Date: July 29, 2016 Report No. 2016-059

INFORMAL STAFF REPORT
TO MAYOR AND CITY COUNCIL

SUBJECT:

Update regarding the funded status and funding progress of the Texas Municipal Retirement System (TMRS) and the Denton Firemen's Relief and Retirement Plan (DFRRP).

EXECUTIVE SUMMARY:

As part of recent budget discussions, the City Council requested information on two items related to the City's pension plans. First, the Council requested information regarding the "funding ratio", and the plan to increase this to 100% over time. Secondly, the Council asked how relatively low investment returns over the past year have impacted the economic viability of the plans. The purpose of this report, therefore, is to answer these questions and provide additional background information on the City's pension plans.

BACKGROUND:

The City of Denton participates in two separate pension plans. The DFRRP covers firefighters in the Denton Fire Department. The TMRS plan covers all other City of Denton employees with the exception of temporary positions.

TMRS Overview:

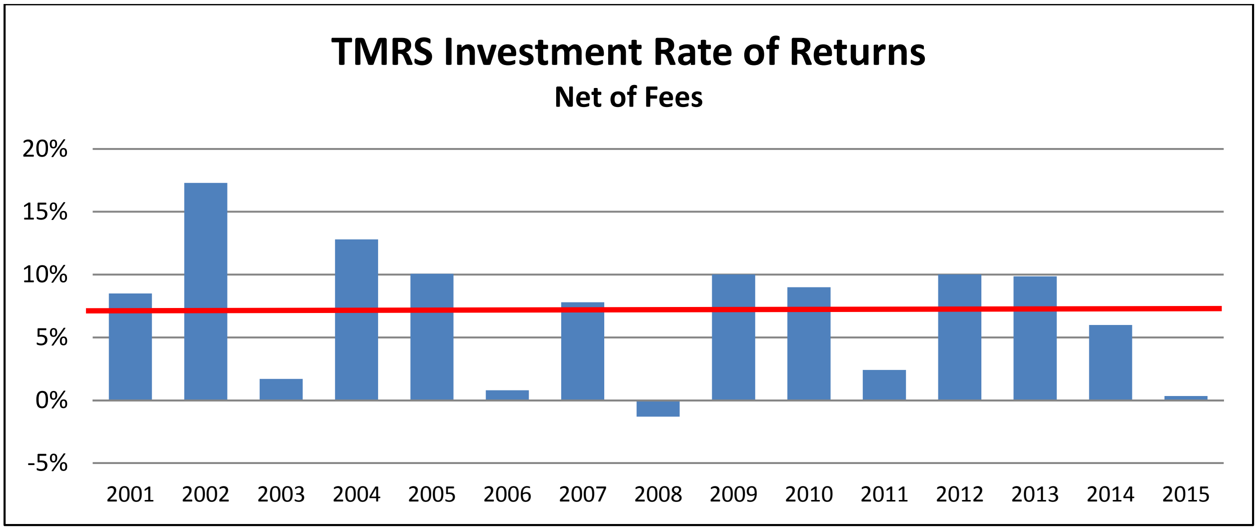
TMRS was created in 1948 by the Texas Legislature. TMRS is a hybrid of a defined benefit and defined contribution plan. Under this approach, contributions are defined until the date of retirement. Upon retirement, the value of these contributions and investment earnings define the benefits for the retiree (also known as a cash balance plan). In this way, the unfunded liabilities associated with many defined benefit plans are minimized.

While TMRS is a state-wide retirement system, the plan does not receive any state funding. Rather, all funding associated with TMRS is provided by employers, employees, and investment earnings of the system. Further, individual cities determine the level of benefits that will be provided to their retirees.

As of December 31, 2015, the TMRS system had 866 cities that participate in the plan. Collectively, these cities have 157,601 employee accounts and 56,481 retirement accounts. The market value of the assets in TMRS is approximately $24.3 billion. Specific information for the City of Denton's TMRS plan is provided in the attached excerpt from the City's Comprehensive Annual Financial Report (CAFR).

Investment Performance

The TMRS plan assumes an annual investment return equal to 6.75% of plan assets. However, the actuarial valuation process utilizes asset smoothing techniques to "smooth out" the natural year-to-year fluctuations that are inherent in the investment markets. Below is a history of the TMRS investment rate of returns achieved compared to the stated goal of 6.75%. Over this period, TMRS has achieved an average investment return equivalent to 7.02% (arithmetic average).



Note: TMRS began measuring investment returns on a "Total Return" basis in 2008, Prior to this time, investment performance reflected yields on the bond portfolio.

Over the past several years, TMRS has taken proactive steps to diversify the investment portfolio to maximize performance. With these changes, the TMRS investment managers believe they will be able to achieve an average 6.75% return over time. There is no guarantee, however, that the system will be able to achieve these rates in the future. If they are not able to do so, the City will have to have higher contribution rates into the plan, alter the level of benefits, or take some other combination of actions. It is important to note that any one year, or even a series of years, of below average investment returns is not a cause for alarm. The TMRS plan is designed to provide benefits for employees and retirees over decades, and as such, a long-term view of investment performance assumptions is the proper way to evaluate the health of the plan.

Funded Status and Funding Progress

Over the past several years, TMRS has made a number of changes to strengthen and improve its actuarial assumptions. As of December 31, 2014, the City of Denton had a Plan Fiduciary Net Position (Plan Assets) of $318.2 million and a Total Pension Liability of $384.4 million for the TMRS plan. This equates to a Net Pension Liability of $66.2 million and a funded ratio of 82.8%. The Net Pension Liability is being amortized over a period of 20 years in our existing contribution rate, so assuming all assumptions are met, the TMRS plan for Denton will be 100% funded by 2034. However, if investment returns or other economic assumptions are not realized, the fund will amortize these actuarial differences over a longer period of time, and the full funding of the plan may be extended.

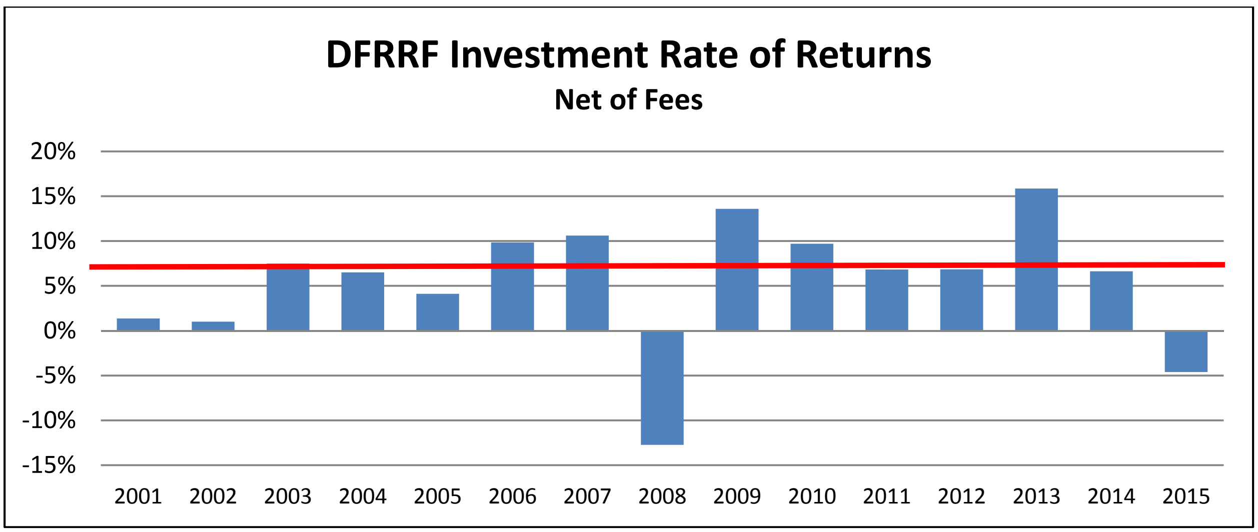
DFRRP Overview:

The Denton Firemen's Relief and Retirement Plan (DFRRP) covers firefighters in the Denton Fire Department, and the Board of Trustees is the administrator of pension plan. The plan provides service, death, and disability benefits to members, and these benefits fully vest after 20 years of service. The normal service retirement benefit is equal to 2.59% of the highest 36-month average salary for each year of service under the plan.

As of December 31, 2013, the most recent biennial valuation, the plan served 169 active firefighters and 81 retirees or beneficiaries. Additionally, 2 inactive employees are entitled to benefits, but they are currently not yet receiving them. Specific information for the City of Denton's DFRRP is provided in the attached excerpt from the City's Comprehensive Annual Financial Report (CAFR).

Investment Performance

The annual investment return assumption is 7.00% of plan assets. Like TMRS, the actuarial valuation process utilizes asset smoothing techniques to "smooth out" the natural year-to-year fluctuations that are inherent in the investment markets. Below is a 15 year history of the DFRRP investment rate of returns achieved compared to the stated goal of 7.0%. Over this period, DFRRP has achieved an average investment return equivalent to 5.54% (arithmetic average).



While the plan has trailed its investment return assumption, the DFRRP Board of Trustees, and their actuarial consultants, believe they will be able to achieve an average 7.00% return over time. However, there is no guarantee that the DFRRP will be able to achieve these rates in the future. If they are not able to do so, the plan will need to alter the level of benefits or request a higher contribution rate from its members or the City. Similar to the TMRS plan, it is also important to note that any one year, or even a series of years, of below average investment returns is not a cause for alarm. The DFRRP is designed to provide benefits for employees and retirees over decades, and as such, a long-term view of investment performance assumptions is the proper way to evaluate the health of the plan.

Funded Status and Funding Progress

As of December 31, 2014, the City of Denton had a Plan Fiduciary Net Position (Plan Assets) of $71.0 million and a Total Pension Liability of $84.9 million for the DFRRP. This equates to a Net Pension Liability of $13.9 million and a funded ratio of 83.7%. The Net Pension Liability is being amortized over a period of 24 years in our existing contribution rate, so assuming all assumptions are met, the DFRRP plan will be 100% funded by 2038. However, if investment returns, or other economic assumptions are not realized, the fund will amortize these actuarial differences over a longer period of time, and the full funding of the plan may be extended.

CONCLUSION:

Public pensions continue to receive a great deal of media scrutiny. Despite this attention, most public pension plans in Texas continue to be appropriately funded. In Denton's case, both the TMRS and DRFFP plans are well funded and managed responsibly. Going forward, the funding ratios for these plans are expected to improve, and a financially sustainable funding mechanism is in place.

As mentioned previously, the purpose of this report is to provide the City Council with additional information regarding the funding status of the TMRS and DFRRP pension plans. Since this report only provides an overview of the pension plans, please let me know if you would like any additional information.

EXHIBITS:

Exhibit 1: Excerpt from 2015 Comprehensive Annual Financial Report (CAFR)

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The solid waste fund has provided for a reservation and designation of cash and investments of $6,927,921 at September 30, 2015, and anticipates increasing the reserve in future periods as the closure and post-closure activities are carried out.

V. OTHER INFORMATION

A. Pension plans

Texas Municipal Retirement Plan

Plan description

The City participates as one of 860 plans in the nontraditional, joint contributory, hybrid defined benefit pension plan administered by the Texas Municipal Retirement System (TMRS). TMRS is an agency created by the State of Texas and administered in accordance with the TMRS Act, Subtitle G, Title 8, Texas Government Code (the TMRS Act) as an agent multiple-employer retirement system for municipal employees in the State of Texas. The TMRS Act places the general administration and management of the System with a six-member board of Trustees. Although the Governor, with the advice and consent of the Senate, appoints the Board, TMRS is not fiscally dependent on the State of Texas. TMRS's defined benefit pension plan is a tax-qualified plan under Section 401(a) of the Internal Revenue Code. TMRS issues a publicly-available comprehensive annual financial report (CAFR) obtainable at www.tmrs.com.

All eligible employees of the city are required to participate in TMRS.

Benefits provided

TMRS provides retirement, disability, and death benefits. Benefit provisions are adopted by the governing body of the City, within the options available in the state statutes governing TMRS.

At retirement, the benefit is calculated as if the sum of the employee's contributions, with interest, and the city-financed monetary credits with interest were used to purchase an annuity. Members may choose to receive their retirement benefit in one of seven payments options. Members may also choose to receive a portion of their benefit as a Partial Lump Sum Distribution in an amount equal to 12, 24, or 36 monthly payments, which cannot exceed 75% of the member's deposits and interest.

At the inception of the plan, the city granted monetary credits for service rendered before the plan began (or prior service credits) of a theoretical amount at least equal to two times what would have been contributed by the employee, with interest (3% annual), prior to establishment of the plan. Monetary credits for service since the plan began (or current service credits) are a percent (200%) of the employee's accumulated contributions. In addition, the City grants on annually repeating basis, another type of monetary credit referred to as an updated service credit. This monetary credit is determined by hypothetically recomputing the member's account balance by assuming the current member deposit rate of the City (7%) has always been in effect. The computation also assumes the member's salary has always been the member's average salary – using a salary calculation based on the 36-month period ending a year before the effective date of calculation. This hypothetical account balance is increased by 3% each year, and increased by the city match currently in effect (200%). The resulting sum is then compared to the member's actual account balance increased by the actual city match and actual interest credited. If the hypothetical calculation exceeds the actual calculation, the member is granted a monetary credit (or Updated Service Credit) equal to the difference between the hypothetical calculation and the actual calculation times the percentage adopted. At retirement, the benefit is calculated as if the sum of the employee's accumulated contributions with interest and the city-financed monetary credits with interest were used to purchase an annuity. The plan provisions also include an annually repeating basis cost of living adjustments for retires equal to 70% of the change in the consumer price index.

Members can retire at ages 60 and above with 5 or more years of service or with 20 years of service regardless of age. A member is vested after five years.

Employees covered by benefit terms

At the December 31, 2014 valuation and measurement date, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits	470
Inactive employees entitled to but not yet receiving benefits	382
Active employees	1,156
Total	2,008

Contributions

The contribution rates for employees in TMRS are either 5%, 6%, or 7% of employee gross earnings, and the city matching percentages are either 100%, 150%, or 200%, both as adopted by the City Council. Under the state law governing TMRS, the contribution rate for each city is determined annually by the actuary, using the Entry Age Normal (EAN) actuarial cost method. The actuarially determined rate is the estimated amount necessary to finance the cost of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability.

Employees for the City were required to contribute 7% of their annual gross earnings during the fiscal year. The contribution rates for the City were 18.36% and 17.76% in calendar years 2014 and 2015, respectively. The City's contributions to TMRS for the year ended September 30, 2015 were $13,514,646 and were equal to the required contributions.

Net pension liability

The City's Net Pension Liability (NPL) was measured as of December 31, 2014, and the Total Pension Liability (TPL) used to calculate the Net Pension Liability was determined by an actuarial valuation as of that date.

Actuarial assumptions

The Total Pension Liability in the December 31, 2014 actuarial valuation was determined using the following actuarial assumptions:

Inflation	3.0% per year
Overall payroll growth	3.0% per year
Investment Rate of Return	7.0%, net of pension plan investment expense, including inflation

Salary increases were based on a service-related table. Mortality rates for active members, retirees, and beneficiaries were based on the gender-distinct RP2000 Combined Healthy Mortality Table, with male rates multiplied by 109% and female rates multiplied by 103%. Based on the size of the City, rates are multiplied by a factor of 100%. The rates are projected on a fully generational basis by scale BB to account for future mortality improvements. For disabled annuitants, the gender-distinct RP2000 Disabled Retiree Mortality Table is used, with slight adjustments.

Actuarial assumptions used in the December 31, 2014, valuation were based on the results of actuarial experience studies. The experience study in TMRS was for the period January 1, 2006 through December 31, 2009, first used in the December 31, 2010 valuation. Healthy post-retirement mortality rates and annuity purchase rates were updated based on a Mortality Experience Investigation Study covering 2009 through 2011, and dated December 31, 2013. These assumptions were first used in the December 31, 2013 valuation, along with a change to the Entry Age Normal (EAN) actuarial cost method. Assumptions are reviewed annually. No additional changes were made for the 2014 valuation.

The long-term expected rate of return on pension plan investments is 7.0%. The pension plan's policy in regard to the allocation of invested assets is established and may be amended by the TMRS Board of Trustees.

Plan assets are managed on a total return basis with an emphasis on both capital appreciation as well as the production of income, in order to satisfy the short-term and long-term funding needs of TMRS.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Arithmetic)
Domestic Equity	17.5%	4.80%
International Equity	17.5%	6.05%
Core Fixed Income	30.0%	1.50%
Non-Core Fixed Income	10.0%	3.50%
Real Return	5.0%	1.75%
Real Estate	10.0%	5.25%
Absolute Return	5.0%	4.25%
Private Equity	5.0%	8.50%
Total	100.0%	

Discount rate

The discount rate used to measure the Total Pension Liability was 7.0%. The projection of cash flows used to determine the discount rate assumed that employee and employer contributions will be made at the rates specified in statute. Based on that assumption, the pension plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

Changes in the net pension liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balance at 12/31/2013	$ 360,116,261	$ 294,819,596	$ 65,296,665
Changes for the year:			
Service cost	10,667,694	-	10,667,694
Interest	25,182,941	-	25,182,941
Change of benefit terms	-	-	-
Difference between expected and actual experience	(171,241)	-	(171,241)
Changes of assumptions	-	-	-
Contributions - employer	-	13,065,763	(13,065,763)
Contributions - employee	-	4,991,415	(4,991,415)
Net investment income	-	16,867,596	(16,867,596)
Benefit payments, including refunds of employee contributions	(11,387,617)	(11,387,617)	-
Administrative expense	-	(176,083)	176,083
Other changes	-	(14,477)	14,477
Net changes	24,291,777	23,346,597	945,180
Balance at 12/31/2014	$ 384,408,038	$ 318,166,193	$ 66,241,845

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability of the City, calculated using the discount rate of 7.0%, as well as what the City's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.0%) or 1-percentage-point higher (8.0%) than the current rate:

	1% Decrease in Discount Rate	Current Discount Rate	1% Increase in Discount Rate
City's net pension liability	$ 125,474,039	$ 66,241,845	$ 18,002,986

Pension plan fiduciary net position

Detailed information about the pension plan's Fiduciary Net Position is available in a separately-issued TMRS financial report. That report may be obtained on the Internet at *www.tmrs.com*.

Pension expense and deferred outflows of resources and deferred inflows of resources related to pensions

For the year ended September 30, 2015, the City recognized pension expense of $11,132,798. This amount is included as part of personal services expenses.

At September 30, 2015, the City reported deferred outflows of resources and deferred inflows of resources related to TMRS pension from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between projected and actual investment earnings	$ 3,015,821	$ -
Contributions subsequent to the measurement date	9,839,888	-
Differences between expected and actual economic experience	-	(137,676)
Total	$ 12,855,709	$ (137,676)

Deferred outflows of resources related to pensions resulting from contributions subsequent to the measurement date of $9,839,888 will be recognized as a reduction of the net pension liability for the measurement year ending December 31, 2015 and the City's fiscal year ending September 30, 2016. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Measurement Year Ended December 31st	
2015	$ 720,390
2016	720,390
2017	720,390
2018	720,391
2019	(3,416)
Total	$ 2,878,145

Pursuant to TMRS policy of conducting experience studies every four years, the TMRS Board at their July 31, 2015 meeting determined they would be changing certain actuarial assumptions including reducing the long-term expected rate of return from the current 7.00% to 6.75% and changing the inflation assumption from 3.0% to 2.5%. Reduction of expected investment return and related discount rate will increase projected pension liabilities. Reducing the inflation assumption reduces liabilities as future annuity levels and future costs of living adjustments are not projected to be as large as originally projected. The actual impact on the City's valuation for December 31, 2015 is not known.

Supplemental death benefit fund

The City of Denton contributes to a cost-sharing multiple-employer defined benefit group-term life insurance plan known as the Supplemental Death Benefits Fund (SDBF). This is a separate trust administered by the TMRS Board of Trustees and is a voluntary program in which the City elected, by ordinance, to provide group term life insurance coverage to active and retired members. The City may terminate coverage under and discontinue participation in the SDBF by adopting an ordinance before November 1st of any year to be effective the following January 1st.

Payments from this fund are similar to group term life insurance benefits, and are paid to the designated beneficiaries upon the receipt of an approved application for payment. The death benefit for active employees provides a lump-sum payment approximately equal to the employee's annual salary (calculated based on the employee's actual earnings, for the 12-month period preceding the month of death). The death benefit for retirees is considered an “other postemployment benefit” (OPEB) and is a fixed amount of $7,500. The obligations of this plan are payable only from the SDBF and are not an obligation of, or claim against, the TMRS Pension Trust Fund.

Contributions are made monthly based on the covered payroll of employee members of the City. The contractually required contribution rate is determined by an annual actuarial valuation and is based on the mortality and service experience of all employees covered by the SDBF and the demographics specific to the workforce of the City. There is a one-year delay between the actuarial valuation that serves as the basis for the employer contribution rate and the calendar year when the rate goes into effect. The contributions to the SDBF are pooled for investment purposes with those of the Pension Trust Fund described above. The TMRS Act requires the Pension Trust Fund to allocate investment income to the SDBF on an annual basis. The funding policy of the plan is to assure adequate resources are available to meet all death benefit payments for the upcoming year; the intent is not to prefund retiree term life insurance during employees’ entire careers. As such, contributions are utilized to fund active member deaths on a pay-as-you-go basis; any excess contributions and investment income over payments then become net assets available for OPEB.

The City’s contributions to the TMRS SDBF for the fiscal years ended September 30, 2013, 2014, and 2015, were $108,645, $118,782, and $133,686, respectively, which equaled the required contributions each year.

Denton Firemen's Relief and Retirement Plan

Plan description

The City contributes to the retirement plan for firefighters in the Denton Fire Department known as the Denton Firemen’s Relief and Retirement Fund (the Fund). The Fund is a single employer, contributory, defined benefit plan. The benefit provisions of the Fund are authorized by the Texas Local Fire Fighters’ Retirement Act (TLFFRA). TLFFRA provides the authority and procedure to amend benefit provisions. The plan is administered by the Board of Trustees of the Denton Firemen’s Relief and Retirement Fund. The City does not have access to nor can it utilize assets within the retirement plan trust. The Fund issues a stand-alone report pursuant to GASB Statement No. 67, which may be obtained by writing the Denton Firemen’s Relief and Retirement Fund at P.O. Box 2375, Denton, Texas 76202. See that report for all information about the plan fiduciary net position.

Benefits provided

Firefighters in the Denton Fire Department are covered by the Denton Firemen’s Relief and Retirement Fund which provides service retirement, death, disability, and withdrawal benefits. These benefits fully vest after 20 years of credited service. Firefighters may retire at age 50 with 20 years of service. A partially-vested benefit is provided for firefighters who terminate employment with at least 10 but less than 20 years of service. If a terminated firefighter has a partially vested benefit, he may retire starting on the date he would have both completed 20 years of service if he had remained a Denton firefighter and attained age 50. As of the December 31, 2013 actuarial valuation date, the plan effective January 1, 2011 provided a monthly normal service retirement benefit, payable in a Joint and Two-Thirds to Spouse form of annuity, equal to 2.59% of Highest 36-Month Average Salary for each year of service.

A retiring firefighter who is at least age 52 with at least 22 years of service has the option to elect the Retroactive Deferred Retirement Option Plan (RETRO DROP) which will provide a lump sum benefit and a reduced monthly benefit. The reduced monthly benefit is based on the service and Highest 36-Month Average Salary as if he had terminated employment on his selected RETRO DROP benefit calculation date, which is no earlier than the later of the date he meets the age 52 and 22 years of service requirements and the date four years prior to the date he actually retires. Upon retirement, the member will receive, in addition to his monthly retirement benefit, a lump sum equal to the sum of (1) the amount of monthly contributions the member has made to the Fund after the RETRO DROP benefit calculation date plus (2) the total of the monthly retirement benefits the member would have received between the RETRO DROP benefit calculation date and the date he retired under the plan. There are no account balances. The lump sum is calculated at the time of retirement and distributed as soon as administratively possible.

There is no provision for automatic postretirement benefit increases. The Fund has the authority to provide, and has periodically in the past provided, ad hoc postretirement benefit increases.

Employees covered by benefit terms

In the December 31, 2013 actuarial valuation, the following numbers of members were covered by the Fund:

Inactive employees or beneficiaries currently receiving benefits	81
Inactive employees entitled to but not yet receiving benefits	2
Active employees	169
Total	252

Contributions

The contribution provisions of the Fund are authorized by TLFFRA. TLFFRA provides the authority and procedure to change the amount of contributions determined as a percentage of pay by each firefighter and a percentage of payroll by the City.

The funding policy of the Denton Firemen's Relief and Retirement Fund requires contributions equal to 12.6% of pay by the firefighters, the rate elected by the firefighters according to TLFFRA. The City currently contributes according to a City ordinance the same percentage of payroll that the City contributes to the Texas Municipal Retirement System for other employees each calendar year. The City contribution rate was 18.53% in calendar year 2014 and 17.94% in calendar year 2015. The December 31, 2013 actuarial valuation includes the assumption that the city contribution rate will average 17.0% over the UAAL amortization period. The costs of administering the plan are paid from the Fund assets. The City's contributions to the Fund for the year ended September 30, 2015 were $2,537,557.

Ultimately, the funding policy also depends upon the total return of the Fund's assets, which varies from year to year. Investment policy decisions are established and maintained by the board of trustees. The board selects investments and employs investment managers with the advice of their investment consultant who is completely independent of the investment managers. For the calendar year ending December 31, 2014, the money-weighted rate of return on pension plan investments was 6.63%. This measurement of the investment performance is net of investment-related expenses, reflecting the effect of the timing of the contributions received and the benefits paid during the year.

While the contribution requirements are not actuarially determined, state law requires that each change in plan benefits adopted by the Fund must first be approved by an eligible actuary, certifying the contribution commitment by the firefighters and the assumed city contribution rate together provide an adequate contribution arrangement. Using the entry age actuarial cost method, the plan's normal cost contribution rate is determined as a percentage of payroll. The excess of the total contribution rate over the normal cost contribution rate is used to amortize the plan's unfunded actuarial accrued liability (UAAL). The number of years needed to amortize the plan's UAAL is actuarially determined using an open, level percentage of payroll method.

Net pension liability

The City of Denton's net pension liability was measured as of December 31, 2014, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2013 and rolled forward to December 31, 2014.

Actuarial assumptions

The total pension liability in the December 31, 2013 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.25% per year
Overall payroll growth	3.25% per year, plus promotion, step and longevity increases that vary by service
Investment Rate of Return	7.0%, net of pension plan investment expense, including inflation

Mortality rates were based on the RP-2000 Combined Healthy Mortality Tables for males and for females (sex distinct) projected to 2024 by scale AA.

The long-term expected rate of return on pension plan investments is reviewed for each biennial actuarial valuation and was determined using a building-block method in which expected future net real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These components are combined to produce the long-term expected rate of return by weighting the expected future net real rates of return by the target asset allocation percentage (currently resulting in 4.24%) and by adding expected inflation (3.25%). In addition, the final 7.00% assumption was selected by "rounding down" and thereby reflects a reduction of 0.49% for adverse deviation. The target allocation and expected arithmetic net real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return (Arithmetic)
Equities		
Large Cap Domestic	40.0%	5.50%
Small/Mid Cap Domestic	10.0%	6.00%
International Developed	10.0%	6.00%
Alternatives		
Master Limited Partnerships	6.0%	7.50%
Real Estate	4.0%	3.50%
Fixed Income	25.0%	1.00%
Cash	5.0%	0.00%
Total	100.0%	

Discount rate

The discount rate used to measure the total pension liability was 7%. No projection of cash flows was used to determine the discount rate because the December 31, 2013 actuarial valuation showed that expected contributions would pay the normal cost and amortize the unfunded actuarial accrued liability (UAAL) in 24 years. That UAAL was based on an actuarial value of assets that was $4.3 million less than the plan fiduciary net position as of December 31, 2013. Because of the 24-year amortization period of the UAAL with the lower value of assets, the pension plan's fiduciary net position is expected to be available to make all projected future benefit payments of current active and inactive members. Therefore, the long-term expected rate of return on pension plan investments of 7% was applied to all periods of projected benefit payments as the discount rate to determine the total pension liability.

Changes in the net pension liability

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balance at 12/31/2014	$ 80,490,694	$ 66,412,172	$ 14,078,522
Changes for the year:			
Service cost	2,747,253	-	2,747,253
Interest	5,685,396	-	5,685,396
Change of benefit terms	-	-	-
Difference between expected and actual experience	-	-	-
Changes of assumptions	-	-	-
Contributions - employer	-	2,566,875	(2,566,875)
Contributions - employee	-	1,745,419	(1,745,419)
Net investment income	-	4,411,066	(4,411,066)
Benefit payments, including refunds of employee contributions	(4,036,009)	(4,036,009)	-
Administrative expense	-	(81,005)	81,005
Other changes	-	-	-
Net changes	4,396,640	4,606,346	(209,706)
Balance at 12/31/2014	$ 84,887,334	$ 71,018,518	$ 13,868,816

Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability of the City of Denton, calculated using the discount rate of 7%, as well as what the city's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6%) or 1-percentage-point higher (8%) than the current rate:

	1% Decrease in Discount Rate	Current Discount Rate	1% Increase in Discount Rate
City's net pension liability	$ 24,601,369	$ 13,868,816	$ 4,825,492

Pension plan fiduciary net position

The plan fiduciary net position reported above is the same as reported by the Fund. Detailed information about the plan fiduciary net position is available in the Fund's separately issued audited financial statements, which are reported using the economic resources measurement focus and the accrual basis of accounting in conformity with accounting principles generally accepted in the United States of America. Revenues are recorded when earned, and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Investments are reported at fair value, the price that would be recognized to sell an asset in an orderly transaction between market participants at the measurement date.

Pension expense and deferred outflows of resources and deferred inflows of resources related to pensions

For the year ended September 30, 2015, the City recognized pension expense of $2,161,472. This amount is included as part of personal services expenses.

At September 30, 2015, the City reported deferred outflows of resources and deferred inflows of resources related to the Fund from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between projected and actual investment earnings	$ 195,697	$ -
Contributions subsequent to the measurement date	1,846,981	-
Differences between expected and actual economic experience	-	-
Total	$ 2,042,678	$ -

Deferred outflows of resources related to pensions resulting from contributions subsequent to the measurement date of $1,846,981 will be recognized as a reduction of the net pension liability for the measurement year ending December 31, 2015 and the City's fiscal year ending September 30, 2016. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Measurement Year Ended December 31st	
2015	$ 48,924
2016	48,924
2017	48,924
2018	48,925
Total	$ 195,697

B. Post-employment benefits other than pensions (OPEB)

The cost of post-employment healthcare benefits, from an accrual accounting perspective, similar to the cost of pension benefits, should be associated with the periods in which the cost occurs, rather than in the future year when it will be paid. According to the requirements of GASB Statement No. 45 for the fiscal year ended September 30, 2015, the City recognizes the cost of post-employment healthcare in the year the employee services are received, reports the accumulated liability from prior years, and provides information useful in assessing potential demands on the City's future cash flows. Recognition of the liability accumulated from prior years will be amortized over 30 years, the first period commencing with the fiscal year ending September 30, 2008.

Plan description

The City provides post-employment medical care (OPEB) for retired employees through a single-employer defined benefit medical plan. The plan provides medical benefits for eligible retirees, their spouses and dependents though the City's group health insurance plans, which covers both active and retired members. The benefits, benefit levels, and contribution rates are approved annually by the City management as part of the budget process. Any changes in rate subsidies for retirees are approved by the City Council. Since an irrevocable trust has not been established, the plan is not accounted for as a trust fund. The plan does not issue a separate financial report.

CITY OF DENTON, TEXAS **Exhibit XII**
REQUIRED SUPPLEMENTARY INFORMATION
TEXAS MUNICIPAL RETIREMENT SYSTEM
SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
LAST FISCAL YEAR (PREVIOUS YEARS ARE NOT AVAILABLE)

	Measurement Year 2014
Total pension liability:	
Service Cost	$ 10,667,694
Interest (on the total pension liability)	25,182,941
Changes of benefit terms	-
Difference between expected and actual experience	(171,241)
Change of assumptions	-
Benefit payments, including refunds of employee contributions	(11,387,617)
Net change in total pension liability	24,291,777
Total pension liability - beginning	360,116,261
Total pension liability - ending (a)	$ 384,408,038
Plan fiduciary net position:	
Contributions - employer	$ 13,065,763
Contributions - employee	4,991,415
Net investment income	16,867,596
Benefit payments, including refunds of employee contributions	(11,387,617)
Administrative expense	(176,083)
Other	(14,477)
Net change in plan fiduciary net position	23,346,597
Plan fiduciary net position - beginning	294,819,596
Plan fiduciary net position - ending (b)	$ 318,166,193
Net pension liability - ending (a) - (b)	$ 66,241,845
Plan fiduciary net position as a percentage of total pension liability	82.77%
Covered employee payroll	$ 71,025,494
Net pension liability as a percentage of covered employee payroll	93.26%

CITY OF DENTON, TEXAS **Exhibit XIII**
REQUIRED SUPPLEMENTARY INFORMATION
DENTON FIREMEN'S RELIEF AND RETIREMENT FUND
SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
LAST FISCAL YEAR (PREVIOUS YEARS ARE NOT AVAILABLE)

	Measurement Year 2014
Total pension liability:	
Service Cost	$ 2,747,253
Interest (on the total pension liability)	5,685,396
Changes of benefit terms	-
Difference between expected and actual experience	-
Change of assumptions	-
Benefit payments, including refunds of employee contributions	(4,036,009)
Net change in total pension liability	4,396,640
Total pension liability - beginning	80,490,694
Total pension liability - ending (a)	$ 84,887,334
Plan fiduciary net position:	
Contributions - employer	$ 2,566,875
Contributions - employee	1,745,419
Net investment income	4,411,066
Benefit payments, including refunds of employee contributions	(4,036,009)
Administrative expense	(81,005)
Other	-
Net change in plan fiduciary net position	4,606,346
Plan fiduciary net position - beginning	66,412,172
Plan fiduciary net position - ending (b)	$ 71,018,518
Net pension liability - ending (a) - (b)	$ 13,868,816
Plan fiduciary net position as a percentage of total pension liability	83.66%
Covered employee payroll	$ 14,238,486
Net pension liability as a percentage of covered employee payroll	97.40%

CITY OF DENTON, TEXAS
REQUIRED SUPPLEMENTARY INFORMATION
TEXAS MUNICIPAL RETIREMENT SYSTEM
SCHEDULE OF CONTRIBUTIONS
LAST TEN FISCAL YEARS (Unaudited)

Exhibit XIV

Fiscal Year	(a) Actuarially Determined Contributions	(b) Contributions in Relation to the Actuarially Determined Contributions	(c) Contribution Excess (Deficiency) (b) - (a)	(d) Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll (b)/(d)
2006	5,809,132	5,809,132	-	47,733,949	12.17%
2007	6,267,597	6,267,597	-	49,917,026	12.56%
2008	7,082,769	7,082,769	-	53,908,360	13.14%
2009	9,709,279	7,952,938	(1,756,341)	57,250,108	13.89%
2010	11,194,086	8,849,577	(2,344,509)	59,457,345	14.88%
2011	11,580,085	9,579,358	(2,000,727)	58,139,688	16.48%
2012	11,475,702	10,435,001	(1,040,701)	60,340,212	17.29%
2013	12,174,640	12,171,482	(3,158)	64,940,234	18.74%
2014	12,912,746	12,911,461	(1,285)	69,872,024	18.48%
2015	13,507,272	13,507,272	-	75,379,632	17.92%

Notes to Schedule:
Actuarial determined contribution rates are calculated as of December 31st and become effective in January, 12 months and a day later. Contributions above do not include contributions into the supplemental death benefit fund.

Methods and assumptions used to determine contribution rate for 2015:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	20 Years
Asset Valuation Method	10 Year Smoothed Market; 15% Soft Corridor
Inflation	3.00%
Salary Increases	3.50% to 12.00% including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the City's plan of benefits. Last updated for the 2010 valuation pursuant to an experience study of the period 2005 - 2009.
Mortality	RP2000 Combined Mortality Table with Blue Collar Adjustment with male rates multiplied by 109% and female rates multiplied by 103% and projected on a fully generational basis with scale BB.

CITY OF DENTON, TEXAS **Exhibit XV**
REQUIRED SUPPLEMENTARY INFORMATION
FIREMEN'S RELIEF AND RETIREMENT FUND
SCHEDULE OF CONTRIBUTIONS
LAST TEN FISCAL YEARS (Unaudited)

Fiscal Year	(a) Annual Required Contributions	(b) Contributions in Relation to the Annual Required Contributions	(c) Contribution Excess (Deficiency) (b) - (a)	(d) Covered Employee Payroll	Contributions as a Percentage of Covered Employee Payroll (b)/(d)
2006	942,237	942,237	-	9,422,370	10.00%
2007	1,193,993	1,193,993	-	10,854,477	11.00%
2008	1,426,906	1,426,906	-	11,890,880	12.00%
2009	1,747,908	1,747,908	-	12,485,061	14.00%
2010	1,976,419	1,976,419	-	13,070,041	15.12%
2011	2,141,662	2,141,662	-	12,828,446	16.69%
2012	2,253,667	2,253,667	-	12,899,800	17.47%
2013	2,579,453	2,579,453	-	13,629,825	18.93%
2014	2,576,652	2,576,652	-	13,828,070	18.63%
2015	2,535,719	2,535,719	-	14,029,051	18.07%

Notes to Schedule:
Annual required contributions are not actuarially determined. According to a City ordinance, since January 2010 the City contributes to the Firemen's Relief and Retirement Fund at the same percentage of payroll that the City contributes to the Texas Municipal Retirement System for other employees. The rates are calculated as of December 31st and become effective in January, 12 months and a day later.

While the contribution requirements are not actuarially determined, state law requires an actuary certify the assumed City contribution rate is adequate. Methods and assumptions used to contribution adequacy for 2015:

Actuarial Cost Method	**Entry Age**
Amortization Method	**Level Percentage of Payroll, Open**
Remaining Amortization Period	**24 Years**
Asset Valuation Method	**5-year adjusted market value**
Inflation	**3.25%**
Salary Increases	**3.25% general increase, 1.98% for promotion, step, and longevity over 30-year career**
Investment Rate of Return	**7.00%**
Retirement Age	**Average expected age at retirement of 57**
Mortality	**RP-2000 Combined Healthy Mortality Tables projected to 2024 by scale AA**