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**Special Purpose Districts in Texas: The Case for Municipal Utility
Districts**

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Report

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Abstract

Special Purpose Districts in Texas: The Case for Municipal Utility Districts

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Texas is one of the fastest growing states in the nation. As the population continues to increase, so does the demand for public utilities, especially in urban and suburban areas. Furthermore, an increasing population means additional strains on the existing urban and suburban utility infrastructure. These public utilities include water, sewer, drainage, roads, levees, and their related infrastructure.

To accommodate the needs of a growing population, certain urban areas of Texas have utilized special purpose districts to finance, construct, and operate the public infrastructure in new and growing communities. The use of special purpose districts has been more heavily used in some urban areas, such as Houston, than others.

This report will consider why the special district model in Texas has been generally successful with respect to issuing debt for the construction, maintenance, development, and operation of public utilities and other capital projects. Additionally, to highlight some of the potential risks this report will look at a case in which a special purpose district has defaulted on outstanding debt obligations.

The research points will be addressed by discussing the history of special purpose districts in Texas, as well as their statutory and regulatory frameworks, including their powers, composition, means of and reasons for creation, and authorities. The report will also describe the various types of special purpose districts in Texas and their powers. Additionally, the report will discuss the various debt instruments available to a special purpose district in Texas, how the debt of a special purpose district can be structured and issued, and key variables of a special purpose district's financial makeup, such as the district's assessed valuation and the various revenue-generating and cost centers of a district.

The report will then argue how and why the special district model in Texas has been largely successful. Next, the report will use a case to highlight failures in the special district model and describe changes in law and regulation that have been made to respond to these failures, as well as reactions from the capital markets.

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Chapter 1: Background

Municipal Utility Districts (MUDs) are local government entities, specifically, political subdivisions of the State of Texas that are created by land developers to finance the water, sewer, and drainage systems required for their urban or suburban commercial, residential, or mixed use development projects. MUDs are governed by a board of directors who are elected by the tax/rate payers within the MUD's jurisdiction. Although developers create the MUD from a legal standpoint, they are not in control of the governing functions of the MUD, a duty which is solely left to the members of the board of directors.

MUDs have the authority to issue tax-exempt municipal bonds, which allows them to borrow funds for non-land inputs at lower interest costs than the developers would be able to finance the funds in private capital markets. The following sections will provide details on the history of special districts in Texas, the structure and creation of MUDs, their powers and authorities, and other background information relating to MUDs.

History of Special Districts

Growth in urban and suburban populations requires the development of new residential communities and commercial establishments to service the needs of those communities. Major capital outlays must be made in order to provide quality water, sewer, drainage, and other public services to these communities.¹ General units of

¹ Joe B. Allen and David M. Oliver, Jr., "Municipal Utility Districts in Texas" (report, Houston, Texas, 2014), 1.

government, such as states, counties, cities, have sometimes been unwilling or unable to finance these large capital outlays. In Texas, this inability has been due to legal restrictions in the Constitution on municipal debt and taxing authority, combined with the unwillingness of one constituency to incur debt for the benefit of another, especially when risks associated with new development are involved.²

Private financing of these capital outlays for public utilities was previously attempted, but the concept failed. In large part, this was attributable to the fact that infrastructure costs were recovered through the sale of land and ultimately passed down to the homebuyer. This resulted in higher lot prices and unaffordable housing. Private financing also comes with higher borrowing costs for the developer as opposed to the much lower borrowing costs that MUDs enjoy due to the full faith and credit of their unlimited tax pledge to service any incurred debt. Furthermore, private ownership of the facilities was attempted, which led to the construction of substandard systems. Additionally, this model led to excessive fees and rates, which were required to recover capital costs.³

States like Texas, Florida, and California that have realized rapid population growth have addressed these shortcoming by using special district governments to finance all or part of the required utility and community support facilities. These special districts are local government entities that can be granted with special powers to provide one or more specific services when general purpose governments cannot or will not provide necessary service to an area. This flexibility makes special districts efficient tools

² Ibid.

³ Ibid.

for the stimulation of urban growth and enables them to function in the development of commercial, industrial, and residential properties, as well as in projects ranging in scope from small subdivisions to large master-planned communities.⁴

Texas recognized the need for special districts as early as 1904 when the Legislature, through voter approval, adopted Article III, Section 52, of the Texas Constitution, which authorized the Texas Legislature to pass laws creating special water districts.⁵ After struggling with limits on indebtedness and other shortcomings in the 1904 amendment, the Legislature, again through voter approval, adopted Article XVI, Section 59, of the Texas Constitution in 1917, which allowed water districts to operate with unlimited tax authority and bond indebtedness.⁶

Initially, these water districts were used to develop water irrigation systems for agriculture lands and later to service small rural communities. Once the use of water districts increased substantially in the 1950s and 1960s, the Legislature adopted Chapter 54 of the Texas Water Code in 1971, which authorized the creation of MUDs to streamline the process by which they were established and created. In 1995, Chapter 49 was added to standardize the administrative provisions for the numerous types of districts.⁷ Today, MUDs are the primary financing tool used by developers in Texas for new development projects.⁸

⁴ Ibid., 2.

⁵ Tex. Const. Article III. Sec. 52.

⁶ Tex. Const. Article XVI. Sec. 59.

⁷ See Appendix 1 for a list of the types of special districts in Texas.

⁸ See Appendix 2 for a legislative timeline relating to special districts.

City Involvement and Today's Special Districts in Texas

Municipalities in Texas are endowed with a sphere of influence outside of their boundaries known as extraterritorial jurisdiction (ETJ). A city must consent to the creation of a MUD within its ETJ or its corporate limits. In its consent, the city may require the MUD to submit all plans or its infrastructure for approval and limit the length of maturity and interest rate of the MUD bonds.⁹ The city bears no risk for the development of the MUD, while controlling the quality of the infrastructure. The city has the legal option to annex the MUD, acquire all the assets and assume the debt, subject to certain procedural steps.¹⁰ However, it is important to note that it is fairly uncommon for cities, specifically the City of Houston, to annex a MUD, especially those that the city has approved within its ETJ. The reasons for this are partly political and partly financial. That is, the city typically does not want to include much more conservative voters in its elections and the city does not want to assume the debt and operating functions of a MUD's utilities.

A majority of the approximately 1,100 special districts in Texas today were created over vacant land owned by the developer outside of city limits. Even after significant annexation by cities, over 2 million people populate these special districts, and it is estimated that there is in excess of \$6.5 billion in outstanding special district bonds.¹¹ There has been significant use of special districts in Austin and an increasing usage in the Dallas area. However, most of the special districts in Texas are located in the Houston

⁹ Association of Water Board Directors, "Water District Directors' Handbook" (report, Spring, Texas, 2014), 17.

¹⁰ Allen and Oliver, "Municipal Utility Districts in Texas", 2.

¹¹ Ibid.

metropolitan area with an estimated 600 special districts. To put this into perspective, over the past thirty years all of the major community developments in the Houston metropolitan area have been developed using special districts. The phenomenon is attributable to the differences between the local government's policies on land development, especially in suburban areas, versus that of other major cities.

Creation of MUDs

MUDs are created by using one of two methods, general law districts or special law districts. Through general law, a district may be created by the Texas Commission on Environmental Quality (TCEQ) or the local county commissioners' court. A general law district conforms to, and is established under, a particular enabling statute in the Texas Water Code.¹² Types of general law districts include: MUDs, water control and improvement districts, levee improvement districts, fresh water supply districts, water improvement districts, irrigation districts, drainage districts, navigation districts, groundwater conservation districts, municipal management districts, and storm water control districts. Most general law districts begin with a petition by a specific number of landowners in the proposed district. The petition is presented before a county commissioners' court or the TCEQ and, if approved at that level, its creation is determined by a vote in the proposed district.

Special law districts have been either created by or altered by an act of the Legislature. The Legislature has passed numerous separate statutes creating special law districts which may perform one function or a limited purpose. However, special law

¹² Association of Water Board Directors, "Water District Directors' Handbook", 17.

districts often combine several of the functions performed by some of the general law districts. General law districts may include geographical areas that differ from district areas defined in the various general laws or emphasize a different function. Although special law districts bear names such as water district, water supply district, or others, it should be noted that a district's name does not necessarily reveal its legal origin or the scope of its activities.¹³

Whether a district is created through general or special law depends on how the developer opts to create the district. There are no requirements on which option must be selected in terms of how a district is created. Most districts are created through special law out of procedural preference and given the fact that special law districts can be granted additional powers through their statutory creation despite the type of district that it is called.

District Consultants

The board of directors of a district have broad powers and extensive responsibilities. However, board members receive nominal compensation (typically a per diem) from the district and serve part-time. Moreover, board members may not have the training and expertise to perform the duties and professional services that a MUD requires. Although most MUDs do not have employees, the MUDs may contract with a variety of consultants in order to carry out the functions of the district, all of which require technical expertise. Below is a list of the primary consultants and a brief description of their duties for a typical MUD.

¹³ Ibid.

1. Bond Counsel: The attorney for the district serves as its general counsel and, as such, handles all legal work associated with the creation and operations of the district, elections, filings, notices, and bond issuance.¹⁴ The bond counsel issues certain opinions related to the district and its debt whenever a new series of bonds are issued. Bond counsel also keeps the official record of all board meetings and prepares all documents related to meetings, such as resolutions, agendas, and minutes.
2. Financial Advisor: The financial advisor helps a district structure its bond deals, market the district's bonds during an issuance, and prepare all bond sale documents and credit packages.¹⁵ The financial advisor also assists in managing everyday financial operations, such as tax rate setting, reviewing utility service rates, and preparing other informational reports as requested by the board of directors.
3. Engineer: The engineer prepares the final designs and specifications for the development project and ensures that the developer, builders, and all contractors follow development plans and specifications.¹⁶ Engineers also ensure all district infrastructure meets TCEQ standards and determines when facilities need to be expanded.

¹⁴ Ibid., 85.

¹⁵ Ibid.

¹⁶ Ibid., 84.

4. Operator: The district's service operator serves the same function as a city's water and wastewater department. The operator handles everyday issues that residents have with their water services and bills.
5. Bookkeeper: The bookkeeper is responsible for maintaining cash receipts and disbursements, including bond payments authorized by the board.¹⁷ Therefore, the bookkeeper is also responsible for maintaining detailed financial records on behalf of the district.
6. Auditor: The auditor, who is a Certified Public Accountant, conducts all annual auditing per state rules and regulations. The auditor advises the board on improvements to be made to its accounting system and areas of noncompliance with statutes, regulations, and contractual obligations.¹⁸
7. Tax-Assessor Collector: The tax-assessor collector is appointed by the board to handle the assessment and collection of taxes within the district. The tax-assessor collector coordinates with the chief appraiser of the central appraisal district for the county in which the district is found.¹⁹

Bond Issuance Process

After its creation, a MUD holds a confirmation election where the registered voters in the MUD approve the creation of the MUD, authorize the MUD to issue a sufficient amount of municipal bonds required to complete all of the anticipated development in the district, and elect the initial board of directors for the MUD. It is

¹⁷ Ibid.

¹⁸ Ibid., 85.

¹⁹ Ibid., 86.

important to note that voters authorize the MUD to issue bonds for certain purposes (e.g. water, sewer, drainage, park, etc.) and up to a certain amount. The MUD can continue to issue bonds that are “authorized but unexpended” until it reaches the debt ceiling set by the voters.

MUDs are reimbursement vehicles and, thus, do not generate capital on the front end to pay for development projects. MUDs rely on funds advanced by developers to pay for construction of its water, sewer, and drainage facilities. The MUD and the developer enter into a development financing agreement in which the developer agrees to advance funds to the MUD to pay for the construction of utilities as engineering and construction invoices come due and the MUD agrees to reimburse the developer for funds advanced if and when the MUD has the ability to do so.²⁰

The funds used to reimburse the developer for the construction of the MUD’s public facilities are obtained through the capital markets, specifically, through the sale of tax-exempt municipal bonds. The MUD makes debt service payments on the bonds through its power to levy and collect ad valorem taxes (unlimited as to rate) on all taxable property in the MUD. The taxes are paid by the homeowners and landowners in the MUD. Additionally, the homeowners and other users pay monthly water and sewer fees to cover the costs of operating and maintaining the system.

²⁰ Allen and Oliver, “Municipal Utility Districts in Texas”, 6.

Types of Debt Instruments Available to MUDs

In general, MUDs typically issue debt that is structured in one of several ways. The primary debt instruments that MUDs issue are general obligation bonds, revenue bonds, refunding bonds, and bond anticipation notes.

General obligation bonds refers to a bond that is payable from general funds of the issuer, although the precise source and priority of payment for general obligation bonds may vary considerably from issuer to issuer depending on applicable state or local law.²¹ Most general obligation bonds are said to entail the full faith and credit, and in many cases, such as MUDs, the taxing power of the issuer. General obligation bonds issued by MUDs often are payable from the district's ad valorem taxes. MUDs must receive voter approval to issue up to a certain amount of debt. General obligation bonds count towards the amount approved by voters in the district. According to the Municipal Advisory Council of Texas, all special districts and authorities in Texas currently have outstanding general obligation debt that amounts to about \$39 billion.²² It is important to note that this figure captures districts that are outside the scope of this report, such as navigation districts, port authorities, river authorities, and other special districts.

Revenue bonds refer to a bond that is payable from a specific source of revenue. Pledged revenues may be derived from operations of the district or the financed project or

²¹ "Glossary of Municipal Securities Terms," *Municipal Securities Rule Making Board*, accessed March 23, 2016, <http://www.msrb.org/Glossary/Definition/GENERAL-OBLIGATION-BOND-OR-GO-BOND.aspx>.

²² "Top Issuers by Outstanding Debt," *Municipal Advisory Council of Texas*, accessed April 13, 2016, <https://www.mactexas.com/Issuers/IssuerSearch/TopOutstanding?IssuerType=1>.

other specified non-ad-valorem taxes.²³ Revenue bonds differ from general obligation bonds because no voter approval is required prior to issuance.

MUDs typically issue refunding bonds once a previously issued series of bonds become callable, but only if the district will realize enough in present value savings to warrant the new issue. The MUD then exercises the call provision on the outstanding bonds, if one exists, and issues the refunding package at a lower interest rate. The proceeds of the new bonds are either deposited in escrow to pay the debt service on the outstanding bonds when due in an “advance refunding” or used to promptly (typically within 90 days) retire the outstanding bonds in a “current refunding.”²⁴

Bond anticipation notes are short term obligations that are used as instruments for developer reimbursement and are paid off with the proceeds of a subsequent bond issue. Bond anticipation notes typically have a maturity that does not exceed one year.

Bond Rating

MUDs are issued credit ratings by the credit rating agencies in order to designate the quality of the district’s debt that it is issuing as compared with other municipal bonds sold and traded on the market. It is important to note that not all MUDs are rated districts, especially those that are in the early stages (i.e. newly created districts with not enough assessed valuation on the ground in order to warrant obtaining a credit rating). These designations rank the bonds on a scale according to what the credit rating agencies deem is their credit worthiness. In their most recent criteria publication, Standard & Poor’s

²³ “Glossary of Municipal Securities Terms,” *Municipal Securities Rule Making Board*, accessed March 23, 2016, <http://www.msrb.org/Glossary/Definition/REVENUE-BOND.aspx>.

²⁴ “Glossary of Municipal Securities Terms,” *Municipal Securities Rule Making Board*, accessed March 23, 2016, <http://www.msrb.org/Glossary/Definition/REFUNDING.aspx>.

Rating Services, the largest rating agency of Texas MUD bonds, places emphasis on a district's relative level of development and financial stability, as evidenced by the maintenance of strong financial reserves over several years.^{25 26}

Although a MUD must pay a fee in order to be rated, a high quality bond rating means that the district will realize lower interest costs when issuing debt. Furthermore, some financially mature MUDs may qualify for municipal bond insurance on the debt they issue, which means the bonds will carry an even higher credit rating resulting in lower interest costs.

TCEQ Economic Feasibility Rules

Before a MUD can issue bonds, certain regulatory requirements and state mandated economic feasibility rules must be met. The TCEQ must determine the economic feasibility of a bond issue using certain "feasibility rules." The MUD, through its consultants, must be able to demonstrate that its bonds are economically feasible based upon its tax rate and property values. According to the TCEQ, economic feasibility is the determination of whether the land values, existing improvements, and projected improvements in the MUD will be sufficient to support a reasonable tax rate for debt service obligations on existing and proposed bond issues while maintaining competitive utility rates.^{27 28}

²⁵ Horacio G. Aldrete-Sanchez, James M. Breeding, Theodore A. Chapman and Colleen Woodell, "Methodology and Assumptions: Rating Unlimited Property Tax Basic Infrastructure Districts," *Standard & Poor's RatingsDirect* (report, 2009), 2.

²⁶ See Appendix 3 for credit characteristics for each credit rating and rating distributions of Texas MUDs.

²⁷ 30 Texas Administrative Code, §293.59

²⁸ See Appendix 4 for a history of MUD tax rates.

The first and primary economic feasibility rule is based on the district's tax rate. A MUD must demonstrate to the TCEQ that the bond issue can be paid by certain "growth" and "no-growth" tax rates. That is, the financial advisor for the district, who acts as the investment banker in structuring the bond transaction on behalf of the district, models a "growth" tax rate to assume a reasonable increase in assessed valuation in the district resulting from the construction of new homes on already developed lots. The "no growth" tax rate scenario assumes no new homes will be constructed in the MUD. The TCEQ rules allow the maximum combined growth tax rate to be \$1.50 per \$100 of assessed valuation and the maximum combined no-growth tax rate to be \$2.50 per \$100 of assessed valuation.²⁹

The next key economic feasibility rules are based on completed construction of homes and utilities. At least 25% of the projected value of houses shown in the projected "growth" tax rate calculations must be completed prior to the sale of the bonds. Furthermore, in order to obtain TCEQ approval for a proposed bond issue the following conditions must be met with regard to completed utilities:

1. All permits for groundwater, surface water, waste discharge, or capacity needed to support the projected build-out must have been obtained;
2. All underground water, wastewater, and drainage facilities to be financed by the bonds or necessary to serve the projected build-out to support feasibility must be at least 95% complete;

²⁹ See Appendix 5 for an example of "growth" and "no growth" debt service cash flow models submitted with a TCEQ bond application, as well as a schedule reflecting how the "growth" scenario arrives at the assessed valuation figures it uses.

3. Sufficient lift station, water plant, and sewage treatment plant capacity to serve the connections projected for a period of not less than 18 months shall be either 95% complete or available in existing plants;
4. Water supply, lift station, and wastewater treatment capacity needed to support the projected build-out used to support feasibility must be existing or funded by the bond issue; and
5. All street and road construction to provide access to the areas provided with utilities financed by the bonds or necessary to serve the projected build-out to support feasibility must be 95% complete.

Other economic feasibility requirements include a developer's requirement to permanently waive their right to claim agricultural, open space, timberland, or inventory valuation for any land, homes, or buildings it owns in the MUD. Also, a current market study must address the projected building program for three years subsequent to bond application and the period of projected build-out shown in the bond application and competing projects in the surrounding market area.

The 30 Percent Rule

The TCEQ promulgated regulations in 1974 that required developers to assume 30% of construction costs for certain water, sewer, and drainage facilities. Under this rule, developers cannot be reimbursed from bond proceeds for more than 70% of the construction and engineering costs of certain facilities.³⁰ However, some facilities, such

³⁰ Association of Water Board Directors, "Water District Directors' Handbook", 54.

as wastewater treatment plants and water supply, treatment, and storage facilities, are exempt from this rule.

Districts may obtain a waiver of the 30% rule from the TCEQ if it meets one of the following criteria:

1. Has a ratio of debt to certified assessed valuation of 10% or less;
2. Obtains an investment grade credit rating (BBB- or higher) on its proposed bond issue; or
3. Obtains a credit enhanced rating on its proposed bond issue by obtaining municipal bond insurance.³¹

Effects of the Financial Crisis of 2008

The financial crises of 2008 was marked by a bust in the housing market on a national scale. While the impacts of this bust were far less evident in Texas than in other states, there were still implications realized by the municipal bond market in Texas. First, the rate of issuance of new money bonds and of new development projects slowed tremendously. Initially, yields on Houston area MUD bonds spiked, as the financial markets viewed a credit tied to development and the housing market as being a riskier security. As interest rates decreased, however, MUDs began issuing more refunding bonds in order to retire outstanding callable debt at lower interest costs.³² While the financial crisis put a strain on the Houston housing market and broader local economy, it was an example of how the TCEQ's feasibility rules for development were advantageous

³¹ Ibid.

³² See Appendix 6 for a history of refunding bonds issued by Houston-area MUDs.

in deterring, and even preventing, defaults. Thus, it is important to note that no major changes in law or regulation surrounding MUDs came as a result of the financial crisis.

Chapter 2: Benefits and Liabilities of MUDs

MUDs have been viewed as a highly effective development tool in Texas because they benefit all of the represented interests, including the bond investors, the developers, the consumers, and good public policy. Each of these benefits will be discussed in the subsections below. Those opposed to the use of MUDs have concerns surrounding powers of the developer throughout the governance process, lack of checks from the public, and other transparency issues.

Benefits to Bond Markets

Between 2001 and 2008, Houston area MUDs issued approximately \$6 billion in bonds in at least 1,281 issues and approximately 60% of the bonds issued were insured with a AAA rating and carried an average true interest cost of approximately 4.53%, 30% were insured with a AA rating and carried an average true interest cost of 5.03%, and the remaining bonds were non-rated and carried an average true interest cost of less than 5.5%.³³ There are several reasons why there has been a developed investor confidence in, and a ready market for, debt issued by Texas MUDs. Those reasons are as follows:

1. The regulatory requirements imposed on Texas MUD bond issues;
2. A MUDs ability to impose an unlimited ad valorem tax to support debt service payments on its bonds;
3. The debt service payment history of Texas MUDs, in general; and
4. Investor experience with Texas MUD bonds over the last thirty years.

³³ Allen and Oliver, "Municipal Utility Districts in Texas", 7.

While there are no constitutional or statutory limits on the amount of bonds that a MUD may issue, a MUD must satisfy strict feasibility rules issued by the TCEQ. Before a MUD can issue any debt the TCEQ rules require the following:

1. The completion of all water, sewer, and drainage facilities to be financed with the proposed bond issue;
2. The completion of all streets and roads that provide access to the areas served by the utility improvements;
3. The completion of at least 25% of the projected value of houses, buildings, and/or other improvements shown in the projected tax rate calculations used to support the bonds; and
4. A showing that the land values, existing improvements, and projected improvements will be sufficient to support a reasonable tax rate for debt service payments for existing and proposed debt while maintaining competitive utility rates.³⁴

While these standards are a legalized disclosure of risks, they are also designed to protect the consumer against high tax rates and maintain the integrity of MUD bonds, which will allow taxpayers to realize better interest rates for future MUD projects.

As previously mentioned, while the TCEQ may limit the amount of debt issued by a MUD, the MUD itself is authorized to levy an unlimited ad valorem tax against all property in the MUD in order to support debt service payments. Furthermore, MUDs fall at the top of the “capital stack,” as a MUD’s tax lien has first priority over mortgages and

³⁴ Ibid., 4.

assessments, and has the same priority as county, city, and school district taxes.³⁵ This priority in the capital stack is significant when considered with the fact that only in extreme situations will a borrower or mortgage lender who has foreclosed forfeit property in order to satisfy taxes due on the property.

Other key forms of security for investors that exist in the Texas MUD bond market are the fact that the interest payments made by a MUD to a purchaser of its bonds are exempt from federal income taxation. Until 2008, the net yield on unrated Texas MUD bonds equaled approximately the yield on ten-year U.S. Treasury Bonds.³⁶

Benefits to Developers

MUD financing of water, sewer, drainage, and other public infrastructure projects allows the developer to quickly recover infrastructure costs that otherwise would be recouped by raising the selling price of subdivided units (i.e. higher costs passed down to the home buyer/consumer). In a business that demands liquidity and is driven by a project's internal rate of return, this is an important element in allowing housing supply to quickly match market demand.

During the first phase of a typical 500 acre development using a MUD, the developer is responsible for financing the build-out of infrastructure for the first 100 acres. Once construction of the first phase is complete and the TCEQ feasibility standards have been met, the MUD issues bonds to pay for the constructed infrastructure and reimburses the developer with the bond proceeds. The MUD levies an ad valorem tax on all taxable land, houses, and other improvements within the boundaries of the district to

³⁵ Ibid.

³⁶ See Appendix 7 for a yield comparison of Texas MUD bonds versus other debt securities.

support the bond issue. Once the developer receives reimbursement from bond proceeds for the first phase, the funds are then used to construct the build out of the second phase of development. This pattern will continue until the development project has been entirely built-out.

MUD financing of utility improvements also allows developer capital to be redeployed at a faster rate and far less expensively than other methods, resulting in a higher quality development over a shorter development period.³⁷ The cyclical reimbursement feature of a MUD, as previously described, also lowers the barriers to entry for developers by reducing the amount of required capital necessary to begin development of new communities. This, in turn, allows for a more competitive housing market and puts downward pressure on prices for homebuyers.³⁸

Those developers choosing non-MUD financing typically subject themselves to higher private interest rates and longer reimbursement periods. This is due to the fact that private developers are not able to compete with a credit rating held by a public entity with unlimited tax authority.³⁹ Therefore, if a developer privately finances infrastructure costs, the cost of the subdivided units will be inflated by the pro rata cost of the utility system and extra capital costs (i.e. borrowing costs).⁴⁰ This results in significantly higher lot prices and higher housing costs, which creates a more challenging marketing environment for the developer. Finally, private financing can slow the rate of

³⁷ Allen and Oliver, “Municipal Utility Districts in Texas”, 5.

³⁸ See Appendix 8 for comparative statistics on the Houston housing market versus that of other municipalities without special districts.

³⁹ See Appendix 9 for credit rating information by issuance of Texas MUDs.

⁴⁰ Allen and Oliver, “Municipal Utility Districts in Texas”, 5.

development due to traditional lenders not being willing to finance a new development phase until loans issued to finance the prior phase have been fully repaid.

Benefits to Consumers

Ultimately, the costs of all the utility systems owned and operated by the MUD are paid by the consumer. As previously mentioned, the use of MUDs allows the cost of site improvements to be paid for through public financing, which lowers the lot costs and reduces the price of homes. Historically, the tax-exempt interest rates on bonds issued by MUDs are lower than mortgage rates. Additionally, payments of taxes to the MUD by the homeowner are viewed as eligible for deduction from the homeowner's federal income tax. Therefore, the homebuyer's tax payments to the MUD are significantly lower than if the cost of improvements were included in the purchase price of the home.

Consumers also have the benefit of transparency in taxes levied by a MUD. Sellers are required to have purchasers of land and houses within the MUD execute a "Notice to Purchaser" informing purchasers of the existence of the MUD, its tax rate, and the amount of authorized bonds.⁴¹ MUDs are also required to file that same information in the real property records.

Other Benefits

The special district model in Texas and the use of MUDs for financing public infrastructure projects represents sound public policy. Several good public policy goals are achieved through the use of MUDs, including the development of quality infrastructure and the creation of affordable housing by encouraging a competitive

⁴¹ Ibid.

market for developers. More importantly, MUDs represent a governmental entity whose directors are elected by MUD residents to provide for the long term management and financing of a community's infrastructure needs.

Liabilities of MUDs

Some argue that special districts, and MUDs more specifically, present many liabilities that the public should be aware of and that the governments who authorized them should consider. These liabilities and pitfalls include lack of transparency, lack of public participation, unchecked power, and encouragement of rapid growth and poor city planning.

Special districts have a broad range of powers and responsibilities authorized by state legislatures and encouraged by units of general purpose local governments in order to deal with tough public policy problems. Since World War II, there has been a threefold increase in special districts and, in total, special districts receive approximately \$123 billion in revenue and have \$217 billion in public debt.⁴² Though special districts have grown in number and scope, many argue that the theories that support them have not been adequately scrutinized by the governments authorizing them because of the difficulty in developing a metric for assessment.

Since developers receive most of the benefits from a MUD, they have tended to be their most vocal advocates. That is, most of the proceeds from the initial bond issuances by a MUD are used to repay a developer at a lower borrowing cost not incurred by the developer, but by the taxpayers. Without the bonding and taxing powers, MUDs would not be able to provide a wide range of amenities, and developers would not be able to benefit from the construction of infrastructure at low or no cost to them.⁴³ For these reasons, some

⁴² Sara C. Galvan, "Wrestling with MUDs To Pin Down the Truth About Special Districts," 75 Fordham Law Review (2007), 3044.

⁴³ Ibid., 3048.

argue that MUDs therefore make suburban development less risky and more attractive by distributing public funds to subsidize private developers' efforts.⁴⁴ Furthermore, since MUDs enable a nimble public vehicle for development and that they represent a model of relatively decentralized city planning, they encourage urban sprawl and worsen the problems associated with it, such as increased traffic, environmental damage, and similar issues.

Developers also wield a lot of power at the onset and throughout the existence of a MUD. Whether lobbying the legislature or regulators to create their MUDs, the developer is the primary driver behind the creation of a MUD. The developer also hires the district's bond counsel, appoints the initial board of directors, and oversees construction within the district.⁴⁵ This creates a situation where the decision makers for the district are loyal and responsive to the developer, thereby removing power from the general public and putting it in the hands of Texas real estate developers.

Arguments also exist that, in the long run, MUDs also suffer from a public participation deficit. Smaller units of government typically encourage greater citizen participation. The same could be said for a MUD, but because of the fact that too many other overlapping special districts also exist within the boundaries of a given MUD, people are not necessarily able to "vote with their feet."⁴⁶ This is due to the complexity and uncertainty of what special districts exist and what their powers are as perceived by the general public. Additionally, though the developer's initial board of directors may be replaced over time, few people are engaged with the affairs of a MUD.⁴⁷

⁴⁴ Ibid.

⁴⁵ Ibid., 3049.

⁴⁶ Ibid., 3045.

⁴⁷ Ibid., 3049.

Chapter 3: Case Study

As in any market-based environment, there are inherent risks involved. The developer, issuer, bondholders, and other market participants are all subjected to these risks in varying forms. This chapter of the report will seek to point out where some of the weaknesses and risks in the special district model have been in the past and how those weaknesses have been mitigated. The primary means of achieving this will be through a specific case of a MUD defaulting on its debt and the contributing factors that lead to that event.

Harris County MUD 19

In 1982, Harris County MUD 19 (MUD 19) issued a series of bonds totaling \$2.6 million. Approximately five years later, MUD 19 found itself defaulting on their outstanding debt obligations and seeking Chapter 9 bankruptcy protection. When MUD 19 issued its bonds in 1982, it was generally accepted that debt securities issued by Harris County MUDs were a good investment even though they were categorized in the riskiest class of municipal debt (i.e. unrated bonds). Up to this point, no Harris County MUD had ever defaulted and investors were confident of receiving their tax-free interest and that their principal investment was “safe.”⁴⁸

At the time, initial homeowners in MUD 19 quickly realized the inherent risk they assumed when buying a house in a newly created MUD. That is, as a homeowner in a MUD, a resident assumes a pro rata share of that district’s outstanding debt obligations according to the value of the homeowner’s taxable real and personal property relative to

⁴⁸ Dr. Ronald Welch, “Trouble on Tap for Municipal Utility Districts,” *Houston Chronicle*, May 17, 1987.

the value of all other property.⁴⁹ As previously mentioned in this report, given the total assessed valuation within the district, the MUD will then set a tax rate that is able to support the required debt service on its bonds. For about two years after a series of MUD bonds are issued, the tax rate required to make the debt service payments on that issue will be relatively low as two years of interest payments are placed into the district's debt service fund from the proceeds of the bond sale.⁵⁰ This is referred to as capitalized interest.

During that same time period, the developer will sell residential lots and commercial tracts, and new homes and commercial improvements will be constructed that will increase the MUD's property tax base. However, whenever the growth rate of construction is slower than initially projected, it may be necessary for the district to increase its tax rate.⁵¹ This is exactly what happened in MUD 19 and, as a result, the tax rate in MUD 19 increased by a factor of approximately 500% from \$1.35 per \$100 of assessed valuation in 1984 to \$6.85 per \$100 of assessed valuation in 1985.⁵² In real dollars, this means that the average homeowner in the district with a house assessed at \$80,000 saw their MUD tax bill go from \$1,080 per year when the Series 1982 bonds were issued to \$5,480 per year in 1985. This tax rate would have only continued to climb had MUD 19 not filed for bankruptcy the subsequent year.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

Contribution Factors

When MUD 19 issued its Series 1982 bonds, the district's developer rendered his land and lot values so that, in conjunction with projected annual house sales, they would generate the required \$430,000 average annual debt service. However, these bonds were issued during a time when the Houston real estate market was in a depressed environment and the developer did not incorporate this factor into the required cash flow analyses submitted as part of the bond application to the Texas Water Commission (TCEQ's predecessor). The Texas Water Commission ultimately approved the sale of the bonds even though the staff comments on the bond application expressed their disapproval of the projections of lot, house, and land sales as being too aggressive.

Another contributing factor to MUD 19's default is the difference between how ad valorem taxes were assessed then versus now. Prior to the phase-in of the Harris County Central Appraisal District, each municipality and special purpose district had its own tax-assessor collector and, as such, the appraised values for all the overlapping jurisdictions could vary greatly.⁵³ Under this model, developers rendered their holdings at higher values to MUD assessors/collectors than to other taxing jurisdictions, so the marginal cost to the developer of an increase in MUD property taxes was justified to keep the MUD property tax competitively low.⁵⁴ In other words, the developer reported high assessed valuations on his property because it allowed him to achieve a lower tax rate for the MUD in order to service the MUD's debt. The lower tax rate was more attractive to home builders because they would be able to more effectively market homes to

⁵³ Ibid.

⁵⁴ Ibid.

homebuyers due to the lower tax rate. More importantly, however, by reporting higher appraised values on his holdings, the developer qualified for more MUD reimbursement sooner rather than later because he was able to satisfy the 10% debt ratio required in order to be exempt from the TCEQ's 30 Percent Rule. Under the current model, if the developer renders his property to one overlapping jurisdiction then, through the central appraisal district, that rendition will apply to all overlapping jurisdictions.⁵⁵

Implications

The implications of MUD 19's default were many. By 1992, fiscal stresses in the Texas economy lead to more defaults. Specifically, 17 MUDs and one Levee Improvement District defaulted on their debt service payments, which totaled \$64.6 million in defaults. Stated alternatively, these figures represented, at the time, 5.8% of active districts and 2.9% of outstanding debt. The effects on the general public were an increase in cost of debt and the associated property taxes or user fees paid to finance urban infrastructure. Furthermore, the default sent signals to homebuyers that they should be cautious of purchasing a home that resides within a MUD or that they should only locate within a MUD that has a large and diversified tax base or has a developer with a good reputation and enough cash to weather depressed real estate environments.⁵⁶

MUD 19's default also encouraged changes in state law and regulation. Most notably it contributed to the establishment of the economic feasibility requirements, detailed previously in this report, that are enforced by the TCEQ in order for a MUD to have a bond issuance approved. Additionally, the way in which taxes were assessed and

⁵⁵ Ibid.

⁵⁶ Ibid.

collected changed so that all tax-assessors collectors were coordinating with a county's central appraisal district to avoid situations where overlapping jurisdictions had varying assessed valuations.

Other policies that were implemented included restrictions on developers from filing for agriculture, timber, wildlife, or other ad valorem exemptions. These defaults also prompted the TCEQ rule that requires at least 25% of the projected value of houses shown in the tax rate calculations to be completed prior to the sale of bonds. Developers were also incentivized with an exemption from the 30% rule (detailed previously in this report) if they could obtain a debt to certified assessed valuation ratio of 10% or less.

The default also disrupted the capital markets surrounding Texas MUD bonds. Demand for Texas MUD bonds decreased significantly as there was a scare that MUD 19's default would have a ripple effect across all Harris County MUDs due to damaged credit ratings and, by extension, higher interest costs on debt. This meant that bondholders were required to sell MUD bonds at a premium if they wanted to shed them from their investment portfolio, even if the bonds were from mature issuers with strong financial statements.

Chapter 4: Conclusions

The case for the special district model in Texas, and MUDs more specifically, is strong. Currently, Texas MUDs are in the best financial condition that they have ever been in. This is due to the policies that have been implemented, as previously outlined in this report, aimed at protecting the taxpayer and ensuring sound financial footing before public debt is issued. This is also attributable to the prudent management that MUDs have through their private professional consultants. Also, MUDs are in better fiscal condition and have stronger financial statements than all other comparable public entities. In part, this is due to the fact that MUDs have no employees, benefits, pensions, or health care costs.

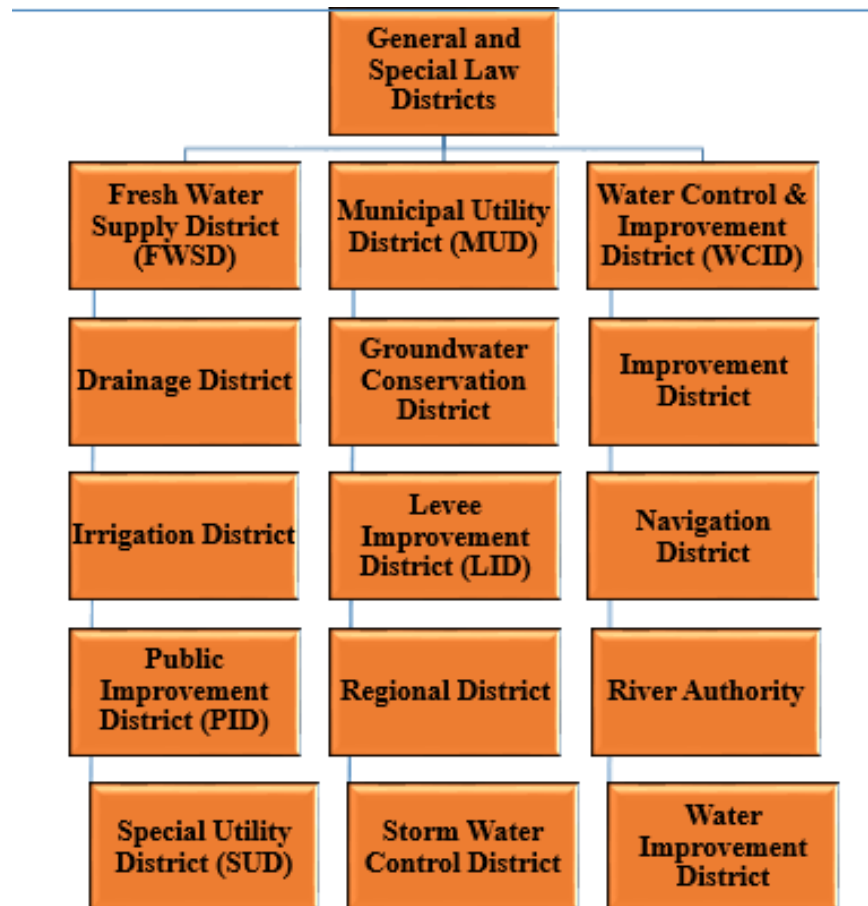
MUDs have also proven to be far more nimble than larger governments, which allows developers to respond to housing market demands in a much timelier manner. This flexibility also allows the taxpayer to save money, as MUDs are able to issue refunding bonds when and if interest rates go below that of a previous bond issue with a call option. MUD financing of utility improvements also allows a developer to redeploy capital at a faster rate and far less expensively than other methods. This results in higher quality development projects over a shorter development period. Furthermore, the cyclical reimbursement feature of a MUD lowers barriers to entry for developers by reducing the amount of required capital necessary to begin development of new communities, which creates a more competitive housing market. These savings, both through lower interest costs and competitive market conditions, are ultimately realized by the end consumer.

The structure of MUDs also offer recognizable benefits to homeowners and the broader public. That is, the structure of MUDs is such that only those that use and benefit

from the utilities pay for the services. This attribute prevents taxpayers from outside of the jurisdiction from having to subsidize public infrastructure and systems that they are not using. Additionally, MUDs are structured so that the public sector is forgoing risks associated with land development.

The risks and market failures outlined in the previous section should now be of minimal concern to interested parties, as they have been largely mitigated through changes in public policy and market self-regulation. Issuers, underwriters, investors, and homeowners now have a far greater sense of security in the credit quality of the debt instruments being issued by MUDs, which is reflected in the current market demand for these tax-exempt securities.

Appendix 1: Types of Special Districts



Appendix 2: Legislative Timeline of Special Districts

Constitutional And Statutory History Of Water Districts In Texas

Year	Change in Law
1876	Art. 3, Sec. 52 - Constitutional provision addressing lending of credit for state, counties, cities/towns
1904	Art. 3, Sec. 52 - Constitutional amendment, adding provisions for the issuance of debt by the districts and limitation on amount of debt issued by specified political subdivisions (1/4 of assessed valuation)
Pre-1911	General Law creating Navigation Districts (minimal powers, see 1921 legislation)
1911	General Law creating Drainage Districts
1913	General Law creating Irrigation Districts
1915	General Law creating Levee Improvement Districts
1917	Art. 16, Sec. 59 - Constitutional amendment, adding provisions regarding conservation and reclamation districts
1917	General Law creating Water Improvement Districts (superseding prior law regarding Irrigation Districts)
1918	General Law creating Conservation and Reclamation Districts, providing that any Water Improvement District, Drainage District or Levee Improvement District previously created may avail itself of the provisions of Article 16, Sec. 59 (Canales Act)
Special Session	1918 General Law creating Water Control & Preservation Districts
1919	General Law creating Fresh Water Supply Districts
1921	General Law creating Navigation Districts
1925	General Law creating Water Control & Improvement Districts
1954	Texas Supreme Court ruling confirming constitutionality of exercise of sewer powers by water districts under Art. 3, Sec. 52 and/or Art. 16, Sec. 59
1955	Creation of Harris County Improvement District No. 1 - first District used as a financing mechanism for development purposes
1963	Passage of Municipal Annexation Act, setting forth procedures for annexation and creating concept of extraterritorial jurisdiction (ETJ)
1970	Art. 3, Sec. 52 - Constitutional Amendment, adding subsection (c) regarding road bonds
1971	Codification of prior water district law from Vernon's Texas Civil Statutes to Water Code
1971	General Law creating Municipal Utility Districts (Chapter 54, Water Code), powers include authority to dispose of solid waste
1977	General Law creating Irrigation Districts
1978	Art. 3, Sec. 52 and Art. 16, Sec. 59- Constitutional Amendments, adding subsections (d) and (f) respectively regarding fire-fighting authority
1983	General Law creating Special Utility Districts, powers include authority to dispose of solid waste
1985	Amendment to MUD law - adding power for MUDs to use surplus revenue for parks and recreational facilities
1985	Amendment to MUD law - adding power for certain MUDs to acquire road utility district powers
1987	Amendment to FWSD law - adding power for certain FWSDs to acquire road district powers
1987 to 1989	Amendments to Water Code and TCEQ rules regarding financial feasibility requirements for issuance of water district debt
1991	Amendment to MUD law - adding authority to operate and maintain street lighting and authority to enforce deed restrictions
1995	Chapter 49, Water Code adopted to provide standard administrative provisions for all water districts, powers include authority for all districts to dispose of solid waste

January 2014

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1995	Amendment to MUD law - adding authority to contract with law enforcement officers
1995	Amendment to Local Government Code, authorizing municipalities to enter into Strategic Partnership Agreements with districts
1997	Amendment to MUD law - adding authority for certain MUDs to perform street repairs
1999	Amendment to Municipal Annexation Act - significant revisions to annexation procedures, including requirements for municipal annexation plan
2003	Art. 16, Sec. 59 - Constitutional Amendment, amending subsection (a) and adding (c-1) allowing districts in certain counties to issue tax-supported debt for parks and recreational facilities. Eligible counties included the following: Bastrop, Bexar, Waller, Travis, Williamson, Harris, Galveston, Brazoria, Fort Bend, and Montgomery Counties
2003	Amendment to Chapter 49, Water Code - allows Constitutionally-authorized districts (except Montgomery County) to issue tax-supported debt for parks and recreational facilities
2005	Amendment to Chapter 49, Water Code - authorizes districts in Harris, Fort Bend, and Galveston Counties receiving money pursuant to a strategic partnership agreement with a municipality to use that money for any purpose of the municipality or district
2007	Amendment to Local Government Code - clarifies requirement to obtain city consent prior to addition of land located in the city's ETJ into an existing district
2007	Amendment to MUD law - clarifies approval process for MUDs exercising road powers
2007	Amendment to Chapter 49, Water Code - allowing certain districts in Montgomery County to issue tax-supported debt for parks and recreational facilities
2013	Water District Omnibus Bill makes numerous changes to Chapters 49, 51, and 54, Water Code, and other statutes relating to the operation and administration of water districts
2013	Amendment to MUD law - clarifies process for county review of MUD creations by the TCEQ

Chart prepared by and courtesy of Allen Boone Humphries Robinson LLP - 2014

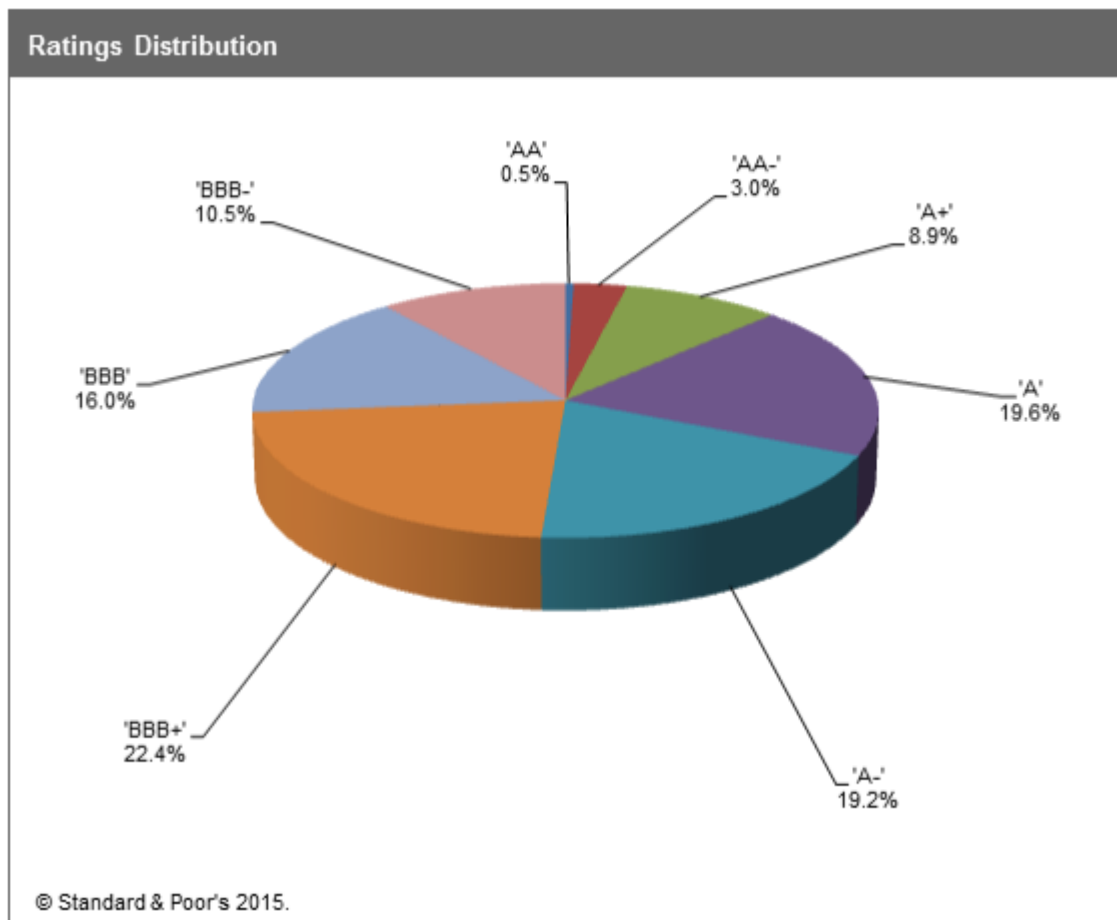
Source: Allen Boone Humphries Robinson LLP

Appendix 3: Credit Characteristics and Rating Distributions of Texas MUDs

Issue Credit Characteristics Of Unlimited Property Tax Basic Infrastructure Districts

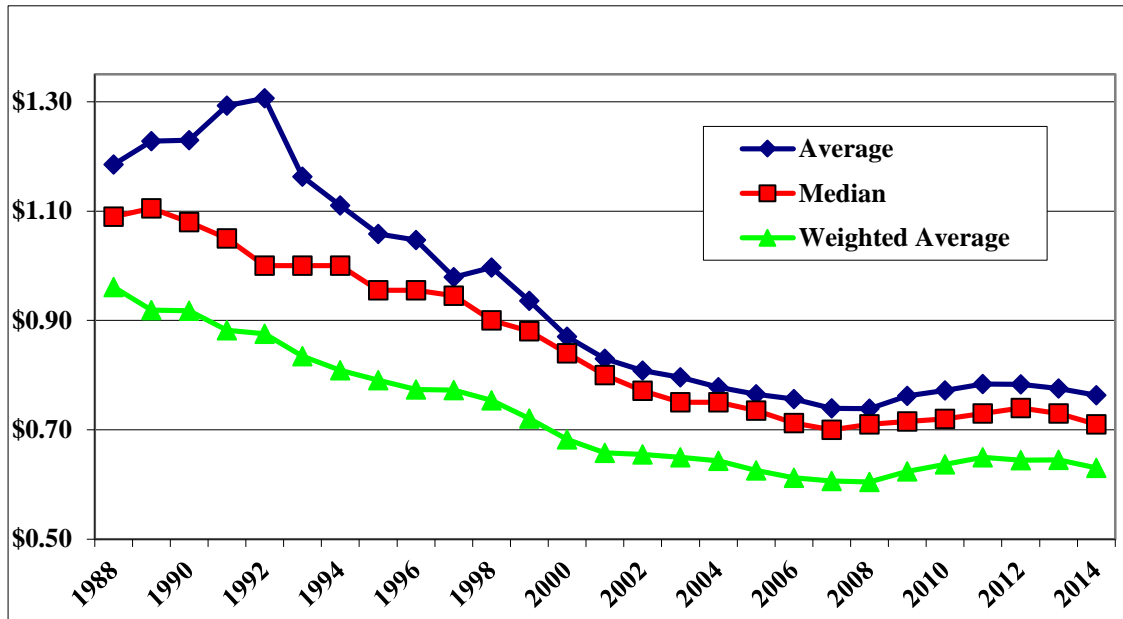
Rating category	
AA	This is typically a fully developed district with a substantial tax base and strong transportation access to a major metropolitan region, supported by a stable history of property tax base growth and tax collections. It will have a moderate, albeit declining, debt level and tax rate. The operating history and reserves are strong. All infrastructure needs have been addressed, with minimal, if any, additional debt plans. These districts are often part of a multidistrict community.
A	This is a mostly developed district, usually located within a master-planned community that will eventually provide all necessary water and wastewater services. Its financial history and reserves are sound. While debt levels and additional debt needs may be high, management opens new sections in a deliberate fashion and promptly makes developer reimbursements. It could also be a largely developed district, with a sound record of good property tax collections. Management will devote any additional debt issuances to fund plant upgrades, and infrastructure replacement. The tax rate and debt levels are moderate, and the tax base does not exhibit a significant level of concentration.
BBB	This is typically a developing district with significant capital expenses ahead, perhaps including overlapping drainage districts. Debt levels and tax rates are high, but the district has maintained a strong financial position. Or, it is a largely commercial district, concentrated in a few taxpayers. While operating performance and debt levels might be good, it faces significant competition within the region. Even a moderate district tax rate could put it at a disadvantage.
BB or below	This is typically a district in the early stages of development with large capital expenses ahead. Debt levels and tax rates are very high and are likely to remain high in the next 10 years, based on anticipated growth patterns and future issuance of debt. Its financial history is limited. The tax base and, therefore, electorate remain concentrated in a few leading taxpayers.

Source: Standard & Poor's Rating Services



Source: Standard & Poor's Rating Services

Appendix 4: History of MUD Tax Rates



Source: Municipal Information Services

Note: The dollar amount in the y-axis is per \$100 of assessed value.

Note: The “Weighted Average” line represents the average tax rate weighted by the taxable value of each MUD. It is derived by multiplying each MUD’s taxable value by its tax rate, adding each of those products, dividing that aggregate sum by the sum of the taxable values of all the MUDs.

Appendix 5: Examples of Assumed “Growth” and “No-Growth” in Assessed Valuation for TCEQ Bond Application

HARRIS COUNTY MUD No. ____ - AV GROWTH DEBT SERVICE CASH FLOW											
Prepared Post Series 2016 Bond Sale - Actual Results											
			Previous Yr.			Projected		Total Funds		Projected	
Year	Beginning Balance(A)	Interest Earnings(B)	Assessed Valuation(C)	Tax Rate(T)	Coll. Factor	Tax Revenues	Other Sources(D)	Available for Debt Service	Debt Service Reqmnts(E)	Ending Balance	Reserve Balance
2016	\$1,730,000	\$4,325	\$305,620,886	\$0.56	98%	\$1,677,247	\$0	\$3,411,572	\$1,865,539	\$1,546,033	74%
2017	\$1,546,033	\$3,865	\$331,475,789	\$0.56	98%	\$1,819,139	\$0	\$3,369,038	\$2,078,142	\$1,290,896	61%
2018	\$1,290,896	\$3,227	\$341,975,789	\$0.56	98%	\$1,876,763	\$0	\$3,170,886	\$2,132,392	\$1,038,494	48%
2019	\$1,038,494	\$2,596	\$355,795,789	\$0.56	98%	\$1,952,607	\$0	\$2,993,698	\$2,160,704	\$832,994	34%
2020	\$832,994	\$2,082	\$365,595,789	\$0.65	98%	\$2,328,845	\$0	\$3,163,921	\$2,477,879	\$686,042	27%
2021	\$686,042	\$1,715	\$366,595,789	\$0.70	98%	\$2,514,847	\$0	\$3,202,604	\$2,497,917	\$704,687	28%
2022	\$704,687	\$1,762	\$366,595,789	\$0.70	98%	\$2,514,847	\$0	\$3,221,296	\$2,491,535	\$729,761	29%
2023	\$729,761	\$1,824	\$366,595,789	\$0.70	98%	\$2,514,847	\$0	\$3,246,433	\$2,528,223	\$718,210	28%
2024	\$718,210	\$1,796	\$366,595,789	\$0.70	98%	\$2,514,847	\$0	\$3,234,852	\$2,527,617	\$707,235	27%
2025	\$707,235	\$1,768	\$366,595,789	\$0.70	98%	\$2,514,847	\$0	\$3,223,851	\$2,577,220	\$646,631	25%
2026	\$646,631	\$1,617	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,270,873	\$2,566,467	\$704,406	27%
2027	\$704,406	\$1,761	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,328,794	\$2,569,129	\$759,665	29%
2028	\$759,665	\$1,899	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,384,190	\$2,583,726	\$800,464	31%
2029	\$800,464	\$2,001	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,425,092	\$2,579,913	\$845,179	32%
2030	\$845,179	\$2,113	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,469,918	\$2,607,729	\$862,189	32%
2031	\$862,189	\$2,155	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,486,971	\$2,656,514	\$830,457	31%
2032	\$830,457	\$2,076	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,455,159	\$2,645,679	\$809,480	30%
2033	\$809,480	\$2,024	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,434,130	\$2,664,960	\$769,170	44%
2034	\$769,170	\$1,923	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$3,393,719	\$1,729,089	\$1,664,630	94%
2035	\$1,664,630	\$4,162	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$4,291,418	\$1,764,098	\$2,527,320	188%
2036	\$2,527,320	\$6,318	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$5,156,265	\$1,343,930	\$3,812,335	279%
2037	\$3,812,335	\$9,531	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$6,444,492	\$1,364,061	\$5,080,431	368%
2038	\$5,080,431	\$12,701	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$7,715,758	\$1,381,436	\$6,334,322	469%
2039	\$6,334,322	\$15,836	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$8,972,784	\$1,351,455	\$7,621,329	918%
2040	\$7,621,329	\$19,053	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$10,263,009	\$829,905	\$9,433,104	1161%
2041	\$9,433,104	\$23,583	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$12,079,313	\$812,280	\$11,267,033	1410%
2042	\$11,267,033	\$28,168	\$366,595,789	\$0.73	98%	\$2,622,626	\$0	\$13,917,827	\$799,187	\$13,118,640	#DIV/0!

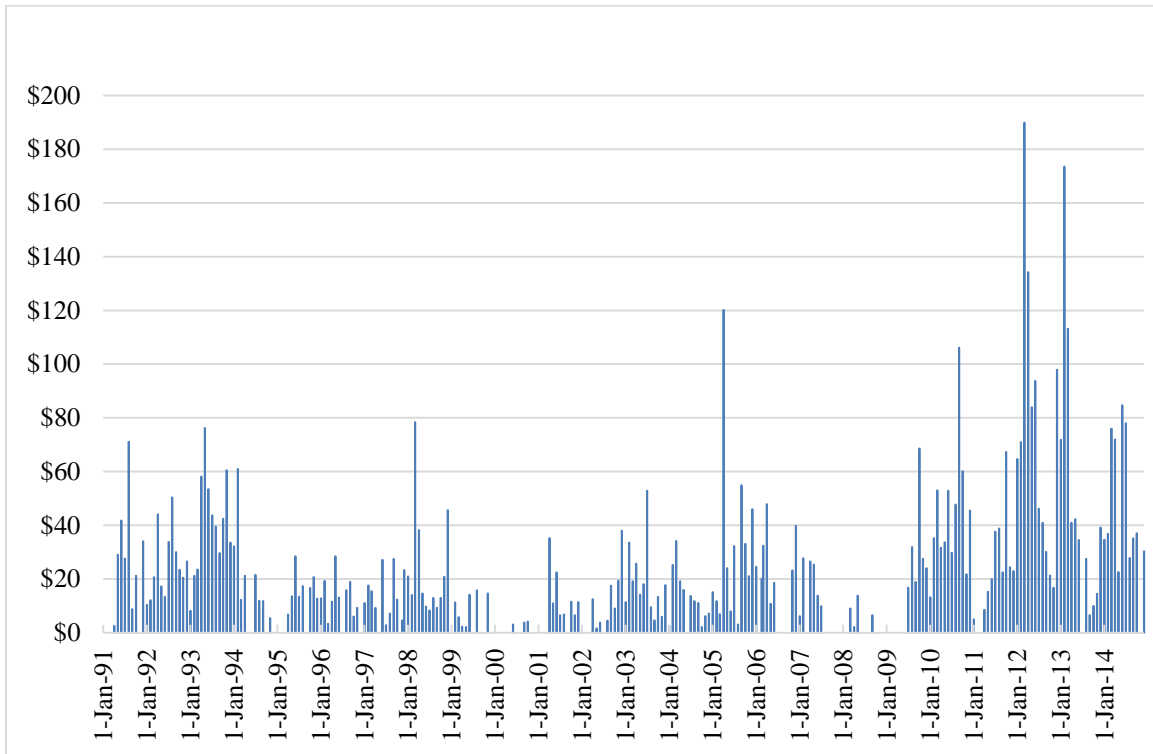
HARRIS COUNTY MUD No. ____ - NO GROWTH DEBT SERVICE CASH FLOW

Prepared Post Series 2016 Bond Sale - Actual Results

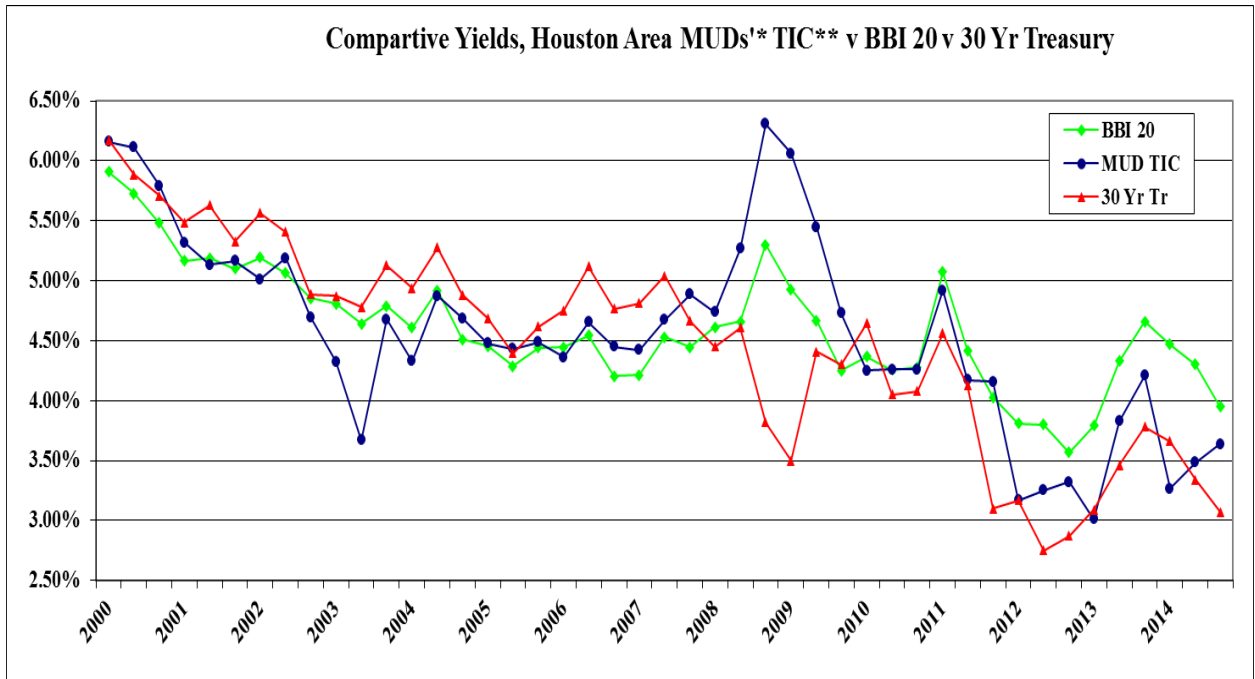
	Beginning	Interest	Previous Yr.	Tax	Coll.	Projected	Other	Total Funds	Debt Service	Projected	Reserve
Year	Balance(A)	Earnings(B)	Assessed Valuation(C)	Rate(T)	Factor	Tax Revenues	Sources(D)	Available for Debt Service	Reqmnts(E)	Ending Balance	Balance
2016	\$1,730,000	\$4,325	\$305,620,886	\$0.56	98%	\$1,677,247	\$0	\$3,411,572	\$1,865,539	\$1,546,033	74%
2017	\$1,546,033	\$3,865	\$331,475,789	\$0.56	98%	\$1,819,139	\$0	\$3,369,038	\$2,078,142	\$1,290,896	61%
2018	\$1,290,896	\$3,227	\$331,475,789	\$0.56	98%	\$1,819,139	\$0	\$3,113,262	\$2,132,392	\$980,870	45%
2019	\$980,870	\$2,452	\$331,475,789	\$0.64	98%	\$2,079,016	\$0	\$3,062,338	\$2,160,704	\$901,634	36%
2020	\$901,634	\$2,254	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$3,567,628	\$2,477,879	\$1,089,749	44%
2021	\$1,089,749	\$2,724	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$3,756,213	\$2,497,917	\$1,258,296	51%
2022	\$1,258,296	\$3,146	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$3,925,181	\$2,491,535	\$1,433,646	57%
2023	\$1,433,646	\$3,584	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$4,100,969	\$2,528,223	\$1,572,746	62%
2024	\$1,572,746	\$3,932	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$4,240,418	\$2,527,617	\$1,712,801	66%
2025	\$1,712,801	\$4,282	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$4,380,822	\$2,577,220	\$1,803,602	70%
2026	\$1,803,602	\$4,509	\$331,475,789	\$0.82	98%	\$2,663,739	\$0	\$4,471,851	\$2,566,467	\$1,905,384	74%
2027	\$1,905,384	\$4,763	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$4,606,371	\$2,569,129	\$2,037,242	79%
2028	\$2,037,242	\$5,093	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$4,738,559	\$2,583,726	\$2,154,833	84%
2029	\$2,154,833	\$5,387	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$4,856,444	\$2,579,913	\$2,276,531	87%
2030	\$2,276,531	\$5,691	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$4,978,447	\$2,607,729	\$2,370,718	89%
2031	\$2,370,718	\$5,927	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$5,072,869	\$2,656,514	\$2,416,355	91%
2032	\$2,416,355	\$6,041	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$5,118,620	\$2,645,679	\$2,472,941	93%
2033	\$2,472,941	\$6,182	\$331,475,789	\$0.83	98%	\$2,696,224	\$0	\$5,175,347	\$2,664,960	\$2,510,387	145%
2034	\$2,510,387	\$6,276	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$5,115,433	\$1,729,089	\$3,386,344	192%
2035	\$3,386,344	\$8,466	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$5,993,580	\$1,764,098	\$4,229,482	315%
2036	\$4,229,482	\$10,574	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$6,838,826	\$1,343,930	\$5,494,896	403%
2037	\$5,494,896	\$13,737	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$8,107,404	\$1,364,061	\$6,743,343	488%
2038	\$6,743,343	\$16,858	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$9,358,971	\$1,381,436	\$7,977,535	590%
2039	\$7,977,535	\$19,944	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$10,596,249	\$1,351,455	\$9,244,794	1114%
2040	\$9,244,794	\$23,112	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$11,866,676	\$829,905	\$11,036,771	1359%
2041	\$11,036,771	\$27,592	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$13,663,133	\$812,280	\$12,850,853	1608%
2042	\$12,850,853	\$32,127	\$331,475,789	\$0.80	98%	\$2,598,770	\$0	\$15,481,751	\$799,187	\$14,682,564	#DIV/0!

HARRIS COUNTY MUNICIPAL UTILITY DISTRICT No. ____		
ASSESSED VALUATION PROJECTIONS BASED ON HCAD'S 1/1/2016 ESTIMATE OF VALUE DATA		
\$305,620,886		1/1/2015 Certified Taxble Value
\$331,475,789		1/1/2016 Projected Assessed Valuation
\$9,000,000		Plus 45 Homes @ \$200,000 (additonal house value only)
\$1,500,000		Plus Build out of 2 Commercial Acres @ \$750,000 per Acre
\$341,975,789		1/1/2017 Projected Assessed Valuation
\$3,520,000		Plus 88 Lots @ \$40,000 per lot
\$8,800,000		Plus 44 Homes @ \$200,000 (additional house value only)
\$1,500,000		Plus 2 Commercial Acres @ \$750,000 per Acre
\$355,795,789		1/1/2018 Projected Assessed Valuation
\$8,800,000		Plus 44 Homes @\$200,000 (additional house value only)
\$1,000,000		Plus 1 Industrial Project @ \$1,000,000
\$365,595,789		1/1/2019 Projected Assessed Valuation
\$1,000,000		Plus 1 Industrial Project @ \$1,000,000
\$366,595,789		1/1/2020 Projected Assessed Valuation

Appendix 6: Houston Area Refunding Bonds Issued



Appendix 7: Comparative Yields for Texas MUD Bonds

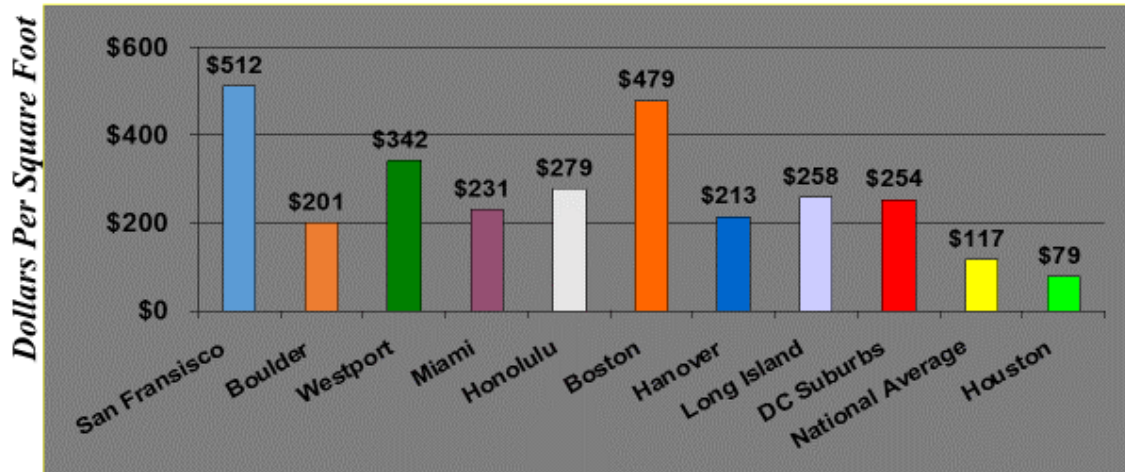


Source: Municipal Information Services

Appendix 8: Comparative Housing Market Statistics

Average Price Per Square Foot Standardized Home – Spring 2005

4 BDRM, 2.5 Bath, 2,200 SF – Corporate Middle Management Neighborhood

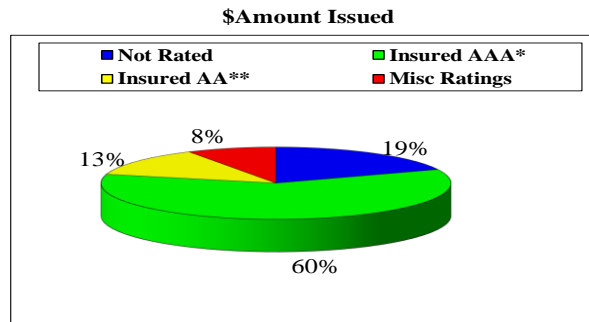
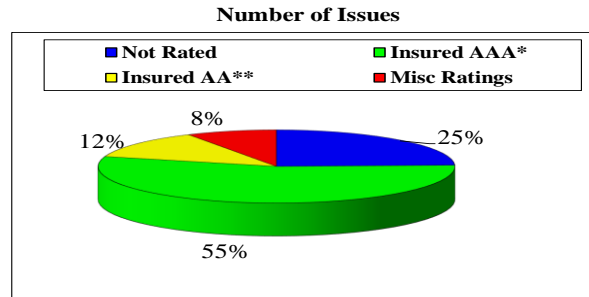


Source: Municipal Information Services

Appendix 9: Quality of Debt Issued by Texas MUDs (1989-2014)

Number of Issues	Rating Type	\$Amount Issued (million)
955	Not Rated	\$3,251.67
2,141	Insured AAA*	\$10,378.98
484	Insured AA**	\$2,205.93
321	Misc Ratings	\$1,431.82
3,901		\$17,268.39

Miscellaneous Ratings		
Number of Issues	Rating Type in Ascending Order of Quality	\$Amount Issued (million)
4	Rated Ba	\$16.94
21	Rated Baa	\$42.69
68	Rated BBB- Baa3	\$300.60
57	Rated BBB Baa2	\$247.61
37	Rated BBB+ Baa1	\$135.77
30	Rated A- A3	\$143.54
41	Rated A A2	\$150.25
30	Rated A+ A1	\$147.53
26	Rated AA- Aa3	\$209.01
4	Rated AA+	\$28.48
3	Rated Aa	\$9.43
321		\$1,431.82



Source: Municipal Information Services

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