308	(2.15)
West Palm Beach (FL) - Water, Sewer & Stormwater Revenues	AA	RO:Sta	Southeast	Retail	Midsize	137,873	3.5	4.6	509	267,266	66,982	2.84
Yuba City (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	15,953	2.3	2.5	1,043	35,305	8,802	2.12

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Yucaipa Valley Water District (CA) - Water Revenues	AA	RO:Sta	West	Retail	Small	10,523	1.3	1.3	71	28,213	3,470	9.80
AA Rated Median						69,352	2.3	2.5	565	131,647	36,917	2.51
AA- Rated Credits												
Atlanta (GA) - Water & Sewer Revenues	AA-	RO:Pos	Southeast	Retail	Large	478,397	2.0	2.1	1,355	3,339,566	492,832	5.27
Austin (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Large	566,125	1.6	1.9	321	2,474,003	254,310	8.48
Brunswick County (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Midsize	61,931	1.9	1.9	889	347,329	35,126	7.92
Clackamas River Water (OR) - Water Revenues	AA-	RO:Pos	West	Retail	Midsize	13,289	2.9	2.9	307	21,928	5,774	4.18
Corpus Christi (TX) - Water, Sewer, Stormwater & Gas Revenues (2nd Lien)	AA-	RO:Sta	Southwest	Retail	Midsize	240,370	1.6	1.7	435	951,786	137,243	6.36
East Valley Water District (CA) - Water & Sewer Revenues	AA-	RO:Sta	West	Retail	Small	39,813	2.2	3.1	178	109,459	18,504	7.30
Edinburg (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsize	19,520	1.4	1.5	282	36,135	6,582	4.05
Florida Keys Aqueduct Authority (FL) - Water Revenues	AA-	RO:Sta	Southeast	Retail	Small	71,880	1.9	1.9	236	200,343	29,159	6.71
Foster City and Estero Municipal Improvement District (CA) - Wastewater Revenues	AA-	RO:Sta	West	Retail	Small	13,650	5.8	5.8	1,711	40,155	8,601	1.69
Glendale (CA) - Water Revenues	AA-	RO:Sta	West	Retail	Midsize	49,864	1.3	1.7	188	74,778	18,983	5.63
Honolulu (City & County) (HI) - Sewer Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Large	454,901	1.8	1.9	3,414	2,671,278	341,212	4.33
Laredo (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsize	86,506	1.3	1.4	758	483,064	41,206	9.25
Lodi (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Small	16,097	1.5	1.9	700	39,490	6,341	5.24
Los Angeles County Sanitation District No. 14 (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsize	37,908	1.6	1.6	1,575	209,506	29,699	5.45
Los Angeles County Sanitation District No. 20 (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsize	25,985	1.6	1.6	1,195	176,040	18,624	8.06
Louisville & Jefferson County Metropolitan Sewer District (KY) - Sewer & Stormwater Revenues	AA-	RO:Sta	Midwest	Retail	Large	319,057	1.3	1.3	285	2,498,264	228,528	10.66
Lubbock (TX) - Water & Sewer Revenues	AA-	RO:Pos	Southwest	Retail	Midsize	136,393	1.2	1.3	272	538,736	79,489	4.95
Marco Island (FL) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	34,105	1.6	1.6	660	158,857	22,766	5.88
Midvale City (UT) - Water & Sewer Revenues	AA-	RO:Pos	West	Retail	Small	9,921	1.1	1.1	191	23,054	3,722	7.12
North Miami Beach (FL) - Water Revenues	AA-	RO:Sta	Southeast	Retail	Midsize	35,979	0.8	1.5	109	108,147	4,753	10.08

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Oakland Park (FL) - Water & Sewer Revenues	AA-	RO:Pos	Southeast	Retail	Small	20,136	1.1	1.3	255	33,693	6,483	6.38
Provo (UT) - Sewer Revenues	AA-	RO:Pos	West	Retail	Midsized	17,030	17.0	19.9	315	8,174	11,495	0.42
Ross Valley Sanitary District (CA) - Sewer Revenues	AA-	RO:Sta	West	Retail	Midsized	22,714	1.7	2.0	443	101,542	15,842	6.83
Sacramento (CA) - Water Revenues	AA-	RO:Sta	West	Retail	Large	142,041	2.1	2.6	629	443,071	78,760	4.92
Salisbury (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	27,717	2.4	2.4	547	53,562	11,006	2.86
San Angelo (TX) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Midsized	58,974	2.5	2.0	1,266	233,359	46,404	3.06
San Diego (CA) - Water Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Large	552,214	1.1	1.3	244	1,299,010	257,196	7.00
Sanford (NC) - Water & Sewer Revenues	AA-	RO:Sta	Southeast	Retail	Small	20,818	1.7	1.7	370	56,517	9,180	4.71
Santa Clarita Valley Water Agency (CA) - Water Revenues (2nd Lien)	AA-	RO:Pos	West	Retail	Midsized	90,909	2.0	2.1	1,280	766,453	74,932	7.52
Stockton (CA) - Water Revenues (2nd Lien)	AA-	RO:Sta	West	Retail	Midsized	57,519	2.0	2.3	809	209,121	40,656	4.38
Victoria (TX) - Water & Sewer Revenues	AA-	RO:Pos	Southwest	Retail	Small	26,345	1.1	1.4	318	46,353	10,658	4.03
Village Center Community Development District (FL) - Water & Sewer Revenues - LSSA System	AA-	RO:Pos	Southeast	Retail	Midsized	11,753	1.7	1.7	2,054	59,205	8,756	4.48
Western Nassau County Water Authority (NY) - Water Revenues	AA-	RO:Sta	Northeast	Retail	Large	18,070	1.2	1.2	218	108,051	9,695	9.87
Yuma (AZ) - Water & Sewer Revenues	AA-	RO:Sta	Southwest	Retail	Small	43,298	2.0	2.0	1,031	102,205	28,484	1.44
AA- Rated Median						38,861	1.6	1.8	439	134,158	20,875	5.54
A+ Rated Credits												
CWA Authority (IN) - Sewer Revenues	A+	RO:Sta	Midwest	Retail	Large	296,978	1.8	2.1	502	2,161,122	195,047	9.37
Daleville (AL) - Water & Sewer Revenues	A+	RO:Sta	Southeast	Retail	Small	1,431	2.2	2.5	939	2,238	484	0.02
Deltona (FL) - Water & Sewer Revenues	A+	RO:Sta	Southeast	Retail	Small	23,748	1.7	1.7	724	123,073	15,446	6.25
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Lehigh System	A+	RO:Sta	Southeast	Retail	Large	16,145	3.5	3.5	992	61,908	9,913	3.96
Fort Myers (FL) - Water, Sewer & Reclaimed Water Revenues	A+	RO:Sta	Southeast	Retail	Small	92,276	1.7	2.0	467	296,354	52,130	4.39
Fresno (CA) - Water Revenues (2nd Lien)	A+	RO:Sta	West	Retail	Large	120,252	2.9	2.9	809	457,486	71,277	4.49
Galveston (TX) - Water & Sewer Revenues	A+	RO:Sta	Southwest	Retail	Small	38,169	1.1	1.2	120	105,719	13,161	7.65
Indianapolis (IN) - Water Revenues (2nd Lien)	A+	RO:Pos	Midwest	Retail	Large	207,593	2.1	2.1	206	934,431	127,670	6.58
Miami-Dade County (FL) - Water & Sewer Revenues	A+	RO:Pos	Southeast	Retail	Large	769,481	1.7	1.7	171	3,423,472	369,277	8.51

Financial Ratios – Retail

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Philadelphia (PA) - Water & Sewer Revenues	A+	RO:Sta	Northeast	Retail	Large	733,318	1.2	1.4	223	2,360,315	308,853	7.97
Port St. Lucie (FL) - Water & Sewer Revenues	A+	RO:Pos	Southeast	Retail	Midsized	82,861	2.9	3.1	541	349,342	71,185	4.07
Stockton (CA) - Wastewater Revenues	A+	RO:Sta	West	Retail	Midsized	71,210	4.4	4.5	820	177,149	36,441	(0.18)
Westlands Water District (CA) - Water Revenues	A+	RO:Sta	West	Retail	Large	212,982	1.5	3.7	246	114,047	106,184	3.80
A+ Rated Median						92,276	1.8	2.1	502	296,354	71,185	4.49
A/A- Rated Credits												
Eagle Pass (TX) - Water & Sewer Revenues	A	RO:Sta	Southwest	Retail	Small	14,644	2.0	2.0	298	59,965	6,630	7.72
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Unified Utility System	A	RO:Sta	Southeast	Retail	Large	8,364	2.3	2.3	266	24,453	3,686	5.51
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Consolidated Utility System	A	RO:Sta	Southeast	Retail	Large	6,559	1.3	1.3	809	27,194	3,183	6.11
Florida Governmental Utility Authority (FL) - Water & Sewer Revenues - Lake Aqua Utility System	A	RO:Sta	Southeast	Retail	Large	4,132	1.6	1.6	191	16,664	1,826	8.22
North Hudson Sewerage Authority (NJ) - Water & Sewer Revenues	A	RO:Sta	Northeast	Retail	Small	61,051	1.4	1.4	717	389,583	37,072	8.67
Sangamon County Water Reclamation District (IL) - Sewer Revenues	A	RO:Neg	Midwest	Retail	Midsized	23,239	0.7	0.7	50	225,429	11,869	17.25
Santa Cruz (CA) - Water Revenues	A-	RO:Neg	West	Retail	Small	41,983	0.8	0.8	389	58,107	14,523	3.77
A/A- Rated Median						14,644	1.4	1.4	298	58,107	6,630	7.72
BBB/BB Rated Credits												
Guam Waterworks Authority (GU) - Water & Sewer Revenues	BBB	RO:Sta	West	Retail	—	103,261	1.1	1.1	322	685,341	51,755	12.17
Jefferson County (AL) - Sewer Revenues (2nd Lien)	BB	RO:Sta	Southeast	Retail	Large	235,327	2.2	2.2	78	2,118,942	157,817	13.08
BBB/BB Rated Median						169,294	1.7	1.7	200	1,402,141	104,786	12.62

Source: Fitch Ratings.

Financial Ratios – Wholesale

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
AAA Rated Credits												
Cobb County-Marietta Water Authority (GA) - Water Revenues	AAA	RO:Sta	Southeast	Wholesale	Large	95,455	22.4	22.4	2,899	43,574	70,738	(2.64)
Orange County Water District (CA) - Water Revenues	AAA	RO:Sta	West	Wholesale	Large	146,718	2.4	2.8	891	704,458	100,428	5.21
Weber Basin Water Conservancy District (UT) - Water Revenues	AAA	RO:Sta	West	Wholesale	Midsize	34,294	2.0	2.0	1,009	164,129	26,896	3.97
Western Municipal Water District (CA) - Water Revenues	AAA	RO:Sta	West	Wholesale	Large	122,347	2.2	4.9	537	194,007	79,857	2.34
AAA Rated Median						108,901	2.3	3.9	950	179,068	75,298	3.16
AA Category Credits												
Alameda County Flood and Water Conservation District Zone 7 Water Agency (CA) - Water & Sewer Revenues	AA+	RO:Sta	West	Wholesale	Small	112,146	2.8	9.2	1,242	68,705	55,340	(1.74)
Central Utah Water Conservancy District (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	191,382	0.8	0.8	1,576	676,371	231,566	1.77
East Central Regional Wastewater Treatment Facilities Operation Board (FL) - Sewer Revenues	AA+	RO:Pos	Southeast	Wholesale	Large	28,922	1.8	1.9	1,050	158,597	21,050	5.02
Jordan Valley Water Conservancy District (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Large	60,660	1.5	1.7	421	321,381	45,864	6.40
Metropolitan Water District of Salt Lake and Sandy (UT) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	22,407	1.8	1.9	677	229,364	30,575	5.57
San Diego County Water Authority (CA) - Water Revenues (2nd Lien)	AA+	RO:Sta	West	Wholesale	Large	569,099	1.1	1.1	62	2,242,231	333,258	9.64
Santa Clara Valley Water District (CA) - Water & Sewer Revenues (2nd Lien)	AA+	RO:Sta	West	Wholesale	Large	266,900	3.0	5.1	698	673,100	224,065	2.39
Sonoma County Water Agency (CA) - Water Revenues	AA+	RO:Sta	West	Wholesale	Midsize	44,692	9.7	9.7	813	43,513	19,470	0.61
Southern California Water Replenishment District (CA) - Water Revenues	AA+	RO:Neg	West	Wholesale	Large	73,229	1.0	0.9	459	308,530	30,265	10.49
Tampa Bay Water, A Regional Water Supply Authority (FL) - Water Revenues	AA+	RO:Sta	Southeast	Wholesale	Large	168,624	1.2	1.2	563	897,551	100,408	7.73
Timpanogos Special Service District (UT) - Water & Sewer Revenues	AA+	RO:Sta	West	Wholesale	Large	20,230	3.9	3.9	2,086	29,067	18,220	(1.67)
Central Valley Water Reclamation Facility (UT) - Sewer Revenues	AA	RO:Sta	West	Wholesale	Large	19,937	4.1	4.1	47	81,655	25,408	2.82

Financial Ratios – Wholesale

System	Rating	Outlook	Region	Type	Size	Operating Revenues (\$000)	Coverage of Full Obligations (x)	Fitch-calculated Total DSC (x)	Current Days Cash on Hand	Long-Term Debt (\$000)	Adjusted FADS (\$000)	Net Adjusted Debt to Adjusted FADS (x)
Central Weber Sewer Improvement District (UT) - Sewer Revenues	AA	RO:Pos	West	Wholesale	Midsized	13,475	2.2	2.2	2,194	111,284	22,347	2.94
Massachusetts Water Resources Authority (MA) - Water & Sewer Revenues (2nd Lien)	AA	RO:Sta	Northeast	Wholesale	Large	778,326	1.0	1.0	192	5,235,335	517,691	9.02
Peace River Manasota Regional Water Supply Authority (FL) - Water Revenues	AA	RO:Sta	Southeast	Wholesale	Midsized	33,290	(1.2)	(1.2)	357	150,101	14,668	8.84
AA Category Median						60,660	1.8	1.9	677	229,364	30,575	5.02
A Category Credits												
North Harris County Regional Water Authority (TX) - Water Revenues	A+	RO:Sta	Southwest	Wholesale	Large	132,784	1.4	1.4	5,215	1,915,857	128,058	11.59
Great Lakes Water Authority (MI) - Water Revenues (2nd Lien)	A	RO:Sta	Midwest	Wholesale	Large	449,087	1.5	1.8	728	3,026,901	232,176	11.32
Great Lakes Water Authority (MI) - Sewer Revenues (2nd Lien)	A	RO:Sta	Midwest	Wholesale	Large	798,331	1.3	1.5	240	3,651,203	321,814	10.39
A Category Median						449,087	1.4	1.5	728	3,026,901	232,176	11.32

Source: Fitch Ratings.

2021 Water and Sewer Retail Medians

	Fiscal Year	2015	2016	2017	2018	2019	2020
Revenue Defensibility	Operating Revenue Growth (%)	3.7	4.9	5.0	4.0	2.5	3.8
	Operating Revenue Growth - 5 Year Average (%)	—	—	—	—	4.0	4.0
	Total Operating Revenues (\$)	61,152	61,138	63,156	66,699	68,108	70,243
	Population	242,088	239,620	234,544	236,217	239,928	N.a.
	Water Connections	33,785	34,514	33,418	33,302	34,394	31,716
	Sewer Connections	32,691	33,698	28,943	29,277	29,870	24,895
	Service Area MHI / US MHI (%)	97	96	97	98	99	N.a.
	Service Area Unemployment / US (%)	96.2	95.9	93.2	92.3	91.9	97.5
	Monthly Water Bill at 7,500 Gallons/Month (\$)	29.20	29.82	31.26	32.57	33.48	31.31
	Monthly Sewer Bill at 6,000 Gallons/Month (\$)	33.56	35.40	35.54	37.06	38.08	31.30
	Total Monthly Bill (\$)	57.09	59.14	60.68	63.25	66.03	61.57
	Percent of Population w/Unaffordable Bill (%)	16.9	17.3	17.3	17.5	17.0	N.a.
Operating Risk	Water Produced (mgd)	15.2	14.2	14.8	15.0	14.8	14.6
	Sewer Flows (mgd)	8.9	9.8	8.5	8.5	9.5	7.6
	Operating Cost Burden (\$/mg)	4,006	4,393	4,433	4,521	4,675	4,527
	Life-Cycle Ratio (%)	32.2	33.0	34.5	35.0	35.7	37.6
	5-Yr Avg Capital Expenditures / Depreciation (%)	134.0	138.9	145.6	149.6	158.8	154.5
Financial Profile	Long Term Debt (\$)	152,220	158,940	143,454	136,798	135,976	156,400
	Net Adjusted Debt (\$)	98,321	94,178	94,208	91,330	87,451	100,370
	Adjusted Funds Available For Debt Service (FADS)	30,320	34,132	31,226	36,157	38,159	39,619
	Net Adjusted Debt to Adjusted FADS Ratio (x)	4.5	4.2	4.1	3.7	3.6	3.8
	Coverage of Full Obligations (x)	1.8	1.9	2.0	2.1	2.1	2.1
	Current Days Cash on Hand	463	476	488	508	520	556
	Liquidity Cushion Ratio (days)	474	487	503	524	535	565
	Fitch-Calculated Total Debt Service Coverage (DSC)	2.1	2.1	2.3	2.4	2.5	2.4

N.A. – Not available.
Source: Fitch Ratings.

2021 Water and Sewer Wholesale Medians – Overall

	Fiscal Year	2015	2016	2017	2018	2019	2020
Revenue Defensibility	Operating Revenue Growth (%)	5.0	4.2	9.4	4.4	2.3	4.8
	Operating Revenue Growth - 5 Year Average (%)	—	—	—	—	5.1	5.0
	Total Operating Revenues (\$)	42,836	52,005	52,109	53,671	53,222	103,801
	Service Area Median Household Income (\$)	58,790	57,972	60,807	63,948	67,005	N.A
	Service Area MHI / US MHI (%)	109	105	105	106	107	N.A
	Service Area Unemployment / US (%)	94.3	93.9	84.1	84.6	83.8	87.0
Operating Risks	Operating Cost Burden (\$/mg)	1,562	1,473	1,539	1,636	1,661	1,492
	Life-Cycle Ratio (%)	25.5	26.8	27.0	27.8	29.1	28.8
	5-Yr Avg Capital Expenditures / Depreciation (%)	172.9	146.0	142.0	144.2	170.6	112.4
Financial Profile	Long Term Debt (\$)	150,212	171,570	179,571	201,450	194,232	268,947
	Net Adjusted Debt (\$)	138,984	188,668	213,976	206,857	194,353	240,414
	Adjusted Funds Available For Debt Service (FADS)	26,023	32,001	37,080	39,588	51,206	63,039
	Net Adjusted Debt to Adjusted FADS Ratio (x)	7.3	7.2	6.3	6.3	5.4	5.1
	Coverage of Full Obligations (x)	1.4	1.8	1.6	1.7	1.7	1.8
	Current Days Cash on Hand	397	347	523	521	620	713
	Liquidity Cushion Ratio (days)	397	347	523	521	620	713
	Fitch-Calculated Total Debt Service Coverage (DSC)	1.5	1.8	1.7	1.7	1.9	1.9

N.A. – Not available.
Source: Fitch Ratings.

Appendix A: Water and Sewer Definitions

Median	Definition	Significance
Operating Revenue Growth (%)	Most recent audited operating revenues divided by the immediately prior year operating revenues minus one.	Indicates revenue gains.
Operating Revenue Growth – 5 Year Average (%)	Average of operating revenues divided by the immediately prior year operating revenues minus one for the five most recent audited fiscal years.	Indicates revenue gains.
Population	Estimated population of the service area.	Provides an overview of the scope of operations in the service area.
Service Area MHI (\$)	Median household income for the primary municipal entity served by the utility based on the most recent year as reported by the U.S. Census Bureau.	Indicates the overall wealth of average residential customers and their ability to pay for services.
Water Connections	Most recent water customer accounts total, if applicable.	Provides an overview of the scope of operations in the service area.
Sewer Connections	Most recent sewer customer accounts total, if applicable.	Provides an overview of the scope of operations in the service area.
Service Area Unemployment (%)	Estimated unemployment for the service area.	Helps assess prospects for service area growth and demand.
Service Area Unemployment/US (%)	Service area unemployment divided by U.S. unemployment for the most recent calendar year.	Indicates the overall strength of the service territory's economy.
Total Monthly Water Bill (\$)	Monthly residential bill for individual utilities based on 7,500 gallons of water, as applicable; when billing was not calculated on a monthly basis, it was converted to a monthly amount for standardization.	Indicates the monthly cost of service to residential customers.
Total Monthly Sewer Bill (\$)	Monthly residential bill for individual utilities based on 6,000 gallons of sewer flows, as applicable; when billing was not calculated on a monthly basis, it was converted to a monthly amount for standardization.	Indicates the monthly cost of service to residential customers.
Total Monthly Bill (\$)	Monthly residential bill for individual utilities based on 7,500 gallons of water consumption and 6,000 gallons of sewer flows, as applicable; when billing was not calculated on a monthly basis, it was converted to a monthly amount for standardization.	Indicates the monthly cost of service to residential customers.
Percent of Population w/Unaffordable Bill (%)	Percent of population for which the combined utility bill exceeds 5% of household income (or individually, 2.0% for water, 2.5% for sewer and 0.5% for stormwater) based on a straight-line interpolation of household income quintiles. In measuring utility charges, Fitch assumes a monthly residential bill based on 7,500 gallons of water consumption and 6,000 gallons of sewer flows.	Indicates the annual burden for cost of service to residential customers.
Water Produced (mgd)	Annual water production in million gallons divided by 365 for the most recent audit year.	Indicates water produced during the year.
Sewer Flows (mgd)	Annual sewer flows in million gallons divided by 365 for the most recent audit year.	Indicates sewer flows treated during the year.
Operating Cost Burden (\$/mg)	The ratio of a utility's total annual operating costs (including net transfers) relative to total million gallons of water produced and/or sewer flows treated within the most recent audit year.	Indicates the utility's cost to provide service per million gallons water produced and/or sewer flows treated.
Life Cycle Ratio (%)	Age of plant divided by the sum of age of plant plus remaining useful life.	Indicates the level of the utility's capital investment needs and condition of the physical operating plant.

Appendix A: Water and Sewer Definitions

Median	Definition	Significance
5-Yr Avg Capital Expenditures/Depreciation (%)	Average of current-year additions to property, plant and equipment divided by current-year depreciation for the five most recent audited fiscal years.	Indicates trends in annual improvements made to system facilities relative to level of annual depreciation to effectively determine if facilities are being maintained.
Long Term Debt (\$)	Sum of all bonds, notes, contracts and any other items listed as debt on the balance sheet.	Indicates total long-term debt liability of a utility.
Funds Available For Debt Service (FADS)	Earnings before interest, taxes, depreciation and amortization (EBITDA) plus interest income, taxes, other non-operating cash receipts not restricted as to spending and connection/availability fees.	Indicates annual cash flows available to service debt obligations.
Net Adjusted Debt to Adjusted FADS Ratio (x)	Total debt plus capitalized fixed charges plus adjusted net pension liability, less available cash, less funds restricted for debt service, divided by the sum of FADS, fixed services expense, net transfers, and pension expense (see Fitch's U.S. Water and Sewer Rating Criteria [March 2021] for more info).	Measures a utility's debt and other fixed obligations, relative to its annual cash flows available to service those obligations.
Coverage of Full Obligations (x)	The sum of FADS plus fixed services expense plus net transfers divided by the sum of total annual debt service plus fixed services expenses.	Provides a measure of operational strength relative to a utility's debt and fixed obligations that come due in any annual period.
Current Days Cash on Hand (Days)	Current unrestricted cash and investments plus any current restricted cash and investments (if available for general utility purposes), divided by operating expenses minus depreciation and amortization, divided by 365.	Indicates financial flexibility to pay near-term obligations.
Liquidity Cushion Ratio (Days)	Current unrestricted cash and investments plus any current restricted cash and investments (if available for general utility purposes) plus amounts remaining and available from lines of credit, divided by operating expenses minus depreciation and amortization, divided by 365.	Indicates financial flexibility, including all available sources of cash, short-term investments and liquidity, relative to expenses.
Fitch-Calculated Total DSC (x)	Current-year FADS minus net transfers divided by total annual debt service.	Indicates the financial margin to meet current total debt service with current revenues available for debt service.
Source: Fitch Ratings.		

Contacts

Julieta Garcia Seebach
+1 512 215 3743
julie.seebach@fitchratings.com

Doug Scott
+1 512 215 3725
douglas.scott@fitchratings.com

Major Parkhurst
+1 512 215 3724
major.parkhurst@fitchratings.com

Teri Wenck, CPA
+1 512 215 3742
teri.wenck@fitchratings.com

Meg Tubridy
+1 212 908 9106
margaret.tubridy@fitchratings.com

Allison Clark
+1 646 582 4562
allison.clark@fitchratings.com

Audra Dickinson
+1 512 813 5701
audra.dickinson@fitchratings.com

Andrew DeStefano
+1 212 908 0284
andrew.destefano@fitchratings.com

Alexander Gittens
+1 646 582 4007
alexander.gittens@fitchratings.com

Shannon Groff
+1 415 732 5628
shannon.groff@fitchratings.com

Gabriela Gutierrez Payne, CPA
+1 512 215 3731
gabriela.gutierrezpayne@fitchratings.com

Kristen Reifsnyder
+1 646 582 3448
kristen.reifsnyder@fitchratings.com

Eva Rippeteau
+1 212 908 9105
eva.rippeteau@fitchratings.com

Victor Valdez
+1 512 813 5650
Victor.valdez@fitchratings.com

Nicole Wood
+1 212 908 0735
nicole.wood@fitchratings.com

Larry Witte
+1 415 732 7572
larry.witte@fitchratings.com

Raj Sanghvi
+1 212 908 0746
raj.sanghvi@fitchratings.com

Related Research

Related Reports

[FAST Water and Sewer - Fitch Analytical Stress Test Model \(April 2019\)](#)

[Public Sector, Revenue-Supported Entities Rating Criteria \(May 2021\)](#)

[U.S. Public Finance Tax-Supported Rating Criteria \(May 2021\)](#)

[U.S. Water and Sewer Rating Criteria \(March 2021\)](#)

ALL FITCH CREDIT RATINGS ARE SUBJECT TO CERTAIN LIMITATIONS AND DISCLAIMERS. PLEASE READ THESE LIMITATIONS AND DISCLAIMERS BY FOLLOWING THIS LINK: [HTTPS://FITCHRATINGS.COM/UNDERSTANDINGCREDITRATINGS](https://fitchratings.com/understandingcreditratings). IN ADDITION, RATING DEFINITIONS AND THE TERMS OF USE OF SUCH RATINGS ARE AVAILABLE ON THE AGENCY'S PUBLIC WEB SITE AT WWW.FITCHRATINGS.COM. PUBLISHED RATINGS, CRITERIA, AND METHODOLOGIES ARE AVAILABLE FROM THIS SITE AT ALL TIMES. FITCH'S CODE OF CONDUCT, CONFIDENTIALITY, CONFLICTS OF INTEREST, AFFILIATE FIREWALL, COMPLIANCE, AND OTHER RELEVANT POLICIES AND PROCEDURES ARE ALSO AVAILABLE FROM THE CODE OF CONDUCT SECTION OF THIS SITE. FITCH MAY HAVE PROVIDED ANOTHER PERMISSIBLE SERVICE TO THE RATED ENTITY OR ITS RELATED THIRD PARTIES. DETAILS OF THIS SERVICE FOR WHICH THE LEAD ANALYST IS BASED IN AN ESMA- OR FCA-REGISTERED FITCH RATINGS COMPANY (OR BRANCH OF SUCH A COMPANY) CAN BE FOUND ON THE ENTITY SUMMARY PAGE FOR THIS ISSUER ON THE FITCH RATINGS WEBSITE.

Copyright © 2021 by Fitch Ratings, Inc., Fitch Ratings Ltd. and its subsidiaries. 33 Whitehall Street, NY, NY 10004. Telephone: 1-800-753-4824, (212) 908-0500. Fax: (212) 480-4435. Reproduction or retransmission in whole or in part is prohibited except by permission. All rights reserved. In issuing and maintaining its ratings and in making other reports (including forecast information), Fitch relies on factual information it receives from issuers and underwriters and from other sources Fitch believes to be credible. Fitch conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security or in a given jurisdiction. The manner of Fitch's factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in the jurisdiction in which the rated security is offered and sold and/or the issuer is located, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors. Users of Fitch's ratings and reports should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information Fitch relies on in connection with a rating or a report will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to Fitch and to the market in offering documents and other reports. In issuing its ratings and its reports, Fitch must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings and forecasts of financial and other information are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings and forecasts can be affected by future events or conditions that were not anticipated at the time a rating or forecast was issued or affirmed.

The information in this report is provided "as is" without any representation or warranty of any kind, and Fitch does not represent or warrant that the report or any of its contents will meet any of the requirements of a recipient of the report. A Fitch rating is an opinion as to the creditworthiness of a security. This opinion and reports made by Fitch are based on established criteria and methodologies that Fitch is continuously evaluating and updating. Therefore, ratings and reports are the collective work product of Fitch and no individual, or group of individuals, is solely responsible for a rating or a report. The rating does not address the risk of loss due to risks other than credit risk, unless such risk is specifically mentioned. Fitch is not engaged in the offer or sale of any security. All Fitch reports have shared authorship. Individuals identified in a Fitch report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only. A report providing a Fitch rating is neither a prospectus nor a substitute for the information assembled, verified and presented to investors by the issuer and its agents in connection with the sale of the securities. Ratings may be changed or withdrawn at any time for any reason in the sole discretion of Fitch. Fitch does not provide investment advice of any sort. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from US\$1,000 to US\$750,000 (or the applicable currency equivalent) per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from US\$10,000 to US\$1,500,000 (or the applicable currency equivalent). The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any registration statement filed under the United States securities laws, the Financial Services and Markets Act of 2000 of the United Kingdom, or the securities laws of any particular jurisdiction. Due to the relative efficiency of electronic publishing and distribution, Fitch research may be available to electronic subscribers up to three days earlier than to print subscribers.

For Australia, New Zealand, Taiwan and South Korea only: Fitch Australia Pty Ltd holds an Australian financial services license (AFS license no. 337123) which authorizes it to provide credit ratings to wholesale clients only. Credit ratings information published by Fitch is not intended to be used by persons who are retail clients within the meaning of the Corporations Act 2001.