

TO: Board Members

THROUGH: Jeff Walker, Executive Administrator

FROM: Jessica Zuba, DEA-WSI
Dain Larsen, Financial Analyst-Discipline Lead

DATE: November 2, 2016

SUBJECT: Update of Internal Risk Scoring of Applications for Financial Assistance

ACTION REQUESTED

No action is requested. This is a briefing and discussion on recent updates to the internal risk scoring methodology used to evaluate applications for financial assistance.

BACKGROUND

In July 2005, Texas Water Development Board (TWDB) Financial Analysis staff briefed the Board about a financial risk scoring system implemented to better communicate staff's assessment of the relative financial risk associated with applications for financial assistance. The TWDB internal risk scoring has 5 levels (1, 2a, 2b, 2c, 3) with "1" being the highest rated credit, and "3" being the lowest. An applicant's score is based on quantitative and qualitative indicators derived from the project information provided in the applicant's application, data provided by industry groups such as the Municipal Advisory Council of Texas, and state and federal government data, such as socioeconomic data provided by the US Census Bureau. The score is reviewed by management and a committee to improve consistency between the regional teams.

Staff uses a list of 44 indicators and discussions with the applicant to determine an appropriate ranking for an application. Some of these indicators are quantitative, such as the ratio of the applicant's median household income to that of the State of Texas. Other indicators are qualitative, such as an assessment of an applicant's contracts to supply water or presence of pending litigation. The indicators were developed by staff based on standard indicators used by credit rating agencies for assessing the risk associated with issuers of debt for utilities infrastructure.

Staff recently reevaluated the current system of 44 indicators to improve comparability of TWDB applicants by establishing more precise benchmarks and the process of calculating the indicators. Based on this evaluation, staff made modifications to the current system.

Our Mission : **Board Members**

To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas :
: Bech Bruun, Chairman | Kathleen Jackson, Board Member | Peter Lake, Board Member
:
: Jeff Walker, Executive Administrator

RESULTS

The indicators were reduced to nine quantitative indicators and a tenth indicator that includes primarily qualitative factors. Please see Attachment 2 for information about specific indicators. In many cases the redundant indicators were removed. For example, previously there were three indicators related to liquidity, nine related to debt, and ten illustrating the revenues available to pay debt service. These have been simplified to two indicators for each of these three types. The indicators that have been retained are similar to the previous indicators. The retained indicators ranked high on the characteristics of being quantitative, based on information that is available from reliable data sources, and capable of being benchmarked with gradations that are comparable to those utilized by the industry¹.

A tenth indicator is used to score the qualitative aspects of an applicant, such as evidence of the use of intermediate and long-term planning, and other quantitative indicators that the Financial Analyst determines provide evidence for small adjustments to the overall score². In addition, a Financial Analyst can include other, non-standard qualitative and quantitative indicators that are deemed important to accurately assess the financial risk associated with a particular applicant.

The ten primary indicators are grouped into four categories based on the characteristics of an applicant: Financial Sustainability, Socioeconomic, Liquidity, and Debt. Financial Sustainability indicators are the most direct measures of the applicant's short-term and long-term ability to repay the proposed debt service. These indicators compare the current revenues of the applicant to the debt service requirements of existing and proposed debt, and the level of reinvestment in long-term assets needed to generate future revenues.

The current revenues of many of our applicants include ad valorem tax revenues pledged for the repayment of their proposed loans. A tax pledge is generally considered to be the strongest pledge that we accept. We consider the applicant's capacity to generate this source of revenues in addition to revenues from operations of a water or wastewater utility. Tax revenues are often not only a secondary source of repayment of debt, but even when not pledged for debt service they can be an additional revenue stream for the applicant that can be used to reduce the need to transfer funds out of the utility system, for example.

Socioeconomic indicators are measures of the overall economic and demographic health of the applicant and the region. This category includes indicators for area wealth and the affordability of utility system rates. This category also includes qualitative factors related to the management and planning performance of the applicant. The Liquidity indicator shows the amount of cash and short-term investments available to meet unplanned and extraordinary expenses of the utility system. The Debt indicators show the amount of debt used by the applicant for investment in

¹ Indicators are typically grouped by whether the debt issuance is supported by a pledge of revenues of the utility system only, ad valorem taxes only, or both. The TWDB indicators consider all three of the common pledges with additional guidance for other pledges such as contract revenues.

² Examples of evidence of intermediate and long-term planning include regular preparation of a capital improvement plan to show the timing and amount of investment in water and wastewater infrastructure and a transfer policy that indicates planned, regular transfers to or from the water and wastewater utility, rather than unplanned and uneven transferring of funds between the utility and the other divisions of the applicant.

water and wastewater infrastructure, and the amount of debt that is secured by the ad valorem taxes of the applicant.

Each category is composed of indicators that are weighted based on how much each affects the overall level of risk of the applicant. The weighting of each is based on the current practices of the industry with small adjustments by financial analysis staff.

Table 1- Internal Risk Scoring, Categories and Weights

Category	Weight
Financial Sustainability	50%
Socioeconomic	20%
Liquidity	15%
Debt	15%
	100%

For example, the Financial Sustainability category is comprised of four indicators: Debt Service Coverage, Cash Balance, Total Assessed Valuation (per capita), and Asset Years. An applicant can receive up to 50 points for its scores on the Financial Sustainability indicators, 20 points for Socioeconomic indicators, and 15 each for Liquidity and Debt. The table below shows the resulting overall internal risk score for the amount of points received from all categories. The maximum amount of points for qualitative indicators is ten. Because the range to receive a particular risk score is 19 points, an applicant can move no more than one risk score based on qualitative and unweighted quantitative factors.

Table 2- Internal Risk Scoring, Overall Score

Overall Risk Score	Total Score
1	≥ 90
2A	70 – 89
2B	50 -69
2C	30 -49
3	<30

To ensure that the internal risk scoring is calculated reliably, guidance was created to instruct the financial analyst on which financial statements to utilize, which figures to use, and considerations for adjustments to the raw data. The guidance is based on the definitions used by Moody's, and allows the financial analysts to continue to use Moody's statistics about utility systems to adjust the gradations of individual risk score indicators when needed.

INTERNAL REVIEW

Historically, a one-step peer review process was used to evaluate whether an individual analyst's internal risk scoring is consistent with that of other financial analysts scoring similar loans presented in previous Credit Committee meetings.

The review process has been revised to include a prior step where the data, calculations and source documents used to determine an internal risk score are reviewed by two additional financial analysts. These peers determine if the data used is consistent with the definitions in the guidance, and that any adjustments made to the data are reasonable. The reviewers sign and date the internal risk scoring documentation, indicating that the proposed financing is eligible for review by the Credit Committee. The Credit Committee primarily reviews the qualitative scoring of the loan and determines if the resulting internal risk score is consistent with that of similar loans. The Financial Analyst Discipline Lead also signs the internal risk scoring documentation to indicate it was reviewed by the Credit Committee. The financial analyst's report about the project financing is then eligible for review by the regional team manager.

Attachment(s):

1. City of Bryan Internal Risk Scoring (Example of scoring)
2. Internal Risk Scoring Guidance

Example- City of Bryan, 2016 SWIFT Application, Internal Risk Scoring

No.	Indicator	Score	Points
1	Debt service coverage	1.39	16
2	Cash balance	46%	10
3	Total Assessed Valuation, per capita	\$58,660	6
4	Net fixed assets/Annual depreciation	32	8
5	Qualitative & other quantitative factors	2B	6
6	Median household income index	75%	3
7	Projected household cost factor	1.75%	3
8	Days of cash on hand	526	15
9	Debt-to-operating revenues	3.04	8
10	Net direct debt/ Total Assessed Valuation	1.28	4
Total			79
Overall Risk Score			2A

Internal Risk Scoring

Indicator	Scoring Ranges				
	1	2A	2B	2C	3
DS Coverage Ratio	> 1.75	1.00 - 1.74	.75 - .99	.50 - .74	<.5
Cash Balance Ratio	> 25%	10 - 24.99%	0 - 9.99%	-15 - 0%	< -15%
TAV, per capita	> \$125,000	\$65,000 - \$124,999	\$30,000 - \$64,999	\$10,000 - \$29,999	< \$10,000
Fixed Assets	> 75 years	25 - 75 years	12 - 24 years	6 - 11 years	< 6 years
Qualitative					
Median Household Income	>285%	174 - 284%	70 - 174%	50 - 69%	< 50%
Household Cost Factor	< 1.25%	1.26 - 1.50%	1.51 - 2.00%	2.01 - 2.50%	> 2.5%
Days of Cash on Hand	> 250 days	150 - 249 days	30 - 149 days	15 - 29 days	< 15 days
Debt-to-operating revenues	< 2.00	2.00 - 3.99	4.00 - 5.99	6.00 - 9.00	>9.00
Net Direct Debt/ TAV	< .75%	.75 - 1.99%	2 - 4.99%	5- 11.99%	> 12%

Indicator	Points				
	1	2A	2B	2C	3
DS Coverage Ratio	20	16	12	8	4
Cash Balance Ratio	10	8	6	4	2
TAV, per capita	10	8	6	4	2
Fixed Assets	10	8	6	4	2
Qualitative	10	8	6	4	2
Median Household Income	5	4	3	2	1
Household Cost Factor	5	4	3	2	1
Days of Cash on Hand	15	12	9	6	3
Debt-to-operating revenues	10	8	6	4	2
Net Direct Debt/ TAV	5	4	3	2	1
TOTAL	100	80	60	40	20

Weight for each of the indicators

No.	Indicator	Weight	Points allocated				
			1	2A	2B	2C	3
Financial Sustainability (50%)							
1	Debt service coverage ratio	20%	20	16	12	8	4
2	Cash Balance Ratio	10%	10	8	6	4	2
3	Total AV per capita	10%	10	8	6	4	2
4	Net fixed assets/Annual depreciation	10%	10	8	6	4	2
Socioeconomic (20%)							
5	Qualitative & other quantitative factors	10%	10	8	6	4	2
6	Median household income index	5%	5	4	3	2	1
7	Projected household cost factor	5%	5	4	3	2	1
Liquidity (15%)							
8	Days of cash on hand	15%	15	12	9	6	3
Debt (15%)							
9	Debt-to-operating revenues	10%	10	8	6	4	2
10	Net direct debt/ Total Assessed Valuation	5%	5	4	3	2	1
	Total	100%	100	80	60	40	20

Total internal risk score groups

Overall Risk Score Group	Total Score
1	> 90
2A	70 - 89
2B	50 - 69
2C	30 - 49
3	< 30

Debt service coverage ratio

Calculation	Current Revenues Available for Debt Service/Proposed Annual Debt Service	
Benchmark <i>(Source: Moody's Scorecard for US Muni Utility Rev Debt, slightly modified)</i>	1	>1.75
	2A	1.00 – 1.74
	2B	.75 - .99
	2C	.5 – .74
	3	< .5
Source(s)	<p>Most recent audited financial statements</p> <ol style="list-style-type: none"> 1. Statement of Revenues, Expenses, and Changes in Net Position (Assets)- Proprietary Funds- Water and Wastewater activities 2. Notes of most recent audited financial statements for long-term debt 3. Pro forma provided in application 4. Municipal Advisory Council of Texas TMR(s) to verify audited data 	
Notes	<ul style="list-style-type: none"> • Revenues Available for Debt Service includes gross revenues pledged for repayment of the proposed debt less operating expenses plus depreciation expenses. • Items not included are non-operating income and expenses, such as interest income and expenses, transfers in and out of the utility system, and donated capital. • Adjustments are often made if grant revenues change substantially from one year to the next, and for impact fees. The most recent 3-year average of impact fees can be used to demonstrate the near-term repayment capacity of an applicant with steady growth. • Include interest and sinking fund tax revenues if the applicant collects an interest and sinking fund tax and ad valorem tax revenues are pledged. Use the total assessed valuation, the interest and sinking fund tax rate, and the 90% collection rate assumed for the pro formas prepared for the board. • The Annual Debt Service used for the calculation is the first year of a principal payment on the proposed debt. • Include all debt service from debt that has a revenue source in common with the debt proposed for our loan. If we receive a pledge of ad valorem taxes, then any debt with a pledge of ad valorem taxes should be included. If the pledge(s) for other debt includes other revenue sources, then we need an estimate from the FA or Texas MAC for the amount of that debt service that is self-supporting and therefore isn't included. The 	

	<p>remainder relies on the taxes pledged to us. In addition, if we receive a utility revenues only pledge, then we need to include any other debt that has those revenues pledged to it.</p>
<p>Data, Calculation, or Analytical Issues</p>	<ul style="list-style-type: none"> • The annual debt service used for the calculation is the first year of a principal payment on the proposed debt. Rating agencies use a similar figure, though some use historical coverage ratios, or coverage of maximum or average annual debt service. Historical coverage may not be useful because we expect most of our applicants to have at least a one times coverage.

Cash Balance ratio

Calculation	(Most Recent Year Cash Balance - 5 Years Prior (e.g. 2015 and 2011) Cash Balance)/Operating Revenues of most recent year { For funds other than utility system , unless no other funds (e.g. water supply corporation, authority)	
Benchmark <i>(Source: Moody's Scorecard for US Local Govt GO Debt, slightly modified)</i>	1	>25%
	2A	10 – 24.99%
	2B	0 – 9.99%
	2C	-15 - 0%
	3	< -15%
Source	Most recent audited financial statements, Governmental Funds Balance Sheet and Operating Statement, and 5 years prior (e.g. 2015 – 2011)	
Notes	<ul style="list-style-type: none"> • If applicable, add back <i>transfers out</i> and subtract transfers in, e.g. utility system <i>transfers in</i> • <i>Operating revenues</i> are for all funds other than the fund that contains the water and wastewater system, and is the gross amount of revenues prior to operating expenses • Only info needed from 5th year prior is the Cash & equivalents balance. The denominator is always the most recent year operating (gross) revenues. 	
Data, Calculation, or Analytical Issues	This indicator replaces the “ <i>Fund Ratio</i> ” which compares the change in the applicant’s funds balances outside of the utility system. The Cash Balance and Fund ratios both are measures of the change in cash for the applicant over five years. However, non-governmental entities and some governmental entities don’t have a “governmental fund”, so there is a potential for some confusion with the calculation of the Fund Ratio. As a result, the change in the cash balance is used instead. It can be calculated for any of our applicants.	

Total assessed valuation, per capita

Calculation	Total Net Taxable Assessed Valuation/ Most recent U.S. Census Bureau, 5-year estimate, population (of borrowing municipality)	
Benchmark <i>(Source: Moody's Scorecard for US Local Govt GO Debt, slightly modified)</i>	1	>=\$125,000
	2A	\$65,000 - \$124,999
	2B	\$30,000 - \$64,999
	2C	\$10,000 - \$29,999
	3	<\$10,000
Source	Most recent total net taxable assessed valuation provided in question 39 of financial assistance application; 5-year population estimate found at: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml	
Notes		
Data, Calculation, or Analytical Issues	The financial data required for calculating this ratio is not available or applicable for applicants who do not have the capacity to levy an ad valorem tax. Please see additional guidance provided for those types of applicants.	

Net fixed assets/Annual depreciation

Calculation	Net fixed assets/ Most recent year's depreciation	
Benchmark <i>(Source: Moody's Scorecard for US Muni Utility Rev Debt, slightly modified)</i>	1	>75 years
	2A	25 – 75 years
	2B	12 – 24 years
	2C	6 – 11 years
	3	< 6 years
Source	Most recent audited financial statements, proprietary fund statements, balance sheet and statement of revenues and expenses	
Notes	The fixed assets are all assets, minus land if detail is provided, net of accumulated depreciation, for the utility system.	
Data, Calculation, or Analytical Issues		

Qualitative factors & other quantitative

Calculation	Not applicable
Benchmark	
Source	Interviews, audited financial statements, financial assistance application, etc.
Notes	
Data, Calculation, or Analytical Issues	

Typical qualitative factors

1. Does the applicant currently have a CIP?
2. Does the applicant's utility system have any regulatory citations from TCEQ or other entities?
3. Does the applicant have any current material findings or significant deficiencies in its most recent audit?
4. Does the applicant have existing loan/bond covenants that it will set rates for a coverage greater than 1 times?
5. Are there characteristics of the pledge that increase or reduce the level of risk?
6. Has the applicant raised rates consistently as needed in the most recent 10-year period? (e.g. sporadic increases of +15% wouldn't be consistent increases)
7. **Other quantitative**
 - a. Change in sales tax revenues
 - b. Change in population or number of connections
 - c. Top 10 customers concentration
 - d. Ad valorem taxes collection rate
 - e. System size
 - f. Trend in net capital assets- net of related debt
 - g. Unemployment rate
 - h. Total assessed valuation by class

Median household income

Calculation	Median household income {applicant}/Median household income {State of Texas}	
Benchmark <i>(Source: most recent Census MHI data for Texas)</i>	1	>285%
	2A	174 – 284%
	2B	70 - 174%
	2C	50 - 69%
	3	<50%
Source	Census Bureau, 5-year estimate, most recent 5-year population estimate found at: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml	
Notes	<ul style="list-style-type: none"> • If applicant isn't a municipality, use the MHI for a census tract that contains the entire service area. • If the service area includes multiple census tracts, then use multiple census tracts or the County-level data if the service area represents more than 50% of the county population. • If the service area includes multiple counties, then use an average of the median household incomes for the counties. 	
Data, Calculation, or Analytical Issues	Per Census Bureau website, the 5-year estimate is the most accurate, and is available for all population levels. The 1-year estimate, for example, is only available for populations >65,000 people. This wouldn't be available for many of our applicants.	

Projected household cost factor, both services

Calculation	Annual cost of water and wastewater services for the average residential customer {based on usage}/Median household income of applicant	
Benchmark <i>(Source: AWWA standard of 2% & often cited by other groups)</i>	1	< 1.25%
	2A	1.24 – 1.50%
	2B	1.49 – 2.0%
	2C	1.99– 2.50%
	3	>2.5%
Source	Census Bureau, 5-year estimate, most recent	
Notes	<ul style="list-style-type: none"> • See notes above for Median Household Income index • Annual cost of water and wastewater is based on the average usage of a residential customer, not a standard usage amount, e.g. 5,000 gallons of service <p>The annual cost includes the rate increases required to repay the proposed debt- this keeps the calculation similar to the Disadvantaged funding calculation for Drinking Water SRF.</p>	
Data, Calculation, or Analytical Issues	<ul style="list-style-type: none"> • Drinking Water SRF uses a standard usage amount for determining Disadvantaged status. If the applicant’s actual usage data is substantially higher or lower, it will produce a different outcome. • Some applicants aren’t providers of retail water or wastewater services. Please see additional guidance on how to score an applicant with this characteristic. 	

LIQUIDITY

Days of cash on hand

Calculation	(Unrestricted cash and equivalents/Cash operating expenses) * 365	
Benchmark <i>(Source: Moody's Scorecard for US Muni Utility Rev Debt, slightly modified)</i>	1	> 250 days
	2A	150 – 249 days
	2B	30 – 149 days
	2C	15 – 29 days
	3	< 15 days
Source	Most recent audited financial statements- Statement of Revenues, Expenses, and Changes in Net Position (Assets)- Proprietary Funds- Water and Wastewater activities	
Notes	<ul style="list-style-type: none"> • If unrestricted cash and equivalents aren't clearly delineated in the audited financial statements, then use the "unrestricted" net assets or net position. This is unrestricted cash and equivalents net of short-term liabilities. • Cash operating expenses are operating expenses of the water and wastewater utility system less depreciation and any other non-cash expenses. <p>If the operating expenses include other revenues and expenses not pledged, but they can't be separated from the pledged revenue, then use all of the expenses, but note that they include the otherwise unpledged activities.</p>	
Data, Calculation, or Analytical Issues		

Debt-to-operating revenues

Calculation	Self-supporting debt of the water and/or wastewater system/Operating revenues of the water and/or wastewater system	
Benchmark <i>(Source: Moody's Scorecard for US Muni Utility Rev Debt, slightly modified)</i>	1	< 2.00
	2A	2.00 – 3.99
	2B	4.00 – 5.99
	2C	6.0 – 9.00
	3	> 9.00
Source	Most recent audited financial statements, Basic Financial Statements for the Proprietary Fund, Water and Wastewater Funds if additional funds in the Proprietary Fund	
Notes		
Data, Calculation, or Analytical Issues	<ul style="list-style-type: none"> This indicator only considers the debt and revenues of the water and wastewater system, and is therefore not as broad as the debt per capita ratio. However, it doesn't have the same issues as the debt per capita ratio, and if this ratio is used together with the ratio that compares net direct debt to total assessed valuation, together they provide a good indication of the relative debt burden of the applicant. In that case, the only debt not assessed is the debt that is not funded by either ad valorem taxes or revenues of the water and wastewater system. Larger cities will have more debt of that type that is not funded by one of these sources, but typically it is not significant. 	

Net Direct Debt to Total Assessed Valuation

Calculation	Net Direct Debt/Total Net Taxable Assessed Valuation	
Benchmark <i>(Source: Moody's Scorecard for US Local Govt GO Debt, slightly modified)</i>	1	<.75%
	2A	.75% - 1.99%
	2B	2% – 4.99%
	2C	5% - 11.99%
	3	>12%
Source	<ul style="list-style-type: none"> • Most recent audited financial statements, typically detailed in the notes section; cross-reference with most recent MAC- TMR, adjust for any recent payments or additional borrowing • Most recent total net taxable assessed valuation provided in question 39 of financial assistance application • Proposed new debt with application • Proposed revenue sources if additional revenues required to pay existing and proposed debt service (tax rate increase or system rate increase) 	
Notes	<ul style="list-style-type: none"> • “Debt is considered to be self-supporting if operating revenues minus operating expenses (excluding depreciation) have been sufficient to cover principal and interest for the previous three years. If essential-service debt fails this test (for instance, if it fails in one of the past three years), it will not be considered self-supporting and will be added to the debt burden.” Net direct debt is all debt less self-supporting debt. • Include in the calculation the proposed new debt. <ul style="list-style-type: none"> ○ If the pledged is ad valorem taxes and water and wastewater system revenue, then allocate the proposed new debt between how much is “direct debt” (i.e. payable with ad valorem taxes) and how much is self-supporting (i.e. payable from revenues of the utility). <p>If additional revenues are required to pay for the proposed debt, and all the increase will be paid with water or wastewater increases, then none of the proposed debt will be added to the net direct debt total. If all, or any portion, will be paid with taxes, then add that portion to the net direct debt total.</p> 	
Data, Calculation, or Analytical Issues	The financial data required for calculating this ratio isn't applicable for applicants who don't have the capacity to levy an ad valorem tax. Please see guidance provided for those types of applicants.	

Total existing debt per capita

(CAN BE USED FOR QUALITATIVE/ “OTHER QUANTITATIVE SCORE)

Calculation	Total indebtedness/Most recent U.S. Census Bureau, 5-year estimate, population (of borrowing municipality)	
Benchmark <i>(Source: Debt, slightly modified)</i>	1	< \$1,000
	2A	\$1,000 - \$1,499
	2B	\$1,500 - \$1,999
	2C	\$2,000 - \$4,999
	3	>\$5,000
Source	Most recent audited financial statements, typically detailed in the notes section; cross-reference with most recent MAC- TMR, adjust for any recent payments or additional borrowing; total indebtedness includes the proposed TWDB loan; 5-year population estimate found at: http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml	
Notes	<ul style="list-style-type: none"> • Total indebtedness includes notes payable, commercial paper and similar financings • Total indebtedness doesn't include leases <p>Population is per the Census Bureau's most recent 5-year estimate for the municipality- not the service area population</p>	
Data, Calculation, or Analytical Issues	The primary limitation of this indicator is that as the population of a city grows it will typically assume additional revenue-only debt for purposes other than water and wastewater. As a result, larger cities typically have more total debt than smaller cities, but much of it is debt paid with a dedicated revenue source, e.g. convention center or airport. The other debt indicators address this issue to improve comparability. However, debt per capita remains an often cited figure in general and can be considered as a secondary factor in the qualitative/ other quantitative scores section.	