

# Duluth Teachers' Retirement Fund Association

Actuarial Valuation and Review as of  
July 1, 2013





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*November 25, 2013*

*Board of Trustees  
Duluth Teachers' Retirement Fund Association  
625 East Central Entrance  
Duluth, Minnesota 55811*

*Members of the Board:*

*We are pleased to submit this Actuarial Valuation and Review as of July 1, 2013. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2014 and analyzes the preceding year's experience.*

*The census information on which our calculations were based was prepared by the Fund and the financial information was provided by the Fund. That assistance is gratefully acknowledged. The actuarial calculations were completed under our supervision.*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in the valuation are consistent with those in the statute, and reasonably represent the experience of the plan.*

*We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work.*

*Sincerely,*

*SEGAL CONSULTING*

*By:*

A handwritten signature in black ink, appearing to read "Tom Levy", written over a horizontal line.

*Thomas D. Levy, FSA, FCIA, MAAA, EA  
Senior Vice President and Chief Actuary*

A handwritten signature in black ink, appearing to read "Matthew A. Strom", written over a horizontal line.

*Matthew A. Strom, FSA, MAAA, EA  
Consulting Actuary*

*cc: Jay Stoffel, Executive Director*

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## SECTION 1: Valuation Summary for the Duluth Teachers' Retirement Fund Association

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### Purpose

This report has been prepared by Segal Consulting to present a valuation of the Duluth Teachers' Retirement Fund Association (DTRFA) as of July 1, 2013. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- Section 356.215 of the Minnesota Statutes, as amended in 2013;
- Standards for actuarial work as prescribed by the Legislative Commission on Pensions and Retirement;
- The benefit provisions of the Retirement Fund, as administered by the Legislative Commission on Pensions and Retirement;
- The data as provided and confirmed by the DTRFA staff;
- The characteristics of covered active members, inactive vested members, pensioners and beneficiaries as of July 1, 2013, provided by the Fund;
- The unaudited assets of the Fund as of June 30, 2013, provided by the Fund;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.

## SECTION 1: Valuation Summary for the Duluth Teachers' Retirement Fund Association

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### Significant Issues in Valuation Year

1. The following Plan changes are reflected in this valuation as described in the 2013 Omnibus Pension Bill. Other changes that are included in the Bill did not impact the valuation of the Fund.
  - a. The employee contribution rate increases from 6.50% to 7.00% for fiscal 2014 (effective July 1, 2013), and from 7.00% to 7.50% for fiscal 2015 (effective July 1, 2014) and thereafter.
  - b. The employer contribution rate increases from 6.79% to 7.29% for fiscal 2014 (effective July 1, 2013), and from 7.29% to 7.50% for fiscal 2015 (effective July 1, 2014) and thereafter.
  - c. An additional State aid payment of \$6 million will be paid in October 2013 and 2014.
  - d. The benefit multiplier for New Plan members increases from 1.7% to 1.9% per year of service for service earned after June 30, 2013.
  - e. A 1% annual post-retirement cost of living adjustment will be reinstated on January 1, 2014.
  - f. The early retirement factors for New Plan Tier II members were revised to lower benefits for earlier retirements and increase benefits for later retirements.
2. Prior to recognition of the plan changes, the target amortization date for full funding of the unfunded actuarial accrued liability was June 30, 2039. Minnesota Statute 356.215, Subdivision 11, outlines the methodology for modifying the full funding date when assumptions and plan changes yield a net increase in the unfunded actuarial accrued liability. The first step is to calculate the amortization as a percent of payroll based upon the valuation results prior to recognition of any changes. This result, based on our original 26-year amortization period and prior plan benefits, was 18.64%. Next, the amortization of the increase in unfunded accrued liability resulting from assumption and plan changes is calculated, based on an amortization period of 30 years. This resulted in a percent-of-pay amortization of 3.28% to reflect the plan changes, for a total rate of 21.92%. The last step is to determine a new amortization period based on the total rate of 21.92%, and round to the nearest integral number of years. Based on the new plan benefits, the updated amortization period is 26.57 years, or 27 years when rounded. Therefore, the new target amortization date for full funding of the unfunded actuarial accrued liability, after recognizing the changes in benefit provisions, is June 30, 2040.
3. The 2013 Omnibus Pension Bill included a change to the post-retirement adjustment under Chapter 354A.27, Subdivisions 6 and 7. The law provides for a post-retirement benefit adjustment of CPI-U (up to 5%) when the funding ratio using the actuarial value of assets equals or exceeds 90%. Until that 90% threshold is met, the post-retirement adjustment will be 1%. Since projected contributions are not sufficient to cover the long-term cost of the plan, a 90% funding ratio on an actuarial

## SECTION 1: Valuation Summary for the Duluth Teachers' Retirement Fund Association

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basis is not expected to be met. As a result, the July 1, 2013 valuation reflects only the 1% annual post-retirement adjustment.

4. The actuarial accrued liability funding ratio based on the actuarial value of assets over the actuarial accrued liability as of July 1, 2013 is 53.99%, compared to 63.40% as of July 1, 2012. This ratio is a measure of funding status, and its history is a measure of funding progress, and is the ratio required to be reported under GASB 25.
5. The statutory contribution rate under Chapter 354A.12 for the 2014 fiscal year is equal to 27.66% of payroll (which includes a direct State aid payment of \$346,000 per year and an additional \$6 million under Subdivision 3a, and \$209,402 of redirected “amortization State aid” under 423A.02, Subdivision 3), and is compared to the required contribution rate under Chapter 356.215 of 30.54% of payroll. Therefore, the contribution deficiency is 2.88% of payroll as of July 1, 2013. Last year’s contribution rate deficiency was 8.49% of payroll. The primary reason for the decrease in the contribution deficiency is the additional \$6 million in additional State aid. Without the additional \$6 million in direct State aid, the contribution deficiency would be 15.12%, which increased from last year primarily due to a loss on the actuarial value of assets. Each year there is a contribution deficiency leads to an increased deficiency in all future years.
6. For the year ended June 30, 2013, assets returned 16.56% on a market value basis. However, due to the gradual recognition of asset gains and losses under the actuarial smoothing method, the actuarial rate of return was 1.58%, compared to the assumed rate of 8.00% for the same time period. As of June 30, 2013, the actuarial value of assets (\$190.1 million) represented 92.6% of the market value (\$205.3 million).
7. The portion of deferred asset gains and losses recognized during the calculation of the July 1, 2013 actuarial value of assets resulted in a loss of \$11,666,347.
8. As indicated on page 4 of this report, the total investment gain not yet recognized as of June 30, 2013 is \$15,183,823. These unrecognized gains will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent they are not offset by recognition of losses derived from future experience.
9. The 1.58% return on the actuarial value of assets caused a \$12,648,785 loss in the unfunded actuarial liability and demographic and liability experience resulted in a \$2,860,218 gain (approximately 0.8% of the total accrued liability).
10. If valuation assets were based on market value, the unfunded actuarial accrued liability would be \$146.8 million, the actuarial accrued liability funding ratio would be 58.30%, the actuarial contribution rate would be 28.51%, and the contribution deficiency would be 0.85%.
11. The actuarial valuation report as of June 30, 2013 is based on financial data as of that date. Changes in the value of assets subsequent to that date are not reflected. Declines in asset values will increase the actuarial cost of the plan, while increases will decrease the actuarial cost of the plan.

**SECTION 1: Valuation Summary for the Duluth Teachers' Retirement Fund Association**

	2013		2012
	Before Plan Changes	After Plan Changes	
<b>Summary of Key Valuation Results</b>			
<b>Contributions (% of payroll) for plan year beginning July 1:</b>			
Statutory – Chapter 354A + Expected 423A	14.42%	27.66%	14.52%
Required – Chapter 356	26.14%	30.54%	23.01%
Sufficiency/(Deficiency)	-11.72%	-2.88%*	-8.49%
<b>Funding elements for plan year beginning July 1:</b>			
Normal cost	\$3,161,266	\$3,799,107	\$3,305,213
Market value of assets	205,300,543	205,300,543	194,552,931
Actuarial value of assets (AVA)	190,116,720	190,116,720	206,833,425
Actuarial accrued liability (AAL)	326,409,657	352,143,396	326,243,873
Unfunded actuarial accrued liability	136,292,937	162,026,676	119,410,448
<b>Funding ratios as of July 1:</b>			
<u>Accrued Benefit Funding Ratio</u>	62.95%	58.70%	68.64%
Current assets (AVA)	\$190,116,720	\$190,116,720	\$206,833,425
Current benefit obligations	302,032,402	323,898,655	301,336,492
<u>Projected Benefit Funding Ratio</u>	75.13%	74.25%**	80.56%
Current and expected future assets	\$262,549,804	\$282,061,456	\$281,961,581
Current and expected future benefit obligations (Present Value of Benefits)	349,448,918	379,862,545	350,008,690
<b>GASB 25/27 information:</b>			
Annual required employer contributions for year ending June 30		\$7,161,915	\$4,996,877
Accrued Liability Funding Ratio (AVA/AAL) as of July 1		53.99%	63.40%
Covered actual payroll		\$44,384,639	\$45,763,895
<b>Demographic data for plan year beginning July 1:</b>			
Number of pensioners and beneficiaries		1,445	1,386
Number of vested terminated members		268	284
Number of other non-vested terminated members		757	766
Number of active members		873	919
Total projected payroll***		\$49,019,534	\$50,973,110

\* The contribution deficiency would be 15.12% without the additional \$6 million of state aid.

\*\* Current assets exclude \$15.2 million of deferred market gains. Projected Benefit Funding Ratio would be 78.25% with current assets valued at market.

\*\*\* Projected payroll includes annualized pay for new hires and increases to current fiscal year.

**SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association**

**A. MEMBER DATA**

The Actuarial Valuation and Review considers the number and demographic characteristics of covered members, including active members, vested terminated members, pensioners and beneficiaries.

The ratio of non-actives to actives has increased for eight of the last nine years.

This section presents a summary of significant statistical data on these member groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A through F.

*A historical perspective of how the member population has changed over the past ten valuations can be seen in this chart.*

**CHART 1**  
**Member Population: 2004 – 2013**

<b>Year Ended June 30</b>	<b>Active Members</b>	<b>Vested Terminated Members*</b>	<b>Pensioners and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
2004	1,178	312	1,137	1.23
2005	1,164	313	1,153	1.26
2006	1,174	312	1,190	1.28
2007	1,150	321	1,227	1.35
2008	1,140	310	1,243	1.36
2009	1,016	348	1,264	1.59
2010	1,054	301	1,295	1.51
2011	1,006	290	1,344	1.62
2012	919	284	1,386	1.82
2013	873	268	1,445	1.96

\* Excludes terminated members due a refund of employee contributions



**SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association**

**Active Members**

Plan costs are affected by the age, years of service and payroll of active members. In this year's valuation, there were 873 active members with an average age of 47.8, average years of service of 12.9 and average projected compensation of \$56,151. The 919 active members in the prior valuation had an average age of 47.8, average service of 13.2 years and average projected compensation of \$55,466.

**Inactive Members**

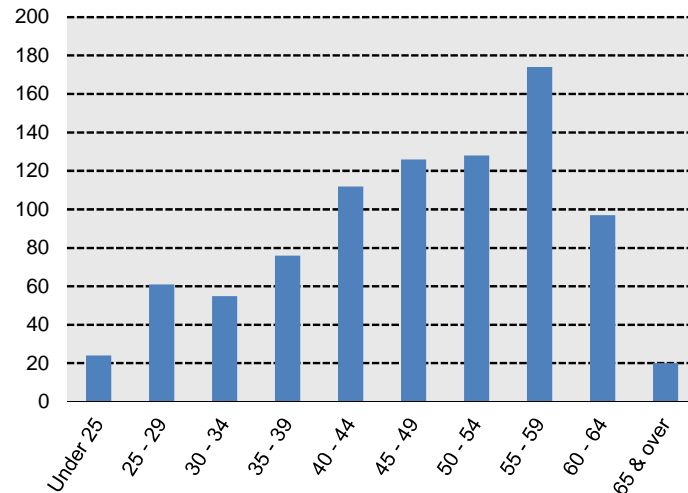
In this year's valuation, there were 268 members with a vested right to a deferred or immediate vested benefit.

In addition, there were 757 other non-vested terminated members entitled to a return of their employee contributions.

*These graphs show a distribution of active members by age and by years of service.*

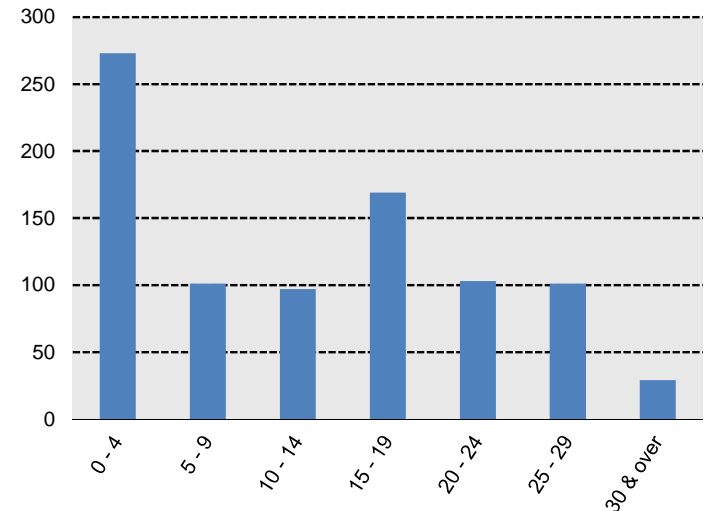
**CHART 2**

**Distribution of Active Members by Age as of June 30, 2013**



**CHART 3**

**Distribution of Active Members by Years of Service as of June 30, 2013**



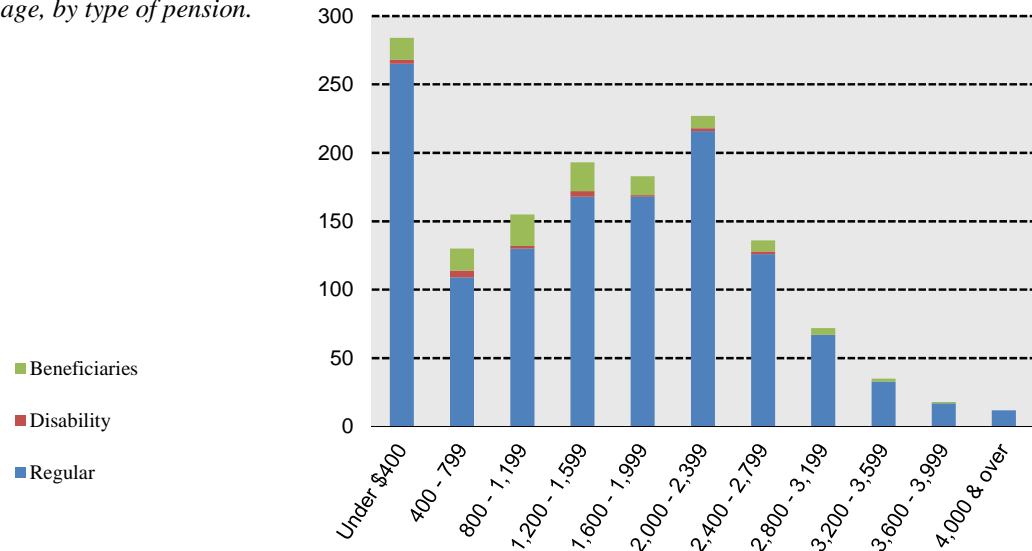
**SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association**

**Pensioners and Beneficiaries**

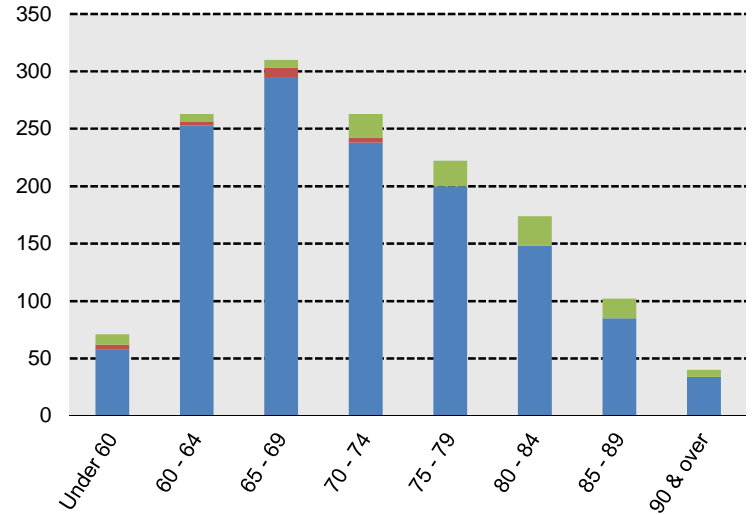
As of June 30, 2013, 1,330 pensioners (including 19 disabled) and 115 beneficiaries were receiving total monthly benefits of \$2,186,006. For comparison, in the previous valuation, there were 1,273 pensioners (including 19 disabled) and 113 beneficiaries receiving monthly benefits of \$2,111,519.

*These graphs show a distribution of the current pensioners and beneficiaries based on their monthly amount and age, by type of pension.*

**CHART 4**  
**Distribution of Pensioners and Beneficiaries by Type and by Monthly Amount as of June 30, 2013**



**CHART 5**  
**Distribution of Pensioners and Beneficiaries by Type and by Age as of June 30, 2013**



## SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association

### B. FINANCIAL INFORMATION

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Minnesota Statutes require an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Both the actuarial value and market value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

*The chart shows the determination of the actuarial value of assets as of the valuation date.*

#### CHART 6

#### Determination of Actuarial Value of Assets for Years Ended June 30, 2013 and June 30, 2012

		2013		2012	
		<u>Original Amount</u>	<u>% Not Recognized</u>	<u>% Not Recognized</u>	
1.	Calculation of unrecognized return				
	(a) Year ended June 30, 2013	\$15,797,970	80%	\$12,638,376	--
	(b) Year ended June 30, 2012	-16,923,132	60%	-10,153,879	80%
	(c) Year ended June 30, 2011	23,938,638	40%	9,575,455	60%
	(d) Year ended June 30, 2010	15,619,356	20%	<u>3,123,871</u>	40%
	(e) Year ended June 30, 2009	-96,764,564			20%
	(f) Total unrecognized return			\$15,183,823	-\$12,280,494
2.	Market value of assets available for benefits			\$205,300,543	\$194,552,931
3.	Less: Unrecognized return			\$15,183,823	-\$12,280,494
4.	Actuarial value of assets (Current Assets): (2) – (3)			<u>\$190,116,720</u>	<u>\$206,833,425</u>
5.	Actuarial value as a percent of market value			<u>92.6%</u>	<u>106.3%</u>

**SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association**

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**C. ACTUARIAL EXPERIENCE**

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. Absent changes in external factors, if overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions.

For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is \$9,788,567, of which a loss of \$12,648,785 is from investments and a gain of \$2,860,218 is from all other sources. The net experience variation from individual sources other than investments was 0.81% of the actuarial accrued liability.

*This chart provides a summary of the actuarial experience during the past year.*

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**CHART 7**  
**Actuarial Experience for Year Ended June 30, 2013**

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1. Net loss from investments on an actuarial value of assets basis	-\$12,648,785
2. Net gain from salary increases different than assumed	742,316
3. Net loss from post-retirement mortality experience	-625,015
4. Net gain from turnover and retirement from active status	1,313,928
5. Net gain from other changes and experience	<u>1,428,989</u>
6. Net experience loss: (1) + (2) + (3) + (4) + (5)	-\$9,788,567

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## SECTION 2: Valuation Results for the Duluth Teachers' Retirement Fund Association

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### **D. INFORMATION REQUIRED BY THE GASB**

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded in accordance with the GASB actuarially required contributions. Section 4, Exhibit III presents a representation of this information for the Fund.

The other critical piece of information regarding the Fund's financial status is the funding ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

GASB requires that the actuarial value of assets be used to determine the funding ratio as shown in Section 4, Exhibit IV.

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT A**

**Table of Plan Coverage**

<b>Category</b>	<b>2013</b>	<b>2012</b>	<b>Change From Prior Year</b>
<b>Active members in valuation:</b>			
Number	873	919	-5.0%
Average age	47.8	47.8	N/A
Average service	12.9	13.2	N/A
Total projected payroll*	\$49,019,534	\$50,973,110	-3.8%
Average projected compensation	56,151	55,466	1.2%
Total active vested members	640	650	-1.5%
<b>Vested terminated members</b>	268	284	-5.6%
<b>Retired participants:</b>			
Number in pay status	1,311	1,254	4.5%
Average age	72.3	72.1	N/A
Average monthly benefit	\$1,531	\$1,544	-0.8%
<b>Disabled participants:</b>			
Number in pay status	19	19	0.0%
Average age	65.0	64.0	N/A
Average monthly benefit	\$1,179	\$1,171	0.7%
<b>Beneficiaries:</b>			
Number in pay status	115	113	1.8%
Average age	76.6	76.1	N/A
Average monthly benefit	\$1,360	\$1,356	0.3%
<b>Other non-vested terminated members</b>	757	766	-1.2%

\* Projected payroll includes annualized pay for new hires and increases to current fiscal year.

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT B-1**

**Members in Active Service as of June 30, 2013  
By Age, Years of Service, and Average Projected Compensation – Total**

Age	Years of Service							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 25	24	24	--	--	--	--	--	--
	\$20,254	\$20,254	--	--	--	--	--	--
25 - 29	61	59	2	--	--	--	--	--
	26,777	25,834	\$54,593	--	--	--	--	--
30 - 34	55	34	20	1	--	--	--	--
	42,162	31,276	59,385	\$67,819	--	--	--	--
35 - 39	76	26	16	24	10	--	--	--
	54,620	31,884	62,938	66,469	\$71,988	--	--	--
40 - 44	112	29	19	17	45	2	--	--
	62,900	36,345	67,823	68,589	75,274	\$74,374	--	--
45 - 49	126	29	11	19	36	27	4	--
	59,026	32,664	52,440	62,958	68,737	72,323	\$72,416	--
50 - 54	128	17	12	11	30	31	26	1
	61,619	25,941	51,255	59,055	69,391	68,716	73,019	\$71,116
55 - 59	174	25	13	18	31	27	47	13
	65,960	39,584	56,639	59,912	69,910	69,684	75,800	81,645
60 - 64	97	15	6	7	16	16	23	14
	61,144	21,513	49,779	56,063	67,576	67,585	73,709	75,663
65 & Over	20	15	2	--	1	--	1	1
	32,641	23,968	42,575	--	67,872	--	68,076	72,211
Total	873	273	101	97	169	103	101	29
	\$56,151	\$29,365	\$58,461	\$63,358	\$70,886	\$69,489	\$74,398	\$78,069

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT B-2**

**Members in Active Service as of June 30, 2013  
By Age, Years of Service, and Average Projected Compensation – Old Plan**

Age	Years of Service							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 25	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
55 - 59	15	--	--	--	--	--	3	12
	\$79,547	--	--	--	--	--	\$70,915	\$81,706
60 - 64	17	--	--	--	2	--	3	12
	74,330	--	--	--	\$69,497	--	73,794	75,270
65 & Over	1	--	--	--	--	--	--	1
	72,211	--	--	--	--	--	--	72,211
Total	33	--	--	--	2	--	6	25
	\$76,638	--	--	--	\$69,497	--	\$72,354	\$78,237



**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT B-3**

**Members in Active Service as of June 30, 2013  
By Age, Years of Service, and Average Projected Compensation – New Plan Tier I**

Age	Years of Service							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 25	--	--	--	--	--	--	--	--
25 - 29	--	--	--	--	--	--	--	--
30 - 34	--	--	--	--	--	--	--	--
35 - 39	--	--	--	--	--	--	--	--
40 - 44	--	--	--	--	--	--	--	--
45 - 49	15	--	--	--	2	9	4	--
	\$71,140	--	--	--	\$73,156	\$70,124	\$72,416	--
50 - 54	57	1	1	1	4	23	26	1
	70,329	\$19,644	\$69,323	\$66,382	79,273	68,118	73,019	\$71,116
55 - 59	58	--	--	1	3	9	44	1
	72,668	--	--	50,592	64,461	60,001	76,133	80,917
60 - 64	34	--	--	2	2	8	20	2
	69,429	--	--	33,098	53,928	69,570	73,696	78,022
65 & Over	1	--	--	--	--	--	1	--
	68,076	--	--	--	--	--	68,076	--
<b>Total</b>	<b>165</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>11</b>	<b>49</b>	<b>95</b>	<b>4</b>
	<b>\$71,026</b>	<b>\$19,644</b>	<b>\$69,323</b>	<b>\$45,792</b>	<b>\$69,513</b>	<b>\$67,233</b>	<b>\$74,527</b>	<b>\$77,019</b>

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT B-4**

**Members in Active Service as of June 30, 2013  
By Age, Years of Service, and Average Projected Compensation – New Plan Tier II**

Age	Years of Service							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 25	24	24	--	--	--	--	--	--
	\$20,254	\$20,254	--	--	--	--	--	--
25 - 29	61	59	2	--	--	--	--	--
	26,777	25,834	\$54,593	--	--	--	--	--
30 - 34	55	34	20	1	--	--	--	--
	42,162	31,276	59,385	\$67,819	--	--	--	--
35 - 39	76	26	16	24	10	--	--	--
	54,620	31,884	62,938	66,469	\$71,988	--	--	--
40 - 44	112	29	19	17	45	2	--	--
	62,900	36,345	67,823	68,589	75,274	\$74,374	--	--
45 - 49	111	29	11	19	34	18	--	--
	57,389	32,664	52,440	62,958	68,478	73,423	--	--
50 - 54	71	16	11	10	26	8	--	--
	54,626	26,335	49,613	58,322	67,870	70,435	--	--
55 - 59	101	25	13	17	28	18	--	--
	60,089	39,584	56,639	60,461	70,494	74,525	--	--
60 - 64	46	15	6	5	12	8	--	--
	50,147	21,513	49,779	65,249	69,530	65,599	--	--
65 & Over	18	15	2	--	1	--	--	--
	28,475	23,968	42,575	--	67,872	--	--	--
Total	675	272	100	93	156	54	--	--
	\$51,513	\$29,401	\$58,353	\$64,114	\$71,001	\$72,224	--	--

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT C-1  
Retired Participants as of June 30, 2013  
By Age, Years Retired and Average Annual Benefit – Total**

Age	Years Retired							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	58	57	--	--	1	--	--	--
60 - 64	\$23,688	\$23,973	--	--	\$7,477	--	--	--
65 - 69	253	179	74	--	--	--	--	--
70 - 74	19,326	19,970	\$17,769	--	--	--	--	--
75 - 79	295	74	123	95	2	--	1	--
80 - 84	18,230	16,153	19,902	\$18,030	3,345	--	\$15,051	--
85 - 89	238	8	34	121	73	2	--	--
90 & Over	18,680	11,366	17,180	18,030	21,377	\$14,327	--	--
Total	200	4	--	33	70	93	--	--
	17,131	10,403	--	15,554	14,430	20,012	--	--
	148	--	--	3	25	84	36	--
	18,158	--	--	29,239	16,184	19,430	15,635	--
	85	1	--	--	1	23	48	12
	17,162	15,038	--	--	37,276	20,988	17,033	\$8,843
	34	--	--	--	--	2	8	24
	12,416	--	--	--	--	11,710	13,875	11,989
Total	1,311	323	231	252	172	204	93	36
	\$18,369	\$19,455	\$18,818	\$17,839	\$17,597	\$19,746	\$16,199	\$10,941

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT C-2  
Retired Participants as of June 30, 2013  
By Age, Years Retired and Average Annual Benefit – Old Plan**

Age	Years Retired							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	20	20	--	--	--	--	--	--
60 - 64	\$38,619	\$38,619	--	--	--	--	--	--
65 - 69	95	76	19	--	--	--	--	--
70 - 74	22,123	24,956	\$10,789	--	--	--	--	--
75 - 79	84	23	21	38	1	--	1	--
80 - 84	14,128	22,029	9,605	\$12,076	\$4,448	--	\$15,051	--
85 - 89	78	2	5	41	29	1	--	--
90 & Over	14,321	29,064	11,891	13,755	14,636	\$11,007	--	--
Total	84	1	--	3	39	41	--	--
	14,803	22,457	--	17,611	11,407	17,642	--	--
	38	--	--	--	3	24	11	--
	13,865	--	--	--	3,529	17,504	8,745	--
	40	--	--	--	--	4	24	12
	11,943	--	--	--	--	20,636	12,045	\$8,843
	27	--	--	--	--	--	6	21
	11,588	--	--	--	--	--	14,666	10,708
Total	466	122	45	82	72	70	42	33
	\$16,607	\$26,691	\$10,359	\$13,118	\$12,283	\$17,671	\$11,626	\$10,030

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT C-3**

**Retired Participants as of June 30, 2013**

**By Age, Years Retired and Average Annual Benefit – New Plan Tier I**

Age	Years Retired							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	20	20	--	--	--	--	--	--
60 - 64	\$24,102	\$24,102	--	--	--	--	--	--
65 - 69	112	64	48	--	--	--	--	--
70 - 74	22,090	21,561	\$22,796	--	--	--	--	--
75 - 79	164	26	85	52	1	--	--	--
80 - 84	23,814	18,601	25,568	\$23,969	\$2,242	--	--	--
85 - 89	110	2	10	59	38	1	--	--
90 & Over	25,765	6,435	27,743	24,331	28,702	\$17,648	--	--
Total	68	1	--	4	17	46	--	--
	24,126	2,080	--	30,252	23,628	24,256	--	--
	63	--	--	--	1	37	25	--
	20,398	--	--	--	53,696	20,667	\$18,667	--
	27	1	--	--	--	2	24	--
	22,263	15,038	--	--	--	28,781	22,021	--
	5	--	--	--	--	--	2	3
	17,175	--	--	--	--	--	11,501	\$20,957
Total	569	114	143	115	57	86	51	3
	\$23,389	\$20,838	\$24,790	\$24,373	\$27,163	\$22,741	\$19,964	\$20,957

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT C-4**

**Retired Participants as of June 30, 2013**

**By Age, Years Retired and Average Annual Benefit – New Plan Tier II**

Age	Years Retired							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	18	17	--	--	1	--	--	--
60 - 64	\$6,639	\$6,590	--	--	\$7,477	--	--	--
65 - 69	46	39	7	--	--	--	--	--
70 - 74	6,820	7,642	\$2,240	--	--	--	--	--
75 - 79	47	25	17	5	--	--	--	--
80 - 84	6,076	8,200	4,295	\$1,514	--	--	--	--
85 - 89	50	4	19	21	6	--	--	--
90 & Over	9,893	4,982	13,013	8,672	7,558	--	--	--
Total	48	2	--	26	14	6	--	--
	11,294	8,538	--	13,055	11,684	\$3,674	--	--
	47	--	--	3	21	23	--	--
	18,625	--	--	29,239	16,206	19,450	--	--
	18	--	--	--	1	17	--	--
	21,105	--	--	--	37,276	20,154	--	--
	2	--	--	--	--	2	--	--
	11,710	--	--	--	--	11,710	--	--
Total	276	87	43	55	43	48	--	--
	\$10,994	\$7,495	\$7,813	\$11,215	\$13,814	\$17,405	--	--

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT D**

**Disabled Members as of June 30, 2013  
By Age, Years Disabled and Average Annual Benefit – Total**

Age	Years Disabled							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	2	2	--	--	--	--	--	--
55 - 59	\$5,621	\$5,621	--	--	--	--	--	--
60 - 64	2	--	2	--	--	--	--	--
65 - 69	9,498	--	\$9,498	--	--	--	--	--
70 - 74	3	--	3	--	--	--	--	--
75 - 79	22,504	--	22,504	--	--	--	--	--
80 - 84	8	1	1	2	2	2	--	--
85 - 89	12,819	8,142	12,697	\$15,995	\$8,469	\$16,394	--	--
90 & Over	4	--	1	2	--	1	--	--
	17,151	--	17,167	15,752	--	19,934	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
Total	19	3	7	4	2	3	--	--
	\$14,153	\$6,461	\$16,625	\$15,873	\$8,469	\$17,574	--	--

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT E-1**

**Beneficiaries as of June 30, 2013**

**By Age, Years Since Member's Retirement Date and Average Annual Benefit – Total**

Age	Years Since Member's Retirement Date							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	3	--	--	3	--	--	--	--
	\$3,291	--	--	\$3,291	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
50 - 54	1	1	--	--	--	--	--	--
	838	\$838	--	--	--	--	--	--
55 - 59	5	3	2	--	--	--	--	--
	13,003	16,049	\$8,433	--	--	--	--	--
60 - 64	7	2	2	--	2	--	1	--
	8,949	6,210	5,385	--	\$16,885	--	\$5,682	--
65 - 69	7	--	1	2	1	3	--	--
	17,527	--	1,942	21,986	17,854	\$19,751	--	--
70 - 74	21	1	1	5	9	5	--	--
	21,123	2,578	7,301	17,634	24,783	24,497	--	--
75 - 79	22	2	--	--	3	11	6	--
	19,434	23,134	--	--	10,961	23,118	15,685	--
80 - 84	26	1	--	1	2	12	10	--
	18,486	47,386	--	19,007	25,599	16,887	16,039	--
85 - 89	17	--	--	--	--	3	8	6
	12,693	--	--	--	--	10,721	14,076	\$11,836
90 & Over	6	--	--	--	--	--	--	6
	8,120	--	--	--	--	--	--	8,120
<b>Total</b>	<b>115</b>	<b>10</b>	<b>6</b>	<b>11</b>	<b>17</b>	<b>34</b>	<b>25</b>	<b>12</b>
	<b>\$16,325</b>	<b>\$15,765</b>	<b>\$6,092</b>	<b>\$14,638</b>	<b>\$21,103</b>	<b>\$19,731</b>	<b>\$14,912</b>	<b>\$9,978</b>



**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT E-2**

**Beneficiaries as of June 30, 2013**

**By Age, Years Since Member's Retirement Date and Average Annual Benefit – Old Plan**

Age	Years Since Member's Retirement Date							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	--	--	--	--	--	--	--	--
60 - 64	2	1	--	--	--	--	1	--
65 - 69	\$8,555	\$11,428	--	--	--	--	\$5,682	--
70 - 74	3	--	--	1	--	2	--	--
75 - 79	21,747	--	--	\$18,283	--	\$23,479	--	--
80 - 84	6	--	--	1	3	2	--	--
85 - 89	22,554	--	--	1,942	\$26,740	26,581	--	--
90 & Over	6	1	--	--	2	2	1	--
Total	11,623	14,042	--	--	10,647	12,194	10,015	--
	3	--	--	--	--	1	2	--
	10,368	--	--	--	--	3,161	13,971	--
	4	--	--	--	--	1	2	1
	13,109	--	--	--	--	11,197	12,831	\$15,576
	6	--	--	--	--	--	--	6
	8,120	--	--	--	--	--	--	8,120
Total	30	2	--	2	5	8	6	7
	\$13,989	\$12,735	--	\$10,112	\$20,303	\$17,358	\$11,550	\$9,185

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT E-3**

**Beneficiaries as of June 30, 2013**

**By Age, Years Since Member's Retirement Date and Average Annual Benefit – New Plan Tier I**

Age	Years Since Member's Retirement Date							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	--	--	--	--	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
50 - 54	--	--	--	--	--	--	--	--
55 - 59	1	1	--	--	--	--	--	--
60 - 64	2	--	1	--	1	--	--	--
65 - 69	2	--	--	1	--	1	--	--
70 - 74	10	1	1	2	3	3	--	--
75 - 79	10	--	--	--	--	6	4	--
80 - 84	11	1	--	--	--	3	7	--
85 - 89	5	--	--	--	--	--	4	1
90 & Over	--	--	--	--	--	--	--	--
	15,806	--	--	--	--	--	18,167	\$2,541
<b>Total</b>	<b>41</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>13</b>	<b>15</b>	<b>1</b>
	\$20,929	\$30,413	\$7,061	\$27,016	\$26,763	\$23,307	\$17,274	\$2,541

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT E-4**

**Beneficiaries as of June 30, 2013**

**By Age, Years Since Member's Retirement Date and Average Annual Benefit – New Plan Tier II**

Age	Years Since Member's Retirement Date							
	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30 & Over
Under 45	3	--	--	3	--	--	--	--
	\$3,291	--	--	\$3,291	--	--	--	--
45 - 49	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
50 - 54	1	1	--	--	--	--	--	--
	838	\$838	--	--	--	--	--	--
55 - 59	4	2	2	--	--	--	--	--
	5,937	3,441	\$8,433	--	--	--	--	--
60 - 64	3	1	1	--	1	--	--	--
	6,895	993	3,950	--	\$15,743	--	--	--
65 - 69	2	--	1	--	1	--	--	--
	9,734	--	1,614	--	17,854	--	--	--
70 - 74	5	--	--	2	3	--	--	--
	16,933	--	--	15,433	17,933	--	--	--
75 - 79	6	1	--	--	1	3	1	--
	20,987	32,226	--	--	11,590	\$22,127	\$15,727	--
80 - 84	12	--	--	1	2	8	1	--
	18,852	--	--	19,007	25,599	17,706	14,371	--
85 - 89	8	--	--	--	--	2	2	4
	11,018	--	--	--	--	10,483	7,141	\$13,224
90 & Over	--	--	--	--	--	--	--	--
	--	--	--	--	--	--	--	--
<b>Total</b>	<b>44</b>	<b>5</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>13</b>	<b>4</b>	<b>4</b>
	<b>\$13,627</b>	<b>\$8,188</b>	<b>\$5,607</b>	<b>\$9,958</b>	<b>\$18,773</b>	<b>\$17,615</b>	<b>\$11,095</b>	<b>\$13,224</b>

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT F**

**Reconciliation of Member Data**

	<b>Active Members</b>	<b>Vested Terminated Members</b>	<b>Other Non- Vested Terminated Members</b>	<b>Retired Participants</b>	<b>Disabled Members</b>	<b>Beneficiaries</b>	<b>Total</b>
A. Number as of June 30, 2012	919	284	766	1,254	19	113	3,355
B. Additions and new hires	86	2	8	0	0	0	96
C. Participant movement:							
1. Retirements	-52	-20	-9	81	0	0	0
2. Disability	0	0	0	0	0	0	0
3. Died with beneficiary	0	0	0	-7	0	7	0
4. Died without beneficiary	-3	0	-2	-17	0	-5	-27
5. Terminated – deferred	-9	9	0	0	0	0	0
6. Terminated – other non-vested	-85	-5	90	0	0	0	0
7. Refunds	0	0	-29	0	0	0	-29
8. Rehired as active	17	-2	-15	0	0	0	0
9. Contributions written off	0	0	-52	0	0	0	-52
10. Expired benefits	0	0	0	0	0	0	0
D. Data adjustments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
E. Number as of June 30, 2013	873	268	757	1,311	19	115	3,343

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT G**

**Schedule of Pensioners and Beneficiaries Added to and Removed from Rolls**

<b>Fiscal Year</b>	<b>Added to Rolls</b>		<b>Removed from Rolls</b>		<b>Rolls – End of Year</b>		<b>% Increase in Annual Allowances</b>	<b>Average Annual Allowances</b>
	<b>Number</b>	<b>Annual Allowances</b>	<b>Number</b>	<b>Annual Allowances</b>	<b>Number</b>	<b>Annual Allowances</b>		
1999	61	1,263,965	32	251,972	939	10,926,102	12.1	11,636
2000	90	2,519,000	33	633,465	996	12,359,721	13.1	12,409
2001	88	2,458,668	26	547,671	1,058	14,341,500	16.0	13,555
2002	56	1,817,094	29	800,165	1,085	15,968,396	11.3	14,717
2003	41	1,191,364	19	574,944	1,107	16,767,603	5.0	15,147
2004	56	1,203,279	26	303,856	1,137	18,240,239	8.8	16,042
2005	64	1,373,262	48	603,930	1,153	18,936,633	3.8	16,424
2006	66	1,359,258	29	312,333	1,190	19,901,351	5.1	16,724
2007	62	1,426,530	25	345,683	1,227	20,978,509	5.4	17,097
2008	58	1,196,895	42	525,597	1,243	22,291,901	6.3	17,934
2009	55	1,201,849	35	424,843	1,264	23,605,292	5.9	18,690
2010	60	1,132,248	29	331,381	1,295	24,114,153	2.2	18,621
2011	76	1,370,877	27	439,349	1,344	24,661,881	2.3	18,350
2012	78	1,717,231	36	644,163	1,386	25,338,231	2.7	18,282
2013	88	1,790,214	29	541,544	1,445	26,227,725	3.5	18,151

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT H**

**Statement of Change in Net Plan Assets for Year Ended June 30, 2013**

	<b>Market Value</b>
A. Assets available at beginning of year (BOY)	\$194,552,931
B. Additions:	
1. Member contributions	\$3,050,990
2. Employer contributions	3,013,717
3. Direct State aid	346,000
4. Investment income	2,097,440
5. Investment expenses	-1,315,561
6. Other	11,735
7. Net appreciation/(depreciation)	<u>29,775,722</u>
8. Total Additions	\$36,980,043
C. Operating Expenses:	
1. Service retirements	\$23,474,340
2. Disability benefits	121,959
3. Survivor benefits	1,833,931
4. Refunds	265,188
5. Administrative expenses	<u>537,013</u>
6. Total operating expenses	\$26,232,431
D. Other changes in reserves	--
E. Assets available at end of year (EOY): (A) + (B.8) – (C.6) + (D)	\$205,300,543
F. Determination of current year unrecognized asset return	
1. Average balance:	
(a) Assets available at BOY: (A)	\$194,552,931
(b) Assets available at EOY: (E)	205,300,543
(c) Average balance [(a) + (b) – Net Investment Income] / 2 [Net Investment Income: (B.4) + (B.5) + (B.6) + (B.7)]	184,642,069
2. Expected return: 8.00% x (F.1.(c))	14,771,366
3. Actual return: (B.4) + (B.5) + (B.6) + (B.7)	<u>30,569,336</u>
4. Current year unrecognized asset return: (F.3) – (F.2)	\$15,797,970

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

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**EXHIBIT I**

**Statement of Plan Net Assets for Year Ended June 30, 2013**

	<b>Market Value</b>
<b>Assets in trust:</b>	
Cash, equivalents, short-term securities	\$11,131,661
Investments:	
Equity	119,546,896
Fixed income	36,923,105
Private equity and limited partnerships	36,180,686
Invested securities lending collateral	5,435,320
Real assets	1,499,155
Other assets	<u>247,843</u>
Total assets in trust	\$210,964,666
<b>Assets receivable</b>	\$1,065,244
<b>Liabilities:</b>	
Invested securities lending collateral	-\$6,468,112
Stock and bond purchases, and accounts payable	<u>-261,255</u>
Total liabilities	<u>-\$6,729,367</u>
<b>Net assets held in Trust for Pension Benefits:</b>	
Member reserves	\$32,005,907
Other reserves	<u>173,294,636</u>
<b>Total Assets Available for Benefits</b>	\$205,300,543
<b>Net Assets at Market Value</b>	<u>\$205,300,543</u>

**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT J**

**Actuarial Value of Assets Calculation History Through June 30, 2013**

<b>Year Ended June 30</b>	<b>Employer Contributions<sup>(1)</sup></b>	<b>Employee Contributions</b>	<b>Net Investment Return<sup>(2)</sup></b>	<b>Administrative Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
2003	--	--	--	--	--	\$278,467,000
2004	\$2,826,730	\$2,991,801	\$10,518,561	\$448,704	\$17,406,336	276,949,052
2005	2,845,684	2,924,264	4,566,718	436,507	18,368,390	268,480,821
2006	2,867,299	3,030,418	16,291,585	424,840	19,319,594	270,925,689
2007	2,940,697	2,978,435	32,143,488	456,987	20,266,573	288,264,749
2008	2,994,086	2,954,062	25,980,797	487,944	21,638,665	298,067,085
2009	3,300,026	2,927,260	-1,539,093	505,164	22,994,555	279,255,559
2010	3,626,514	2,899,071	-6,254,241	505,672	23,712,318	255,308,913
2011	3,456,562	2,779,703	-1,697,460	497,009	24,278,734	235,071,975
2012	3,432,259	2,888,242	-9,026,836	628,923	24,903,292	206,833,425
2013	3,359,717	3,050,990	3,105,019	537,013	25,695,418	190,116,720

<sup>(1)</sup> Includes direct State aid payments for years ending 2009 and later.

<sup>(2)</sup> Net Investment Return on an Actuarial Value of Assets basis, and net of investment fees.



**SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association**

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**EXHIBIT K**

**Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2013**

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1. Unfunded/(Overfunded) actuarial accrued liability at beginning of year		\$119,410,448
2. Normal cost at beginning of year, including expenses		3,896,501
3. Total contributions		-6,410,707
4. Interest		
(a) For whole year on (1) + (2)	\$9,864,556	
(b) For half year on (3)	<u>-256,428</u>	
(c) Total interest: (4a) + (4b)		<u>9,608,128</u>
5. Expected unfunded/(overfunded) actuarial accrued liability:		\$126,504,370
6. Changes due to (gain)/loss from:		
(a) Investments	\$12,648,785	
(b) Demographic experience <sup>(1)</sup> and other changes	<u>-2,860,218</u>	
(c) Total changes due to (gain)/loss		9,788,567
7. Change due to plan amendments		<u>25,733,739</u>
8. Unfunded/(Overfunded) actuarial accrued liability at end of year		<u>\$162,026,676</u>

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<sup>(1)</sup> Includes (gain)/loss due to age/service retirements, disability, mortality (pre and post-retirement), withdrawal, salary increases, and other experience

### SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association

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#### EXHIBIT L

#### Definitions of Pension Terms

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The following list provides an overview of certain technical terms for the convenience of the reader:

#### **Assumptions or Actuarial**

#### **Assumptions:**

The estimates on which the cost of the Fund is calculated including:

- (a) Investment return — the rate of investment yield that the Fund will earn over the long-term future. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

#### **Actuarial Cost Method:**

Entry Age Normal Actuarial Cost Method. Entry Age is calculated as current age minus pension credits. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are expressed as a level percentage of payroll, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

#### **Actuarial Accrued Liability**

#### **For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

### SECTION 3: Supplemental Information for the Duluth Teachers' Retirement Fund Association

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**Unfunded Actuarial Accrued Liability:**

The extent to which the actuarial accrued liability of the Fund exceeds the assets of the Fund. There are a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

**Amortization of the Unfunded Actuarial Accrued Liability:**

Payments made over a period of years equal in value to the Fund's unfunded actuarial accrued liability.

**Accrued Benefit Funding Ratio:**

A current year funded status that measures the percent of benefits covered by Current Assets. This ratio is based on benefits earned to the valuation date (accrued service) and includes future salary increases to retirement. The liability for these benefits is defined as the Current Benefit Obligations. The Accrued Benefit Funding Ratio is calculated as the Actuarial Value of Assets (Current Assets) divided by the Current Benefit Obligations.

**Projected Benefit Funding Ratio:**

A projected funded status that measures contribution sufficiency/deficiency, which is based on a present value of all plan benefits for the lifetime of all plan members. The liability for these benefits is defined as the Current and Expected Future Benefit Obligations, or Present Value of Benefits. The Current and Expected Future Assets are determined as the sum of the Actuarial Value of Assets (Current Assets), the Present Value of Expected Future Statutory Supplemental Contributions and the Present Value of Future Normal Costs. The Projected Benefit Funding Ratio is calculated as the Current and Expected Future Assets divided by the Current and Expected Future Benefit Obligations. In general (and without consideration of unrecognized investment gains or losses), if the ratio is equal to or more than 100%, there is a contribution sufficiency, and if it is less than 100% there is a contribution deficiency.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

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**EXHIBIT I**

**Summary of Actuarial Valuation Results**

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The valuation was made with respect to the following data supplied to us:

1. Pensioners as of the valuation date (including 115 beneficiaries in pay status)		1,445
2. Members inactive during year ended June 30, 2013 with vested rights		268
3. Members active during the year ended June 30, 2013		873
Fully vested	640	
Not vested	233	
4. Other non-vested terminated members as of June 30, 2013		757

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**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT I (continued)**

**Summary of Actuarial Valuation Results**

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
<b>A. Determination of Actuarial Accrued Liability</b>			
1. Active members:			
(a) Retirement benefits	\$120,287,845	\$22,014,867	\$98,272,978
(b) Disability benefits	1,693,481	577,202	1,116,279
(c) Death benefits	2,182,952	576,494	1,606,458
(d) Withdrawal benefits	<u>4,375,613</u>	<u>4,550,586</u>	<u>(174,973)</u>
(e) Total	\$128,539,891	\$27,719,149	\$100,820,742
2. Vested terminated members	\$8,685,900	--	\$8,685,900
3. Other non-vested terminated members	1,404,695	--	1,404,695
4. Annuitants	<u>241,232,059</u>	--	<u>241,232,059</u>
5. Total	\$379,862,545	\$27,719,149	\$352,143,396
<b>B. Determination of Unfunded Actuarial Accrued Liability</b>			
1. Actuarial Accrued Liability			\$352,143,396
2. Actuarial Value of Assets			<u>190,116,720</u>
3. Unfunded Actuarial Accrued Liability: (1) – (2)			\$162,026,676
<b>C. Determination of Supplemental Contribution Rate</b>			
1. Present value of future payrolls through the amortization date of June 30, 2040			\$745,139,285
2. Supplemental contribution rate: (B.3) / (C.1)			21.74%

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

### EXHIBIT II Actuarial Balance Sheet

A. Current Assets <sup>(1)</sup>				\$190,116,720
B. Expected Future Assets				
1. Present Value of Expected Future Statutory Supplemental Contributions				\$64,225,587
2. Present Value of Future Normal Costs				<u>27,719,149</u>
3. Total Expected Future Assets				\$91,944,736
C. Total Current and Expected Future Assets <sup>(1)</sup>				\$282,061,456
D. Current Benefit Obligations	<b><u>Non-Vested</u></b>	<b><u>Vested</u></b>		<b><u>Total</u></b>
1. Benefit recipients:				
(a) Retirement annuities	--	\$225,084,004		\$225,084,004
(b) Disability benefits	--	2,884,648		2,884,648
(c) Beneficiaries	--	13,263,407		13,263,407
2. Vested terminated members	--	8,685,900		8,685,900
3. Other non-vested terminated members	--	1,404,695		1,404,695
4. Active members:				
(a) Retirement benefits	\$1,688,063	66,296,879		67,984,942
(b) Disability benefits	281,112	577,622		858,734
(c) Death benefits	16,938	1,215,171		1,232,109
(d) Withdrawal benefits	<u>129,506</u>	<u>2,370,710</u>		<u>2,500,216</u>
5. Total Current Benefit Obligations	\$2,115,619	\$321,783,036		\$323,898,655
E. Expected Future Benefit Obligations				<u>\$55,963,890</u>
F. Total Current and Expected Future Benefit Obligations - Present Value of Benefits: (D.5 + E)				\$379,862,545
G. Unfunded Current Benefit Obligations (D.5 - A)				\$133,781,935
H. Unfunded Current and Future Benefit Obligations (F - C) <sup>(2)</sup>				\$97,801,089

<sup>(1)</sup> Item does not reflect \$15.2 million of deferred market gains.

<sup>(2)</sup> Item H would be \$82,617,266 with current assets valued at market.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT III**

**Supplementary Information Required by the GASB – Schedule of Employer Contributions**

<b>Plan Year Ended June 30</b>	<b>Actuarially Required Contribution Rate (a)</b>	<b>Actual Covered Payroll (b)</b>	<b>Actual Member Contributions (c)</b>	<b>Annual Required Employer Contributions [(a) x (b)] – (c) = (d)</b>	<b>Actual Employer Contributions<sup>(1)</sup> (e)</b>	<b>Percentage Contributed (e) / (d)</b>
1994	10.21%	\$43,109,000	\$2,230,000	\$2,171,000	\$2,496,000	114.97%
1995	10.36	46,528,000	2,144,000	2,676,000	2,694,000	100.67
1996	13.23	44,870,000	2,570,000	3,366,000	2,598,000	77.18
1997	13.60	46,770,000	2,644,000	3,717,000	2,708,000	72.85
1998	12.87	47,064,000	2,664,000	3,393,000	3,211,000	94.64
1999	10.24	52,176,000	3,118,000	2,225,000	3,507,000	157.62
2000	9.16	52,270,000	3,152,000	1,636,000	3,512,000	214.67
2001	8.51	51,996,000	3,141,000	1,284,000	3,497,000	272.35
2002	7.49	51,054,000	3,275,000	549,000	3,442,000	626.96
2003 <sup>(2)</sup>	9.85	50,656,000	3,299,000	1,691,000	2,933,000	173.45
2004	11.27	48,820,898	2,991,801	2,510,314	2,826,730	112.60
2005	12.11	49,148,256	2,924,264	3,027,590	2,845,684	93.99
2006	14.16	49,521,572	3,030,418	3,981,837	2,867,299	72.01
2007	15.19	50,789,240	2,978,435	4,736,451	2,940,697	62.09
2008	14.53	51,711,330	2,954,062	4,559,594	2,994,086	65.67
2009	15.87	51,019,447	2,927,260	5,169,526	3,300,026	63.84
2010	17.82	49,501,727	2,899,071	5,922,137	3,626,514	61.24
2011	13.22	48,325,164	2,779,703	3,608,884	3,456,562	95.78
2012	17.23	45,763,895	2,888,242	4,996,877	3,432,259	68.69
2013	23.01	44,384,639	3,050,990	7,161,915	3,359,717	46.91

<sup>(1)</sup> Includes contributions from other sources (if applicable)

<sup>(2)</sup> Actuarially Required Contribution Rate prior to change in actuarial assumptions and plan provisions is 7.62%.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**EXHIBIT IV**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) – (a)</b>	<b>Funding Ratio (a) / (b)</b>	<b>Actual Covered Payroll (Previous FY) (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) – (a)] / (c)</b>
07/01/1994	\$133,632,000	\$137,042,000	\$3,410,000	97.51%	\$43,109,000	7.91%
07/01/1995	142,852,000	173,965,000	31,113,000	82.12	46,528,000	66.87
07/01/1996	157,007,000	189,518,000	32,511,000	82.85	44,870,000	72.46
07/01/1997	170,059,000	197,820,000	27,761,000	85.97	46,770,000	59.36
07/01/1998	187,482,000	197,078,000	9,596,000	95.13	47,064,000	20.39
07/01/1999	218,699,000	220,540,000	1,841,000	99.17	52,176,000	3.53
07/01/2000	251,007,000	241,899,000	-9,108,000	103.77	52,270,000	-17.42
07/01/2001	273,618,000	254,255,000	-19,363,000	107.62	51,996,000	-37.24
07/01/2002	280,515,000	279,428,000	-1,087,000	100.39	51,054,000	-2.13
07/01/2003	278,467,000	291,109,000	12,642,000	95.66	50,656,000	24.96
07/01/2004	276,949,052	301,704,445	24,755,393	91.79	48,820,898	50.71
07/01/2005	268,480,821	310,923,929	42,443,108	86.35	49,148,256	86.36
07/01/2006	270,925,689	322,229,167	51,303,478	84.08	49,521,572	103.60
07/01/2007	288,264,749	332,216,981	43,952,232	86.77	50,789,240	86.54
07/01/2008	298,067,085	363,044,284	64,977,199	82.10	51,711,330	125.65
07/01/2009	279,255,559	364,811,453	85,555,894	76.55	51,019,447	167.69
07/01/2010	255,308,913	312,649,572	57,340,659	81.66	49,501,727	115.84
07/01/2011	235,071,975	321,065,000	85,993,025	73.22	48,325,164	177.95
07/01/2012	206,833,425	326,243,873	119,410,448	63.40	45,763,895	260.93
07/01/2013	190,116,720	352,143,396	162,026,676	53.99	44,384,639	365.05



**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**Exhibit V**

**Determination of Contribution Sufficiency – Total**

<b>July 1, 2013</b>		
<b>A. Statutory Contributions – Chapter 354A</b>	<b>Percent of Payroll</b>	<b>Dollar Amount</b>
1. Member contributions	7.00%	\$3,431,368
2. Employer contributions	7.29%	3,573,524
3. Direct State aid <sup>(1)</sup>	1.13%	555,402
4. Additional direct State aid <sup>(2)</sup>	<u>12.24%</u>	<u>6,000,000</u>
5. Total	<u>27.66%</u>	<u>\$13,560,294</u>
<b>B. Required Contributions – Chapter 356</b>	<b>Percent of Payroll</b>	<b>Dollar Amount</b>
1. Normal Cost:		
(a) Retirement	6.31%	\$3,092,495
(b) Disability	0.16%	76,337
(c) Death	0.16%	80,326
(d) Withdrawal	<u>1.12%</u>	<u>549,949</u>
(e) Total	<u>7.75%</u>	<u>\$3,799,107</u>
2. Supplemental contribution amortization	21.74%	\$10,656,847
3. Allowance for administrative expenses	<u>1.05%</u>	<u>514,705</u>
4. Total	<u>30.54%</u>	<u>\$14,970,659</u>
<b>C. Contribution Sufficiency / (Deficiency): (A.5) – (B.4)<sup>(3)</sup></b>	-2.88%	-\$1,410,365
<b>Projected annual payroll for fiscal year beginning on the valuation date<sup>(4)</sup></b>		<b>\$49,019,534</b>

<sup>(1)</sup> A direct State aid payment of \$346,000 is made each year on October 1<sup>st</sup>. In addition, it is assumed that \$209,402 of redirected “amortization State aid” under 423A.02, Subdivision 3 is paid on July 15<sup>th</sup>.

<sup>(2)</sup> An additional State aid payment of \$6,000,000 will be made in October 2013.

<sup>(3)</sup> Contribution deficiency would be 15.12% without the \$6 million additional State aid.

<sup>(4)</sup> Projected payroll includes annualized pay for new hires and increases to current fiscal year.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**Exhibit VI**

**Determination of Contribution Sufficiency – Old Plan**

			<b>July 1, 2013</b>	
			<b>Percent of Payroll</b>	<b>Dollar Amount</b>
<b>A. Statutory Contributions – Chapter 354A</b>				
1.	Member contributions		7.00%	\$177,033
2.	Employer contributions		7.29%	184,367
3.	Direct State aid <sup>(1)</sup>		1.13%	28,655
4.	Additional direct State aid <sup>(2)</sup>		<u>12.24%</u>	<u>309,555</u>
5.	Total		<u>27.66%</u>	<u>\$699,610</u>
<b>B. Required Contributions – Chapter 356</b>				
<b>1. Normal Cost:</b>				
	(a) Retirement		5.00%	\$126,454
	(b) Disability		0.15%	3,720
	(c) Death		0.16%	3,947
	(d) Withdrawal		<u>1.40%</u>	<u>35,412</u>
	(e) Total		<u>6.71%</u>	<u>\$169,533</u>
<b>Projected annual payroll for fiscal year beginning on the valuation date<sup>(3)</sup></b>				<b>\$2,529,038</b>

<sup>(1)</sup> \$28,655 represents a pro-rata portion of the \$555,402 direct State aid and redirected “amortization State aid” payments, allocated by projected payroll.

<sup>(2)</sup> \$309,555 represents a pro-rata portion of the \$6 million additional State aid, allocated by projected payroll.

<sup>(3)</sup> Projected payroll includes increases to current fiscal year.

*Note: The above calculation does not take into account the necessary required contributions to amortize the unfunded accrued liability nor an allowance for administrative expenses.*

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**Exhibit VII**

**Determination of Contribution Sufficiency – New Plan Tier I**

			<b>July 1, 2013</b>	
			<b>Percent of Payroll</b>	<b>Dollar Amount</b>
<b>A. Statutory Contributions – Chapter 354A</b>				
1.	Member contributions		7.00%	\$820,350
2.	Employer contributions		7.29%	854,336
3.	Direct State aid <sup>(1)</sup>		1.13%	132,782
4.	Additional direct State aid <sup>(2)</sup>		<u>12.24%</u>	<u>1,434,443</u>
5.	Total		<u>27.66%</u>	<u>\$3,241,911</u>
<b>B. Required Contributions – Chapter 356</b>				
1.	Normal Cost:			
	(a) Retirement		5.65%	\$662,029
	(b) Disability		0.16%	18,644
	(c) Death		0.16%	19,333
	(d) Withdrawal		<u>1.22%</u>	<u>142,810</u>
	(e) Total		<u>7.19%</u>	<u>\$842,816</u>
<b>Projected annual payroll for fiscal year beginning on the valuation date<sup>(3)</sup></b>				<b>\$11,719,286</b>

<sup>(1)</sup> \$132,782 represents a pro-rata portion of the \$555,402 direct State aid and redirected “amortization State aid” payments, allocated by projected payroll.

<sup>(2)</sup> \$1,434,443 represents a pro-rata portion of the \$6 million additional State aid, allocated by projected payroll.

<sup>(3)</sup> Projected payroll includes increases to current fiscal year.

*Note: The above calculation does not take into account the necessary required contributions to amortize the unfunded accrued liability nor an allowance for administrative expenses.*

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

**Exhibit VIII**

**Determination of Contribution Sufficiency – New Plan Tier II**

			July 1, 2013	
			Percent of Payroll	Dollar Amount
<b>A. Statutory Contributions – Chapter 354A</b>				
1.	Member contributions		7.00%	\$2,433,985
2.	Employer contributions		7.29%	2,534,821
3.	Direct State aid <sup>(1)</sup>		1.13%	393,965
4.	Additional direct State aid <sup>(2)</sup>		<u>12.24%</u>	<u>4,256,002</u>
5.	Total		<u>27.66%</u>	<u>\$9,618,773</u>
<b>B. Required Contributions – Chapter 356</b>				
<b>1. Normal Cost:</b>				
	(a) Retirement		6.63%	\$2,304,012
	(b) Disability		0.16%	53,973
	(c) Death		0.16%	57,046
	(d) Withdrawal		<u>1.07%</u>	<u>371,727</u>
	(e) Total		<u>8.02%</u>	<u>\$2,786,758</u>
<b>Projected annual payroll for fiscal year beginning on the valuation date<sup>(3)</sup></b>				\$34,771,210

<sup>(1)</sup> \$393,965 represents a pro-rata portion of the \$555,402 direct State aid and redirected “amortization State aid” payments, allocated by projected payroll.

<sup>(2)</sup> \$4,256,002 represents a pro-rata portion of the \$6 million additional State aid, allocated by projected payroll.

<sup>(3)</sup> Projected payroll includes annualized pay for new hires and increases to current fiscal year.

*Note: The above calculation does not take into account the necessary required contributions to amortize the unfunded accrued liability nor an allowance for administrative expenses.*

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

### EXHIBIT IX

#### Cash Flow Sufficiency Test

	7/1/2013	7/1/2014	7/1/2015	7/1/2016	7/1/2017	7/1/2018	7/1/2019	7/1/2020	7/1/2021	7/1/2022
1. Market value of assets at beginning of year	\$205,300,543	\$204,103,999	\$205,826,576	\$201,101,666	\$195,795,378	\$190,690,885	\$184,909,501	\$178,408,475	\$171,160,114	\$163,190,387
2. Total member and employer contributions	7,004,892	7,610,283	7,876,643	8,152,325	8,437,656	8,732,974	9,038,628	9,354,980	9,682,405	10,021,289
3. Direct State aid	6,346,000	6,346,000	346,000	346,000	346,000	346,000	346,000	346,000	346,000	346,000
4. Amortization State aid	209,402	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
5. Projected benefit payments	30,118,555	27,797,277	28,261,621	28,713,567	29,268,754	29,776,502	30,279,682	30,760,696	31,166,167	31,473,771
6. Administrative Expenses	514,705	532,720	551,365	570,663	590,636	611,308	632,704	654,849	677,768	701,490
7. Expected investment return										
(a) For whole year on (1) + (4)	16,440,796	16,344,320	16,482,126	16,104,133	16,659,607	16,225,725	15,734,308	15,181,720	14,565,610	13,888,183
(b) For half year on (2)	280,196	304,411	315,066	326,093	358,600	371,151	384,142	397,587	411,502	425,905
(c) For three-fourths of a year on (3)	380,760	380,760	20,760	20,760	22,058	22,058	22,058	22,058	22,058	22,058
(d) For half year on (5) + (6)	1,225,330	1,133,200	1,152,519	1,171,369	1,269,024	1,291,482	1,313,776	1,335,161	1,353,367	1,367,449
(e) Total expected return: (7a) + (7b) + (7c) - (7d)	15,876,422	15,896,291	15,665,433	15,279,617	15,771,241	15,327,452	14,826,732	14,266,204	13,645,803	12,968,697
8. Projected market value of assets at end of year: (1) + (2) + (3) + (4) - (5) - (6) + (7e)	\$204,103,999	\$205,826,576	\$201,101,666	\$195,795,378	\$190,690,885	\$184,909,501	\$178,408,475	\$171,160,114	\$163,190,387	\$154,551,112

- Notes:*
1. Future total member and employer contributions are based on projected payroll increasing at the payroll growth assumption (3.5% annually).
  2. Direct State aid includes \$6 million on October 1, 2013 and 2014; \$346,000 per year each October 1.
  3. Amortization State aid includes \$209,402 in July 2013 and an estimated \$200,000 in July of each subsequent year.
  3. Projected benefit payments are based on a closed-group projection of the current members where actives, inactive vesteds, and members in payment status are assumed to decrement based on the demographic assumptions outlined in Exhibit XI.
  4. Administrative expenses are assumed to be 1.05% of projected payroll in the future.
  5. Expected investment return is 8.00% from July 1, 2013 through June 30, 2017 and 8.50% thereafter.

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### EXHIBIT X

#### Supplementary Information Required by the GASB

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<b>Valuation date</b>	July 1, 2013
<b>Actuarial cost method</b>	Entry Age Normal
<b>Amortization method</b>	Level percentage of payroll, assuming payroll increases of 3.50% per annum
<b>Remaining amortization period</b>	27 years remaining as of July 1, 2013
<b>Asset valuation method</b>	Market Value, adjusted for amortization obligations receivable at the end of each fiscal year, less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during that fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year), and is recognized (20% per year) over a five-year period.
<b>Actuarial assumptions:</b>	
Investment rate of return	8.00% per annum for the period July 1, 2013 through June 30, 2017, 8.50% thereafter
Projected salary increases	Select and ultimate rates by age, with ultimate rates of 3.25% - 6.00%
<b>Plan membership:</b>	
Pensioners and beneficiaries receiving benefits	1,445
Terminated vested members entitled to, but not yet receiving benefits	268
Other terminated non-vested members	757
Active members	<u>873</u>
Total	3,343

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**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

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**EXHIBIT XI**  
**Actuarial Assumptions and Actuarial Cost Method**

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**Mortality Rates:**

*Healthy:*

- Male: RP-2000 Mortality Table for males, set back 3 years, and projected with generational improvement from 2012
- Female: RP-2000 Mortality Table for females, set back 3 years, and projected with generational improvement from 2012

Rates for sample ages are shown on the next page. (Adopted effective July 1, 2012)

*Disabled:*

Male and Female tables apply: (Adopted effective July 1, 2012)

<b>Age</b>	<b>Table</b>
54 and younger	Disabled Eligible for Social Security Disability – ERISA Sec. 4044 for 2006
55 – 64	Graded from table for ages 54 and younger to table for ages 65 and older
65 and older	RP-2000 Mortality Table, set back 3 years, and projected with generational improvement from 2012

The mortality tables above without generational improvement reasonably reflect the projected mortality experience of the Fund as of the measurement date. The mortality table was then adjusted to future years using generational improvement under Scale AA to anticipate future mortality improvement.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

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**Summary of Rates:**

Shown below for selected ages:

Age	Rate (%)						
	Mortality*		Withdrawal	Disability	Retirement		Ultimate Rate of Salary Increases
	Male	Female			Old/Tier 1	Tier 2	
20	0.03%	0.02%	3.50%	--	--	--	6.00%
25	0.04	0.02	3.25	--	--	--	6.00
30	0.04	0.02	3.00	--	--	--	6.00
35	0.06	0.04	2.75	0.01%	--	--	6.00
40	0.09	0.06	2.50	0.03	--	--	5.31
45	0.12	0.09	2.00	0.06	--	--	4.63
50	0.17	0.13	1.50	0.10	--	--	3.94
55	0.27	0.20	0.75	0.15	7.50%	7.50%	3.25
60	0.47	0.35	--	0.21	25.00	15.00	3.25
65	0.88	0.67	--	--	35.00	30.00	3.25
70**	1.61	1.22	--	--	100.00	100.00	--

\* Does not include generational improvement

\*\* Last Retirement Age



#### SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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<b>Retirement Rates:</b>	Rates are shown for selected ages on the previous page. In addition, 30% of the members are assumed to retire each year that they are eligible for Rule of 90. (Adopted effective July 1, 2012)
<b>Withdrawal Rates:</b>	Select and ultimate rates are based on recent plan experience. Ultimate rates after the third year are shown for sample ages on the previous page. Select rates are as follows: (Adopted effective July 1, 2012)
First year:	45.00%
Second year:	20.00%
Third year:	12.00%
<b>Decrement Timing:</b>	Retirements are assumed to occur at the beginning of the fiscal year and all other decrements are assumed to occur at the middle of fiscal year.
<b>Retirement Age for Inactive Vested Members:</b>	Normal retirement age
<b>Unknown Data for Members:</b>	Same as those exhibited by members with similar known characteristics.
<b>Percent Married:</b>	80% of members are assumed to be married.
<b>Age of Spouse:</b>	Females three years younger than males.
<b>Net Investment Return:</b>	8.00% per annum for the period July 1, 2013 through June 30, 2017, 8.50% thereafter. (Adopted effective July 1, 2012)
<b>Salary Increases:</b>	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the ultimate rate table on the prior page. This table includes an 8-year select period. For service from hire through 7 completed years, a 7.75% salary increase is assumed. (Adopted effective July 1, 2012)
<b>Administrative Expenses:</b>	Prior year administrative expenses expressed as percentage of prior year projected payroll.

#### SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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<b>Allowance for Combined Service Annuity:</b>	10% load on liabilities for active and deferred vested participants. (Adopted effective July 1, 2002)				
<b>Return of Contributions:</b>	All employees withdrawing after becoming eligible for a deferred benefit - for purposes of determining the liability in the actuarial valuation - were assumed to take either their contributions accumulated with interest or their deferred benefit, whichever is more valuable.				
<b>Special Consideration:</b>	<p>Members in the Old Plan are assumed to receive their retirement benefits from either the Old Plan or New Plan, based on whichever benefit is larger.</p> <p>Direct State aid payments include a portion attributed to redirected "amortization State aid" under 423A.02, Subdivision 3 and an additional \$6 million in October 2013 and 2014. For fiscal 2014, the "amortization State aid" is \$209,402 and is assumed to be \$200,000 for fiscal 2015 and thereafter.</p> <p>Married Members assumed to elect subsidized joint and survivor form of annuity as follows: (Adopted effective July 1, 2008)</p> <table><tr><td>Males:</td><td>30% elect 50% J&amp;S option 40% elect 100% J&amp;S option</td></tr><tr><td>Females:</td><td>15% elect 50% J&amp;S option 15% elect 100% J&amp;S option</td></tr></table>	Males:	30% elect 50% J&S option 40% elect 100% J&S option	Females:	15% elect 50% J&S option 15% elect 100% J&S option
Males:	30% elect 50% J&S option 40% elect 100% J&S option				
Females:	15% elect 50% J&S option 15% elect 100% J&S option				
<b>Post-retirement Increases</b>	Effective July 1, 2013, the law provides for a post-retirement benefit adjustment of CPI-U (up to 5%) when the funding ratio using the actuarial value of assets equals or exceeds 90%. Until that 90% threshold is met, the post-retirement adjustment will be 1%. Since projected contributions are not sufficient to cover the long-term cost of the plan, a 90% funding ratio on an actuarial basis is not expected to be met. As a result, the July 1, 2013 valuation reflects the 1% annual post-retirement adjustment. (Adopted effective July 1, 2013)				

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

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**Asset Valuation Method:** Market Value, adjusted for amortization obligations receivable at the end of each fiscal year, less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during the fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Each year's Unrecognized Asset Return is being amortized over 5 years (20% per year) on a straight-line basis.

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**Actuarial Cost Method:** Entry Age Normal Actuarial Cost Method. Entry Age is calculated as current age minus pension credits. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are expressed as a level percentage of payroll, with Normal Cost determined as if the current benefit provisions had always been in effect.

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**Payment on the Unfunded Actuarial Accrued Liability:** A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 3.50% per annum. If the Actuarial Value of Assets exceeds the Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

**SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association**

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**EXHIBIT XII**

**Summary of Plan Provisions**

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This summary of provisions reflects the interpretation of applicable Statutes for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

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**Plan Year:** July 1 through June 30

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**Eligibility (Old Plan and New Plan):** Licensed full-time and part-time teachers who are employed by the Duluth Public Schools other than a charter school teacher, and eligible licensed staff at Lake Superior College, who have elected to retain their membership in the DTRFA. Also includes any employees of the Retirement Fund Association. Employees in the Old Plan are those first hired before July 1, 1981. Employees in the New Plan, Tier I are those first hired on or after July 1, 1981. Employees in the New Plan, Tier II are those first hired on or after July 1, 1989.

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**Credited Service (Old Plan and New Plan):** Earned while employed in a covered position and employee contributions are deducted. May also include extended or mid-career leaves of absence, medical leave of absence, sabbatical leave, and military service. Credit for less than a full year is granted on a prorated basis.

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**Salary (Old Plan and New Plan):** Total Compensation. Excludes any lump-sum annual leave or sick leave payments and lump-sum payments at time of separation from employment.

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**Average Salary (Old Plan):** Average of the five highest years of annual salary.

**Average Salary (New Plan):** Average of the five highest successive years of salary. Average Salary is based on all Credited Service if less than five years.

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### **Retirement (Old Plan):**

#### Normal Retirement:

<i>Age Requirement:</i>	Age 60, and
<i>Service Requirement:</i>	10 years of Credited Service
<i>Amount:</i>	1.45% of Average Salary for each year of Credited Service

#### Early Retirement:

<i>Age Requirement:</i>	Age 55, and
<i>Service Requirement:</i>	10 years of Credited Service, or
<i>Age/Service Requirement:</i>	The sum of age and Credited Service equals 90, if earlier.
<i>Amount:</i>	The Normal Retirement Amount with a reduction of 0.25% for each month the member is under age 60. No reduction if the sum of age and years of Credited Service equals 90.
<i>Form of Payment:</i>	Life annuity. Actuarially equivalent options are: (a) 5, 10, 15 or 20-year certain and life, or (b) 50% or 100% joint and survivor with bounce back feature without additional reduction. (c) Other equivalent options approved by the Board.
<i>Benefit Increases:</i>	<u>Annual Cost-of-Living Adjustment (COLA):</u>

Post-retirement benefit adjustments are based on the Plan's funding ratio as outlined in the assumptions section.

**Note: A member who is eligible for normal or early benefits under the Old Plan may instead receive a benefit under New Plan Tier I or New Plan Tier II if it is greater than the benefit from the Old Plan.**

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### **Retirement (New Plan Tier I):**

#### Normal Retirement:

*Age/Service Requirement:* Members first hired before July 1, 1989:

- (a) Age 65, or
- (b) Age 62 and 30 years of Credited Service.

*Amount:* For Credited Service earned before July 1, 2013: 1.20% of Average Salary for each of the first ten years of Credited Service and 1.70% of Average Salary for each subsequent year.

For Credited Service earned after June 30, 2013: 1.40% of Average Salary for each of the first ten years of Credited Service and 1.90% of Average Salary for each subsequent year.

#### Early Retirement:

*Age/Service Requirement:* (a) Age 55 and three years (five years, if hired after June 30, 2010) of Credited Service, or

- (b) Any age with 30 years of Credited Service, or
- (c) The sum of age and Credited Service equals 90.

*Amount:* The Normal Retirement Amount with a reduction of 0.25% for each month the member is under Normal Retirement Age. No reduction if the sum of age and years of Credited Service equals 90.

*Form of Payment:* Life annuity. Actuarially equivalent options are:

- (a) 5, 10, 15 or 20-year certain and life, or
- (b) 50% or 100% joint and survivor with bounce back feature without additional reduction.
- (c) A larger life annuity before age 62 and reduced thereafter.

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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*Benefit Increases:*

Annual Cost-of-Living Adjustment (COLA):

Post-retirement benefit adjustments are based on the Plan's funding ratio as outlined in the assumptions section.

**Note: A member who is eligible for normal or early benefits under the New Plan Tier I may instead receive a benefit under New Plan Tier II if it is greater than the benefit from New Plan Tier I.**

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### **Retirement (New Plan Tier II):**

Normal Retirement:

*Age/Service Requirement:*

Members first hired after June 30, 1989:

The greater of age 65 or the age eligible for full Social Security retirement benefits but not higher than age 66.

*Amount:*

1.70% of Average Salary for each year of Credited Service earned before July 1, 2013 and 1.90% of Average Salary for each year of Credited Service earned after June 30, 2013.

Early Retirement:

*Age/Service Requirement:*

Age 55 and three years (five years, if hired after June 30, 2010) of Credited Service.

*Amount:*

The Normal Retirement Amount is augmented to the age eligible for full social security retirement benefits at 2.50% per year. The benefit is then reduced by 7% per year for ages under Normal Retirement Age until age 59 and 4% thereafter, for participants retiring under age 62 or with less than 30 years of service. For participants retiring at age 62 or older with 30 or more years of service, the benefit is reduced by 6% per year under Normal Retirement Age.

*Form of Payment:*

Life annuity. Actuarially equivalent options are:

- (a) 5, 10, 15 or 20-year certain and life, or
- (b) 50% or 100% joint and survivor with bounce back feature without additional reduction.
- (c) A larger life annuity before age 62 and reduced thereafter.

#### SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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*Benefit Increases:* Annual Cost-of-Living Adjustment (COLA):  
Post-retirement benefit adjustments are based on the Plan's funding ratio as outlined in the assumptions section.

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##### **Disability (Old Plan):**

*Age/Service Requirement:* Totally and permanently disabled as a teacher before the age of 60 with five years of Credited Service.

*Amount:* (a) Normal Retirement Amount based on Credited Service and Average Salary at disability date without reduction for early commencement. Amount is reduced for Workers' Compensation.  
(b) Payment stops at age 60, or earlier if disability ceases or death occurs.

*Form of Payment:* Same as for Normal Retirement.

*Benefit Increases:* Same as for Normal Retirement.

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##### **Disability (New Plan):**

*Age/Service Requirement:* Totally and permanently disabled under Normal Retirement Age with three years (five years, if hired after June 30, 2010) of Credited Service. Also, at least two of the years of Credited Service must have been uninterrupted.

*Amount:* (a) Normal Retirement Amount based on Credited Service and Average Salary at disability without reduction commencement before retirement age. Benefit is reduced by Workers' Compensation.  
(b) Payments may begin 90 days after disability and stops at Normal Retirement Age, or earlier if disability ceases or death occurs. Benefits paid while partially employed may be reduced.

*Form of Payment:* Same as for Normal Retirement.

*Benefit Increases:* Same as for Normal Retirement.



## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### Retirement After Disability:

<i>Age/Service Requirement:</i>	Normal Retirement Age if still totally and permanently disabled.
<i>Amount:</i>	Optional annuity continues, otherwise the larger of the disability benefit paid before Normal Retirement Age or the Normal Retirement benefit available at Normal Retirement Age, or an actuarial equivalent optional annuity.
<i>Benefit Increases:</i>	Same as for retirement.

---

### **Withdrawal (Old Plan):**

#### Refund of Member's Contributions:

<i>Age/Service Requirement:</i>	Termination from Teaching Service.
<i>Amount:</i>	Member's contributions with 4.00% interest compounded annually

#### Deferred Annuity:

<i>Age/Service Requirement:</i>	Ten years of Credited Service.
<i>Amount:</i>	For members hired before July 1, 2006, the benefit computed under law in effect at termination and increased by the following annual percentage: (a) 3.00% until January 1 of the year following attainment of age 55, and (b) 5.00% thereafter until the annuity begins.

For members hired after June 30, 2006, the benefit is computed under law in effect at termination and increased by 2.50% annually until the annuity begins.

Effective July 1, 2012, the annual augmentation percentage is reduced to 2.00% from the age of termination to the age the annuity begins. The amount is payable as a Normal or Early Retirement.

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### **Withdrawal (New Plan):**

#### Refund of Member's Contributions:

<i>Age/Service Requirement:</i>	Termination from Teaching Service.
<i>Amount:</i>	Member contributions accumulate with 4.00% interest compounded annually.

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### Deferred Annuity:

*Age/Service Requirement:* Three years (five years, if hired after June 30, 2010) of Credited Service.

*Amount:* For members hired before July 1, 2006, the benefit is computed under law in effect at termination and increased by the following annual percentage:

- (a) 3.00% until January 1 of the year following attainment of age 55, and
- (b) 5.00% thereafter until the annuity begins.

For members hired after June 30, 2006, the benefit is computed under law in effect at termination and increased by 2.50% for all years.

Effective July 1, 2012, the annual augmentation percentage for all New Plan members is reduced to 2.00% from the age of termination to the age the annuity begins. The amount is payable as a Normal or Early Retirement.

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### **Pre-Retirement Death Benefit (Old Plan):**

*Age/Service Requirement:* None.

*Amount:* Refund of two times member's contributions accumulated with 4.00% interest compounded annually.

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### **Post-Retirement Death Benefit (Old Plan):**

*Age/Service Requirement:* None.

*Amount:* Refund the excess of member's contributions over total benefits paid, accumulated with 4.00% interest compounded annually.

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### **Surviving Spouse Benefit (Old Plan):**

#### Optional Annuity I:

*Age/Service Requirement:* Death of active member with ten years of Credited Service.

*Amount:* In lieu of the Pre-Retirement Death Benefit Refund, an annuity to surviving spouse equivalent to 120% of the refund amount.

#### SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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##### Optional Annuity II:

*Age/Service Requirement:* Death of active member who is age 55 with ten years of Credited Service.

*Amount:* In lieu of Pre-Retirement Death Benefit Refund or Surviving Spouse Optional Annuity I, spouse may elect survivor portion of the 100% joint and survivor annuity the member could have elected if terminated.

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##### **Pre-Retirement Death Benefit (New Plan):**

##### Surviving Spouse Optional Annuity:

*Age/Service Requirement:* Member who dies before retirement benefits commence with three years (five years, if hired after June 30, 2010) of Credited Service.

*Amount:* Survivor's payment of the 100% joint and survivor benefit or an actuarial equivalent term certain annuity. If commencement is prior to Normal Retirement Age, the benefit is reduced at the early retirement reduction factors, with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.

*Benefit Increases:* Same as for Normal Retirement.

##### Refund of Member's Contributions:

*Age/Service Requirement:* Member or former member dies before receiving any disability or retirement benefits, and survivor benefits are not payable.

*Amount:* Member's contributions with 4.00% interest compounded annually.

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##### **Contributions:**

*Member:* 7.00% of salary. Effective July 1, 2014, 7.50% of salary.

*Employer:* 7.29% of salary. Effective July 1, 2014, 7.50% of salary.

*Direct State Aid:* \$346,000 per year each October 1, beginning in 2008, plus a redirected "amortization State aid" payment of \$209,402 for fiscal 2014 and an estimated \$200,000 thereafter, plus an additional State aid of \$6 million in October 2013 and 2014.

## SECTION 4: Reporting Information for the Duluth Teachers' Retirement Fund Association

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### Changes in Plan Provisions:

The following Plan changes are reflected in this valuation as described in the 2013 Omnibus Pension Bill:

- The employee contribution rate increases from 6.50% to 7.00% for fiscal 2014, and from 7.00% to 7.50% for fiscal 2015 and thereafter.
- The employer contribution rate increases from 6.79% to 7.29% for fiscal 2014, and from 7.29% to 7.50% for fiscal 2015 and thereafter.
- The benefit multiplier for New Plan members increases from 1.7% to 1.9% per year of service for service earned after June 30, 2013.
- A 1% automatic annual compound cost of living adjustment will commence on January 1, 2014.
- The early retirement factors for New Plan Tier II members were revised to lower benefits for earlier retirements and increase benefits for later retirements.

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